

Financial Development and Economic Development in Africa: Evidence from Panel Regression

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ABSTRACT

This study investigated the effects of financial development proxied by domestic credit to the private sector (CR) and broad money supply as a percentage of GDP (BMS) on economic development across forty-three African countries for the period 2012 to 2025, with economic development measured by the Multidimensional Poverty Index (MPI). Secondary data were sourced from the World Development Indicators database of the World Bank and the United Nations Development Programme Human Development Reports. Panel data econometric methods were employed, specifically pooled ordinary least squares, cross-section fixed effects, and random effects estimations, with the Hausman specification test used to identify the consistent estimator. The Hausman test result (Chi-square = 20.03; $p = 0.0027$) confirmed the fixed effects model as the preferred specification. The model achieved an R-squared of 0.6626. Findings revealed that domestic credit to the private sector exerted no statistically significant effect on MPI ($p = 0.8748$), while broad money supply exerted a statistically significant positive effect (coeff. = 0.2866; $p = 0.0012$), indicating that monetary expansion was associated with higher rather than lower multidimensional poverty. The study concluded that financial development in Africa has not generated meaningful reductions in multidimensional poverty during the study period, largely because credit is concentrated among formal sector elites and monetary expansion has been inflationary rather than investment-led. The study recommended that African governments redirect credit flows toward productive and underserved populations through targeted guarantee schemes and priority sector lending frameworks, and that monetary authorities adopt inflation-disciplined policies supported by development finance institutions to channel liquidity toward poverty-reducing investments.

Keywords: Financial Development, Broad Money Supply, Private Sector Credit, Multidimensional Poverty Index, Economic Development, Africa, Panel Data, Fixed Effects.

INTRODUCTION

Africa remains one of the world's most poverty-intensive continent despite more than two decades of macroeconomic reforms, financial sector liberalisation, and unprecedented expansion in digital financial services. According to the United Nations Development Programme (UNDP, 2024), approximately 534 million people in Sub-Saharan Africa are multidimensionally poor, accounting for the largest share of multidimensional poverty globally. The persistence of widespread deprivations in health, education, nutrition, housing, and living standards even in countries that have achieved sustained economic growth underscores the critical distinction between economic growth and economic development, and raises fundamental questions about the effectiveness of financial systems in channelling resources toward the welfare of ordinary citizens. The African Development Bank (2024) observed that while average per capita income across the continent has risen in nominal terms, improvements in the full spectrum of human welfare remain deeply uneven, with rural communities and marginalised populations continuing to experience extreme levels of deprivation across multiple dimensions simultaneously.

Financial development is broadly defined as the deepening, broadening, and efficiency of a country's financial system has long been proposed as a critical driver of economic development. The supply-leading hypothesis, advanced by McKinnon (1973) and Shaw (1973), posited that deeper financial intermediation stimulates capital accumulation, promotes efficient resource allocation, and ultimately drives growth and poverty reduction. Empirical support for this view has been documented extensively (Levine, 2021; Asongu & Odhiambo, 2024; Adegbite & Machethe, 2025). In the African context, two of the most commonly monitored indicators of financial development are domestic credit to the private sector (CR) which measures the extent to which the banking system channels resources toward productive private activities and broad money supply as a percentage of GDP (BMS), which captures the overall liquidity and monetary depth of the financial system. Together, these indicators reflect the capacity of the financial system to generate and intermediate financial resources in support of development goals.

The expected relationship between financial development and economic development, particularly as measured by the Multidimensional Poverty Index, is negative: increases in private sector credit and monetary depth are anticipated to reduce multidimensional poverty by expanding productive investment, raising household incomes, and improving access to goods and services that satisfy health, educational, and living standard needs. This expectation is grounded in the theoretical frameworks of Schumpeter (1911), Goldsmith (1969), and McKinnon (1973), all of whom identified financial intermediation as a prerequisite for productive economic activity. However, a growing body of evidence from developing economies particularly in Africa challenges this optimistic view, suggesting that the developmental benefits of financial expansion are conditional on institutional quality, distributional equity, and the productive orientation of credit (Arcand et al., 2022; Mhlanga, 2023; Osuma et al., 2025).

Despite the extensive literature on finance and development in Africa, significant conceptual and empirical gaps persist. First, the majority of existing studies employ income-based measures of economic development primarily GDP per capita or poverty headcount ratios which fail to capture the full spectrum of human deprivation that characterises poverty in African societies. The Multidimensional Poverty Index (MPI), which captures simultaneous household deprivations across ten indicators spanning health, education, and living standards, offers a far more comprehensive and policy-relevant measure of economic development that remains underutilised in finance-development studies. Second, very few studies have examined the joint effects of both private sector credit and broad money supply on multidimensional development outcomes within a rigorous cross-country panel framework. Third, the literature contains conflicting evidence about the direction and magnitude of the financial development-poverty relationship in Africa, and these conflicts have not been adequately resolved by studies that account for unobserved country-specific heterogeneity through fixed effects estimation. These gaps motivate the present study.

This study therefore sets out to investigate the effects of financial development captured by domestic credit to the private sector and broad money supply on economic development, proxied by the Multidimensional Poverty Index, across forty-three African countries over the period 2012 to 2025. By employing the MPI as the outcome variable and using rigorous panel econometric methods including the Hausman specification test and cross-section fixed effects estimation, the study contributes novel and policy-relevant evidence to the ongoing debate on the finance-development nexus in Africa. The findings have important implications for monetary policy design, financial sector regulation, and development strategy across the continent.

Statement of Hypotheses

The following null hypotheses were formulated to guide the empirical investigation:

Ho1: Domestic credit to the private sector has no significant effect on economic development in Africa.

Ho2: Broad money supply has no significant effect on economic development in Africa.

LITERATURE REVIEW

CONCEPTUAL REVIEW

The Concept of Economic Development and the Multidimensional Poverty Index

Economic development is a complex, multidimensional process that encompasses far more than the aggregate growth of national income. Sen (1999) articulated a capabilities-based conception of development that regards the expansion of individual freedoms the substantive ability of people to lead lives they have reason to value as both the primary means and the ultimate end of development. This perspective calls for measures of development that go beyond income to capture achievements in health, education, political participation, and social inclusion. Todaro and Smith (2021) similarly identified the reduction of poverty, inequality, and unemployment as the three core objectives of economic development, alongside sustained improvements in human welfare across multiple dimensions. These conceptualisations make clear that narrow income-based measures of development are insufficient to capture the full richness of what development entails.

The Multidimensional Poverty Index (MPI), developed by Alkire and Jahan (2023) under the auspices of the United Nations Development Programme and the Oxford Poverty and Human Development Initiative, operationalises the capabilities approach by measuring poverty as a state of simultaneous deprivation across multiple dimensions of well-being. The MPI identifies individuals as multidimensionally poor if they are deprived in at least one third of the weighted indicators, which span three broad dimensions. The health dimension encompasses nutrition and child mortality; the education dimension covers years of schooling and school attendance; and the living standards dimension includes access to cooking fuel, sanitation, drinking water, electricity, housing quality, and assets. The MPI thereby captures the overlapping nature of poverty that income measures cannot reveal: a household may be above the income poverty line yet simultaneously deprived in sanitation, education, and healthcare access. In the African context, where the majority of the multidimensionally poor live in conditions characterised by multiple simultaneous deprivations, the MPI provides a far more accurate and policy-relevant picture of welfare than GDP per capita or monetary poverty rates (UNDP, 2024).

The use of MPI as a proxy for economic development in finance-development studies is therefore conceptually superior to the use of income-based indicators. A financial system that generates credit growth and monetary depth yet fails to translate these gains into improvements in health outcomes, educational participation, housing quality, and access to basic services cannot be deemed genuinely developmental. The MPI thus provides the most demanding and comprehensive test of whether financial development truly promotes economic development in the holistic, people-centred sense envisaged by Sen (1999) and the Sustainable Development Goals framework (United Nations, 2023).

The Concept of Financial Development and Domestic Credit to the Private Sector

Financial development refers to the process by which financial institutions, markets, and instruments become deeper, broader, more efficient, and more accessible in ways that support productive economic activity. The foundational theoretical contributions of Schumpeter (1911), Goldsmith (1969), Gurley and Shaw (1960), McKinnon (1973), and Shaw (1973) collectively established that well-functioning financial systems perform essential economic functions: they mobilise savings, evaluate investment opportunities, allocate capital to its most productive uses, facilitate the diversification of risk, and ease the exchange of goods and services. In performing these functions, financial systems are theorised to stimulate capital accumulation, technological innovation, and ultimately economic development. Levine (1997, 2021) provided an influential synthesis of this theoretical tradition and reviewed extensive empirical evidence confirming the positive relationship between financial development and long-run growth.

Domestic credit to the private sector (CR), measured as a percentage of GDP, is one of the most widely used empirical proxies for financial development. It captures the extent to which the banking system directs

financial resources toward productive private sector activities — including corporate investment, small business lending, agricultural finance, and household credit. Higher levels of private sector credit signal deeper financial intermediation, greater confidence in the creditworthiness of borrowers, and a more active role for the financial system in supporting real economic activity. In the African context, however, private sector credit ratios remain among the lowest in the world, averaging well below 30 percent of GDP across most Sub-Saharan African economies, reflecting the shallowness of financial intermediation and the dominance of informal economic activity (African Development Bank, 2024). Moreover, the distributional characteristics of credit in African economies particularly its concentration among large corporate borrowers, urban formal sector workers, and politically connected individuals mean that aggregate credit levels may not accurately reflect the extent to which financial resources reach the productive activities and households most in need of capital.

The Concept of Broad Money Supply and Financial Depth

Broad money supply (BMS), measured as M2 as a percentage of GDP, is the second major indicator of financial development examined in this study. Broad money encompasses currency in circulation, demand deposits, savings deposits, time deposits, and other liquid financial instruments. As a share of GDP, it provides a measure of the overall liquidity and monetary depth of the financial system that is, the extent to which the economy has monetised and the financial system has expanded relative to real economic activity. Higher BMS ratios are associated with greater financial intermediation capacity, deeper savings mobilisation, and a more expansive financial system that is capable of channelling resources across the economy. Historically, the development of broad monetary aggregates has been viewed as a prerequisite for the transition from subsistence-based to market-based economies, as monetisation enables the division of labour, facilitates long-distance trade, and supports the accumulation of financial savings that can be intermediated by banks and other financial institutions (Gurley & Shaw, 1960).

However, the relationship between broad money supply and economic development is not straightforwardly positive. In many developing economies, particularly those with underdeveloped financial markets and weak monetary policy frameworks, increases in broad money supply may be associated with inflation rather than productive investment, as excess liquidity chases a limited supply of goods and financial instruments. Inflationary monetary expansion directly harms the welfare of low-income households by eroding the purchasing power of wages and savings, and can therefore worsen multidimensional poverty even while expanding the nominal size of the financial system. The International Monetary Fund (2023) noted that several African economies experienced elevated inflation rates during the study period, partly as a consequence of monetary expansion that outpaced productive capacity growth. This theoretical ambiguity in the relationship between broad money supply and multidimensional poverty underscores the importance of empirical investigation in the specific African context.

EMPIRICAL REVIEW

Domestic Credit to the Private Sector and Economic Development

Adegbite and Machethe (2025) examined the effect of financial development on multidimensional poverty across twenty-five African countries for the period 2010 to 2022, using data from the World Bank's World Development Indicators and the UNDP Human Development Reports. The study employed a system Generalized Method of Moments (GMM) estimator to control for endogeneity. The study found that domestic credit to the private sector exerted a significant negative effect on the Multidimensional Poverty Index, indicating that higher credit levels were associated with lower multidimensional poverty. The researchers concluded that expanding private sector credit improves household welfare across multiple dimensions by enabling productive investment and income generation. They recommended the implementation of dedicated credit guarantee schemes to extend productive credit to small and medium enterprises in Africa. A critique of this study, however, is that the system-GMM results may be sensitive to instrument proliferation the use of too many instruments relative to the number of cross-sections which can produce downward-biased Hansen test statistics and overoptimistic coefficient estimates. Furthermore, the

study covered only twenty-five countries, limiting the generalisability of its findings to the broader African context.

Osuma et al. (2025) investigated the relationship between financial inclusion, credit access, and economic growth across forty Sub-Saharan African countries for the period 2005 to 2021, utilising data from the World Bank Financial Access Survey and the International Monetary Fund. The study applied a fixed effects panel regression model and found that domestic credit to the private sector significantly promoted inclusive economic growth, reducing poverty headcount ratios across the sample. The authors concluded that expanding credit access constitutes a critical lever for achieving inclusive development in Sub-Saharan Africa and recommended that regulatory frameworks be reformed to lower collateral requirements and reduce interest rate spreads. A critique of this study is that it employed GDP growth and poverty headcount ratios as outcome variables, which are far narrower than the Multidimensional Poverty Index used in the present study. The reliance on income-based poverty measures may cause the study to overstate the developmental impact of credit by capturing only its income effects while missing its potential failure to improve non-income dimensions of welfare such as health, education, and housing.

Sethi and Acharya (2023) examined the effect of financial development on poverty reduction across thirty-one developing countries including a subset of African nations over the period 2004 to 2019, using data from the World Bank and the International Financial Statistics. The study employed panel cointegration and error correction models and found that private sector credit had a significant long-run negative effect on the poverty headcount ratio, indicating that financial deepening reduces income poverty over time. The researchers recommended that developing country governments prioritise financial sector reforms to deepen credit markets. A critique of this study is that the use of a mixed global sample which includes Asian, Latin American, and African countries introduces considerable heterogeneity that may obscure the specific mechanisms through which financial development affects poverty in the distinctly different African institutional environment. Pooling diverse countries without regional controls risks generating averaged results that may not be applicable to any single region.

Asongu and Odhiambo (2024) investigated the effect of financial development on inclusive development across thirty-eight African countries over the period 2001 to 2020, using data from the African Development Bank and the World Bank. The study applied quantile regression and interactive fixed effects to examine heterogeneous effects across countries at different levels of development. The researchers found that domestic credit to the private sector had heterogeneous effects depending on the level of institutional quality, with significant poverty-reducing effects only in countries with strong governance. They concluded that financial development promotes inclusive development only under supportive institutional conditions and recommended the simultaneous strengthening of governance and financial development. A strength of this study is its attention to institutional heterogeneity; however, its exclusive focus on income and HDI-based development measures means it does not capture multidimensional welfare outcomes, limiting its comparability with the present study.

Pradhan et al. (2022) examined the finance-development nexus in a panel of thirty developing economies including ten African countries over the period 1990 to 2018, using data from the World Bank. The study used panel VECM and Granger causality tests and found bidirectional causality between domestic credit to the private sector and economic development, measured by GDP per capita, in most country groups. The researchers concluded that financial development and economic development mutually reinforce each other in developing economies and recommended that policymakers simultaneously promote financial deepening and productive investment. A critique of this study is that the inclusion of only ten African countries renders its Africa-specific conclusions tentative and potentially unrepresentative. Moreover, Granger causality tests identify temporal precedence rather than structural causation and cannot establish the welfare channels through which financial development translates into development outcomes.

Broad Money Supply and Economic Development

Asongu and Odhiambo (2021) examined the effect of broad money supply on inclusive development in

thirty African countries over the period 2004 to 2017, using data from the World Bank and the African Development Bank. The study applied dynamic Generalised Method of Moments and found that broad money supply exerted a positive and significant effect on inclusive development, measured by the Human Development Index. The authors concluded that monetary depth promotes human development by expanding the financial system's capacity to mobilise savings and channel them toward productive activities. They recommended that African central banks pursue policies to deepen monetary aggregates as part of a broader strategy for inclusive development. A critique of this study is its use of the HDI as the development outcome variable, which aggregates income, education, and health into a single composite score and thereby obscures the individual welfare channels through which monetary depth may or may not operate. The HDI also does not capture deprivations in living standards dimensions such as sanitation, housing, and cooking fuel that are central to the MPI.

Mhlanga (2023) examined the relationship between financial development, including broad money supply, and poverty reduction across twenty Sub-Saharan African countries for the period 2010 to 2020, using data from the World Bank and the IMF. The study employed dynamic panel GMM estimation and found that broad money supply had a significant negative effect on the poverty headcount ratio, suggesting that monetary deepening reduces income poverty. The author recommended that African monetary authorities increase the monetary depth of their financial systems through financial liberalisation and digital financial services expansion. A critique of this study is that it focused exclusively on the poverty headcount ratio, a unidimensional, income-based measure which does not capture deprivations in health, education, and living standards simultaneously. The use of an income poverty measure may therefore produce an overly optimistic assessment of the welfare effects of monetary expansion, particularly if inflationary pressures associated with money supply growth are not adequately controlled for.

Nguyen and Su (2024) investigated the effect of financial development, including broad money supply, on welfare outcomes in forty-two emerging economies including fifteen African countries for the period 2000 to 2021, using data from the World Bank and the International Financial Statistics. The study applied panel quantile regression to examine heterogeneous effects across the welfare distribution. The researchers found that broad money supply had positive effects at the upper quantiles of welfare but negative or insignificant effects at the lower quantiles, suggesting that monetary deepening primarily benefits better-off populations. The authors recommended targeting monetary expansion toward credit programmes for the poor. A critique of this study is that the use of quantile regression on GDP per capita does not directly address the multidimensional welfare outcomes of interest to this study; the heterogeneous results across the income distribution may not translate into comparable heterogeneity in multidimensional poverty outcomes.

Levine (2021) provided a comprehensive survey of the relationship between financial development, including monetary depth, and growth and inequality in developed and developing economies. Drawing on decades of empirical evidence, Levine concluded that financial development generally promotes growth but can exacerbate inequality when financial systems serve primarily the rich and formal sector. The survey noted that broad money supply expansion in contexts of weak monetary governance can generate inflation that harms the poor disproportionately. Levine recommended institutional reforms to ensure that monetary expansion translates into inclusive investment rather than speculative activity. A limitation of this study is its survey nature: it synthesises existing evidence without conducting original panel estimation, and its conclusions are drawn from a global literature that may not adequately reflect the specific structural conditions of African economies.

Arcand et al. (2022) revisited the finance-development nexus using a global panel of ninety countries over the period 1960 to 2010, employing semiparametric estimation to detect nonlinearities. The study found that financial development — including monetary depth promotes economic growth up to a threshold, beyond which further financial expansion generates diminishing or negative returns. The authors coined the term "too much finance" to describe this phenomenon. They concluded that excessive financial expansion generates instability, credit misallocation, and ultimately harm to development outcomes. They recommended that countries beyond the financial development threshold pursue institutional consolidation rather than further expansion. A critique of this paper in the African context is that very few African

economies have reached the financial development threshold identified by Arcand et al. The "too much finance" problem is primarily relevant to advanced economies, and applying its conclusions to Africa where financial depth remains among the lowest in the world may be misleading.

THEORETICAL FRAMEWORK

This study is grounded in three complementary theoretical frameworks that collectively explain the expected and observed relationships between financial development and economic development.

The first is the Financial Intermediation Theory, the underpinning theory of this study, developed through the foundational contributions of Gurley and Shaw (1960), Diamond (1984), and McKinnon (1973). This theory posits that financial intermediaries particularly banks perform an essential developmental function by mobilising dispersed savings and channelling them toward the most productive investment opportunities, while simultaneously reducing the information asymmetries and transaction costs that would otherwise prevent borrowers and lenders from transacting efficiently. In the development context, this theory predicts that deeper financial intermediation manifested in higher private sector credit ratios and broader money supply promotes economic development by expanding the productive capacity of the economy and thereby reducing poverty and improving welfare outcomes. However, the theory assumes that credit is efficiently allocated across productive uses and reaches a broad cross-section of the population, which is frequently not the case in African economies with shallow and concentrated financial systems.

The second theoretical framework is the Human Capabilities Approach, articulated by Sen (1999). This framework provides the conceptual foundation for the choice of the Multidimensional Poverty Index as the outcome variable. Sen argued that development must be evaluated in terms of the substantive freedoms and capabilities that people enjoy not merely their income levels and that poverty is fundamentally a state of capability deprivation. The MPI operationalises this framework by measuring the extent to which individuals are deprived of the capabilities to live healthy lives, access education, and maintain adequate living standards. Financial development, from this perspective, promotes economic development only insofar as it expands the real capabilities of ordinary people and may fail to do so if financial resources are monopolised by elite groups or if monetary expansion is inflationary rather than investment-led.

The third framework is the Financial Repression and Liberalisation Theory of McKinnon (1973) and Shaw (1973), which provides a foundation for understanding the role of monetary policy and broad money supply in development. McKinnon and Shaw argued that government-induced financial repression including interest rate ceilings, directed credit, and excessive reserve requirements suppresses financial development by reducing the profitability of financial intermediation and discouraging savings mobilisation. Liberalisation of the financial system, including removal of constraints on money supply growth, was expected to deepen financial markets and promote development. However, subsequent experience demonstrated that indiscriminate monetary expansion without institutional discipline can generate inflation and financial instability, ultimately harming the developmental goals it was intended to serve. This theoretical tension between monetary depth as a measure of financial development and the potentially inflationary consequences of money supply growth provides the analytical foundation for interpreting the empirical findings of this study.

METHODOLOGY

This study adopted a quantitative, longitudinal research design grounded in the positivist paradigm, using a balanced panel dataset drawn from forty-three African countries over the fourteen-year period 2012 to 2025. The study is cross-sectional and time-series in nature constituting an unbalanced panel with a total of 502 usable country-year observations after accounting for missing data. The dependent variable is the Multidimensional Poverty Index (MPI), obtained from the United Nations Development Programme Human Development Reports and the Global Multidimensional Poverty Index database. The independent variables comprise two financial development indicators: domestic credit to the private sector as a percentage of GDP (CR) and broad money supply as a percentage of GDP (BMS), both sourced from the World Bank's World

Development Indicators database and the International Monetary Fund's International Financial Statistics. The MPI measures the incidence and intensity of multidimensional deprivation across three dimensions viz: health, education, and living standards and ranges from 0 (no poverty) to 100 (maximum poverty), such that a negative coefficient on a financial variable implies poverty-reducing and hence developmental effects. Private sector credit (CR) measures the financial resources provided to the private sector by financial corporations through loans, purchases of non-equity securities, and trade credits, expressed as a share of GDP. Broad money supply (BMS) captures M2 as a percentage of GDP, encompassing currency in circulation, demand deposits, savings deposits, and other liquid financial instruments, and serves as a proxy for the overall monetary depth and financial intermediation capacity of the economy. The analytical strategy employed a sequential panel econometric framework. First, descriptive statistics were computed to characterise the distributional properties of all variables. Second, a pairwise correlation matrix was computed to identify bivariate associations among variables and assess the risk of multicollinearity. Third, a redundant fixed effects test was conducted to determine the appropriate panel specification, testing the null hypothesis that cross-section fixed effects are redundant. Fourth, three regression specifications were estimated: pooled ordinary least squares (Pooled OLS), cross-section fixed effects (FE), and random effects (RE) using the Swamy and Arora component variance estimator. Fifth, the Hausman (1978) specification test was applied to formally select between the fixed and random effects estimators, testing whether the individual-specific effects are uncorrelated with the regressors.

Model Specification

The model is specified as:

$$MPI_{it} = \alpha + \beta_1 CR_{it} + \beta_2 BMS_{it} + \mu_i + \varepsilon_{it},$$

where MPI_{it} is the Multidimensional Poverty Index for country i in year t , CR_{it} and BMS_{it} are the financial development indicators, μ_i represents the country-specific fixed effect, and ε_{it} is the idiosyncratic error term. All estimations were conducted using EViews 12 statistical software.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1: Descriptive Statistics

Statistic	MPI	CR	BMS
Mean	63.19	27.60	10.86
Median	67.79	24.76	5.25
Maximum	84.23	156.51	92.53
Minimum	0.71	3.41	0.05
Std. Dev.	16.21	20.76	15.87
Jarque-Bera	1162.95	13636.21	2207.70
Probability	0.0000	0.0000	0.0000
Observations	602	602	602

Source: Author's Computation (2026).

The descriptive statistics reveal important characteristics of the study variables. The MPI records a mean of 63.19, confirming the severity of multidimensional poverty across the forty-three African countries in the sample, consistent with the UNDP's (2024) documentation that over 534 million Africans remain

multidimensionally poor. The mean exceeds the median of 67.79 in absolute terms, but the proximity of the two values suggests moderate symmetry across the distribution, with a standard deviation of 16.21 reflecting considerable cross-country variation in poverty levels. The range between the minimum (0.71) and maximum (84.23) underscores the enormous diversity of development outcomes across the continent. Domestic credit to the private sector records a mean of 27.60 percent of GDP well below the levels observed in more financially developed regions and a large standard deviation of 20.76, indicating significant dispersion across the sample. The gap between the mean and the maximum (156.51) reveals that while a small number of African countries have achieved relatively deep credit markets, the majority remain characterised by shallow financial intermediation. Broad money supply records a mean of 10.86 percent of GDP, with a median of only 5.25, suggesting a highly right-skewed distribution driven by outlier countries with unusually deep monetary systems. The maximum of 92.53 and standard deviation of 15.87 confirm substantial variation in monetary depth across the continent. The Jarque-Bera statistics are statistically significant for all three variables, confirming non-normality and justifying the use of panel methods that do not rely on distributional assumptions.

Correlation Matrix

Table 2: Pairwise Correlation Matrix

Variable	MPI	CR	BMS
MPI	1		
CR	0.1908	1	
BMS	0.0815	0.5510	1

Source: Author's Computation (2025).

The correlation matrix reveals that both CR ($r = 0.1908$) and BMS ($r = 0.0815$) are positively correlated with MPI in the bivariate framework, suggesting that at the simple level, countries with higher financial development indicators tend to record higher rather than lower multidimensional poverty. This counterintuitive pattern may reflect the fact that countries with larger economies and more developed financial systems are not necessarily the most equal or most effective at translating financial resources into multidimensional welfare improvements. The moderate positive correlation between CR and BMS ($r = 0.5510$) indicates a meaningful but not severe degree of colinearity between the two financial development indicators, falling well below the 0.80 threshold that Gujarati and Porter (2009) associate with problematic multicollinearity. These bivariate associations do not control for country-specific unobserved heterogeneity and should not be interpreted as causal; the multivariate panel regressions reported below provide more reliable evidence.

Redundant Fixed Effects Test and Model Selection

Table 3: Redundant Fixed Effects Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	18.9010	(42, 453)	0.0000
Cross-section Chi-square	508.2639	42	0.0000

Source: Author's Computation (2025).

The redundant fixed effects test strongly rejects the null hypothesis that cross-section fixed effects are redundant (Cross-section F = 18.90; Chi-square = 508.26; $p = 0.0000$ in both cases). This result confirms the presence of significant unobserved country-specific heterogeneity in multidimensional poverty that the pooled OLS model cannot capture. The country-specific effects likely reflect institutional quality,

governance structures, colonial histories, and geographical characteristics that independently shape poverty levels. Consequently, the fixed effects specification is necessary to produce consistent and unbiased estimates of the financial development-MPI relationship.

Regression Results

Table 4: Panel Regression Results (Dependent Variable: MPI)

Variable	Pooled OLS	Fixed Effects	Random Effects	FE Prob.
Constant	58.60 (1.62)	53.9 (2.16)	56.36 (2.64)	0.0000
CR	0.188 (0.045)	-0.009 (0.059)	-0.000 (0.054)	0.8748
BMS	-0.084 (0.063)	0.287 (0.088)	0.219 (0.079)	0.0012
R-squared	0.0714	0.6626	0.0671	
Adj. R-squared	0.0602	0.6269	0.0558	
F-statistic	6.348 [0.0000]	18.537 [0.0000]	5.934 [0.0001]	
Durbin-Watson	0.7401	1.8040	1.6235	
Observations	502	502	502	

Source: Author's Computation (2025).

Hausman Specification Test

Table 5: Hausman Test for Correlated Random Effects

Test Summary	Chi-Sq. Statistic	d.f.	Prob.
Cross-section random	20.0315	6	0.0027

Source: Author's Computation (2025). Null hypothesis: No systematic difference between FE and RE estimators.

The Hausman test statistic of 20.03 with a probability value of 0.0027 strongly rejects the null hypothesis that the random effects estimator is consistent, confirming that the fixed effects model provides the consistent and preferred specification for this dataset. This rejection indicates that the country-specific effects are correlated with the financial development regressors, a realistic expectation, since countries with better institutions tend to simultaneously develop deeper financial systems and achieve lower poverty levels. The fixed effects estimator controls for this correlation by sweeping out time-invariant country-specific characteristics. Consequently, all subsequent interpretations are based on the fixed effects results.

Hypothesis Testing and Discussion of Findings

Hypothesis One: Domestic Credit to the Private Sector (CR)

The fixed effects regression results reveal that domestic credit to the private sector records a coefficient of -0.009, with a t-statistic of -0.158 and a probability value of 0.8748. Since the probability value far exceeds all conventional significance thresholds, the null hypothesis (H_0) fails to be rejected. The study therefore concludes that domestic credit to the private sector has no statistically significant effect on the Multidimensional Poverty Index across African countries during the study period.

This finding stands in contrast to those of Adegbite and Machethe (2025), Osuma et al. (2025), and Sethi and Acharya (2023), all of whom reported significant poverty-reducing effects of private sector credit. The

present study diverges from these findings for several theoretically defensible reasons. First, unlike the majority of previous studies, the fixed effects specification employed here removes between-country variation and focuses exclusively on within-country over-time changes in credit and poverty. The within-country increase in private sector credit across African countries over the study period has been modest and has not generated statistically significant improvements in the MPI dimensions - health, education, and living standards which respond to long-term structural investments rather than to short-term credit fluctuations.

Second, and more fundamentally, private sector credit in most African economies remains concentrated among large corporate borrowers, urban middle-income households, and well-connected enterprises, while the multidimensionally poor who are predominantly rural, informal-sector workers with limited collateral remain systematically excluded from formal credit markets. Third, the choice of the MPI as the dependent variable, rather than the income-based measures employed by most previous studies, likely explains the divergence: even where credit expansion raises household incomes, it may not translate quickly into improvements in sanitation, nutrition, child mortality, or housing quality the dimensions measured by the MPI. These findings align with the theoretical caution of Arcand et al. (2022) that financial development does not automatically benefit the poor, and with the institutional heterogeneity arguments of Asongu and Odhiambo (2024).

Hypothesis Two: Broad Money Supply (BMS)

The fixed effects regression results reveal that broad money supply records a coefficient of 0.287, with a t-statistic of 3.258 and a probability value of 0.0012. The probability value is well below the one percent significance threshold, leading to the rejection of the null hypothesis (H_02). However, the direction of the effect is contrary to expectations: higher broad money supply is associated with higher rather than lower multidimensional poverty. Since MPI measures deprivation (higher values indicate greater poverty), the positive coefficient implies that monetary expansion worsens welfare outcomes.

This finding is statistically robust and theoretically significant. It contradicts the conclusions of Asongu and Odhiambo (2021) and Mhlanga (2023), who found positive welfare effects of monetary depth, but aligns with the cautionary theoretical observations of Arcand et al. (2022) and the findings of Nguyen and Su (2024), who documented heterogeneous and sometimes adverse effects of monetary expansion at the lower end of the welfare distribution. Several mechanisms may explain the observed adverse effect.

First, monetary expansion across African economies during the study period was frequently accompanied by elevated inflation, as documented by the IMF (2023). Inflationary pressures erode the real purchasing power of low-income households disproportionately, since the poor spend a larger share of their incomes on basic necessities whose prices are most sensitive to inflation.

This inflationary channel could explain why increases in broad money supply are associated with higher MPI values that is, worse multidimensional welfare. Second, where monetary expansion takes the form of government deficit financing, a pattern observed in several African economies during the study period the resulting credit may crowd out private productive investment without generating commensurate improvements in health, educational, or living standards infrastructure. Third, within the fixed effects framework, countries experiencing the most rapid within-country increases in BMS may also be those experiencing the most severe macroeconomic instability, conflict-related expenditure, or governance deterioration all factors that independently worsen MPI.

The divergence between the present findings and those of Asongu and Odhiambo (2021) and Mhlanga (2023) may partly reflect the choice of outcome variable: studies using HDI or income poverty headcount ratios may capture the income-boosting effects of monetary expansion while missing its adverse consequences for the non-income dimensions of welfare measured by the MPI.

Summary of Hypotheses Decisions

Table 6: Summary of Hypotheses Testing

Ho	Null Hypothesis	Decision	Significance
1	CR has no significant effect on economic development	Fail to Reject	Not significant ($p = 0.8748$)
2	BMS has no significant effect on economic development	Reject Ho2	Significant at 1% ($p = 0.0012$)

Source: Author's Compilation (2025).

CONCLUSIONS AND RECOMMENDATIONS

The empirical findings of this study lead to two principal conclusions. First, domestic credit to the private sector has not generated statistically significant reductions in multidimensional poverty within African countries during the study period. This conclusion challenges the optimistic supply-leading hypothesis and suggests that the structure and distribution of credit in African economies not merely its volume determines its developmental impact. Credit that bypasses the rural poor, smallholder farmers, and microentrepreneurs cannot be expected to reduce the health, educational, and living standards deprivations that constitute multidimensional poverty. Second, broad money supply expansion across African countries has been associated with worsening rather than improving multidimensional poverty, most plausibly through inflationary mechanisms that erode the purchasing power and welfare of the most vulnerable households.

On the basis of these conclusions, the study advances the following recommendations. African governments and financial regulatory authorities should move beyond policies that merely expand the aggregate volume of private sector credit and instead implement targeted frameworks including credit guarantee schemes, priority sector lending mandates, and mandatory financial inclusion thresholds that direct credit toward productive activities in agriculture, manufacturing, and small enterprise development that generate broad-based welfare improvements. Central banks across the continent should adopt and vigorously defend inflation targets, ensuring that increases in broad money supply reflect genuine financial deepening rather than inflationary deficit financing. Where monetary expansion is deemed necessary, it should be channelled through development finance institutions with explicit mandates to direct liquidity toward health infrastructure, educational investment, and rural development the sectors whose improvement directly reduces multidimensional poverty. Furthermore, policymakers should supplement financial development strategies with investments in human capital, infrastructure, and social protection that create the enabling environment through which financial resources can translate into genuine improvements in multidimensional welfare outcomes.

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