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# Financial Inclusion and Economic Growth in Nigeria: An Empirical Article Comparing the Saving-Usage and Credit-Usage Dimensions of Financial Inclusion in Nigeria Using ARDL Bounds Testing

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**Abstract**

This article re-examines the long-standing but empirically unsettled claim that financial inclusion drives economic growth in Nigeria, by comparing two usage dimensions of inclusion that the literature routinely conflates into a single construct: saving usage, proxied here by Financial Usage/Saving Activity (FUSA, measured by aggregate deposit and savings mobilization as an indicator of active saving behaviour), and credit usage, proxied by credit extended to the private sector. Both are usage-side indicators; unlike physical access measures such as branch counts, a Nigerian saver today can build a FUSA balance through mobile banking platforms such as OPay and Moniepoint, or through POS-agent channels, without ever entering a physical bank branch, which is precisely why deposit and saving activity is better conceptualized as usage rather than access (Sarma & Pais, 2011; Demirguc-Kunt et al., 2018, 2022). Using annual time-series data spanning 1980–2024 obtained from the Central Bank of Nigeria Statistical Bulletin and the World Bank's World Development Indicators, the study models Gross Domestic Product as a function of FUSA, private sector credit and inflation within an Autoregressive Distributed Lag (ARDL) bounds-testing framework. Augmented Dickey-Fuller tests confirm a mixed order of integration across the series (I(0) for inflation and I(1) for the remaining variables), which justifies the ARDL approach over alternative cointegration techniques. The bounds test (F = 4.054) confirms a long-run equilibrium relationship among the variables. The results show that private sector credit exerts a positive and statistically significant long-run effect on output: a one percent increase in private sector credit is associated with an approximately 0.23 percent increase in GDP. FUSA carries an unexpected negative sign and is statistically insignificant in both the long and short run, contrary to the simple positive prior that saving activity alone should raise output; inflation carries the theoretically expected negative sign but is likewise statistically insignificant. The error-correction term is negative and significant, indicating that roughly 17.3

percent of any deviation from long-run equilibrium is corrected within a year. Diagnostic checks (Breusch-Godfrey, White, Ramsey RESET, CUSUM and CUSUM of Squares, supplemented by HAC-robust standard errors) support the reliability of the estimated model. These findings suggest that Nigeria's financial inclusion agenda has, over four decades, delivered growth primarily through the credit-usage channel rather than through saving usage alone, and that policy attention should shift from expanding saving enrolment toward deepening the productive use of financial services through credit.
**Keywords:** Financial Inclusion, Financial Usage, Saving Activity, Private Sector Credit, Economic Growth, Ardl Bounds Testing, Cointegration, Nigeria, Digital Financial Services

## Introduction

Financial inclusion has become one of the more crowded policy conversations in development finance, and Nigeria offers a particularly instructive case for interrogating what the term actually buys an economy. In principle, an inclusive financial system allows households and small enterprises to save, borrow, insure and transact through formal channels, thereby smoothing consumption, financing investment and reducing the economy's reliance on informal, often costly, sources of credit (World Bank, 2015; Central Bank of Nigeria [CBN], 2022). In practice, the concept has been used so loosely, sometimes to mean the number of bank accounts opened, sometimes the number of branches built, sometimes the volume of deposits collected, that it has become difficult to say with any precision which of these things, if any, actually moves the needle on national output.

This looseness matters because Nigeria has, since the early 2000s, invested heavily in expanding the physical and digital footprint of its financial system: bank branch expansion programmes, microfinance institutions, agent banking, the cashless policy, and successive iterations of the National Financial Inclusion Strategy (CBN, 2013, 2022). The Enhanced Financial Inclusion in Nigeria (EFInA) Access to Financial Services survey reports genuine progress on these fronts: financial exclusion fell from roughly 32 percent of adults in 2020 to about 26 percent, or some 28.9 million adults, in 2023 (EFInA, 2024). Yet the persistence of that 26 percent, after two decades of deliberate policy effort, is itself a signal that opening accounts and mobilizing deposits is not the same exercise as putting those funds to productive use. A household can hold a savings account and still be denied an affordable loan; a local bank branch can collect deposits from farmers and traders and still lack the appetite or the infrastructure to lend those deposits back into the local economy (Diamond, 1984; Beck, Demirgüç-Kunt, & Levine, 2007).

This distinction (between the mere availability of formal financial services and their productive utilization) sits at the centre of the present article, but it requires a conceptual correction before it can be operationalized. Following Sarma and Pais (2011) and Demirguc-Kunt, Klapper, Singer, and Ansar (2018, 2022), financial inclusion research conventionally separates access, the availability and physical or digital reach of financial services, from usage, the extent to which those services are actively drawn upon once available. A branch can exist and collect no deposits; conversely, a Nigerian saver today can build a deposit balance, transfer funds and transact entirely through mobile banking apps such as Moniepoint and OPay, or through a POS agent, without ever entering a physical bank branch or bank headquarters. This everyday reality shows that deposit and saving activity is a behavioural, usage-side phenomenon rather than a proxy for physical access; the Global Findex Database

(Demirguc-Kunt et al., 2018, 2022) similarly classifies account activity, saving and transacting as usage indicators, reserving access for infrastructural measures such as branch or agent density. Accordingly, this article departs from the access/usage dichotomy used in earlier drafts and instead treats financial usage/saving activity (FUSA) and private sector credit (CPS) as two distinct usage-side dimensions of financial inclusion, saving usage and credit usage respectively, following the conceptual architecture of Nigeria's National Financial Inclusion Strategy 3.0 (CBN, 2022) and the broader access-usage-quality framework of Beck, Demirgüç-Kunt, and Levine (2007). Both are set against inflation, included as a control because persistent price instability erodes the real value of savings, distorts lending decisions and is itself a longstanding feature of the Nigerian macroeconomic environment (Mankiw, 2021).

**Problem Statement**

The empirical literature remains inconclusive and mixed on financial inclusion and growth in Nigeria and other developing economies. Some studies report a strong positive relationship (Babajide, Adegboye, & Omankhanlen, 2015; Onaolapo, 2015; Makina & Walle, 2019); others find the relationship weak, negative, or statistically indistinguishable from zero (Nkwede, 2015; Otiwu, Okere, Uzowuru, & Ozuzu, 2018). Much of this disagreement traces back to how "financial inclusion" is measured. Studies that lean on account-ownership or branch-count indicators are, in effect, measuring physical access; studies that lean on saving, deposit, credit or transaction indicators are measuring usage, and even within the usage category, saving-side and credit-side indicators need not move together, let alone produce the same growth effect. If Nigeria continues to grow saving-side usage without a corresponding expansion in credit-side usage, financial inclusion strategy risks becoming an exercise in counting balances rather than building an economy. The problem this article investigates, then, is not whether financial inclusion matters for growth in the abstract, but which usage dimension of it, saving usage or credit usage, actually does the work, and by how much.

*Purpose, Objectives and Significance*

The study pursues three specific objectives: (i) to determine the long-run and short-run relationship between financial usage/saving activity and Nigeria's economic growth; (ii) to establish the long-run and short-run relationship between private sector credit and Nigeria's economic growth; and (iii) to assess the relationship between inflation and Nigeria's economic growth, as a control for macroeconomic stability.

For the Central Bank of Nigeria and financial-sector regulators, distinguishing the saving-usage and credit-usage channels sharpens the diagnostic value of financial inclusion monitoring: it clarifies whether the financial system is functioning as a conduit of funds into the real economy or merely as a collection point for savings (Klapper, Singer, Starita, & Norris, 2025). For deposit money banks and rural financial institutions, the findings speak directly to how mobilized deposits ought to be deployed. For policymakers more broadly, the study offers evidence to support a shift in financial inclusion strategy away from account-opening targets and toward usage-oriented interventions such as credit guarantees and SME lending facilities. And for the research community, the extension of the data series to 2024 (beyond the 2015–2020 cut-off common in earlier Nigerian studies) offers a more current empirical basis for this debate, incorporating the post-pandemic credit expansion and the inflationary pressures of 2022–2024.

*Research Hypotheses*

Three null hypotheses, corresponding to the study's three objectives, are tested at the 5 percent significance level:

H01: Financial usage/saving activity (FUSA) has no statistically significant relationship with Nigeria's economic growth.

H02: Private sector credit has no statistically significant relationship with Nigeria's economic growth.

H03: Inflation has no statistically significant relationship with Nigeria's economic growth.

*Scope*

The analysis is confined to four annual macroeconomic series for Nigeria over 1980–2024: GDP, financial usage/saving activity, private sector credit and the inflation rate, drawn from the CBN Statistical Bulletin and World Bank World Development Indicators. It is worth situating this scope within the broader global trajectory of financial inclusion. The 2025 Global Findex Database points to continued worldwide growth in account ownership and in the active use of savings, credit, payment and risk-management products, driven substantially by mobile-phone penetration and improvements in digital security infrastructure (World Bank, 2025; Klapper et al., 2025). Nigeria has participated in this shift through mobile money, agent banking, digital lending platforms and internet-based transfers. These digital channels lie outside the immediate scope of the present analysis (which is deliberately anchored to the long-run, branch-based indicators for which a consistent forty-five-year data series exists), but their rapid expansion is precisely why getting the access/usage distinction right in the traditional banking data matters: if digital inclusion strategy is to build on lessons from the formal banking sector, it needs to be built on an accurate diagnosis of what, in that sector, actually drove growth.

**Contribution to the Study**

In brief, this article contributes to the literature by disaggregating the usage dimension of financial inclusion into its saving-usage and credit-usage components within a single estimation framework, by extending the Nigerian evidence base to 2024, and by applying ARDL bounds testing to a mixed-integration data set in a way that yields both short-run and long-run coefficients. The full statement of the study's theoretical, empirical, methodological and policy contributions is developed in Section 5.5, once the results that ground each claim have been presented.

**Literature Review and Theoretical Foundation**

*Conceptual Foundations*

Financial inclusion is conventionally defined as a state in which individuals and firms have access to useful and affordable financial products and services (payments, savings, credit, insurance) delivered responsibly and sustainably (World Bank, 2015; CBN, 2022). The National Financial Inclusion Strategy 3.0 usefully decomposes this broad definition into three working dimensions: access (the physical and infrastructural availability of financial services), usage (the frequency, depth and purpose to which those services are actually put), and quality (the cost, suitability and consumer protection embedded in service delivery) (CBN, 2022; Sarma & Pais, 2011).

The distinction between access and usage is not merely semantic. Access captures whether a financial product exists and can be reached: a bank branch, an agent, an account. Usage captures whether that product does anything once it is reached: whether savings are actively built up, whether credit lines are drawn upon, whether payments are actually processed through the formal system rather than around it (Sarma & Pais, 2011; Demirguc-Kunt, Klapper, Singer, & Ansar, 2018, 2022). This article follows that usage-side conceptualization for both of its financial-sector variables. Deposit and saving activity, previously treated in earlier drafts of this study as an access indicator, is more accurately classified as usage: a bank branch can exist and record no deposits, while a Nigerian saver can build a deposit balance entirely via mobile banking channels, OPay and Moniepoint being prominent examples, or through a POS agent, without ever visiting a branch or bank headquarters, confirming that the act of saving or depositing measures behaviour, not infrastructure (Demirguc-Kunt et al., 2018, 2022). Financial Usage/Saving Activity (FUSA) is therefore treated here as a saving-usage indicator, set against private sector credit (CPS) as a credit-usage indicator; the empirical question the study investigates is which of these two usage channels, saving or credit, drives growth, rather than an access-versus-usage comparison. In an economy such as Nigeria's, where a substantial share of small-business and household finance still runs through informal channels (thrift collectors, rotating savings groups [esusu], family networks and moneylenders), the gap between saving-side usage and credit-side usage can be wide, and it is precisely this gap that motivates treating the two as separate empirical constructs rather than folding them into a single "financial inclusion" index (EFInA, 2024).

Financial exclusion, the mirror image of this concept, is understood as the inability of individuals, households and businesses to obtain financial services from formal institutions on fair terms. In the Nigerian context, the drivers of exclusion are well documented and go well beyond the simple absence of a nearby bank branch: unstable or informal income, physical remoteness from financial infrastructure, onerous documentation and collateral requirements, weak digital and electricity infrastructure, low financial literacy, and, in some communities, a residual distrust of formal financial institutions rooted in past bank failures (EFInA, 2024; CBN, 2022). The EFInA (2024) Access to Financial Services survey further notes that income and institutional barriers are the dominant drivers of exclusion from formal accounts altogether, while cost, documentation and trust barriers are more binding for those who already have some informal financial relationship but have not moved into the formal sector, a pattern that again maps onto the access/usage distinction, since different frictions govern whether a person can open an account at all versus whether, having opened one, they go on to use it productively.

Two related constructs (Gross Domestic Product and inflation) round out the conceptual apparatus of the study. GDP, the standard measure of the market value of final goods and services produced within an economy over a given period, is used throughout the finance-growth literature as the benchmark outcome variable against which financial-sector indicators are assessed (Klapper et al., 2025; Mankiw, 2021). Inflation, the sustained rise in the general price level, is included because it conditions the real return to saving and lending and has repeatedly been shown to influence household and firm decisions around consumption, investment and credit demand (Mankiw, 2021), decisions that sit directly upstream of both the saving-usage and credit-usage channels this study investigates.

**Theoretical Framework**

Two theoretical traditions frame the analysis. The finance-growth hypothesis, tracing back to Bagehot (1873) and Schumpeter (1911/1934) and formalized in the modern growth literature by McKinnon (1974) and Levine (2005), holds that financial intermediaries support growth by mobilizing savings, allocating capital to its most productive uses, monitoring borrowers, facilitating risk management, and easing the exchange of goods and services. Diamond's (1984) theory of delegated monitoring adds an important qualification: intermediaries only generate these benefits if they perform the costly work of screening and monitoring borrowers, that is, if deposits are actually converted into productive loans rather than sitting idle or being rationed away from creditworthy but under-collateralized borrowers, a description that fits much of Nigeria's rural and small-enterprise sector.

The inclusive growth theory (The Growth Report, 2008) complements this by foregrounding distributional reach: growth strategies should widen participation for the poor, rural households and informal-sector actors, not merely raise aggregate output. Financial inclusion is one of the clearest policy levers for this kind of broadening, since access to savings, credit and payment services can enable previously excluded groups to invest, insure against shocks and build assets (Sahay et al., 2015). Read together, the two theories suggest a two-stage causal chain within the usage dimension of financial inclusion: inclusive growth theory explains why broadening saving usage among previously excluded households matters for welfare, while finance-growth theory explains why that saved capital must translate into actual credit allocation before it can be expected to show up in aggregate output. This is precisely the chain that the saving-usage/credit-usage distinction in this study is designed to test empirically: Financial Usage/Saving Activity (FUSA) representing the first stage of usage (capital mobilized through active saving), and private sector credit (CPS) representing the second stage of usage (capital deployed through active lending).

A third, more implicit theoretical thread running through the study is the structuralist critique of financial deepening associated with development economists such as Gerschenkron (1969), who argued that in economically "backward" or catching-up economies, the mere presence of financial institutions is a weaker growth signal than in mature economies, precisely because institutional, informational and enforcement frictions can prevent mobilized capital from reaching its most productive uses. Applied to Nigeria, this view predicts exactly the asymmetry the empirical results below confirm: saving usage (FUSA) can expand considerably without a matching expansion in output, if the intermediation chain connecting saved deposits to productive credit is itself constrained by collateral requirements, credit-information gaps, or risk-averse lending behaviour on the part of banks. The theoretical expectation, then, is not simply that "finance matters for growth," but that finance matters for growth conditional on effective intermediation, which is an empirical question this study is positioned to answer directly by comparing the saving-usage and credit-usage coefficients within a single model. It follows that a negative or insignificant coefficient on the saving-usage proxy is not, on this reading, an anomaly to be explained away; it is one of two outcomes the structuralist account anticipates from the outset, the other being a positive but weaker coefficient than that on the credit-usage proxy.

*Empirical Literature*

The global empirical literature on financial inclusion and growth is decidedly mixed, and often depends heavily on which dimension of inclusion the chosen indicator actually captures. On the positive side, Karlan and Zinman (2010), studying expanded consumer credit access in South Africa, found that additional credit raised household income, consumption and self-reported well-being, a usage-side result. Sarma and Pais (2011) constructed a composite financial inclusion index across countries and linked higher inclusion to lower costs of capital and reduced reliance on informal credit. Yorulmaz (2012) reported a strong positive association between financial inclusion and human development indicators across Turkey and the European Union, while Joseph and Varghese (2014) found a significant relationship between financial inclusion indicators (bank branch density, ATM penetration, smart-card usage) and growth in India, albeit alongside persistent access gaps. At the regional level, Makina and Walle (2019), using panel data across African countries, concluded that inclusive finance is positively associated with economic development across the continent. Sahay et al. (2015), in an IMF cross-country study, likewise found a positive growth relationship but cautioned that rapid, poorly supervised credit expansion can raise financial-stability risk, a reminder that the credit channel, while growth-enhancing, is not without limits.

The Nigerian evidence base is where the disagreement sharpens. Babajide et al. (2015) found that most of their financial inclusion indicators were positively associated with economic growth. Onaolapo (2015), covering 1982–2012, likewise reported a significant positive relationship between banking-sector financial inclusion and economic growth. Okoye, Adetiloye, Erin, and Modebe (2017) found that broad money supply, the loan-to-deposit ratio, liquidity ratio and private sector credit were significant predictors of growth, again indicators tilted toward the usage side. Enueshike and Okpebru (2020), covering 2000–2018, reported that financial usage/saving activity and SME lending had significant positive effects on growth in their specification.

Set against these are studies that find little or no relationship, particularly on the deposit-mobilization side. Nkwede (2015), covering 1981–2013, found a significant negative relationship between financial inclusion indicators and growth, attributing this to persistent exclusion even among nominally "bankable" individuals. Otiwu, Okere, Uzowuru, and Ozuzu (2018), focusing specifically on the microfinance option, similarly reported that broad deposit and branch indicators did not translate cleanly into a significant growth effect. Ezenwakwelu (2018) likewise found no statistically significant relationship between several financial inclusion indicators and selected macroeconomic outcomes in Nigeria.

A further layer of Nigerian evidence reinforces this pattern without resolving it. Asuming, Osei-Agyei, and Mohammed (2019), examining the determinants of financial inclusion across Sub-Saharan Africa, found that ease of doing business, ATM density, household wealth, income per capita, gender, age and education all shape a country's overall level of inclusion, variables that speak to the preconditions for access rather than to its growth effect once achieved. Nwafor and Yomi (2018), by contrast, reported a positive association between rural-sector financial inclusion indicators and growth, a result that sits in tension with the deposit-side findings above and is revisited in the discussion section below. This tension is itself informative: it suggests that the relationship between deposit-side indicators and growth in the Nigerian literature is highly sensitive to sample period, estimation technique

and the presence or absence of a credit variable in the same specification, exactly the kind of instability that a properly specified, cointegration-based model with both variables entered jointly is designed to resolve.

What this body of work suggests, read as a whole, is not that financial inclusion research is contradictory for no reason, but that studies using deposit- or saving-usage-type indicators tend to find weak, inconsistent or insignificant effects, while studies using credit- or lending-usage-type indicators tend to find positive and significant effects more consistently. Few Nigerian studies, however, have set saving-usage and credit-usage indicators against one another within a single, unified estimation framework capable of distinguishing short-run dynamics from long-run equilibrium relationships, which is the gap this article addresses directly.

*Research Gap*

Three gaps emerge from this review. First, an indicator gap: most Nigerian studies proxy financial inclusion with a single composite measure or with access-heavy indicators (branch numbers, ATM counts, account ownership), which obscures whether any observed growth effect is coming from saving usage, credit usage, or an unmeasured combination of both. Second, a methodological gap: a considerable share of the literature relies on ordinary least squares or simple correlation analysis on levels data, without formally testing the order of integration of the underlying series or distinguishing short-run adjustment from long-run equilibrium, a nontrivial omission when working with macroeconomic time series that are frequently non-stationary. Third, a temporal gap: the majority of Nigerian studies in this space stop somewhere between 2013 and 2020, leaving out the post-pandemic credit expansion, the naira redesign and cashless-policy episodes, and the inflationary surge of 2022–2024, all of which plausibly affect the saving-usage-credit-usage-growth relationship. This article is designed to close all three gaps at once.

## Methods

*Research Design*

The study adopts an ex post facto research design, appropriate because the underlying macroeconomic series (GDP, financial usage/saving activity, private sector credit and inflation) are historical, secondary and already determined; the researcher exercises no control over them and instead analyzes relationships among variables as they occurred (Kothari, 2004). A longitudinal time-series approach is used to capture both the short-run dynamics and the long-run equilibrium relationship among the variables over a forty-five-year horizon, 1980–2024.

*Data Sources*

Annual secondary data for the full sample period were sourced from two institutions that are among the most widely referenced repositories for Nigerian macroeconomic data: the Central Bank of Nigeria Statistical Bulletin (CBN, 2024) and the World Bank's World Development Indicators (World Bank, 2024).

*Variable Definitions*

Four variables are used, each defined here with the exact source series relied upon. Gross Domestic Product (GDP) is Gross Domestic Product at current basic prices, measured in

billions of naira (nominal terms), sourced from the Central Bank of Nigeria Statistical Bulletin 2024 Edition, Section C – National Accounts, Table C.1.1, and cross-validated against the World Bank World Development Indicators series NY.GDP.MKTP.CN (GDP, current LCU). GDP is expressed in nominal terms throughout; it serves as the dependent variable and proxy for economic growth, consistent with standard practice in the finance-growth literature (Klapper et al., 2025; Mankiw, 2021). Financial Usage/Saving Activity (FUSA) is the aggregate value of deposits mobilized across the commercial banking system, sourced from the CBN Statistical Bulletin 2024, Financial Sector Statistics, Table A.4.2 – Aggregate Deposits of Commercial Banks: Rural Branches / Other Deposits, used here as the proxy for the saving-usage dimension of financial inclusion rather than for physical access. As Section 2.1 sets out, deposit and saving activity is conceptualized here as usage, not access, because a saver can build a FUSA balance through digital channels such as mobile banking platforms (for instance, Moniepoint and OPay) and POS agents, without visiting a physical branch; the underlying assumption is instead that deposit accumulation reflects the extent to which formal and formal-adjacent saving instruments are actively used, though, as the theoretical review makes clear, accumulation alone says nothing about whether those funds are subsequently deployed productively (Diamond, 1984; Levine, 2005). Private Sector Credit (CPS) is total credit extended by the formal financial sector to households and non-government entities, sourced from the CBN Statistical Bulletin 2024, Table A.4.7 – Commercial Banks' Credit to Private Sector (₦bn), and cross-validated against the World Development Indicators series FS.AST.PRVT.GD.ZS (domestic credit to private sector by banks, % of GDP), used as the proxy for the credit-usage dimension of financial inclusion. Because credit extension requires funds to have been mobilized and then actively lent out, CPS captures the "downstream" or productive-utilization side of financial intermediation (Beck et al., 2007; Levine, 2005). Inflation (INF) is the annual inflation rate, sourced from the CBN Statistical Bulletin 2024, Table B.3.1 – Inflation Rate (%), and cross-validated against the World Development Indicators series FP.CPI.TOTL.ZG (inflation, consumer prices, annual %). Inflation is included as a control variable because sustained price instability affects real returns on saving and lending, shapes the demand for and supply of credit, and has been a recurring feature of the Nigerian macroeconomic environment across the sample period, with notable spikes in the late 1980s, mid-1990s and again after 2019 (Mankiw, 2021).

All variables, including inflation, were transformed into natural logarithms (LNGDP, LNFUSA, LNCPS, LNINF) prior to estimation, which stabilizes variance and allows the estimated coefficients on FUSA, CPS and INF to be interpreted directly as elasticities.

*Model Specification*

The functional relationship investigated is:

$$GDP = f(FUSA, CPS, INF)$$

which is estimated in econometric form as:

$$LNGDP_t = \beta_0 + \beta_1 LNFUSA_t + \beta_2 LNCPS_t + \beta_3 LNINF_t + \mu_t$$

where $\beta_0$ is the intercept, $\beta_1$ through $\beta_3$ are the long-run elasticities of interest, $\mu_t$ is a white-noise error term, and t indexes years from 1980 to 2024. On theoretical grounds, $\beta_1$ and $\beta_2$ are expected a priori to carry positive signs (more deposit mobilization and more credit extension should, in principle, support higher output), while $\beta_3$, the inflation coefficient, is expected to be negative, reflecting the standard macroeconomic prior that sustained inflation dampens real economic activity. As Section 2.2 notes, however, the structuralist view of

financial deepening qualifies the expectation on $\beta_1$ specifically: where the intermediation chain linking deposits to productive credit is constrained, deposit accumulation need not translate into a positive, let alone significant, growth effect.

*Analytical and Estimation Procedure*

Four estimation steps follow. First, descriptive statistics establish the basic distributional properties (mean, median, dispersion, skewness, kurtosis and normality) of each series prior to any transformation or modelling. Second, the Augmented Dickey-Fuller (ADF) test is applied to each series to establish its order of integration; this step is essential because standard OLS applied to non-stationary time series risks producing spurious regression results with inflated R-squared values and misleadingly significant coefficients (Dickey & Fuller, 1979; Gujarati & Porter, 2009).

Third, because the ADF results below show a mixture of I(0) and I(1) series (with none integrated of order two), the study adopts the ARDL bounds-testing approach of Pesaran, Shin, and Smith (2001) rather than the Engle-Granger or Johansen cointegration techniques, both of which require all series to share the same order of integration. The ARDL approach is also well suited to the relatively small annual sample available here (45 observations), and it produces short-run and long-run coefficients simultaneously through its associated error-correction representation:

$$\Delta LNGDP_t = \alpha_o + \Sigma\beta_1\Delta LNGDP_{t-i} + \Sigma\beta_2\Delta LNFUSA_{t-i} + \Sigma\beta_3\Delta LNCPS_{t-i} + \Sigma\beta_4\Delta LNINF_{t-i} + \lambda_1 LNGDP_{t-1} + \lambda_2 LNFUSA_{t-1} + \lambda_3 LNCPS_{t-1} + \lambda_4 LNINF_{t-1} + \mu_t$$

where $\Delta$ denotes the first-difference operator, the $\beta$ terms capture short-run dynamics, and the $\lambda$ terms (recovered as the error-correction term, CointEq(–1)) capture the speed of adjustment back toward long-run equilibrium after a shock. The bounds test compares the computed F-statistic against the lower [I(0)] and upper [I(1)] critical bounds tabulated by Pesaran et al. (2001): an F-statistic above the upper bound supports cointegration, below the lower bound rejects it, and a value in between is inconclusive.

Hypotheses are tested at the 5 percent significance level using the standard decision rule: reject the null hypothesis of no relationship if the associated p-value is below 0.05; otherwise, fail to reject it.

The choice of the ARDL bounds-testing framework over alternative approaches deserves brief further justification. Ordinary least squares on levels data would risk spurious regression given the strong trending behaviour visible in Figures 1 through 3. The Johansen maximum-likelihood cointegration procedure, a common alternative, requires that all variables entering the system be integrated of the same order (typically I(1)), a condition the unit-root results below show is not met here, since inflation is stationary in levels while the other three series are not. The Engle-Granger two-step procedure, similarly, is not well suited to a system with more than two variables and a mixed order of integration, and it does not distinguish short-run from long-run dynamics as cleanly as the ARDL error-correction representation does. The ARDL bounds test avoids all three limitations: it accommodates a mixture of I(0) and I(1) regressors (though not I(2)), it performs comparatively well in small samples, and its unrestricted error-correction form yields both the long-run cointegrating vector and the short-run adjustment dynamics from a single estimated equation (Pesaran et al., 2001). Given

the sample size here (45 annual observations) and the mixed integration order confirmed by the ADF tests, the ARDL approach is not simply a defensible choice but the methodologically appropriate one.

*Diagnostic and Robustness Procedures*

A battery of diagnostic and stability tests is applied to the estimated ARDL model: the Jarque-Bera test for normality of residuals, the Breusch-Godfrey Lagrange Multiplier test for serial correlation, the White test for heteroskedasticity, the Ramsey RESET test for functional-form misspecification, and the CUSUM and CUSUM of Squares tests for parameter stability over the sample period. Where serial correlation is detected, Newey-West heteroskedasticity- and autocorrelation-consistent (HAC) standard errors are reported as a robustness check on the significance of the long-run coefficients. All estimation was carried out in EViews 10.

## Results

*Descriptive and Preliminary Findings*

Table 1 reports descriptive statistics for the four series in their raw form. GDP averaged ₦38,812.18 billion over the sample period, ranging from ₦13,770.26 billion (1984) to ₦80,606.53 billion (2024), with a standard deviation of ₦23,169.92 billion, reflecting the substantial nominal growth of the Nigerian economy across four and a half decades. Financial usage/saving activity and private sector credit are both markedly right-skewed (skewness of 3.14 and 3.15, respectively) and leptokurtic, consistent with the visual pattern in Figures 2 and 3 below, where both series remain nearly flat for most of the sample before accelerating sharply from the mid-2010s onward. Inflation averaged 19.2 percent with a standard deviation of 16.1 percentage points, underscoring its volatility across the period. The Jarque-Bera statistics reject normality for FUSA, CPS and inflation at conventional levels, which is unsurprising for macroeconomic series exhibiting strong trends and occasional volatility spikes, and reinforces the decision to work with logged variables and a cointegration-based estimator rather than relying on distributional assumptions appropriate only to stationary, normally distributed data.

Table 1
*Descriptive Statistics*

| Statistic | GDP (₦bn) | FUSA (₦bn) | CPS (₦bn) | Inflation (%) |
|---|---|---|---|---|
| Mean | 38,812.18 | 99.93 | 10,771.82 | 19.19 |
| Median | 28,957.71 | 10.58 | 930.49 | 13.01 |
| Maximum | 80,606.53 | 1,189.52 | 109,410.00 | 72.84 |
| Minimum | 13,770.26 | 0.02 | 6.23 | 5.39 |
| Std. Dev. | 23,169.92 | 227.11 | 20,335.50 | 16.11 |
| Skewness | 0.481 | 3.144 | 3.154 | 1.830 |
| Kurtosis | 1.598 | 13.720 | 14.411 | 5.411 |
| Jarque-Bera (Prob.) | 5.419 (0.067) | 289.617 (0.000) | 318.715 (0.000) | 36.022 (0.000) |
| Observations | 45 | 45 | 45 | 45 |

*Source: Author's computation from CBN Statistical Bulletin and World Development Indicators data (CBN, 2024; World Bank, 2024). GDP is reported in nominal terms (₦bn).*

The trend charts in Figures 1 through 4 illustrate the underlying data. Nigeria's GDP (Figure 1) rose steadily and almost monotonically across the sample, with a distinct acceleration in nominal growth after 2000 that reflects both real output expansion and the effects of the 1990s rebasing and subsequent economic restructuring. Financial usage/saving activity (FUSA, Figure 2) was negligible for most of the 1980s through the mid-2000s, dipped further during the 2004–2005 banking-sector consolidation, and then rose sharply after 2014, a pattern consistent with the rollout of agent banking and renewed financial-inclusion initiatives under the National Financial Inclusion Strategy. Credit to the private sector (Figure 3) shows a broadly similar but more consistently upward trajectory, with a particularly steep climb after 2020 that coincides with post-pandemic credit expansion and, in nominal terms, the inflationary pressure of 2022–2024. Inflation itself (Figure 4) was highly volatile, with major episodes in the late 1980s (structural adjustment), the mid-1990s (peaking near 73 percent in 1995), and a renewed climb after 2019 that reached 33.2 percent by 2024. None of these trend charts constitutes a test of causality on its own, but together they frame the econometric results that follow: FUSA and CPS both accelerate late in the sample, while GDP grows steadily throughout; the key empirical question is which of the two financial variables, if either, tracks that growth once formal time-series methods are applied.

**Figure 1. Trend in Nigeria's GDP, 1980-2024**

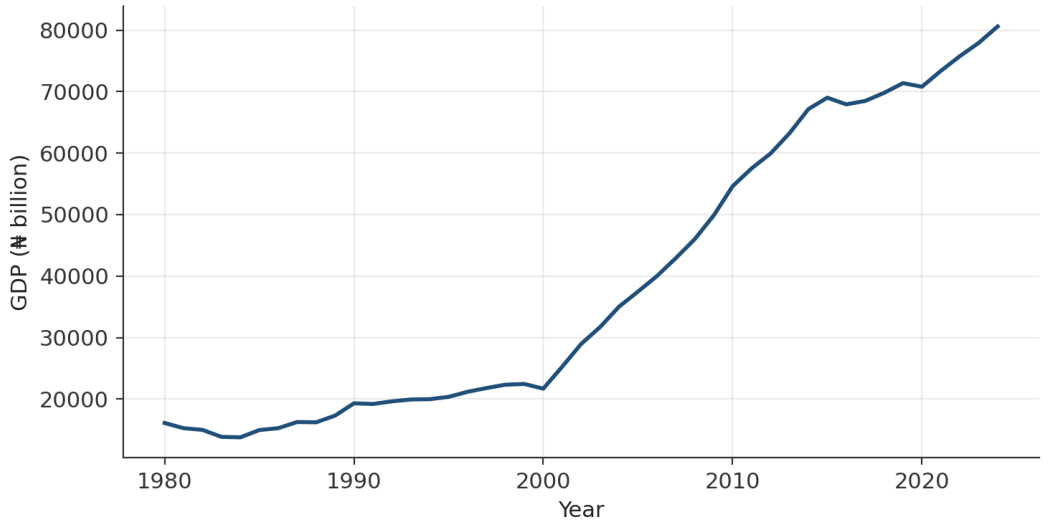


Figure 1. Trend in Nigeria's GDP, 1980–2024. Source: Author's computation using CBN and WDI data.

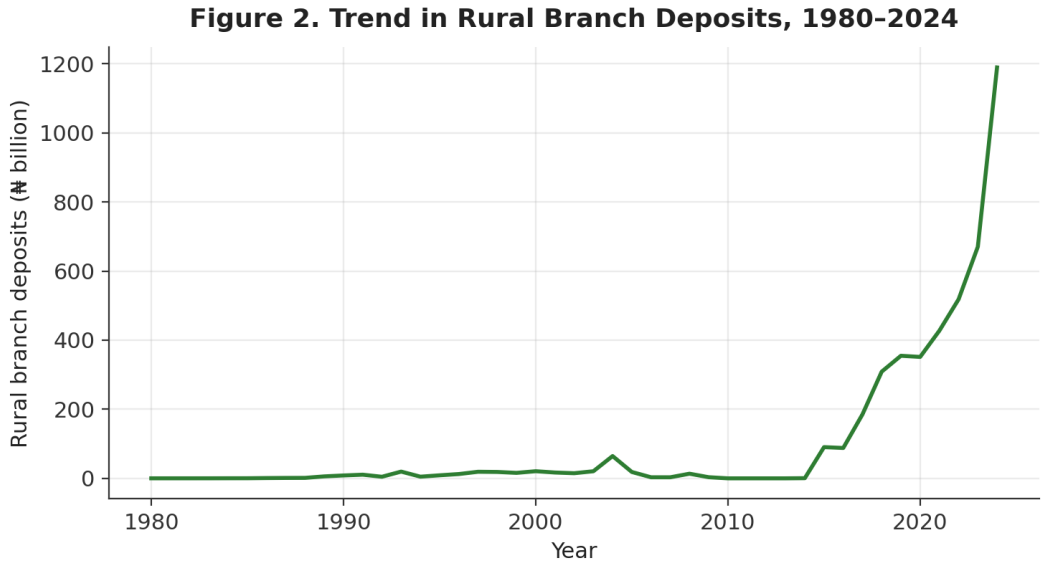


Figure 2. Trend in Financial Usage/Saving Activity, 1980–2024. Source: Author's computation using CBN and WDI data.

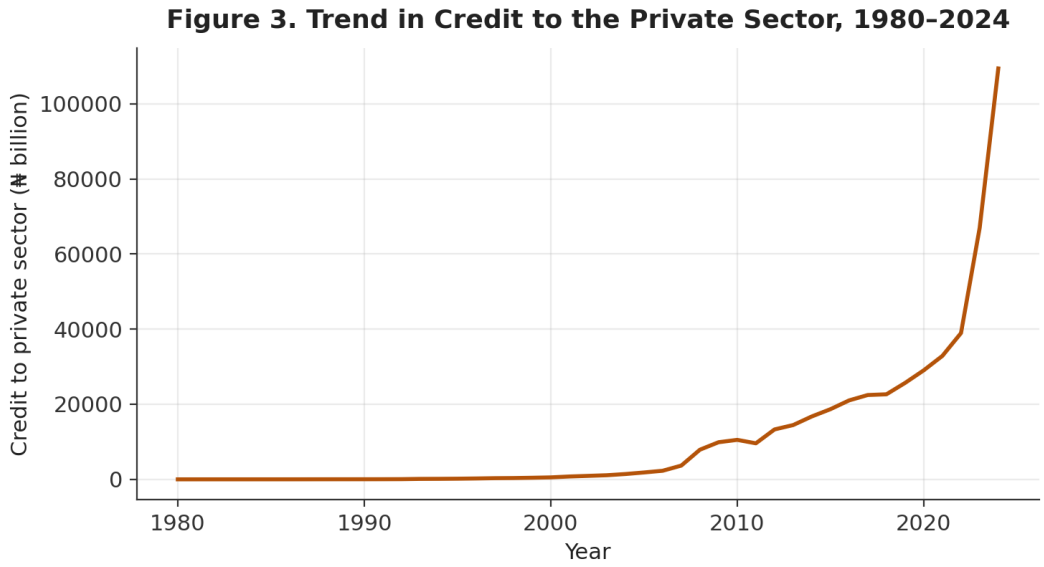


Figure 3. Trend in Credit to the Private Sector, 1980–2024. Source: Author's computation using CBN and WDI data.

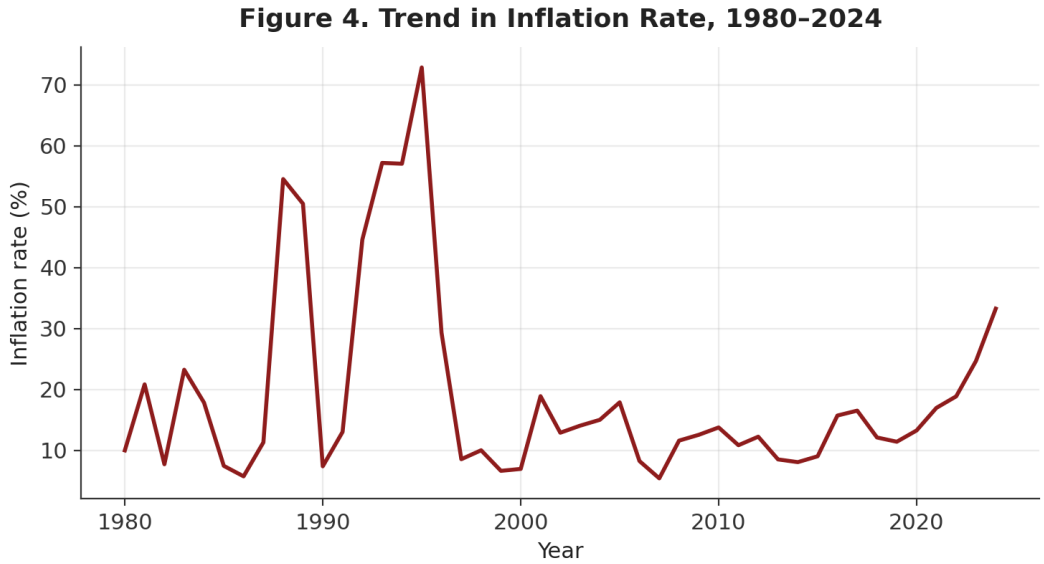


Figure 4. Trend in Inflation Rate, 1980–2024. Source: Author's computation using CBN and WDI data.

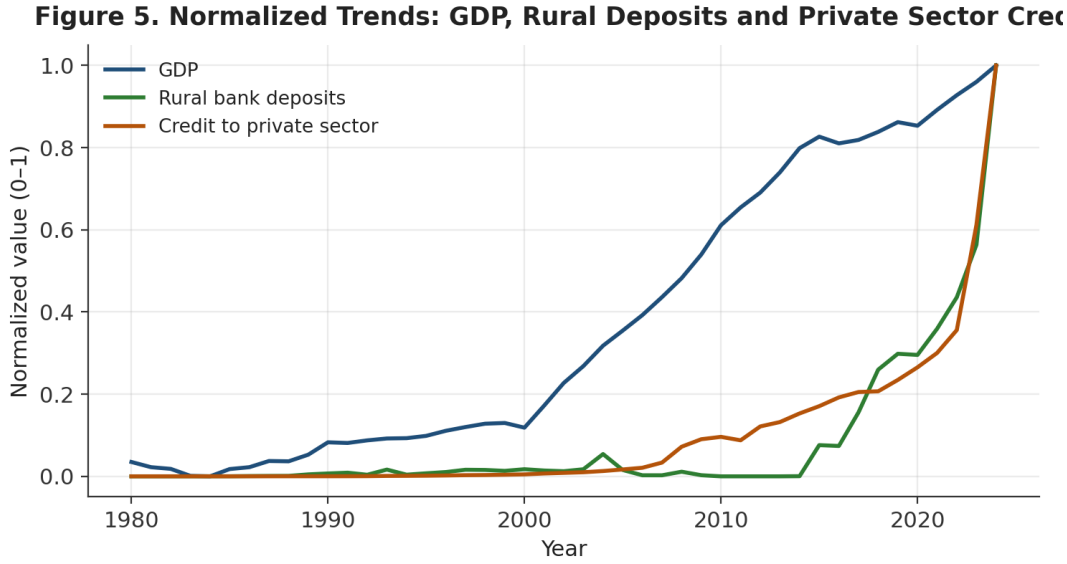


Figure 5. Normalized trends comparing GDP, financial usage/saving activity and private sector credit on a common 0–1 scale.

**Main Results**

*Unit Root Test*

Table 2 reports the Augmented Dickey-Fuller unit root results. LNGDP, LNFUSA and LNCPS are each non-stationary in levels but become stationary after first differencing, indicating that all three are integrated of order one, I(1). LNINF, by contrast, is stationary in levels, I(0). This mixed order of integration (with no series integrated of order two) is precisely the condition under which the ARDL bounds-testing approach is appropriate, and rules out the Johansen cointegration technique, which requires all series to be integrated of the same order (Pesaran et al., 2001).

Table 2
*Summary of ADF Unit Root Test Results (5% Critical Value)*

| Variable | ADF Statistic | 5% Critical Value | Order of Integration | Decision |
|---|---|---|---|---|
| LNGDP | -4.297487 | -2.931404 | I(1) | Reject H0 |
| LNFUSA | -5.045680 | -2.931404 | I(1) | Reject H0 |
| LNCPS | -4.464684 | -2.931404 | I(1) | Reject H0 |
| LNINF | -3.548001 | -2.929734 | I(0) | Reject H0 |

Source: Author's computation using EViews 10, 2026.

*ARDL Bounds Cointegration Test*

Table 3 presents the ARDL bounds test for cointegration. The computed F-statistic of 4.054 exceeds the upper bound critical value of 3.67 at the 5 percent significance level (lower bound: 2.79), leading to rejection of the null hypothesis of no cointegration. This confirms the existence of a long-run equilibrium relationship among LNGDP, LNFUSA, LNCPS and LNINF, and justifies proceeding to estimate both the long-run and short-run ARDL coefficients.

Table 3
*ARDL Bounds Co-integration Test Result*

| F-Statistic | k | Significance Level | I(0) Lower Bound | I(1) Upper Bound |
|---|---|---|---|---|
| 4.054179 | 3 | 5% | 2.79 | 3.67 |

*Source: Author's computation using EViews 10, 2026.*

*Error Correction Model*

The error-correction term, CointEq(–1), reported in Table 4, is negative and highly statistically significant (coefficient = –0.172599, t = –4.746, $p < 0.001$). This confirms that the system is stable and self-correcting: following a shock that pushes GDP away from its long-run relationship with financial usage/saving activity, private sector credit and inflation, approximately 17.26 percent of the resulting disequilibrium is eliminated within one year. At this speed, a full adjustment back to equilibrium would take roughly five to six years, indicating a moderate, not particularly fast, pace of convergence, consistent with the structural rigidities and lending frictions often noted in the Nigerian financial system. Since serial correlation was detected in the residuals (Table 8), Table 9 reports Newey-West HAC-robust standard errors as the reliable basis for long-run inference, and the long-run coefficients discussed below should be read alongside that correction rather than from Table 5 in isolation.

Table 4
*Summary of Parsimonious Short-Run Relationship Result*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| CointEq(-1) | -0.172599 | 0.036368 | -4.745863 | 0.0000 |

Source: Author's computation using EViews 10, 2026.

*Long-Run ARDL Results*

Table 5 reports the long-run ARDL coefficients, the central results of the study. Private sector credit (LNCPS) carries a positive coefficient of 0.229078, significant at the 1 percent level (t = 14.23, p < 0.001): a 1 percent increase in credit to the private sector is associated with an approximately 0.23 percent increase in GDP in the long run. Financial usage/saving activity (LNFUSA) carry a negative coefficient of –0.016535, but this is not statistically significant (t = –1.107, p = 0.276); the negative sign runs counter to the simple a priori expectation set out in Section 3.4 and is addressed directly in the Discussion. Inflation (LNINF) is likewise negative, as theory predicts, but statistically insignificant (coefficient = –0.018335, t = –0.271, p = 0.788). Figure 6 visualizes these three long-run coefficients side by side: private sector credit stands out as the only variable both correctly signed relative to the naive prior and statistically distinguishable from zero.

Table 5

*Summary of Long-Run Coefficients*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LNFUSA | -0.016535 | 0.014931 | -1.107395 | 0.2755 |
| LNCPS | 0.229078 | 0.016096 | 14.23161 | 0.0000 |
| LNINF | -0.018335 | 0.067676 | -0.270922 | 0.7880 |
| C | 8.997287 | 0.153100 | 58.76738 | 0.0000 |

*Source: Author's computation using EViews 10, 2026.*

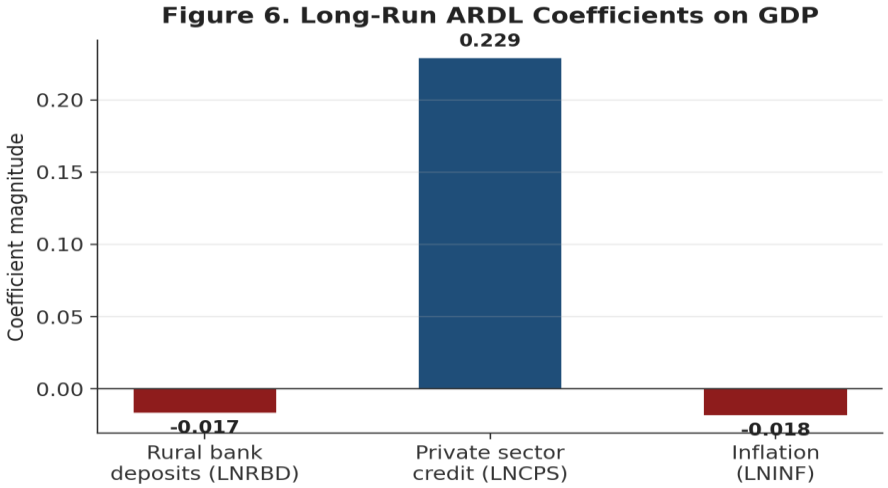


Figure 6. Long-run ARDL coefficients on GDP, with 95% conventional significance indicated by shading (navy = significant and positive; red = statistically insignificant).

**Additional and Robustness Results**

*Short-Run Analysis*

Table 6 reports the short-run ARDL error-correction regression. None of the three explanatory variables (D(LNFUSA), D(LNCPS), D(LNINF)) is statistically significant at the 5 percent level in the short run, though D(LNCPS) approaches significance at the 10 percent level (coefficient = 0.046690, p = 0.1005). This pattern, an insignificant short-run credit effect alongside a highly significant long-run effect, is consistent with the intuition that credit takes time to translate

into investment, employment and output; the benefits of expanded lending accrue gradually rather than within the same fiscal year.

Table 6
*ARDL Error Correction Regression (Short Run)*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(LNFUSA) | -0.002740 | 0.004355 | -0.629209 | 0.5332 |
| D(LNCPS) | 0.046690 | 0.027700 | 1.685516 | 0.1005 |
| D(LNINF) | -0.017934 | 0.009538 | -1.880289 | 0.0682 |
| CointEq(-1) | -0.172599 | 0.036368 | -4.745863 | 0.0000 |

*Source: Author's computation using EViews 10, 2026.*

*Diagnostic and Stability Tests*

Table 7 reports the overall model fit: an adjusted $R^2$ of 0.9956 and a highly significant F-statistic (1384.9, $p < 0.001$) indicate that the model explains the overwhelming majority of variation in LNGDP, though, as is common with trending macroeconomic time series, this high $R^2$ should be read cautiously rather than as proof of a well-specified causal model on its own. Table 8 reports the Breusch-Godfrey serial correlation LM test, which detects statistically significant serial correlation in the residuals ($\chi^2$ probability = 0.0107). To address this, Newey-West HAC-corrected standard errors were computed as a robustness check (Table 9); under this correction, private sector credit remains positive and highly significant (coefficient = 0.206527, $p < 0.001$), while financial usage/saving activity and inflation remain statistically insignificant, confirming that the serial correlation issue does not overturn the central finding.

Taken together, the diagnostic battery indicates a well-behaved model: residuals are free of heteroskedasticity and functional-form misspecification, parameters are stable across a sample that spans multiple oil-price cycles, two formal recessions and a pandemic shock, and the one detected issue, residual serial correlation, is addressed transparently through HAC-robust inference rather than left unremarked. This matters for how much weight the central finding can bear: because the significance of the private-sector-credit coefficient survives the HAC correction essentially unchanged, the result is not an artifact of understated standard errors.

Tables 10 and 11 report the White heteroskedasticity test and the Ramsey RESET test respectively. Both are statistically insignificant (White: $\chi^2$ probability = 0.2707; RESET: F probability = 0.5633), indicating no evidence of heteroskedasticity and no evidence of functional-form misspecification. The CUSUM and CUSUM of Squares statistics remain within their respective 5 percent critical bounds throughout the sample period, indicating that the estimated parameters and residual variance are stable over 1980–2024, reassuring given the structural shifts (banking consolidation, the 2008–09 financial crisis, the 2016 and 2020 recessions, and the post-pandemic credit and inflation surge) that occurred within the sample window.

Table 7
*Model Summary Diagnostic Statistics*

| Diagnostic Test | Result | P-Value |
|---|---|---|
| Adjusted R-squared | 0.995581 | N/A |
| F-statistic | 1384.886 | 0.000000 |

Table 8
*Breusch-Godfrey Serial Correlation LM Test*

| Statistic | Value | Probability |
|---|---|---|
| F-statistic | 4.411904 | Prob. F(2,34) = 0.0198 |
| Obs*R-squared | 9.066162 | Prob. Chi-Square(2) = 0.0107 |

Table 9
*HAC-Robust Standard Errors and Covariance*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LNFUSA | -0.011510 | 0.008899 | -1.293393 | 0.2031 |
| LNCPS | 0.206527 | 0.009375 | 22.02902 | 0.0000 |
| LNINF | -0.018952 | 0.038985 | -0.486144 | 0.6295 |
| C | 8.978252 | 0.073672 | 121.8672 | 0.0000 |

Source: Author's computation using EViews 10, 2026.

Table 10
*White Heteroskedasticity Test*

| Statistic | Value | Probability |
|---|---|---|
| F-statistic | 2.077830 | Prob. F(35,8) = 0.1390 |
| Obs*R-squared | 39.63947 | Prob. Chi-Square(35) = 0.2707 |
| Scaled explained SS | 31.82897 | Prob. Chi-Square(35) = 0.6220 |

Table 11
*Ramsey RESET Test*

| Statistic | Value | df | Probability |
|---|---|---|---|
| t-statistic | 0.583122 | 38 | 0.5633 |
| F-statistic | 0.340032 | (1, 38) | 0.5633 |

*Source: Author's computation using EViews 10, 2026.*

*Hypothesis Testing*
Table 12 summarizes the formal hypothesis tests against the three research hypotheses set out in Section 1.4.

H01 (financial usage/saving activity and GDP growth): not rejected (p = 0.2755). Financial usage/saving activity does not have a statistically significant relationship with Nigeria's economic growth over 1980–2024.

H02 (private sector credit and GDP growth): rejected (p = 0.0000). Private sector credit has a positive and statistically significant relationship with Nigeria's economic growth.
H03 (inflation and GDP growth): not rejected (p = 0.7880). Inflation does not have a statistically significant relationship with Nigeria's economic growth within this model, although the sign of the coefficient is consistent with theoretical expectation.

Table 12
*Summary of Hypothesis Testing*

| Hypothesis | Coefficient | p-value | Decision | Conclusion |
|---|---|---|---|---|
| H01: FUSA → GDP | -0.016535 | 0.2755 | Do not reject H0 | No significant relationship |
| H02: CPS → GDP | 0.229078 | 0.0000 | Reject H0 | Significant positive relationship |
| H03: INF → GDP | -0.018335 | 0.7880 | Do not reject H0 | No significant relationship |

**Discussion**

*Interpretation of Major Findings*

The central empirical finding of this article (that private sector credit, not financial usage/saving activity, is the channel through which financial inclusion supports growth in Nigeria) sits comfortably within the finance-growth tradition running from Schumpeter (1911/1934) through Levine (2005) and Beck et al. (2007), and it is consistent with Diamond's (1984) emphasis on the intermediation function of banks: it is not the collection of deposits that matters for growth, but their conversion, via active lending, into productive investment. The negative sign on financial usage/saving activity deserves direct comment, since Section 3.4 set out a simple a priori expectation that deposit mobilization, like credit, should carry a positive coefficient. That the estimated sign is negative, even though statistically indistinguishable from zero, is not consistent with the naive positive prior, and the honest reading is that the data reject the simple version of the saving-usage hypothesis rather than confirm it. The result is, however, consistent with the structuralist qualification introduced in Section 2.2: where deposits mobilized in rural areas are transferred out to fund urban lending, held as low-yielding liquid assets, or rationed away from creditworthy but under-collateralized borrowers, deposit accumulation on its own carries no reason to correlate positively with aggregate output, and could plausibly correlate weakly negatively if rural deposit growth and rural credit growth have, over parts of the sample, moved in different directions.

On the saving-usage side, the insignificant coefficient on financial usage/saving activity echoes Otiwu, Okere, Uzowuru, and Ozuzu (2018), whose microfinance-focused evidence likewise did not find a robust positive deposit effect, and Ezenwakwelu (2018), who found no significant relationship between several financial inclusion indicators and Nigerian macroeconomic outcomes. It stands in contrast, however, to Nwafor and Yomi (2018), who reported a positive association between rural-sector financial inclusion indicators and growth.

A plausible reconciliation is methodological and temporal: that study relies on a shorter sample, on OLS rather than an error-correction framework, and on indicators that partially blend saving-usage and credit-usage measures together, any of which could mechanically attribute credit-driven growth to deposit variables that happen to be correlated with credit over the sample period used. The present study's separation of the two usage channels, and its extension of the data to 2024, offers a plausible explanation for why the result diverges: FUSA and credit move together in the raw trend data (Figure 5), but only credit survives as a statistically distinguishable driver of output once both are entered into the same cointegrating relationship.

*Comparison with Previous Studies*

On the usage side, the significant positive long-run coefficient on private sector credit is broadly consistent with Okoye et al. (2017) and Makina and Walle (2019), who identified credit-related indicators as significant, positive correlates of Nigerian or African growth. It also aligns with Karlan and Zinman's (2010) South African finding that expanded credit access raises household welfare, a result obtained through a very different empirical strategy (a field experiment rather than macro time-series analysis) but pointing toward the same underlying mechanism: credit that is actually disbursed and used does more for economic outcomes than credit that is merely, in principle, available.

The magnitude of the credit effect (a 0.23 percent increase in GDP for every 1 percent increase in private sector credit) is economically meaningful without being implausibly large. It implies that credit expansion is a real, but not overwhelming, lever on output: it operates alongside, not instead of, the other structural determinants of Nigerian growth (oil revenue, exchange rate policy, infrastructure investment, human capital) that lie outside this model's scope. The insignificance of the short-run credit coefficient, set against the strong and significant long-run coefficient, is also economically sensible. Loan disbursement does not translate instantaneously into output: firms take time to deploy borrowed capital into working capital, plant expansion or hiring, and the resulting output gains accrue with a lag. This lag structure is precisely what the ARDL error-correction framework is designed to capture, and the moderate 17.26 percent annual adjustment speed suggests that shocks to the credit-growth relationship take roughly five to six years to fully work through the Nigerian economy, a horizon consistent with typical investment-project gestation periods and with the well-documented frictions (collateral requirements, high lending rates, information asymmetries) that slow credit transmission in the Nigerian banking sector.

**Theoretical Implications**

Taken together, the results speak more clearly to the structuralist qualification of the finance-growth hypothesis than to its textbook form. The textbook version, in which any expansion of the formal financial system should raise output, predicts a positive coefficient on both FUSA and CPS; that prediction is only half-confirmed. The Diamond (1984) delegated-monitoring framework and the Gerschenkron (1969) structuralist critique, read together, offer the more accurate description: financial development supports growth only insofar as institutions actively perform the intermediation function of converting mobilized funds into monitored, productive credit. Where that function is weak or partial, as the insignificant, negatively signed FUSA coefficient suggests it may be in Nigeria's deposit-mobilization segment, deposit growth alone carries no guaranteed growth dividend. This reframes the finance-growth

hypothesis, for the Nigerian case, as conditional rather than unconditional: it is intermediation quality, not financial-system size, which the data identify as the operative growth channel.

It is also worth pausing on what the insignificant deposit coefficient does not imply. It does not imply that financial usage/saving activity is economically worthless, or that deposit mobilization should be deprioritized outright. Deposits remain the raw material from which credit is eventually created: a bank cannot lend what it has not, in some form, mobilized or accessed through wholesale funding, so a weak direct relationship between deposits and GDP is fully compatible with deposits mattering indirectly, through their role in funding the credit channel that does show up as significant. What the result does imply is that deposit accumulation, taken on its own and without a corresponding lending response, is not a reliable growth lever, and that policy frameworks which treat deposit-mobilization targets as a proxy for "financial inclusion success" are measuring an intermediate input rather than the outcome that ultimately matters for national output.

The statistically insignificant, though correctly signed, inflation coefficient deserves comment because it runs somewhat against the strong theoretical prior that inflation depresses growth. Two explanations are plausible. First, Nigeria's inflation series (Figure 4) is dominated by a small number of extreme episodes (the late-1980s structural-adjustment period and the mid-1990s peak near 73 percent) that may not be well captured by a single linear coefficient across a forty-five-year sample encompassing very different monetary and exchange-rate regimes. Second, and more substantively, if inflation in Nigeria has historically been driven as much by supply-side shocks (fuel subsidy adjustments, exchange-rate pass-through, food-price shocks) as by excess demand, its relationship with output need not follow the textbook inverse pattern implied by demand-driven inflation theory (Mankiw, 2021). This is consistent with the broader literature's ambivalence about the inflation-growth relationship in commodity-dependent, structurally constrained economies, and it argues for treating the insignificant coefficient here as a genuine empirical finding about the Nigerian case rather than as evidence of model misspecification, a conclusion reinforced by the Ramsey RESET test, which does not reject correct functional form.

*Practical and Policy Implications*

Taken together, these results carry a clear policy implication that runs through the rest of this article: Nigeria's financial inclusion strategy, insofar as it is judged by its contribution to economic growth, should be evaluated and designed around credit-usage outcomes rather than saving-usage outcomes alone. Expanding the number of bank accounts, rural branches, agent-banking touchpoints or digital saving balances is a necessary but, on this evidence, insufficient condition for growth. What appears to matter is whether the funds that flow into the formal financial system are subsequently lent back out into productive activity, a distinction with real implications for how success is measured, how banks are incentivized, and how limited policy and regulatory attention is allocated between deposit-mobilization programmes and credit-expansion programmes.

**Contribution to Existing Knowledge**

This article contributes to the financial inclusion literature in five interconnected ways. First, it disaggregates the usage dimension of financial inclusion into its saving-usage and credit-

usage components from the outset, rather than treating usage as a single construct, and tests each component's relationship with GDP separately within the same model, allowing a direct comparison of which usage channel actually drives growth rather than an inference drawn from a composite index. Second, it empirically identifies the credit-usage channel, not saving usage on its own, as the operative mechanism through which Nigeria's financial system has historically supported output growth, a finding with direct implications for how financial inclusion strategy is designed and evaluated. Third, it extends the estimation window to 1980–2024, incorporating forty-five years of data and, notably, the post-2020 period that most existing Nigerian studies omit. Fourth, it applies the ARDL bounds-testing approach of Pesaran, Shin, and Smith (2001), which is appropriate for a mixture of I(0) and I(1) series and yields both short-run and long-run coefficients within a single, internally consistent framework, addressing the methodological gap identified in Section 2.4. Fifth, the study translates its empirical findings into a specific, actionable policy recommendation: that Nigeria's financial inclusion strategy should be evaluated and redesigned around credit-usage metrics (loan disbursement, credit utilization, repayment behaviour) rather than saving-usage or account-based metrics such as deposit and account counts, which current policy debate tends to treat as sufficient in themselves.

**Limitations and Future Directions**

As with any single-country time-series study, the findings here are conditioned on the specific proxies chosen for saving usage and credit usage; financial usage/saving activity and private sector credit are reasonable, data-available proxies, but they do not capture the full range of formal financial activity, particularly the rapid growth of mobile money, fintech lending and digital payment platforms that has occurred largely outside the traditional banking indicators used here. Future research should extend this saving-usage/credit-usage framework to digital financial inclusion specifically (mobile money penetration, fintech credit, agent-banking transaction volumes), both because these channels are increasingly central to Nigeria's inclusion strategy and because the 2025 Global Findex Database points to their growing global importance (Klapper et al., 2025; World Bank, 2025). Further avenues include examining the relationship's implications for poverty reduction and employment generation directly, rather than through GDP alone; disaggregating the analysis by region (northern versus southern Nigeria) or by sector (agriculture, manufacturing, services) to identify where the credit-growth channel is strongest; and undertaking comparative studies across West African or Sub-Saharan African economies to test whether the saving-usage/credit-usage distinction identified here for Nigeria generalizes across similarly structured financial systems.

A further limitation concerns causal interpretation. The ARDL bounds-testing framework establishes a long-run cointegrating relationship and directional coefficients, but it does not, on its own, establish the direction of causality between private sector credit and GDP: it remains possible that some of the observed relationship reflects growing firms demanding more credit as they expand, rather than credit expansion driving that growth (or, more plausibly, some combination of both operating simultaneously). A natural extension of this work would therefore apply Toda-Yamamoto or ARDL-based Granger causality tests to establish the direction, or bidirectionality, of the credit-growth relationship identified here, and to check whether the same asymmetry between saving usage and credit usage holds up when causality, rather than long-run association, is the object of interest.

Finally, the negative long-run sign on financial usage/saving activity, while statistically insignificant, is a result that future work with richer, branch-level or regional data could probe further; the present national-aggregate specification cannot distinguish whether the sign reflects genuine crowding-out, a measurement artefact in the FUSA series, or simply sampling noise around a true coefficient of zero.

**Conclusion**

This article set out to determine which usage dimension of financial inclusion (saving usage, proxied by Financial Usage/Saving Activity, or credit usage, proxied by private sector credit) actually drives Nigeria's economic growth, using annual data from 1980 to 2024 within an ARDL bounds-testing framework. Four main conclusions follow from the analysis. First, a long-run cointegrating relationship exists among GDP, FUSA, private sector credit and inflation, confirmed by an ARDL bounds F-statistic (4.054) that exceeds the upper critical bound. Second, private sector credit has a positive, statistically significant long-run effect on GDP: each 1 percent increase in credit to the private sector is associated with roughly a 0.23 percent increase in output. Third, FUSA carries a negative long-run coefficient that runs counter to the simple a priori expectation and is not statistically significant, while inflation carries the theoretically expected negative sign but is likewise not statistically significant, in either the short or long run. Fourth, the error-correction mechanism is significant and moderately paced, correcting approximately 17.3 percent of any disequilibrium within a year.

The overarching conclusion is that Nigeria's financial system has, over four and a half decades, supported economic growth primarily through the credit-usage channel rather than through saving usage in itself. Simply expanding the physical or digital presence of saving instruments (opening more accounts, building more branches, growing more deposit or FUSA balances) is not, on this evidence, sufficient to move national output. What appears to matter is whether funds mobilized through saving are subsequently converted into credit for productive private-sector activity. This does not mean that saving usage is unimportant: FUSA remains the necessary first step in the intermediation chain, and it carries welfare benefits (precautionary saving, payment convenience, financial resilience) that a growth regression of this kind cannot fully capture, but it does mean that saving usage alone, without a corresponding credit-usage channel, should not be expected to register as a driver of aggregate output.

**Policy Recommendations**

Building on these findings, five policy recommendations follow.

First, strengthen credit channels to the real sector. The Central Bank of Nigeria should continue and expand programmes that make it easier and cheaper for commercial banks to lend to small and medium enterprises, including credit guarantee schemes, targeted refinancing windows at concessional rates, and incentives (regulatory or reserve-requirement based) for banks that maintain high SME lending portfolios.

Second, enhance rural financial intermediation, not just rural deposit collection. Community and microfinance banks operating in these areas should be supported and, where necessary, required to convert a meaningful share of locally mobilized deposits into local lending (to agriculture, small trade and rural industry) rather than allowing deposits to be transferred out of the communities that generated them. Agricultural credit on concessional terms, and the

continued expansion of agency banking and mobile money as delivery channels for that credit, should accompany any further push on deposit mobilization.

Third, reorient financial inclusion policy and measurement around credit usage, not saving usage alone. National Financial Inclusion Strategy targets and monitoring frameworks should place at least as much weight on loan disbursement volumes, credit utilization rates and repayment performance as they currently place on account-ownership, deposit-balance and access-point statistics. Financial literacy and consumer-education programmes should be designed explicitly to convert new accounts into active credit and savings relationships, not merely to increase enrolment numbers.

Fourth, pursue coordinated monetary and fiscal discipline on inflation. Although this study did not find a statistically significant inflation effect on growth, the theoretical case for price stability (protecting the real value of savings and the predictability of lending decisions) remains sound, and the sharp post-2019 inflation climb evident in Figure 4 warrants continued, coordinated monetary and fiscal attention.

Fifth, treat financial inclusion as a long-term structural programme rather than a short-term intervention. Given the moderate, multi-year speed of adjustment identified in the error-correction results, policymakers should expect the growth benefits of credit expansion to accrue gradually and should design institutional frameworks (for credit-guarantee schemes, for financial-inclusion mandates, for SME finance facilities) built to survive changes in political administration rather than being tied to any single budget cycle.

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