Commercial Bank Credit and Economic Growth in Nigeria

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ABSTRACT

The aim of this study is to examine the effect of credit from commercial banks on the economic growth of Nigeria from 1992 to 2023.. Using the ARDL approach, it analyzes the short-run and long-run impact of commercial and merchant bank credit (CMBC) on GDP growth. The bounds test confirms a significant long-run cointegrating relationship. Short-run results show a positive immediate effect on growth from credit expansion, which reverses into a significant negative effect in the following period. In the long run, the coefficient for commercial bank credit is positive but statistically insignificant. The findings indicate that while commercial bank credit provides a short-term growth stimulus, its long-term contribution is muted, likely due to allocative inefficiencies and high lending costs. The study therefore recommends policy interventions to reduce interest rates and improve credit allocation within the commercial banking sector.

Keywords: commercial bank credit, economic growth, Nigeria, ARDL model, allocative efficiency, lending rates

INTRODUCTION

The critical importance of commercial bank credit to economic growth has been well established, acting as the conduit for the channeling of savings to productive investment opportunities. In the developed world, the existence of highly developed financial systems represents the embodiment of this economic principle, whereby the availability of credit serves to facilitate economic growth, innovation, and industrialization. An illustrative example of this is the banking systems of the United States and Germany, which consistently provide the long-run stability required to facilitate corporate growth and industrialization, thereby ensuring economic growth and stability. This represents the benchmark for the ideal scenario, whereby commercial banks play a powerful catalyst for economic growth.

In the case of the developing world, the relationship between commercial bank credit and economic growth becomes very complex, with the said relationship being tenuous at best. While nations like Kenya have registered impressive gains in improving the availability of credit, other nations continue to face crippling challenges that hinder economic growth. The case of Ghana illustrates how the unstable exchange rate environment, coupled with high inflation, has resulted in a contraction of private sector credit, thereby stifling economic growth. Thus, the critical factor for the developmental potential of commercial banks becomes the environment, which has to be conducive for economic growth to occur.

In Nigeria's case, this dependency portrays a profound and endemic problem. This is because, despite the sector's dominance in the control and management of about 65% of Nigeria's financial assets, its contribution to Nigeria's transformative and inclusive economic growth is a very ambiguous phenomenon that attracts a lot of scholarly and policy debate. The sector is also faced with a paradox that is associated with resource mobilization and allocative efficiency. Nigeria's business sector, especially small and medium-sized enterprises (SMEs), as well as strategic sectors such as agriculture and manufacturing, are faced with a very high cost of credit that ranges from 18% to 30%. This has resulted in a worrying phenomenon where strategic sectors such as agriculture, which employ a large number of Nigeria's population, are allocated a meager percentage of Nigeria’s bank loans. This study, therefore, is intended to critically examine this core issue in Nigeria's economy.

LITERATURE REVIEW

Theoretical Framework

This research is underpinned by two major economic theories that, when combined, offer a comprehensive explanation for how bank credit influences economic growth in Nigeria: the Endogenous Growth Theory and the Credit Creation Theory of Banking.

The Endogenous Growth Theory, as developed by Romer and Lucas, posits that economic growth originates from within the economy, with investments made in human capital, innovation, and knowledge being the driving force for sustained economic development. In the context of Nigeria, this theory focuses on how bank credit influences the direction of investments towards more productive channels for sustainable economic development.

While this theory provides valuable insights into the role played by bank credit, it does not offer a clear explanation for how bank credit is actually created and made available for productive use. This is where the second theory comes into play: the Credit Creation Theory of Banking, as developed by Schumpeter and other prominent economists.

This theory focuses on how banks, as financial institutions, actually create money through bank credit, thus augmenting the existing supply of money for productive use. In the context of Nigeria, this theory provides valuable insights into how bank credit influences economic development, as well as the potential for inflation and economic instability, which may be experienced as a result of bank credit activities.

Empirical Review

Sectoral Allocation of Commercial Bank Credit and Economic Growth

Adebayo and Ogunleye (2020) investigated the impact of sectoral commercial bank credit on economic growth using an ARDL approach covering agriculture, manufacturing, and services sectors. Their findings revealed that credit to manufacturing had a positive and significant long-run effect on GDP, while credit to agriculture was insignificant. The study concluded that the growth impact of commercial bank credit depends largely on sectoral productivity and absorption capacity.

Similarly, Chukwu (2021) examined commercial bank credit to the real sector and economic growth in Nigeria using OLS and error correction techniques. The results showed that although total commercial bank credit positively influenced GDP growth, sectoral disaggregation revealed inefficiencies, particularly in agriculture and small-scale enterprises. The study attributed this to weak monitoring and high non-performing loans.

In contrast, Okafor and Onyekachi (2022) employed a VAR model to assess sectoral credit allocation and growth performance in Nigeria. Their results indicated that commercial bank credit to the services sector dominated growth outcomes, while credit to manufacturing and agriculture had weak or delayed effects. This raised concerns about structural imbalance and credit concentration in non-productive sectors.

Interest Rate, Cost of Commercial Bank Credit and Economic Growth

Adegbite (2019) analyzed the relationship between commercial bank lending rates and economic growth in Nigeria using a cointegration and ECM framework. The study found that high lending rates significantly dampened the growth-enhancing effect of bank credit in the short run, although long-run effects remained positive. This suggests that the cost of borrowing weakens credit effectiveness.

Similarly, Bello and Yusuf (2021) examined the interaction between interest rates, commercial bank credit, and economic growth using ARDL techniques. Their findings revealed that while commercial bank credit positively affected growth, rising interest rates significantly offset these gains. The authors argued that monetary tightening often neutralizes the expansionary impact of bank lending.

On the other hand, Musa (2023) adopted a nonlinear ARDL model to explore asymmetric effects of interest rate changes on commercial bank credit and GDP. The results showed that increases in lending rates had a stronger negative impact on growth than the positive effects arising from rate reductions. This asymmetry underscores structural rigidities in Nigeria's credit market.

Studies on Credit Activities Commercial Banks and Economic Growth in Nigeria

Eze (2025), using a disaggregated VECM with quarterly data from 2000 to 2024, found that commercial bank credit significantly stimulated growth in the manufacturing sector, while its effects on agriculture and services were negligible. The study highlighted high lending rates and risk aversion as key constraints limiting credit flow to high-growth sectors. Similarly, Adebayo (2023) investigated private sector credit from 1986 to 2022 using VECM and reported that while short-run effects on GDP were weak, long-run contributions were significant. Both studies underscore that bank financing can drive economic growth, but inefficiencies in credit allocation and lending conditions reduce its short-term effectiveness.

Olawale and Shiloh (2024) complement these findings by focusing on SMEs from 1981 to 2022 using an ARDL model. They found that commercial bank lending rates negatively affected economic growth in the short run, whereas long-run effects were positive. However, inflation and misallocation of loans diminished the economy's benefit from bank credit, echoing Eze (2025) and Adebayo (2023) regarding structural inefficiencies in Nigeria's financial system. Bello (2023), employing a VAR approach on SME credit from 1985 to 2022, reinforced this pattern, showing that while short-term growth impacts were weak, long-run contributions were significant. He further identified stringent collateral requirements and high-interest rates as barriers to effective SME financing, suggesting that flexible lending practices and government-backed credit guarantees could enhance credit accessibility.

Research Gap

Empirical studies on commercial bank credit and economic growth in Nigeria reveal mixed and inconclusive findings across three key dimensions: sectoral allocation of credit, interest rate dynamics, and bank-specific lending activities. While some studies emphasize sectoral inefficiencies, others highlight the dampening role of high lending rates or focus narrowly on individual banks such as Access Bank, Guarantee Trust Bank, and United Bank for Africa in isolation. However, existing literature largely treats these dimensions separately and relies on static or limited dynamic approaches that do not adequately capture their combined effects on economic growth. Consequently, there remains a lack of comprehensive evidence on how commercial bank credit, operating through different sectors, lending conditions, and major commercial banks, jointly influences Nigeria's economic growth in both the short and long run.

METHODOLOGY

Choice of Variables

The target variable is GDP growth rate (GDPgr), while the predictors are Commercial and Merchant Bank Credit (CMBC), Microfinance Bank Credit (MFBC), Bank of Agriculture Credit (BOAC), Bank of Industry Credit (BOIC), African Development Bank Credit (ADBC), and World Bank Credit (WBC). The independent variables cover different segments of Nigeria's financial system, with Commercial and Merchant Bank Credit focusing on the core formal banking system, Microfinance Bank Credit targeting micro-enterprises and low-income groups, Bank of Agriculture Credit and Bank of Industry Credit targeting specific sectors like agriculture and industry, and African Development Bank Credit and World Bank Credit focusing on multilateral financing agencies. The study has a comprehensive credit system for evaluating the influence of commercial bank credit channels on Nigeria's economic growth. The data are obtained from the World Bank Indicator 2023 Statistical Bulletin, the Statistical Bulletin published by the Central Bank of Nigeria, and the annual reports published by the relevant multilateral financing agencies, providing a solid foundation for the study with credible data and figures.

Model Specification

This study examines the impact of commercial bank credit on economic growth in Nigeria through the lens of Endogenous growth theory and credit creation theory of banking. Both of the theories provide a solid foundation for understanding the relationship between commercial bank credit and economic growth in Nigeria.

The study incorporated variables specific to commercial bank credit and economic growth:

GDPgr = f(MFBC, BOAC, BOIC, ADBC, CMBC, WBC) ……..…..…3.1

Mathematically, this equation may be specified in econometrics form as:

$GDPgr_{it} = \beta_0 + \beta_1 MFBC + \beta_2 BOAC + \beta_3 BOIC + \beta_4 ADBC + \beta_5 CMBC + \beta_6 WBC + \mu_{it}$……..3.2

Where:

GDPgr= GDP growth rate

And

MFBC= Microfinance bank credit

BOAC = Bank of agriculture credit

BOIC= Bank of industry credit

ADBC= African Development bank credit

CMBC= Commercial and merchant bank credit

WBC= World bank credit

B_0-β_6 is the coefficient parameters of the independent variables

Methods of Data Analysis

Descriptive Statistics

The nature and characteristics are synonyms to a great extent like mean, minimum, maximum, standard deviation and Jarque-bera will be used in this study.

Unit Root Test

The unit root tests was carried out to ascertain the underlying properties of the time series variables before model estimation, Augmented Dickey-Fuller (ADF) unit root test method was used in this study. The reason for the unit root test is to avoid obtaining spurious regression results arising from non-Stationarity of the time series variables (Gujarati and Porter, 2009). Below is the equation to be estimated for the Augmented Dickey-Fuller (ADF) unit-root test.

$\Delta Yt = \alpha + \beta t + \vartheta Yt{-}1 + \sum k\, i{-}1\, \lambda\Delta \times Yt{-}1 + \mu t$ …… (3.3)

Where ΔYt is the first difference of the series Y; μt is a stochastic error term, in which $\Delta Yt{-}1 =$

$(Yt{-}1 - Yt{-}2)$, $\Delta Yt{-}2 = (Yt{-}2 - Yt{-}3)$; α is a constant; t is the time; and β and ϑ are parameters Decision rule: If the ADF test statistic is greater than the MacKinnon critical value at 5% (all in absolute term) the variable is said to be stationary. Otherwise, it is non-stationary.

ARDL Bounds Co-integration Test

The bound Co- integration test was used in this study for estimation, the ARDL method as developed by Pesaran, Shin, and Smith (2001).

$$\Delta \ln y_{it} = \lambda_0 + \sum_{i=1}^{n} \lambda_0 \Delta \ln y_{u-1} + \sum_{i=1}^{n} \beta_j \ln y_{u-1} + {}_t \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \quad (3.4)$$

The long-term association between the study's variables was investigated using the ARDL bound test. The null hypothesis must be rejected if the F-statistic exceeds the upper bound's critical value. Conversely, the null hypothesis should be accepted and the existence of co-integration among the variables established if the lower critical bound value is greater than the F-statistics, and vice versa.

Autoregressive Distributed Lags (ARDL)

The study employed the Autoregressive distributive lag (ARDL). ARDL approach examines both the long-run and short-run equilibrium relationship between the variables regardless of whether the explanatory variables are characterized by I (0), I (1) or partially integrated and also, for the purpose of clearness approach. Since, there is a level of interrelationship between the variables. (Pesaran et al., 2000) and also capable in handling limited sample sizes yet it delivers robust results.

$$\Delta GDPgr_{it} = \alpha_0 + \sum \gamma_i \Delta (MFBC)_{t-1} + \sum \delta_k \Delta (BOAC)_{t-k} + \sum \omega_l (BOIC)_{t-l} + \sum \theta_m \Delta (ADBC)_{t-m} + \sum \vartheta_n \Delta (CMBC)_{t-n} + \sum \omega_l \Delta (WBC)_{t-l} + \sum \omega_l \Delta (INF)_{t-l} + \beta_1 MFBC_{t-1} + \beta_2 ln BOAC_{t-1} + \beta_3 BOIC_{t-1} + \beta_4 ADBC_{t-1} + \beta_5 CMBC_{t-1} + \beta_6 WBC_{t-1} + \beta_7 INF_{t-1} + \mu_t \quad (3.5)$$

Where α_0 and μ_t are the autonomous component and white noise respectively. The expression with the signs of summation in the equation is error correction. The parameter coefficient denotes the short-run effects while Beta (β) is the corresponding relationship in the long run. Gross domestic product growth rate in eqn (3.10) is the dependent variable while Microfinance bank credit (MFBC), Bank of agriculture credit (BOAC), Bank of industry credit (BOIC), African Development bank credit (ADBC), Commercial and merchant bank credit (CMBC), World bank credit (WBC), and Inflation (INF) are the independent variables.

Post Estimation Test

Test for Heteroskedasticity

This test would be carried out using White's general Heteroskedasticity test with cross terms. The test asymptotically follows a chi-square distribution with a degree of freedom equal to the number of repressors excluding the constant term. This test basically focused on the variance of the error term. The test helps to ascertain whether the variance of the error term is constant. Heteroskedsticity can also be said to occur when the standard deviation of a predicted variable is mentioned over different values of an independent variable.

Test for Serial Correlation

Recall that one of the assumptions when building a linear regression model is that the errors are independent. That is autocorrelation does not exist in the disturbances μ. In essence, the disturbance term relating to any observation is not influenced by the disturbance term relating to any other observation. However, if the disturbance terms are correlated over time, then we have a situation of autocorrelation or serial correlation.

Cumulative Sum of Errors and Cumulative Sum of Squared Errors

The cumulative sum of errors (CUSUM) and cumulative sum of squared errors (CUSUMSQ) are used to test whether the model is spurious. The test has two basic lines (the critical lines) at the 5% critical level. In-between the line is a line (graph); if the graph touches or crosses any of the lines, it indicates that the model is spurious; otherwise, it is not.

Normality Test

A normality test was used to determine whether sample data has been drawn from a normally distributed population**.**)

Presentation of Results

Descriptive Statistics

Table 4.1 Descriptive Statistics Result

	GDP	CMBC	BOIC	BOAC	ADBC	MFBC	WBC
Mean	19.41037	26.30007	1.937513	27.48092	8599.027	41.99303	21.55047
Median	14.11625	19.74189	1.584091	10.33793	-2.461402	14.83279	8.920696
Maximum	75.26780	118.7049	10.84777	355.6151	256433.3	381.9588	289.4678
Minimum	0.535487	-8.729170	-5.085580	-55.10230	-99.93300	-64.16300	-17.72200
Std. Dev.	14.95937	27.41274	2.923417	66.96542	45252.16	84.47943	52.36066
Skewness	1.812697	2.291990	0.819962	3.805953	5.377781	2.449169	4.367032
Kurtosis	7.086422	8.238969	6.020660	19.37362	29.95932	9.806208	22.88306
Jarque-Bera	39.78977	64.61290	15.75165	434.7156	1123.316	93.75759	628.8268
Probability	0.000000	0.000000	0.000380	0.000000	0.000000	0.000000	0.000000
Observations	32	32	32	32	32	32	32

Author’s computation using E-Views 10

The descriptive statistics reveal that there are essential insights into the dynamics of Nigeria's commercial bank sector and their implications for economic growth. The GDP growth rate exhibits high volatility with a mean of 19.41% in light of negative growth (0.54%) and exceptional expansion (75.27%). The extensive fluctuation, which is corroborated by the high standard deviation of 14.96 and high positive skewness, indicates Nigeria's vulnerability to economic shocks, as is characteristic of its commodity-dependent economy. The financial sector indicators show distinct volatility patterns for the different credit sources. Credit from merchant and commercial banks, while significant in size with a mean of 26.30, shows erratic fluctuations between expansion and contraction (minimum -8.73), reflecting a banking sector that amplifies rather than stabilizes economic cycles. Development finance is fragmented in pattern: Bank of Industry credit is consistently low (mean 1.94), implying chronic underfinancing of industrial sectors, and Bank of Agriculture credit is highly volatile (standard deviation 66.97) between massive lending programs and severe contractions. The African Development Bank's activity appears episodic, with gargantuan standard deviation (45,252.16) between sporadic mega-projects and low activity. The microfinance institutions also share the same instability with credit expansions being followed by sharp contractions (at least -64.16), undermining their poverty reduction potential. World Bank financing is no exception to this trend of intermittent large-scale involvement followed by dormancy.

Unit Root Test

Table 4.2: Unit Root Result Table

	ADF		*Philip-P*		
Variable	Level	F-diff	Level	F-diff	Order of integration
GDP	0.110	0.000	0.001	0.000	I(1)
MFBC	0.015	0.040	0.000	0.000	I(0)
WRBC	0.000	0.000	0.000	0.000	I(0)
CMBC	0.003	0.001	0.000	0.000	I(0)
BOIC	0.006	0.001	0.003	0.000	I(0)
BOAC	0.001	0.000	0.001	0.000	I(0)
ADBC	0.000	0.000	0.000	0.000	I(0)

Author's computation using E-Views 10

The tests show a clear distinction between the performance of GDP growth and the various financial sector variables. GDP growth is stationary at level but becomes stationary after first differencing, which means it follows a random walk behavior in its original form but the growth rate of GDP follows mean-reverting behavior. This is typical of macroeconomic variables that are more likely to follow trend lines rather than meandering around a constant mean.

Conversely, the majority of variables in the financial sector are confirmed to be stationarity at level, meaning that they fluctuate around fixed means over time. Microfinance bank credit is borderline stationarity, while world bank credit, commercial and merchant bank credit, and development bank credits are all highly level stationary. Bank of industry and agriculture credits are also stationary, but with marginally varying confidence levels in each test. African development bank credit is most evident level stationary.

These findings have significant implications for model specification. The orders of integration being mixed - with GDP growth being I(1) and the financial variables predominantly I(0) - make the ARDL configuration particularly well suited for this application because it can accommodate varying orders of integrated variables and avoids spurious regression considerations.

Co-integration Bound Test

Table 4.3 Cointegration Test Result

F-Statistic	Lower Bound	Upper Bound
19.82	2.27	3.28

Author's computation using E-Views 10

The cointegration test demonstrates a statistically significant long-run relationship among the variables in the system, as revealed by the estimated value of 19.82 for the F-statistic. This is way above both the lower and upper critical values (2.27 and 3.28 respectively) at conventional levels of significance, providing strong evidence against the null hypothesis of no cointegration. The big F-statistic indicates that even if the variables

vary in orders of integration, they co-move in the long run and form a stable equilibrium relationship. The finding is important in that it verifies that there exists an economically significant relationship between bank finance variables and GDP growth in Nigeria beyond short-run fluctuations.

Autoregressive Distributed Lag Results

Table 4.4 ARDL Test Result

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Long-run C	3.301610	2.687920	1.228314	0.2450
GDP(-1)*	-1.107482	0.123888	-8.939352	0.0000
BOIC(-1)	0.379981	0.561307	0.676958	0.5124
BOAC**	0.009441	0.026515	0.356047	0.7285
ADBC**	-6.10E-05	2.45E-05	-2.490804	0.0300
CMBC(-1)	0.069417	0.058474	1.187142	0.2602
MFBC(-1)	0.226875	0.077511	2.926998	0.0138
WRBC(-1)	0.252183	0.040522	6.223298	0.0001
D(BOIC)	-0.212639	0.369792	-0.575023	0.5768
D(BOIC(-1))	-0.453616	0.331352	-1.368986	0.1983
D(CMBC)	0.076239	0.045294	1.683221	0.1205
D(CMBC(-1))	-0.076093	0.040419	-1.882623	0.0865
D(MFBC)	-0.046837	0.038486	-1.216986	0.2491
D(MFBC(-1))	-0.159194	0.039846	-3.995262	0.0021
D(MFBC(-2))	-0.060787	0.021870	-2.779467	0.0179
D(WRBC)	0.000300	0.015960	0.018818	0.9853
D(WRBC(-1))	-0.183675	0.026483	-6.935609	0.0000
D(WRBC(-2))	-0.182127	0.028105	-6.480162	0.0000

Short-run

D(BOIC)	-0.212639	0.162317	-1.310025	0.2169
D(BOIC(-1))	-0.453616	0.163047	-2.782121	0.0178
D(CMBC)	0.076239	0.027372	2.785306	0.0177

D(CMBC(-1))	-0.076093	0.025871	-2.941219	0.0134
D(MFBC)	-0.046837	0.012539	-3.735344	0.0033
D(MFBC(-1))	-0.159194	0.015252	-10.43791	0.0000
D(MFBC(-2))	-0.060787	0.011420	-5.322719	0.0002
D(WRBC)	0.000300	0.009758	0.030777	0.9760
D(WRBC(-1))	-0.183675	0.016130	-11.38682	0.0000
D(WRBC(-2))	-0.182127	0.014831	-12.28059	0.0000
CointEq(-1)*	-1.107482	0.068749	-16.10906	0.0000
R-squared	0.970416			
Adjusted R-squared	0.953980			

The Autoregressive Distributed Lag (ARDL) model estimated here provides useful insights into both short-run dynamics and long-run equilibrium relationship between GDP and different types of credit to the private sector in Nigeria during the period 1992-2023. The short-run dynamics of the ARDL provide important insights into how instantaneous changes in different categories of credit to the private sector influence Nigeria's economic output. The evidence indicates that short-run behavior in microfinance bank credit (MFBC), commercial bank credit (CMBC), and World Bank-related credit (WRBC) statistically significantly affects GDP, but with different directions and types of effect. That is, the microfinance bank credit coefficients are negative and significant for more than one lag. For instance, MFBC(-1) and MFBC(-2) show robust negative effects with p-values less than 1%, which means that microfinance credit rises negatively affect GDP in the short term. The connection can be attributed to structural inefficiencies in the fund allocation, low productive use of microcredit, or short repayment horizon deterring long-term investment among beneficiaries. These findings are inconsistent with the hypothesis that expanded access to microfinance necessarily expands short-run economic activity.

Similarly, World Bank-related credit also registers huge short-run negative effects. WRBC(-1) and WRBC(-2) are negative and extremely significant, which suggests that development assistance-disbursed-linked disbursements may impose a cost of adjustment on the economy in the short run. These can include policy conditionalities, project preparation delays, or displacements of domestic expenditure priorities, all of which can temporarily depress output. Commercial bank credit, however, has a more complex picture. The recent turnaround in CMBC is favorable and meaningful, which implies that short-run infusions of commercial credit stimulate economic activity. However, the original lag of CMBC is negative and statistically significant, showing a reversal that might take place in the following period by means of repayment pressures or misallocation of credit. In the case of Bank of Industry credit, there is statistically significant and negative lagged change D(BOIC(-1)), showing contractionary effects in the short term, which might come as a consequence of long gestation periods that industrial projects characteristically take. Combined, these short-run results highlight transitional frictions and timing concerns in transforming credit expansion into short-run economic growth.

Long run captures the model portraying a very different picture, with the effects of sustained credit flows beginning to gain traction. Microfinance bank credit is an important and positive driver of economic growth, with a coefficient of 0.2269 and p-value of 0.0138. This indicates that the microfinance credit, in the long term, contributes positively to GDP, perhaps by enabling entrepreneurship, increasing household welfare, and facilitating investment on a small scale in production. Similarly, World Bank-related credit has very highly significant and positive long-term impact on GDP, as indicated by its 0.2522 coefficient and 0.0001 p-value. This would mean that although WRBC is economically costly in the short run, long-run development gains of WRBC are enormous and positive. These long-run outcomes are consistent with the premise that timely

foreign development assistance and microcredit policies at the grassroots level can be effective instruments of structural transformation and long-term growth.

The long-run coefficient for Agricultural Development Bank Credit (ADBC) is negative and statistically significant. The negative coefficient of -0.000061 means that greater long-term credit by this institution is associated with a slight fall in GDP. This is contrary to expectations and may be attributed to institutional inefficiencies, targeting weaknesses, or concentration of credit in unproductive agricultural sectors. Otherwise, Bank of Industry credit (BOIC), Bank of Agriculture credit (BOAC), and commercial bank credit (CMBC) have positive but statistically insignificant long-run coefficients. This suggests that while these credit sources may be relevant in specific sectors or under specific conditions, their combined long-term effects on economic production are muted or ambiguous over the study duration.

The general robustness and durability of the ARDL model are further confirmed by the performance of the error correction term, CointEq(-1). The coefficient on the term is -1.107 and is statistically significant at the 1% level. It confirms the presence of a long-run stable relationship between the GDP and various credit variables. The coefficient size reveals that more than 100% of any short-run deviation is corrected in one year, reflecting a strong but over-adjusting system. This adjustment speed captures that the Nigerian economy is fast to resume its long-run path of equilibrium upon undergoing system shocks, a quality which is desirable in dynamic modelling.

To the significance of the error correction process, the R-squared value of 0.9704 captures that approximately 97.04% of the change in GDP is explained by the combination of credit variables and their lags in the model. The high explanatory power of the model shows that the model is not just well-specified but also efficient in identifying the key macroeconomic relationships involved. After controlling for sample size and number of regressors, the adjusted R-squared is still strong at 0.9540, reinforcing the reliability of the model and reducing the overfitting risk.

Post Estimation Test

Heteroskedasticity Test

Table 4.5: Heteroskedasticity Result

F-Stat.	**F-Prob.**
1.254	0.36

The test for heteroskedasticity produced an F-statistic of 1.254 and a corresponding probability (p-value) of 0.36. Since the p-value is greater than the conventional threshold of 0.05, we are not able to reject the null hypothesis of homoskedasticity. This result indicates that there is no statistical evidence of heteroskedasticity in the residuals of the ARDL model.

Serial Correlation Test

Table 4.6: Serial Correlation Result

F-Stat.	**F-Prob.**
1.258	0.33

The test for serial correlation produced an F-statistic of 1.258 and a corresponding probability (p-value) of 0.33. Since the p-value is greater than the standard significance level of 0.05, we fail to reject the null hypothesis of no serial correlation in the residuals of the ARDL model.

Cusum Test

Figure 4.1: Cusum Test Result

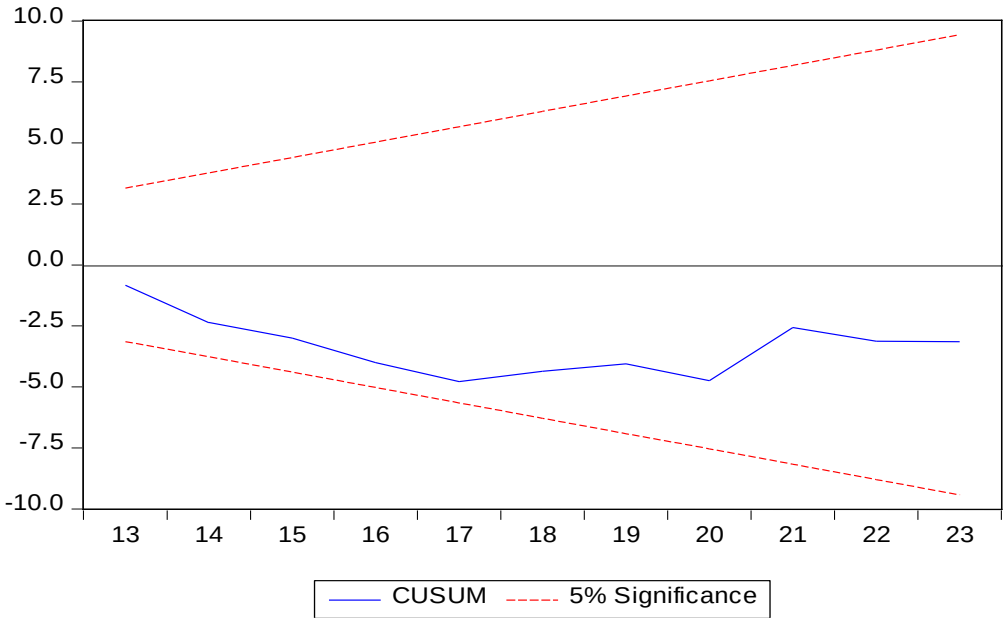
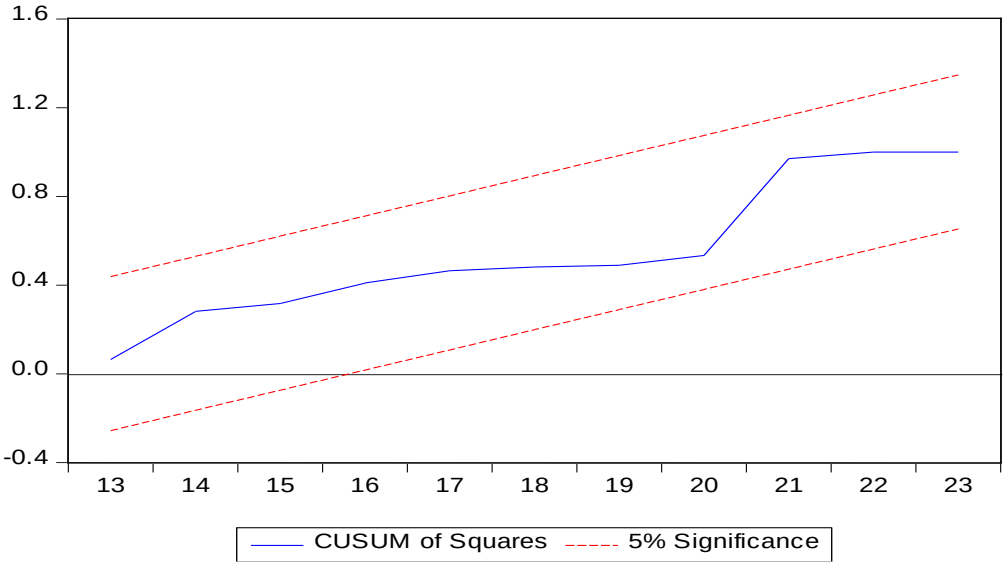


Figure 4.2: Cusum-Square Test Result



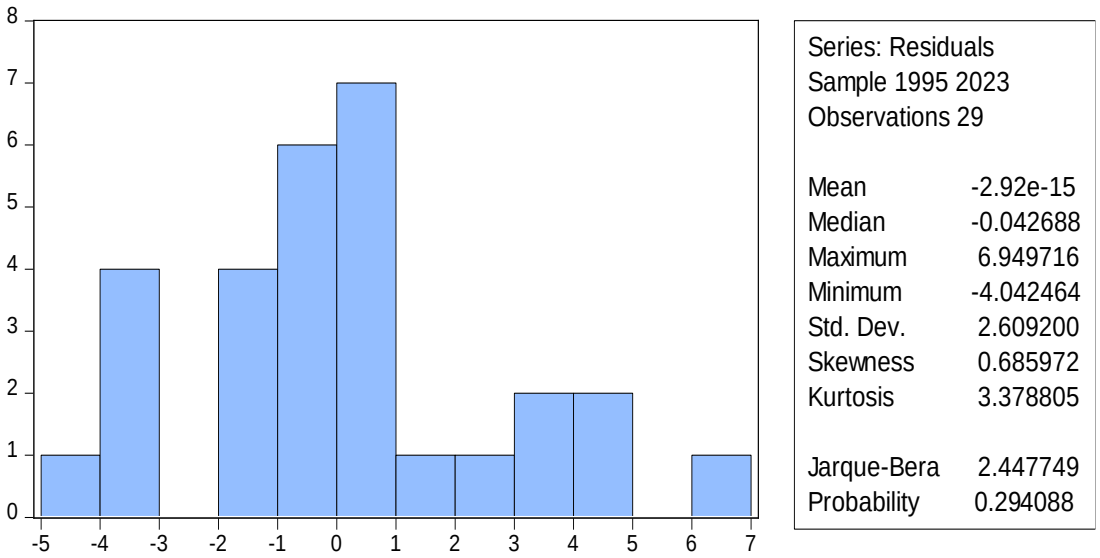
Author's computation using E-Views 10

The graphical results from the CUSUM and CUSUM of squares tests reveal that the cumulative sum of the recursive residuals and the squared residuals remain within the 5% significance boundaries throughout the entire sample period. This outcome indicates the absence of structural breaks or significant instability in the relationship between the dependent variable (GDP) and the explanatory variables (bank financing indicators, including commercial bank credit, microfinance credit, development bank credit, and others).

Consequently, we do not reject the null hypothesis of parameter constancy. This means that the coefficients of the ARDL model have remained stable over time, and the model's structure has not been affected by shocks, policy shifts, or regime changes during the study period. The implication is that the estimated short-run and long-run relationships between bank financing and economic growth in Nigeria are reliable, consistent, and robust. The structural stability evidenced by these tests reinforces the validity of the empirical findings and supports the use of the ARDL framework in analyzing the dynamic interactions within the Nigerian financial and economic environment.

Normality Test

Figure 4.3: Normality Test Result



Author's computation using E-Views 10

The normality test, assessed using the Jarque-Bera statistic, produced a value of 2.45 with a corresponding p-value of 0.294. Since the p-value is greater than the conventional significance level of 0.05, we fail to reject the null hypothesis that the residuals of the ARDL model are normally distributed.

This result indicates that the error terms are symmetrically distributed and do not exhibit significant skewness or excess kurtosis. In practical terms, the normality of residuals validates the assumption required for reliable statistical inference in regression analysis.

DISCUSSION OF RESULTS

The unit root tests, which confirmed the mixed order of integration among the variables, provided a foundational justification for the use of the Autoregressive Distributed Lag (ARDL) model in analyzing the relationship between bank financing and economic growth in Nigeria. Specifically, the growth rate of GDP was found to be integrated of order one [I(1)], meaning it became stationary only after first differencing, which reflects the trend-following behavior common in macroeconomic indicators. In contrast, the financial sector variables—including microfinance bank credit, commercial and merchant bank credit, development bank credit, and credits from the Bank of Industry, Bank of Agriculture, and African Development Bank were largely stationary at level [I(0)]. This configuration validated the ARDL model's suitability for the study, as it accommodates regressors with different levels of integration without requiring them all to be of the same order, thereby avoiding the risk of spurious regression.

Subsequently, the ARDL bounds test confirmed the existence of a statistically significant long-run cointegration among the variables. The computed F-statistic of 19.82 far exceeded both the lower and upper critical bounds at the 5% significance level, strongly rejecting the null hypothesis of no cointegration. This outcome affirms that despite differences in stationarity, the selected financial variables co-move with GDP in the long run, maintaining a stable and meaningful economic relationship. This finding is crucial, as it demonstrates that fluctuations in bank financing are not merely short-term disturbances but are systematically linked to Nigeria's growth trajectory over time. It aligns with the empirical conclusions of Ibrahim (2023) and Adegbite (2023), who found long-run associations between sectoral credit allocations and economic performance, particularly in the real sectors of the economy.

The short-run estimates of the ARDL model revealed nuanced dynamics in the influence of different categories of bank credit on GDP. Notably, microfinance bank credit (MFBC) and World Bank-related credit

(WRBC) had consistently negative and statistically significant coefficients across their first and second lags. This suggests that short-run increases in credit through these channels may temporarily depress economic activity, possibly due to credit misallocation, repayment pressures, or gestational delays in realizing productive returns. These findings reflect similar concerns raised by Bello (2023) and Oluwaseun (2022), who argued that while microfinance and external development credits offer critical support to small enterprises and low-income earners, they often suffer from short-term inefficiencies, such as delayed implementation and inadequate credit supervision.

Commercial bank credit (CMBC) demonstrated a mixed effect in the short run. The current change in commercial bank credit was positive and significant, indicating its immediate stimulative impact on economic growth. However, its first lag turned negative and significant, suggesting that the initial boost might be reversed in the following period due to factors like credit repayments or interest rate burdens. This oscillating pattern aligns with the observations by Adebayo (2023) and Onigah (2024), who noted that while commercial bank financing contributes to growth, its short-term effects can be dampened by structural frictions, lending constraints, or misaligned interest rates. Additionally, bank credit from the Bank of Industry, while influential in theory, exerted a statistically significant negative short-run effect only through its lagged values, supporting the notion that industrial financing often requires longer gestation to yield growth dividends.

The long-run coefficients present a more stable and promising relationship. Both microfinance bank credit and World Bank-related credit were statistically significant and positively associated with GDP growth. This indicates that despite their short-term constraints, these credit channels are vital in sustaining economic expansion over time. Such outcomes resonate with the findings of Ibrahim and Musa (2022) and Yusuf (2020), who emphasized the long-run effectiveness of structured development finance and micro-lending in improving productivity, reducing poverty, and broadening economic participation. Conversely, credit from the Agricultural Development Bank (ADBC) showed a statistically significant but negative long-run impact on GDP, suggesting inefficiencies in credit disbursement or targeting. This outcome echoes earlier concerns raised by Okonkwo (2022) and Eze and Okoye (2023), who identified weaknesses in agricultural credit schemes, particularly in terms of accessibility, loan terms, and sector-specific risks.

Other credit sources such as those from commercial banks, Bank of Industry, and Bank of Agriculture, had positive but statistically insignificant long-run coefficients. This suggests that their contribution to GDP is not consistent or strong enough to pass statistical thresholds, possibly due to sectoral biases, underutilization of credit, or uneven policy frameworks. Studies by Chukwu (2021) and Okeke (2021) support this interpretation, having documented that excessive government borrowing and weak private sector credit channels often distort the optimal allocation of financial resources in Nigeria.

The estimated error correction term (CointEq(-1)) was negative and highly significant, with a coefficient of -1.107. This signifies the presence of a strong long-run adjustment mechanism within the model. The magnitude suggests that deviations from equilibrium are corrected at a rapid pace over 100% within one period, indicating an over-adjustment dynamic that brings the system back to its long-run path swiftly after experiencing shocks. This finding confirms the stability of the model and the reliability of the established relationships between the financial variables and economic growth. It also reinforces the conclusions of Nwachukwu and Ugochukwu (2022), who observed that structural reforms and regulatory frameworks improve the responsiveness of the financial system to macroeconomic fluctuations.

Finally, the model's overall performance is exceptionally strong, as demonstrated by the R-squared value of 0.9704 and the adjusted R-squared of 0.9540. These indicate that over 97% of the variation in economic growth is explained by the selected financial variables, reinforcing the robustness and credibility of the ARDL estimates. The findings are consistent with the broader empirical literature, such as studies by Ikenna (2022), Adeyemi and Olufunke (2023), and Adamu (2021), which confirm that the effectiveness of bank financing in promoting economic growth depends not only on access to credit but also on efficient allocation, regulatory support, and long-term institutional stability. Taken together, these results provide a comprehensive understanding of how bank financing operates as both a short-term stimulus and a long-term driver of economic performance in Nigeria.

RECOMMENDATIONS

Based on the findings, the study recommends the following:

i. Given the mixed short-run effects of commercial bank credit where current credit expansion stimulates growth but lagged effects become negative, there is a need for improved credit allocation and post-disbursement monitoring by commercial banks. Regulatory authorities such as the Central Bank of Nigeria (CBN) should encourage banks to channel credit more consistently toward productive, growth enhancing sectors, particularly manufacturing, agriculture value chains, and small and medium scale enterprises (SMEs). In addition, interest rate structures and repayment schedules should be better aligned with the cash-flow realities of productive investments to minimize the reversal effects observed in the short run. This would help sustain the positive growth impact of commercial bank credit beyond the immediate period.

ii. Policymakers should undertake structural reforms of agricultural and development finance institutions to improve loan accessibility, reduce bureaucratic delays, and enhance risk-sharing mechanisms such as credit guarantees and insurance schemes. Strengthening sector-specific supervision and providing technical support to beneficiaries would ensure that credit translates into productive investment and output growth, rather than persistent inefficiencies that undermine economic performance.

iii. Monetary and financial sector policies should prioritize long-term stability over short-term credit expansion. This can be achieved by deepening financial intermediation, improving institutional quality, and ensuring policy consistency in credit-related interventions. Strengthening regulatory frameworks, reducing excessive government crowding-out of private sector credit, and supporting long-term financing instruments will enhance the effectiveness of bank credit as a sustainable driver of economic growth in Nigeria.

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