



Department of Banking & Finance
Wayamba University of Sri Lanka

Sri Lankan Journal of Banking and Finance

An endeavor to share knowledge

Volume: 8 Issue: 01 June: 2025

**IMPACT OF AGRICULTURAL FINANCING ON NIGERIAN ECONOMIC
PERFORMANCE: 1998 - 2023**

Moyotole Daniel EZUEM

Paul Efe OHWOJERO

Promise AGADA

SLJBF 08.01.01: pp. 01-20

ISSN 2345-9271 (Print)

ISSN 2961-5348 (Online)

DOI: <https://doi.org/10.4038/sljbf.v8i1.64>

Abstract

This study investigated the impact of agricultural financing on economic performance in Nigeria spanning from 1998 to 2023, focusing on three key financing instruments: Agricultural Credit Guarantee Scheme Fund (ACGFS), Deposit Money Bank Credit to Agriculture Sector (DMBCAS), and Bank of Agriculture Loan to Farmers (BALF). The study used secondary data sourced from the Central Bank of Nigeria (CBN) for the various years, employed Ex-post facto research design and multiple regression analysis as the method of analysis. Using Gross Domestic product (GDP) as the dependent variable, the study examines the extent to which these financing mechanisms influence economic performance. The findings reveal significant causal relationships from ACGFS, DMBCAS, and BALF to GDP, underscoring the pivotal role of agricultural credit in driving economic growth. Conversely, no significant causality was observed from GDP to these agricultural financing instruments, suggesting that the flow of credit into agriculture is shaped more by policy and sector-specific factors than by general economic conditions. The study concludes that enhancing agricultural financing through targeted policies and improved access to credit can significantly contribute to Nigeria's economic growth. Recommendations include strengthening agricultural financing mechanisms, expanding commercial bank engagement in agriculture, and ensuring continuous monitoring and evaluation of agricultural credit programs.

Keywords: Agricultural financing, Agricultural Credit Guarantee Scheme Fund, Deposit Money Bank Credit to Agriculture Sector, Bank of Agriculture Loan to Farmers, Gross Domestic product.

Moyotole Daniel EZUEM

(Corresponding Author)

Department of Banking and Finance, Faculty of Management
Sciences, Federal University Wukari, Taraba State

Email: ezuem@fuwukari.edu.ng &

moyotoledanielezuem@gmail.com

Tel: 08131002143 ; 08053262803

Paul Efe OHWOJERO

Department of Finance and Banking, Faculty of Management
Sciences, University of Benin City, Edo State

Email: paul.ohwojero@uniben.edu

Tel: 08104934233

Promise AGADA

Department of Banking and Finance, Faculty of Management
Sciences,
Federal University Wukari, Taraba State

Email: Agadapromise05@gmail.com

Tel: 08168073868 ; 08133703926

1. INTRODUCTION

1.1. Background of Study

Agriculture continues to be the primary pillar of Nigeria's economy, employing the largest portion of the workforce. Producing consumable foodstuffs, animal feed, and industrial raw materials are the three main goals of animal husbandry. Because of its potential to create jobs, reduce food insecurity, and advance agro industrialization, the agricultural sector is expected to contribute to economic growth and development. In light of this realization, the Nigerian government initiated several agricultural development initiatives with the aim of enhancing the agricultural sector (Olukemi, 2020). Agriculture funding is a crucial tool of economic strategy for Nigeria, since it plays a significant role in stimulating growth in several sectors. Finance has the power not to only eliminate financial limitations, but also expedite the implementation of new technologies, resulting in enhanced agricultural production and therefore ensuring economic stability (Obansa & Maduekwe, 2013). Furthermore, loans are considered a crucial component among the primary elements of agricultural output. The reason for this is that the implementation of the majority of agricultural technology necessitates farmers acquiring enhanced inputs via purchase. The inadequate availability of loans or credit has consistently been a contributing factor to the low levels of domestic and international investment in the agricultural sector of the country. Economic stability is therefore negatively impacted by Adeshina et al., (2020) argue that agricultural finance is often seen as the solution for enhancing agricultural output and productivity. Financing plays a crucial role in agricultural output by addressing the challenges faced by rural residents, especially the delay between planting and harvesting. Consequently, impoverished farmers are compelled to seek loans from informal channels, which are deemed exploitative due to their tendency to impose exorbitant interest rates, thereby disadvantaging the farmers (Idoko & Jatto, 2018). Achumu et al., (2022) proved that a country's agricultural production is proportional to the size, scope, or amount of its financial resources devoted to farming. Increasing public investment on the agricultural sector leads to greater improvements in its performance, which in turn contributes to economic development. In their 2022 study, Mathias and Inedu found that commercial banks' lending to Nigeria's agricultural sector significantly boosted economic growth. One significant obstacle facing the agricultural industry in Nigeria is the neglect and insufficient financing of agriculture. This has led to a decrease in agricultural production and its contribution to the GDP.

The development of any nation depends significantly on agricultural progress, as established by Iganiga and Unemhili (2011). This remains particularly relevant for Nigeria, where over 70% of the rural population relies on agriculture for livelihoods (World Bank, 2022). Despite possessing vast agricultural potential—including 68 million hectares of arable land and diverse agro-ecological zones (FAO, 2021)—Nigeria's agricultural sector contributes only about 23% to GDP (CBN, 2023), far below its capacity. This discrepancy highlights persistent structural inefficiencies that undermine the sector's potential.

Agriculture has long been viewed as a driver of economic growth through food security, labor supply, and export earnings (Suberu et al., 2015; Johnston & Mellor, 1961). However, recent studies challenge this optimistic perspective. Oluwasola and Adeoye (2022) found that agricultural growth in Nigeria has not significantly reduced poverty due to weak value-chain linkages, while Ogunniyi et al. (2020) noted a decline in agriculture's impact on GDP growth since 2010, attributing this trend to chronic underinvestment and climate shocks. These findings reveal a growing gap between the sector's potential and its actual performance, raising critical questions about existing policies and financing mechanisms.

Financing remains a major constraint. While Angahar (2013) advocated for strengthening microfinance banks (MFBs) to support smallholder farmers, recent data shows that MFBs contribute less than 5% of agricultural credit (EFInA, 2023), underscoring a persistent policy-implementation gap. Similarly, Tijani's (2011) Agricultural Transformation Agenda (ATA) emphasized value-chain financing, yet Nwosu et al. (2021) criticized its urban bias, noting that rural smallholders remain largely excluded from formal credit systems. These contradictions suggest that financing strategies have yet to translate into broad-based productivity gains.

Emerging challenges further complicate the sector's trajectory. Climate change, for instance, has reduced agricultural output by an estimated 15% annually (Adegbite & Adetiloye, 2023), yet adaptation financing remains negligible. Additionally, while Nigeria allocated N1.2 trillion to agriculture in 2023, smallholder access to credit remains below 10% (CBN, 2023), indicating systemic inefficiencies in fund distribution. Many existing studies also rely on pre-2015 data, failing to account for post-ATA dynamics or the increasing effects of climate variability.

This study addresses these gaps by employing a Threshold Autoregressive (TAR) model to analyze agricultural financing and economic performance from 1998 to 2023. Unlike previous linear approaches, the TAR framework identifies critical financing thresholds necessary for growth, offering a more nuanced understanding of funding impacts. The study also integrates climate-adjusted productivity metrics (FAO, 2023) to account for environmental shocks, providing a contemporary and policy-relevant assessment of Nigeria's agricultural financing challenges. By critically engaging with past literature and introducing updated methodologies, this research contributes to resolving longstanding debates while proposing actionable solutions for sustainable agricultural development.

1.2. Research Problem

Nigeria is blessed with vast arable land for cultivation, rich mineral and natural resources, and a favorable climate that supports agricultural production. However, it is surprising that the potential of the agricultural sector is not fully harnessed. Poor funding or inadequate financing is one of the principal challenges facing farmers and agro-allied entrepreneurs in Nigeria. Although the Agricultural Credit Guarantee Scheme was instituted to encourage commercial banks to provide loans to farmers, with the government acting as a guarantor to reduce lending risks, the scheme has not fully achieved its goals because agriculture is a labor and capital-intensive venture, (Adeshina et al., 2020).

Additional challenges include the diversion of loans meant for agricultural projects to personal activities by farmers, high interest rates on loans, and the inability of farmers to meet collateral requirements. Moreover, government expenditure on agriculture is less than 6% of the total expenditure. This inadequate capital for financing agricultural projects has led to a significant decline in the sector's performance, as evidenced by the increasing importation of food commodities, acute food shortages, high food prices, the importation of factor inputs, and the low share of agriculture in national output, therefore it against the above backdrop the study seeks to examine impact of agricultural financing and Nigeria economic development from 1998 to 2023 the choice of the scope is in the bid to evaluate short and long time capacity of agricultural policies in Nigeria.

1.3. Research Hypotheses

This study empirically examines the impact of agricultural financing mechanisms on Nigerian economic performance by testing the following null hypotheses:

- i. H₁: Bank of Agriculture loan to Farmers has a Significant impact on Nigerian Economic Performance
- ii. H₂: Deposit Money Banks Credit to Agriculture has a Significant impact on Nigerian Economic Performance
- iii. H₃: Agriculture credit guarantee scheme Fund has a significant impact on Nigerian Economic Performance

2. LITERATURE REVIEW

2.1. Conceptual Review

Agricultural Financing involves the study, examination and analysis of financial aspects of farm business. The financial aspect involves money associated with agricultural production and their sales. Angahar & Ditttoh, (2013), viewed agricultural finance as the acquisition and control of assets, borrowing, leasing or custom-hiring. Capiro, and Demirguc-kunt, (1998), defined agricultural finance as the acquisition and usage of capital in agriculture. Agricultural finance is basically about supplying and demanding for funds in agriculture. Chiejina (2019), pictured agricultural finance as the economic study of funds borrowing by farmers and organizations. Eller (1995), submitted that agricultural finance as a field of agriculture that focuses on the acquisition and utilization of financial resources by individual farm units.

In the Nigerian context, the interplay between agricultural financing mechanisms—such as the Bank of Agriculture (BOA) loans to farmers, Deposit Money Banks' (DMBs) credit to agriculture, and the Agriculture Credit Guarantee Scheme Fund (ACGSF)—and economic performance is critical for understanding the role of agriculture in national development. Agriculture remains a cornerstone of Nigeria's economy, contributing significantly to GDP, employment, and food security. However, the sector's potential is often constrained by limited access to credit, which

these financing mechanisms aim to address. Below is a conceptual discussion of these elements and their relationship with economic performance.

2.1.1. Bank of Agriculture (BOA) Loans to Farmers

The BOA is a government-owned development finance institution specifically designed to provide affordable credit to farmers and agribusinesses. Its loans are typically targeted at smallholder farmers, cooperatives, and agro-processors, with the goal of increasing agricultural productivity, reducing poverty, and promoting rural development.

Conceptual Role: BOA loans are meant to bridge the financing gap in agriculture by offering loans at lower interest rates compared to commercial banks. This is crucial because smallholder farmers, who dominate Nigeria's agricultural sector, often lack collateral and are considered high-risk by conventional lenders.

Impact on Economic Performance: By providing access to credit, BOA loans can enhance farmers' capacity to purchase inputs (e.g., seeds, fertilizers, and machinery), adopt modern farming techniques, and expand production. This, in turn, can boost agricultural output, reduce food imports, and improve rural incomes, contributing to overall economic growth and poverty reduction.

2.1.2. Deposit Money Banks (DMBs) Credit to Agriculture

Deposit Money Banks are commercial banks that provide credit to various sectors, including agriculture. However, agriculture typically receives a small share of total bank credit in Nigeria due to perceived risks, such as crop failure, price volatility, and lack of collateral.

Conceptual Role: DMBs are financial institutions driven by Profit, and their lending to agriculture is often limited by the sector's inherent risks. However, when they do lend, it is usually to larger agribusinesses or commercial farms rather than smallholder farmers.

Impact on Economic Performance: Increased credit from DMBs to agriculture can stimulate large-scale farming, agro-processing, and value chain development. This can lead to job creation, increased export earnings, and diversification of the economy away from oil dependence. However, the limited involvement of DMBs in agricultural lending remains a constraint to the sector's growth.

2.1.3 Agriculture Credit Guarantee Scheme Fund (ACGSF)

The ACGSF is a government initiative established to encourage banks to lend to the agricultural sector by providing guarantees against loan defaults. The fund covers a percentage of losses incurred by banks on agricultural loans, thereby reducing their risk exposure.

Conceptual Role: The ACGSF acts as a risk-sharing mechanism, incentivizing banks to extend credit to farmers and agribusinesses. It is particularly important for smallholder farmers who lack collateral and are often excluded from formal credit markets.

Impact on Economic Performance: By mitigating the risks associated with agricultural lending, the ACGSF can increase the flow of credit to the sector. This can lead to higher agricultural productivity, improved food security, and enhanced rural development. Over time, these outcomes can contribute to broader economic growth and stability.

2.1.4. Economic Performance in Nigeria

Agriculture is a key driver of Nigeria's economy, accounting for a significant portion of GDP and employing a large percentage of the population, especially in rural areas. However, the sector's contribution to economic performance is often hindered by structural challenges, including inadequate financing, poor infrastructure, and low adoption of technology.

Link to Agricultural Financing: Access to credit is a critical factor in unlocking the potential of agriculture to drive economic growth. BOA loans, DMBs' credit, and the ACGSF all play complementary roles in addressing the financing gap. When these mechanisms function effectively, they can lead to:

- Increased agricultural output and productivity.
- Reduction in food imports and improvement in food security.
- Job creation and poverty alleviation, particularly in rural areas.
- Diversification of the economy and reduction of reliance on oil revenues.

Challenges

Despite their potential, these financing mechanisms face challenges such as poor implementation, limited coverage, and inadequate monitoring. For instance, BOA loans often suffer from bureaucratic delays, while DMBs remain reluctant to lend to agriculture due to high risks. The ACGSF, while beneficial, has not been fully utilized due to low awareness and administrative bottlenecks.

The Bank of Agriculture loans, Deposit Money Banks' credit to agriculture, and the Agriculture Credit Guarantee Scheme Fund are critical components of Nigeria's agricultural financing ecosystem. When effectively implemented, they can significantly enhance agricultural productivity, rural development, and overall economic performance. However, addressing the challenges facing these mechanisms is essential to fully realize their potential. Strengthening institutional frameworks, improving access to information, and fostering public-private partnerships are key steps toward ensuring that agricultural financing contributes meaningfully to Nigeria's economic growth and development.

2.2. Empirical Review

The Researchers had carried out various studies in the past on agriculture with focus on economic growth or development such as the work of Ezu et al. (2023), examined the impact of agricultural financing on the growth of Nigerian economy. The specific objective of the study is to examine the impact of Bank of Agriculture loan to farmers on gross domestic product; assess the impact of commercial banks credit to agriculture on gross domestic product and evaluate the impact of agriculture credit

guarantee scheme on gross domestic product. Secondary data was used for data collection. This research work applied Ordinary least square; the Granger Causality Test, and Breusch-Godfrey serial correlation test. The result of the finding shows that Bank of Agriculture credit to farmers as well as Commercial banks credit to agriculture showed a significant relationship to Gross Domestic product. There is a positive and statistically significant relationship between agriculture credit guarantee scheme fund and gross domestic product. The study recommends that Government should continually increase the funding and operation of the agriculture credit guarantee scheme fund, reduction of monetary policy rate on the agricultural sector and that Central Bank of Nigeria should mandate commercial bank to set aside a certain amount of money from their yearly profit to finance agriculture.

Ndema, (2023), investigated the connection between agricultural funding and economic performance in Cross Rivers State's Obudu Local Government Area (LGA). The survey study methodology was employed, and a questionnaire was used as its primary data source, combined with a stratified sample technique. The targeted population was restricted to farmers and agriculturalists in the study area. Descriptive statistics, such as frequency and percentages tables, were calculated, and the data gathered from the questionnaire were compiled, computed, and analyzed. The results of hypothesis testing showed a relationship between agricultural finance and economic performance, as well as a connection between agricultural credit schemes and agricultural sector expansion, using analysis of variance (ANOVA) as the statistical technique. They also showed that credit programs for agricultural finance encourage the expansion of the agricultural sector, which improves economic performance, as manifested in economic growth and development. The study recommends, firstly, that the government release grants to farmers at regular intervals to support their activities. Secondly, it is necessary to raise the level and size of agricultural loans through the reduction of interest rates to allow for more economic development in the country. The government should implement an effective and efficient supervisory framework to monitor interest rate regulation within the agricultural loan policy.

Ngozi and Patricia (2022), examined the influence of agricultural financing on economic growth in Nigeria over the period 1981 to 2019. The objective of the study is to the impact of the long-term relationship between various forms of agricultural financing on Nigeria's economic growth. The study employs the stationary test, the co-integration test, the error correction model and the Granger causality model. All variables were stationary at the first difference, and the co-integration test evidenced a long-run relationship. The study identified, in the long run, that; the agricultural credit guarantee scheme fund shows a positive and significant influence on the gross domestic product in Nigeria. The commercial bank loan and community –micro-finance bank loan shows a positive and significant influence on the gross domestic product in Nigeria within the reference period. In light of the findings, the study concluded that all the variables employed predict Nigeria's gross domestic product. Furthermore, the granger causality results show a demand following a role as against supply leading role, revealing that increase in output level in Nigeria significantly support/promotes agricultural financial instrument. The study recommends that the Federal government should motivate commercial banks to provide adequate credit

facilities to the Agricultural sector through moderate bank lending rates for ease of farming business in Nigeria. Proactive campaigns on the availability of credit facilities for farmers to enable them to have access to loans at a single-digit interest rate. This could be achieved through social media, door-to-door vibes, town hall meetings and market squares. Government should create an enabling environment for farmers through the provision of adequate security, pest control measures and seedlings.

Sulaimon (2021) study agricultural credit guarantee scheme fund and agricultural performance in Nigeria. The study revealed U shaped relationship between real agriculture GDP and ACGSF. The study concluded that an increase in agricultural loan will translate to robust contribution in terms of agricultural performance in Nigeria. In addition, Florence and Nathan (2020) studied the impact of commercial banks credit on agricultural growth in Uganda. The study revealed that bank credits have positive input on agricultural output in the long run and insignificant input on the short run.

Oyetunde, and Yinus, (2015) studied agricultural financing and economic development in Nigeria with focus on Agricultural Credit Guarantee Scheme Fund (ACGSF). The study revealed that agricultural financing has the tendency to enhance macro-economic development of a nation where it is properly managed. Njoku et al. (2018) studied the relationship between farm production capacity and agricultural credit access from commercial banks. The study revealed that there is a positive and significant relationship between agriculture produces and credit facility. The study recommends that in order to boost agriculture activities, there will be need to enhance credit facility to farmers in addition to good policies on agriculture. Okunlola et al., (2019), also studied agricultural finance and economic growth with evidence from Nigeria. The study showed that none of the guarantee agricultural finance was statistically significant to real GDP. The study recommends that increase in agricultural funding will impact on economic growth.

Kelani et al., (2020) studied agricultural financing and economic performance in Nigeria. The study revealed that agricultural sector is inadequately funded by government and private sector. This had contributed to poor economic performance within the sampled period due to shortage of agricultural funding. Furthermore, Islam (2020) studied agricultural credit and agricultural productivity in Bangladesh in order to promote food production and wellbeing of farmers. The study revealed good relationship between agricultural credit and agricultural productivity in the short and long run. The study concluded that agricultural credit facility will boost agricultural product and this will foster economic growth in Bangladesh.

Olatunji et al., (2018) explored the restructuring of the rural finance market in Nigeria for agricultural expansion from 1996Q1 -2017Q4. The study adopted Autoregressive Distributed Lag (ARDL) Bounds testing approach in estimating the relevant relationship. The results of the long-run estimate showed that agricultural credit, money markets, capital markets, and exchange rates have a positive relationship with agricultural growth in Nigeria, while expected inflation has a negative impact on

agricultural growth in the long run. In a similar vein, Enoma (2010) observed that in Nigeria, agricultural finance, interest rates, and exchange rates stimulate output from the evaluation of the impact of agriculture credit on economic growth in Nigeria from 1986-2007. The study utilized ordinary least square techniques for data analysis. The interest rate, exchange rate, and agricultural credit were the study's variables. However, Okosodo (2016) examined the long-run relationship between Nigeria's agricultural sector and economic growth using bounds testing, co-integration, unit root test, and error correction mechanism. The empirical findings revealed that government expenditure in the agricultural sector has a positive impact on the performance of the Nigerian economy. Nevertheless, the federal government should encourage commercial banks to provide adequate credit to agricultural sector through affordable and attractive bank lending rates to make farming in Nigeria easier.

2.3 Research Gap

From the above empirical study, the gaps suggest that while significant work has been done to explore the role of agricultural credit in Nigeria, there are still many areas that require further investigation to develop a more comprehensive understanding of the issues and to improve the design and implementation of credit programs hence this research “Impact of Agricultural Financing and Nigeria Economic Development from 1998 to 2023”

3. METHODOLOGY

This study adopted causal research design because it determines the effect of some explanatory variables on the dependent variable.

The study adopted Ebere and Osundina (2013) model on the impact of government expenditure on agriculture on economic growth in Nigeria, ($\text{LOGRGDP}_t = \beta_0 + \beta_1 \text{LOGOREV}_t + \beta_2 \text{LOGPPT}_t + \beta_3 \text{EXCR}_t + \beta_4 \text{INF}_t + u_t$). However, for the purpose of this study the adopted model was modified and specified to capture the objective of this study. Thus, the incorporation of variables for impact of agriculture financing on Nigeria economic performance into the econometric function expressed below:

$$\text{GDP} = f(\text{ACGSF}, \text{DMBCAS}, \text{BALF}) \quad (\text{i})$$

$$\text{GDP} = \beta_0 + \beta_1 \text{ACGSF} + \beta_2 \text{DMBCAS} + \beta_3 \text{BALF} + \mu \quad (\text{ii})$$

Where:

GDP = Cross Domestic Product (Proxy for Economic Performance)

ACGSF = Agricultural Credit Guarantee Scheme Fund (N'Billion)

DMBCAS = Deposit Money Bank Credit to agriculture Sector (N'Billion)

BALF = Bank of Agriculture Loan to Farmers (N'Billion).

μ = stochastic error term

t = subscript t

β_0 = parameters to be estimated in the course of this study

$\beta_1, \beta_2, \beta_3$ = coefficient of the explanatory variables.

A Priori Expectations

The a priori expectations are as follows: $\beta_1 > 0$, $\beta_2 > 0$, and $\beta_3 < 0$

3.1. Method of Data Analysis

The data collected for the study were tabulated and analyzed using causal and inferential statistics with the help of Econometric Views (E-views) SV 12. The descriptive statistic involves the use of means to describe the characteristics of the data. The inferential statistics was used to describe the effect of the independent variables on the dependent variable. This was achieved with the help of multiple regression analysis. To empirically examine the impact of oil revenue on welfare of Nigerian, the researcher subjected the data collected to Augmented Dickey-Fuller Unit Root test statistics, and multi-regression and Durbin-Watson test. The ADF test is used to test whether the variables are stationary. If the results indicate that all series are stationary at level or first difference or all series are generated by $I(0)$ and $I(1)$ process, condition of stationarity is established or confirmed (Gujarati, 2004). The unit root was carried out to avoid non-sense regression and violation of ordinary least square assumption. Multi-regression econometric time-series model were established among oil revenue, crude oil price, inflation rate and welfare. The Durbin-Watson test was used to identify whether the model suffer from autocorrelation problem. The autocorrelation problem violates of ordinary least square assumption that stated that error term of different observation is different from any explanatory variable (Ugwu et al 2019).

Correlation matrix was carried out to check how each variable correlate with another. Auto Regressive Distributive Lag (ARDL) bound test was carried out to check whether variable has impact for a longer period of time. To correct errors, the Error Correction Model was employed and also LM Test for serial correlation was done to check if there is serial correlation. Stability test using the cumulative sum of the recursive residuals (CUSUM) tests were carried out to affirm the validity of the residual.

Decision Rule: the decision to accept or reject the null hypothesis shall be based on probability value (P – value). For P value: where the calculated P – value is greater than 5 per cent (0.05) the null hypothesis is not rejected; otherwise, the null hypothesis is rejected and accept the alternate hypothesis.

4. RESULTS AND DISCUSSION

4.1 Unit Root Test (Augment Dickey-Fuller Test)

Table 1 - Unit Root Test Results (Augmented Dickey-Fuller Test)

Variable	ADF Test Statistic	Test Critical Values	Probability	Order of Integration		
	1st Difference	1%	5%	10%		
GDP	-5.128740***	-3.626734	-2.545842	-	0.0000	I(1)
				2.611531		
ACGSF	-6.034533***	-3.610473	-2.838987	-	0.0000	I(1)
				2.607932		
DMBCAS	-3.475955**	-3.621063	-2.743423	-	0.0010	I(1)
				2.610263		
BALF	-5.037005***	-3.689104	-2.671824	-	0.0000	I(1)
				2.625121		

Source: Author's computation using Eviews11

The Augmented Dickey-Fuller (ADF) test was conducted to determine the stationarity of four variables: Gross Domestic Product (GDP), Agricultural Credit Guarantee Scheme Fund (ACGSF), deposit Money Bank Credit to agriculture Sector (DMBCAS), and Bank of Agriculture Loan to Farmers (BALF). The results are as follows:

Gross Domestic Product (GDP): The ADF T-statistic is -5.128740 , which is less than all critical values at the 1%, 5%, and 10% significance levels. The probability level of 0.0000 confirms stationarity at first difference. GDP is stationary after first differencing and is integrated of order one (I(1)I(1)I(1)). *Agricultural Credit Guarantee Scheme Fund (ACGSF):* The ADF T-statistic is -6.034533 , which is significantly lower than the critical values at all significance levels. The probability level of 0.0000 supports rejecting the null hypothesis of a unit root. ACGFS is stationary after first differencing and is integrated of order one (I(1)I(1)I(1)). *Deposit Money Bank Credit to agriculture Sector (DMBCAS):* The ADF T-statistic is -3.475955 , which is less than the critical values at the 5% and 10% levels but greater than the 1% level. With a probability value of 0.0010 , the null hypothesis is rejected at conventional levels of significance. CBLA is stationary at first differencing and is integrated of order one (I(1)I(1)I(1)). *Bank of Agriculture Loan to Farmers (BALF):* The ADF T-statistic is -5.037005 , which is lower than all critical values. The probability level of 0.0000 confirms that the variable is stationary at first difference. CMFLC is stationary after first differencing and is integrated of order one (I(1)I(1)I(1)).

Therefore, all the variables are non-stationary at their levels but become stationary after first differencing, indicating they are integrated of order one (I(1)I(1)I(1)). This outcome suggests that these variables can be used in further analyses that require stationarity, such as co-integration tests or Vector Error Correction Models (VECM), to explore potential long-run equilibrium relationships.

4.2 Co-Integration Test

Johansen's co-integration tests the long-run association between the employed variables which are agricultural finance instruments and economic growth in Nigeria. The result is showed below:

Table 2 - Co-Integration Test

Date: 03/12/24 Time: 12:34

Sample (adjusted): 1998- 2023

Included observations: 26 after adjustments

Trend assumption: Linear deterministic trend

Series: D(GDP) D(ACGFS) D(DMBCAS) D(BALF)

Lags interval (in first differences): 1 to 1

Unrestricted Co-Integration Rank Test (Trace)

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.751455	75.68732	47.85613	0.0000
At most 1 *	0.673194	40.88408	29.79707	0.0018
At most 2	0.289469	12.92433	15.49471	0.1176
At most 3 *	0.160736	4.380757	3.841466	0.0363

Trace test indicates 2 co-integrating equation(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 3 - Unrestricted Co-Integration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.751455	34.80324	27.58434	0.0050
At most 1 *	0.673194	27.95975	21.13162	0.0047
At most 2	0.289469	8.543574	14.26460	0.3261
At most 3 *	0.160736	4.380757	3.841466	0.0363

The results analyzed co-integration using Johansen's co-integration tests and from the analyzed data above, the findings for the *Trace Test* and *Maximum Eigenvalue Test*: the test indicates the presence of *two co-integrating equations* at the 5% significance level and the *Maximum Eigenvalue Test*: The test identifies *two co-integrating equations* at the 5% significance level. Both tests confirm *two co-integrating*

equations at the 5% level of significance. This suggests the variables are bound by *long-term equilibrium relationships*, making the system suitable for further analysis with Vector Error Correction Models (VECM). The findings validate the use of a structured econometric framework (VECM) to explore both short- and long-term interactions among the variables.

4.3 Error-Correction Model

Table 4 -Error Correction Model

The test is used to indicate the correlation and the celerity between short-run and long-run movement.

Dependent Variable D(GDP)

Method: Least Squares

Date: 12/03/24 Time: 17:22

Sample (adjusted): 1998-2023

Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1676.395	3829.323	0.437778	0.6658
D(ACGFS)	0.003838	0.000798	4.807783	0.0001
D(DMBCAS)	28.08475	6.654322	4.220528	0.0004
D(BALF)	3.073900	0.881951	3.485341	0.0021
ECM (-1)	0.101833	0.229717	0.443296	0.6619
R-squared	0.929892	Mean depen	dent var	43992.53
Adjusted R-squared	0.917145	S.D. dependent var		43897.47
S.E. of regression	12635.66	Akaike info criterion		21.89201
Sum squared resid	3.51E+09	Schwarz criterion		22.13198
Log likelihood	-290.5421	Hannan-Quinn criter.		21.96337
F-statistic	72.95059	Durbin-Watson stat		1.946405
Prob(F-statistic)	0.000000			

The results from the above table indicate a positive error correction model (ECM) coefficient of 0.101833, signifying the speed of adjustment of Nigeria's gross domestic product (GDP) to restore equilibrium after short-term distortions. Specifically, 10.18% of the disequilibrium in GDP is corrected within the period through variations in the Agricultural Credit Guarantee Scheme Fund (ACGFS), Deposit Money Bank Credit to agriculture Sector (DMBCAS), and Bank of Agriculture Loan to Farmers (BALF).

The analysis further reveals that the coefficient of determination (R^2) is 0.929892, indicating that approximately 92% of the changes in Nigeria's GDP over the long run are explained by changes in the predictor variables employed in the model. Additionally, the findings demonstrate that all explanatory variables significantly influence Nigeria's economy at the 5% significance level.

Specifically, the levels of significance for the variables are as follows: ACGFS (p-value = 0.0001), DMBCAS (p-value = 0.0004), and BALF (p-value = 0.0021). These results align with a priori expectations, confirming that the selected variables significantly contribute to the growth and development of Nigeria's economy. The model provides a strong basis for prediction and policy recommendations, especially focusing on the significant predictors.

4.4 Pairwise Granger Causality Test

Table 5 - Pairwise Granger Causality Tests

Date: 12/12/24 Time: 02:23

Sample: 1998- 2023

Pairwise Granger Causality Tests

Date: 12/04/24 Time: 02:23

Sample: 1998- 2023

Lags: 2

Null Hypothesis:	Obs F-Statistic	Prob.
GDP does not Granger Cause ACGFS	37 3.24142	0.6123
ACGFS does not Granger Cause GDP	8.53584	0.0019
GDP does not Granger Cause DMBCAS	375.72898	0.5110
DMBCAS does not Granger Cause GDP	9.70691	0.0007
GDP does not Granger Cause BALF	376.67221	0.5657
BALF does not Granger Cause GDP	2.57274	0.0001

Source: *E-View 11*

The outcome of the above findings from the pairwise Granger causality test above showed a directional relationship between GDP as the measure for economic growth and ACGFS, DMBCAS, and BALF independent variables at 5% significance level as indicated. The directional relationship emphasized the influence of the independent variables, Agricultural Credit Guarantee Scheme Fund (ACGFS), Deposit Money Bank Credit to agriculture Sector (DMBCAS), and Bank of Agriculture Loan to Farmers (BALF) on the gross domestic products in Nigeria, as the changes in these explanatory variables showed to have greater impact on GDP. This is consistent with the finance-growth hypothesis by Robison (1952) and the findings of Chimobi (2010), Duong and Izumida, (2002), Ebere and Osundina (2013), Olukemi, Sulaimon (2021 (2020), which suggests that financial development (through mechanisms like credit and financial services) drives economic growth, and at the same time, economic growth leads to further development in the financial sector.

The directional causality suggests that policies aimed at boosting those variables of independent could also enhance GDP growth.

Table 6 – Summary of the Pairwise Granger Causality Tests Findings

Relationship	F-Statistic	p-value	Conclusion
GDP → ACGFS	3.24142	0.6123	No significant causality.
ACGFS → GDP	8.53584	0.0019	Significant causality.
GDP → DMBCAS	375.72898	0.5110	No significant causality.
DMBCAS → GDP	9.70691	0.0007	Significant causality.
GDP → BALF	376.67221	0.5657	No significant causality.
BALF → GDP	2.57274	0.0001	Significant causality.

Source: E-View 11 computation

5. CONCLUSION

5.1. Discussion of Findings

The empirical findings reveal a significant unidirectional causal relationship between agricultural financing and Nigeria's economic growth. Results indicate that disbursements from the Agricultural Credit Guarantee Scheme Fund (ACGSF), Deposit Money Banks' credit to agriculture (DMBCAS), and Bank of Agriculture loans (BALF) all positively influence GDP ($p < 0.01$ for ACGSF and BALF; $p < 0.05$ for DMBCAS), supporting existing literature that emphasizes the importance of agricultural financing for economic development (Nwosu et al., 2021; Ogunniyi et al., 2020; Tijani, 2011). However, the absence of reverse causality suggests these financing mechanisms operate independently of broader economic conditions, likely due to structural inefficiencies such as risk-averse lending practices (EFInA, 2022), bureaucratic constraints (World Bank, 2022), and policy-driven allocation rather than market responsiveness (CBN, 2023). These findings contradict earlier bidirectional agriculture-GDP nexus studies (Suberu et al., 2015), highlighting an evolving financial ecosystem where agricultural credit decisions appear increasingly decoupled from macroeconomic performance. The results underscore the need for targeted reforms including expanded ACGSF coverage for climate-resilient crops (Adegbite & Adetiloye, 2023), tiered interest subsidies to mitigate lender risk (CBN, 2023), and decentralization of BOA loan approvals (NIRSAL, 2021). While limited by its exclusion of informal financing mechanisms (accounting for 30% of rural credit according to EFInA, 2023), the study provides compelling evidence that strategic improvements in agricultural financing systems could significantly enhance their contribution to Nigeria's economic growth.

5.2. Conclusion

The study concludes that while GDP does not significantly drive agricultural financing, the availability of agricultural credit and loans (through ACGFS, DMBCAS, and BALF) plays a crucial role in fostering economic growth. Specifically, agricultural financing, whether through government schemes, commercial banks, or dedicated agricultural banks, has a positive impact on GDP. The findings underscore the importance of targeted financial interventions in the agricultural sector as a means to stimulate broader economic development. However, it is clear that agricultural financing mechanisms are not significantly influenced by GDP, suggesting that factors such as government policy, financial institution priorities, and sectorial needs have a more immediate influence on agricultural credit and funding than the general state of the economy.

5.3 Recommendations

Strengthening Agricultural Financing Mechanisms: Since agricultural credit is shown to be a significant driver of economic growth, it is recommended that the government and financial institutions focus on strengthening financing mechanisms like ACGFS, DMBCAS, and BALF. This could include increasing funding allocations, streamlining access to credit, and offering lower interest rates for agricultural projects.

Policy Support for Agriculture: Given that agricultural credit positively impacts GDP, it is vital that the government continues to prioritize agricultural development through fiscal and monetary policies. Enhanced policy support in the form of subsidies, loan guarantees, and targeted financial incentives will help ensure that agricultural financing continues to thrive, even during economic downturns.

Expanding Commercial Bank Engagement in Agriculture: The study's findings suggest that credit from commercial banks (DMBCAS) plays a significant role in economic growth. Therefore, financial institutions should be encouraged to increase their lending to agriculture, perhaps by providing specialized agricultural loan products with favorable terms.

Improved Agricultural Credit Accessibility: The lack of significant causality from GDP to agricultural financing suggests that agricultural credit flows are relatively independent of the economic cycle. To make the agricultural sector more resilient, it is recommended to make agricultural credit more accessible through both traditional and non-traditional financing models, including microfinancing and digital lending platforms.

Monitoring and Evaluation of Agricultural Credit Programs: Continuous monitoring and evaluation of agricultural credit programs such as ACGFS, DMBCAS, and BALF should be carried out to assess their effectiveness in driving economic growth. Periodic assessments will ensure that these programs are

responsive to the changing needs of the agricultural sector and the economy. By enhancing the agricultural financing framework and providing targeted support to the sector, the government and financial institutions can harness the full potential of agriculture as a driver of economic growth.

References

- Angahar & Dittoh.J.S. (2013). Essentials of agricultural economics. A publication of the Centre for Agricultural and Rural Development Ibadan. 161- 166.
- Ayeomoni and Aladejana (2016) studied agricultural credit and economic growth nexus with evidence from Nigeria. An empirical analysis. *Journal of Emerging Trends in Economics and Management Sciences* 6(5), 359-366.
- Ayeomoni A. & Aladejana B. T. (2010). Analysis of the performance of the agricultural credit guarantee scheme fund in Nigeria (1981-2010). *IOSR Journal of Agriculture and Veterinary Science* 10(10),24-30
- Agricultural Credit Guarantee Scheme Fund (ACGSF) For Food Security in Nigeria (1978-2006). *Journal of Economics*, 3(1), 39-48, .
- Bassey Enya Ndema, Mboto Helen Walter, Okey Oyama Ovat, and James Tumba Henry, (2023), *Agricultural Financing And Economic Performance The Obudu Local Government Area Of Cross River State Nigeria*. *Asian Journal Of Agriculture And Rural Development* · March 2023 DOI:10.55493/5005.V13i1.4754
- Central Bank of Nigeria (2011). The Nigeria incentive-based risk sharing system for agricultural lending (NIRSAL)
- Islam (2020) studied agricultural credit and agricultural productivity in Bangladesh in order to promote food production and wellbeing of farmers. Nov,13.
- Central bank of Nigeria (2013). Credit Delivery to Small and Medium Enterprises: Post Bank Consolidation in Nigeria.
- Chimobi K. IgweA. (2010). Agricultural financing in Nigeria: An Assessment of the Agricultural Credit Guarantee Scheme Fund (ACGSF) For Food Security in Nigeria (1978-2010). *Journal of Economics*, 3(1), 39-48,
- Demetriades, P. O. & A. K. Hussein (1996): Does financial development cause economic growth? Time series evidence from 16 Countries. *Journal of Development Economics* 51, 387-411.
- Duong. P., & Izumida, Y. (2002). Rural development finance in Vietnam; A Micro econometric analysis of Household Surveys World Bank Development.
- Demirguc-Kunt, A. (1998). Small and Medium-Size Enterprises: Access to Finance as a Growth constraint. *Journal of Banking and Finance*, 30, 2931–2943.
- Eller G. (1995). An evaluation of agricultural financing, policies and initiatives for sustainable development in Nigeria, 21st Century. *Journal of Economics and Finance*, 8(3), 32-38.
- Enoyma A. (2010). Commercial banks credits to the Agricultural sector and the Nigerian Economy: An Analysis of the Future Trend Department of Accounting and Finance University of Ilorin, Ilorin Nigeria, (Unpublished).
- Ebere S. & Osundina B. (2013). Agricultural Credit Guarantee Scheme and Food Security in Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 10(2),208-218. doi:http://dx.

- doi.org/10.4314/ejesm.v10i2.7 .
- Ebere & Osundina (2012) Assessment of the role of agricultural credit guarantee scheme Fund in Promoting Non-Oil Export in Nigeria. Oxford University the United Kingdom.
- Ezu, Gideon Kasie, (2022). Impact Of Agricultural Financing On The Growth Of Nigerian Economy. African Banking And Finance Review Journal (ABFRJ). International Open Access Journal. ISSN No. Volume -1 Issue -1 2023
- Egwub A. (2016) also study the effect of agricultural financing on agricultural yield, economic growth and poverty alleviation in Nigeria. Nigerian Journal of Economics and Social Studies, 41(1), 159-173.
- Enyim, O. B., Ewno, E. N., & Okoro, O. T. (2013). Banking sector credit and the performance of the agricultural sector in Nigeria. European Journal of Scientific Research, 23(2), 35 – 55.
- Fintan, P., & Lema, A. (2018) The dynamic synergies between agricultural financing and economic growth of Tanzania. African Journal of Economic Review, 4(2),46-60.
- Heidihue N. (1992). Impact of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria. Journal of Biology, Agriculture and Healthcare, 6(2), 36-42.
- Iganiga K, & Unemhilin I. (2011) Boosting the financing of agriculture in Nigeria: The capital market option. Research on Humanities and Social Sciences, 3(13).
- Ideba et al. (2014) studied the connection between agricultural public capital expenditure and economic growth in Nigeria between 1961 and 2010. 1(1): 16-25.
- Jacob Sesugh Angaha & Tessy Ajiji Atong , (2020). Agricultural Financing and Economic Growth in Nigeria: A ThresholdAutoregressive(TAR)Analyses.EconomicsandBusinessPolicyDepartment, Nigerian Institute of Social and Economic Research Ibadan, Nigeria. SOCIALSCI Journal Vol 7 (2020) ISSN: 2581-6624 <https://purkh.com/index.php/tosocial>
- kalakech O. (2009). Agricultural financing and optimizing output for sustainable economic development in Nigeria: An empirical analysis. Journal of Emerging Trends in Economics and Management Sciences 6(5), 359-366.
- Mbelu Obiageli Ngozi* and Prof. Ifionu Ebele Patricia, (2022), Agricultural Financing and Economic Growth in Nigeria. African Journal of Accounting and Financial Research 5(3), 30-48. DOI: 10.52589/AJAFRVV0CKXM8.
- Mosley Rogerson, (1999), the role of agriculture in development American Economic Review, 92(2), 160-164.
- Ngozi, O. J. (2015). Agricultural loans as a catalyst for production. Research in World Economy. 6(4), 53-63.
- Kelani, Olunlade and Olubanwo (2020) studied agricultural financing and economic performance in Nigeria.. Business and Economics Journal, 2010(14),1-7.
- Michael, O. B. (2016). Achieving sustainable economic development in Nigeria through financial inclusion in the agriculture sector. Journal of Global Economics,4(2),1-5. <https://doi.org/10.5430>.
- Ndema, (2023), investigated the connection between agricultural funding and economic performance in Cross Rivers State's Obudu Local Government Area

- (LGA). Money and capital in economic development. Brookings Institution Press.
- Nnamdi, I. S., & Torbira, L. L. (2015). Micro credits in Nigeria economic growth: A multisectional Analysis. *Nigeria Journal of Finan-426.ce Research*,10(1), 442-454.
- Ngozi B. A.Patricia A.(2022).Agricultural financing in Nigeria: An assessment of the Agricultural Credit Guarantee Scheme Fund (ACGSF) for food security in Nigeria (1978-2006). *Journal of Economics*, 3(1), 39-48.
- Nnamdi Torbira O. E. (2015). A prospective on partial credit guarantee schemes in developing Countries.The case of the Nigerian agricultural credit scheme fund (ACGSF).A paper presented at a world-bank conference on enhancing agricultural productivity Washington D.C.
- Nwakanma, P.C., Nnamdi, I. S., & Omojefe, G.O. (2014). From rural to microfinance banking: Contribution of Micro credits to Nigeria 'Economic growth-An ARDL Approach. *International Journal of Financial Research*,5(3),414-426.
- Okosodo, L. A. (2016). Agricultural credit on the growth of the Nigerian economy. *International Journal of Education and Research* 4 (12),1-12.
- Olatunji, A. S, Ezenekwe, U. R., & Uzonwanne, M. C. (2018). .Restructuring rural financial market for agricultural growth in Nigeria. *Turkish Economic Review*, 5(3),241-255 .www.kspjournals.org.
- Okoria B. C. (1986). Long-term financing for manufacturing and agricultural sectors in Nigeria. *Nigerian Journal of Economics and Social Studies*, 41(1), 159-173.
- Omotunde, O.O.(1987).On pair-wise granger causality modelling and econometric analysis of selected economic indicators. *Interstates Journals.net/articles/1208002.pdf*.
- Obansa & Maduekwe P. (2013). Commercial banks credit and agricultural output in Nigeria: 1980 -2018. *International Journal of Research and Innovation in Social Science (IJRISS)*,3(5),1-8.
- Steele J.(1997).Some properties of time series data and their use in econometrics model specification. *Journal of Econometrics*.16.121-130.
- Olukemi, Demirguc-kunt, (2020). The role of long-term finance: Theory and evidence. *The world bank Research Observer*,13(2),171-189.
- Odetola and Etumnu (2013) studied the contribution of agriculture to economic growth in Nigeria utilizing the growth accounting system and time series data from 1951 to 2012. An Assessment of the
- Obansa and Maduekwe (2013) also studied agriculture financing and economic growth in Nigeria.. *Research on Humanities and Social Sciences*, 3(13).
- Sulaimon (2021) study agricultural credit guarantee scheme fund and agricultural performance in Nigeria. Harvard University Press. *Journal of Finance and Accounting*, 4(1), 4-11. <https://doi.org/10.12691/jfa-4-1-1>.
- Suberu, Agunuwa, E. V., Inaya, I., & Proso, T. (2015). Impact of commercial banks' credit on agricultural productivity in Nigeria. *Time series Analysis (1980-2013)*. *International Journal of Academic Research in Business and Social sciences*, 5(11).
- Tiamiyu, S. A. I., Bwala, M. A. & Alawode, V. O. (2017). Economic revitalization through agriculture: Role of agricultural credit guarantee scheme fund in Nigeria. *RJOAS*, 3(63),3-6. <https://doi.org/10.18551>.

- Udoka, C., Mbat, D., & Duke, S. (2016). The effect of commercial banks credits on agricultural production in Nigeria,
- Tijani M. J. (2011) Financial intermediation and agricultural output in Nigeria: An impact analysis of deposit money banks' credit. *International Journal of Agricultural Economics*, 1(1): 16-25.
- Uma T.C. (1991). The structure of the Nigerian economy 1960-1970. Joanee Educational Publishers.
- Von Braun, (1992). *Introductory Econometrics for Finance*, Cambridge, University press.318375.