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THE INFLUENCE OF DEPOSIT MONEY BANKS ON AGRICULTURAL FINANCING IN NIGERIA

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Abstract

This study examined the influence of agricultural financing by deposit money bank and government on agricultural output in Nigeria. The time series data used spanning between 1983 up to 2022 culled from Central Bank of Nigeria (CBN) Statistical Bulletin. The study employed simple ordinary least square analysis. Both pre-test and post-test analyses conducted revealed suitable results. The study found out that banks and government's financing activities of agriculture have positive influence on the agricultural output within the period of investigation. It is significant that the government makes agriculture attractive to young and vibrant men who have what it takes to sustain the nation, reduce acute shortage of food production and thereby making enough food available for local consumption and for exportation and hence garner foreign currencies from agricultural products. Also, the government should remove the bottlenecks farmers face while trying to secure banks' loans for their operations.

Keywords: Commercial Bank financing, Agricultural output and Nigeria

I. Introduction

The agricultural sector is without doubt the bedrock and largest sector which provides means of sustenance of lives and contributes immensely to the gross domestic product (GDP) in Nigeria economy (Adegoroye et al., 2021; Ogunyemi et al., 2022). This argument holds true owing to the fact that agriculture provides livelihoods to the teeming population in Nigeria and other emerging economies-especially those in rural areas. According to Doris (2019), agricultural sector accounts for 65 percent of Nigeria's working class group especially in cities and farm settlement areas. Around 1960s there about, agricultural subdivision notably occupied an enviable position in Nigerian economy. It maintained a leading position when it comes to palm oil exportation and came second in cocoa exportation and thereby outperformed United State of America and Argentina in groundnut exportation (Sulaimon, 2021). According to Ayeomoni and Aladejana (2016), agriculture funded 90% of Nigeria's GDP and contributed largest portion of foreign exchange earnings before oil boom emergence in commercial quantity during the initial years of the 1970s. Over the years, there has been a shift in this trend, primarily driven by Nigeria's over reliance on revenues from crude oil sales, leading to significant neglect of agricultural sector.

The Nigerian government over the last decade decided to take a stance by introducing different agricultural programs in order to bring agriculture to its pride of place. This led to the introduction of programs such as Agricultural Transformation Agenda (ATA) in 2011. ATA was lunched with the goal of attaining food security, fostering job creation and mitigating poverty in Nigeria. The program focuses on increasing productivity in agriculture by supporting farmers with inputs, credit and market linkages. This program was followed in 2012 with Growth Enhancement Support Scheme (GESS) as a component of ATA. The program aimed at increasing farmers' access to improved seeds, fertilizers, and other agricultural inputs through a subsidy scheme. As a follow up to GESS, Anchor Borrowers Program (ABP) was introduced in 2015 as part of efforts to improve farmer's access to credit. The program provides loans to smallholder farmers to cultivate specific crops such as maize, wheat and rice with the aim of increasing local production and reducing food importation. In 2016, Presidential Fertilizer Initiative (PFI) was introduced with the objective of revitalizing domestic fertilizer production and lowering the cost of fertilizer in Nigeria. Recent among several programs introduced by the Nigeria government to revamp agriculture is the Livestock Transformation Plan (LTP) in 2019. The LTP was aimed at improving livestock productivity, and promoting food security. The program focuses on promoting ranching and other modern livestock management practices. Interestingly, these programs seem inadequate in revamping agriculture in the country without the contributions of commercial banks financing.

Irrespective of efforts by Nigerian government towards improving agricultural productivity, according to Chatterjee and Oza (2017) and Oparinde et al. (2023), agriculture is visible to many obstacles at all levels. A significant constraint faced by smallholder farmers is the restricted access to credit from commercial banks, making it challenging for them to obtain financial support from formal institutions. Although the banking sector is widely acknowledged as a driver of national growth and development, commercial banks in Nigeria tend to show limited interest in extending credit to the agricultural sector. This disinterest stems from the historical neglect of agriculture in credit allocation over the years especially

by deposit money bank. Thus, the insufficient allocation of credit to the agricultural sector by commercial banks over the years is one of the reasons for low level economic development in Nigeria. This study is positioned to unraveled whether or not deposit money banks influences agricultural output in Nigeria considering the capacity of the sector on Nigeria's gross domestic product and well-being of her citizens. The rest part of this study is organized as follows: review of related literatures is in section two, methodology adopted in section three, data presentation and analysis of results in section four and finally in section five is conclusion and recommendations.

II. Literature Review

The agricultural sector significantly contributes to the economic development of developing countries by making substantial contributions to GDP (Rehman et al., 2017; Udoka et al., 2016; Mbowa et al., 2018). Prior to oil boom in the early 1960s in Nigeria on yearly basis, the agricultural subdivision constitutes approximately 90% of the nation's GDP (Ayeomoni and Aladejana, 2016). It is crucial to acknowledge that the fundamental role played by the funding subdivision is indispensable for realizing the full potential of these agricultural contributions. Hence, the significance of the funding subdivision in the expansion of the real sector, particularly agriculture, has been emphasized by scholars such as King and Levine (1993), Bayoumi and Melander (2008), Driscoll (2004), and Akpansung and Babalola (2010). They emphasize that the dire role of the funding subdivision lies in mustering funds from depositors and channeling these funds as credits to creditworthy clients. This process aims to encourage the progress and stability of the economy. As highlighted by Kolapo et al, (2012), the intermediation role of the banking sector acts as a spur for economic overall sustainability. This is based on the idea that banks mobilize funds from various stakeholders of the economy and channel same to the most profitable users of the funds which ranges from individuals, government and corporate entities, transforming them into venture funds available for users to boost investment. Banks play a crucial role in ensuring that mobilized deposit funds are effectively transformed into productive capital. As highlighted by Okuneye and Ajayi (2021), agricultural financing encompasses various facets and dimensions, including one's savings, credits various people such as friends and relatives, participation in helpful societies, and loans from deposit money banks. It is essential to underscore that, particularly in the financing of agriculture on a commercial scale, the involvement of banks is indispensable. The study conducted by Adeyeye et al, (2016) investigated the influence of security expenditure on foreign direct investment. Using Ordinary Least Squares analysis, the findings revealed that security expenditure has positive influence on foreign direct investment within the period of review. This study has a correlation in that security issues can hamper agricultural performance and hence hinder sustainable growth in agricultural productivity Adeyeye et al, 2016.

Empirical Literature

Adesina et al, (2020) conducted an in-depth assessment of the impact of agricultural financing on Nigerian economy performance. They utilized secondary figures and employed a comprehensive methodology involving tests for unit root, ARDL Bound Co-integration, and error correction modelling to quantitatively analyse the parameters of the variables. The statistical significance level for the estimation was set at 5% (0.05). The findings unveiled that in the long run, the Agricultural Credit

Guarantee Scheme Fund (ACGSF) emerged as the most significant agricultural financing explanatory variable contributing to economic performance. This was evidenced by a robust favourable influence on the Nigerian economy as revealed by their empirical analysis. According to Chisasa and Makina (2015), they adopted time series analysis which spanned from 1970 to 2011 to investigate the active relationship between bank's financing in agriculture and the output of the agriculture sector. The outcome of their finding showed that in the short run bank's credit had negative influence on agricultural output within the period of review, this result unravelled the uncertainties surrounding the financing institution in south Africa. Similarly, Nakazi and Sunday (2020) used quarterly times series in their analysis from the data obtained from Bank of Uganda and Uganda Bureau of Statistics spanning the duration of 2008 quarter 3 to 2018 quarter 4. Using autoregressive distributed lag model, their findings revealed the short run and long run situation between deposit money bank's financing and agricultural output in Uganda as it relates to their GDP. The study showed positive relationship between deposit money bank's financing on agriculture and agricultural output in the long run.

Also, Ammani (2012) carried out an evaluation on the influence of bank's credit on agriculture output using Least Square method of analysis. The study revealed that formal credit facilities stimulates positive influence on the agricultural output in general especially crops such livestock, fishing and crops production within the period of review. Nwokoro (2017) investigated similar work by exploring the influence of commercial banks on agricultural output. Using Ordinary Least Square regression analysis and an error correction model in analysing data culled from Nigeria spanning between 1980 up to 2014, the findings showed that banks' credit exerted a positive influence on Nigeria's GDP. In a contrast study by Oyakhilomen et al, (2012) using the Johansen co-integration test to examine the relationship between cocoa making in Nigeria and the Agricultural Credit Guarantee Scheme fund, the study discovered, upon using time series data spanning from 1981 to 2011, that there is an adverse relationship between cocoa production and Agricultural Credit Guarantee Scheme fund within the period of review. In addition to this, Nnamocha and Charles (2015) used the error correction mechanism (ECM) to analyse the influence of bank finances and loans on agricultural making in Nigeria from 1970 to 2013. The findings advocated an optimistic input of bank finances and loans, along with manufacturing production, to agricultural output in the long run. In the short run, agricultural production had positive influence on industrial output. In a succeeding study, Adewole et al, (2015) undertook an in-depth analysis of the sectorial apportionment of loans and advances by profit-making banks specifically to the agricultural sector. The computation included cash reserve ratio, liquidity ratio and money market minimum rediscount rates ranging from 2002 up to 2014 in Nigeria. Adopting multi-faceted regression analysis of Ordinary Least Squares, the findings indicated that liquidity ratio, cash reserve requirement and discount rate had no weighty influence on agricultural sector financing by banks.

In another separate approach, Ahmed et al (2018) used the Autoregressive Distributed Lag (ARDL) model of Bound Co-integration approach to dissect annual time series data which covered the period of 1973 to 2014. The study had the objective of exploring the long term relationship between agricultural financing expended using official institutions and GDP's contribution by agriculture. The study found that a long run relationship between

agricultural credit and agricultural GDP. Again from the study conducted by Udoka et al, (2016), they scrutinized the intricate relationship between commercial banks' financing and agricultural output in Nigeria using Ordinary Least squares method. Their findings indicated that a positive and statistically weighty relationship between the Agricultural Credit Guarantee Scheme Fund and agricultural creation in Nigeria, the study actually stressed the importance of banking credits on agricultural output in Nigeria within the period of investigation. According to Agunuwa et al, (2015), they investigated the impact of commercial banks' credit on agricultural growth using Ordinary Least Squares (OLS) regression analysis technique. Their findings indicates an existence of negative relationship between interest rate and agricultural productivity, however, stressed the serious impact it has on agricultural performance within the period of review. In a contrast study by Ubesie et al. (2019) and Nteegah (2017), it was discovered that commercial banks' credit distributed to agricultural subdivision showed negative influence on the overall economic growth in Nigeria. Hence, an in-depth study had to be carried out to unravel the numerous factors influencing credit allocation to agriculture and economic growth in Nigeria. In another study conducted by Oladapo and Adefemi (2015); Akujuobi and Nwezeaku (2015), and Ajao et al, (2021), their works shed more positive light in this area of investigation. They discovered that commercial banks' credit apportionment to agricultural subdivision had a weighty favourable influence on economic growth in Nigeria. This direct correlation indicates a projected means for leveraging credit instruments to enlarge sustainable economic growth viz-a viz agricultural productivity in Nigeria.

Gap in the Empirical Literature

A comprehensive examination of the existing empirical literature reveals a prevalent utilization of the Ordinary Least Squares (OLS) method in the majority of studies. The consensus among researchers, as observed in the works of Adesina et al. (2020), Nakazi & Sunday (2020), Ammani (2012), Nnamocha and Charles (2015), Udoka et al, (2016), upholds an encouraging and substantial connection amid bank credit and agricultural productivity (GDP). Notably, these studies concur on the beneficial influence of banks' credit on agricultural productivity, except for interest rate, which consistently shows a negative relationship with agricultural productivity, as highlighted by Agunuwa et al. (2015).

However, regarding the methodological approaches employed in these studies, a predominant reliance on time series data and the OLS method is evident, supplemented by occasional use of error correction, Johansen co-integration models, and tests for unit root. Intriguingly, less than 10% of the reviewed studies considered the effects of interest rates and the agricultural credit guarantee scheme. This study seeks to underwrite to the prevailing works by adopting a comprehensive methodology that incorporates OLS, time series data analysis, and tests for unit root and co-integration. By focusing on the components of commercial bank activity—specifically, commercial bank credit, agricultural credit guarantee scheme fund, and interest rates—the research aims to offer a nuanced understanding of their combined influences on agricultural productivity in Nigeria.

III. Methodology

Research Design

This research endeavors to explore the influence of profit-making banks on agricultural financing and subsequent agricultural development in Nigeria. Adopting an ex-post facto investigation

design is deemed most suitable for this investigation. This design choice arises from the kind of the data, which is inherently time series and lacks the manipulability or influence typical of experimental research settings. Ex-post facto research design is particularly well-suited when analyzing historical data to discern patterns and relationships, aligning with the unalterable nature of the information relevant to evaluating the influences of money-making banks on agricultural financing and development in Nigeria.

Sources of Data and Variables

The research relies on secondary data obtained from the Central Bank of Nigeria Statistical Bulletin spanning various issues from 1983 to 2022. Consequently, the rationality of this study is intricately linked to the precision and authenticity of the periodic reports published in the CBN annual reports. The robustness of the findings hinges on the reliability and accuracy of the data sourced from these reports, emphasizing the importance of the Central Bank of Nigeria as a credible and authoritative data repository for this research.

This study invariably investigates the influence of commercial banks on agricultural financing and agricultural growth in Nigeria. The variables to be used include: agricultural output - AGROUTP (proxy as agricultural development) which is dependent variable and others which are explanatory variables include: agricultural credit guarantee scheme fund on agricultural sector – ACGS, commercial banks’ lending/credit to agricultural sector – CBLA and interest rate – INTR.

Specification of the Empirical Model

All data collection for the purpose of the study were evaluated, cross checked, compared and critically analyzed. The gauge, the relationship between the commercial banks on agricultural financing and agricultural development, a simple closed macro-economic model was applied. The model adopted in this is patterned after the work of Okafor (2020) and Ajinaja et al, (2017). While Okafor investigated the effects of commercial banks on agricultural financing and agricultural development in Nigeria; Ajinaja et al, (2017) explored the implication of credit creation by banks on economy growth in Nigeria. Since the authors in the two separate studies explored the extent in which credit influences agricultural output or economic growth, both studies’ methods of analyses are assumed to be similar. However, Okafor model which is more related specified that Agricultural output (proxy as Agricultural development) as dependent variable and is significantly influenced explanatory variables. The model is specified thus:

The comprehensive data collection process for this study involved rigorous evaluation, cross-checking, comparison, and critical analysis. To gauge the relationship between commercial banks, agricultural financing, and agricultural development, a modest closed macroeconomic model was used. The conceptual framework of this model draws inspiration from the work of Okafor (2020), who extensively scrutinized the effects of profit-making banks on agricultural financing and development in Nigeria. Okafor’s model, which serves as the basis for the one adopted in this study, delineates Agricultural output (utilized as a proxy for Agricultural growth) as the dependent variable. The model is designed to capture the significant influences of various explanatory variables on agricultural output. The meticulous specification of the model is essential for unravelling the intricate dynamics between commercial banks, agricultural financing, and

the broader landscape of agricultural development in Nigeria. Specifying the model thus:

In implicit form:

$$AGO = F(AGO, CAS, GAS, ACGS, INTR) \dots (1)$$

That is, in explicit form:

$$AGO = \beta_0 + \beta_1CAS + \beta_2GAS + \beta_3INTR + \beta_4ACGS + U \dots(2)$$

Where: AGO = Agricultural output

CAS = Credit to agricultural sector

GAS = Government spending on agricultural sector

ACGS = Agricultural credit guarantee scheme fund on agricultural sector

INTR = interest rate

U = Stochastic error term

$\beta_1, \beta_2, \beta_3, \beta_4$ = slope of the regression equation

Nonetheless, in the context of this study, some modifications and adjustments will be made to the aforementioned model as follows:

$$AGROUTP= F (CBLA, ACGS, INTR) \dots\dots\dots(3)$$

$$AGROUTP= \lambda_0 + \lambda_1 CBLA + \lambda_2 ACGS + \lambda_3 INTR + \mu \dots\dots\dots(4)$$

By log linearization the equation becomes:

$$\text{LogAGROUTP}= \lambda_0 + \lambda_1 \text{logCBLA} + \lambda_2 \text{logACGS} + \lambda_3 \text{INTR} + \infty \dots(5)$$

Where:

AGROUTP = Agricultural output (proxy for Agricultural development)

CBLA = Commercial banks’ lending/credit to Agricultural development

ACGS = Agricultural credit guarantee scheme fund on agricultural sector

INTR = Interest rate

∞ = Stochastic error term

$\lambda_1, \lambda_2, \lambda_3,$ = slope of the regression equation

A priori expectation

$$\lambda_1, \lambda_2, \lambda_3 > 0$$

IV. Data Analysis and Interpretation

Descriptive Statistics

Table 1	ACGS	AGROUTP	CBLA	INTR
Mean	2.08E+08	8216.517	160.9836	19.27800
Median	544.9972	4932.757	44.79520	18.38500
Maximum	8.33E+09	18348.18	1049.678	36.09000
Minimum	24.65490	2303.505	0.590600	10.00000
Std. Dev.	1.32E+09	5530.398	248.0323	5.855841
Observations	40	40	40	40

Source: Author’s Own Computation (2023)

Table 1 above portrays the descriptive statistics for the postulated model, encompassing Agricultural output (AGROUTP),

commercial bank credit financing to the agricultural sector (CBLA), agricultural credit guarantee scheme fund on the agricultural sector (ACGS), and Interest rate (INTR). The average mean of the variables falls within the range of 0.0000000208 to 8216.517. AGROUTP exhibits the highest maximum descriptive statistic, registering at 18348.18, while commercial bank credit to the agricultural sector, interest rate, and agricultural credit guarantee scheme fund on the agricultural sector follow in that order, with values of 1049.678, 36.09000, and 00000000833, respectively. The dataset comprises a total of 40 observations, corresponding to the number of years investigated in this study.

Correlation Coefficient

Table 2 Interpretation of strength of correlation co-efficient

Value of Co-efficient	Relation between variables	Signs
0.00 – 0.19	Very Weak	+ve or –ve
0.20 – 0.39	Weak	+ve or –ve
0.40 – 0.59	Moderate	+ve or –ve
0.60 – 0.79	Strong	+ve or –ve
0.80 – 1.00	Very Strong	+ve or –ve

Correlation Co-efficient Analysis

Table 3

Correlation				
Probability	ACGS	AGROUTP	CBLA	INTR
ACGS	1.000000			

AGROUT	0.120631	1.000000		
	0.4584	-----		
CBLA	-0.016529	0.867329	1.000000	
	0.9194	0.0000	-----	
INTR	-0.007976	-0.292464	-0.357745	1.000000
	0.9610	0.0671	0.0234	-----

Source: Author's Own Computation (2023).

Table 3 presents the correlation coefficients for the model formulated in this study. Inferences drawn from these coefficients reveal that the dependent variable, agricultural output (AGROUTP), demonstrates a positive and very weak relationship with Agricultural Credit Guarantee Scheme Fund on the agricultural sector (ACGS), although this result lacks statistical significance. Notably, AGROUTP exhibits a positive and very strong correlation coefficient, a finding that holds statistical significance. In contrast, interest rate displays a negative and weak correlation coefficient with AGROUTP, and this result does not achieve statistical significance.

Unit Root Test

Data that is non-stationary can lead to spurious regression, potentially yielding misleading results. Therefore, it is crucial to address the issue of data stationarity. To assess this, the Augmented Dickey-Fuller (ADF) unit root test is employed. The verdict criterion is that the ADF test statistic assessment should exceed the Mackinnon critical value at a 5% significance level and absolute value. The table below provides a summary of the unit root test carried out on the coefficients at the level.

Table 4 Unit root test at level.

Variables	ADF Test Statistic Value	Mackinnon critical Value at 5%	Prob.	Remark
AGROUTP	-1.8045	-3.5297	0.6833	Non-stationary
CBLA	3.2246	-3.5297	1.0000	Non-stationary
INTR	-2.7248	-3.5297	0.2328	Non-stationary
ACGS	-6.2461	-3.5297	0.0000	Stationary

Source: Author's Own Computation (2023)

Analyzing Table 4, it is apparent that every of the variable is deemed non-stationary since their Augmented Dickey-Fuller (ADF) statistics falls below the Mackinnon critical value at a 5% significance level, except for ACGS, which demonstrates stationarity at the level. Consequently, further testing for stationarity is conducted through first and second differences. Table 4 outlines the order of integration, as reflected in the remarks column. Ensuring the stationarity of the data is imperative to prevent the potential generation of spurious results throughout the entire analysis process.

Table 5 Unit root test at first/second difference.

Variables	ADF Test Statistic Value	Mackinnon critical Value at 5%	Prob.	Remark
AGROUT P	-5.6324	-3.5330	0.0002	Stationary I ₍₁₎
CBLA	-3.8809	-3.5330	0.0228	Stationary I ₍₁₎
INTR	-6.8406	-3.5366	0.0000	Stationary I ₍₁₎
ACGS	-6.2461	-3.5297	0.0000	Stationary I ₍₀₎

Source: Author's Own Computation (2023)

The interpretation of the unit root test presented in Table 5 reveals that all variables have achieved stationarity at the first difference, as evidenced by their respective Augmented Dickey-Fuller (ADF) statistics surpassing the Mackinnon critical value at a 5% significance level. The observation that some variables are stationary at the first order of difference while others are at the level suggests that these variables may not be co-integrated at the same order.

Table 6: Presentation of Estimation Technique and Result

Dependent Variable: AGROUTP				
Short-Run Estimation				
Variable	Coefficient	Std. Error	t-Statistic	Prob
C	7.909211	0.114477	69.08978	0.0000
LOG(CBLA)	0.285332	0.016399	17.39978	0.0000
LOG(ACGS)	0.028491	0.010887	2.617117	0.0129
INTR	-0.016988	0.004728	-3.592857	0.0010

Source: Author's Own Computation (2023).

Table 7: Statistical Properties and Post Diagnostic Results

Statistical Properties		Post Diagnostic Test Results	
R-Squared	0.946793	B-G Serial Correlation LM (F-Statistics)	9.103142
Adj R-squared	0.942360	B-G Serial Correlation LM Prob F (1, 28)	0.0007
F-statistics	213.5363	Heteroskedasticity Test: Breusch-Pagan-Godfrey (F-stat)	1.697783
Prob(F-statistic)	0.000000	Heteroskedasticity Test: Breusch-Pagan-Godfrey (Prob)	0.1848
Durbin Watson Statistics	0.947035		
Akaike Info Criterion			
Model Selection	NA		
Estimation Technique	BLUE (OLS)		

Sources: Author's Computation (2023).

Interpretation of Results and Discussion of Findings

From the Table 6 & Tables 7 above, results of the model postulated were presented.

Commercial Bank credit to Agricultural Sector (CBLA)

The influence of Commercial Bank credit on the Agricultural sector is positively reflected in the agricultural output (AGROUTP). The estimation technique indicates that the coefficient of AGROUTP, with a value of 0.285332, signifies that a one-percentage increase in Commercial Bank credit to the Agricultural sector (CBLA) will lead to a substantial 28.5332% increase in agricultural output. This outcome holds statistical significance, as evidenced by a probability value of 0.0000, even reaching significance at the 1% level. The obtained result aligns with the anticipated expectation, as the positive sign implies. The policy implication suggests that commercial banks play a significant and impressive role in influencing agricultural development. Recent displays of rice pyramids in the country, which have garnered considerable acclaim, underscore the

substantial impact of bank credits and loans on agricultural development in Nigeria, particularly in terms of rice production.

Agricultural Credit Guarantee Scheme Fund on Agricultural Sector – ACGS

Agricultural credit guarantees scheme funds on agricultural sector have positive influence on the agricultural output within the period investigation in this study. The coefficient result of ACGS indicates that one percent increase in the ACGS will stimulate 0.028491 (or 2.8491%) boost in the agricultural output in Nigeria. The upshot is statistically momentous with the likelihood value of 0.0129. The outcome also aligns with the *a priori* anticipation as a positive relationship is predicted in this study. The government should expand its scope of commitment to the agricultural sector so as to take Nigerian food production and income from that sector to the next level.

Interest rate (INTR)

Agricultural output has a negative relationship with the interest rate within the period of reviews. The coefficient of interest rate of -0.016988 infers that one percent rise in the INTR will kindle 0.016988 or (1.6988%) decrease in the agricultural productivity in Nigeria. Thus, the government should endeavor to scrutinize how to alleviate the plight of farmers in this regards. The outcome is statistically significant with the likelihood value of 0.0010 which is even significant at 1%. The result agrees with the *a priori* expectation as a negative relationship is envisaged in this study.

Constant (c)

Constant denotes that if all the parameters are apprehended unbroken or fixed except it, the agricultural output will still have positive relationship with it (constant). Coefficient of constant with the value of 7.909211 infers that a unit rise in the constant will induce 7.909211 (or 790.9211%) increase in the agricultural output within the period of investigation. The result is statistically weighty with the probability value of 0.0000.

The Post Diagnostic Results

Table 7 provides a comprehensive overview of the statistical belongings and post-diagnostics test outcomes for the proposed model in this study. The coefficient of determination, represented by R-Squared at 0.946793, suggests that the descriptive variables can account for a substantial 94.67% variation in AGROUTP (a proxy for agricultural development). The remaining 5.33% nonconformity is seized by the error term. This finding is further supported by the adjusted R-squared at 94.23%.

The F-statistics result, standing at 213.5363 with a probability distribution of 0.000000, implies that the whole regression analysis is statistically significant. Therefore, it can be established that agricultural output in Nigeria has been positively influenced by both government spending in the agricultural sector and bank credit to the sector.

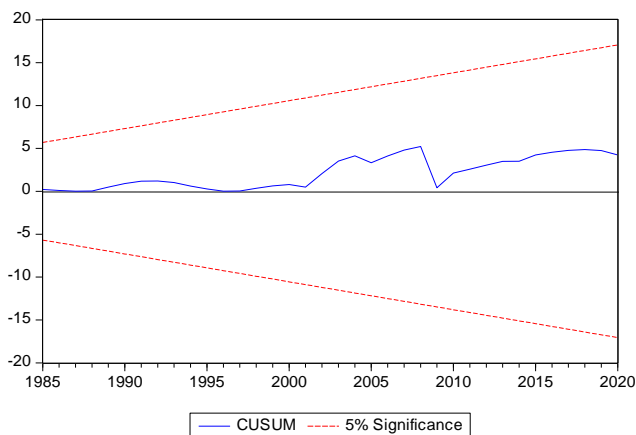
The Heteroskedasticity test, with a value of 1.697783 and a probability value of 0.1848, suggests that the entire regression analysis may not be affected by the serial correlation problem.

Additionally, the Breusch-Godfrey Serial Correlation LM Test assesses the existence of serial correlation. The null hypothesis, indicating the incidence of a serial correlation issue, is not supported, as the probability is greater than 5%. The F-statistics of B-G serial correlation at 1.697783 and a probability value of 0.1848 further indicate that the whole analysis is less likely to suffer from a serial correlation problem

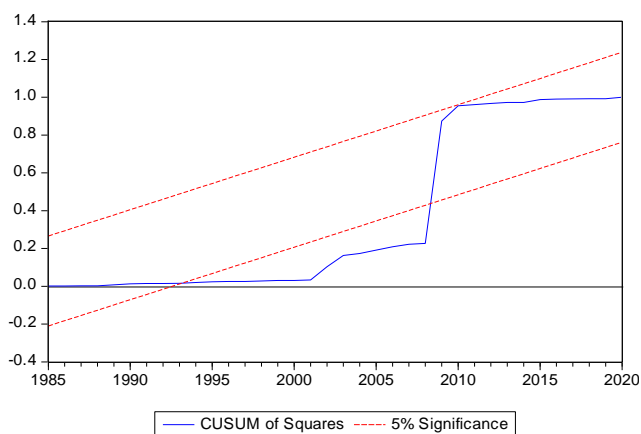
Stability Test

The stability test measures graphically whether or not the regression analysis is relatively stable and falls within the acceptable region at 5% significance level. Below in Graph 1 and Graph 2, the stability test is presented using cusum and cusum square at 5% significance level.

Graph 1



Graph 2



Graph 1 and 2 reported the cusum and cusum of squared stability test result. These results show that the cusum test fall within the acceptable region at 5% significance level and hence the analysis is stable. Meanwhile, cusum of squared test indicates a slight deviation as it falls out the acceptable region briefly before moving back within the region. In a nutshell, the overall results had provided substantial evidences to attest to the fact agricultural financing has been surviving and supported by the two legs of government spending and banks' credit to the sector within the period of investigation.

V. Conclusion and Recommendations

This study examined the influence of agricultural financing by deposit money banks and government on agricultural development in Nigeria. The data used are spanning the period of 1983 – 2023. Augmented-Dickey Fuller Unit Root test was conducted to ascertain the stationarity of the data used. All the variables adopted in this study are stationary. A good number of econometrics techniques were used to analyze our time series data which include but not limited to: unit root test, descriptive statistics test and correlation coefficient. All these tests denote pre-test analysis, meanwhile the post-test include stability test, Durbin Watson test, serial correlation test etc were conducted in this study. Thus, based on the overall findings, it is concluded that government spending and bank's credit to agricultural sector have had impressive

influence on agricultural output in Nigeria. There is need to diversify the economic to pave way for other viable sources of revenue to the federal, State and Local Governments. The federal government should attach more importance to agricultural development in Nigeria. There are lots of revenues to be derived from agriculture. Thus, the time has come to diversify the economy to pave way for multiple sources of income to the three tiers of government. The federal government should see to removing the hurdles faced the farmers in sourcing for funds to boost their production. There is need for the government to put in place all the necessary infrastructures to encourage young graduate to take up farming as professions. The federal government should step up their efforts in subsidizing farms tools and other materials needed to boost farm produce.

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