IMPACT OF COMMERCIAL CREDIT ON AGRICULTURAL GROWTH IN NIGERIA

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ABSTRACT

The study examined the impact of commercial credit on agricultural growth in Nigeria. The study particularly determined the effect of commercial bank loan on agriculture on agricultural growth in Nigeria; assessed the effect of interest rate on commercial banks' credit to agriculture on agricultural growth in Nigeria and examined the relationship commercial banks total asset and agricultural growth in Nigeria. The quantitative and qualitative research design was adopted in the study. Annual time series data spanning thirty-one years (1989-2020) was obtained in the study. Data gathered in the study was estimated using descriptive statistics, unit root analysis, Autoregressive Distributed Lag (ARDL) analysis, parsimonious error correction model and other post estimation tests. Discoveries from the study suggested that commercial bank loan on agriculture affects agricultural growth positively and insignificantly both in the short and long run; interest rate on commercial banks' credit to agriculture exerts negative significant impact on agricultural growth both in the long and short run and commercial bank total assets exerts positive significant effect on agricultural growth in the long run and an insignificant positive effect on agricultural growth in the short run. Following these findings, the study advocated that commercial banks should increase loan channeled to the agricultural sector as such is required to enhance the growth of the sector; government through the Central Bank of Nigeria should urgently make policies that would cause interest rate charged on agricultural loans to maintain single digits towards making interest payment favorable and ultimately encourage loan taking and government should shoot up agricultural sector expenditure and cause improvement in the monitoring of the sector.

Keywords: Agricultural Growth, Commercial Bank Loan on Agriculture, Interest Rate on Commercial Banks' Credit, Commercial Banks Total Asset, Gross Domestic Product

1.0 INTRODUCTION

The potentials in agriculture has more than ever before been the most leverage-able alternative to diversify to change the economy of Nigeria from a mono-economy as the heightened dependence on oil sector has increased the susceptibility of the country to the usual variation in global oil prices (Nwadioha & Igoni, 2021). The economy of Nigeria which was dominated by agriculture recorded increased prosperity as agriculture contributed about 65% to GDP, albeit the contribution of agriculture in terms of output in recent times has critically cascaded (Fowowe, 2020). The nation which was self-sufficient in food and crop production as well as it maintained being the lead in the production and export of numerous cash crops including cotton, groundnut, cotton, cocoa etc have had its agricultural output put at a very low level following the discovery of oil some years after independence (Nwadioha & Igoni, 2021). This caused the country to disregard its largest population and land mass in Nigeria thus cultivating less than 50% of the cultivable agricultural land; besides, the unimpressive growth in agricultural growth is further aggravated by limited access to credit and modern input, dilapidated infrastructure amongst others (Fowowe, 2020).

In the midst of various challenges that has constrained the productivity of the agricultural sector, the most critical and evident issue that has per time demonstrated adverse effect is the lack of credits to small scale farmers. Most times, a good number of small scale farmers depend on financial aids from informal sources such as community development associations, cooperatives, family, friends, thrift associations and other informal credit providers as financial institutions mobilize relatively significant fund to other sectors as they practically neglect the agricultural sector (Anetor, Ogbechie, Kelikume & Ikpesu, 2016). Evidently, the National Bureau of Statistics (NBS) affirmed that credit to agricultural sector was less than 4% of the total credit to private sector in 2016 and 2017. This may be due to the relatively higher risk associated to the business of agriculture which cause agricultural lending to be perceived as relatively risker and less profitable when compared to other sectors of the economy. However, in the same years, the nation experienced moderate recession stemming from the global crises in crude oil prices, volatile macroeconomic factors and crisis occasioned by herdsmen and Boko Haram attack (Nwadioha & Igoni, 2021).

Despite affirmations that access to agriculture credit is a precursor to alleviating the financial constraints that has challenged the sector as credit would proffer the financial capacity to integrate new technologies which could aid the attainment of noticeable productivity and growth in agricultural output (Qureshi, Akhtar and Shan, 1996). Most importantly, in the agribusiness, finance is deployed to the acquisition of land, building of warehouse, purchase of seedlings, agro-chemicals, machinery and equipment, settlement of wages and installation of irrigation which is necessary for harnessing or utilization in total the capacity in the sector and in effect boosting agricultural growth. In the bid to bring to fore these good fortunes, the government has established numerous agricultural programmes such as a national economic empowerment and development (NEEDS), porting existing domestic production for agriculture. Other policies by the government includes; the Agricultural Credit Guarantee Scheme Funds (ACGSF), National Accelerated Food Production Project (NAFPP), Green Revolution (GR), Operation Feed the Nation (OFN), Root Tuber Expansion Projects (RTEP); but the failure of these schemes further affirmed the position of modern growth theory that commercial bank intermediation is all-important in occasioning sustainable growth in sectors existing in developing countries including the agricultural sector (Lawal, Asaleye, Inegbedion, Ojeka, Adekunle, Olaniyan, Eyiolorunshe & Olabode, 2019).

The significance of lending to several sectors of the economy emphasizes the primary role of the commercial bank in the mobilization of financial resources required in promoting growth in agriculture business in line with the guidelines of the Central Bank of Nigeria (CBN). Commercial banks which has its function to include financial intermediation towards catalyzing capital formation and sectoral growth has created sectoral preferences with adequate consideration of its total assets precludes the agricultural sector from accessing commercial credits in form of loan and advances and import finance has practically claimed the significance of the sector (Asukwo, Owui, Olugbemi and Ita, 2020). Similarly, the high interest rate charges associated to loans provided to farmers, low collateral possessed by farmers, political involvement in loan activities, inability of farmers to provide feasibility report to aid the provision of credit as well as increased non-performing loan experienced by banks on credits disbursed to the agricultural sector have contributed to the reduced amount of loan disbursed to the agricultural sector. In the midst of these prevailing issues stems the doubt about the role of commercial credit in driving agricultural growth in Nigeria.

Nigeria has from time immemorial maintained great economic potentials that encourages agricultural growth; albeit, the availability of financial resources to the agricultural sector has been on the decline thus impeding the fortune attainable in the sector (Nwadioha & Igoni, 2021). Even though this has caused a noticeable fall in the contribution of agriculture to the GDP of Nigeria per time the sector still provides means of living for several Nigerians despite being the largest employer of labour (National Bureau of Statistics, 2010). However, notwithstanding the discernable influence of agriculture on economic activities, the sector has been marred by severe inability to reach financial resources from financial institutions. Shockingly, the banking sector mobilized 4.2 percent of its total credit to private sector to agricultural sector in 2019 while oil and gas got 22 percent, services sector received 36.5 percent while the manufacturing sector had 15.3 percent (National Bureau of Statistics, 2019). In a similar way, it was gathered that farmers are the most limited persons in terms of finance in Nigeria as about 38 percent of farmers do not have access to formal finance (EFINA, 2017); this evidences the height of preclusion that the agricultural has suffered in obtaining formal finance.

The Nigerian government towards giving farmers useable financial aid, cushion the continues fall agricultural growth and consequently improve the growth of the economy has introduced several schemes, programmes and policy implementations towards facilitating credit to the agricultural sector some of which include Agricultural and Cooperative Bank (NACB) in 1973, Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1977, Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB) in 2000, Commercial Agricultural Credit Scheme (CACS) in 2009, and Nigerian Incentive-based Risk Sharing for Agricultural Lending (NIRSAL) in 2011. Albeit, the efforts exerted by the government through these initiatives has not commanded any noticeable growth in the sector as food products for domestic consumption are still inadequate, exports has been on the decline hence low foreign reserves while importation has been on the increase (Awe, 2013; Olomola & Yaro, 2015). Hence, the sector has remained undercapitalized as banks have denied farmers credits despite government policies that encouraged release of funds to the agricultural sector at favorable interest rates; this has worsened the underutilization of the prospects in the country which explains the snail wise growth in the sector and the consequent state of the economy of Nigeria.

Additionally, potential investors has been utterly discouraged from investing in the sector while existing investors has divested considering the less profitability experienced by the sector which is eroded by the limited finance available to the sector. It is most likely that the sector would again be denied future prospects in the sector as it has been mentioned that availability of finance for farmers in Africa could command a shoot up beyond 300 percent of agricultural output from $280 to $880 billion by 2030 (McKinsey Global Institute, 2010). It is towards aiding the agricultural sector in Nigeria in having a share of this future prospect that several studies have been carried out; however, in capturing the associationship between commercial credit and agricultural growth, the growth of the economy which is the most considered factor is not considered in these studies (Anifowose & Lanadu, 2020; Fowowe, 2020; Medugu, Musa & Abalis, 2019; Emenuga, 2019; Ogbuabor & Nwosu, 2017; Bada and Ogunbi, 2017; Anetor *et al.,* 2016; Aukwo *et al.,* 2020; Nnamocha & Eke, 2015). Although Oyelade (2019) and Egwu (2016) measured agricultural output with Agriculture Sector Contribution to Gross Domestic Product in Nigeria but employed ordinary least regression which does track the long and short run association between metrics of commercial credit and agricultural output. It is based on this premise that this study sets out to examine the impact of commercial credit on agricultural growth in Nigeria.

2.0 REVIEW OF LITERATURE

Agricultural Growth

Agricultural growth refers to the increase in the total value of products and services of farming, forestry, animal husbandry and fishery (Medugu, Musa & Abalis, 2019). It reflects the total scale and results of agricultural production during a given period. The gross output of farming includes all the products of the field crops cultivation, cultivation of meadows, vegetables growing, orchard and vineyard cultivation. The gross output of livestock rising includes all the products of farming, beekeeping, sericulture, fish breeding, cattle, swine horse, reindeer and rabbit breeding (Lemeshev, 2010). It also refers an increase in the total value of products and services of farming, forestry, animal husbandry and fishery. It reflects the total scale and results of agricultural production during a given period.

Commercial Credit

Credit is the extension of money from lender to the borrower. Sunny (2013, Cited Spenser 1977), noted that credit implies a promise by one party to pay another for money borrowed or goods and services received. This shows that bank credit can be in cash, kind or services. Banks depends on deposit from individuals or groups with surpluses which can be given out to those that need the money to carry out their businesses (Medugu, Musa & Abalis, 2019). These banks serve as debtors to the depositors but creditors to the borrowers. Banks therefore connects surpluses to the borrowers in form of credits.

Relationship between Credit and Agricultural Growth

According to Ijaiya and Abdulraheem (2000), credit is a financial resource that is obtainable from financial institution within a specified period of time based on agreed terms with the promising of paying back as and when due. Osuntogun and Adewunmi (2003) viewed agricultural credit as the aggregation of agreement where cash and kind contributions are visibly made available to farmers with the obligation of paying back with interest at a later date in future. Kolapo, Ayeni and Oke (2012) and Mohammed (2012) disclosed that the intermediation role played by bank sector can be said to be a catalyst for economic growth and development based on the premise that banks collect savings and resources from individual, entities, government and corporate bodies as investment funds and channel the savings to the users of resources for investment activities. This implies that the rate at which banks advance financial resources to the real sector determines the pace of a nation’s economic growth.

Lending risks and Agricultural Loans

Risk taking channel may operate via several ways. Most importantly, low interest rates boosting asset prices may increase the value of collateral and thereby allow banks to accept higher credit risk (Borio et al, 2001). Altunbas et al (2009) report also on other possible impacts of lower interest rates on higher risk taking of borrowers. Low interest rate environment may facilitate search for higher risk assets, the so called "search for yield" (Rajan, 2005) and increase banks' risk tolerance. It is a necessary but not sufficient condition for the existence of risk taking channel. Also banks' risk perception would have to change following the change in the monetary policy stance. Although they do not test this in their research, they give some insights into the determinants of the changes of bank lending policies, which seem to support their view that changes in perception

of risk by banks is an important driver of changes in lending policies. Since according to Bernanke and Lown (1991); Woo (1999), changes in bank lending policy are related either to capital constraints (for which we control) or to shifts in perception of risks, our results provide some support toward the significance of risk taking channel. Moreover, Rajan (1994) and Berger and Udell (2004) demonstrate that banks tend to curb lending in economic downturns by changing lending standards. Their results point to the importance of bank lending policies to the broad economy and the business cycle.

3.0 METHODOLOGY

This study is guided by the model of Emenuga (2013) which assessed the effect of commercial banks credit on agricultural productivity in Nigeria. Emenuga (2013) measured commercial credit with commercial banks credit to agriculture and interest on banks' credit to agriculture. For simplicity, the adapted model is presented thus:

$AGP_t = \beta_0 + \beta_1 CBCA_t + \beta_2 INTR_t + \beta_3 ACGSF_t + \mu_t$ ……..….. 3.1

Where:

AGP_t = natural logarithm of Agricultural Productivity at time t
$CBCA_t$ = natural logarithm of time t Commercial banks' credit to Agriculture
$INTR_t$ = natural logarithm of time t Interest on banks' credit to Agriculture
$ACGSF_t$= natural logarithm of Agricultural credit guarantee scheme fund at time t
μ_t = Stochastic error term
β_0 = constant and $\beta_1 - \beta_3$ = coefficients of independent variables;
t = time series

As this study concerns the interplay between commercial credit and agricultural growth in Nigeria, the above model is modified to capture bank characteristics - commercial banks total assets. More importantly, it is unarguable that the ultimate goal of any action in a developing country like Nigeria is the growth of the economy; the effective model captures economic growth proxied with gross domestic product towards tracking the association between the flow of credit from commercial banks to the agricultural sector and the ultimate effect on the growth of the Nigerian economy. Hence, the modified model is specified below:

AGG = f (CBLA, ICBC, CBTA, GDP) …….3.2
$AGG_t = \beta_0 + \beta_1 CBLA_t + \beta_2 ICBC_t + \beta_3 CBTA_t + \beta_4 GDP_t + \mu_t$ ……..…….3.3
Where:
AGG = Agricultural Growth
CBLA = Commercial Bank Loan on Agriculture
ICBC = Interest Rate on Commercial Banks' Credit
CBTA = Commercial Banks Total Asset
GDP = Gross Domestic Product

Sources of Data

Data used in the study will be sourced from the statistical bulletin of the Central bank of Nigeria and the Nigeria Bureau of Statistics for the period covered in the study. Specifically, commercial bank loan on agriculture, interest rate on commercial banks' credit and commercial banks total

asset data were gleaned from the Central Bank of Nigeria Bulletin while data on agricultural growth and gross domestic product were amassed from the publications of the Nigeria Bureau of Statistics. The data from these sources span from the period of 1989-2020 as evidenced and justified in the scope of this study.

***A-priori* Expectation:**

$\frac{dAGG}{dCBLA}$, +: connote that commercial bank loan on agriculture is expected to exert positive impact on agricultural growth in Nigeria.

$\frac{dAGG}{dICBC}$, +: connote that interest rate on commercial bank credit is expected to exert positive impact on agricultural growth in Nigeria.

$\frac{dAGG}{dCBTA}$, +: connote that commercial bank total assets is expected to exert positive impact on agricultural growth in Nigeria.

$\frac{dAGG}{dGDP}$, +: connote that agriculture growth is expected to exert positive impact on gross domestic product in Nigeria.

4.0 DATA ANALYSIS AND DISCUSSION

Table 4.1 Descriptive Statistics of Variables

	AGG	CBLA	ICBC	CBTA	GDP
Mean	8089645.	141629.0	6.339375	13082.25	41193.01
Median	4328369.	60976.25	4.075000	4134.200	36247.75
Maximum	29084783	398945.5	18.80000	52876.34	78983.83
Minimum	120060.2	3470.500	1.370000	845.3500	17294.68
Std. Dev.	8618917.	144705.5	5.154340	14748.27	20849.44
Skewness	1.015830	0.705728	1.233902	1.033416	0.398752
Kurtosis	2.887746	1.772648	3.039816	3.014063	1.608566
Jarque-Bera	5.520328	4.664798	8.122189	5.695990	3.429466
Probability	0.063281	0.097063	0.017230	0.057960	0.180012
Sum	2.592308	4532129.	202.8600	418631.9	1318176.
Sum Sq. Dev.	2.304515	6.495611	823.5838	6.745709	1.358910
Observations	32	32	32	32	32

Source: *Author's Computation, (2022)*

Table 4.1 descriptive statistics of variables based on observation collected over the period spanning from 1989 to 2020. As reported in the table average agricultural growth for the period under study stood at 8089645 million naira, with minimum and maximum values of 120060 million naira and 29084783 million naira respectively. Commercial bank loan on agriculture, interest rate on

commercial banks' credit to agriculture, commercial banks total asset and gross domestic product stood at 141629.0 million naira, 6.339375 percent, 13082.25 million naira and 41193.01 billion naira respectively. Maximum and minimum value reported on table 4.1 stood at 398945.5 million naira and 3470.5 million naira for commercial bank loan on agriculture, 18.80000 percent and 1.37 percent percent for interest rate on commercial banks' credit to agriculture, 52876.34 million naira and 845.35 million naira for commercial bank total assets, 78983.83 billion naira and 17294.68 billion naira for gross domestic product respectively. Skewness statistics reported in table 4.1 revealed that all the variables used in the study are skewed to the right with reported values of 1.015830, 0.705728, 1.233902, 1.033416, 0.398752 for agricultural growth, commercial bank loan on agriculture, interest rate on commercial banks' credit to agriculture, commercial banks total asset and gross domestic product respectively. Reported kurtosis statistics revealed that all the variables are platykurtic by the distribution peakedness. In specific terms reported kurtosis statistics stood at 2.887746, 1.772648, 3.039816, 3.014063 and 1.608566 for each variables. Jarque-bera statistics reported in table 4.1 stood at 5.5203 (p=0.0.0632>0.05) for agricultural growth, 4.6647 (p= 0.0970>0.05) for commercial bank loan on agriculture, 8.1221 (p= 0.0172<0.05) for interest rate on commercial bank credit to agriculture, 5.6959 (p=0.0579>0.05) for commercial banks total assets, 3.4294 (p=0.1800>0.05) for gross domestic product which reflect that all the variables except are normality distributed except interest rate on commercial banks' credit to agriculture.

Correlation Analysis

Table 4.2 Correlation Matrix

	AGG	CBLA	ICBC	CBTA	GDP
AGG	1.000000	0.932000			
CBLA	0.932000	1.000000			
ICBC	-0.561458	-0.567044	1.000000		
CBTA	0.992140	0.931807	-0.527303	1.000000	
GDP	0.961457	0.957239	-0.666716	0.958790	1.000000

Source: *Author's Computation, (2022)*

Results of correlation estimation showed in table 4.2 demonstrate the existence of positive correlation between agricultural growth and commercial bank loan on agriculture, agricultural growth and commercial banks total asset, agricultural growth and gross domestic product and negative correlation between agricultural growth and interest rate on commercial banks' credit to agriculture. Indications from the result revealed that agricultural growth move mostly in the same direction with commercial credit proxied with commercial bank loan on agriculture, interest rate on commercial banks' credit to agriculture and commercial banks total asset. Specifically, correlation estimates stood at 0.932000 for AGG and CBLA, -0.561458 for AGG and ICBC, 0.992140 for AGG and CBTA, 0.961457 for AGG and GDP respectively.

Unit Root Analysis

This section present summary of result of unit root test carried to ascertain the stationary property i.e. predictability properties of the variables. The test showed the order of integration of each of the variables, as presented in table 4.3 below.

Table 4.3 Summary of Unit Root Test Result

	At Level			At First Difference			
Variables	**ADF statistics**	**1% critical value**	**5% critical value**	**ADF statistics**	**1% critical value**	**5% critical value**	**Order of integration**
AGG	5.837361	-3.670170	-2.963972	0.077041	-3.689194	-2.971853	I(0)
CBLA	-0.112693	-3.661661	-2.960411	-5.773988	-3.670170	-2.963972	I(1)
ICBC	-1.855866	-3.661661	-2.960411	-7.068231	-3.670170	-2.963972	I(1)
CBTA	5.736689	-3.661661	-2.960411	0.123760	-3.670170	-2.963972	I(0)
GDP	1.302524	-3.670170	-2.963972	-4.019731	-3.670170	-2.963972	I(1)

Source: *Author's Computation, (2022)*

Co-integration Analysis

Table 4.4 ARDL Long Run Estimation Result

Series: *AGG CBLA ICBC CBTA GDP*

Variables	**Coefficient**	**Probability**
C	1055740.	0.0385
CBLA	1.410117	0.0749
ICBC	-80022.61	0.0060
CBTA	545.3591	0.0000
GDP	5.024231	0.0296

R-square=0.9864, *Adjusted R-square*=0.9844; Durbin-Watson=1.1959

Source: *Author's Computation, (2022)*

Estimation result presented in table 4.4 revealed that in the Commercial bank loan on agriculture, exerts positive insignificant long run impact on agricultural growth with coefficient estimate of 1.4101 (p=0.0749>0.05). Furthermore, result showed in the long run interest rate on commercial banks' credit to agriculture exert significant negative impact on agricultural growth captured with agricultural output growth index with coefficient estimate of -8002.61 (p=0.0060<0.05); commercial bank total assets exert positive significant long run impact on agricultural growth in Nigeria with coefficient estimate of 545.3591(p=0.0000 <0.05) and gross domestic product exerts positive significant impact on agricultural growth in the long run with coefficient estimate of 5.0242 (p=0. 0296<0.05). Reported R-square statistics stood at 0.98 which suggests that in the

long run commercial bank loan on agriculture, interest rate on commercial banks' credit to agriculture, commercial banks total asset and gross domestic product can jointly explain about 98% of the systematic variation in agricultural growth, other things held constant.

Error Correction Model (ECM)

Table 4.5 Short Run Estimation Result

Series: *AGG CBLA ICBC CBTA GDP*

Variables	Coefficient	Probability
D(AGG(-2))	0.040332	0.8206
D(AGG(-3))	0.671088	0.0011
D(CBLA)	3.788287	0.2733
D(ICBC)	-88905.65	0.0106
D(CBTA)	133.0719	0.0837
D(GDP)	371.7643	0.0020
D(GDP(-1))	-626.2845	0.0002
D(GDP(-2))	284.7954	0.0274
ECT	0.154605	0.0003
C	3000.822	0.0898

R-square=0.8114, *Adjusted R-square*=0.7172, Durbin-Watson=2.6725

Source: *Author's Computation, (2022)*

Parsimonious error correction model estimation result presented in table 4.5 revealed that in the short run commercial bank loan on agriculture exert positive insignificant impact on agricultural growth with coefficient estimate of 3.7882 (p=0.2733<0.05), interest rate on commercial banks' credit exert negative significant impact on agricultural growth with coefficient estimate of -88905.65 (p=0.0106<0.05). Result also showed that in the short run commercial bank total assets exert positive insignificant impact on agricultural growth with reported coefficient estimate of 133.0719 (p=0.0837>0.05) and gross domestic product exert positive significant impact on agricultural growth with coefficient estimate of 284.7954 (p=0.0274<0.05). Coefficient of one period lagged error correction term reported in table 4.6 stood at 0.1546 with probability value of 0.0003 which implies that over time about 15% of the short run inconsistencies is significantly corrected and incorporated into the long run dynamic annually. R-square statistics of 0.81 reported in table 4.5 revealed that about 81% of the systematic variation in human development index can be explained jointly by commercial bank loan on agriculture, interest rate on commercial banks' credit to agriculture, commercial banks total asset and gross domestic product.

Post Estimation Test

Table 4.6 Post Estimation Test

Linearity Test		
Statistics	***Values***	***Probability***
T-statistic	1.383404	0.1783
F-statistic	1.913806	0.1783
Likelihood Ratio	2.272795	0.1317
Normality Test		
Statistics	***Values***	***Probability***
Jarque-Bera Stat	2.6785	0.2620
Serial Correlation LM Test		
Statistics	***Values***	***Probability***
F-statistic	4.5456	0.0207
Heteroscedasticity Test		
Statistics	***Values***	***Probability***
F-statistic	6.8237	0.0006

Source: *Author's Computation, (2022)*

Result of Ramsey test presented in table 4.6 report three statistics including t-statistics and f-statistics, alongside their respective probability values. Specifically table 4.6 reported t-statistics of 1.3834 (p=0.1783>0.05), f-statistics of 1.9138 (p=0.1783>0.05) and likelihood ratio of 2.6785 (p=0.1317>0.05) thus reflecting that there is no enough evidence to reject the null hypothesis that the model is correctly specified.

The Jarque-bera statistics value for error term of the estimated models stood at 2.6785 (p= 1317>0.05). The result revealed that there is no enough evidence to reject the null that the error term of the estimated model is normally distributed, given the probability value, thus confirming that the error term is normally distributed.

Breusch-Godfrey serial correlation LM test result presented in table 4.6 revealed f-statistics and probability value of 4.5456 and 0.0207 respectively. The statistics showed that there is no evidence to reject the null hypothesis of no serial correlation between successive values of error terms of the estimated models. Hence there is no problem of serial autocorrelation in the estimated models.

Table 4.6 report f-statistics and probability value of 6.8237 and 0.0006 which reflect that there is no evidence to reject the null hypothesis of constant variance of the error term (homoscedasticity). Hence the test confirmed that there is no problem of heteroscedasticity in the error term of the estimated models.

CUSUM Test

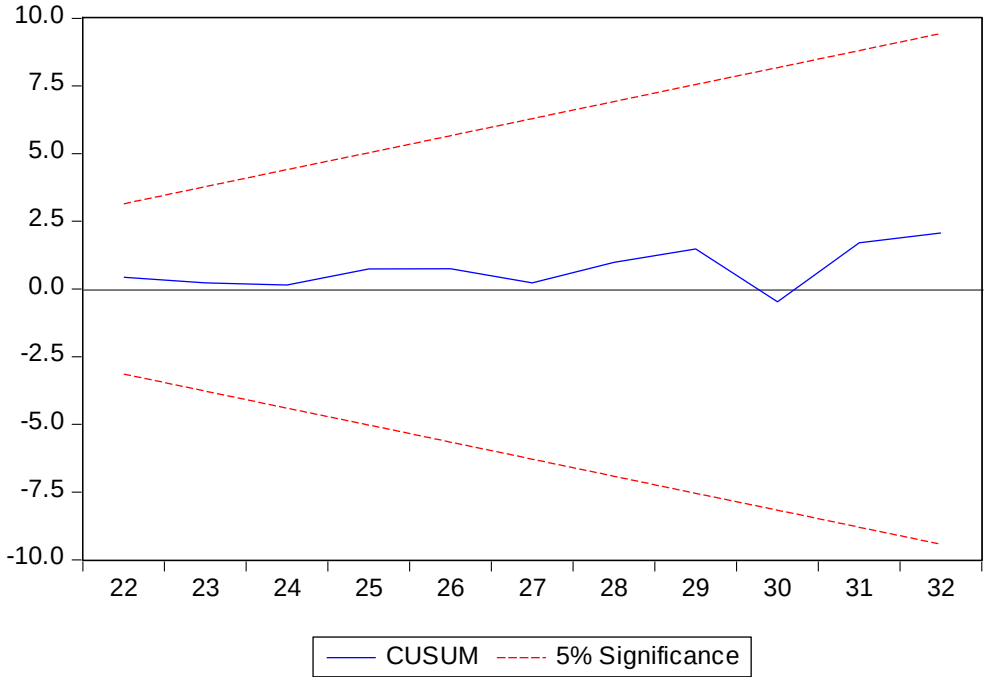

Figure 4.1: Cumulative Sum (CUSUM) Test

In an attempt to ensure that the ARDL model is well fitted, the study employs cumulative sum (CUSUM) test developed by Durbin, Brown, and Evans (1975). The test decision is that, if the plotted CUSUM statistics lies within 5% significance level, the coefficient estimates are accepted. Figure 4.1 shows that the CUSUM plot falls within the 5% level of significant (indicated by the two red lines). This indicates that the model adopted in this study is stable and not spurious.

Discussion and Implication of Findings

The obtained result of the estimation carried out in this study evidenced that commercial bank loan on agriculture affects agricultural growth positively and insignificantly both in the short and long run; this finding suggests that as loan delivered by commercial bank to agricultural businesses increases, agricultural growth tends to shoot upward. The might of agriculture and its potentials has been grossly underutilized in Nigeria thereby causing its output to be meager and with no consequent contribution to the growth of the economy; however, the basic limiting factor for individuals and businesses that explores agriculture is the less priority given to the sector by commercial banks. As established in the finding, it is expected that as commercial bank loan to the sector increases, the sector would be more productive and prosperous; but commercial banks prefers to give out loans to businesses in the oil sector as the nation depends largely on such sector despite the doom that the sector has caused the nation in recent time. The implication is that the agricultural sector is almost completely deprived of the resources it require to grow thereby hampering the productivity of the sector which in effect discourages both investors and individuals interested in the business of agriculture; this finding is also affirmed by Fowowe (2020).

Additionally, the study established that interest rate on commercial banks' credit to agriculture exerts negative significant impact on agricultural growth both in the long and short run; thus

implying that as interest charged on loan delivered to the agricultural sector increases, the growth of the sector reduces very noticeably. Interest rate has per time been a factor that discourages investment especially in agriculture as it is in this case; investment in agriculture has been discouraged following the unproductive nature of the sector which undoubtedly dwells on the lack of cheap funds which could be deployed to shoot up the output of the sector and ultimately encourage investors to pool their funds in the business. In fact, as evidenced in the finding, the effect of interest rate remained adverse even in the long run thereby; this reflects the height of macroeconomic uncertainty which has over the years caused the underutilization of the agricultural sector, discouraged investment and consistently hampered the growth of the economy; this finding is consistent with the discovery of Ojima and Emerenini (2015) and Onwumere, Okore and Ibe (2012).

Furthermore, the study affirmed that commercial bank total assets exerts positive significant effect on agricultural growth in the long run and an insignificant positive effect on agricultural growth in the short run; hence suggesting that as commercial bank total assets increase, the growth of the agricultural sector also improves. The baking sector has in the past been the quickest and surest source of loan for growing business especially lucrative businesses in the agricultural sector; albeit, recently the consistent regulations of the Central Bank of Nigeria has practically caused most commercial banks to become cash-trapped thereby leaving these banks with no choice but to ration their limited assets (cash) and deploy same to sectors that are certain to pay back within a relatively shorter period of time. In fact, most banks considering their limited useable cash and in their bid to maintain increased profit may outright deny agribusiness owners funds which could shoot up agricultural output although maybe not in the shortest period of time as usually desired by these banks; this finding aligns with that of Oyelade (2019).

Conclusion and Recommendation

Premise on the estimation results obtained carried out in the study, it is evident that the commercial credit affects agricultural growth noticeably in Nigeria. This study specifically established that commercial bank loan on agriculture affects agricultural growth positively and insignificantly both in the short and long run; interest rate on commercial banks' credit to agriculture exerts negative significant impact on agricultural growth both in the long and short run and commercial bank total assets exerts positive significant effect on agricultural growth in the long run and an insignificant positive effect on agricultural growth in the short run. Premised on these findings, it is therefore worthwhile to conclude that the cascading value of commercial credit drags down the growth of agricultural sector which is noticeable in the height of import of agricultural products in Nigeria; hence, the impact of commercial credit on agricultural growth in Nigeria is highly significant. Based on the findings ascertained in the study, the following policy recommendations become imperative.

i. Commercial banks should increase loan channeled to the agricultural sector as such is required to enhance the growth of the sector.

ii. Government through the Central Bank of Nigeria should urgently make policies that would cause interest rate charged on agricultural loans to maintain single digits towards making interest payment favorable and ultimately encourage loan taking.

iii. Government should shoot up agricultural sector expenditure and cause improvement in the monitoring of the sector; this would catalyse and propel sustainable growth in the agricultural sector.

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