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THE IMPACT OF CREDITS ON AGRICULTURAL OUTPUT IN NIGERIA

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Abstract

The present study examined the impact of credits on agricultural output in Nigeria over the period of 1978 to 2016. The data were sources from various edition of Central Bank of Nigeria Statistical Bulletin. Johansen cointegration test and Multivariate Ordinary Least Squares regression estimation were applied to the data to achieve the objective of the study. The findings of the study revealed no long-run relationship between deposit money bank credit to the agriculture sector in Nigeria and agriculture sector output. The findings of the study are further in line with a priori expectations as deposit money bank credit to the agriculture sector in Nigeria has a positive and significant impact on agriculture sector output in Nigeria. Therefore the Deposit money bank credit is a channel through which the Nigeria government can achieve a boost in the output of the Agriculture sector. This is more so in light of its renewed interest in reviving the sector.

Keywords: Credit, Agriculture, Deposit money bank, Government Expenditure, Nigeria

INTRODUCTION

Finance is essential for any economy seeking to achieve growth and consequently economic progress. Such finance is one of essential resources which if invested in strategic sectors of the economy have the potential to result in the transformation of the economy (Mellor & Dorosh, 2010). One source of finance of significant importance in any business is credit.

Credit may be obtained from various sources, including banks, nonbank financial institutions, stock markets, and so on. However, banks remain a major source of credit for

investment by both individuals and firms. This credit borrowed while it may be invested in various sectors of the economy, in the case of a developing country as Nigeria, the Agriculture sector may be argued as a strategic sector of importance for the growth and development of the Nigeria economy and hence a sector of choice for investment of credit. In Nigeria today, agriculture accounts for one third of the Gross Domestic Product GDP and employs about two third of the labour force (Oyeyinka, 2002). In fact, the agriculture sector is argued as the most dominant sector and indeed a major source of livelihood for the citizens of a country (Udoka, Mbat & Duke, 2016).

The importance of agriculture stems from the sector providing food for the teeming population of the economy thereby ensuring food security, and being the only source of raw materials that is used as input in the production process in other sectors of the economy (Ijaiya & Abdulaheem, 2005). Further the agriculture sector through the rearing of animals provides agro-allied products for industrial growth and development, provision of employment opportunities, especially to the rural populace; provision of market for the industrial sector; and provision of the needed linkage between the traditional sector and the modern sector (Ijaiya & Abdulaheem, 2005). Consequently, agriculture may serve as a catalyst for the growth of the entire economy, and hence the growth and development of the agriculture sector cannot be over-emphasized.

The lack of credit supply to the agriculture sector is particularly of concern as agricultural credit is an integral part of the process of modernization of agriculture and commercialization of the rural economy. The introduction of easy and cheap credit is the quickest way for boosting agricultural production. Therefore, it has become the prime policy of all the successive governments, to meet the credit requirements of the farming community. However, as highlighted by Jumare (1996) successive governments have come up with numerous programmes to address the inability of agricultural output to keep pace with the country's demand for agricultural products but despite this farmers have had limited success in accessing the much needed credit for investment in the activities of their farms (Bolarinwa & Oyeyinka, 2005; Olagunju & Adeyemo, 2008).

The sources from which funds may be obtained for financing the activities of the agriculture sector may be categorized into Micro and Macro sources of finance. The micro sources relate to the use of Deposit Money bank financing as capital for agricultural activities, while agricultural funding through capital mobilization and allocation by government through such agencies as rural banking development programmes, Nigerian Agricultural Cooperative and Rural development Bank (NACRDB) and the Central Bank of Nigeria (CBN), constitute the macro sources of Agriculture sector finance.

Therefore, with a variety of sources of credit available in Nigeria, and with the recent shift in focus of the Nigeria government towards rekindling interest in the development of the Nigeria Agriculture sector, the present study is an examination of Deposit Money Bank credit to the Agriculture sector and Agriculture sector output in Nigeria.

Several studies in this area including Enyim, Ewno and Okoro (2013), Bolarinwa and Oyeyinka (2005), Olagunju and Adeyemo (2008), and Udoka, Mbat and Duke (2016) have identified poor credit supply as one of the factors accounting for the poor performance of the agricultural sector in Nigeria. The Deposit money banks have no keen interest in agricultural finance (Obilor, 2013). In order to encourage the banks, the government established the Agricultural Credit Guarantee Scheme (ACGS) to provide guarantees against inherent risk in agricultural lending. This measure could not achieve the intended objectives because agriculture requires huge capital outlay because it is both labour and capital intensive venture (Nwankwo, 2013). This made the country to rely on massive importation of basic food items and raw materials for industrial inputs (Itodo, Apeh and Adeshina, 2012). The resultant effect is the high cost of living coupled with high level of unemployment on the common man. Evidently, this suggests that the government's effort to fortify the Nigeria agricultural sector has not yielded the desired result (Udensi, Orebiyi, Ohajianya and Eze, 2012). Thus, the need for further investigation in this area cannot be overemphasized.

In particular, with credit being scarce, and with significant competition amongst alternative uses of this credit, it is pertinent to examine the impact of Deposit money bank credit on Nigeria's agriculture sector output. This is important as the Nigeria government's renewed interest in agriculture in recent time critically depends on the extent to which sufficient credit may be directed to the sector in addition to its efficient use by the sector. This credit should not only be directed in the short run but also the long run and hence the need for also establishing whether deposit money bank credit to the Nigeria agriculture sector and agriculture sector output has a long run relationship. The questions then are: Is there a long run relationship between Deposit Money Bank credit to the agriculture sector and agriculture sector output in Nigeria?; What is the impact of Deposit Money Bank credit to the Nigeria agriculture sector on agriculture sector output in Nigeria?

Therefore this study examines the relationship between agriculture sector credit and agriculture sector output in Nigeria: investigating whether a long run relationship exists between credit to the agriculture sector and agriculture sector output in Nigeria and thereafter determines the impact of the credit on the sector's output. The study covers the period of 1978 to 2016, based on data availability.

LITERATURE REVIEW

Numerous studies have been conducted to reveal the impact of credit on agricultural output in both developed and developing economies. Majority of these studies seems to suggest that credit has a positive effect on economic growth and development. For instance, Zuberi (1989) in his study discovered that about 70 per cent of the overall credit to the agricultural sector was employed in fertilizer and seed purchases and submitted that, the majority of the increased agricultural production could be attributed to changes in the quality and quantity of fertilizer and seed.

There have been consistent attempt to increase these support incentives by Nigerian government through increased budgetary expenditure and provision of available affordable credit facilities. This government budgeting provision has serves as a critical determinant of the output and performance of the Nigerian agricultural sector over the year (Nwosu, 2010).

Food and Agricultural Organization (FAO) concluded in 2008 that the allocation of capital to the Nigerian agricultural sector from 1970 to 1980 averaged at 4.74 per cent. This figure rose to 7.00 per cent between 1980 and 2000, and further moved to 10.00 per cent between 2001 and 2007. In spite of this upward trend, it is far below what is being recommended by FAO that government should assigned about 25 per cent of its budgetary allocation to the development of the agricultural sector. Along this reasoning, several studies are focused toward examining the impact of the expenditure of government on agricultural output. For instance, Nafisat (2009) examined the impact of the expenditure of Nigerian government on output using the ordinary least square (OLS) estimation technique for the period 1977-2006. The results show that agricultural output does not respond significantly to government expenditure on agriculture. It confirms that the government contribution to agriculture is not enough for its development. The study therefore suggested that the unique role of agriculture is recognized so that the sector can obtain its right share of government expenditure.

Iganiga and Unemhilin (2011) conducted a study on the impact of agricultural expenditure of government and other determinants of agricultural output on the value of the Nigerian agricultural output. They specified the Cobb Douglas growth model to accommodate food important, annual average rainfall, commercial credit to agriculture, GDP growth rate, consumer price index and population growth rate. The error correction result revealed that, the capital expenditure of government had a positive relationship with agricultural output and total commercial bank credit to the Agriculture sector had a negative and significant impact on agriculture sector output amongst other findings.

Adofu, Abula and Agama (2012) studied on the examination of the impact of budgetary provision of the government to the agricultural sector on its performance employing annual data

from 1995-2009. Employing the ordinary least squares multiple regression model, the findings revealed that the relationship that existed between budgetary provision to agricultural sector and Nigerian agricultural production was found to significant, strong and positive. The recommendations made from the study were that, the allocation from the budget to the agricultural sector should be increased and monitored to achieve employment, food security, and ultimately, enhanced growth and development of the Nigerian economy.

Idoko, Sunday and Sheri (2012) used data from 1975 to 2010 when studying the effect government expenditure on the Nigerian agricultural output. The variables of this study included foreign direct investment on agricultural sector, annual rainfall, government expenditure on agricultural sector, agricultural credit guarantee scheme fund, and commercial bank loans and advances to the agricultural sector. The result of the estimated OLS model revealed that, the relationship that existed between government expenditure on agriculture and Nigerian agricultural sector output was found to significant and positive during the evaluation period. Uger (2013) studied the effect of government expenditure on agricultural sector using annual time series data from 1991 to 2010. Employing the OLS model, the findings revealed that, a positive but insignificant relationship existed between agricultural financing (expenditure) and its output in Nigeria.

As observed by Anyawu, Ukeje, Amoo, Igwe and Eluemunor (2010), one of the purposes of the policies of agricultural credit years over was the provision adequate credit to the agricultural players at an affordable cost and at the right time. According to Afolabi (2010), the intervention of government in form of sectoral credit allocation, oligopolistic tendencies, interest rate ceilings and highly concentrated market structure that resulted in monopoly as well as promoting other inefficiencies that are responsible for economic distortions. On the empirical ground, there are several studies investigating the effect of interest rate on agricultural productivity.

Omojimite (2012) carried out a study on the relationship between the growth of the Nigerian agricultural sector, macroeconomic policy and institutions finds significant signal in sustenance of the hypothesis that institutions are more critical in economic growth particularly the Nigerian agricultural sector growth. The study recommended that, interest rate should be liberalized to the agricultural sector and institutional supports should be strengthen basically on the areas such as extension services to farmers and subsidized inputs.

Amassoma, Nwosa and Ofere (2011) examined the nexus of lending rate, deregulation of interest rate and agricultural productivity in Nigeria using annual data spanning 1986 to 2009. The authors used ordinary least squares (OLS) econometric estimation technique and cointegration and ECM as well as long run relationship was revealed among the variables from

the cointegration test while the error correction modelling revealed a significant and positive relationship between interest rate deregulation and agricultural productivity. The study further recommended that, interest rate should be market determined so as to serve as a catalyst for improved agricultural productivity. It is also expected that government must make it possible for the financial sector to carry out the policies that will guarantee available credit to the preferred sector, especially every sort of farmers and not bigger borrowers only like the government alone for the sole aim of boosting the productivity of the Nigerian agricultural sector.

Kolawole (2013) empirically investigated the effect of interest rate and some macroeconomic variables on the performance of the Nigerian agricultural sector using time series annual data from 1980 2011. The study employed the ECM model within the framework of OLS regression estimation. A long run relationship was revealed among the variables and the ECM model found out that there was an inverse relation between interest rate spread agricultural productivity. There was also a negative relationship between exchange rate and agricultural productivity. This means that assuming the interest rate spread levels and exchange rate is increased, there will be a decline in the degree of agricultural value added in the country.
Okulegu (2010) examined Banking sector credit and the performance of the Agricultural sector in Nigeria. The study adopted time series econometrics analysis and descriptive statistics to estimate the banking sector agricultural credit effects on agricultural product performance in Nigeria. The empirical analysis carried out use the econometric tests such as unit root, cointegration, Error correction model and Grange causality test, in which changes in AGDP was regressed on commercial bank credit to agriculture, agricultural credit guarantee scheme, and government expenditure on agriculture-using annual series data for the period 1981-2011, and the data was mainly from CBN statistical bulletin. The result of our analysis showed that the total money stated as Government Expenditure on agriculture in Nigeria was not statistically significant and not theoretical in line. The study also found that Commercial bank credit to agriculture (CBCA) granger caused Agricultural sector contribution to Gross Domestic Product since the Commercial bank credit to agriculture (CBCA) estimated F-coefficient showed (51.1429) greater than the f-critical value (3.034) at 5% level. Based on the findings above, the study recommended that one or other rural saving institutions (post office savings banks, cooperative banks etc) should be established in every autonomous community in Nigeria. The study equally recommended that a clear-cut credit policy which ensures a long-term financing of agriculture. Short-term, discriminating policies cause confusion and prevent farmers from investing in agriculture.

Awe (2009) investigated the mobilization of domestic financial resources for agricultural productivity in Nigeria with a view to identify the contributions of the various sources of finance

to agricultural productivity in Nigeria. He employed Vector Auto Regressive Model (VAR) to analyze time series data from (1980 – 2009). The paper identified the various instruments and strategies used by the government for mobilizing resources for the agricultural sector in Nigeria to include subsidy and agricultural credit policies that were financed through Nigerian Agricultural Credit Bank (NACB), credit facilities from Nigerian Bank for Commerce and Industries at the state level, credit through Commercial and Merchant Banks and provision of agricultural credit to the defunct Commodity Board by the Central Bank of Nigeria. The result revealed positive relationships between the variables and the variance decomposition measured the proportion of forecast error. The paper therefore recommend that the Federal government recurrent expenditure on agriculture should be reviewed upward for enhanced agricultural productivity and that both the Federal government and the Commercial Banks should mobilize more financial resources toward the agricultural sector to boost agricultural productivity which would guaranteed maximum agricultural productivity in Nigeria.

Muftaudeen and Hussainatu (2011) empirically investigated the impact of macroeconomic policies on agricultural output specifically on crop production in Nigeria. The Multivariate Vector Error Correction approach was applied to examine both short run and long run relationship between the series over the period of 1978-2011. The research revealed a cointegrating relationship among agricultural output, government expenditure, agricultural credit, inflation, interest and exchange rates. The findings showed that in the long run, agricultural output was responsive to changes in government spending, agricultural credit, inflation rate, interest rate and exchange rate. The results of impulse response functions suggested that one standard deviation innovation on government expenditure and interest rate reduces the agricultural output thus threatening food security in the short, medium and long term. While results of the variance decomposition indicate that, a significant variation in Nigeria's agricultural food output was due to changes in exchange rate and government expenditure movements. That implied the imperative of the role played by both fiscal and monetary policy in an effort to ensure food security. They recommended that to achieve a sustainable food security, an expansionary fiscal policy that is not inflationary should be rigorously pursued along with a realistic exchange rate that takes account of the prevailing internal macroeconomic environment rather than the dynamics of international undertones.

CONCEPTUAL FRAMEWORK

The absence of an appropriate theory bringing together how agriculture credit and other inputs may affect agriculture output necessitates the conceptual framework of the present study. The

conceptual framework underpins the model adopted for the study. The conceptual framework is as presented in Figure 1.

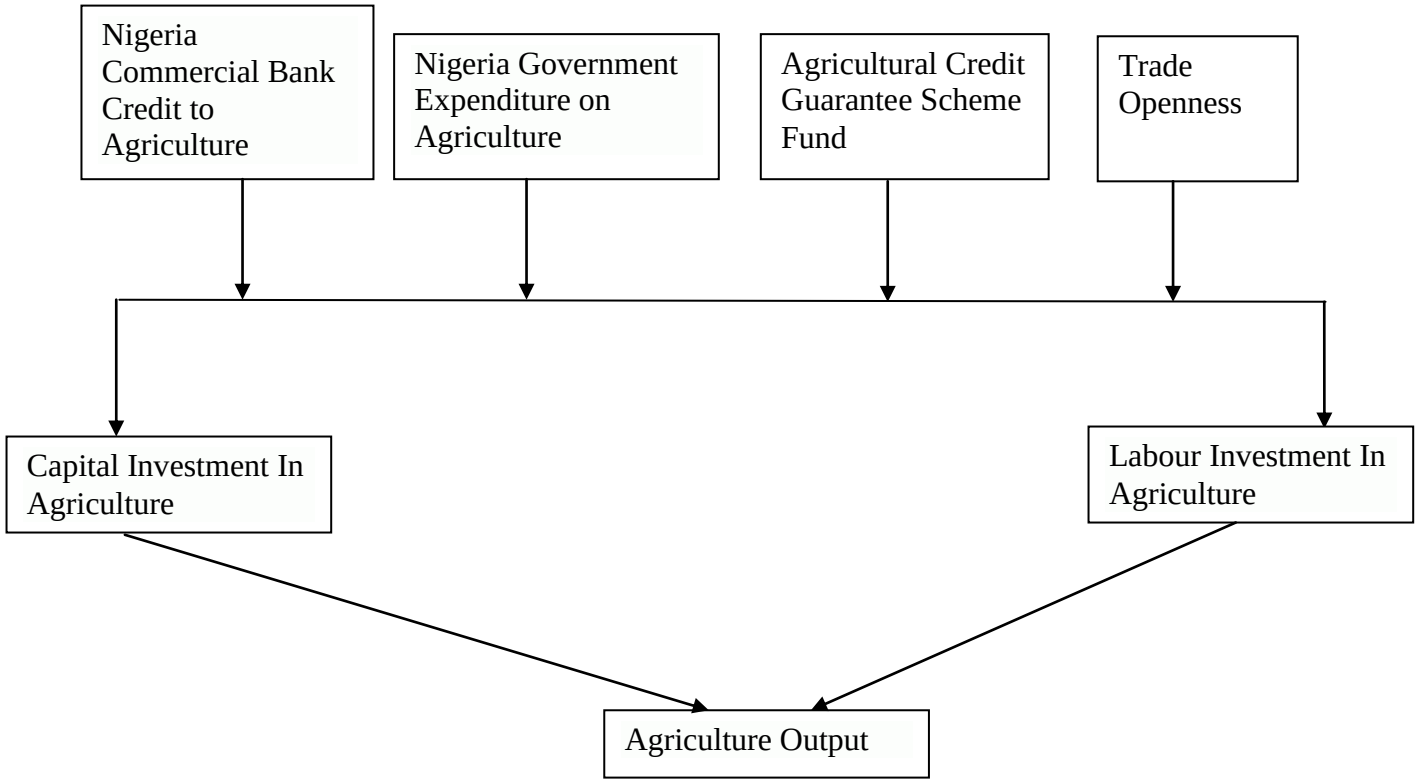

Figure 1: Conceptual Framework of Agriculture Output

From the above figure 1, Nigeria commercial bank credit to agriculture, Nigeria government expenditure on Agriculture, Agriculture Credit Guarantee scheme fund, and Trade openness play a role in affecting the availability of funds which flow to the agriculture sector via capital investment in Agriculture and labour investment in Agriculture. Capital investment in agriculture refers to the use of funds to purchase farm inputs and capital goods that contribute to farm output, while labour investment in agriculture refers to the use of funds to pay agriculture workers salaries and wages. That is capital and labour investments are two channels through which funds flow to the agriculture sector. Capital investment and labour investment affect Agriculture sector output as capital goods purchased for agriculture and agriculture sector workers together contribute to production effort in the sector.

EMPIRICAL MODEL SPECIFICATION

The Model adopted for the present study is a modification of the model of Udoka, Mbat and Duke (2016). While Udoka, Mbat and Duke (2016) specify agriculture sector output as a

function of commercial bank credit to agriculture, agriculture credit guarantee scheme fund, government expenditure on Agriculture, and interest rate, the present study replaces the variable interest rate in Udoka, Mbat and Duke (2016) with the variable, Trade openness. Further the lag of the dependent variable also enters as an independent variable. The general form of the model adopted for the present study is as in equation (1) below:

Agriculture Output = f(Deposit Money bank credit to agriculture, government expenditure on Agriculture, Agriculture Credit Guarantee scheme fund, Trade Openness) (1)

The above model in equation (1) is specified as an econometric model as below with all variables transformed to Logs except Trade Openness.

$$LOG\ AGROUT_t = \beta_0 + \beta_1 LOG\ DMBCRAG_t + \beta_2 LOG\ AGCGSF_t + \beta_3 LOG\ GEXPAG_t + \beta_4 TOPEN_t + \beta_5 LOG\ AGROUT(-1)_t + \varepsilon_t \quad (2)$$

Where,

AGROUT = Agriculture Sector Output

DMBCRAG = Deposit Money Bank Credit to Agriculture Sector

AGCGSF = Agriculture Credit Guarantee Scheme Fund

GEXPAG = Government expenditure on the Agriculture Sector

TOPEN = Trade Openness

β_0 is the constant. β_1 ……β_5 are the parameters of the model corresponding to the marginal effects of independent variables on the dependent variable. ε is the error term which is stochastic in nature. The subscripts, t denote the time period and are from 1978 -2016. The lagged Log of Agriculture sector output (Log AGROUT(-1)) is included in the model to correct for serial correlation and also on the basis that agriculture sector output in an earlier period where re-invested in the sector boosts the sector's output in the next period. On the basis of existing economic theory, the prior expectations of the respective independent variables in the model specified are: $\beta_0 > 0, \beta_1 > 0, \beta_2 > 0, \beta_3 > 0,\ \beta_4 > 0,\ \beta_5 > 0$

Measurement of Variables

AGROUT: This is measure by Agriculture sector Gross Domestic Product (GDP).

DMBCRAG: This is measured by the credit given by Nigeria deposit money banks to agriculture sector firms

AGCGSF: This is measured by the Value of loans guaranteed by the Agriculture credit guarantee scheme.

GEXPA: This is measured by the Nigeria federal government expenditure on the Agriculture sector.

TOPEN: This is computed as the sum of total foreign trade (exports and imports) divided by Gross Domestic Product (GDP).

DATA DESCRIPTION

Data employed in the study were source from the Central Bank of Nigeria statistical bulletin for various years. The data, spanning the period of 1978 – 2016, include: Agriculture output, Nigeria deposit money bank credit to agriculture, Agriculture Credit Guarantee Scheme, Nigeria government expenditure on the Agriculture Sector, and trade openness. The rationale for selecting the time series data from 1978 – 2016 is due to availability of the data for the set of variables included in the model.

Table 1. Variable Summary Statistics

Summary Statistics	Agriculture Sector Output	Deposit Money Bank Credit to Agriculture Sector	Agriculture Credit Guarantee Scheme Fund	Government expenditure on the Agriculture Sector	Trade Openness
Mean	4805.48	86.93	2.77	147.96	0.32
Median	1211.46	27.93	0.23	2.059	0.35
Maximum	21523.51	494.96	12.45	2246.40	0.59
Minimum	8.03	0.229	0.013	0.009	0.074
Std. Dev.	6596.62	136.58	4.027	491.11	0.13
Skewness	1.22	1.86	1.11	3.419	-0.25
Kurtosis	3.096	5.23	2.589922	13.26101	2.271522
Jarque-Bera	9.653372	30.49945	8.327432	247.0896	1.260949
Probability	0.008013	0.000000	0.015550	0.000000	0.532339
Observations	39	39	39	39	39

Source: Authors' Computation

From Table 1 above, it is observed that while the means of Agriculture output (AGOUT), Agriculture Credit Guarantee Scheme fund (ACGSF), Government Agriculture expenditure (AGEXP), and Deposit Money Bank Credit to the Agriculture sector (DMBCRAGRIC) are considerably low, that of Trade Openness (TOPEN) is at an appreciable level. Further the standard deviation across all variables indicates significant variation in the data across all variables.

Augmented Dickey Fuller (ADF) Unit Root Test

Table 2: Augmented Dickey Fuller Unit Root Test Results with Intercept

Variable	ADF Test Statistic	ADF Test Critical Values			Significance of ADF Test Statistic	Integration
		1%	5%	10%		
AGROUT	-4.742402	-4.226815	-3.536601	-3.200320	Yes***	I (1)
DMBCRAG	-6.942259	-4.226815	-3.536601	-3.200320	Yes***	I (1)
AGCGSF	-6.345002	-4.226815	-3.536601	-3.200320	Yes***	I (1)
GEXPA	-7.720424	-4.226815	-3.536601	-3.200320	Yes***	I (1)
TOPEN	-4.419160	-4.243644	-3.544284	-3.204699	Yes***	I (1)

. *, **,*** denotes significance of ADF test statistics at 10%, 5% and 1% levels respectively.

The results of Augmented Dickey Fuller (ADF) unit root test on the variables in the study from Table 2 above indicated that all variables are integrated of order 1. That is the variables are non-stationary by their nature being time-series observations, but on differencing the variable once, the variables become stationary.

MODEL ESTIMATION

The existence of a long run relationship between Nigeria deposit money bank credit to Agriculture sector and Agriculture sector output was achieved using Johansen cointegration test. On the other hand, the impact of Deposit money bank credit to the Agriculture sector on Agriculture sector output in Nigeria was achieved using Multivariate Ordinary Least Squares regression estimation of model specified in equation.

Long Run Relationship

The test for the existence of long run relationship between deposit money bank credit to the Nigeria Agriculture sector and Agriculture sector output was performed using Johansen Co-integration test. The results presented in Table 3 below indicate no co-integration between deposit money bank credit to the Nigeria Agriculture sector and Agriculture sector output. Hence, there exists no long run relationship between deposit money bank credit to the Nigeria Agriculture sector and Agriculture sector output over the period of 1978 and 2016.

Table 3. Trace and Eigen value Test Results of Johansen Cointegration Test

Sample (adjusted): 1980 2016							
Included observations: 37 after adjustments							
Trend assumption: Linear deterministic trend							
Series: LOG (AGROUT) LOG (DMBCRAGIC)							
Lags interval (in first differences): 1 to 1							
Trace Test				**Maximum Eigenvalue Test**			
Null	**Alternative**	**Statistics**	**5% Critical Value**	**Null**	**Alternative**	**Statistics**	**5% Critical Value**
r=0	**r≥1**	7.653144	15.49471	**r=0**	**r≥1**	4.971557	14.26460
r≤1	**r≥2**	2.681587	3.841466	**r≤1**	**r≥2**	2.681587	3.841466

*,** indicate significance of statistics at 1% and 5% levels of statistical significance

The variables employed in the model adopted are tested for the existence of co-integration between the variables. The results are presented in Table 4 below.

Table 4. Johansen Co integration test Results for All Variables in Adopted Model

Sample (adjusted): 1980 2016							
Included observations: 37 after adjustments							
Trend assumption: Linear deterministic trend							
Series: LOG (AGROUT) LOG (DMBCRAGIC) LOG (AGCGSF), TOPEN							
Lags interval (in first differences): 1 to 1							
Trace Test				**Eigen Value Test**			
Null	**Alternative**	**Statistics**	**5% Critical Value**	**Null**	**Alternative**	**Statistics**	**5% Critical Value**
r=0	**r≥1**	78.66397	95.75366	**r=0**	**r≥1**	29.18777	40.07757
r≤1	**r≥2**	49.47620	69.81889	**r≤1**	**r≥2**	19.79933	33.87687
r≤2	**r≥3**	29.67687	47.85613	**r≤2**	**r≥3**	14.98864	27.58434
r≤3	**r≥4**	14.68823	29.79707	**r≤3**	**r≥4**	8.276226	21.13162
r≤4	**r≥5**	6.412005	15.49471	**r≤4**	**r≥5**	4.913302	14.26460
r≤5	**r≥6**	1.498703	3.841466	**r≤5**	**r≥6**	1.498703	3.841466

*,** indicate significance of statistics at 1% and 5% levels of statistical significance

The above table 4 indicates that no co-integration relationship exists between all variables in adopted model for the present study.

Multivariate Ordinary Least Squares Regression

The results of multivariate ordinary least squares regression of the model adopted as specified in equation (2) are presented in Table 5 below.

Table 5. Multivariate Ordinary Least Regression Model Estimation Results

Dependable Variable	**LOG AGROUT**	
C	0.675134	(0.372598)
LOG DMBCRAG	0.189662**	(0.085091)
LOG GEXPAG	-0.011348	(0.027788)
LOG AGCGSF	0.005615	(0.042572)
TOPEN	0.198742	(0.228029)
LOG AGROUT(-1)	0.832873***	(0.084322)
R-squared	**0.996754**	
Adjusted R-squared	**0.996247**	
Durbin Watson	**1.746467**	
F-Statistic	**1965.094*** **	
No. of Observations	**38**	

, *, represent significance of standard errors at 5% and 1% levels of significance.

From the above Table 5, the estimated model has a good fit as evidenced by the R-squared of 0.996754 and the Adjusted R-squared of 0.996247. The Durbin-Watson statistic is also at an acceptable level and the significant F-statistic indicates the model specified is valid

Further deposit money bank credit to the Agriculture sector is positive and statistically significant at the 5% level. This implies that increases in deposit money bank credit to the Nigeria Agriculture sector has a positive impact on Agriculture sector output in Nigeria. In other words, deposit money bank credit to the Agriculture sector boosts agriculture boosts Agriculture sector output in Nigeria. In addition, from Table 5, it is observed that previous period agriculture sector output has a positive impact on current period Agriculture sector output.

Further from Table 5, the independent variables, government expenditure on the Agriculture sector, Agriculture Credit Guarantee Scheme fund, and Trade Openness are all insignificant in their respective impacts on Agriculture sector output. While the Log of government expenditure on the Agriculture sector (LOG GEXPA) is negative, Log of Agriculture Credit Guarantee Scheme fund (LOG AGCGSF), and Trade Openness (TOPEN) are positive.

Comparing the findings of the study with those of existing studies on commercial bank credit to agriculture sector and agriculture sector output, the findings of the study are consistent

with that of Udoka et al (2016)who find that a positive and significant impact of deposit money bank credit to agriculture on agriculture sector production. Thus am increase in deposit money bank credit to agriculture leads to an increase in agricultural production in Nigeria. Through deposit money bank credit to agriculture being invested in the Nigeria agriculture sector in expanding the scale of firm operations through a variety of channels such as purchase of capital equipment and employing more labour, agriculture sector output in Nigeria will be boosted. Consequently, this implies that the Nigeria economy will also receive a boost as a result. The findings of the study however contrast with than of Iganiga and Unemhilin (2011) who find deposit money bank credit to agriculture has a negative and significant impact on agricultural output.

CONCLUSION

The present study has examined deposit money bank credit to the agriculture sector in Nigeria and Agriculture sector output over the period of 1978 to 2016. The findings of the study revealed no long-run relationship between deposit money bank credit to the agriculture sector in Nigeria and agriculture sector output. The findings of the study are further in line with a priori expectations as deposit money bank credit to the agriculture sector in Nigeria has a positive and significant impact on agriculture sector output in Nigeria. Therefore the Deposit money bank credit is a channel through which the Nigeria government can achieve a boost in the output of the Agriculture sector. This is moreso in light of its renewed interest in reviving the sector.

RECOMMENDATIONS

Based on the findings of the present study recommendations are made. Firstly, Deposit money Banks should increase their credit to the Agriculture sector both in terms of the volume of credit and its quality in bringing about significant boost in Agriculture sector output. Secondly, Deposit money bank should reduce interest rate in giving out loans to agriculture sector firms so as to encourage borrowing by the sector in their bid to boost agriculture sector output. Thirdly, government should aid farmers, especially those in rural areas to favourably access Deposit money bank credit for investment in the agriculture sector through reducing barriers to borrowing (such as supporting banks to use credit scoring in considering loan applications). Lastly, the Nigeria government should put in place appropriate mechanisms to monitor farmers in ensuring that credit borrowed from deposit money banks are invested in the agriculture sector in areas of high productivity so as to yield significant agriculture sector output.

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