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# An Empirical Investigation into the Nexus between Agricultural Financining and Economic Growth in Nigeria

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**Abstract:** The study empirically investigate the nexus between agricultural financing and economic growth in Nigeria from 1983 to 2015. Augmented Dickey-Fuller (ADF) test and the Phillip-Perron tests were used to establish which variable is stationary at different levels. Almost all the variables (Real Gross Domestic Product (RGDP) Agricultural credit guarantee scheme fund (ACGSF) Commercial Bank Loan and Advance on Agriculture (CBLAA) are stationary at first different form, that is they are integrated of order I (1) except interest rate (INTR) which is stationary at level, that is, it is integrated of order I (0), hence Bounds co-integration test was adopted since it allows combination of fractionally integrated variables i.e. combines variables of different orders of integration. The results reveal existence of long-run relationship between proxy of economic growth and the proxies of agricultural financing. Meanwhile, Auto Redistributed Lag (ARDL) results show both short and long run effect of agricultural financing schemes on the growth of Nigerian economy. In addition, various diagnostic tests (such as Jarque-Bera (JB) test, Breusch-Pagan Serial Correlation (LM) test, Ramsey test, and ARCH test) were conducted to fulfill some of both Ordinary Least Square and normality assumptions. Notably, the loan disbursement mechanism adopted by agricultural credit institutions have fail to drive the Nigerian economy towards real growth despite the long run nexus among the key variables, coupled with corruption, and policy summersaults in the sector. Therefore, there is need for proper channelization of loans across board with sustainable fiscal measures that can translate to actual growth.

**Keywords:** Nexus, Agricultural Financing, Economic Growth.

## INTRODUCTION

Agriculture play important roles in the cause of attaining growth in an economy, especially developing economy like Nigeria. Parts of it roles could be traced to sources of food for the teaming population, sources of raw material for the manufacturing sector, source of foreign exchange earnings, empowerment of the labour force, source of income and savings for the farmer, which in turn reduce inflationary pressure, improve living standards of the populace, and market for products of the manufacturing sector [1]. Meanwhile, series of works done by previous scholars try to establish link between agricultural financing and agricultural output; e.g. Schumpeter [2] and Shaw [3]. These studies did not reveal the relationship between agricultural financing and economic growth.

Meanwhile, in Nigeria, the financing roles are hardly met by both Nigerian government and potential investors towards expanding agricultural sector based on the internal and external factors that tend to be bottlenecks on the part of the Nigerian farmers. Series of reasons have been advanced for the relative poor performance of Nigeria's agricultural sector. Key among these macroeconomic disequilibrium, especially interest and foreign exchange rate volatilities, poor infrastructural base, policy somersault and unnecessary intervention by the public sector which sends wrong (crowding out) signal to the private sector. Other important constraints include inadequate agricultural expenditure, over dependence on crude oil revenue, rural-urban migration, inadequate processing and storage capacity, smallness of farm holdings, ageing population, use of inefficient traditional technology, inadequate agricultural extension services and growing population pressure etc.

Although, attempts were made to solve these problems of agricultural sector, the Federal and State governments in Nigeria intervene through some agricultural policies and programmes design. The notable ones among the these policies are the Operation Feed the Nation (OFN), the Green Revolution (GR), Land Use Decree, Fertilizer Company of Nigeria (NAFCON) and the National Agriculture Land Development Authority (NALDA) and the latest is the

Agriculture Development Project (ADP). Meanwhile, these policies have not helped much in improving significantly the agricultural sector, particularly in the area costs-benefit, that is costs incur are still more than the benefits realized. Interestingly, agricultural sector is being characterized with numerous problems despite the different polies put in place in the past, which has resulted to poor performance of the sector over the years. And this has attracted various strategies including expansion of financing on agricultural activities in attempt to address some these problems. Over time, it has been argued that agricultural financing has been on the increase through different agencies, without actually translating to a corresponding expansion in agricultural output. Therefore, there is the need to empirically investigate into the nexus between agricultural financing and economic growth in Nigeria.

The broad objective of this study is to determine whether there is nexus between agricultural financing and economic growth. While, the specific objectives is determine the impacting variables among the independent variables proxy as agricultural financing that really drive economic growth. As these objectives when achieved would be of great benefit to significantly direct policy makers (potential investors, Local, State and Federal Government) on the right part, especially in the areas of fiscal discipline, formulation of a workable model that will enhance economic growth through agricultural financing.

This study covers a period of thirty-three years i.e. the period of 1983-2015, basically this research focuses on the trend of public agricultural financing and some contributions of agriculture to the economy (GDP).

The study shall be divided into five sections. Section one contains the introduction, statement of the problem, objectives of the study, significance of the study, scope of the study. Section two shall be divided into segments which will include the theoretical review, conceptual frame work and the empirical review. While, section three shall explain the research methodology of the study. Section four comprise the analysis of the data collected and five section five contains summary, conclusion and recommendation of the research study.

## LITRATURE REVIEW

Nigeria is an agrarian economy and as such it has often been referred to as the background of the country's economy. Agriculture as a key sector in most developing counties, Nigeria in pare-thesis has been playing a key role in enabling them to accomplish developmental goals, including self-reliance, growth and equity. The export sector of the agricultural economy providing the original impetus for Nigeria's encouraging growth and it remained the most significant sector in the growth of the economy till it expansion to the late 1970's. During this period, agriculture provided a significant proportion of the resources available to government for the purpose of economic growth. In the post war period, before the use of oil exports, agricultural products constituted over 80% of Nigeria total exports.

Meanwhile, in the later year the government tended to focus on four types of policy measures each of which become a major source of agricultural finances in the economy [4]. These includes;

- The establishment and encourage given to institution credit agencies e.g. the Nigeria agriculture and cooperative Bank (NACB).
- Increased spending by federal and state government for agricultural development.
- Encouragement given to foreign investors and
- Mobilization of saving for lending.

Rostow's Stages of Economic Growth is being propounded by Professor W. W. Rostow and he sought an historical approach to the process of economic development. He distinguished five stages of economic growth, such as: The Traditional Society which implies that more land could be brought under cultivation, the scale and pattern of trade could be expanded, manufacturing could be developed and agricultural productivity could be raised along with increase population and real income. The Pre-Conditions for Take-Off explains that stage as a transitional era in which the pre-conditions take-off were encouraged or imitated by four focuses: The new learning or the renaissance, the new monarchy, the new world or new religion or the reformation. These forces led to "Reasoning" or the "Skepticism" in place of "faith and Authority", brought an end to feudalism and led to the new discoveries and inventions and consequently the rise of the bourgeoisies in the new mercantile cities [5]. The Drive to maturity basically focus on transformation from less high mass production to real production level. The Age of High Mass-Consumption is characterized by the migration of sub-urban, the extensive use of the automobile, the durable consumer's goods and household gadgets. In this stage, the balance of attention of the society is stated of production to problems of consumption and of welfare in the widest sense.

In Nigeria, agricultural financing has a key role to play in agricultural sector and it remains crucial towards achieving economic growth and development in the long. Notwithstanding, the empirical review investigates at what other scholars have studied on agricultural financing in relationship with economic growth. Ogwuma [6] for example, studied on public financing on Agricultural sector using series of econometric models. Based on his findings, agricultural financing in Nigeria shows positive relationship between interest rate and loanable funds on the level of agricultural output.

Chuku Goodwill [7] using chi-square statistical test of independence at 95% confidence level, conclude that commercial banks are not encouraging banking habit among the people, and high interest rate and collaterals affects the readiness of farmers to obtain loan hence public expenditure is the key to drive agricultural development in Nigeria. Whereas, Ogiogio [8] carried out the study, the result of this analysis indicates that productive base which can support growth in the absence of new investment is lacking, and thus the economy is vulnerable to macroeconomic disturbances. Meanwhile, Idris [9] argued that the important role of credit in agricultural sector enterprise has prompted the federal government of Nigeria to establish credit schemes such as the agricultural credit scheme (ACSS) to ensure farmers access to agricultural credit, which could guaranteed development and sustainability in the long run. Rhaji [10] through ordinary least square to assess the impact of agriculture on Nigeria economy. It was revealed that lack of adequate, accessible, and affordable credit is among major factors responsible for the systematic decline in the agricultural output towards the growth of the Nigerian economy.

Interestingly, Awoke [11] examined the factors affecting loan acquisition and repayment pattern of small holder farmers in Nigeria. The study reveals that high rate of default arising from poor management procedures, loan diversion and unwillingness to repay loans have been threatening the sustainability 0f the most public agricultural credit schemes in Nigeria. While, Adekanye [12] used panel data threshold to examine the role of banks on the growth of the economy. The study observed that in making credit available, banks are rendering a great social service, because through their actions, production is increased, capital investment are expanded and a higher standard of living is realized.

Obansa and Maduekwe [13] adopted Ordinary Least Square technique and Granger causality test to conclude that agricultural productivity rises through well financed foreign direct investment alongside with direct private loan. It was further reveal that bidirectional relationship exist between economic growth and agricultural financing. Nwankwo [14] disclosed that there is significant relationship between agricultural financing and economic growth in Nigeria, using Ordinary Least Square and quantitative research design. It was argued further that the rate of loan repayment over the years in terms of percentage has impacted on the growth of the Nigeria economy negatively. Whereas, Egwu P. N. [15] used co-integration approach to examine the impact of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria. The result reveal that agricultural credits have significant impact on agricultural sector output which in turn alleviate poverty rate among the populace.

In so far, the empirical findings from previous scholars mostly adopt Ordinary Least Square [13-16] with less emphasizes on empirical search for both long-run and short-run relationship between Agricultural financing and economic growth in Nigeria. Therefore, this study shall attempt to fill the earlier gaps through co-integration, ARDL and others tests e.g. diagnostics test and post estimation test.

## METHODOLOGY

This study measures the degree of the relationship between agricultural financing and economic growth; multiple regression analysis was adopted to evaluate the study. The model was close to model earlier adopted by the likes of Obansa and Maduekwe [13]; Nwankwo [14]; Egwu P. N. [15] but with slight modifications. The recent Autoregressive Distributed Lag (ARDL) Model was further used in the study to account both short-run and long-run relationship between the key variables.

Notably, this study has its theoretical backing from the Jorgenson's neoclassical model of a dual economy which sees the agricultural sector characterized by constant returns to scale with all factors variable (except the supply of land that is fixed) as given by Cobb-Douglas production function:

$$Y = \ell^{\alpha t} L\beta P^{1-\beta}$$

Where Y represent agricultural output, $\ell^{\alpha t}$ is technical change which takes place at a constant rate ($\alpha$) in the time (t), L is fixed quantity of land available in the economy, $\beta$ is the share of landlords in the product which takes the form of rent, P is total population in this sector, and $1-\beta$ is the share of labour in product paid. Hence, the cobb-Douglas model is being transformed to achieve the objective of the study thus:

**SPECIFICATION OF THE MODEL**

RGDP = F (ACGSF, CBLAA, INTR) ---------- (i)

$$LOG(RGDP_t) = \beta_0 + \beta_1 LOG\ (ACGSF_t) + \beta_2\ LOG(CBLA_t) + \beta_3 LOG\ (INT_t) + U_t$$ ---- (ii)

Where;

RGDP = Real Gross Domestic Product
ACGSF=Agricultural credit guarantee scheme fund,
CBLAA=Commercial Bank Loan and Advance on Agriculture
INTR= Interest Rate

Where, $U_t$ is the stochastic error terms.

Considering the apriority expectations, we expect

$\beta_0, \beta_1, \beta_2, \beta_3$ >0, which implies that ACGSF, CBLA, INT stimulates economic growth.

**ECONOMETRIC CRITERION (SECOND ORDER TEST)**

This test was carried out to check whether the error term follows the normal distribution. The normality test adopted is the **JARQUE-BERA (JB) TEST OF NORMALITY.** The JB test of normality is an asymptotic, or large-sample, test and it is based on the OLS residuals. This test computes the skewness and Kurtosis measures of OLS residuals and uses the chi-square distribution [16].

**Hypothesis: Test**

Ho: ∑i= 0 (the error term follows a normal distribution)

Against:

H1:∑i≠ 0 (the error term does not follow a normal distribution)

The source of data obtained includes annual time series data on the variables under study from 1983-2015. The data collected are mostly from the CBN statistical bulletin, which includes: CBN annual report and statement of accounts, CBN economic and financial review and statement of accounts, Journal of economics study and NBS, Federal ministry of agriculture publications.

**EMPIRICAL ANALYSIS**

The results to be presented and analyzed includes the descriptive statistics, graphical analysis, unit root tests (Augmented Dickey-fuller and Phillip-Perron) which are prelimary and co-integration test and ARDL are employed to confirm the existence of both long-run and short-run relationship between agricultural financing and economic growth. Also, other post estimations (diagnostics) results are disclose to establish the robustness of the techniques.

**Table-4.1: Descriptive Statistics**

| STATISTICS | RGDP | ACGSF | CBLA | INT |
|---|---|---|---|---|
| **Mean** | 3.17E+13 | 3.02E+09 | 8.77E+10 | 13.34848 |
| **Median** | 2.24E+13 | 2.42E+08 | 3.33E+10 | 13.00000 |
| **Maximum** | 6.90E+13 | 1.25E+10 | 4.68E+11 | 26.00000 |
| **Minimum** | 1.38E+13 | 24654900 | 9.40E+08 | 6.000000 |
| **Std. Dev.** | 1.74E+13 | 4.14E+09 | 1.26E+11 | 4.112642 |
| **Skewness** | 0.875980 | 1.011863 | 1.786310 | 0.777779 |
| **Kurtosis** | 2.382039 | 2.375169 | 5.058382 | 4.252297 |
| **Jarque-Bera** | 4.745455 | 6.168083 | 23.37575 | 5.483509 |
| **Probability** | 0.093226 | 0.045774 | 0.000008 | 0.064457 |
| **Sum** | 1.05E+15 | 9.97E+10 | 2.89E+12 | 440.5000 |
| **Sum Sq. Dev.** | 9.67E+27 | 5.48E+20 | 5.05E+23 | 541.2424 |
| **Observations** | 33 | 33 | 33 | 33 |

Source: Author's Compilation (2017)

The description shows that the average values of RGDP, ACGSF, CBLA and INT from 1983 to 2015 are ₦3.17 billion, ₦3.02 billion, ₦8.77 billion and 13.35% while the mid observations of these variables when arranged in ascending or descending order from 1983 to 2015 are ₦2.24 billion, ₦2.42 billion, ₦3.33 billion and 13% respectively. The table also indicates that the maximum obtainable values of these variables (i.e. RGDP, ACGSF, CBLA and INT) given the values of the series from 1983 to 2015 are ₦6.90 billion, ₦1.25 billion, ₦4.68 and 26% which coincided with 2015, 2014, 2015 and 1993 respectively. On the other hand, the minimum values of the aforementioned variables are ₦1.38 billion, ₦246.54 million, ₦9.40 million and 6% which coincided with1983, 1984, 19983 and 2009 respective periods.

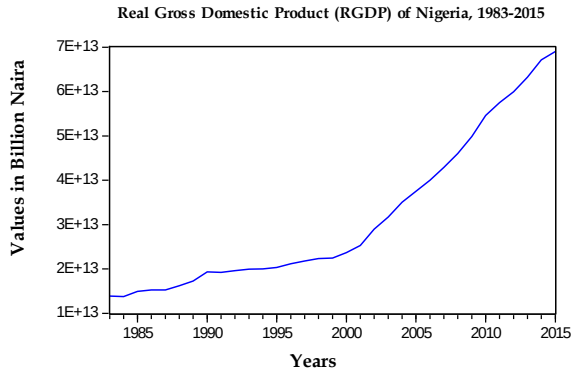
The standard deviation values showed the extent at which the observations are dispersed around their respective means and the standard deviation to

mean ratio of RGDP and ACGSF which are greater than 0.5 suggested high coefficient of variation (i.e. high dispersion) while CBLA and INT indicate a lower dispersion since their standard deviation to mean ratio is less than 0.31. Also, considering the skewness statistics whose threshold value for symmetry (or normal distribution) is zero, none of the variable is exactly zero. All variables are positively skewed since their skewness statistics are greater than zero. On the other hand, the kurtosis value whose threshold is three indicate that RGDP and ACGSF variables are platykurtic (lowly peaked) with the exception of CBLA and INT which are leptokurtic (highly peaked). Neither skewness nor kurtosis can singularly confirm the normality of a series. Hence, since the Jarque-Bera statistics combines skewness and kurtosis properties, it provides more comprehensive information. Following the above highlight on Jarque-Bera, since its probability value for ACGSF and CBLA variables are less than 5%, it therefore suggests that the hypothesis of normal distribution is rejected and the series cannot be regarded as having a normal distribution while the probability value fo0r RGDP and INT variables are greater than 5%, it therefore suggests that the hypothesis of normal distribution is accepted and the series can be regarded as having a normal distribution.

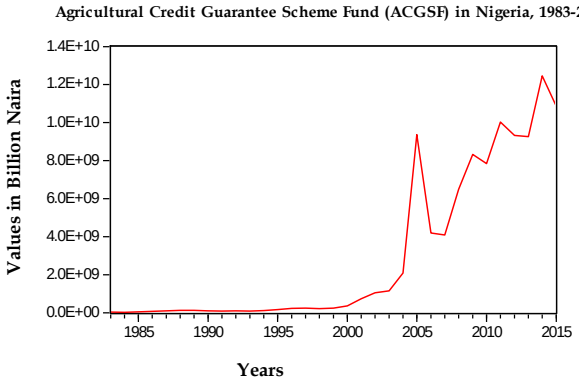
### Graphical Analysis

Intuitively, the high and rising increase of the RGDP should have increased also per capita income thereby increasing the economic growth. It is therefore expected that this kind of trend in the RGDP should improve the finance on agricultural activities (ACGSF and CBLA) in the nation at large, since Nigeria is an agrarian country. Hence, graphical display shows the trends, structural breaks and seasonal fluctuations of the variables under consideration.

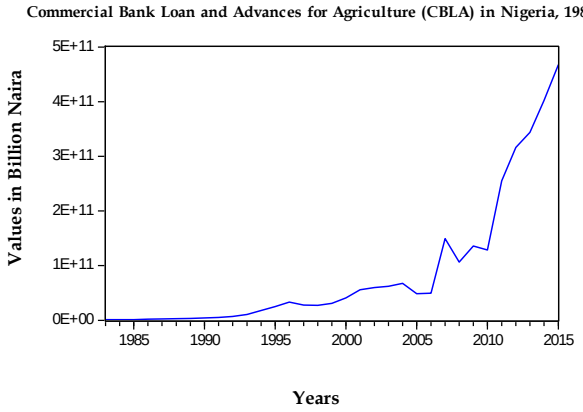
**Panel A**



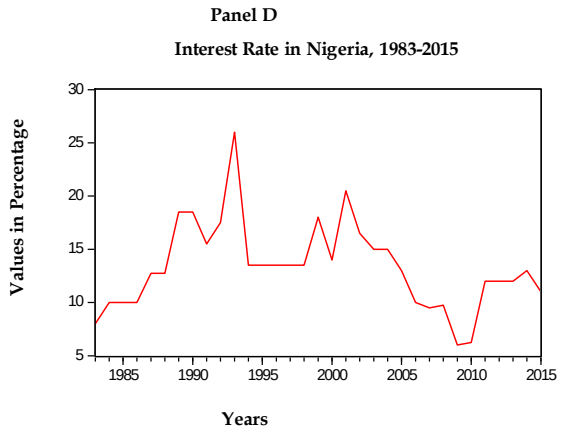

**Panel B**




**Panel C**




**Panel D**




## Unit Root Test

When series are not stationary, it is said to exhibit a unit root process. If non stationary series are adopted in a regression analysis, the resulting model is termed as spurious, unstable, and misleading and thereby, cannot be used for standard forecast. This is because non-stationary variables feature changes over time. Thus, such variables are said to exhibit unit root and cannot be used for conventional modelling. This test is primarily important as the use of non-stationary series result in spurious regression which will generate misleading results. The unit root result using Augmented Dickey-Fuller (ADF) test and the Phillip-Perron tests are provided thus:

**Table-4.2: Augmented Dickey-Fuller Test Result:**

| LEVEL | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Augmented Dickey-Fuller | | | Phillip-Perron | | | I(d) |
| Variable | Model A | Model B | Model C | Model A | Model B | Model C | |
| RGDP | 3.276674 | 0.551210 | -1.296433 | 5.918408 | 1.310043 | -1.421552 | I (1) |
| ACGSF | 2.455844 | -0.489122 | -2.139087 | 2.795346 | -0.420672 | -2.200690 | I (1) |
| CBLA | 3.943912 | -0.950360 | -2.383479 | 5.620330 | -1.658530 | -2.268800 | I (1) |
| INT | -0.407928 | -3.010357** | -3.262384* | -0.500351 | -3.004405** | -3.162905 | I (0) |
| FIRST DIFFERENCE | | | | | | | |
| RGDP | -1.777972* | -3.842396*** | -3.850399** | -1.581844 | -3.832396*** | -3.850399** | I (1) |
| ACGSF | -4.772572*** | -5.836390*** | -5.718434*** | -4.827038*** | -5.836390*** | -5.718434*** | I (1) |
| CBLA | -4.297615*** | -6.385070*** | -6.370353*** | -4.327756*** | -6.890436*** | -8.381579*** | I (1) |
| INT | ___ | ___ | ___ | ___ | ___ | ___ | I (0) |

The 1, 5 and 10 percent critical values are -2.58, -1.94 and -1.61 for model A, -3.49, -2.89 and -2.58 for model B and -4.04, -3.45 and -3.15 for model C respectively. Numbers in brackets are SIC optimal lag length.

Where Model A represents unit root test without intercept and trend

Model B represents unit root test with intercept and

Model C represents unit root test with intercept and trend

* indicate significance at 10% level.

** indicate significance at 5% level.

*** indicate significance at 1% level.

Source: Author's Compilation (2017)

The ADF test and Phillip-Perron test above show the result for both the level and differenced form. The order of integration indicates the number of times, a series is differenced in order to be stationary. The optimal lag length was selected using Schwarz Information Criterion (SIC). From the ADF and Phillip-Perron test result, all variables are stationary in their first differenced form, that is, they are integrated of order I (1) except INT which is stationary at level form, that is, it is integrated of order I (0).

**Co-integration Test**

Co-integration test is used to detect or check for the presence of long-run equilibrium between or among series. Since it has been established that some variables are not stationary at level, there is need to check whether there is existence of similar trend properties between or among the series as a regression model on co-integrated series is said to be super consistent. Thus, given the unit root test result above, the most appropriate co-integration test is the Pesaran Bounds test since the test allows combination of fractionally integrated variables i.e. combines variables of different orders of integration. The Bounds Co-integration test result is provided thus:

**Table-4.3: ARDL Bounds Co-integration Test Result**

| Test Statistic | | | | |
|---|---|---|---|---|
| F-Statistic | 6.838392 | | | |
| Critical Value Bounds | | | | |
| Significance | 10% | 5% | 2.5% | 1% |
| I(0) | 3.47 | 4.01 | 4.52 | 5.17 |
| I(1) | 4.45 | 5.07 | 5.62 | 6.36 |

Source: Author's Compilation (2017)

Using the ARDL bounds test, the result above shows that with the assumption of weak exogeneity on RGDP, ACGSF, CBLA and INT, the hypothesis of no long run relationship can be rejected at 5% significant levels as the F-statistic for the model is greater than 5% of both I (0) and I (1) bounds of 4.01 and 5.07 respectively. Thus, this shows existence of long-run relationship between RGDP and ACGSF, CBLA and INT.

**ARDL ANALYSIS**

This subsection presents the result obtained from estimating the ARDL unrestricted error correction (short run or dynamic) model and the ARDL long-run (static) model in equation.

Following this result, this study examines and estimates both short-run dynamics and the long-run relationships between real gross domestic product, agricultural credit guarantee scheme fund, commercial bank loan and advances for agriculture and interest rate.

**Table-4.4: Short-Run (Dynamic) Model Result**

| Variable | Coefficient | Std. Error | T-Statistic |
|---|---|---|---|
| **D(LOG(ACGSF))** | 0.015444 | 0.013106 | 1.178411 |
| **D(LOG(ACGSF(-1))** | -0.033526 | 0.016637 | -2.015202* |
| **D(LOG(CBLA)** | -0.023714 | 0.024127 | -0.982877 |
| **D(LOG(CBLA(-1))** | -0.016018 | 0.021765 | -0.735954 |
| **D(LOG(CBLA(-2))** | 0.016554 | 0.021864 | 0.757110 |
| **D(LOG(CBLA(-3))** | 0.069841 | 0.021982 | 3.177141*** |
| **D(LOG(INT))** | 0.054246 | 0.020818 | 2.605724** |
| **D(@TREND())** | 0.014405 | 0.006131 | 2.349703** |
| **CointEq (-1)** | -0.474833 | 0.096978 | -4.896281*** |
| **$R^2$** | 0.998669 | | |
| **Adj $R^2$** | 0.997807 | | |
| **F-Stat (Prob)** | 1159.260 (0.0000) | | |
| **Durbin-Watson** | 2.5553 | | |

*, ** and *** *indicate significance at 10%, 5% and 1% critical level respectively.*

Source: Author's Compilation (2017)

**Table-4.5: Long-Run (Static) Model Result**

| Variable | Coefficient | Std. Error | T-Statistic |
|---|---|---|---|
| **LOG(ACGSF)** | 0.124928 | 0.044518 | 2.806242** |
| **LOG(CBLA)** | -0.200512 | 0.070796 | -2.832248** |
| **LOG(INT)** | 0.114243 | 0.045336 | 2.519942** |
| **C** | 13.799695 | 0.937511 | 14.719501*** |
| **@TREND** | 0.030337 | 0.009082 | 3.340323*** |

* ** *** *indicate significance at 10%, 5% and 1% critical level respectively.*

Source: Author's Compilation (2017)

**Diagnostics**

Sequel to the adoption of the classical least square technique, for any estimated model to be valid, there are certain assumptions that are to needed to be verified. Table 4.8 shows the result of the test on these assumptions.

**Table-4.6: Diagnostic Test Result**

| Test | F-Stat (Prob) |
|---|---|
| **Jarque-Bera test** | 5.195537 (0.74440) |
| **Breusch-Godfrey Test** | 2.160224 (0.1610) |
| **ARCH test** | 0.018961 (0.8915) |
| **Ramsey-Reset test** | 0.223264 (0.6429) |

Source: Author's Compilation (2017)

**Empirical findings**

**Short-Run (Dynamic) ARDL Model analysis**

The Table-4.5 above shows the short run (dynamics) results. The optimal lag combination for the models is obtained via Schwartz Information criterion (SIC).

It can be deduced that there is a positive relationship between RGDP, ACGSF and INT but a negative relationship with CBLA movements. The results further show that a 1% increase in ACGSF on average leads to about 0.0154% increase on RGDP while a 1% decrease in CBLA on average leads to a 0.0237% increase in RGDP. In the same vein, a 1% increase (decrease) in INT leads to a 0.0542% increase (decrease) in RGDP. Meanwhile, considering the statistical significance of the coefficients only INT and the time trend are statistically significant at 5% level of significance.

The Error Correction Coefficient above indicates the speed of adjustment from the short run dynamics to long run equilibrium is about 47.48%. In other words, 47.48% of the long run equilibrium in the previous year is adjusted at each year.

The Adjusted $R^2$ value of 0.9987 indicates that 99.87% of the variation in RGDP is explained by ACGSF, CBLA and INT. The F-Statistic which is less than 0.05 confirms that the estimated model in Table 4.6 is significant

**Long-Run ARDL Model analysis**

It can be observed that there is a positive relationship between RGDP, ACGSF and INT but a negative relationship with CBLA movements. The results further show that a 1% increase in ACGSF on average leads to about 0.1249% increase on RGDP while a 1% decrease in CBLA on average leads to a 0.2005% increase in RGDP. In the same vein, a 1%

increase (decrease) in INT leads to a 0.1142% increase (decrease) in RGDP. However, considering the statistical significance of the coefficients all the variables are statistically significant at 5% level of significance except for constant and time trend which are both significant at 1% level of significance.

**Diagnostics Tests Justifications**

After having estimated the short-run and long-run models, it is required to verify whether the estimated model follow the OLS technique assumptions so as to ensure the efficiency and consistency of the model.

The Jarque-Bera test suggests that the residuals for both models are normally distributed since the probability value is greater than the 5% significance level. Hence, the hypothesis of normal distribution for the residuals cannot be rejected. The Breusch-Pagan Serial Correlation (LM) test result suggests that the hypothesis of no autocorrelation can be rejected since the probability value is greater than the 5% critical level. The Ramsey-Reset result whose probability value is greater than 5% indicate that there is no functional misspecification in the estimated models. The ARCH test indicates that the hypothesis of presence of heteroscedasticity can be rejected.

## CONCLUSIONS

In conclusion, this study was carried out to empirically ascertain the impact of agricultural financing on economic growth in Nigeria. And in-depth review of the previous literatures were carried out, which disclose the necessary gaps to be filled. This necessitate the adoption of series of econometrical techniques, which revealed that agricultural financing through loan has improved economic growth performance of Nigeria within the period under review. The co-integration result for example, shows that there is a sustainable long-run relationship between Real Gross Domestic Product (GDPGR) and the explanatory variables: Agricultural Credit Guarantee Scheme Fund (ACGSF), Commercial Bank Loan and Advances for Agriculture (CBLA), and Interest rate (INTR), which conform to both economical and theoretical intuitions. However, few recommendations are necessary so as to sustain the continuous economic growth through agricultural financing in Nigeria in the real sense. Firstly, the central bank should be more proactive to loan disbursement through appropriate channel with less administrative bottle necks. Secondly, government policies towards agricultural sector should be consistence enough to put agricultural banks in a formidable front in order to provide agriculture loans with cheaper interest rate. Thirdly, key players in agricultural sector should be trained on how to take advantage of the services of government and non-government agriculture financings programmes, institutions and schemes. Finally, government should therefore create an enabling environment for the potential investor who is interested in agriculture and this would eventually reduce the rate of unemployment in the long run.

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