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Abstract
The study examined the impact in the agricultural credit guarantee scheme fund on economic growth Nigeria for the period of 1986-2017. The study employed the use of secondary data which was sourced from CBN bulletin. The variables used to establish these effect are Agricultural Credit Guarantee Scheme fund (AGC), interest rate to agricultural loan (INTRA), Commercial Bank’s Credit to the Agricultural Sector (CBC), and Government Financial Allocation to the Agricultural Sector (GFA) were used as independent variables showing its effect on the dependent variable Real Economic Growth (RGDP). The Ordinary Least Square (OLS) method of econometric technique and granger causality test was used to achieve the objectives of the study. The result shows that there is a significant relationship between AGC and economic growth in Nigeria. While the parameter estimate of INTRA relates positively with GDP but was found statistically insignificant. It also shows that CBC has a positive and significant relationship with GDP. Also there is a positive but significant relationship between GFA and GDP. Therefore, it was recommended that Government and the private sectors should invest more in agribusiness to improve domestic supply of food in Nigeria, and Nigerian farmers should also be encouraged to adopt modern mechanized farming by providing them with modern farm implements among other recommendations were made.

Keywords: Agricultural Credit Guarantee Scheme fund, Real Economic Growth, Causality test, Interest Rate on Agricultural Loan
The position of agriculture as the bedrock for the development of other sectors can never be overemphasized. Finance stands out among many problems confronting the agriculture sector in Nigeria. This is because the availability of finance is directly linked to other problems facing agriculture, affecting production, transportation, processing and storage. When farmers have adequate access to finance, they can obtain the inputs they require for production processes. Without credit, farmers are forced to produce food and fibre using out-dated biological inputs and tools, on soils that are characterized by lack of nutrients, as fertilizer use is very rare (Otti, 2005).

A key source of financing is farmers own savings from extra income generated from production and farm sales. However, because the lack of adequate finance forces farmers to use minimal levels of inputs, they are able to produce agricultural products in only small quantities, which can often barely meet their families basic needs. Under this scenario, the potential for saving is very low, leading to low investment and low levels of income. This vicious cycle of poverty continues until it is broken by an external capital inflow from outside the smallholder farming system. The external source increases investment, which consequently increases output, income and savings (Nzotta, 2009).

In Nigeria, operators/players in the agriculture market can be broadly classified into two categories: formal and informal. Small farmers have more access to informal credit sources than formal rural farm enterprises have, but the local moneylenders who represent the predominant source of credit to small farmers usually charge exorbitantly high interest rates. These high interest rates are counterproductive to the farmers, who lack alternative sources for the loans they need to finance their farm operations. Many farmers lose out when the assets they use to secure a loan are recovered by moneylenders in case of default, leaving the farmers worse off than they were before they acquired the loan (Nzotta, 2009).

Although the government encourages commercial and merchant banks to increase lending to agriculture, most banks have not done so because of the risks confronting agricultural production in Nigeria. In addition, the loan amounts required by small farmers are lower than the sums that commercial banks prefer to lend. Even when banks do make these loans, processing costs are higher relative to the size of the loan.

This financial bottleneck preventing small farmers from obtaining access to credit led the Government of Nigeria to create an institutional programme for making credit available to this vulnerable but productive sector. In 1973, the National Agricultural Cooperative Bank was integrated into the National Agricultural Cooperative and Rural Development Bank to create the Bank of Agriculture. The government encouraged commercial banks to support the Bank of Agriculture’s financing of agriculture by opening branches in rural areas.

Another policy stipulated a minimum percentage of total loans to be granted to the agriculture sector, encouraging banks to relax some of their restrictive lending procedures. However, banks preferred to pay a fine rather than to comply with this directive of the Central Bank of Nigeria (CBN). Banks complain of the high risks they incur in financing smallholder farmers, who usually lack the right kind of collateral to qualify them for any form of bank credit. Recognizing this challenge, the government established the Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1977, which became operational in 1978, primarily as a mechanism to encourage commercial and merchant banks to lend to farmers, with ACGSF and the banks sharing the risks. Hence, it is against this background that this study seeks to empirically examine the impact of agricultural credit guarantee scheme fund on economic growth in Nigeria. The hypotheses of this study are stated as follows:
H_{01}: Agricultural credit guarantee scheme fund has no significant impact on economic growth in Nigeria.

H_{02}: Agricultural credit guarantee scheme fund has no causal link with economic growth in Nigeria.

Conceptual Review

Concept of Agricultural Credit Guarantee Scheme Fund

Agricultural Credit Guarantee Scheme Fund is one of the laudable programmes put in place by the Federal Government of Nigeria to boost agricultural production, generate revenue for the farmers, alleviate poverty, earn foreign exchange for the country and spur economic growth. It is also aimed at ensuring food security, rural transportation and improved nutritional health profile of the citizens (ACGSF Manual, 2005).

Agricultural finance is one of the services provided by financial institutions especially the commercial banks, and some specialized organs of government such as the Ministry of Agriculture of the various states in Nigeria. The provision of this service is not limited to the aforementioned but also identified are the informal or non-institutional lenders i.e. the local thrift collector and cooperative bodies who also provide credit to farmers in the absence of banks in the rural areas. Abe (1982) has reported that non-institutional creditors accounted for 70% of the total credits received by Nigerian farming population. However, with the present situation in Nigeria these services could hardly meet the increasing demand for credit by farmers. This creates a scenario that predicts a bleak future for the sub-sector at its essential benefits.

Agricultural finance comes in the form of Agricultural credit to farmers for providing wherewithal for various productive activities. According to Adegeye and Dittoh (1985) agricultural credit is the process of obtaining control over the use of money, goods and services for agriculture in the present in exchange for a promise to repay at a future date. The important role of credit in agricultural production and the problems emanating from the lack of it are a major constraint due to the difficulty in receiving it, particularly by the rural farmers that constitute the large number of the farming populace in Nigeria. They tend to suffer largely as a result of limited access to credit resulting from their low level of education, absence of banks in the rural areas and the issue of their subsistence level of production.

Consequent upon the aforementioned, the Federal Government of Nigeria was prompted to establish the Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1978 through the Central Bank of Nigeria (CBN). This is indeed a deliberate policy of government meant to ameliorate some of the problems faced by farmers in accessing credit for farming purposes and production, also, to encourage the lending Banks to support the agricultural sector with the provision of credit. The scheme is an indirect measure taken by government since it only guarantees the agricultural credit provided by the Commercial Banks in the ratio of 60 to 40 percent, in other words, government bears losses up to 60% arising from failure or inability of the farmers to repay the loan facility due to unforeseen circumstances that may eventually result to bad and doubtful debt, while the banks who are in direct contact with the farmers bear the balance of 40% loss.

The Agricultural Credit Guarantee Scheme Fund (ACGSF) was formed under the military government in 1978 with an initial capital base of N100 million distributed between the federal government (60% equity) and the Central Bank of Nigeria –CBN (40%). The ACGSF
is exclusively managed by a board set up under the supervision of the CBN (management agent). The fund is set up with the sole purpose of providing guarantee in respect of loans granted by any bank for agricultural purposes (Central Bank of Nigeria, 1990). Nwosu, Ekpebu, and Udeh, (2010) noted that the ACGSF was formed solely with the objective of encouraging financial institutions to lend funds to those engaged in agricultural production as well as agro-processing activities with the aim of enhancing export capacity of the nation as well as for local consumption. This is solely exclusive for large scale farming (Somayina, 1981).

Most often, financial institutions require huge collateral from customers before loans are granted to them. This is detrimental to farmers’ efforts that may require such loans to enhance their production. The ACGSF is aimed at reducing this dearth by guaranteeing these farmers or other individuals involved in agricultural production when seeking for loans from the banks. In case of a breach in contract, the fund bears the liability of 75% of the amount in default, net of any amount realized by the banks in the sale of the security pledged by the customer. This has made most financial institutions interested and secured in granting loans to agricultural ventures. The ACGSF is aimed at guaranteeing agricultural outfit that specializes in the following:

a. Agricultural outfit engaged in the establishment and management of plantation for cash crop produce like rubber production, oil palm extracting, cocoa plantation etc.

b. Agricultural outfit engaged in the cultivation and production of food crops like fruit of all kinds, tubers of yam, cereals and all other food crops.

c. Agricultural activities involved in the large scale production of animal husbandries.

**Concept of Economic Growth**

Economic growth refers to increase in a country’s potential GDP, although this differs depending on how national product has been measured. Economic growth must be sustained for a developing economy to break the circle of poverty. Countries usually pursue fiscal policy to achieve accelerated economic growth. For instance, if the social rate of return on investment exceeds the private return, then tax policies that encourage can raise the growth rate and levels of utility. Growth models that incorporate public services, the optimal tax policy lingers on the characteristic of services (Nworji et al., 2012).

Economic growth has provided insight into why state growth at different rates over time; and this influence government in her choice of tax rates and expenditure levels that will influence the growth rates. Growth means an increase in economic activities. Todaro (1995) and Kuznets (1965) define a country’s economic growth as a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growth capacity based on advancing technology and the institutional and ideological adjustment that it demands. Economic growth is a source to advanced living standard; it can be defined as a rise in the gross domestic or national product of a country (GDP/GNP) over time, which ultimately leads to higher per capita income.

Schumpeter (1934) defines economic growth as gradual and steady changes in the long run which is brought about by a gradual increase in the rate of savings and population. It could also be defined as the steady process by which the productive capacity of the economy is increased overtime to bring about rising level of national income. Economic growth is the increase in the volume of goods and services produced by an economy. It is generally a phenomenon associated with an increase in the income of a nation. It is conventionally...
measured as the percentage rate of increase in real gross domestic product (GDP). Growth is usually calculated in real term, i.e., inflation adjusted term in order to net out the effect of change in prices of goods and services produced. In economic, economic growth typically refers to growth of potential output i.e., production at full employment which is called growth in aggregate demand.

Economic growth is measured as the annual percentage change of national income. It is generally recognized that economic growth also corresponds to a process of continual rapid replacement and reorganization of human activities facilitated by investment motivated to maximize returns. This notion of growth as increased stock of capital goods (means of production) was codified as the Solow-Swan growth model which involved series of equations which showed the relationship between labour-time, capital goods, output and investment. In this modern view, the role of technological change became crucial even more important than the accumulation of capital. The real GDP per capital of an economy is often used as an indicator of the average standard of living of individuals in the country and the growth of such economy is therefore seen as indicating an increase in the average standard of living. Over long period of time, even small rate of annual growth can have immense effect through compounding. A growth rate of 2.5% per annum will lead to doubling of GDP within 30 years, while 8% growth rate per annum will lead to doubling of GDP within 10 years.

**Theoretical framework**

**Structural Change Theory**

This theory was formulated by Nobel Laureate Arthur W. Lewis in the mid 1950’s and latter modified, formalized and extended. The theory focuses on the mechanism by which underdeveloped economies can transform their domestic economic structures from a heavy emphasis on traditional subsistence agriculture to a more modern and more advanced agricultural practice through heavy financial support in order to attain industrial breakthrough.

The extended version of the theory added that the full benefits of agricultural development cannot be realized unless government support systems are created that provide the necessary incentives, economic opportunities and most importantly access to needed credit and inputs to enable small farmers to expand their output and raise their productivity. Other reforms or strategies are likely to be ineffective and perhaps even counter-productive unless there are corresponding structural changes that control productivity example bank loans, sects, fertilized distribution, technical and educational extension service, public credit agencies, rural transport and feeder roads (Orok & Ayim, 2017).

**Research Design**

Ex post facto research is ideal for conducting social research when is not possible or acceptable to manipulate the characteristics of human participants. It is a substitute for true experimental research and can be used to test hypotheses about cause-and-effect or correlational relationships, where it is not practical ethical to apply a true experimental, or even a quasi-experimental, design. This research, will adopt ex post facto research design to show the influence of independent variables on the dependent variable and test the claim using statistical hypothesis testing techniques. Akpa (2013), explained that in the context of social science research and ex post facto investigation seeks to reveal possible relationships
by observing an existing condition or state of affairs and searching back time for plausible contributing factors. Ex post facto research uses data already collected, but not amassed for research purposes. Ex post facto literally means from what is done afterwards. Ex post facto research is an experimental research in reverse in the sense that instead of taking groups that are equivalent and subjecting them to different treatments to determine differences in the dependent variables, an ex post facto begins with groups that are already different in some respect and searches in retrospect for factors that brought about those differences. Ex post facto research then is a method of teasing out possible antecedents of events that have happened but cannot, be manipulated by the investigator.

**Sources and Nature of Data**

**Model Specification**
In order to empirically examine the impact of agricultural credit guarantee scheme fund on economic growth in Nigeria, the study adopted Olaitain (2014) modelling framework given as follows: \( RGDP = f(AGC, GFA, CBC, INTRA) \) .............................................................. 1

The above function can be presented in a model form below

\[
RGDP = \beta_0 + \beta_1 AGC + \beta_2 GFA + \beta_3 CBC + \beta_4 INTRA + \mu \]

Where:

\( RGDP = \) Real Gross Domestic Product

\( AGC = \) Agricultural Credit Guarantee Scheme Loan by Purpose

\( GFA = \) Government Financial Allocation to the Agricultural Sector

\( CBC = \) Commercial Bank’s Credit to the Agricultural Sector

\( INTRA = \) Interest rate on agricultural loan

\( \mu = \) Error Term

\( B_1, B_2, B_3, B_4 = \) Parameters of the model to be estimated

**A Priori Expectations**
This defines the theoretical expectations about the sign or size of the parameters of the specified model. The a priori expectations are determined by the principles of economic theory guiding the economic relationship of variables under study. For our specified model of study, in line with economic theory, the a priori expectations are mathematically expressed as: \( B_1 > 0, B_2 > 0, B_1 > 0 \)

**Results and Discussions**
**Pre-Estimation Diagnostics Tests**
**Unit Root Test**

Macroeconomic time series data are generally characterized by stochastic trend which can be removed by differencing. Unit root test therefore is a test of stationarity or non-stationarity of series data used in the model. This is to find out if the relationship between economic
variables is spurious or nonsensical. This test is conducted by adding the lagged values of the dependent variable so that the error term is serially uncorrelated. Thus, the study used or adopted Augmented Dickey-Fuller (ADF) Techniques to test and verify the unit root property of the series and stationarity of the model. The ADF tests here consist of estimating the following regression:

\[ \Delta Y_t = \beta_1 + \delta \Delta Y_{t-1} + \Delta Y_{t-1} + \varepsilon_t \]

Where:
\[ \Delta Y_t = Y_t - Y_{t-1} \]
\[ \Delta = \text{First difference operator} \]
\[ \Delta Y_{t-1} = Y_{t-1} - Y_{t-2} \]
\[ \delta = \rho - 1 \]
\[ \varepsilon_t = \text{White noise error term} \]
\[ \rho = \text{Rho} \]

The \( t \) value of the coefficient of \( Y_{t-1} \) (that is \( \delta \)) in the equation follows the \( r(tau) \) statistic. The acceptance of the null hypothesis that shows the presence of unit root or non-stationarity follows that if \( r(tau) \) calculated statistic is less than the critical \( r \) values of tabulated, then we conclude that the times series variable involved is not stationary. Therefore, to examine the existence of stochastic non-stationarity in the series, the research establishes the order of integration of individual time series through the unit root tests. The tests of the stationarity of the variables adopted were Augmented Dickey Fuller (ADF) test. The variables tested are: RGDP, AGC, GFA,CBC and INTRA are presented in table 4.3.1 below;

<table>
<thead>
<tr>
<th>Variable</th>
<th>Order of Integration</th>
<th>ADF Test Statistics</th>
<th>Critical ADF Test Statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGDP</td>
<td>I(1)</td>
<td>-6.280304</td>
<td>-3.568379</td>
<td>0.0001</td>
</tr>
<tr>
<td>AGC</td>
<td>I(1)</td>
<td>-7.158194</td>
<td>-3.568379</td>
<td>0.0000</td>
</tr>
<tr>
<td>GFA</td>
<td>I(1)</td>
<td>-7.886897</td>
<td>-3.574244</td>
<td>0.0000</td>
</tr>
<tr>
<td>CBC</td>
<td>I(1)</td>
<td>-5.481277</td>
<td>-3.574244</td>
<td>0.0006</td>
</tr>
<tr>
<td>INTRA</td>
<td>I(1)</td>
<td>-5.273827</td>
<td>-3.574244</td>
<td>0.0010</td>
</tr>
</tbody>
</table>

Source: Authors Computation, 2018 (Eview-10)

From table 4.3.1, all the five variables; RGDP, AGC, GFA,CBC and INTRA were found stationary at first difference, and they are integrated of order one, that is \( I(1) \). At this order of integration, its ADF test statistics are greater than their critical test statistics at 5% and 1% level of significance respectively. These stationary variables were then used for the linear multiple regression analysis.

Cointegration Test Result and Interpretation
Variables are cointegrated if they have a long term or equilibrium relationship between them (Dimitrious and Stephen, 2007). It is possible for a combination of some series to achieve long run equilibrium; although they may be individually non-stationary. This phenomenon is
referred to as the test for cointegration. The evidence of cointegration implies that there is a long run relationship among the variables.

Table 4.3.2 shows the results of the cointegration test, using the Johansen methodology. The results show that trace statistics test rejected the null hypothesis of no co-integration among the variables at the 5 percent level of significance. The trace statistics indicates 1 cointegrating equations at the 5% level of significance. The cointegration test results are therefore uninformative about the number of cointegrating relations among the variables. Max-eigen test also indicates 1 cointegration equations at the 5 percent level cointegrating equation.

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Trace Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.830403</td>
<td>109.0696</td>
<td>88.80380</td>
<td>0.0008</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.479516</td>
<td>55.83963</td>
<td>63.87610</td>
<td>0.1969</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.459082</td>
<td>36.24974</td>
<td>42.91525</td>
<td>0.1973</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.313717</td>
<td>17.81509</td>
<td>25.87211</td>
<td>0.3565</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.195369</td>
<td>6.521146</td>
<td>12.51798</td>
<td>0.3971</td>
</tr>
</tbody>
</table>

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Max-Eigen Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.830403</td>
<td>53.22999</td>
<td>38.33101</td>
<td>0.0005</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.479516</td>
<td>19.58989</td>
<td>32.11832</td>
<td>0.6843</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.459082</td>
<td>18.43465</td>
<td>25.82321</td>
<td>0.3448</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.313717</td>
<td>11.29394</td>
<td>19.38704</td>
<td>0.4835</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.195369</td>
<td>6.521146</td>
<td>12.51798</td>
<td>0.3971</td>
</tr>
</tbody>
</table>

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Authors Computation, 2018 (Eview-10)

4.4 Estimated Regression Model

In order to obtain the numerical estimates of the coefficients of the model the estimation of the model requires the use of various econometric methods, their assumptions and the economic implications of the estimates of the parameters. In the earlier stated simple linear regression model, we have

\[ RGDP = \beta_0 + \beta_1 AGC + \beta_2 GFA + \beta_3 CBC + \beta_4 INTRA + \mu \]
Table 4.5: Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-274066.5</td>
<td>105189.6</td>
<td>-0.260545</td>
<td>0.7964</td>
</tr>
<tr>
<td>AGC</td>
<td>2.318929</td>
<td>0.225261</td>
<td>10.29440</td>
<td>0.0000</td>
</tr>
<tr>
<td>GFA</td>
<td>48.22578</td>
<td>8.983745</td>
<td>5.368115</td>
<td>0.0000</td>
</tr>
<tr>
<td>CBC</td>
<td>59.27487</td>
<td>12.31409</td>
<td>4.813581</td>
<td>0.0001</td>
</tr>
<tr>
<td>INTRA</td>
<td>13754.71</td>
<td>56053.97</td>
<td>0.245383</td>
<td>0.8080</td>
</tr>
</tbody>
</table>

R-squared: 0.996781  Mean dependent var: 18053551
Adjusted R-squared: 0.996304  S.D. dependent var: 22568582
S.E. of regression: 1372119.  Akaike info criterion: 31.24421
Sum squared resid: 1.842517  Schwarz criterion: 31.47323
Log likelihood: 494.9074  Hannan-Quinn criter.: 31.32013
F-statistic: 2089.903  Durbin-Watson stat: 1.842517
Prob(F-statistic): 0.000000

Source: Authors Computation, 2018 (Eview-10)

\[ RGDP = 274066.5 + 2.32AGC + 48.22GFA + 59.27CBC + 13754.71INTRA + \mu \quad \ldots \ldots \]

<table>
<thead>
<tr>
<th>SEE</th>
<th>(39577.69)</th>
<th>(187.11)</th>
<th>(358.51)</th>
<th>(6.54)</th>
<th>(849.98)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t*</td>
<td>-0.26</td>
<td>10.29</td>
<td>5.37</td>
<td>4.81</td>
<td>0.25</td>
</tr>
<tr>
<td>F*</td>
<td>2089.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prob (F-statistic) = 0.00000; \( R^2 = 0.997 \bar{R}^2 = 0.996 \quad DW=1.81 \)

Model Evaluation and Post-Estimation Diagnostics Tests

The F-statistic
The F-statistic examines the overall significance of a regression model including all the K variables. Therefore, by examining the overall fit and significance of the model, it could be observed that the model has better fit. That is, the probability F-statistic value of 0.0000 is less than 0.05.

The \( R^2 \) (R-square)
The coefficient of determination (R-square), used to measure the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction, that is, 99.67 percent change in RGDP was due to AGC, CBC, GFA and INTRA collectively, while 0.33 percent unaccounted variations was captured by the error term. It showed that AGC, CBC, GFA and INTRA had strong significant impact on the growth of the Nigerian economy.
Table 4.9 : Pairwise Granger Causality Tests

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGC does not Granger Cause RGDP</td>
<td>30</td>
<td>0.75346</td>
<td>0.4811</td>
</tr>
<tr>
<td>RGDP does not Granger Cause AGC</td>
<td>12.5720</td>
<td>0.0002</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Authors Computation, 2018 (Eviews-10)*

**Statistical Test of Hypothesis**

The two hypotheses formulated in this study were tested using student t-statistics and p-value. The level of significance for the study is 5%, for a two tailed test. The decision rule is that we shall accept the null hypothesis if the critical/t-value (±1.96) is greater than the calculated value, otherwise reject the null hypothesis. That is, using the student t-test (t-statistic), we say that a variable is statistically significant if \( t^* \) (t-calculated) is greater than the tabulated value of ±1.96 under 95% (or 5%) confidence levels and it is statistically insignificant if the \( t^* \) is less than the tabulated value of ±1.96 under 95% (or 5%) confidence levels. Using the p-value if the p-value is equal to or less than 0.05 we reject the null hypothesis and accept the alternative hypothesis, however if the p-value is greater than 0.05 we accept the null hypothesis. Thus;

\[
H_0: \beta_0 = 0 \text{ (Null hypothesis)}
\]

\[
H_1: \beta_1 \neq 0 \text{ (Alternative hypothesis)}
\]

**Hypothesis one**

**H01:** Agricultural credit guarantee scheme fund has no significant impact on economic growth in Nigeria.

From the regression result in table 4.5, the calculated t-value for AGC is 10.29 and the tabulated value is +1.96, it therefore falls in the rejection region and hence, we reject the null hypothesis. The conclusion is that Agricultural credit guarantee scheme fund had significant impact on economic growth in Nigeria.

Using p-value from table 4.5, of AGC (0.0000) is less than 0.05. Thus we reject the null hypothesis.

**Hypothesis two**

**H02:** Agricultural credit guarantee scheme fund has no causal link with economic growth in Nigeria.

The Pairwise Granger Causality Tests result in table 4.9 also showed that AGC does not Granger Cause change in RGDP, while, RGDP Granger Cause change in AGC. This result clearly show that there is unidirectional causality among the variables.

**Post- Estimation Diagnostics Tests**

i. **Serial correlation**

The regression model is free of serial correlation going by the result of the serial LM test.
Table 4.6: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

<table>
<thead>
<tr>
<th></th>
<th>F-statistic</th>
<th>Prob. F(2,25)</th>
<th>0.8794</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-squared</td>
<td>0.129205</td>
<td>Prob. F(2,25)</td>
<td>0.8794</td>
</tr>
<tr>
<td></td>
<td>0.327382</td>
<td>Prob. Chi-Square(2)</td>
<td>0.8490</td>
</tr>
</tbody>
</table>

Source: Authors Computation, 2018 (Eview-10)

From table 4.6 the Prob. Chi-square gave 0.8490, and it’s greater than 0.05; thus we accept the null hypothesis that there is no serial correlation among the variables used in the model. 

Durbin Watson (DW) statistic was also used to test for the presence of serial correlation or autocorrelation among the error terms.

The model also indicates the alternative hypothesis (H₁) is accepted, indicating that there is no autocorrelation among the variables as captured by Durbin Watson (DW) statistic of 1.81 (approximately 2). It shows an unbiased estimate and the model could be used for policy

The regression model is homoscedastic as shown in table 4.7 below:

Heteroskedasticity Test: Breusch-Pagan-Godfrey

<table>
<thead>
<tr>
<th></th>
<th>F-statistic</th>
<th>Prob. F(4,27)</th>
<th>0.1345</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-squared</td>
<td>0.129205</td>
<td>Prob. F(2,25)</td>
<td>0.8794</td>
</tr>
<tr>
<td></td>
<td>0.327382</td>
<td>Prob. Chi-Square(2)</td>
<td>0.8490</td>
</tr>
</tbody>
</table>

Source: Authors Computation, 2018 (Eview-10)

From table 4.7, the Prob. F-value gave 0.1345, and it’s greater than 0.05; thus we accept the null hypothesis that there is no heteroscedsticity among the variables used in the model.

i. Parameter Instability Test- CUSUM test

CUSUM test does not require specifying a particular date and it plots the cumulative sum of the recursive residuals together with the 5% critical lines. The CUSUM test indicates parameter instability if the cumulative sum goes outside the area between the two critical lines.

Figure 2: Testing the Parameter stability
As observed from figure 2, the CUSUM test result indicates parameter stability as the cumulative sum does not go outside the area between the two critical lines.

**Discussion of Research Findings**

Agriculture is seen as crucial to economic development through strengthened economic framework, creation of employment, enhancement of farmers’ living standard, provision of raw materials to manufacturers, revenue vehicle for government and contribution to gross domestic production of the country. The Agricultural credit guarantee scheme fund (ACGSF) is one of the multifarious schemes initiated by the Federal Government of Nigeria to finance agriculture through provision of incentives for deposit money banks (DMBs) to extend credit facilities to Nigerian farmers. This scheme founded by decree no 20 of 1977 and inaugurated its operations in April 1978 with initial 100 million naira share capital was subscribed by the Central Bank of Nigeria and the federal government of Nigeria (40 per cent and 60 per cent respectively). This capitalization was subsequently shored up to N1 billion in 1999, and further up to N 6 billion in 2006 (CBN, 2007), which is the present amount of fund available for the purpose of guarantee. Under the scheme, the gross credit extension to Nigerian farmers is guaranteed up to 75% of realisable net default value.

The parameter estimate of the AGC showed that it relates positively with RGDP and was found statistically significant. This is true since Agricultural credit guarantee scheme fund play significant role in economic growth in any economy. The obtained result is similar to the works of Njoku and Odii (1991), Isijola (2002) and Oguamanam (1996). Their finding revealed a significant relationship between credit supply and agricultural output in Nigeria. They identified commercial banks’ loans and advances, Agricultural Credit Guarantee Scheme as the determinant of agricultural credit supply in Nigeria. The result showed that when AGC increased by one unit (holding other variables constant), on the average, increased the RGDP of Nigeria by 2.3% between 1986 and 2016. The Agricultural Credit Guarantee Scheme Fund (ACGSF) resulted to upscale the traditional and subsistence method of farming practices engaged by farmers in Nigeria since the farmers required huge capital to purchase agricultural equipment and input were provided. Again, access to credit also contributed to growth and efficiency of the sector, and the poor adaptation to modern agricultural techniques. access to credit has result in an increased utilization of improved
seedlings and other agricultural inputs which will in turn translate to higher yield as shown in the result.

Conclusion
The Agricultural Credit Guarantee Scheme Fund (ACGSF) was established in 1977 with the aim of enhancing commercial banks’ loans to the agricultural sector in Nigeria with focus on agro-allied and agricultural production. Since the inception of ACGSF, the scheme provides guarantee to large volumes of loans given to farmers throughout Nigeria. Thus, it paves the way for a relative ease of credit accessibility by farmers. On the other hand, farmers are expected to produce to meet the food needs of the country, for export, lower cost of agro-produce and reduce inflation, hence increase Nigeria’s foreign earnings as well as diversify its revenue base, for the overall purpose of encouraging economic growth and development. However, there are arguments in some quarters that many years down the line, the country has not fully realized the purpose to which it was established.

Recommendations
In view of findings from the study, the following recommendations are made:
Government should not only increase the credit facility made available to the farmers, but the utilization of the fund by the farmers should also be monitored so that fund is not diverted from the target, only farmers that are serious should access the scheme. Government and the private sectors should invest more in agribusiness to improve domestic supply of food in Nigeria, this will increases demand for agricultural output and enhance productivity in the sector. Nigerian farmers should also be encouraged to adopt modern mechanized farming by providing them with modern farm implements. Ploughs, ridgers and other farm implements should be made available to them at the minimum cost possible. This should not necessarily be done by the government alone, but individuals and private organizations should also get involved in order to achieve more in the area of agricultural production and to attain food sufficiency in Nigeria, this will motivate young men to engage in farming. Schools and organisations should take a lead in collectivization agriculture where sciences are applied to farming. Commercial and merchant banks should also be encouraged by the CBN to provide loans and advances to farmers at an attractive market interest rate.

Limitation of the Study
The limitations of this study include: The time I have at my disposal is limited. As a result I will not be able to carry out an extensive research. There are several variables of economic growth I could have chosen for my research. However due to my time limit I was not able to carry out such an extensive research which could have given me a different answer. The model used (OLS) and the methods of data analysis and the sources of information available mostly from the internet. The literature and data gathered for this research gotten from the online journals, books, and previously done researches, the website of National Bureau of Statistics and CBN bulletins.

Implication for Future Research
Based on the findings and limitations of the study mentioned above, there is urgent need to conduct more researches on the topic. Researcher can conduct further studies on:
1. Agricultural funding and the performance of the economy in different countries
References


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