EFFECT OF DEPOSIT MONEY BANK CREDIT TO AGRICULTURAL SECTOR ON ECONOMIC GROWTH IN NIGERIA

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Abstract

This study examines the effect of deposit money bank credit on the agricultural sector on economic growth in Nigeria. The study adopts the ex post facto research design and secondary data was used. The data used for the estimation of the model is extracted in respect of deposit money bank credit to the agricultural sector and real gross domestic product while the study covered the periods of 1990 to 2021 (32 years). The hypotheses were tested using a robust ordinary least square regression model after conducting some diagnostics tests like the Skewness/Kurtosis Normality Test, Pearson Correlation and Heteroscedasticity test. The results show that depositing money bank credit to the agricultural sector has a significant positive effect on the real gross domestic product in Nigeria for the period under review. The study recommends that the Central Bank of Nigeria should ensure a sustainable increase in deposit money bank credits to the agricultural sector to boost the Nigerian Real Gross Domestic Product.

Keywords: Agricultural sector, Credit, Deposit Money Bank, Economic Growth, Financing

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Introduction

Deposit money banks are financial institutions that make credit available by mobilising surplus funds from depositors who have no immediate need of such money and channelling it in the form of credit to investors. These investors have brilliant ideas on how to create additional wealth in the economy but lack the necessary capital to execute the ideas. Credit, therefore, is the borrowing capacity provided to an individual, government, firm or organisation by the banking system in the form of loans. Okereke (2003) sees credit as a fund-based and non-fund-based activity of banks that exposes them to risk of varying degrees. Nwanyanwu (2012) asserted that the role of credit in an economy has been recognised; as credit is obtained by economic agents to enable them to meet operating expenses. For instance, farmers obtained credit to purchase farm inputs such as fertilizers, seeds, and farm buildings among others to enhance their productivity.

In responding to the dilapidated state of the agricultural sector in Nigeria, the Federal Government of Nigeria prioritised the agricultural sector by directing deposit money banks, through the Central Bank of Nigeria (CBN), to devote a certain percentage of their loanable funds to this sector. To encourage deposit money banks to meet this target, the CBN introduced the Agricultural Credit Guarantee Scheme (ACGS) in 1979, to guarantee credit disbursement by deposit money banks to farmers. In agriculture, finance remains the bedrock for mechanisation – the purchase of machinery, the training to use machinery, the transportation of equipment and products, and the marketing of produce among others. Therefore, it cannot be taken for granted, the connections between agricultural finance and actual agricultural production. Finance in agriculture is very important for improved productivity as technical input can only be purchased and used by farmers if they have the required funds at their disposal.

In every economy, financial resources are pertinent for enhancing growth through efficient financial intermediation (Sulaiman & Aluko, 2015). Financial intermediaries particularly banks play a crucial role in a country's overall financial system by embarking on several activities vital for economic growth (Aziakpono, 2005; Unvan &

Yakubu, 2020). For instance, financial intermediaries serve as a conduit by which financial resources move from surplus to deficit economic units. They aid in maturity transformation, thus ensuring sufficient liquidity. Financial intermediaries also ensure risk management by providing mechanisms for diversification and risk–sharing.

Economic growth is understood, as a dynamic mechanism in which each economy creates relationships between the different production factors that, following economic policies, allow the production of a greater quantity of goods and services produced, thereby improving the well-being of the population (Gallardo *et al*., 2019). Economic development requires more demand which implies an increase in output per unit of input, not only inputs but also greater efficiency. Economic growth to Wikipedia is the rise in the volume of the products and services that a country creates over time. It is conventionally calculated, as the percentage rate of actual gross domestic product growth.

Economic growth is a sustained increase in the economic variables of an economy mainly the "GDP" over a while. The concept of economic growth has been observed by Dewett, (2005) as a rise in the net domestic output of a nation in a specified period. He elucidated that the growth of an economy could be perceived as a quantifiable adjustment in economic productivity recorded over some periods.

Empirical evidence from relevant studies such as Adekunle and Ayeni (2021), and Asuquo and Ibiyingibo (2021) on the nexus between agricultural financing and economic growth in developed and emerging climes of the world have yielded divergence and convergence findings in the field of finance and economics. Furthermore, the growing theoretical literature in these areas has also witnessed increasing empirical testing and validation but most of these empirical studies in recent times have been for advanced economies and only a few have studied emerging and developing countries like Nigeria. There exists scope, methodological and findings gaps in many of the studies reviewed. This, therefore, juxtaposes the need for this present research.

It has been argued that deposit money banks prefer granting credit to commerce or trading as against agriculture and where the credit was allowed, the interest payable seems high with some tight securities, which place restrictions and scare many prospective farmers. The Nigerian deposit money banks have concentrated on short-term lending as against long-term farming investments which should have formed the bedrock of virile agricultural growth. Rahji and Adeoti (2010) argued that agricultural credit is a major input in the development of the agricultural sector in Nigeria, yet there has been a decline in deposit money banks' enthusiasm to lend to the sector because of the inherent problems of lack of collateral securities and diversification of agricultural loans for other purposes associated with the sector.

The seemingly lacklustre performance of banks in lubricating the economy was the precursor to the emergence of the widespread banking crisis in the early 1990s. Indeed, it has been argued that the banking crisis is often preceded by deterioration in various indices of macroeconomic performance. The crisis could have been forecasted by inconsistent economic developments (Chete & Adeoye, 2005). A typology of factors that sparked the deterioration in the financial conditions of banks, which in turn affected the spat of growth of the economy include insider abuse, mismanagement and outright fraud (Robinson, 1952; Lucas, 1988; Olufemi & Stephen, 2015).

Distressed banks have also been funded to be more managerial and technically inefficient compared with healthy banks (Olufemi & Stephen, 2015). These provided the breeding ground for fastening financial problems in the banking sector. Accordingly, the sector was further hamstrung and incapacitated in mobilizing and allocating financial resources to the agricultural sector for the growth of the economy (Fapetu & Obalade 2015).

The empirical works have also shown that some of the studies Abiodun *et al.* (2021), Adekunle and Ayeni (2021), Asuquo and Ibiyingibo (2021), Kelani *et al*. (2020) and Okunlola *et al.* (2020) carried out in recent times regarding deposit money banks agricultural financing and economic growth in Nigeria and other countries of the

world were not current in the data used for the analysis to reflect the current economic realities as all the data ended in 2019. The identified gaps in the literature call for further study in this area which necessitated this study to investigate the deposit money bank agricultural financing and economic growth in Nigeria, to update the data up to 2021 and add to more literature in this area in Nigeria.

Based on the identified problems, the study provides answers to the research question: To what extent does aggregate deposit money bank credit to the agricultural sector affect economic growth in Nigeria? The main objective of this study is to examine the effect of deposit money bank agricultural financing on economic growth in Nigeria. The specific objective is to; **e**xamine the effect of aggregate deposit money bank credit on the agricultural sector on economic growth in Nigeria. In line with the specific objectives of the study, the null hypothesis is formulated:

H01: Aggregate deposit money bank credit to the agriculture sector has no significant effect on economic growth in Nigeria.

Literature Review

Conceptual Review

Deposit Money Bank Agricultural Financing

Bank credit can be described as a process of making funds available to various sectors of the economy based on some agreed terms in respect of repayment with interest (Ebele & Iorember, 2016). Deposit-taking banks play an important function in the development and growth of a nation. Principal amongst the roles carried out by deposit money banks is to ensure there is an adequate flow of money to service deficit sectors of the economy and facilitate the movement of funds amongst economic units. This movement referred to as financial intermediation, is usually from units of surplus to units of deficits/needs (Ufot, 2004). Supply of finance can retard economic development if it is repressed or stimulate it if it is liberalized. A bank is a financial intermediary that accepts deposits from customers and channels the amount mobilized to borrowers in the form of loans and advances. Nwanyanwu (2010) defined credit as the money from the lender to the borrower. However,

Spencer (1977) noted that credit entails an undertaking by one party to another for the payment of money borrowed or goods and services received.

Agriculture finance refers to (public or private) resources (in the form of equity, gift or loan) for improving social welfare through the development of the agricultural sector (Shreiner & Yaron, 2001). Adesina et al. (2006) asserted that agricultural finance promotes a sustainable economy, reduces poverty, increases business opportunities and leads to economic growth that improves the standard of living of the people. Omankhanlen (2013) averred that the lack of agricultural credit to finance agrarian investment is a major problem in mechanizing our agricultural produce. Ayeomoni and Aladejana (2016) described agrarian credit as the use of credit through every stage to enlarge and enhance agricultural production and efficiency. Anthony *et al.* (2015) defined agrarian credit as one of several payment instruments used to fund agricultural transactions. This type of funding is tailored to suit the farmer's particular financial need, which is influenced by the planting, harvesting and marketing periods.

Economic Growth

Economic growth is a positive change in the level of production of goods and services over a certain period. Economic growth is usually brought about by technological innovation and positive external forces (King & Levine, 1993). It is an increase in the capacity of an economy to produce goods and services compared from one period to another. Economic growth can be measured in nominal terms, which include inflation or in real terms which are adjusted for inflation. Economic growth is measured by changes in the gross domestic product, GDP, which measures a country's entire economic output for the past year. This takes into account all goods and services that are produced in a country for sale whether they are sold domestically or sold overseas. It only measures final production (Aliero, 2013).

Economic growth is the endless improvement in the capacity to satisfy the demand for goods and services, resulting from increased production scale, and improved productivity (innovations in products

and processes) which is usually measured over a certain period. In other words, it is the measurement of annual percentage increases in real GDP over a certain period. Economic growth is viewed to indicate the ability of an economy to increase the production of goods and services over a certain period using the available factor inputs such as capital and labour (Aliero, 2013). The activities of economic agents determine the quantity of goods and services produced in an economy, known as the gross national product (GNP) which is the accepted yardstick for measuring the level of economic growth of any nation. It, therefore, follows that for growth to occur, a country must invest to build up productive capacity. It is this capacity that determines the level of output of goods and services in the economy. If investment, which represents the net increase in an economy's capital stock leads to growth, then there is a relationship between capital accumulation and economic growth (Soyode, 1990).

Economic growth is defined as a positive change in the national income or the level of production of goods and services by a country over a certain period. This is often measured in the form of the level of production within the economy. Other possible measures include the total factor of productivity, factors of production such as technological change, and human capital termed the Schumpeterian approach. Other measure of growth ranges from real per capita GDP; to the rate of physical capital accumulation among others, (Odedokun, 1998, King & Levine, 1993; Allen & Ndikumama, 1998). Todara and Smith (2006) saw economic growth as a steady process by which the productive capacity of the economy is increased over time to bring rising levels of national output and income. The main characteristics of economic growth are a high rate of growth of per capita income or output, a high rate of productivity, a high rate of structural transformation, and international flows of labour, goods and capital (Dewett, 2005; Awanyanwu, 2010).

Similarly, Jhingan (2006) defined economic growth as "a quantitative sustained increase in the country's per capita income or output accompanied by an expansion in its labour force, consumption, capital and volume of trade." Todaro and Smith (2006) looked at economic growth as a stable route by which the economic productive

ability of a nation is improved over some periods that will result in rising heights of the nation's product and income. Based on their premises, the growth of an economy can be ascertained based on some features; i.e. the high rate of per capita income, a favourable balance of payment, price stability, full employment of labour, high rate of productivity and sustainable value of the currency. Awanyanwu (2010) affirmed that economic growth is the increase in the aggregate output of an economy, excluding reference to inflation, deflation, or the entire population. Chappelow (2019) inferred that economic growth is an increase in the creation of economic goods and services, compared from time to time.

Theoretical Review

Endogenous Growth Theory

Endogenous growth theory was developed in the 1980s by Romer (1986), Lucas (1988) and Rebelo (1991) among other economists as a response to criticism of the neo-classical growth model. The endogenous growth theory holds that policy measures can have an impact on the long-run growth rate of an economy. The growth model is one in which the long-run growth rate is determined by variables within the model, not an exogenous rate of technological progress as in a neoclassical growth model. Endogenous growth theory explains long-run growth as emanating from economic activities that create new technological knowledge. This article sketches the outlines of the theory, especially the 'Schumpeterian' variety, and briefly describes how the theory has evolved in response to empirical discoveries. Endogenous growth is long-run economic growth at a rate determined by forces that are internal to the economic system, particularly those forces governing the opportunities and incentives to create technological knowledge. In the long run, the rate of economic growth, as measured by the growth rate of output per person, depends on the growth rate of total factor productivity (TFP), which is determined in turn by the rate of technological progress. The neoclassical growth theory of Solow (1956) and Swan (1956) assumes the rate of technological progress to be determined by a scientific process that is

separate from, and independent of, economic forces. The neoclassical theory thus implies that economists can take the long-run growth rate as given exogenously from outside the economic system. Endogenous growth theory challenges this neoclassical view by proposing channels through which the rate of technological progress, and hence the long-run rate of economic growth, can be influenced by economic factors. It starts from the observation that technological progress takes place through innovations, in the form of new products, processes and markets, many of which are the result of economic activities. For example, because firms learn from experience how to produce more efficiently, a higher pace of economic activity can raise the pace of process innovation by giving firms more production experience. Also, because many innovations result from R&D expenditures undertaken by profit-seeking firms, economic policies concerning trade, competition, education, taxes and intellectual property can influence the rate of innovation by affecting the private costs and benefits of doing R&D.

Jhingan (2006), explained that the endogenous growth model emphasizes technical progress resulting from the rate of investment, the size of the capital stock and the stock of human capital. In an endogenous growth model, Nnanna *et al.* (2004), observed that financial development can affect growth in three ways, which are: raising the efficiency of financial intermediation, increasing the social marginal productivity of capital and influencing the private savings rate. This means that a financial institution can affect economic growth by efficiently carrying out its functions, among which is the provision of credit.

Empirical Review

The empirical studies related to this study were reviewed based on the specific objective as presented below:

Adekunle and Ayeni (2021) provided a nexus between credit channels of financial sector development and economic growth in Nigeria estimated with ARDL using data from 1986 to 2018. Findings from the Bound Co-integration result suggested a long-run relationship between

credit channels of financial sector development and economic growth in Nigeria. The study found that credit to the core sector (agriculture and manufacturing) and credit to the government impede economic growth in the short, with credit to the core sector stimulating economic growth in the long run. The study used adequate statistical tools of analysis to examine the data. However, even though the study was carried out in 2021 the data covered only up to 2018 which affects the currency of the study. However, this study intends to increase the scope to 2021 data.

Asuquo and Ibiyingibo (2021) examined the sector-specific credit allocation by deposit money banks and real sector development in Nigeria. The study used secondary data on GDP in Nigeria from 1981-2019. Descriptive statistics, Phillips-Perron unit root test, cointegration test and error correction mechanism were relied upon for the analysis. The cointegration test result showed that a long-run equilibrium relationship exists between agriculture's share of GDP and the underlying explanatory variables. The study found that deposit money banks' credit to agriculture has an insignificant positive effect on agriculture's share of GDP. The interest rate on credit also conforms to economic theory by bearing a negative sign with the output of agriculture. This implies that a reduction in the cost of funds stimulates agricultural production and vice versa. On the other hand, the inflation rate has a positive relationship with agriculture's contribution to economic growth but was statistically insignificant at a 5 per cent level. The study used appropriate statistical tools of analysis to examine the data. Also, the study was carried out in 2021 and the data covered up to 2019. However, this study will increase the scope to 2021 data.

Mosinmileoluwa *et al.* (2021) examined the impact of agricultural credit on economic growth in Nigeria. The study used data sourced from the Central Bank of Nigeria (CBN) statistical bulletin and World Development Indicator (WDI). The detailed objectives are to analyze the effect of the Agricultural Credit Guarantee Scheme fund and the deposit money bank credit to the agriculture sector (DMBCA) on Nigeria's Economic Growth. Data were analyzed using stationarity, ARDL was adopted due to the mixed order of stationarity of the

variables at levels and first difference. The study found that DMBCA is significant and there exists a direct relationship, only in the short run, and the ACGSF is insignificant in both the short and long run but has a direct relation in the short run and an inverse relationship in the long run. However, the exogenous variables, methodology to be used and time frame are different, leaving a gap to be filled.

Abiodun *et al.* (2021) examine the impact of deposit money bank credit to small and medium-scale enterprises on the economic growth of Nigeria. Secondary data were collected from eleven indigenous deposit money banks in Nigeria from 2010 to 2019. Fixed and random effect regression analysis method was adopted for the analysis. The study found that loans and advances to SMEs in the agricultural sector have a significant positive effect on economic growth. The study also found the positive insignificant impact of loans and advances to the general commerce sector on GDP. The findings also revealed that the inflation rate has a significant negative relationship with economic growth. They recommended that all stakeholders in Nigeria should ensure that affordable loans are made available to the agricultural sector and the rate of inflation needs an aggressive measure to reduce it to the barest minimum. However, the exogenous variables, methodology to be used and time frame are different, leaving a gap to be filled.

Okunlola *et al.* (2020) carried out a study on agricultural finance and economic growth: evidence from Nigeria. The study used time series data sourced from the Central Bank of Nigeria statistical bulletin of various issues. The data sets covered thirty-seven (37) years spanning from 1981 to 2017. Autoregressive Distributed Lag (ARDL) model was employed for data analysis, while, the Phillip Perron stationarity test was used to determine the order of integration because of its robustness to serial correlation and heteroskedasticity. The study found that the lag criterion was based on LR, FPE, AIC, SC and HQ using the Newey-West covariance matrix estimator. The study found both short-run and long-run models as confirmed by the Wald test, which shows that none of the guaranteed agricultural finance is statistically significant to real gross domestic product. The scope of this study is belated to 2017 while the present study intends to cover up to 2021.

Kelani *et al*. (2020) examined agricultural financing and economic performance in Nigeria. The study used a sampled period of 1978- 2017 on data obtained through secondary sources from the Central Bank of Nigeria statistical bulletin. The data were analyzed using the Unit root test, Bound Cointegration test and error correction modelling to empirically estimate the coefficient of parameter estimates. The study found that in the long run, Agricultural Credit Guarantee Scheme Fund is the most influential agricultural financing variable (as compared to government expenditure on agriculture and commercial bank credit to agriculture) that contributed to economic performance, as it revealed that Agricultural Credit Guarantee Scheme Fund had a strong positive impact on the growth rate of the Nigerian economy. However, the study was carried out in 2020 and the data covered up to 2017 which enhances the currency of the study but this study will be carried out in 2023 and the scope will cover up to 2022.

Onyema and Agada (2018) examined deposit money banks, agricultural financing and the growth of the agricultural sector in Nigeria: from 1981 to 2015. The study used time series data collected from the Central Bank of Nigeria Statistical Bulletin from 1981 to 2015. The percentage of agricultural sector gross domestic product to total domestic product was used as the dependent variable while the percentage of deposit money bank credit to agricultural to total deposit money banks credit, prime lending rate and maximum lending rate were used as the independent variables. Co-integration test, Augmented Dickey-Fuller test, granger causality test and error correction model were used to determine the short and long-run relationships that exist between the dependent and the independent variables. The study found that deposit money bank's credit to the agricultural sector is not done in such a volume that will guarantee a positive contribution to the growth of the agricultural sector while prime lending rate and maximum lending rate are found to contribute positively to the growth of the agricultural sector. The study also found that all the variables are stationary at first difference; the co-integration test indicates the presence of a long-run relationship while the Granger causality test exhibits a uni-directional causal relationship between the

dependent and the independent variables. The study found that agricultural financing has no significant effect on the growth of the agricultural sector in Nigeria. The study used appropriate statistical tools of analysis to examine the data. The study was carried out in 2018 and the scope covered up to 2015 while this present study intends to cover up to 2022.

Methodology

This study adopts the *ex post facto* research design. *An ex-post facto* research design was adopted since the phenomenon of the study had already taken place and data to be used were already in existence. This study employed secondary sources of data including the data in published forms such as the CBN Annual and Quarterly Reports and the CBN Statistical Bulletin (2021). The data used for the estimation of the model is extracted with respect (to deposit money bank credit to the agricultural sector and real gross domestic product in Nigeria) from the Central Bank of Nigeria Statistical Bulletin 2021. The data were extracted from the periods of 1990 to 2021 (32 years) using the Central Bank of Nigeria statistical bulletin 2021. In examining the deposit money bank agricultural financing and economic growth in Nigeria, multiple regression methods were used. The choice of this technique is necessary because the ordinary least square (OLS) estimator is of high standard amongst all other forms of estimators. This is a result of its desirable properties such as linearity, minimum variance and unbiasedness. The analysis was aided by STATA 15 software.

The dependent variable is the economic growth proxy by the real gross domestic product (RGDP) while the independent variable is deposit money bank agricultural financing proxies by deposit money bank credit to the agricultural sector (DMBCA). Specifically, the functional linear equation as adapted from Agunuwa *et al*. (2015), Athanasius (2017) and Moureen and Borniface (2021) is presented as follows:

RGDP = *f*(DMBCA)

Econometrically, the above function is rewritten into a model as follows:

$RGDP_t = \beta 0 + \beta 1DMBCA_t + \mu t$……..…(Model)

Where:
RGDP = an indicator representing real gross domestic product (dependent Variable);
$\beta 0$ = Intercept term (a constant);
$\beta 1$ = Coefficient of deposit money bank credit to the agricultural sector;
DMBCA = a predictor Variable (deposit money bank credit to the agricultural sector);
μ = Stochastic error term;
t = periods; and
f = Functional relationship.
A-priori Expectation: $\beta 1 > 0$

Model Evaluation Techniques

To establish the reliability of the results from the Ordinary Least Square (OLS) regression and also to decide whether the estimates of the parameters are theoretically meaningful and statistically satisfactory. The Descriptive statistics, Skewness/Kurtosis Normality Test, Pearson Correlation Test and Heteroskedasticity Test were employed to evaluate the model.

The technique deployed for this study is based on the parametric tool. A regression tool was preferred because it assists the researcher in ascertaining the relationship between deposit money bank agricultural financing and economic growth in Nigeria. Overall, the technique is appropriate for achieving the set objectives of the study because it seeks to establish the effect between the variables of the study. One of the merits of the model is that it produced optimal results in predicting numeric output when properly structured.

Variable Definition and Measurement

Table 1: Variables Measurement

Variables	Type	Measurement	Previous Application
Real Gross Domestic Product	Dependent Variable	This is the total value of goods and services produced in Nigeria after adjusting for inflation less the oil sector.	Adekunle and Ayeni (2021), Garba (2014) and Mosinmileoluwa *et al.* (2021).
Deposit Money Banks Credit to Agriculture (DMBCA).	Independent Variable	This is the total loans given to the agricultural sector by the deposit money banks in Nigeria.	Adekunle and Ayeni (2021), Chris *et al.* (2016), Garba (2014), Mosinmileoluwa *et al.* (2021) and Udoka *et al*. (2016).

Source: Researcher's Variables Definitions, 2022.

Results And Discussion

The time series data for thirty-two years regarding the Real Gross Domestic Product (RGDP) and Deposit Money Bank Credit to the Agricultural Sector (DMBCA) covering 1990 to 2021 are presented in Appendix A. The data were analysed with the aid of Stata 15 software using Descriptive Statistics, Skewness/Kurtosis Normality Test, Pearson Correlation, Heteroscedasticity test and Robust Ordinary Least Square Regression based on the data attached in Appendix A and the detailed results are equally attached in Appendix B.

Descriptive Statistics

Table 2 summarises the descriptive statistics of the entire data set.

Variable	Obs	Mean	Std. Dev.	Min.	Max.
RGDP	32	43327.67	19581.71	21462.73	72393.67
DMBCA	32	246.30	341.71	4.22	1457.82

Source: Researcher's Computation using STATA 15 software, 2022.

Table 2 shows that the Real Gross Domestic Product (RGDP) has a minimum value of 21, 462.73, a maximum value of 72, 393.67 and a mean value of 43, 327.67 which is within the minimum and maximum values indicating a good spread within the period studied. The table also reveals that RGDP has a standard deviation of 19, 581.71 which is less than the mean, which implies that it had weak growth for the period under review. Table 2 also shows that deposit money bank credit to the agricultural sector (DMBCA) has a minimum value of 4.22, a maximum value of 1, 457.82 and a mean value of 246.30 which is within the minimum and maximum indicating a good spread within the period studied. The table also reveals that DMBCA has a standard deviation of 341.71 which is more than the mean, which implies that it had strong growth during the period under review.

Skewness/Kurtosis Test

Table 3 and the figure below is figure 1 presents the results of the normality test conducted with the use of the Skewness/Kurtosis test and normal distribution curve.

Variable	**OBS**	**Pr(Skewness)**	**Pr(Kurtosis)**	**Adj chi2(2)**	**Prob>chi2**
Residual	32	0.0001	0.0030	18.01	0.0001

Source: Researcher's Computation using STATA 15 software, 2022.

Diagram 1: Normal Distribution Curve

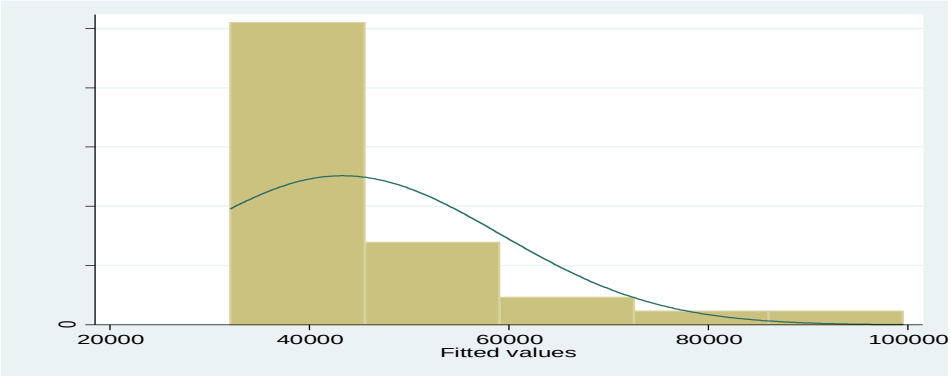


Table 3 above shows the residual and the Adj. chi of 18.01 and the corresponding probability of the value of 0.00 which is less than 0.05 signified that the residual is not normally distributed around the mean. This result is further corroborated by the normal distribution curve presented in Figure 1 above. This implies that one of the basic assumptions of the linear regression technique which allows only normally distributed residuals has been violated.

Pearson Correlation

Table 4 below is the Pearson correlation matrix for the data set to show the extent of the relationship between the variables.

Variable	RGDP	MS
RGDP	1.0000	
DMBCA	0.8098	1.0000

Source: Researcher's Computation using STATA 15 software, 2022.

The correlation matrix determines the degree of relationships between the proxies of an independent variable and the dependent variable. It is also used to show whether there are relationships among the proxies of independent variables themselves, to detect if a multicollinearity problem exists in the model. The table also shows that there is approximately 81% positive and strong relationship between deposit

money banks credit (DMBCA) and real gross domestic product (RGDP) in Nigeria from a correlation coefficient of 0.8098.

Heteroscedasticity Test

Table 5: Heteroscedasticity test

Type of test	Chi2	P-Value
Heteroscedasticity Test	6.60	0.0102

Source: Researcher's Computation Using STATA 15 software, 2022.

To establish that the data for this study was robust for the model, a heteroscedasticity test was carried out. The study revealed that data is heteroscedastic; as the basic linear regression model is violated. This is confirmed by the heteroskedasticity result in Table 5 which revealed the chi2 value of 6.60 with a p-value of 0.0102. This failed to satisfy the classical linear regression assumption of homoskedasticity (constant error variance).

Results of Robust Ordinary Least Regression Model

Table 6 is the robust ordinary least square regression model conducted for the estimation of this model.

Variable	Coefficients	t-value	Prob.
Cons.	31898.44	12.41	0.00
DMBCA	46.40309	4.53	0.00
R-sq overall	0.6557		
F-statistic	20.55		
Prob. >chi2	0.000		

Source: Researcher's Computation using STATA 15 software, 2022.

Table 6 above shows that approximately 66% variation of real gross domestic product (RGDP) is predicted by the effect of deposit money bank's credit to agriculture with (Overall R-sq of 0.6557). The F-statistic

value of 20.55 with a P-value of 0.00 signified that the model is fit for the study. This indicates that the model of the study is fit for decision-making.

Test of Hypotheses

To examine the deposit money bank agricultural financing and economic growth in Nigeria, the formulated hypotheses were tested using a robust ordinary least square regression model.

The results in Table 6 above showed that the t-value of 4.53 and the corresponding p-value of 0.00 shows that deposit money bank's credit to the agricultural sector has a significant positive effect on the real gross domestic product in Nigeria for the period under review. Based on this, the null hypothesis which says that deposit money banks credit to agricultural sector has no significant effect on real gross domestic product in Nigeria is rejected.

Discussion of Findings

The study further reveals that depositing money bank credit to the agricultural sector has a significant positive effect on the real gross domestic product in Nigeria. This implies that an increase in deposit money bank credit to the agricultural sector will result in an increase in the real gross domestic product in Nigeria by 1.475036. This finding is in agreement with the researcher's prior expectation and also in line with the endogenous growth theory' which suggests that a strong banking sector promotes economic growth and holds that policy measures can have an impact on the long-run growth rate of an economy. The finding is in agreement with the findings of Athanasius (2017), Mosinmileoluwa *et al*. (2021), Ogbuabor and Nwosu (2017), Onyema and Agada (2018), Tokunbo (2017) and Udoka *et al*. (2016). However, the finding is at variance with the findings of Asuquo and Ibiyingibo (2021).

Conclusion and Recommendations

The Central Bank of Nigeria must encourage and support deposit money bank credit to the agricultural sector to further enhance the real

gross domestic product in Nigeria. The increase in deposit money bank credit to the agricultural sector will enhance the growth of real gross domestic product in Nigeria and this must be encouraged in Nigeria by the regulatory authority. Based on the above conclusion, the recommendation is proffered that The Central Bank of Nigeria should ensure a sustainable increase in deposit money bank credits to the agricultural sector to boost Nigerian real Gross Domestic Product.

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