DEPOSIT MONEY BANK CREDIT AND AGRICULTURAL SECTOR IN NIGERIA

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ABSTRACT

This study investigates the impact of deposit money bank credit on the agricultural output in Nigeria in the past forty-one (1981-2021) years. Four variables: Agricultural Output (AGO), government expenditure on agriculture (GEXA), interest rate (INT) and Exchange rate (EXR) are tested using descriptive statistics and export facto research design. Agricultural Output (AGO) is the dependent variable, while government expenditure on agriculture (GEXA), interest rate (INT) and Exchange rate (EXR) the independent variables. Secondary data sourced from CBN statistical Bulletin and Nigeria Bureau of statistics provide the data. Descriptive statistics and ordinary least squares (OLS) multiple regressions analysis is employed to find out the effects of government expenditure (GEXA), interest rate (INT) and exchange rate (EXR) on agricultural output. The result of the analysis shows that GEXA and EXR are statistically significant. Against the backdrop of this finding, we recommend that government should increase her financing of agro-based business and initiate policies that encourages money deposit money banks to extend more credit facilities to smallholder famers. There is also the need for government to restructure the educational system in a way that it will lead the youths with capability of self-employment in agriculture.

Keywords: *Commercial bank credit, Agricultural Sector, Bank lending rate, Government Expenditure on Agriculture, Foreign Exchange Rate.*

Introduction

Agriculture is unavoidably an important sector that compliments the efforts of developing economies towards self-sufficiency in food supply and poverty alleviation, as it plays the important of food supply to the entire population and provision of raw materials inputs to the other sectors of the economy for the provision of goods and services (Food & Agriculture Organization, 2017). The agricultural sector plays the role that alters the modern economy and has many active benefits capable of providing sustainable economic development. In the more developed economies, the sector is highly regarded and its contributions to the economy in terms of foreign exchange, employment and improved standard of living is immeasurable. Furthermore, it creates investment capital at a faster rate than any other sector of the economy

through its complex value chain creation, thereby creating an effective linkage among different sectors (Emeaghalu, 2018).

The agricultural sector remains an important subsector of the Nigeria economy, due to the roles it plays in its developmental processes. Besides, in the recent past decades, agriculture has come to contribute a fairly lager percentage of foreign exchange earnings. It's role in the country's food security and poverty alleviation cannot be over emphasized, as majority of the poor are staying in the rural communities and rely mainly on agriculture-based economic activities as the main source of their livelihood. Despite all these, its contributions to the Gross Domestic Product (GDP) remains low, its contribution to the nation's food security is inadequate as Nigeria continue to depend on other countries for food. The agriculture's share of GDP in Nigeria 1950 was 69 percent, but declined continuously to 49% in 1970, 22 percent in 1982, 42.2%iin 2007, 40% in 2010 and 22% in 2019 (Ogueli, 2020).

Also, agricultural production activities in Nigeria is still predominantly controlled mostly by small-scale peasant farmers who account for some 95% of the country's agricultural production, though there has been some slight changes following movements of largescale foreign capital into domestic agriculture in the recent years. Small scale system of farming is characterized by low asset base, low fixed capital, labour intensive production, small farm size, low investment and expenditure on farm inputs, crude farm implements and equipment and low productivity, among others (Adewunmi & Ayinde, 2013). The performance of the sector is largely dependent on the provisions of affordable financial services basically through credits to both the rural and urban participant, the sectoral value chain creation.

Nnamocha and iEke (2015), opine that funds are regularly needed in agriculture to enable the farmer purchase more land, buy inputs at the appropriate time and to pay for hired labor or farm machineries. But it is disappointing to note that credits to the agricultural sector remains as low as 5%, even though the Central Bank of Nigeria (CBN) has at various times dedicated funds to agricultural production through various schemes with the aim of resuscitating the sector. The annual publications of the Security and Exchange Commission (SEC) believe that only money deposit banks and the capital market have the capacity to provide facilities to finance the sector through innovative financing and products offerings (Okpala, 2018).

Money deposit banks are the major sources of such financial services in the form of loans and advances and that is why deposit money banks in Nigeria have been directed to devout sizeable part of their funding to finance this sector. Besides, other government owned banks like the Nigerian Agricultural and Cooperative Bank (NACB) (Sunny, 2013). The contributions of deposit money banks to the agricultural sector have stemmed debate and growing among researchers, policy makers and farmers have recognized their immense contribution in agricultural production. The vital role of deposit money bank credit in ensuring growth in food production in an economy has been widely acknowledge. For instance, Imoughele, Ehikioya and Ismaila, (2013) established that deposit money banks facilitate technological innovation in agriculture through their intermediary role. Their emphasis is that efficient allocation of savings through identification and funding of farmer with the best chances of

successfully implementing innovative product and production are tools to achieve real economic performance.

The overall intentions of these reforms have been to ensure financial stability, soias to influence the growth of the industry and also enhance banks to play the critical role of financial intermediation in the provision and accessibility of credit in the sector. These reforms have led to improvement in banking services to agro-businesses. Deposit money banks financing has been identified as a means of transforming the agricultural sector and revamping the Nigeria economy by ensuring food security, job creation and economic diversification. Having pointed these facts, there is the urgent need for deposit money bank to grants credits to develop the agricultural sector today, more than ever. Inspite of all the measures put in place by the government, financial institutions, non-governmental organizational agencies and private individuals to improve the agricultural sector, agricultural productivity in Nigeria remains low. This unhealthy situation necessitates this study.

Thus, there is the need to critically examine the role of money deposit banks in Nigeria agricultural development with a view to highlighting areas of its strengths and weaknesses. Therefore, this study examines the influence of deposit money bank credit on the growth of the Nigeria agricultural sector.

Hypotheses

H_{01}: there is no significant relationship between government expenditure and agricultural output in Nigeria.

H_{02}: there is no significant relationship between Bank's lending rate and agricultural output in Nigeria.

H_{o3}: there is no significant relationship between exchange rate and agricultural output in Nigeria.

Review of Literature

Numerous studies have been conducted to examine the impact of deposit money bank credits to agricultural sector in both developed and developing economies. Majority of these studies seem to suggest that commercial bank credit has a positive effect on agricultural growth and development. Oyelade (2019) studied the impact of Commercial Banks' credit on agricultural output in Nigeria, covering the period, 1980 to 2018. Annual time series data was employed, which was sourced from Central Bank (CBN) publications such as Statistical Bulletins and Bullions, and National Bureau of Statistics (NBS) publications. The study recommended that Government should as a matter of policy through the Central Bank, make urge Deposit Money Banks (DMB) to available and affordable credit facilities to the agricultural sector.

Aina et al. (2016) analyzed the impact of deposit money bank lending on agricultural production and productivity in Ondo and Ekiti States of Nigeria. Descriptive statistics, gross margin, elasticity of production, return to scale as well as regression analysis were used to analyze the data. The study found that deposit money bank credits is positively related to agricultural production and shows a significant impact on output levels. The study recommended active government involvement and the private sector at boosting in flow of funds into agriculture and agro-business.

Okezie and Erendui(2016) examined the determinants of agricultural icredit in Nigeria between 1981 and 2014 using secondary data obtained from the CBN

statistical publications. A multiple regression analysis was used to determine the effects of these variables on the amount of credit supplied to the agricultural sector through the Agricultural Credit Guarantee Scheme Fund (ACGSF) of the federal government. The results indicated that there has been an increase in the supply of credit to the agricultural sector under the scheme, especially between 2000 and 2012. It was recommended that the on-going policies of the federal government aimed at attracting foreign investments be sustained and also the financial institutions need to review their lending rates downwards since the real rate was seen to inhibit supply of credit to agriculture.

Nnamocha and Eke (2015) investigated the effect of Bank Credit on Agricultural Output in Nigeria using the Error Correction Model (ECM). A yearly data (1970 - i2013) obtained from the Central Bank of Nigeria was used for the analysis. The study showed that, in the long run, bank credit and industrial output contributed a lot to agricultural output in Nigeria, while; only industrial output influenced agricultural output in the shortrun. The study recommended that loans for the farmers should be disbursed in good time with low interest.

Agunuwa, Inaya, and Proso (2015) examined the impact of commercial banks' credits on agricultural productivity in Nigeria. The statistical tool of analysis is the Ordinary Least Squares (OLS) techniques. However, the variables were subjected to the Unit Root Test to ensure stationarity before the application of the OLS. On the whole, three hypotheses were tested; all the alternative hypotheses were validated by the OLS result. The study showed a significant positive relationship between commercial bank credit and agricultural productivity in Nigeria. The study recommended that the Agricultural Credit Guarantee Scheme should improve on their conditions for credit guarantee in order to make agricultural financing attractive to commercial banks.

Chisasa and Makina (2015) recent study on bank credit and agricultural output in South Africa using cointegration and error correction model (ECM) showed that credit supply has a positive and significant impact on agricultural output in the long run. However, the ECM revealed that bank credit has a negative impact on agricultural output in the short run. Ur Rahman et al. (2014) investigated the impact of agricultural credit on agricultural productivity in Pakistan: an empirical analysis by using logit regression analysis. The outcome of their research findings shows that there exists a direct relationship between agricultural credit and agricultural productivity.

Bassey, Akpaeti, and Udo (2014) investigated the impact of bank credit financing on agricultural output in Nigeria between the periods of 1970-2011. Employing Ordinary Least Square (OLS) regression method, the result shows that in order to boost agricultural GDP, emphasis should be directed towards proper funding of the sector by the government and other financial stakeholders. Akintola (2004) identified banks' traditional roles to financing of agriculture, manufacturing and syndicating of credit to productive sectors of the economy and opined that credit of banks to the Nigerian economy has been increasing over the years.

Hussain and Taqi (2014) investigated the impact of agricultural credit on agricultural productivity in Pakistan using logit regression analysis. The results showed

that there was a direct and significant relationship between credit and agricultural productivity. Zakaree (2014) studied on the impact of agricultural credit guarantee scheme fund (ACGSF) on domestic food supply in Nigeria using the ordinarily least square approach revealed that the credit scheme had a positive and significant impact on domestic food supply. Awe (2013) examined the mobilization of domestic financial resources for agricultural productivity in Nigeria. Some of the financial resources the study identified include credit facilities from Nigerian Bank for Commerce and Industries (NBCI) and credit provided by commercial and merchant banks. The results revealed that these resources have a positive relationship with agricultural productivity in Nigeria.

However, Ayegba and Ikani (2013) assessment of agricultural credit on rural farmers in Nigeria through the administration of questionnaires found that credits to agriculture have not sufficiently boost productivity in the sector. Tasie and Offor (2013) explored the effects of international fund for agricultural development (IFAD) credit supply on rural farmers in River state, Nigeria through the administration of questionnaires. The result showed that the IFAD credit programme has contributed significantly to farm output and income. Imoughele, Ehikioya and Mohammed (2013) investigated the impact of deposit money bank credit accessibility and sectoral output performance in Nigerian economy for the period which spanned between 1986 and 2010. An augmented growth model was estimated via the Ordinary Least Square (OLS) techniques to ascertain the relationship between various deposit money bank credits and sectoral output growth. The variables were tested for stationarity and co-integration analysis was also carried out using the Augmented Dickey-Fuller test. The study found that the various deposit money bank credit supply and other included variables has a long run relationship with sectoral output performance i.e., agricultural, manufacturing and services sector. The study concluded that consistent expansion of monetary policy which engenders supply and demand for deposit money bank credit by the manufacturer, farmer and services provider promote the sectors productivity. It recommended that continuous credit accessibility in a deregulated financial market economy has the capacity to induced the nation sectoral output performance which will promote economic growth and development.

Medugu, Musa and Ogbanje, Yahaya and Kolawole (2012) examined the relationship between deposit money banking sector loans and agricultural development in Nigeria from 1981 to 2007 using descriptive and inferential statistics. The result revealed that during 1981-1991, there was substantial increase commercial banks' loans to the agricultural sector, while the loans more than tripled during the subsequent periods. Thus, deposit money banks showed great concern for the growth of the agricultural sector in Nigeria. Result also revealed that deposit money banks' loan to the agricultural sector considerably and progressively affected agricultural sector contribution to GDP in Nigeria.

Adetiloye (2012) study on agricultural financing in Nigeria found that credit to the agricultural sector is significant but noted that credit supply has not been growing in relation to the economy. De Castro et al. (2012) study examine the rural credit and agricultural supply in Brazil within the period 1976-2005. The result of their research findings revealed that

farmers normally have a budget constraint to purchase agricultural inputs (fertilizers, labour, pesticides, etc.), and government credit program might increase agricultural supply. Reyes, et al. (2012) examined the impact of access to credit on farm productivity of fruit and vegetable growers in Chile between the period 2006 and 2008 with 177 farmers. The outcome of the research indicates that short term credit does not affect farm productivity while other factors such as education and the type of activity do.

Olagunju and Babatunde (2011), examined the impact of credit on poultry productivity in South-Western Nigeria using open ended questionnaires. The outcome of the study showed that access to credit facility by farmers lead to increased productivity of poultry. Khan, et al. (2011) cited by Anetor, et al. (2016) carried out a review of past literature on agriculture credit in the rural area of Pakistan. Their research findings clearly indicated that the importance of agriculture credit as not only developing the farming but also furnished every sector of the economy positively. Anthony (2010) investigated agricultural credits and economic growth in Nigeria. The outcome of the research shows that agricultural variables have an impact on economic growth and their role in the growth of export has been encouraging. Ahmad (2007) noted in his study that boosting agricultural productivity depends on the availability and accessibility of credit facility by farmers in respective of their areas. Akinleye, Akanni, and Oladoja (2005) appraisal of the agricultural credit guarantee scheme in Nigeria found that the scheme has failed in bringing about the desired productivity of the agricultural sector.

Foltz (2004) investigated credit market access and profitability in Tunisian agriculture using primary data from rural Tunisia. The outcome of the survey reveal that the existence of credit market constraints does significantly affect farm profitability, but does not affect investment. Petrick, (2004) studied farm investment, credit rationing, and governmentally promoted credit access in Poland and noted that the character of the borrower, not the availability of land as collateral had an impact on credit rationing. The outcome of the research also revealed that access to subsidized credit plays a major role in determining farmer's investment behaviour and that investment size is negatively related to farm size. Zeller, et al. (2002) investigated group-based financial institutions for the rural poor in Bangladesh: An institutional - and household - level analysis. The result of the research shows that in Bangladesh, access to credit has a significant effect on income and consumption.

Feder, et al. (1990) in their study examined the relationship between credit and productivity in Chinese agriculture. The outcome of the study indicates that a major part of the short-term credit provided by the rural credit cooperatives known as "production credit" might be used for consumption and investment. Also, the medium and long term formal credit is nil among the agricultural households covered in the study. The foregoing literature suggests that the relationship between credit supply and agricultural production in Nigeria is inconclusive. This, therefore, necessitate this study to examine the impact of credit supply, through ACGSF and commercial loans, on agricultural output. Also, the empirical evidence provided by previous scholars did not show that at different time in history, from 1981 and

2021, where bank's credit had always showed a negative impact of agricultural sector of Nigerian economy. However, limitation of the previous literature is that they are generalized, that is, bank's credit on Nigeria economy. This study intends to narrow it down to a particular sector (i.e., agricultural sector) on how bank credit has impacted positively or negatively on agricultural output.

Methodology

The data analysis techniques adopted for this study consist of multiple regression using the Ordinary Least Square (OLS) method of estimation. This statistical tool seeks to establish the strength or degree of association between the dependent and independent variables. Akmulegun and Oluwole (2013) note that research design is usually formulated by the researcher to find answers to research questions and to achieve the objectives of the study. This study adopts descriptive research and ex-post Facto research design to obtain necessary data for the study, since the researcher is not in any position to alter the independent variables.

It also adopts the tenets of the Williams Arthur Lewi' structural change theory as its framework. The theory was "development with unlimited supply of labour". The assumptions of the theory states that an economy is made up of two sectors. One is the traditional (agricultural or subsistence) sector while the other is the modern (capitalist, industrial or manufacturing) sector. This gives rise to the two-sector model. The theory also assumed that the development of an economy is dependent on the growth of the two sectors.

Y = f*(AGRIC, IND)*

Where;

Y = Economic development,
AGRIC = Agricultural sector and
IND = Industrial sector.

Lewis' structural change of growth:

Source: *Pinstrup-Andersen (2009).*

Description of Variables

Since the purpose of this research is to gain a better insight into the effects of deposit money bank credit on agricultural sector output in Nigeria. The following variables determine the study are carefully chosen. They include; agricultural output (AGO) as dependent variable while government expenditure on agriculture (GEXA), deposit money bank interest rate and exchange rate (EXR).

Model Specification

The model used for this study is specified based on the structural change theory, to capture the variables of interest. Based on the title of this study, "Deposit Money Bank Credit and Agricultural output in Nigeria" we developed a compact form of our model as follows;

AGO = f(GEXA, INT, EXR) ……1

The econometric form of the model based on the mathematical relation above can be specified as follows;

$AGO = \alpha + \beta_1 GEXA + \beta_2 INT + \beta_3 EXR + \&$…….2

Where:

AGO = Agricultural Output – the dependent variable

GEXA, INT and EXR are the explanatory variables.

& = Stochastic error term

Data Presentation and Discussion of Findings

The model as stated in equation 2 above is estimated using ordinary least square (OLS) method using. E-views 10.0 version software package. The estimation was subjected to various statistics and

econometric tests, after which an in-depth analysis was made on the result generated from the regression. This section presents the results of the various tests carried out in this study ranging from the pre-tests (unit root) using the Augmented Dickey Fuller (ADF) residual test and ordinary least square (OLS) multiple regression analysis. This section also includes analysis and discussion as well as interpretation of results from which logical inferences are drawn. Two types of statistical analysis were used in this study – descriptive statistical analysis which is an examination of the nature of distribution of time series data using measures of central tendency and variability. The second type of analysis involves the use of inferential statistics for the final decisions and to draw logical conclusion over the research findings.

Descriptive Statistical Analysis of the Data

To ensure that the time series data for the present study meet the Guassian criteria for normal distribution, the data were subjected to the normality tests. The normality tests were carried out by employing measures of central tendencies and variability. Jaque-Bera test for symmetry and normal curve of the data. Jaque-Bera test considers a combination of symmetry – skewness and kurtosis. This test indicates that asymptotic test statistic follows the chi-square distribution with two differences. The following time series data were tested for normality: Agricultural Output (AGO), Government Expenditure on Agriculture (GEXA), Interest rate (INTR) and Exchange rate (EXR). The mean, standard deviation, minimum and maximum time series were determined.

Table 1: Summary of the descriptive statistics of the four variables in the study.

	AGO	GEXA	INT	EXR
Mean	61.09683	2343.572	0.354634	107.1493
Median	40.11000	41.10000	4.310000	111.2300
Maximum	219.500	59316.20	18.20000	362.6000
Minimum	0.720000	7.540000	-65.90000	0.620000
Std. Dev.	61.43430	9365.604	14.29524	107.5381
Skewness	0.869300	5.705105	-2.683586	0.896560
Kurtosis	2.832959	35.10694	12.74142	2.909322
Jarque-Bera	5.211497	1983.457	211.3238	5.506810
Probability	0.073848	0.000000	0.000000	0.063711
Sum	2504.970	96086.47	14.54000	4393.120
Sum Sq. Dev.	150967.0	3.51E+09	8174.159	462578.0
Observations	41	41	41	41

***Source**: Author's computation from e-views version 10.0.*

Government Expenditure on Agriculture (GEXA) has the highest mean value (2343.6%) followed by exchange rate (EXR)(107.1%) Agricultural Sector Output (AGO) (61.1%) and interest rate (INT) (0.35%) with the least mean value. In terms of standard deviation, the most volatile series is Government expenditure on agriculture (GEXA) (9365.6%) while the least volatile series is interest rate (INT) (14.3%). The highest in the minimum is the GEXA with 7.5% while the least in the maximum is interest rate with 18.2%. The Jarque-Bera statistics show that all the series follow

normal distribution. The skewness of all the variables in the study is normal. Kurtosis is also within the normal average range. The probability shows that all the variables were significant at 10% level.

Correlation Matrix

Table 2: The Correlation Matrix of the Variables

VARIABLES	AGO	GEXA	INT	EXR
AGO	1.000000	-0.117517	0.358493	0.971702
GEXA	-0.117517	1.000000	0.079221	-0.044455
INT	0.358493	0.079221	1.000000	0.341358
EXR	0.971702	-0.044455	0.341358	1.000000

Source: Author's computation from e-views 10.00 version

The correlation matrix for the variables is reported in Table 2 above in order to examine the correlation that exists among variables. The results show that there is a positive relationship between agricultural outputs, interest rate and, exchange rate and negative relationship with interest rate. However, agricultural output is positively correlated with interest rate at 35%, while government expenditure on agriculture is positively correlated with interest rate at 8%. Also, interest rate is positively correlated with agricultural output at 35.8%, government expenditure on agriculture at 8%, exchange rate at 34.1%; Finally, Exchange rate is negatively correlated with government expenditure on agriculture.

The Unit Root Test

Table 3 presents the result of the Augmented Dickey Fuller (ADF) unit root test. It is found that of all the four quantitative variables captured by the study, GEXA, and INT are stationary at level, that is, they are integrated of order zero in ADF unit root test, and also EXR is stationary at first difference in ADF unit root tests. However, other series including agricultural output (AGO) is stationary at second differences. AGO and EXR are non-stationary at levels, but are stationary at first and second differences in ADF series of unit root tests. Therefore, the order of stationarity is mixed in this study.

Table 3 Augmented Dickey Fuller (ADF) Unit Root Test Result

Variables	ADF Test Statistic	Critical values at 5% Levels	Prob.	Order of Integration
D(AGO)	-6.364522	-2.943427	0.0000	1(2)
D(GEXA)	-5.415674	-2.936942	0.0001	1(0)
D(INT)	-7.420514	-2.936942	0.0000	1(0)
D(EXR)	-4.817289	-2.938987	0.0003	1(1)

Source: *Author's computation from e-views 10.00 version.*

Presentation of Regression Result

Table 4: Results from The Model Estimation

Variables	***Coefficients***	***Std. Error***	***T-Statistic***	***Prob. Value***
C	*3.779657*	*3.306858*	*1.142976*	*0.2604*

GEXA	*-0.000512*	*0.000240*	*-2.134880*	*0.0395*
INT	*0.166212*	*0.167153*	*0.994374*	*0.3265*
EXR	*0.545587*	*0.022172*	*24.60702*	*0.0000*

R-Squared = 0.951048 or 95%
Adjusted R-Squared = 0.947079 or 95%
F – Statistic = 239.6128
Prob.(F-Statistic) = 0.000000
Durbin-Watson Stat. = 0.57460

Discussion of Findings

The findings of this study reveal that government expenditure on agriculture (GEXA), interest rate (INTR) and Exchange Rate (EXR) are determinants of agricultural sector output (AGO). The result of the model shows that the overall goodness of fit is plausible. This is evident in the Adjusted R^2 value of 0.947079 indicating that approximately 95% of the total variation of the behaviour of the dependent variable (AGO) can be adequately explained by all the explanatory variables. The remaining 5% is explained by the confounding variables that are not included in the model. The observed value of F-statistic which is 239.6128 exceeded the table value of 2.84 at 5% level of significance. The significant nature of F-statistic confirms that the changes in AGO can be explained by changes in the explanatory variables. The Durbin-Watson d* test value of 0.574601 < dL (1.22) indicated the presence of a positive serial correlation of first order.

From the regression result, government expenditure on agriculture (GEXA) and EXR is significant. On the other hand, government expenditure on agriculture (GEXA) is significant and negatively related to AGO. Interest rate (INTR) is insignificant in the agricultural sector in Nigeria. On the ground of the, a priori expectation of the variables, INTR and EXR conforms to the a priori expectations indicating that a unit increase in both variables will cause AGO to increase by 0.166212 and 0.545587 units respectively, while GEXA does not conform to the a priori expectations. The GEXA has a negative result which indicated that a unit increase in GEXA will cause AGO to decrease by -0.000512 units. Also, the INTR and EXR have a positive result which indicates that a unit increase in INTR and EXR will cause an increase in AGO by 0.166212 and 0.545587 units respectively. However, the positive value of the intercept indicates an overall significant relationship between the commercial bank credit and agricultural sector in Nigeria.

Summary and Conclusion

The study explored the recent development in deposit money bank credit and its effect on agricultural sector output in Nigeria for the period 1981 through 2021 within the framework of multiple regression of the ordinary least square method. The time series data on this study were extracted from the Central Bank of Nigeria Statistical Bulletins and Central Bank Annual Report and Statements (various issues). Specifically, data on government expenditure on agriculture, interest rate, exchange rate and agricultural sector were used to proxy bank credit and agricultural sector respectively. From the empirical result, it is evident that the behaviour of the interest rate and exchange rate used are

consistent in sign except the ratio of government expenditure on agriculture to agricultural sector when taken together, suggesting that the explanatory variables that exert significant influence on economic growth are GEXA and EXR. Specifically, interest rate and exchange rate to agricultural sector respectively have impacted positively on the Nigerian economy.

From the statistical computation, analyses and findings of the test carried out, it shows that: the joint action of deposite money banks credit to the agricultural sector, government expenditure on agriculture and foreign exchange rate are significant factors that can influence agricultural production in Nigeria. Deposite money banks' credit to agricultural sector for the period 1981 to 2021 has no significant positive impact on agricultural productivity in Nigeria.

Recommendations

From the result of this study, we found that government expenditure on agriculture has a tripartite involvement of the Nigeria government through the Central Bank of Nigeria as the management agent under the Ministry of Finance, the banks in this case, the commercial banks and the farmers i.e., borrowers. The study notes that all these organs must be pro-active to deal with the changing attitudes of the customers (beneficiaries of the loan). The beneficiaries should recognize the practice and advantages of accumulated savings, which is often allowed to group when existing facilities are not fully adjusted. This can help the banks to hope that the loan will be paid and usher sustainability of bank and customer friendly relationship. The scheme should put more commitments in implementing vigorously the policy of granting loan by purpose so that those segments of the nation's agricultural produce that are targeted for improved productivity will be achieved.

References

Adetiloye, K. A. (2012). Agricultural Financing in Nigeria: An Assessment of the Agricultural Credit Guarantee Scheme Fund (ACGSF) For Food Security in Nigeria (1978 - 2006). *Global Journal of Applied, Management and Social Sciences, (16*.).

Adewunmi, O. & Akinde, L. T. (2013). Agricultural financing in Nigeria: An empirical study of Nigerian Agricultural Co-operative and Rural Development Bank (NACRDB): 1990 – 2010. *Journal of Management Research, 5(2), 28 – 44.*

Agriculture: The Western Nigeria Experience. *The Nigeria Journal of Economics and Social Studies*, *March. Vol 7, No 1.*

Agunuwa, E.V.; Inaya, L. and Proso. T. (2015). Impact of Commercial Banks' Credit on Agricultural Productivity in Nigeria (Time Series Analysis 1980 - 2013) *International Journal of Academic Research in Business and Social Sciences 5(11).*

Anthony, E. (2010). Agricultural credit and economic growth in Nigeria: An empirical analysis. *Business and Economics Journal*, *14*, 1-7.

Akinleye, S. O., Akanni, K. A., Oladoja, M. A. (2005). An appraisal of the Agricultural Credit Guarantee Scheme in Nigeria. *Journal of Agricultural Management and Rura Development*, 2, 51-58.

Aino et al. (2016). The impact of commercial bank lending on agricultural production and productivity in Nigeria. *International Journal of Current Research. 8(09) pp.37586-37591.*

Anetor, F. O. et al. (2016). Credit supply and agricultural production in Nigeria: A vector Autoregressive (VAR) Approach. *Journal of Economics and Sustainable Development 7(2).*

Awe, A. A. (2013). Mobilization of Domestic Financial Resources for Agricultural Productivity in Nigeria. *Australian Journal of Business and Management Research*, 2(12), 01-07.

Ayegba, O. & Ikani, D. I. (2013). An impact assessment of agricultural credit on rural farmers in Nigeria*. Research Journal of finance and Accounting*, 4(18), 80-89.

Bassey, N. Jim, A. and U. Jacob. (2014). Impact of Bank credit financing on agricultural output in Nigeria Economic, *Agriculture and food sciences American International Journal of Contemporary Scientific Research. Corpus ID: 156875491.*

Chisasa, J. & Makina, D. (2015). Bank credit and agricultural output in South Africa: Cointegration, short run dynamics and causality. *Journal of Applied Business Research* (JABR), *31*(2*), 489-500.*

Emeaghalu, I. E. (2018). The Role of Credit in the Transformation of Traditional.

Ihikioya, L. and Mohammed, S. (2013). Commercial bank credit accessibility and sectoral output performance in a deregulated financial market economy: Empirical evidence from Nigeria *Journal of Finance and Bank Management, 1 (2) pp 36 – 59.*

Feder, G., Lau, L. J., Lin, J. Y., & Luo, X. (1990). The relationship between credit and productivity in Chinese agriculture: A microeconomic model of disequilibrium. *American Journal of Agricultural Economics*, 1151-1157.

Foltz, J. D. (2004). Credit market access and profitability in Tunisian agriculture. *Agricultural Economics*, *30*(3), 229-240.

Food and Agricultural Organization (FAO) (2017). Nigeria at a Glance. Available at www.fao.org/nigeria-at-a-glance/en (Accessed on 12th of August, 2020).

Ijaiya G.T. & Abdulraheem A. (2000). Commercial Banks Credits to the agricultural sector and poverty reduction in Nigeria: A calibration analysis. *Nigerian Journal of Agricbiz and Rural Development,* University of Uyo, Uyo, 1(1)*.*

Impact of Access to credit on farm productivity of Fruit and vegetable growers in Chile. *The International Association of Agricultural Economists (IAAE), Foz do Iguacu, Brazil*, 18-24.

Imoughele, D. A., Ehikioya, L., Ismaila, K. O. & Mohammed, A. O. (2013). Commercial bank credit accessibility and sectoral output performance in a deregulated financial market economy: Empirical evidence from Nigeria. *Journal of Financial and Banking Management, 1(2) 36-59.*

Khan, N., Shafi, M. M., Shah, M., Islam, Z.,

Arif, M., Javed, R., & Shah, N. (2011). Review of past literature on agriculture credit in rural area Pakistan. *Sarhad Journal of Agriculture*, *27*(1), 103-110.

Lambe, O. (1983). Problems and Prospects of Agriculture in Nigeria: Nigeria Herald, Tuesday, March 29, pages 7-8.

Lewis, W. A. (2050) Structural change theory cited by Agbenyo, J.S. (2020). Structural change theory: An analys of the success and failures of technology*. International Journal of Research and Innovation in Social Science (IJRISS) IV (I).*

Nnamocha, P. N., & Charles, N. E. (2015). Bank credit and Agricultural output in Nigeria (1970-2013): An Error Correction Model approach. *British journal of Economics, Management and Trade 10(2),1-12.*

Ogueli, O. L. (2020). The impact of commercial banks' credit to agriculture on agricultural Development in Nigeria: An econometric analysis. *International Journal of Business Humanities and Technology, 3(1), 85 - 95.*

Okezie, C.R. and Erendu, I. (2016). Determinants of agricultural credit supply in Nigeria (1981 - 2014). *IIARD International Journal of Economics and Business Management ISSN 2489-0065 2 (6)*. www.iiardpub.org.

Olagunju, F.I. and Raphael Babatunde, O. (2011). Impact of credit on poultry productivity in South-Western Nigeria.*https://api.semanticscholar. org/CorpusID:155011292.*

Oladeji, S. I., Ayegbusi, S. O. & Olowe, F. O. (2004). Food Insecurity Bane to Sustainable Development in Nigeria. *Journal of Economic and Financial Studies*, 1(2): 43-58.

Oyelade, A. (2019). Impact of commercial bank credit on agricultural output in Nigeria *Review of Innovation and Competitiveness.*

Petrick, M. (2004). Farm investment, credit rationing, and governmentally promoted credit access in Poland: a cross-sectional analysis. *Food Policy*, *29*(3), 275-294.

Rahman, S.; A. Hussain, A. and Taqi, M. (2014). Impact of agricultural credit on agricultural productivity in Pakistan: An empirical analysis. *Agricultural and Food Sciences, Economics International Journal of Advanced Research in Management and Social Sciences. Corpus ID: 155131272.*

Reyes, A., Lensink, R., Kuyvenhoven, A., & Moll, H. (2012). Impact of Access to Credit on Farm Productivity of Fruit and Vegetable Growers in Chile. Paper presented at 28th International Conference of Agricultural Economists; *The Global Bio-Economy; Foz do Iguacu, Brazil. https://edepot.wur.nl/239243*

Sunny, O. I. (2013). The impact of commercial banks credit to agriculture on agricultural development in Nigeria: Econometric analysis*. International Journal of Business, Humanities and Technology. 3(1), 85 - 9*4.

Tasie, C. M. & Offor, U. S. (2013). Effects of International Fund for Agricultural

Development (IFAD) credit supply on rural farmers in Rivers State, Nigeria. *Journal of Poverty, Investment and Development*, 1, 65-70.

Ur Rahman, S., Hussain, A., & Taqi, M. (2014). Impact of agricultural credit on agricultural productivity in Pakistan: an empirical analysis. Statistical Bulletin. CBN. Abuja.

Zakaree, S.S. (2014). Impact of agricultural credit guarantee scheme fund (ACGSF) on domestic food Supply in Nigeria. *British Journal of Economics, Management and Trade 4(8).* 1273-1284. *SCIENCEDOMAIN international*

Zeller, M.; Sharma, M.; Akhter U Ahmed, A. U. Shahidur and Rashid, S. (2011). Group-based financial institutions for the rural poor in Bangladesh: an institutional- and household-level analysis PMID: 12362599 DOI: 10.1177/156482650202300313.