Monetary Policy Variables and Agricultural Development in Nigeria

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ABSTRACT : The goal of any country's monetary policy is to maximize economic production ; thus, the monetary authorities of that country use monetary policy variables to regulate the money supply, interest rates, and other aspects of the money market. From 1999-2017, when the Central Bank of Nigeria (CBN) employed a wide range of monetary policy variables to stimulate the economy, this study employs the multiple regression technique to examine the relationship between agricultural output, government spending, money supply, and inflation rate in Nigeria. This research found that financial policy measures can be used to affect agriculture, which would have a positive knock-on effect on agricultural development and, ultimately, Nigeria's economic growth and development. Both tools of monetary policy have the potential to promote agricultural growth with the right policies in place.

KEYWORDS : *Agricultural Output, Government Spending, Inflation Rateand Money Supply.*

I.　　　INTRODUCTION

　　Agriculture and agricultural development are important and pivotal to the economic development and viability of every nation. A nation that can provide for its own people without relying on imports from other countries is more likely to be economically stable in the long run. Lack of access to start-up funds, investment opportunities, and lines of credit is hampering growth in Nigeria's agricultural sector. The availability of credit in the agriculture sector is strongly impacted by monetary policy's effect on the financial sector. The goal of monetary policy is to promote economic growth and stability by influencing the money supply under the jurisdiction of a country's central bank. Either an increase in the money supply or a decrease in the money supply are possible outcomes of monetary policy.

　　Open Market Operations (OMO), discount rate, reserve requirement, moral suasion, direct management of banking system lending, and direct regulation of interest rate are just some of the measures used by the Central Bank of Nigeria to combat inflation and preserve price stability [1]. Most of the basic food for Nigeria's 120 million people comes from the agricultural sector, which also acts as a catalyst for and major supplier of raw materials for the industrial sector. The availability of credit and financing for new agricultural ventures, as well as investments and growth, is made possible by monetary policy. The CBN regulates the lending practices of banks and other financial institutions, including those that serve the agricultural sector, to influence agricultural production and progress. To optimize profitability and capacity for financial institutions, good and effective governance should be entrenched [2]. In 1984, a grace period for repaying agricultural debts was developed as part of monetary authorities' efforts to ease farmers' loan repayment. Despite government initiatives aimed at increasing agricultural output, the industry appears to be stagnating. Therefore, to draw a reasonable conclusion, this study will empirically investigate the effects of CBN's monetary policies on agricultural growth in Nigeria.

1.1　　　Statement of the Problem

　　Before its oil exports took off, Nigeria was already a significant player in the global food trade. Since then, Nigeria has not been able to produce enough food for its massive and fast increasing population, therefore the country has had to rely heavily on food imports. Due to low productivity in agriculture, the sector's contribution to GDP has been declining. Providing for the country's estimated 70 percent population of farmers and agribusiness entrepreneurs presents a significant challenge for Nigeria. Emerging problems such as insufficient farm input supply and delivery, working capital, technology, disease and insect infestation, post-harvest processing and storage, environmental dangers, and land use limits have hampered agricultural growth. The focus of this research is on filling these voids.

1.2   Research Objectives and Hypotheses

The purpose of this research is to evaluate how changes in monetary policy have affected agricultural output in Nigeria. The paper aims to assess the agricultural sector's contribution to Nigeria's economy between 1999 and 2017, analyze the development and structure of the country's monetary policy, and propose measures to improve agricultural output. Emphasis is on the pre-COVID19 era to reflect true economic performance.The following are the hypotheses during this study that are to be tested where H_0 is the null hypothesis.

Hypothesis 1:that the index of agricultural productivity does not correlate positively with government spending on agriculture.

Hypothesis 2:that the Agri-Production Loan Facility Index does not correlate positively with real money supply.

II. LITERATURE REVIEW

2.1   Review of Related Theories and Concepts

On the impact of monetary policy on the economy, two schools of thought referred to as the monetarist and the fiscal with differing recommendations on stabilization policy. Monetarists are those who follow the modern quantity theory of money stated as

$$MV = PT$$

Where, M = total money stock   V = velocity or turnover ratio of money

P = general price level   T = number of transactions per unit of money

Monetary policy could change the nominal supply of money to accommodate the changes in real demand resulting from stock in the aggregates. Macroeconomic issues are often the subject of discussion because of their importance in maintaining economic stability, growth, and agricultural development; so, effort is made in analyzing their cause and effect to reach a desired economic level. A conducted study to test the relative importance of monetary policy on economic stability and concluded that monetary policy performs better than other economic tools in achieving economic stability.   However, to review and appraise the effectiveness of monetary policy in economic stabilization it was found that monetary policy exercises a powerful influence on economic stability.   Despite the steep devaluation that could destabilize the economy, a flexible rate regime is preferable for stimulating growth through monetary policy. In other words, if monetary policy is employed to directly target inflation rather than growth, economic stability is more likely to result. So, outside monetary policy, other policy measures and instruments are needed to steady the economy. Fiscal extravagance, a lack of central bank autonomy, inadequate and poor-quality figures, an inept distribution mechanism, and a poor financial structure are all factors that have made it difficult to implement monetary policy in Nigeria [3]. According to the data, neither the fixed exchange rate solution nor the stable prices/free float option is good for Nigeria in the long run. There are several reasons why inflation targeting with a free float remains the best option. Both the inflation rate and the real exchange rate are affected by monetary policy's efforts to influence the financing of the government fiscal deficit by determining the inflation-tax rate. Inflation was found to influence both the volatility of its own rate and the real exchange rate. This paper's policy implication is that the target of monetary policy should be clearly articulated. The authority employs fiscal, monetary, economic, and structural policies to accomplish the macroeconomic goal. It is the responsibility of the Central Bank to implement a monetary policy that is in line with these goals. As such, the Central Banks calculate the required money supply, considering previous policies, to use the monetary policy instruments at its disposal and attain the desired money supply.

2.2   Definition of Monetary Policy

The goal of monetary policy is to promote economic growth and stability by influencing the supply, availability, and cost of money as determined by the monetary authorities of a country. To curb unemployment, inflationary pressures, sluggish economic growth, and external sector imbalances, monetary policy seeks to regulate the money supply.

Monetary policy is the use of discretionary measures by monetary authorities to manage and control the money supply in an economy to achieve macroeconomic goals [4]. Since shifts in the behavior of the monetary sector affect a wide range of monetary variables or aggregates, he stressed that this was a primary goal of monetary policy formulation. The money supply can grow or shrink depending on the monetary policy that is currently in effect. Monetary policy is the set of actions taken by a central bank to control the money supply, interest rates, and currency exchange rates in an economy to prevent inflation and other negative effects of excessive demand for goods and services, such as a worsening trade balance. However, an insufficient money supply might cause economic stagnation, which slows growth and development, thus it's important to maintain a healthy money supply rate. The goals of monetary policy can be summed up as follows: reducing inflation, fostering agricultural expansion and prosperity, and preserving the country's positive balance of payments.

2.3   Instruments of Monetary Policy

Monetary authorities use instruments for monetary control to affect the accessibility, distribution, and credit cost in the economy [5]. The government, acting through the Central Bank of Nigeria and the Federal Ministry of Finance, strives to draw on some instruments of monetary policy to arrive at this credit level, which in turn depends on the current economic climate and the desired result.

These instruments include portfolio constraint techniques that are direct control (Special Deposits, Selective credit controls, administered interest rate regimes, Moral suasion, and other direct measures) and the market intervention mechanisms which fall under indirect control (Reserve Requirement, Variable Rediscount Rate Policy, Open Market Operations).

- Special Deposits - Stabilization Securities: The central bank of Nigeria used stabilized securities extensively to mop up excess liquidity in the system. This is a form of special deposits used in monetary control, on an ad hoc basis. The issuance of the instruments and its use as a tool of monetary control was suspended in 1993 as a deliberate policy thrust to send positive signal to the money market about the switch to the market-based system of monetary control and in regulation of adverse side effects associated with their use as a policy instrument.

- Selective Credit Controls and Credit Growth Ceiling: Under this direct method of monetary control, the monetary authorities used two principal methods- the selective controls and the application of credit growth ceilings. Selective credit controls are direct instruments designed to influence the allocation of credit to specified sectors of the economy. In using this instrument, the various sectors of the economy were grouped into two- the preferred and the less preferred sectors. The preferred sector attracted a minimum percentage of bank credit, usually specified in the monetary policy guidelines, and while the less preferred sectors had a maximum level of bank credit allocated to them. The essence is to persuade the banks to grant more credits to the more preferred and productive sectors of the economy, while discouraging them from granting credits to the less preferred and less productive sectors. The banks were also classified for purposes of credit expansion depending on their level of deposits. The implication was that banks that had large deposits were allowed to expand their total credits at a higher level, while the reverse is the case for banks with low deposits.

- Administered Interest Rate: The CBN has the power to fix and vary the minimum rediscount rates and the structure of all the rates on the money market. The CBN also prescribed the rates for the lending and deposits of the major participants in the money market. First, the CBN changed to the lowest rediscount rate under the administered interest rate regime to indicate the course of monetary policy. Secondly, minimum, and maximum lending rates were specified for the banks. Also, minimum deposit rates (savings and time) were applied to the productive sectors and the less productive sectors in a discriminatory manner. This was to the advantage of the productive sectors. Generally, the administered interest rates sought to check inflation, improve resource allocation, exchange domestic non- bank financial institutions to buy government bonds, to finance development projects and attract t foreign investments. Over time, the rate structure introduced various distortions which limited resource allocation, introduced irrationality in resource use and generally hindered the efficient functioning of the financial system and thus the intermediation process. This necessitated interest rate deregulation as a major plank of the monetary policy reforms [6].

- Moral Suasion: Policy that the central bank (CBN) employs to convince banks to limit, restrict, or channel their lending operations, or allocate their lending in a specific way, is known as monetary policy. In addition, the CBN may encourage banks, for the sake of the national interest, to forego short-term profit maximization in favor of the economy's core productive sectors [7].

- Other Measures: Various measures were used by the monetary authorities, primarily to control the credit expansion of banks and thus money supply. An example of this is advanced import deposits.

- Reserve Requirement: The monetary authorities usually employ legal reserve requirements as one of the major tools of monetary policy. Essentially, a bank's ability to expand money supply through credit creation is always limited by the amount of its legal reserves. Thus, reserve requirements serve to limit the expansion of credit and money supply. In a developed financial market, the reserve requirement is the fulcrum of monetary control. Here, the Central Bank of Nigeria manages the money supply by influencing the reserve base of banks. If the reserve base of banks is constrained though legal reserves, their ability to create money is also constrained. Banks are required to hold specified liquid assets as a ratio of their deposit liabilities. When the CBN changes the reserve requirements, the ability of the banks in the system to create money is also affected.

- Variable Rediscount Rate Policy: To rediscount short-term bills for commercial banks essentially when they are under pressure for short-term funding, the Central Bank implements a variable rediscount rate policy, commonly known as the minimal rediscount rate (MRR). As the lender of last resort, Central Banks play an important role in rediscounting. The primary goals are to ensure monetary stability, increase

bank liquidity, and inspire trust in the banking system. The rediscount rate policy is crucial because it serves as a benchmark against which all other money market rates can be measured. When central banks increase or decrease the minimum rediscount rate (MRR), it indicates that they intend to reduce or increase the size of the bank credit base and, by extension, the money supply. Because of the punitive nature of the rediscount rate, financial institutions will often only use it as a last resort to demonstrate their liquidity.

- Open Market Operations (OMO): Under a market-based system of monetary management, this is a primary tool of monetary policy. By manipulating banks' portfolio behavior, central banks can affect changes in the economy's credit supply and interest rates [8]. Depending on their goals and policies, central banks may engage in open market operations (OMO), which involve the purchase and sale of government securities and other investments in the money market and the private sector. Treasury bills, treasury certificates, and development stocks with a maturity date no farther out than three years are acceptable alternatives.

2.4   Recent Development in the Nigerian Monetary Policy

There is mounting evidence that Nigeria is shifting towards a market-based monetary policy, both in terms of design and implementation [9]. A credit ceiling imposed on banks, interest rates set by the government, mandated sectorial allocation of credit, and the use of special deposits were the primary tools of monetary policy during the era of direct monetary policy, which prevailed before to 1992. Because of concerns about the long-term impact of direct instruments on monetary policy and the financial system's stability, an indirect approach was first implemented in 1992. This approach places more emphasis on market-based instruments like reserve requirement, the discount lending window, and open market operations. However, a deregulated, competitive, and healthy monetary market was necessary to efficiently operate the system of indirect monetary management [10]. As a result, there was a major loosening of restrictions in the financial sector. Interest rates, the market for government debt instruments, and the currency rate are typical targets of deregulation.

On September 1, 1992, the CBN lifted the credit ceiling for banks meeting the criteria of prudential guidelines, sound management, and the legally mandated capital payment requirement and sufficiency ratio as part of the transition to an indirect monetary control system. When the Central Bank of Nigeria (CBN) established Open Market Operations (OMO) on June 30, 1993, it marked the completion of the transition to indirect monetary regulation by mopping up excess liquidity or injecting it into the system as needed. The CBN has increased its OMO activity with already existing government securities (Treasury bills, treasury certificates, and development stock) since the implementation of indirect control.

2.5   The Impact of Monetary Policy on Nigeria's Economy

The provision of stimulation when the economy is weak or in recession and exert restraint when the economy is excessively liquid is the primary aim of monetary policy. However, monetary action may be delayed through the existence of various lags in the economy including recognition, action and affect or outside lags [5]. The indirect regulation of interest rate by the monetary authority as against the forces of the market inhibits the effectiveness of the traditional tools of a monetary policy. Also, the existence of conflict among the objectives of monetary policy prevents the effectiveness of policy measures. It is apparent that Nigerian economy has been significantly monetized or totally mineralized by the move of the then Obasanjo's administration. With the private sector having greater share of credit allocation, this could have been compounded by excessive production cost, which emanated from the net flow of foreign exchange and the impact of the floating management under the Nigeria's deregulation advice brings noticeable changes in the Nigerian financial economy [11].

2.6   Agricultural Development

Effective planting, harvesting, and processing of crops are made possible by agricultural development, which in turn helps to alleviate poverty and save lives [12]. Soil that has been overworked is one potential problem, as are shortages of essential resources like seeds, fertilizer, and water for irrigation. The improvement of farming conditions encompasses not just infrastructure but also education, science, and legislation.

2.7   Agricultural Financing

Farmer acceptance of new production methods and investment in new input materials are essential tenets of the economic theory upon which agricultural finance rests. Unfortunately, there is insufficient funding available in the rural capital market to support such developments. Finding sufficient funds for agricultural development, matching those funds with farmers who would most benefit from them, and doing so on conditions that are fair to all parties is the crux of the agricultural finance challenge [13]. The Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB) is undergoing a restructuring and recapitalization to improve its efficiency and expand its lending to small and medium-sized farmers, as well as cooperatives. The bank's retail locations are also geared at reaching a larger share of the economically engaged

farming community through the promotion of a group lending plan. The bank has just made a firm decision to prioritize the support of small and medium-sized farms across the country. Farmers and rural residents, who account for over 70% of the country's population, have access to a variety of lending and savings programs. As a result, the following schemes and policies were instituted.

- The Agricultural Credit Guarantee Scheme (AGCS)
- The National Agricultural Policy
- Agricultural Credit Support Scheme (ACSS)

2.8   The Impact of Monetary Policy on Agriculture

The use of the interest rate structure has primarily been to channel "cheap credit" towards the agricultural and industrial sectors. To accomplish this, we routinely required less-than-market interest rates on the loans and advances made to these industries. It's important to remember that the interest rates were raised by the central bank because they thought it was essential. It is also worth noting that commercial and merchant banks still only lend a modest percentage of their total advances to the agricultural sector. To further alleviate farmers' financial stress caused by repaying their agricultural loans, monetary authorities came up with a moratorium on repayment in 1984. Federal and state governments rely heavily on annual budgetary allocations to put policies into action. This is the method by which the government distributes its annual budget to the various economic sectors. Measures that fall under the umbrella of monetary policy include incentives, the creation of new lending institutions, and controls over existing ones [14]. Another program mandated that commercial banks reinvest a portion of the rural savings they mobilized into agriculture.

III. RESEARCH METHODOLOGY

3.1   Research Design andSource of Data

The study examines data from 1999-2017 using percentages, means, and other central tendency indicators. Emphasis on the pre-COVID19 era as this gives a clear and accurate picture of economic indices and performance. Simple and multivariate regression models are also used. Secondary sources such as the Central Bank's yearly bulletin, economic and financial indicators and reports, the Nigerian Bureau of Statistics' quarterly and annual reports, the State Ministry of Agriculture's annual reports, academic journals, relevant textbooks, magazines, and bulletins were used for this study.

The adoption of a sample design in this investigation will make administration easier, faster, and less prone to error. Using a period of 18 years (1999-2017) of data on monetary variables and the index of agricultural output ensures a finite population is used.

3.2   Method of Data Analysis

Using secondary data sources and data collected based on empirical evidence in the country, the study shall regress index of agricultural production and other macroeconomic variables on various instruments of monetary policy like the real money supply. Apart from being relatively simple, this method would provide more in-depth analysis of the series will reveal.   During analyzing and interpreting the data, the extent of the increase or decrease in the various descriptions will be explored vis-à-vis   the actual distortions. This will be done by comparing the figures for different years of the period under review.

Analyses of variance (ANOVA/F-RATIO) and students' t-tests will be among the test statistics alongside the correlation and determination coefficients. The significance of the explanatory factors is determined by using the ANOVA/F-test. The T-test is used to determine how much of an effect each independent variable has on the dependent variable. A fitting equation is evaluated using the R^2 statistic.

3.3   Specification of the Model

Model I

$\text{Log Agind} = a_0 + a_1 \text{LogGexp} + a_2 \text{LogInf} + U_i$

Where,   Agind = Index of agricultural production;   Gexp = Government Expenditure on Agriculture.

Inf = Rate of inflation in the country for the period under review.

U_i = error term A_0, a_1, and a_2 = parameters.

Hypothesis I

H_0: That the index of agricultural production does not correlate positively with public investment in the agricultural sector.

H_1: That the ratio of government spending on agriculture to the agricultural production index is positive.

Model II

$\text{Log Agind} = b_0 + b_1 \text{LogSla} + b_2 \text{LogM}_2 + U_i$

Where,   Agind = Index of agricultural production M_2 = Real money supply

Sla = small scale loan to Agriculture U_i = error term

Hypothesis II

H_0: That the Agricultural Production Loan Facility Index does not correlate positively with the real money supply.

H_1: That the real money supply is positively correlated with an index of agricultural production and lending facility.

3.4   Decision Rule

If $F^c > F^*$, we reject the null hypothesis, that is, we accept that the regression is significant.

If $F^c < F^*$, we accept the null hypothesis and agree that the regression is not significant at the level of confidence selected.

Also,

If $T^c > T^*$, we reject the null hypothesis and accept the alternative hypothesis.

If $T^c < T^*$, we accept the null hypothesis and reject the alternative hypothesis.

Where, F^c = calculated F- value; T^c = calculated value of T

       F^* = observed F- value (tabulated) at appropriate degree of freedom (df) and 1,5percent confidence interval; T^* = tabulated value of T.

IV. RESULTS AND DISCUSSIONS

4.1   The Impact of Government Expenditure and Inflation on Agricultural Production

The derived data was regressed on index of agricultural production.The hypothesis is tested as follows:

H_0: That the index of agricultural production does not correlate positively with public investment in the agricultural sector.

H_1: That the ratio of government spending on agriculture to the agricultural production index is positive.

SUMMARY OUTPUT

Regression Statistics							
Multiple R	0.813997513						
R Square	0.662591951						
Adjusted R Square	0.639322431						
Standard Error	0.199935481						
Observations	20						
ANOVA							
	Df	SS	MS	F	Significance F		
Regression	2	2.276504229	1.138252115	28.47467136	1.44E-07		
Residual	17	1.159251705	0.039974197				
Total	19	3.435755934					
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%
Intercept	4.397530062	0.170942081	25.72526335	1.62E-21	4.047914255	4.747145868	4.047914255
Log X_1	0.213265883	0.028581399	7.461701964	3.19E-08	0.154810359	0.271721407	0.154810359
Log X_2	-0.000834405	0.110911233	-0.007523177	0.994048946	-0.227673343	0.226004534	-0.227673343

4.2   The Impact of Real Money Supply and Loan Facility on Agricultural Production

The hypothesis and the model states thus:

H_0: Real money supply is not correlated with measures of agricultural output or credit availability.

H_1: The real money supply is positively related to the agricultural production loan facility index.

SUMMARY OUTPUT

Regression Statistics							
Multiple R	0.868802208						
R Square	0.754817276						
Adjusted R Square	0.737908123						
Standard Error	0.170464628						
Observations	20						
ANOVA							
	df	SS	MS	F	Significance F		
Regression	2	2.594289957	1.297145	44.63956654	1.40E-09		
Residual	17	0.842687492	0.029058				
Total	19	3.436977449					
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	95%	Lower 95.0%	Upper 95.0%
Intercept	3.435456075	0.187618193	18.31089	1.77E-17	3.051733792		3.051733792	3.819178358
X Variable 1	0.128348228	0.165140966	0.777204	0.443332507	-0.209402965		-0.209402965	0.466099422
X Variable 2	0.194616119	0.13755359	1.414839	0.16776439	-0.086712557	0	-0.086712557	0.475944794

4.3   Discussion of Findings

From the results of the first hypothesis and model as contained in the summary output, it shows that even though there is a relationship between government expenditure on agricultural output, inflation is not statistically significant in the model. That is not to suggest inflation has zero impact on Nigeria's agricultural output as a whole, but it has a negligible effect on the country's agricultural output index. The model shows that about 81% level of the relationship exists between the explanatory variables. Similarly, with an R^2 of about 66%, it then suffices to say therefore that the explanatory variables (the monetary policy instruments) have been able to explain about 66% of the variations in the value of agricultural production in Nigeria, thus leaving only about 34% to some other monetary policy instruments not included in this study. However, in terms of the relationship between each of the individual explanatory variables and agricultural production in Nigeria, government expenditure had the highest level of relationship i.e., government expenditure contributed 21.3% to agricultural production index variation while inflation contributed little or none to index of agricultural production variation. In terms of the signs of the individual coefficient, only government expenditure shows a positive sign meaning that government expenditure exerts a positive contribution to the level of agricultural production while inflation's contribution is negligible.

From the second hypothesis, the relationship existing between the variables is 86% and real money supply and small-scale loan facility were able to explain 75% of the variation in the index of agricultural production in Nigeria, meaning that both small scale loan facility and real money supply contribute to the total agricultural output in Nigeria for the period under review. From the research carried out, it shows that the major monetary instrument affecting agricultural production in Nigeria is real money supply which is the total amount of money in circulation as opposed to inflationary trends. Also, government expenditure also affectsthe index of agricultural production.

With the above analysis, conclusions are drawn that if the monetary policy tools are effectively and efficiently utilized by the monetary authorities and if the government on their own part increase budget allocation to the agricultural sector and other private investors increase the amount of loans to small scale farmers especially those in the rural areas; agricultural production in Nigeria would increase.

V. CONCLUSION

In the bid to increase or boost agricultural development in Nigeria, the monetary authorities have adopted different approaches both direct and indirect to control the supply, value, and cost of money to achieve agricultural development.

In this study, it was observed that sectorial allocation to the agricultural sector is low. Although efforts are being made by the government and monetary authorities to control inflation rates, the outcome of inflation rates are still higher than their target rates and as such it constricts the ability of banks to lend to farmers.   The results of empirical analysis showed that selective credit control as a tool of monetary policy has adversely affected the development of agriculture in Nigeria while inflation has also affected it but not significantly. The result of this study shows that the problems faced by the agricultural sector are monumental. It also reveals that at both 1% and 5% alpha levels, a significant relationship exists between the monetary policy instruments selected and agricultural development for the period under investigation. Whereas on the second hypothesis, inflation rates influence little or none on the index of agricultural production in the economy for the period under review.

Based on the findings, it is safe to conclude that monetary policy instruments can be employed to influence the agricultural sector and in turn agricultural development which translates to economic growth and development for Nigeria as a nation. Also, both monetary policy instruments can influence agricultural development positively if properly implemented. The greatest influence on agricultural development can be achieved when sectorial credit allocation is employed. Similarly, government expenditure in the agricultural sector exerts a positive influence on the index of agricultural production while inflation rates exert a negative influence, which shows that inflation rate is not   a major determinant of agricultural development.

Based on the findings and conclusions and the results of the regression analysis, the following recommendations are hereby suggested:

- That monetary authorities should focus more to the use of instruments like money supply to enhance agricultural development, since the quantity of money in the economy has a significant effect on the growth of the economy and avails the agricultural sector the opportunity to receive loans from the banks for adequate production.
- The government should formulate policies that would stimulate agricultural production all year round by providing credit facilities to farmers, revisit the land use policy, and provide incentives such as improved seedlings, farm implements and advisory support to farmers. Also, there is need for the monetary policies of the Central Bank of Nigeria to be complementary with the fiscal policies of the Federal Government to achieve agricultural development and other macroeconomic objectives.

- Finally, the monetary authorities should embark on supervisory roles to investigate whether the policy thrust in place at any given time is significant and yielding the expected results.

Appendix: **Monetary Policy and Agricultural Productivity Indices**

INDEX OF AGRICULTURAL PRODUCTION, GOVERNMENT EXPENDITURE ON AGRICULTURE AND INFLATION RATE				REAL MONEY SUPPLY (M₂), SMALL SCALE LOAN TO AGRICULTURE(SLA) AND INDEX OF AGRICULTURAL PRODUCTION			
YEAR	Y(₦MM)	X₁(₦MM)	X₂(%)	YEAR	Y(₦MM)	X₁(₦MM)	X₂(₦MM)
1999	114570.7	59316.2	6.6	1999	114570.7	31045.7	699733.7
2000	117945.1	6335.78	6.9	2000	117945.1	41028.9	1036079.5
2001	122522.3	7064.55	18.9	2001	122522.3	55846.1	1315869.1
2002	190133.4	9993.55	12.9	2002	190133.4	59949.7	1599494.6
2003	203409.9	7537.35	14	2003	203409.9	62102.8	1985191.8
2004	216208.5	11256.6	15	2004	216208.5	67738.6	2263587.9
2005	231463.3	16326	17.9	2005	231463.6	48561.5	2814845.1
2006	248599	17919	8.2	2006	248599	49393.4	4027901.7
2007	266477.2	32484.2	5.4	2007	266477.2	149579	5832488.5
2008	287175.4	65399	11.6	2008	287175.4	106354	9166835.5
2009	299823.9	22435.2	12.5	2009	299823.9	112369	9578490.3
2010	317281.7	28218	13.7	2010	317281.7	147996	11154783
2011	355391.9	41169.9	10.8	2011	335391.9	197823	12436824
2012	364422.8	35622.8	12.2	2012	342860.7	200519	13643820
2013	370262.9	42152.3	8.5	2013	361085.3	213462	15584607
2014	399406.5	44058.4	8	2014	377920.5	220308	17055316
2015	407653	47633.8	9	2015	388186.7	231504	18521347
2016	412988.3	52085.1	15.7	2016	402637.4	274361	19938743
2017	4202134	48138.4	16.5	2017	418634.4	292189	21006574
Y= Index of agricultural production				Y= Index of agricultural production			
X1= Govt expenditure on agricultural sector				X1= small scale loan to agriculture sector			
X2= Inflation rate				X2= Real money supply (M2)			

Source: National Bureau of Statistics (2017): annual reports

REFERENCES

[1]   Iyoha, M. A. and Oriakhi, D., Explaining African Economic Growth Performance: The Case of Nigeria. A Revised Interim Report,*Nigerian Case Study prepared for the African Economic Research Consortium, 2002.*

[2]   Ogudo, V. and Afolabi, B., Non-Performing Loans and Banks' Performance in Nigeria: Evidence from First Bank Nigeria Plc. *Journal of Economics and Business, Vol.1, No.1, 2018, 107-119.*

[3]   Batini, N., Achieving and Maintaining, Price Stability in Nigeria. *IMF Working Paper No. 04/97, 2004, Available at SSRN: https://ssrn.com/abstract=878921*

[4]   NzottaS.M.,*Money, Banking and Finance - Theory and Practices*(Hudson Jude Nigeria Publishers, Owerri, Nigeria, 2013)

[5]   Anyanwu J. C.,*Monetary Economics: Theory, Policy, and Institutions*(Hybrid publishers limited, 2011).

[6]   CBN,*Monetary Policy Management in Nigeria in the context of Uncertainty*(CBN brief Abuja, 1997).

[7]   CBN, Monetary Credit Foreign trade and Exchange Policy guidelines for the 1996 fiscal year. *Circular No. 30., 1996*

[8]   Bamdole, A., The Imperatives of E- banking for monetary policy in Nigeria. *Economic and Financial Review, Vol. 43, No1, 2005, March CBN Abuja.*

[9]   Mordi C.N.O., Overview of monetary policy Framework in Nigeria. *Bullion Vol.33, No.1, 2009, (January –March), CBN Abuja*.

[10]   Ojo M.O., *Principles and Practice of Monetary Management in Nigeria*(CBN Abuja, 2009).

[11]   Soludo C.C., *Financial Globalization and Domestic Monetary Policy* (University of Nigeria Nsukka, 2008).

[12]   Pandey, I. M., *Financial Management*(New DAHI, Vikas Publishing House PVT. Ltd, 2005)

[13]   Ade T. O. and Adewunmi W., *Banking and Finance in Nigeria* (Graham, U.K Bedfordshire, 1999).

[14]   Sanusi, L. S., *Growth Prospects for the Nigerian Economy*(Convocation Lecture delivered at the Igbinedion University Eighth Convocation Ceremony, Okada, Edo State. November 26, 2010)