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Agricultural Financing and Economic Performance in Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author KFA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors OYT and OME managed the analyses of the study. Authors KFA and OYT managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

The Agricultural sector which used to be the mainstay of the Nigerian economy in the 1950s, 60s and early 70s is now conceived as a risky and unprofitable venture by financial institutions and government. This is because the financial institutions prefer to give funds to other sectors where payback period is short and return rate is high and also because the agricultural sector is inadequately funded by the government due to low budgetary allocation to the Agricultural sector over the years. The study examined the impact of Agricultural Financing on Economic Performance in Nigeria within the sampled period of 1978-2017. The study specifically attempted to assess the impact of Agricultural Financing on Economic Performance in Nigeria. The study which utilizes data through secondary sources from the Central Bank of Nigeria statistical bulletin were analyzed using the Unit root test, Bound Cointegration test and error correction modelling to empirically estimate the coefficient of parameter estimates. The statistical decision of the analysis is based on 5%

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(0.005) level of significance. From the result, it was deduced that in the long-run, Agricultural Credit Guarantee Scheme Fund (ACGSF) 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 (ACGSF) had strong positive impact on the growth rate of the Nigerian economy. The study concluded and strongly maintained that Agricultural Financing contributed poorly to the economic performance of Nigeria within the sampled period basically because of inadequate funding.

Keywords: Agriculture; agricultural financing; economic performance; GDP growth rate.

1. INTRODUCTION

Agriculture is imperative in the process of growth and development of an economy. The benefits of agriculture to mankind cannot be undermined. Firstly, agriculture provides food for the ever-increasing populace of Nigeria. Secondly, through rearing of animals, agriculture provides agro-allied products that are highly nutritious for the populace. Third, agriculture is being depended upon by other sectors of the economy for source of raw materials. Moreso, agriculture has been regarded as the largest employer of labour force in Nigeria [1]. In addition, agriculture interlinks the subsistent sector with the modern sector to enhance economic growth. These benefits demonstrate that agricultural development is fundamental for industrialization [2]. Okoh [3] noted that almost 70% of the entire working population in Nigeria is employed in the agricultural sector. Agriculture used to be the linch-pin of the Nigerian economy in the 1950s, 60s and early 70s, whose contribution to the gross domestic product (GDP) was above 50% in these periods. Furthermore, during this era, agriculture generated huge foreign exchange earnings for the economy from exportation of primary products such as rubber, cotton, cocoa, palm oil and groundnut amongst others. The economic fortune of agriculture was shattered as a result of the emergence of crude oil as the country's major export products. Available statistics from the Central Bank of Nigeria indicated that the contributions of agriculture to GDP fell from 57% in the 1960s to 30% in the 1970s. Agricultural financing has the capacity to eliminate the financial challenges facing farmers, paves way for adoption of new technologies to spur productivity, promotes economic development through increased income and improved living standards and helps to unveil talents, capacities, prospects and opportunities, which are catalytic elements of sustainable development. The funding challenges faced by the agriculture sector does not emanate from paucity of finance, but rather stems from the unwillingness of financial institutions to grant loans and credit facilities to farmers without necessary collateral requirements. Often times, peasant farmers are incapable to provide collateral requirements needed to access credit facilities, and eventually left with the option of internal sourcing funds [4].

Inadequate funding of the agriculture sector has been recognized as a leading setback for the agricultural sector in Nigeria [5]. The Agricultural Credit Guarantee Scheme (ACGS) was introduced to resolve the funding challenges faced by peasant farmers in Nigeria. In this scheme, government acts as the middle man between farmers and providers of credit [6]. More recently, the Central Bank of Nigeria releases N607bn agriculture credit for 587 projects [7], with a view to further facilitating easy access of credit facilities by farmers.

Farm households in developing countries are heavily constrained to accessing credit from financial markets. Available Statistics from the Central Bank of Nigeria revealed that commercial bank credit equaled $18, 065.57 was allotted to the agricultural sector in 1970, rose to $96, 522.984 in 1974, $1,192,884.52 million in 1980 and $3,381,576.384 million in 1985. Aggregate credit to agricultural sector rose to $10,895,134.14 million, depicting 16% of the total credit in the economy, and $65,242,532.663 million in 1995, which was 17% of the overall credit available in the economy. Starting from the year 2000, the proportion of credit to agriculture sector increased in absolute terms but decreased on relative grounds. For example, total credit to agriculture rose from $106,865,182.34 million, representing 2.46% of total credit in 2005, to $331,404,400.427 million in 2010, representing 1.67% of total commercial bank credit to the economy. As at 2013 and 2014, the share of agriculture credit in total commercial bank credit fell were 3.9% and 3.7% respectively [8].

However, agricultural financing is pivotal to agricultural development and economic growth, and has been among the policy thrusts of successive government. The Federal Government of Nigeria has instructed financial institutions to make loans and credits available for the sector. Despite the enormous investment in the agricultural sector via provision of loans to farmers, agricultural sector is still performing below expectation, evident by its low share in national output and massive importation of food products [9].

1.1 Statement of Problem

Nigeria is blessed with vast arable land for cultivation, mineral, natural and human resources and a favorable climate that supports agricultural production, but it is surprising that the potentials of agricultural sector are not optimally harnessed. Poor funding or inadequate financing has been identified as one of the principal challenges facing farmers and agro-allied entrepreneurs in Nigeria [10,11]. [12], noted that although the agricultural credit guarantee scheme was instituted to make commercial banks provide loans to farmers, with the government acting as a guarantor in order to reduce possible risks in lending, the scheme has not fully achieved its goals, because, agriculture is a labour and capital-intensive venture. [13] remarked that the other challenges of agricultural financing include channeling loans meant for agricultural projects to personal activities by farmers, outrageous rate of interest charged on loans and incapacity of farmers to meet the collateral requirements. [14], observed that the share of government expenditure on agriculture to total expenditure is less than 6%. Thus inadequate capital in financing agricultural projects over the years has subsequently led to the significant decline in the performance of the sector, evident by the increasing importation of food commodities, acute food shortage, high price of food, importation of factor inputs and low share of agriculture in national output.

1.2 Objectives of the Study

The broad objective of this study is to examine the impact of agricultural financing on economic performance in Nigeria. The specific objectives include:

1. To examine the impact of government spending in agriculture on the performance of Nigeria's economy.
2. To assess the impact of bank credit in agriculture on the economic performance of Nigeria.
3. To investigate the impact of Agricultural credit guarantee scheme fund on the performance of the Nigerian economy.

2. CONCEPTUAL REVIEW

2.1 Concept of Agricultural Financing

Agricultural finance involves the study, examination and analysis of financial aspects of farm business. The financial aspect involves money associated with agricultural production and their sales. [15] viewed agricultural finance as the acquisition and control of assets, borrowing, leasing or custom-hiring. Lee [16] defined agricultural finance as the acquisition and usage of capital in agriculture. Agricultural finance is basically about supplying and demanding for funds in agriculture. [17] pictured agricultural finance as the economic study of funds borrowing by farmers and organizations. [18] submitted that agricultural finance as a field of agriculture that focuses on the acquisition and utilization of financial resources by individual farm units.

2.2 Agricultural Financing in Nigeria

Agricultural financing is as important as other factor inputs like labour and land, for without adequate credit to finance agriculture, agricultural activities would be redundant. The agricultural lending market is constituted by financial institutions that would make funds available for agricultural activities. The agricultural lending market contains the commercial banks, non-financial institutions and other specialized institutions like the Nigerian Agricultural Cooperative and Rural Development Bank (NARCDB) and Nigerian Agricultural and Co-operative Bank (NACB). [19], observed that farmers who have sufficient land for cultivation finds it easier to obtain credit compared to smallholder farmers who lack sufficient land to optimize credit peradventure it was made available. In addition, lenders failed to assist smallholders' farmers owing to credit appraisal cost. Majority of the credit to the farmer could be for a period of less than one year for arable crops which fits well into the Nigerian banks desired portfolio. Between 1978 and 1989 with sectoral allocation of credit to agriculture, the lending portfolios of banks to agriculture rose remarkably. The whole lending process has been

shattered as a result of the introduction of financial sector deregulation which made agricultural lending risky, un-lucrative and uncertain in relation to other sectors [20]. The nominal value of bank credit rose from N230 million in 1978 to about N262 billion in 2005; similarly, food imports continue to increase steadily. The effectiveness of agriculture credit lies in soft landing for credit providers and farmers with respect to cost and duration. Various policies and programmes have been designed to encourage agricultural financing in Nigeria, commonest among them are:

2.2.1 Nigerian agricultural cooperative and rural development bank (NACRDB)

This is the earliest institution established to encourage financing in agriculture and rural development in Nigeria. The bank is a limited liability company owned by the Federal Government. 60% of the shares are owned by the Federal Ministry of Finance and the remaining 40% by the Central Bank of Nigeria. The basic responsibility of NARCDB was to provide funds for agriculture especially for small and medium-scale farmers. The NARCDB accepts deposits from customers, provide loans and advances to customers, provide advisory serves and acts as a major partner for investors in agricultural sector.

2.2.2 National agriculture and cooperative bank (NACB)

This scheme was established in 1973 with the overall objective of developing the economy through the provision of support for agriculture and providing funds for farmers and co-operative societies. The need to finance agricultural projects resulted in the establishment of NACB. After its emergence, there was a remarkable change in the process of credit provision for farmers. NACB provides farmers loan to enable them procure surplus crops during harvesting seasons. This method has reduced wastage and act as a catalyst to farmers to produce more. The duration of the loans ranged from one month to 21 months. Unfortunately, the NACB failed to achieve its objectives.

2.2.3 Nigerian agricultural insurance corporation (NAIC)

This scheme was established in 1977 at the period agricultural financing needs a specialized agricultural insurance firm to provide insurance cover for farmers. The scheme was birthed as a result of unwillingness of conventional insurance firms to provide cover for agricultural activities, which they tagged as risky. The NAIC was basically established to provide insurance cover for farmers against havoc, natural disasters, unforeseen contingencies and other risks inherent in agriculture production.

2.2.4 Refinancing and rediscounting facility

This scheme was instituted by the Central Bank of Nigeria to provide support for agricultural exports. This scheme helps commercial banks to provide short-term finance in domestic currency at favorable interest rates to support export commodities. The objectives of the facility are to foster medium and long-term bank lending to critical sectors of the economy in order to expand the productivity base of the country and also to ensure that a significant fraction of total credits are channeled to the real sector for economic growth and development.

2.2.5 Agricultural credit guarantee scheme fund (ACGSF)

The scheme as established in 1977 to provide assurance to banks that provides credits to farmers. The scheme was established to stimulate credit flows to agricultural sector by making guarantees available to commercial banks. The scheme has a capital base of about N3 billion and provide credit facilities to farmers to a maximum limit of 75% of the amount of security accrued. Several measures have sprung in ACGSF such as Self-Help Group Linkage Banking, the Trust Fund Model and the Interest Drawback [21]. The interest drawback scheme was instituted to encourage easy access to credit facilities at a cheap interest of 8%. ACGSF rose from N0.04 billion in 1981 to N0.16 billion in 1995, N3.31 billion in 2004, N7.74 billion in 2010 and N11.44 billion and N8.10 billion in 2015 and 2016 respectively.

2.3 Indicators of Economic Performance

Economic performance is a multidimensional concept that measures the extent to which an economy has achieved its desired goals and objectives. Before 1970s, economic performance is predicated on the growth of GDP and GDP per capita [22]. An economy with rising rate of GDP growth and/or GDP per capita was considered to have performed. However, [23], asserted that

economic performance is not limited to growth of domestic output.

There are veritable macroeconomic indices that are used to assess the performance of an economy. According to [24], economic performance can be angled from the macroeconomic goals every economy strive to achieve and they include price stabilization, full employment of labour, balance of payment equilibrium, exchange rate stability, economic growth, poverty alleviation, income and wealth redistribution, resource allocation and trade.

2.4 Theoretical Review

Quite a number of theories on financing and agricultural development have been postulated in literature. However, the study reviewed two theories which are highly relevant to the subject matter. The theories are Structural change theory and Boserupian theory of agricultural development.

2.4.1 Structural change theory

The structural change theory stressed on the process by which developing economies transform their economic structures from a traditional and primitive agriculture to a more modern, urban, civilized and industrially diverse manufacturing and service economy. A prominent theory under the structural change theory is the two-sector theory of surplus labour propounded by Sir Arthur Lewis.

Economic Development with Unlimited Supplies of Labour [25], observed that majority of developing economies have two distinct sectors. The bulk of the economy was a labour intensive agricultural sector producing primary commodities. [26] observed that output of the agricultural sector was very low and farmers lack the profit incentive that could be found in a market economy. Furthermore, there was a smaller manufacturing sector, which had higher productivity. Labourers in the agricultural sector usually lacked education, access to capital and had poor prospects for income growth.

Economic Development [27], If a developing economy increases the output of agricultural products, this increase in supply is likely to depress prices and lead to lower export revenue because demand is price inelastic. More revenue would be made by restricting supply and keeping prices high. Studies carried out by the World Bank have suggested a positive link between growth in industry and growth in agriculture. Rather than being separate, there is greater interdependence. If agriculture stagnates, it can be hard to grow the industry. But, if agriculture grows, it would help other sectors of the economy, such as manufacturing and services to grow.

2.4.2 Boserupian theory of agricultural development

This theory was propounded by Professor Ester Boserup. The theory postulates that the proportion of a country's labour force engaged in agricultural activities determines the growth and development of agricultural sector. Boserup averred that there exist a positive correlation between the fraction of economically active population involved in agriculture and agricultural development. Boserup in an attempt tried to probe into the causes of agricultural development. She maintained the view that agricultural development is due to some kind of compulsion. This compulsion relates to rising trend of population. It means the basic force behind agricultural development is the pressure of population. The development of patterns and techniques of cultivation is governed by the population growth. She supported this contention through an examination of agricultural development of some African and Latin American countries.

2.5 Empirical Review

Series of studies have been carried out to examine the effect of agricultural financing on agricultural output and economic growth in Nigeria. Among the findings and submissions of previous studies are reviewed as follows:

Hatemi and Irandoust [28], in their study "relationship between foreign aid and economic growth in developing Countries –Botswana, Ethiopia, India, Kenya, Sir-lanka, and Tanzania" reveals that foreign aid has a positive and significant effect on economic activity for each country in the sample. They conclude that foreign capital flows can have a favorable effect on real income by supplementing domestic savings.

Imosi et al. [29], examined credit facilities and agricultural output and productivity in Nigeria between 1970 and 2010. Agricultural output was proxied by agricultural GDP while credit facility was measured by deposit money bank credit to

agricultural sector and foreign private investment to agricultural sector. The result of the regression analysis showed that deposit money banks' credit and foreign private investment to agricultural sector positively and significantly impact agricultural output in Nigeria.

Ibid [30], analyzed the impact of commercial banks' credit to agriculture on agricultural development in Nigeria between 1980 and 2011. The study measured agricultural output by agricultural production output index while commercial bank credit to agriculture sector, agricultural credit guarantee scheme loan by purpose, government financial allocation to agricultural sector and agricultural produce price. The study employed the unit-root test and regression analysis. The results revealed agricultural scheme loan by purpose and government financial allocation resulted to significant positive growth in agricultural development while commercial bank credit and agricultural produce price had no significant positive impact on agricultural productivity.

Obansa and Maduekwe [31], investigated the impact of agricultural financing on economic growth in Nigeria between 1975 and 2010. The study employed the Augmented-Dickey Fuller unit root test, Granger Causality test and Ordinary Least Square technique. The results showed the existence of bidirectional causality between agricultural financing and economic growth and between agricultural development and economic growth. The study maintained that productivity of investment should be more appropriately financed with foreign direct private loans, share capital, foreign investment and development stocks to boost economic growth via agricultural development.

Ojeigbe and Duruechi [32], evaluated the impact of agricultural loans on agricultural gross domestic product in Nigeria between 1992 and 2012. Agricultural loans in the study comprised total loan on crop production, total loan on livestock, total loan on forestry and total loan on fishery. The study employed secondary data and used the regression technique to estimate the model. The results showed that total loan on livestock had significant impact on agricultural GDP in Nigeria. Total loans on crop production, fishery and forestry subsectors had positive but weak impact on agricultural GDP in Nigeria.

Adewole et al. [33], examined the contributions of commercial banks in agricultural financing in Nigeria between 2002 and 2014. Commercial banks' loans and advances to agriculture sector was proxy as agricultural financing while liquidity ratio, cash reserve ratio and discount rate were employed as the explanatory variables. The results of the regression analysis showed that cash reserve ratio, discount rate and liquidity ratio has negative but insignificant impact on agricultural credit. Agricultural credit was found as a decreasing function of the explanatory variables. There is negative correlation between the ratios and agricultural credit.

Egwu [34], examined the impact of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria between 1980 and 2010. Agricultural output was measured by the share of agricultural sector in GDP. Also, agricultural financing was surrogated as agricultural credit guarantee scheme fund and commercial bank credit to agricultural sector. The study employed the Augmented-Dickey Fuller test, Phillip-Perron test and Ordinary Least Square technique. The results showed that agricultural credit guarantee scheme fund and commercial bank credit positively and significantly impacted agricultural output, thereby alleviated the poverty rate and induced economic growth within the period.

Ayeomoni and Aladejana [35], examined the relationship between agricultural credit and economic growth in Nigeria between 1986 and 2014 using the Autoregressive Distributed Lag-Model. Economic growth was regressed on agricultural sector credit, private domestic investment, real exchange rate, interest rate and inflation rate. The results showed that short-run and long-run relationship existed between agricultural credit and economic growth in both short-run and long-run respectively. Also, real exchange rate and private domestic investment had direct effect on economic growth whereas inflation rate had negative effect on economic growth.

Ibid [36], examined the effect of agricultural financing on agricultural productivity in Nigeria between 1970 and 2014. Agricultural output was measured by agricultural GDP and agricultural financing was proxied by commercial banks' credit to agriculture sector, government expenditure on agriculture, agricultural credit guarantee scheme fund and lending interest rate. The study employed the multiple regression analysis. The result showed that agricultural credit guarantee scheme fund, commercial bank

credit to agriculture and government expenditure on agriculture had positive and significant effect on agricultural output. In addition, lending interest rate exerted negative but weak effect on agricultural output in Nigeria.

Ibid [37], assessed the impact of banks' credit on agricultural output in Nigeria between 1980 and 2014. The study also examined the effect of interest rate, foreign exchange rate, government expenditure on agriculture and money supply on agricultural output. The study employed the unit root test, cointegration test, ordinary least square technique and error correction model. The results showed that all the variables were stationary at first difference and there also exist both short-run and long-run relationship between agricultural output and the regressors. The study found that apart from interest rate that had significant negative impact on agricultural output, bank credit to agriculture sector, foreign exchange rate, government expenditure on agriculture and money supply had positive and negative impact on agricultural output.

3. ANALYTICAL FRAMEWORK AND MODEL SPECIFICATION

3.1 Introduction

This chapter focuses on the methodology adopted in the study. It contained the specification of model, a-priori expectation, sources of data and estimation technique.

3.2 Model Specification

This study follows the work of [38] in model specification with suitable adjustments

The functional representation of the models is expressed as follows:

$$growth = f(acgsf, gexagric, bankagric) \quad (1)$$

Where:

Growth= Growth rate of the Nigerian economy (%).
ACGSF= Agricultural Credit Guarantee Scheme Fund (N'Billion).
GEXAGRIC= Government expenditure on agriculture (N'Billion).
BANKAGRIC= Commercial bank credit to agriculture (N'Billion).

Thus, the econometric representation of equation (1) is further expanded as,

$$growth = \beta_0 + \beta_1 acgsf + \beta_2 gexagric + \beta_3 bankagric + \mu \quad (2)$$

Where:

β_0 = Intercept of the regression model.
β_1= Estimated coefficient of agricultural credit guarantee scheme fund.
β_2= Estimated coefficient of government expenditure on agriculture.
β_3= Estimated coefficient of commercial banks loans and advances to agriculture.
μ= Error term.

3.3 Data and Sources

Data on the variables of interest are time-series data sourced from the Central Bank of Nigeria (CBN, 2017) Statistical Bulletin and World Development Indicator (2017). The time frame of the data collected ranged from 1978 to 2017.

3.4 Estimation Technique

The study employed the Unit-root test, Bound Cointegration test, error correction modeling. These techniques were utilized in order to have robust results that can be used for policy formulation. The Econometric Views (EViews) was utilized for the analysis of data.

4. DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter concentrated on the presentation and discussion of results as regard the effect of agricultural financing on the economic performance of the Nigerian economy between 1978 and 2017. Agricultural financing was represented by Agricultural Credit Guarantee Scheme Fund, Government recurrent spending on agriculture and Commercial banks loan and advances on agriculture.

4.2 Presentation of Result

4.2.1 Unit-root test

A major defect of time-series data is its exposure to unit-root problem. The study therefore adopts the Phillip-Perron unit root test to examine the time-series properties of the variables.

Tables 1 & 2 presented the Phillip-Perron test for unit-root for the variables. The results showed

that growth was stationary at level as its probability value is less than the standard 0.05. Furthermore, the independent variables became stationary at first order, meaning they are integrated to order of one. Since at least two series are stationary at first-order, we therefore proceed to test for long-run relationship between the variables by using the Bound test cointegration test.

4.2.2 Bound test co-integration test

The Bound Test Co-integration test is carried out to test the variables with existed long term equilibrium relationship. Cointegration test is carried out to investigate the existence of long-run relationship between two or more series or variables. The basis for the Bound Cointegration test is to ascertain the existence of long-run linear relationship among the economic variables.

The ARDL bound tests result showed cointegration among the variables as the F-statistic, which is 6.02 exceeds the critical value at 5 percent for zero-order and first-order difference, which settled at 2.79 and 3.67 respectively.

4.2.3 Autoregressive distributed lag modelling

ARDL technique corrects for disequilibrium between short run and long run behavior of the dependent variable to its long run value. The error correlation model indicates the speed of the adjustment which restores equilibrium in the dynamic model.

The results showed the short-run impact of ACGSF, government expenditure on agriculture and bank credit to agriculture on GDP growth rate. ACGSF has positive but weak impact on GDP growth within the estimated period. A percent rise in ACGSF is associated with 0.08 percent rise in growth rate ceterisparibus. Also, ACGSF in the first, second, third and fourth previous period has negligible impact on GDP growth in the current year.

Table 1. Phillip-perron test at level

Series	PP test statistic	Critical value	Probability	Remark	Order of integration
Growth	-4.8833	-2.9458	0.0003	Stationary	I(0)
Acgsf	-0.8078	-2.9458	0.8048	Non-stationary	
Gexagric	-1.7026	-2.9458	0.4214	Non-stationary	
Bankagric	-2.6418	-2.9458	0.0942	Non-stationary	

Source: Author's Extraction from EViews

Table 2. Phillip-perrontest at first-order

Series	PP test statistic	Critical value	Probability	Remark	Order of integration
Acgsf	-5.5219	-2.9484	0.0001	Stationary	I(1)
Gexagric	-8.9558	-2.9484	0.0000	Stationary	I(1)
Bankagric	-6.9892	-2.9484	0.0000	Stationary	I(1)

Source: Author's Extraction from EViews

Table 3. Bound test result

F-Bounds test		Null Hypothesis: No levels relationship		
Test statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.023350	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Table 4. Short run estimate of the impact of ACGSF, government expenditure on agriculture and bank credit to agriculture on GDP growth rate

Dependent variable: LNGROWTH
Method: ARDL
Date: 03/24/19 Time: 10:58
Sample (adjusted): 1982 2017
Included observations: 35 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): LNACGSF LNCREAGRIC LNGEXAGRIC
Fixed regressors: C
Number of models evalulated: 500
Selected Model: ARDL(1, 4, 4, 3)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. error	t-Statistic	Prob.*
LNGROWTH(-1)	0.432566	0.121717	3.553868	0.0021
LNACGSF	0.078866	0.047348	1.665675	0.1122
LNACGSF(-1)	0.006181	0.064294	0.096137	0.9244
LNACGSF(-2)	0.087617	0.074125	1.182013	0.2518
LNACGSF(-3)	0.100419	0.083947	1.196217	0.2463
LNACGSF(-4)	0.028563	0.050486	0.565751	0.5782
LNCREAGRIC	0.068811	0.061276	1.122967	0.2754
LNCREAGRIC(-1)	0.036251	0.073030	0.496383	0.6253
LNCREAGRIC(-2)	0.023610	0.068599	0.344177	0.7345
LNCREAGRIC(-3)	0.027570	0.068112	0.404775	0.6902
LNCREAGRIC(-4)	-0.102481	0.068183	-1.503021	0.1493
LNGEXAGRIC	-0.015089	0.021290	-0.708756	0.4871
LNGEXAGRIC(-1)	-0.001346	0.021515	-0.062539	0.9508
LNGEXAGRIC(-2)	-0.010724	0.021908	-0.489495	0.6301
LNGEXAGRIC(-3)	0.023012	0.020586	1.117860	0.2776
C	5.842928	1.244105	4.696491	0.0002
R-squared	0.998060	Mean dependent var		10.23711
Adjusted R-squared	0.996528	S.D. dependent var		0.533607
S.E. of regression	0.031441	Akaike info criterion		-3.778062
Sum squared resid	0.018782	Schwarz criterion		-3.067045
Log likelihood	82.11608	Hannan-Quinn criter.		-3.532619
F-statistic	651.6410	Durbin-Watson stat		1.899943
Prob(F-statistic)	0.000000			

**Note: p-values and any subsequent tests do not account for model selection.*

Commercial bank credit to agriculture sector improves GDP growth rate but impact remains immaterial. This is traceable to the fact that financial institutions see lending for agriculture activities as risky. A percent rise in bank credit will expand GDP growth rate by 0.07 percent in the short run, holding other variables constant.

But, government expenditure on agriculture negates growth of the Nigerian economy in the short-run. A percent rise in government expenditure is associated with 0.02 percent decline in growth rate.

The explanatory variables account for 99 percent of total variation in GDP growth, indicating strong predictive influence on GDP growth rate. Also, the model is free from autocorrelation as the Durbin-Watson statistic is within the threshold of non-autocorrelation, 1.85 and 2.15.

In the Long-run, ACGSF is the most influential variable on GDP growth among the variables. A percent rise in ACGSF is associated with 0.08 percent rise in growth rate. This means that ACGSF positively and substantially impacts on growth in Nigeria.

Table 5. Long run estimates of the impact of ACGSF, government expenditure on agriculture and bank credit to agriculture on GDP growth rate

ARDL long run form and bounds test
Dependent Variable: D(LNGROWTH)
Selected Model: ARDL(1, 4, 4, 3)
Case 2: Restricted Constant and No Trend
Date: 03/24/19 Time: 10:59
Sample: 1978 2017
Included observations: 35

Conditional error correction regression				
Variable	**Coefficient**	**Std. error**	**t-Statistic**	**Prob.**
C	5.842928	1.244105	4.696491	0.0002
LNGROWTH(-1)*	-0.567434	0.121717	-4.661920	0.0002
LNACGSF(-1)	0.301646	0.067578	4.463668	0.0003
LNCREAGRIC(-1)	0.053761	0.059990	0.896172	0.3814
LNGEXAGRIC(-1)	-0.004147	0.033942	-0.122167	0.9040
D(LNACGSF)	0.078866	0.047348	1.665675	0.1122
D(LNACGSF(-1))	-0.216599	0.066524	-3.255935	0.0042
D(LNACGSF(-2))	-0.128982	0.077072	-1.673515	0.1106
D(LNACGSF(-3))	-0.028563	0.050486	-0.565751	0.5782
D(LNCREAGRIC)	0.068811	0.061276	1.122967	0.2754
D(LNCREAGRIC(-1))	0.051300	0.065963	0.777709	0.4463
D(LNCREAGRIC(-2))	0.074911	0.068052	1.100778	0.2847
D(LNCREAGRIC(-3))	0.102481	0.068183	1.503021	0.1493
D(LNGEXAGRIC)	-0.015089	0.021290	-0.708756	0.4871
D(LNGEXAGRIC(-1))	-0.012288	0.023408	-0.524959	0.6057
D(LNGEXAGRIC(-2))	-0.023012	0.020586	-1.117860	0.2776

** p-value incompatible with t-Bounds distribution.*

Levels equation				
Case 2: Restricted Constant and No Trend				
Variable	**Coefficient**	**Std. error**	**t-Statistic**	**Prob.**
LNACGSF	0.531596	0.032087	16.56739	0.0000
LNCREAGRIC	0.094744	0.101923	0.929565	0.3643
LNGEXAGRIC	-0.007308	0.059519	-0.122777	0.9036
C	10.29710	0.119236	86.35904	0.0000

*EC = LNGROWTH - (0.5316*LNACGSF + 0.0947*LNCREAGRIC -0.0073 *LNGEXAGRIC + 10.2971)*

While commercial bank credit to agriculture has positive but weak impact on growth, government expenditure exerted negative albeit slight impact on growth rate within the sampled period. A percent rise in the former elevates GDP growth rate by 0.07 percent, and the latter reduces growth by 0.02 percent.

The R-squared indicates that 70 percent of the variation in growth is attributable to agricultural financing variables, leaving the other 30 percent to exogenous factors. The long-run model is free from autocorrelation given the fact that the Durbin-Watson statistic falls within acceptable range for non-autocorrelation.

The coefficient of Error Correct Model is negatively signed at 0.57 and statistically significant as expected. This means that disequilibrium in the model will adjusted by 57 percent annually to ensure the variables converge at equilibrium in the long-run.

Table 6. Error correction model result of the impact of agricultural financing on economic performance (1978-2017)

ARDL Error Correction Regression
Dependent Variable: D(LNGROWTH)
Selected Model: ARDL(1, 4, 4, 3)
Case 2: Restricted Constant and No Trend
Date: 03/24/19 Time: 11:17
Sample: 1978 2017
Included observations: 36

ECM regression				
Case 2: Restricted constant and no trend				
Variable	**Coefficient**	**Std. error**	**t-Statistic**	**Prob.**
D(LNACGSF)	0.078866	0.036489	2.161387	0.0436
D(LNACGSF(-1))	-0.216599	0.057588	-3.761192	0.0013
D(LNACGSF(-2))	-0.128982	0.067096	-1.922348	0.0697
D(LNACGSF(-3))	-0.028563	0.042599	-0.670498	0.5106
D(LNCREAGRIC)	0.068811	0.043790	1.571383	0.1326
D(LNCREAGRIC(-1))	0.051300	0.041435	1.238085	0.2308
D(LNCREAGRIC(-2))	0.074911	0.043293	1.730325	0.0998
D(LNCREAGRIC(-3))	0.102481	0.044327	2.311946	0.0322
D(LNGEXAGRIC)	-0.015089	0.014032	-1.075311	0.2957
D(LNGEXAGRIC(-1))	-0.012288	0.014299	-0.859393	0.4008
D(LNGEXAGRIC(-2))	-0.023012	0.016253	-1.415863	0.1730
CointEq(-1)*	-0.567434	0.093978	-6.037973	0.0000
R-squared	0.701489	Mean dependent var		0.042668
Adjusted R-squared	0.558723	S.D. dependent var		0.043018
S.E. of regression	0.028576	Akaike info criterion		-4.006633
Sum squared resid	0.018782	Schwarz criterion		-3.473371
Log likelihood	82.11608	Hannan-Quinn criter.		-3.822551
Durbin-Watson stat	1.899943			

** p-value incompatible with t-Bounds distribution*

5. SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Summary of the Study

The study examined the impact of agricultural financing on economic performance in Nigeria between 1978 and 2017. The study specifically assessed the extent to which public spending on agriculture, agricultural credit guarantee scheme fund and bank credit to agriculture impacted on the performance of the economy, measured by GDP growth rate.

It was established that agricultural finance is the examination and analysis of financial aspects of farm business. An important variant of agricultural finance is agricultural credit which is the amount of investible funds made available for agricultural production from resources outside the farm sector. The taxonomy of agricultural credit based on purpose, repayment period, security, generation of funds, creditors and number of activities for which credit is provided. Among the various policies and programmes designed to encourage agricultural financing in Nigeria are Nigerian Agricultural Cooperative and Rural Development Bank (NARCDB), National Agriculture and Cooperative Bank (NACB), Nigerian Agricultural Insurance Corporation (NAIC), Refinancing and Rediscounting Facilities, Agricultural Credit Guarantee Scheme Fund (ACGSF), Agriculture Credit Support Scheme (ACSS) and Commercial Agriculture Support Scheme (CASS).

Agricultural financing with regard to commercial banks loans and advances and government spending on agriculture were reviewed. The study established that the prospects of agricultural financing in agricultural sector in Nigeria are massive increase in food supply, expansion of the country's productivity base and promotion of rural sector development. The problems of agricultural financing in Nigeria are unwillingness of deposit money banks to grant credit for agriculture purpose, inconsistency in government policies, deregulation of the financial

markets, lack of business acumen amongst farmers, tendency to divert the loans for non-agricultural projects, loan default, high interest rate charged on loans and inability of most farmers to meet the collateral requirements of the loans. The study utilized the Phillip-perron test of unit root, Bound Cointegration test, error correction modeling. The findings showed that agricultural financing variables had positive but little impact on Nigeria's economic performance in terms of GDP growth rate.

5.2 Conclusion

Nigeria's agricultural sector has been poorly financed over the years. Agriculture, which used to be the mainstay of the Nigerian economy in the 1950s, 60s and early 70s, is now conceived as a risky and unprofitable venture by financial institutions and government. This conception in collaboration with the financial incapacity of majority of Nigerian farmers and agro-allied entrepreneurs discouraged financial institutions from granting credit for agricultural purpose. Financial institutions prefer to channel their funds to industrial and service sector where payback period is short and the return rate is high. The study maintained that agricultural financing contributed poorly to the economic performance of Nigeria within the sampled period because of inadequate funding.

5.3 Policy Implications

In order to ensure that agricultural financing contribute remarkably to the economic performance of Nigeria, the following recommendations are put forward.

Agricultural financing programmes should exert more commitment in implementing 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.

Government are advised to pay more attention to the agricultural sector by compelling financial institutions to supplement government efforts towards financing agriculture through the disbursement of loans at low interest rate at appropriate time in order to avoid diversion of such loans.

Farmers 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 banks to hope that the loans will be repaid as at when due.

Supervisory agencies should be established by the government and financial institutions to make sure farmers utilize the loans accordingly. This would propel banks' willingness to provide credit for agricultural purposes. Machinery should be set up to ensure that the loans given to farmers are utilized for right purpose. Farmers caught using the loan for other purposes should be sanctioned.

To resolve the problems faced by farmers, good road networks should be constructed to enhance movement of food and cash crops from one location to another. This will consequently make agriculture more profitable and attractive to get credit.

There is need for the Central Bank of Nigeria to reduce the cash reserve ratio, so that funds that accrue from such policies can be added to agricultural credit portfolios.

There is need to review the land use decree to enable farmers have free access to land. This would consequently increase the farmers that could eventually serve as collateral for credit facilities from banks.

There is need for government to put in place policies that would enhance agricultural commercialization through cooperative system.

Government should fight against corruption in the disbursement process of ACGSF and ACGS loans, commercial banks and other agencies in the agricultural sector.

Government should play an important role in contract enforcement in agricultural development by ensuring timely and recourse against the failure to meet contract obligations or other abuses in agricultural policies. The existing infrastructural facilities should be improved.

Agriculture must be made to become very lucrative like trade and commerce and industry. To accomplish this, government should guarantee prices of farm products by purchasing excess in period of harvest. Storage facilities, fertilizers, pesticides and pest control facilities should be provided to farmers. Also, farm produces should be made accessible and competitive in the world market.

A low rate of interest should be charged on loans and advances for agricultural projects. This would greatly encourage farmers to access these loans and repay back as at when due.

Lastly, policies towards diversifying the economy should be pursued and campaign for the improvement of non-oil sectors especially the agricultural sector should be intensified. Because of the drop in agricultural output due to poor financing, government should mandate financial institutions to set aside funds annually for agricultural financing to complement government efforts.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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