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Effect of Agricultural Financing on the Performance of Agricultural Sector in Nigeria

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Abstract

The study examined the effects of agricultural financing on the performance of agricultural sector in Nigeria using annual time series data. The data for the study was sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. Contribution of agriculture to GDP was used as proxy for the performance of agricultural sector, commercial banks loan to agriculture, rain fall, government expenditure to agriculture and interest rate were used as proxy for explanatory variables. Following unity in the order of integration, Johansen cointegration approach was used to check for the long run relationship among the variables. Vector autoregressive estimate the vector correction mechanism was used to examine the speed of adjustment of the variables from the short run dynamics to the long run equilibrium. The study found that there is long run relationship among the variables. Specifically; there is significant and long run effect of Agricultural Credit Guarantee Scheme on Contributions of agriculture to GDP. Commercial banks loans to agriculture showed positive and significant effect on Contributions of agriculture to GDP within the reference period. The coefficient of multiple determinations explained the variation in the dependent variable jointly explained by the independent variables. The study recommend that there should be increase in the amount which the agricultural credit guarantee scheme inject into the sector on annual basis and proper supervisory measures should be constituted in order to ensure efficient application and use of the money.

Introduction

Agriculture contributes greatly to the Nigerian economy in a number of ways, and the most significant way in which it supports the country's growth is as a provider of food for the rising population, as a source of raw materials, and as a market for industrial products. Additionally, agriculture provides a major source of employment and foreign exchange earnings (Okumadewa, 2007).

Nigeria has traditionally had an abundant supply of resources, and this has led to the development of several infrastructure and agricultural support initiatives in the public sector. These include agricultural research extension, commodity trading, and input supply as well as land use regulations, all of which facilitate agricultural expansion. Prior to the implementation of the SAP in the agriculture sector, many projects and activities were undertaken to promote the growth and development of the agricultural industry. In addition to this, the government has instituted low interest rate policies supported by the 1970s and early 1980s. The establishment of specialized banks which are focused only on financing to the sector, with subsidies for raw materials, and the regulation of prices on the commodity exchanges (Kargbo,

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2006). Following the launch of the structural adjustment program (SAP), a uniform agricultural extension system was put in place to improve husbandry techniques and research findings and to increase farmers' access to such techniques and outcomes.

As an additional measure, more agricultural institutes and research institutes have been built in Nigeria, with the goal of diversifying and increasing the level of agricultural research. Additionally, international and nongovernmental organizations such as the World Bank and the United Nations food and agricultural organization contribute to the improvement of farmer productivity by financing, providing supplies, and increasing technical capacity in order to promote agricultural growth. The organizations' main strategies include implementing monetary policies such as credit channeling, which funds farmers, along with financial policies like price stability and monetary annexes, which keep prices stable (Markuser, 1995). Despite these measures, the agricultural sector's performance has been universally considered as deplorable, and the significant role that it is anticipated to play in Nigeria's economic and social growth is just an expectation at this time (Ukpong 1993).

The Nigeria Agricultural Cooperative and Rural Development Bank (or NACRD) was Nigeria's most important development financing organization. After the successful merger of the People's Bank of Nigeria (P.B.N) with the defunct Nigeria Agricultural and Cooperative Bank (NACB) Ltd., the new bank was founded. Thus, in 2000, the Nigeria Agricultural Cooperative and Rural Development Bank was revived and reopened in 2001, having been defunct for about 15 years. One of the key goals of the bank is to help facilitate agricultural financing in both rural and urban locations, as well as microfinance for small and medium-sized enterprises in Nigeria. the main objectives of this research are to elucidate the significant issues hindering Nigeria's agricultural growth and development and to describe the results of the operations and performance of the Nigeria agricultural cooperative and rural development bank plc (NACRDB).

Despite the rich natural resources Nigeria has to offer, the agricultural business has had difficulty in the last several years, according to the information. Even though the country has limited access to credit facilities, this hasn't stopped the agricultural sector from playing a major role in helping the country's economy grow and develop. The lack of access to credit, coupled with inefficient allocation of financial resources and its non-exercise by the agricultural sector, has prompted perceptions that agricultural development in Nigeria has been constrained by a host of social-economic and structural problems, such as: financial shortfalls; ineffective and misdirected allocation of funds; lack of access to adequate information Interest rates on loan facilities are problematic for farmers in Nigeria, and in certain cases inhibit their ability to get money. people leaving the countryside for urban settings Unprofitable institutions saddled with the burden of policy implementation end up engendering numerous ill practices such as social discrimination, embezzlement of public funds, and a failure on the part of farmers to utilize credit granted due to the high level of illiteracy and the dearth of adequate formal training. These negative occurrences are due to excessive food importation that drives up prices, but the country's abundant natural resources and land make this alternative more feasible.

The purpose of this research is to give advice on how to increase agricultural financing and commerce in Nigeria.

Review of Related Literature

agriculture finance is a phrase that is used to describe resources (either public or private) that are provided in the form of equity, gift, or loan to facilitate social well-being through agricultural expansion (Shreiner and Yaron, 2001). A wide range of resources comes into play:

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Government and other public funds are supported, as well as money raised from sources such as nonprofit organizations that provide matching grants in support of community and sector growth, income equality, and local empowerment. As opposed to using private funds, public funds are subsidized. However, no matter how much the contribution is, if it is not tax-deductible or if the market price is modified by a government guarantee of a development finance institution's responsibilities, then it is not considered private funding (Shreniner and Yaron, 2001).

To address the problems of agricultural finance and poor agricultural output, the Nigerian government developed a range of strategies, organizations, and initiatives to increase the agricultural sector's capacity for production (Nwakwo, 2013). Agricultural financing schemes are made up of a variety of financial instruments or programs put in place by governments at all levels to ease farmers' access to capital for agricultural production increase. The insurance programs safeguard farmers and provide financial help in the event of crop loss due to natural catastrophes, diseases, or pests. They also encourage farmers to use sophisticated technology, high-value inputs, and modern agricultural processes (Adejumo & Bolarinwa, 2017). This program is essential since it was formed in 1977, and it is a vital part of the Agricultural Credit Guarantee Scheme (ACGS). as stated by Oguoma et al, (2010) these other projects, among them the setting up of the Nigerian Agricultural Cooperative and Rural Development Bank; rural banking; River Basin Authorities; agricultural development projects in all of the federation's states between 1972 and 1980; crop loans; produce marketing loan schemes; warehouse receipt loan schemes; and agricultural term loans, have all been proposed as part of a large-scale overhaul of agricultural development initiatives throughout the country, as reported by the aforementioned scholars (see also Egwu, 2016). To accomplish one of the main goals of the agricultural finance strategies, which is to make banks more comfortable lending to farmers by lowering the risks involved and also to reduce the costs of money, a reduced cost is provided for money lending, while farmers have access to multiple money options when they are due (Mafimesebi, Oguntade and Mafimisebi, 2009). The goal of agricultural financing, according to Kehinde (2012), is to assist farmers in improving their rate of food production in order to secure national food security. As a result, agricultural funding flows to the agricultural sector, resulting in an increase in the efficiency and effectiveness of the scheme's operations. Because of its importance, governments at all levels – federal, state, and municipal – have developed their own versions of agricultural support programs, resulting in increased agricultural productivity in Nigeria (Ijaiya et al., 2017; Kehinde, 2012). A variety of obstacles stand in the way of agricultural financing in Nigeria, according to the study done (Enyim et al., 2013).

Agricultural Credit and Finance

There is another condition that is essential for agricultural activity to be relevant, and that is the availability of adequate finance to support agricultural production. All around the world, the agricultural loan industry is made up of financial institutions and units that are capable of effectively lending resources to encourage the development of farm goods, crops, and animals. The financial markets in this country are mostly controlled by deposit money banks (DMBs), as well as other financial institutions, corporations, and regular individuals. But it's also important to note that there are certain niche organizations, such as the NACRDB (the principal agricultural financing institution in Nigeria), which is owned by the agricultural cooperatives in the country.

Banks have a big role to play in this whole process and will continue to do so due to the complementary bundle of incentives. As a result, life insurance firms could be able to identify

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effective methods to allocate their long-term resources by acquiring equipment for rental. We may assume that the informal financial market, which includes cooperatives, families, and friends, would continue to function as normal. In order to help farmers get the funding necessary to conduct farming operations, farmers had to belong to one of a number of different groups (Udry, 1993; Steel et al., 1997). size is important when negotiating terms and prices of loans, although farmers are few and far between who are very large When deregulation was put in place, banks were expected to follow the lead of the agricultural sector, which benefitted greatly during the sectoral allocation era. This expectation no longer holds true, however, since it is too costly to maintain compliance under deregulation.

Theoretical Framework

The Theory of Structural Change is the foundation of the study. Structural Change Theory (also known as development with an unending supply of labor) was developed by Lewis Arthur in 1954 and has ever since been referred to as "development with an unending supply of labor." The economic theory referred to assumes that an economy consists of two distinct sectors. The traditional sector (agricultural or subsistence) and the modern sector (capitalist, industrial, or manufacturing) are two separate types of businesses. The creation of the two-sector model occurred as a consequence of this. While an economy's growth is dependent on both the two sectors growing, this study argues that economic growth is also dependent on the development of the two sectors. The equation is Y = f (AGRIC, IND), where Y is the measurement of economic development, AGRIC refers to agriculture, and IND refers to industry. Because of the interdependence between agriculture and industry, it is impossible to consider one without the other. The agricultural sector is both a provider of capital inputs and an absorbent of industrial sector products, while the industrial sector is both a provider of agriculture sector labor and an exporter of finished goods. The point of this study is essential to growing the agriculture industry since no money is possible in the absence of a hypothesis. In order to have agricultural programs well supported, it is necessary to support these programs. Providing enough funding to these programs will result in a rise in agricultural output, which in turn will help foster economic growth. In all likelihood, other changes or strategies will be useless, or may even be harmful, unless they are complemented by complementary structural changes that boost productivity.

Empirical Literature

A major goal in the research has been to investigate how health care costs relate to the overall economy. While Rehman et al, (2015) used an error correction model to analyze the role of agricultural production in Nigeria's economic development, (the study) found that there was a connection between agricultural production and Nigeria's economic growth. Based on these facts, it can be concluded that agriculture's future growth will depend on adequate money, as opposed to any other kind of resource farmers might benefit from. Kareem (2010) reports that credit for farmers boosts growth, productivity, and output in addition to agricultural practices. Joseph & Daniel (2013) found that credit for farmers had a substantial impact on agriculture output in Nigeria, using a cointegration methodology. In addition, the presence of cointegration suggests that the historical value of gross domestic product had a major positive influence on agricultural output, whereas the inflation rate, loan rate, and exchange rate all had major negative effects on agricultural output. Bassey et al, (2014) looked at the link between the use of bank loan in agriculture and productivity in Nigeria between 1970 and 2011. Using the Ordinary Least Square (OLS) regression methodology, the results show that in order to boost agricultural GDP, the government and other financial stakeholders should put priority on sector investment. The thesis of this study, completed by Basir (2012), is that banks historically

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carried out three duties in the Nigerian economy: the financing of agriculture, manufacturing, and syndicating credit to the productive sectors of the economy. Lending to the Nigerian economy has expanded over time according to this research.

For the study by Ogbanje, Yahaya, and Kolawole (2012), descriptive and inferential statistics were employed to analyze the connection between commercial banking sector loans and agricultural development in Nigeria from 1981 to 2007. Based on these statistics, it can be concluded that commercial bank loans to the farm sector rose dramatically between 1981 and 1991, and then more than tripled in the following decades. As a result, commercial banks showed a significant commitment to the growth of the agricultural industry in Nigeria. Additional findings reveal that commercial banks' lending to the agricultural sector has a considerable and rising influence on the contribution of the agricultural sector to GDP in Nigeria. These researchers, Agunuwa et al, (2015), use the Ordinary Least Squares (OLS) methodology to study the impact of commercial bank loans on agricultural productivity in Nigeria. This implies that there is a positive linkage between commercial bank lending, government spending, and agricultural output, but a negative relationship between interest rates and agricultural output. The method used by Obilor (2013) included using the Ordinary Least Square (OLS) technique in order to assess the impact of deposits by lending funds to the agricultural sector in Nigeria through the Agricultural Credit Guarantee Scheme Fund (ACGSF). The research reveals that all of the above aforementioned actions (in particular, the action of deposit money banks lending to the agricultural sector, agricultural credit guarantee loans, government financial assistance to the agricultural sector, and agricultural produce prices) are crucial in affecting agricultural production in Nigeria. Additional analyses, for example, were done by Udensi, Orebiyi, Ohajianya, and Eze (2012) using the Two-Stage Least Squares (TSLS) regression approach to look at the connection between macroeconomic issues and the Nigerian agricultural sector. The research discovered that nominal interest rate, government spending on agriculture, and global prices of the main agricultural commodities in Nigeria are all positively correlated to the agricultural sector index, whereas inflation is negatively correlated to the agricultural sector index in Nigeria. In order to explore the effects of bank lending on economic development in Nigeria from 1987 to 2012, the Mamman and Hashim (2014) team used a multiple regression model. They found that bank lending had a considerable impact on growth. Additionally, in study conducted by Obasi, P. (2015), it was shown that commercial bank loans had a great progressive influence on Nigeria's economic growth from 1992 to 2012.

Methods

The primary objective of this study is to examine the impact of agricultural finance on the performance of the agricultural industry in Nigeria. A retrospective research methodology was used to investigate the reasons behind the erroneous forecast. The importance of ex-post-facto research is stressed by Christev et al., (2005) and Chowdhury (1993), both of whom argue that it offers a systematic and empirical approach to answering research difficulties by utilising previously-existing data. Data for this study was gathered from several sources, including the Statistical Bulletin from the Central Bank of Nigeria, as well as annual reports and statement of accounts.

Model Specification

The empirical model utilized in this work is comparable to those used by Arize (2004), Abbott (2004), Adebayo & Ogunrinola (2006), Adubi & Okunmadewa (2007) in their empirical analyses of the link between agricultural financing and trade flows in Nigeria, as well as the expected revenue losses. The chosen model's functional form is as follows:

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IAP = f(FGRE, FGCE, OAC, SDCML)..... (3) (3.1)

Their model was stated in the following econometric form:

IAP = 0+1FGRE+2FGCE+3OAC+4SDCLML+t .....(3.2)

Where IAP denotes the agricultural production index.

FGRE = Federal Government's Annual Agriculture Expenditure

OAC refers to the Fund's operation of the Agricultural Credit Guarantee Scheme.

SDCML is an acronym for Sectoral Distribution of Bank Loans to Agriculture.

The model and terminology used in the preceding research will be updated for this investigation. In accordance with past research, our models will thus be mathematically stated as follows in regard to each of the hypotheses:

AGDP = F(,ACGS, CBLA, ARF, GEA, INT) (3.3) The following econometric form was given for the model to be used in this study:

AGDPt = 0 + 1 log ACGSt + 2 log CBLAt + 3 log ARFt + 4 log GEAt + 5 log INTt + I (1.40)

When:

AGDP = Agriculture's contribution to GDP

ACGS is an abbreviation for Agricultural Credit Guarantee Scheme.

CBLA is an abbreviation for commercial banks lending to agricultural.

ARF is an abbreviation for annual rainfall (measured in millimeter)

GEA stands for government spending on agriculture; INT stands for interest rate on loans.

While 0,1,2,... 5 are parameters or coefficients, and = error term and time variables, respectively.

The equations are the usual reduced form solutions of the long-run behavioural demand and supply functions for exports and imports, respectively (Arize 2004; Adubi, & Okunmadewa 2000).

Technique for Data Estimation

The results of this study employed a range of estimation approaches to study the impact of agricultural finance on the agricultural sector's performance in Nigeria. There are other approaches to choose from, including the Augmented Dickey-Fuller (ADF) unit root test and the Johasen cointegration test. A modern algorithm called the Johansen maximum likelihood estimation procedure and the vector error correction model was used to analyze the data (VECM);

Results and Discussion

Data Presentation and Analysis

The conclusions of the data analysis are reported in tables. Statistics based on annual time series data are sourced from the Statistical Bulletin and Annual Reports of the Central Bank of Nigeria, as well as the Nigerian Bureau of Statistics (comprising both explained and explanatory variables) While AGDP was used as a proxy for the dependent variable, the agricultural credit guarantee programs, commercial bank loans to agriculture, government

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expenditures on agriculture, annual precipitation, and lending interest rate were used as proxy variables for the explanatory factors.

Table 1. Augmented Dickey Fuller (ADF) and Phillips Perron (PP) Test for unit root

Variables	**Augmented Dickey Fuller (ADF)**			**Phillips Perron (PP)**		
	Level	**First Difference**	**OI**	**Level**	**First Difference**	**OI**
AGDP	-1.418157	-4.691036***	I(1)	-1.024165	-4.862289***	I(1)
Agricultural credit guarantee scheme	-2.343551	-7.512540***	I(1)	-2.185458	-8.866598***	I(1)
Commercial banks loan to agriculture	1.672373	-3.500676***	I(1)	1.797566	-3.783945***	I(1)
Annual rain fall	-2.427334	-10.34271***		-2.427334	-12.60189***	I(1)
Government expenditure on agriculture	-3.123423	-9.346835		-3.002690	-20.27406***	I(1)
Interest rate	-3.026997	-6.789002***	I(1)	-2.917101	-8.410107***	I(1)
Test critical values:	-3.621023	-3.626784		-3.621023	-3.626784	
	-2.943427	-2.945842		-2.943427	-2.945842	
	-2.610263	-2.611531		-2.610263	-2.611531	

Source: *,**,*** indicate statistical significance at 1%, 5%, and 10% respectively. OI signifies order of integration

None of the variables were constant at the level of the table, as seen in Table 1. By making this comparison, it may be demonstrated that the observed values (in absolute terms) of the augmented Dickey fuller (ADF) and Phillips Perron test statistics are equal to the critical value (also in absolute terms) at the 1 percent, 5 percent, and 10 percent level of significance. This meant that once all the variables had a similar starting value, they all came to rest at the same moment, integrating together in the same order. This result suggests that the cointegration analysis is relevant to this investigation.

Johansen Maximum Likelihood test of Co-integration

Once the integration sequence is determined, co-integration is used to uncover long-term correlations among the variables. To check for the presence of cointegration, the Johansen cointegration test was used to identify a vector autoregressive (VAR) model of the VAR equation for order K:

$\Delta yt = \pi yt\text{-}1+\sum\_(i=1)^k r\_i\ \Delta yt\text{-}i+\beta xt+\varepsilon t$

In this situation, the Δ is a difference operator, whereas Ytis a vector of non-stationary variables (n).

The primary goal of this test is to demonstrate if a linear combination of integrated variables is able to maintain its stability over time; if this is the case, it means that cointegration exists between the variables; and since the variables have a long-term connection, it means that the variables are closely interrelated. This procedure was implemented by applying the trace test to Johansen's maximum Eigen value, together with a count of cointegrating relations to get the total number of cointegrating relations (or rank). Table 2 summarizes the results for the export model.

Table 2. Johansen Co-Integration Test for Agricultural Growth Model

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No. of co-integrating equation	Trace statistics		Maxi-Eigen value	
	Statistic	**5 percent CV**	**Statistic**	**5 percent CV**
None *	123.9687	95.75366***	49.09599	40.07757***
At most 1 *	74.87270	69.81889**	29.00901	33.87687***
At most 2	45.86369	47.85613*	23.19072	27.58434
At most 3	22.67296	29.79707	12.82561	21.13162
At most 4	9.847356	15.49471	8.145797	14.26460
At most 5	1.701559	3.841466	1.701559	3.841466

Source: Computed by the Author using e-view 10.0. Note: ***, ** and * represented 1%, 5% and 10 levels of significance respectively.

Table 2 presents the findings of the Max-Eigen value and Trace test, along with their respective p-values and degrees of significance. In the trace test, the null hypothesis (H0) that there is no co-integration between the variables was rejected, however in the maximum Eigen value test, the null hypothesis (H0) that there is no co-integration between the variables was not rejected. A statistically significant result suggests that they support a single co-integrating equation at the 5% level of significance. The long-run equilibrium is shown by the cointegration test which reveals that agricultural GDP, ACGS, CBLA, annual rain fall, GEA, and interest rate are all held in proportion to one another over time. Following this, the study carried out a long-term vector autoregressive (VAR) estimate of the agricultural development model in order to explore the link between the variables given in Table 4.5 below:

Long-Run Vector Auto-Regression Estimate for the Agricultural Growth Model

Because of the logarithmic shape of our model, calculated coefficients may be regarded as long-run elasticity, and the t-statistics and probability were used to establish the statistical significance of each variable. In statistical terms, a variable is said to be statistically significant if the absolute value of its t-statistic is around 2 or more.

Table 3. Long-run Relationship (Agricultural growth model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGDP(-1	0.680837	0.230464	2.954202	0.0071***
AGDP(-2)	0.432462	0.261202	1.655663	0.1114
ACGS(-1)	0.030121	7.18E-05	3.679932	0.0065***
ACGS(-2)	9.08E-05	8.53E-05	1.064729	0.2980
ARF(-1)	0.438255	0.484329	0.904869	0.3749
ARF(-2)	-0.254371	0.479967	-0.529976	0.6012
CBLA(-1)	0.205415	0.271275	2.357220	0.0166**
CBLA(-2)	-0.511598	0.259518	-1.971343	0.0608*
GEA(-1)	0.000889	0.011277	0.078854	0.9378
GEA(-2)	0.011766	0.010944	1.075115	0.2935
INTR(-1)	-0.919051	36.71564	-0.025032	0.9802
INTR(-2)	-1.279436	36.44390	-0.035107	0.9723
C(-1)	-613.9126	2013.481	-0.304901	0.7632
R-squared	0.991712	Mean dependent var		6058.600
Adjusted R-squared	0.987388	S.D. dependent var		6930.935
F-statistic	229.3480***	Durbin-Watson stat		2.354660
Prob(F-statistic)	0.000000			

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Source: Computed by the author using E-view 10 econometric and statistical package with data obtained from CBN statistical bulletin and IMF. Note: *** = significant at 1%; ** = significant at 5%.

It was the long-term Vector Auto regression result in Table 4 that showed that agricultural GDP has shown a significant increase throughout the previous period but has seen more modest growth in recent years. This reveals that the agricultural sector saw a period of growth throughout the early years, but this next period was marked by a gradual decrease. The use of agricultural loan guarantee programs was statistically significant and highly elastic in its association with agricultural sector performance. Since changing the agricultural credit guarantee system would result in a comparable change in the agricultural sector, the implication is that in the long term, the agricultural credit guarantee system will affect the agricultural sector. But, on the other hand, it was found that commercial banks' financing to agriculture had an equally big impact on the long-term outlook.

This study demonstrates that interest rates had a neutral but insignificant impact on agricultural GDP performance in the long term, but banks' lending to agriculture had a substantial and elastic effect on agricultural GDP performance in Nigeria. In contrast, rain did have a significant negative but insignificant effect on agricultural GDP performance in the long term, but did not affect agricultural GDP changes in this study. To put it more precisely, the coefficient value of 0.030121 for the agricultural credit guarantee program at the 5% level shows that an increase in agricultural credit would result in a 3% decrease in the performance of the agricultural sector in Nigeria over the specified time period. On the other hand, commercial bank loan to agriculture had a coefficient of 0.205415 at the 5 percent significance level, meaning that a unit change in commercial bank loan to agriculture would result in an increase of 20.54 percent in the agricultural sector in Nigeria during the period under consideration. According to previous theoretical assumptions, agricultural loans in Nigeria should have favorable correlations with agricultural sector growth. However, this research shows a contradictory link between agricultural loans and agricultural sector growth in Nigeria. R2, which shows how much of the variation in the dependent variable is explained by all the components included in the model, has a value of 0.9917, while the Durbin-Watson statistic of 2.354 shows that serial correlation does not exist in the model. As a result of this discovery, the development of agricultural finance has the potential to affect the long-term growth of the Nigerian agricultural sector. The current study finds a positive correlation between the number of agricultural loans a country has obtained and its total exports. Iganiga & Unemhilin (2011) and Kareem (2010) discovered a direct link between agricultural loans and exports for countries and Nigeria, respectively.

Vector Error Correction Model

The ECM coefficient is sometimes referred to as the speed of adjustment factor; it indicates how quickly the system changes in order to reestablish equilibrium. It represents the variables' reconciliation through time from their state of disequilibrium to their state of equilibrium. The vector correction model's (VECM) output is provided in Table 5; the fundamental requirements for VECM analysis are as follows: (1) The VECM must lie between 0 and 1; (2) It must be negative for it to be meaningful. If it is positive there is no error correction and therefore diverges; and (4) The t-statistic must be significant.

Table 4. Vector Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECM(-1))	-0.186237	0.026564	-7.010825	0.0000***

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D(AGDP(-1))	-0.654380	0.165094	-3.963688	0.0007***
D(AGDP(-2))	-0.474878	0.174713	-2.718052	0.0129**
D(ACGS(-1))	-0.020249	5.60E-05	-4.442866	0.0002***
D(ACGS(-2))	-0.010199	5.96E-05	-3.337409	0.0031***
D(ARF(-1))	-0.124046	0.276896	-0.447986	0.6588
D(ARF(-2))	-0.754052	0.294877	-2.557170	0.0184**
D(CBLA(-1))	0.522954	0.192152	2.721566	0.0128**
D(CBLA(-2))	0.376676	0.192322	1.958569	0.0636*
D(GEA(-1))	-0.028804	0.006363	-4.526833	0.0002***
D(GEA(-2))	-0.018589	0.006146	-3.024594	0.0064***
D(INTR(-1))	-18.09514	20.02492	-0.903631	0.3764
D(INTR(-2))	-14.65940	19.07672	-0.768445	0.4508
C(-1)	898.7139	135.6780	6.623872	0.0000***
R-squared	0.811127	Mean dependent var		513.2589
Adjusted R-squared	0.694206	S.D. dependent var		862.6659
F-statistic	6.937384***	Durbin-Watson stat		2.084126
Prob(F-statistic)	0.000054			

Source: Computed by the author using E-view 10 econometric and statistical package with data obtained from CBN statistical bulletin and IMF. Note: *** = significant at 1%; ** = significant at 5%.

The initial value shown in Table 4 for the coefficient of the error correcting technique ECM(-1)-0.186237 was obtained. The VECM has a coefficient that is appropriately signed, with a value that varies between 0 and 1. Once these requirements are met, it is a sign that the model is capable of correcting for faults that occurred during the short run, because it is on its way to reaching long-term equilibrium. It may be specified in more detail, which is that, in the model shown, about 18.62% of errors that occur between two subsequent periods are linked to other errors that occur after these periods. The problems with our model are just temporary, thus we can be certain about the long-term association we found and our findings are correct.

The derived model is statistically significant, as can be shown from the F-statistic (6.9373 at 5 percent level of significance). This statistic, known as the coefficient of multiple determination, or R2, measures the total variation in the dependent variable that the independent variables accounted for. This illustration serves to highlight the adequacy of the model for the variables used in the model. Statistically significant, but while the value of agricultural GDP was significant, indicating adaptability and a propensity to generate profits within the shortest time possible, agricultural credit guarantee scheme was not significant, but was negatively correlated with agricultural GDP in the short run at the 1% significance level, implying that a one unit decrease in agricultural credit guarantee scheme will result in t.

In the near term, commercial banks' lending to agriculture had a positive impact and had a statistical significance of around 5 percent. This shows that an increase in commercial bank lending to agriculture would result in comparable increases of 57% and 37% in agricultural GDP, which is utilized to represent agricultural sector performance in this study. While annual rainfall had a statistically significant negative affect on the performance of the agricultural sector, however, annual rainfall had a positive impact on the fisheries sector. A unit reduction in rain precipitation causes a 75% fall in the agricultural sector's performance during the reference period. A third factor that decreased agricultural GDP changes was the fact that the government invested a large amount of money in agriculture. As you can see from the coefficients of GEA (specifically, the values at the 5% significance level: -0.2880 and -

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0.018589), which indicate decreases in government investment on agriculture contributed greatly to the country's agricultural inefficiency during the reference period, GEA suggests that the overall decrease in government investment on agriculture caused this significant agricultural inefficiency. A number of variables (i.e., excluding the effect of lending interest rates) have a significant impact on short-term changes in agricultural GDP. If the other characteristics are addressed, it is likely that they will have a significant impact on the sector's success. On the other hand, this finding is congruent with the aforementioned research by Iganiga & Unemhilin (2011).

A test value for GEA is found to be [-4.526833] when a research team run multiple t-tests and found that it significantly deviates from a critical value. GEA has a probability value of 0.0002, meaning that this difference is highly likely to happen by chance, which has been validated through multiple tests. After analysis, the study rejected the null hypothesis, which maintained that GEA had no impact on AGDP in Nigeria, and supported the alternative hypothesis, which said that GEA had a significant impact on AGDP in Nigeria.

Conclusion

In order to examine the effects of agricultural financing on the agricultural sector in Nigeria, a time series analysis and a vector error-correction model were used. It is unique in comparison to previous research, since it used an unrestricted vector Autoregressive estimate (VAR) to determine the transmission rate between variables. It additionally follows established standard model formations in the literature by including the most recent data from the CBN statistical bulletin and the World Bank, ensuring that the study period is sufficient to uncover any current issues. This study found that agricultural finance has a significant impact on the performance of the agricultural sector in Nigeria between the time period under study and the present day; (1) The paper suggests increasing the annual infusion of money into the agricultural credit guarantee programme, and establishing suitable regulatory mechanisms to ensure the money is put to use and put to effective use; (2) Banks should be more proactive in promoting the growth of the agricultural sector by providing loans and advances to individuals as necessary in order to encourage them to get involved in larger-scale commercial farming; (3) Because water is such a precious resource, the federal government should embark on a huge irrigation project to help resolve the long-term issue of water availability, and that will help eliminate gaps caused by dry seasons, which will allow for the uninterrupted supply of agricultural output all year round; (4) Another way to boost agricultural investment is to boost the government's expenditure on it. This would make the sector highly leveraged when it comes to fertilizers and heavy gear. The sector's productivity will always grow as a result of this action

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