

The Impact of Banks' and Public Sector's Financing Activities on Agricultural Output in Nigeria

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Abstract

The study examined the impact of banks' and public sector's financing activities on agricultural output in Nigeria. Towards this background, the paper looked at the Nigeria budgetary allocation to the agricultural sector between 1990 and 2007. An analysis was performed using SPSS. The study discovered that the joint action of commercial banks' credit to the agricultural sector, government financial allocation to agriculture and agricultural products prices are significant factors that can influence agricultural production in Nigeria. The study recommended that Banks should be encouraged to assist such institutions that are engaged in agricultural financing and that Agricultural financing should be given paramount attention in policy formulation.

Keywords: Agricultural output, Public sector's finance, Agricultural finance policies, Agricultural output. Agricultural Product Price Index

1.0 Introduction

As confirmed by Ugochukwu (1999:02), agriculture is the first and most thriven occupation of mankind. Anyanwu (1997:213) posits that "agriculture has been the main source of gainful employment from which Nigeria nation can feed its feeding population. Agriculture occupies a priority status in Nigeria as the sector serves as the key driver of growth, wealth creation and poverty reduction for a large portion of the population.

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It accounts for about 70% of employment, and in spite of this Binswanger, et al (1999:23) say it has not been able to achieve the major objectives of agricultural development which the World Bank (1997) indentified to include; (I) increase in food production and farm income, (ii) make household food, water and energy secure and (iii) restore and maintain the natural resources. They stated further that the failure of agriculture to meet these objectives is due to limited use of purchased inputs and mechanization.

Over the years, there have been efforts by various governments to diversify the economy. Policies have been initiated, committees set up but the seemingly good initiatives have been marred by little commitment from government. For the agricultural sector, successive governments have made serious efforts at making good agricultural policies through schemes, programmes and institutions, they however, have not been able to back them up with adequate budgetary allocation and financing coupled with corruption in the execution of the policies.

With several uncertainties such as inadequate funding, resource scarcity, heightened risks from climate change, higher energy prices, demand for bio-fuels and doubts about the speed of technical progress, the future of the agricultural sector of the nation's economy remains gloomy.

In situations where funds are available, the high interest rate being charged on bank loans; banks' lopsided method of disbursing loans; poor policy implementation, and paucity of funds have been identified as some of the critical challenges facing the country's farmers. . However, Ogunfowora et al (1972:35) attributed most of the short comings on institutional credits in Nigeria to factors such as, ineffective supervision or monitoring insufficient funds, political interference, cumbersome and time consuming loan processing, large loan defaults and absence of financial projections.

Due to the peculiarities of the agricultural sector like the long gestation periods for agricultural production; the risks and uncertainties from natural causes and the predominance of small scale producers with little asset base and working capital, the sector has continued to receive less attention.

Nigerian agricultural policy provides, among others, for adequate financing of agriculture. The role of finance in agriculture, just like in the industrial and service sectors, cannot be over-emphasized, given that it is the oil that lubricates production.

Higgins (1980:37) states his position most plainly by arguing that the only means to a cumulative improvement in agricultural productivity is a public policy designed to move to large-scale agriculture and encouraging a rapid rate of industrialization. Public expenditure on agriculture has, however, been shown not to be substantial enough to meet the objective of the Government agricultural policies (IFPRI, 2008).

The objective of agricultural financing policies in Nigeria is to establish an effective system of sustainable agricultural financing schemes, programmes and institutions that could provide micro and macro credit facilities for the micro, small, medium and large scale producers, processors and marketers.

1.1 Objectives of the Study

The objectives of this study are stated hereunder as follows.

To determine the impact of agricultural output on economic growth in Nigeria

- i. To investigate the extent to which commercial bank credit had supported agricultural output in Nigeria..
- ii. To determine the impact of government fund allocation to agriculture on agricultural productivity in Nigeria.
- iii. To evaluate whether the agricultural product prices enhances agricultural productivity.

1.2 Hypothesis

- i. H_0 : Commercial bank's credit to agriculture has not impacted positively to agricultural productivity in Nigeria.
- ii. H_0 : Government fund allocation to agricultural sector has not led to any significant growth in agricultural productivity in Nigeria.
- iii. H_0 : Prices of agricultural products have not made any significant positive impact on agricultural productivity in Nigeria.

2.1 Overview of Government and Banks' Roles in Agricultural Finance in Nigeria

Since independence in 1960, successive Nigerian governments have made efforts to address the problem of lack of access to credit to the rural poor. In recognition of the vital role of small-scale farmers in wealth creation, the GON has experimented with various financing initiatives. These are largely subsidized, targeted credit programs to promote agricultural production and improve the lives of smallholders. It was in recognition of the downward trend observed in agricultural productivity that the Federal Government of Nigeria at various periods put in place credit policies and established credit institutions and schemes that could facilitate the flow of agricultural credit to farmers (Adegeye and Dittoh, (1985:28)). The following are the most important of the formal, mostly government financial schemes and institutions:

- i. Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB):** The Nigerian Agricultural and Co operative Bank (NACB) was established in 1973 as part of government's effort to inject oil wealth into the agricultural sector through the provision of credit facilities to support agriculture and agro-allied businesses (Olagunju, 2000:74). Jointly owned by the Government of Nigeria (GON) and the Central Bank of Nigeria (CBN), it plays the role of providing finance in the rural landscape. In practice, its deposit mobilization and credit services are also extended to urban clients. The bank is required to lend 70% of its loan portfolio at single digit interest rates through loans of 250,000 Naira (\$1,666) or less (Anyanwu et. al 1997:54, Yesuf 1996:43). The very low repayment rates and the interest rate cap have both been found to undermine the viability of the institution as well as restricting its ability to satisfy the demand for loans from its target clientele.
- ii. The People.s Bank of Nigeria (PBN):** Created in the early 1990s through a military Decree in order to reach the unbanked public, it essentially provided micro credit of 250,000 Naira (\$1,666) or less to clients at a service charge of 20%. Clients had to have compulsory savings of 30% of the loan amount on hand when they obtained their loan (less (Anyanwu et. al 1997).
- iii. The Community Bank (CB):** was set up with the goal of encouraging locally-owned savings and loans institutions to meet the needs of the rural population not served by the commercial banks and government owned banks. The imposition of the ceiling on interest rates led to an inability of many CBs to recover their costs and eventually many became distressed.

- iv. Microfinance Banks (MFI):** was introduced by the CBN in 2005 with the specific objective of making financial services accessible to a larger segment of the potentially productive Nigerian population who otherwise have no access to such services and permit them to contribute to rural transformation, promote synergy, and mainstream/graduate the informal subsector into the formal financial system. Through this microfinance policy, the CBN introduced a new regulatory and supervisory framework that made it compulsory for all institutions to obtain a new license and have a minimum share capital of 20 million Naira. Some modest success has been achieved, especially through the MFIs that are supported by NGOs. These are important financial providers for the rural poor in states such as Benue, Nassarawa and Bauchi, although their overall impact remains small. The limitation with NGO-MFIs is that they are prohibited from mobilizing deposits and find it difficult to grow.
- v. The National Poverty Eradication Program (NAPEP):** this currently has several micro-finance initiatives underway. From the onset, the program recognized the tendency for delinquency rates among borrowers to be higher for those who accessed government funds than those who access funds from commercial financial intermediaries. Building on the success with community approaches in the past, NAPEP loans are channeled through community-based financial intermediaries (CBN. 2009:102).
- vi. Financial Agricultural Cooperatives:** Rare in Nigeria due to traditional views on sharing personal wealth information, these tend to be found in the northern states of Gombe and Bauchi, where experience with cooperatives has been positive. Very little is known about them however, including their number. Small-scale cooperatives are common across the country since most formal financial providers will only lend to farmers through this vehicle. These cooperatives are usually stand-alone entities and are not federated under an apex body. In recent years, the GON promoted the formation of cooperatives in local communities and along commodity lines as a way of improving access to financing for the small-holder farmers. Cooperatives provide the required guarantees which the individual farmer cannot provide. Currently, there is a Directorate of Cooperatives in the Federal Ministry of Agriculture with more than 30,000 registered cooperatives spread across the country (CBN, 2009:98). Except for a few isolated cases, cooperatives have not helped to improve access to bank finance for the small-scale farmers.

- vii. The concept of cooperatives is alien to Nigerian farmers who tend to want to keep matters relating to their farm operation and finances in secret;
- viii. **Agricultural Credit Guarantee Scheme (ACGSF):** Set up since 1977, primarily to induce banks to increase and sustain lending to agriculture. Under the scheme, bank loans to farmers are guaranteed 75 percent against default by the CBN. Commercial Banks in the country see agricultural finance as development finance and they are generally not pro-development finance. According to Mafimisebi, Oguntade and Mafimisebi (2008:28) banks consider the guarantee provided under ACGSF as inadequate to build their confidence to finance a sector that is reputed for loan default. There is also the problem of a large backlog of unsettled claims, some of which span over twenty years. This is highly undesirable as it has eroded the confidence of banks in not only the scheme but also all other government initiatives to provide credit to the agricultural sector.
- ix. **Preferred Sector Allocation of Credits 1970-1996:** The GON mandated all commercial banks to allocate a minimum of 40% of their total loan portfolio to agriculture or be penalized. Virtually all the banks opted to pay the penalty. Ogunfowora et al (1972:41) posited that direct intervention by Government in lending to small-scale farmers did not only fail but it also planted a seed in farmers that government-backed loans are mere grants or "gifts". Traditionally, repayments defaults are very high for almost all of these government-supported efforts. This explains the unwillingness of commercial banks to finance small-scale farmers because of the poor loan repayment history, despite credit guarantees provided by the government. The problem is that these farmers often see such loans as their share of the "national cake" (i.e. national oil revenue) which they sometimes channel to non-farming activities, such as marrying new wives, vehicle purchase, etc.

2.2 Problems Militating against Effective Roles of Public Sector and Banks' Agricultural Financing Activities in Nigeria

The followings are some of the identified challenges of agricultural finances:

- i. **Lack of adequate skills to deliver services effectively.** Most of the credit institutions undertook lending to agriculture without the use of trained agricultural credit officers vested with knowledge of agriculture and the constraints to farmer performance. Additionally, supervision of credit programmes has often been below acceptable standards. Invariably, the schemes fail due to poor repayment performance (Titilola, 2008:28).

- ii. **Low management capacity of farmer-clients.** Most farmers who should benefit from the financing policies, especially the financing schemes, lack the basic skills of farm management, including record keeping. And when these are called up as requirement for accessing facilities, as is always the case, they become ineligible (Titilola, 2008:27).
- iii. **Unwillingness of conventional banks to support agriculture.** Even with mandatory (preferred sector) lending, guarantee of exposure and subsidized fund schemes, most banks prefer not to lend for farming, citing its lower productivity and higher risk relative to the non-agricultural sector as their reason Adegbite, Oloruntoba and Olaoye (2008) recommended that loans should be disbursed on time to farmers as at when due so that they can make use of it for agricultural production.
- iv. **Paucity of loanable funds.** Most of the loanable funds have come from government sources and is not sufficient for any meaningful agricultural investment. The government cannot do it all alone. This creates a finance supply deficit relative to demand. Statistics show that bank credit to agriculture as a proportion of total bank credit to the economy has hardly exceeded 17 per cent since recorded history in 1970, yet the sector contributes over 35 per cent of the gross domestic product annually (CBN, 2007:143).
- v. **Weak institutional support in the sector.** Infrastructure for processing and storage, land tenure systems, legal system for registration and perfection of collateral, judicial system for the enforcement of loan contracts and foreclosure of collateral, etc, are weak. This does not encourage private sector commitment to the agricultural financing policies (Dayo Phillip, Ephraim Nkonya, John Pender and Omobowale Ayoola Oni 2009:9).
- vi. **Poor funding of public financing institutions.** The NACRDB, for instance, has a capital base of N50 billion to be contributed to by the FGn and the CBN in a 60:40 ratio. However, as of date, about N23 billion has been paid up. DFRRl and other non-bank institutions were or have been similarly starved of funds. These institutions cannot deliver effectively in the face of this dearth in funding (Mafimisebi, Oguntade and Mafimisebi 2008:12).

3.1 Methodology

The study is focused on the impact of banks' and public sector's financing activities on agricultural output in Nigeria. So the data is based on secondary data.

The data used are the aggregate amount of the commercial banks' credit to agricultural sector in Nigeria because of the fluctuating performance, frequent liquidation and distress of these banks which made it difficult to obtain their individual records. The other data on government allocation to agricultural sector and agricultural product prices were obtained from published data of the Central Bank of Nigeria (CBN) Annual and Quarterly Reports, the CBN Statistical Bulletin and the Bullion.

3.2 Method of Data Analysis

In as much as the agricultural production output as the dependent variable of the study can be affected by the rate of change of some other factors, it is necessary and sufficient to denominate all those other variables as rates of change. These other variables include Commercial banks' credit to agriculture, government fund allocation to agriculture and, agricultural product price index. These are not all the identifiable factors associated with influencing the level of agricultural production output. In spite recognizing all these other variables, the fact remains that the researcher's major interest is focused on the banks' and public sectors financing activities on agricultural output.

Given the above explanation, our function on this study is taken as:

$$API = f(CBCA, GFAA, APPR).$$

Where

API = Agricultural Product Output Index;
 CBCA = Commercial Banks' Credit to the Agricultural Sector;
 GFAA = Government Fund Allocation to Agriculture.
 APPR = Agricultural Product Price.

The equation can be explicitly be specified in the following linear relationships:

$$API = b_0 + b_1CBCA + b_2GFAA + b_3APPR + e.$$

The b s represent the parameter estimates and e is the error term.

From the above model, we can now draw the following apriori inferences:

- i. If the independent variable API responds positively to the set of explanatory variables CBCA, GFAA and APPR as may be shown by the parameter estimates b_0 , b_1 and b_3 , we will conclude that agricultural production output can be positively influenced by these variables as mentioned above.
- ii. But where the parameter estimates obtained are insignificant by exhibiting negative signs and values, we will conclude that the variables do not influence significantly agricultural production output in Nigeria.

Regression analysis adopted by the Statistical Package for Social Sciences (SPSS) is used for the analysis. Furthermore, Analysis of Variance (ANOVA) is applied to test the significance of the relationship. The student t-distribution (t-test) is employed for the test of hypothesis. In the application of t-test, the decision rule stipulates that:

$H_0: b_1 = 0$ (statistical insignificance),

$H_A: b_1 \neq 0$ (statistical significance).

If t^* calculated $>$ t-tabulated at 5% level of confidence, we accept H_A and reject H_0 .
But if t^* calculated $<$ t-tabulated at 5% level of confidence, we accept H_0 and reject H_A .

4.1 Data Presentation

The data used are those concerning agricultural production output index and variables such as commercial banks' credit to agriculture, federal government financial allocation to agriculture and agricultural product price index, which falls within the time frame 1990 – 2007.

Table 4.2 is the general theoretical representation of the relationship between the agricultural production output (API) and the banks' credit to agricultural sector (CBCA), the federal government financial allocation to agriculture (FGAA) and the agricultural product price index (APPR) during the period under review. The relationship can be stated symbolically as shown below.

$$\partial API = f(\partial CBCA_t, \partial FGAA_t, \partial APPR_t \dots\dots\dots)$$

Where:

t = the current period;

∂ API = annual change in the commercial banks' credit to agriculture;

∂ FGAA = annual change in the federal government allocation to agriculture;

∂ APPR = annual change in the agricultural product price index;

∂ = the change in the variables.

The above equation means that agricultural production in Nigeria is hypothesized to be jointly determined by the four variables, which are the arguments of the equation.

The algebraic form of our statement as stated above could be expressed in the model as below:

$$\partial$$
API = ∂ b₀ + b₁ ∂ CBCA_t + b₂ ∂ FGAA_t + b₃ ∂ APPR_t + ... + U_t

Table 4.2 Data Presentation For The Study

Year	Agric Production Output API	Commercial Banks' Credit to Agric Sector CBCA N'000	Govt Financial Allocation to Agric Sector GFAA N'000	Agric. Products Price APPR (1985 = 100) Naira per ton
1990	167.5	4221.4	1758.5	646.0
1991	191.7	5012.7	551.2	568.0
1992	206.4	6978.9	763.0	918.0
1993	211.4	10753.0	1820.0	1247.0
1994	209.7	17888.8	2800.1	1519.0
1995	216.8	25278.7	4691.7	5227.0
1996	224.8	33264.1	3892.8	5866.3
1997	234.1	27939.3	6247.4	6083.5
1998	242.4	27180.7	8876.6	6940.6
1999	249.1	118518.3	6912.6	5277.0
2000	258.2	146504.5	5761.7	4099.7
2001	244.5	200856.2	57879.0	5640.8
2002	251.4	227617.6	32364.4	9684.6
2003	263.7	242185.7	8510.9	9442.8
2004	276.2	261558.6	48047.8	8261.0
2005	293.3	262005.5	79939.4	7881.9
2006	309.6	239752.3	15176.8	8131.7
2007	307.7	149578.9	22518.6	3828.4

Source: CBN Annual Report and CBN Statistical Bulletin

4.2.0 Results and Discussion

4.2.1 Analysis of the Impact of the Independent Factors on the Dependent Variable

$$\partial \text{API} = b_0 + b_1 \partial \text{CBCA}_t + b_2 \partial \text{FGAA}_t + b_3 \partial \text{APPR}_t + \dots + U_t$$

$$\text{API} = 202.757 + 0.000184 \text{CBCA} + 0.000130 \text{FGAA} + 0.002104 \text{APPR}$$

The above relationship model is generated based on the impact of Commercial banks' credit to agriculture (CBCA), Government financial allocation to agriculture (FGAA) and Agricultural product pricing index (APPR) during the period 1990 – 2007.

In the column **t-statistic**, the value of test statistics is provided to test that the hypothesis $\beta_i = 0$. The coefficients Constant (C), ACLP, and CBCA are statistically significant under a 5% level of significance as indicated by low P-values in the coefficients Table, column (**Sig**). The other coefficients (FGAA and APPR) are not statistically significant as indicated by their high probability values. The overall significance of the regression is reflected in the value of **F-statistic** which is high enough to reject the null hypothesis of the insignificance of all slope coefficients (p-value is given in the ANOVA Table **F(9.823)**, **Sig (0.001)**). The overall regression fit, as measured by the **R²** statistic **0.678**, indicates a moderate fit.

4.3 Testing of Hypothesis

Hypothesis One:

H_0 : Commercial Banks' credit to agricultural sector has not significantly influenced agricultural productivity in Nigeria.

Decision: This is tested using the t-test. From the table coefficients, the low probability value of 0.27 (which is lower than F-statistics (2.472)) indicates the non-significance of the null hypothesis. Thus, we accept the alternative hypothesis at 5% level of significance, and conclude that commercial banks' credit to agricultural sector for the period 1990 to 2007 has a significant positive impact on agricultural productivity in Nigeria.

Hypothesis Two:

H_0 : Government fund Allocation to the agricultural sector has not led to a significant positive growth in agricultural productivity.

Decision: The table coefficients reports the probability value as **0.749** which is higher than the absolute value of t-statistics (**-0.326**). This is indicative of the acceptance of the null hypothesis. Thus we conclude that government fund allocation to the agricultural sector has not led to a significant positive growth in agricultural productivity.

Hypothesis Three:

H_0 : Prices of agricultural products have not made any significant positive impact on agricultural productivity.

Decision: The high probability value suggests the rejection of H_0 . Thus we conclude that prices of agricultural products have made a significant positive impact on agricultural productivity.

5.1 Conclusion

From the statistical computation, analysis and findings of our test carried out, we found out that:

- i. The joint action of commercial banks' credit to the agricultural sector, government financial allocation to agriculture and agricultural products prices are significant factors that can influence agricultural production in Nigeria.
- ii. Commercial banks' credit for the period 1990 to 2007 has significant positive impact on agricultural productivity in Nigeria.
- iii. Government financial allocation to the agricultural sector has not produced any significant positive growth in agricultural productivity.
- iv. Prices of agricultural products have made a significant positive impact on agricultural productivity.

5.2 Recommendation

From the analysis carried so far, the following recommendations are made.

Banks should be encouraged to assist such institutions that are engaged in agricultural financing. This can be done by reducing the tax rate to be paid by banks that are engaged in agricultural lending up to a certain level.

Agricultural financing should be given paramount attention in policy formulation. Government presence in financing agriculture should be given greater attention.

Nigeria should encourage more international trade because gains from the trade contribute to agricultural output.

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Appendix

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	APPR, GFAA, CBCA ^a	.	Enter

a. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.823 ^a	.678	.609	2.440312017E1

a. Predictors: (Constant), APPR, GFAA, CBCA

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17549.211	3	5849.737	9.823	.001 ^a
	Residual	8337.172	14	595.512		
	Total	25886.383	17			

a. Predictors: (Constant), APPR, GFAA, CBCA b. Dependent Variable: API

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	202.757	11.499		17.633	.000
	CBCA	.000	.000	.747	2.472	.027
	GFAA	.000	.000	-.073	-.326	.749
	APPR	.002	.003	.159	.666	.516