Total Loans and Total Interest Rates from Government Owned Development Financial Institutions as a Determinant of Attainment of Food Security in Nigeria

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ABSTRACT

The study examined the total loans and total interest rates from government owned development financial institutions as determinants of attainment of food security in Nigeria. To guide the study, two specific objectives, research questions and null hypotheses, respectively, were formulated. Ex-Post Facto research design was adopted in the study. The study area was Nigeria. Annual data for this study was sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin for the period 2000-2018 as the periods of major financial and economic reforms aimed at enhancing agricultural sector financing and food security and the economic recession. Hence, food security (FOS) (dependent variable), total loans from government owned development financial institutions (TLG), and total interest rates on agricultural loans (TIRL) (independent variable) were used. Besides, total Central Bank of Nigeria interventions to agricultural sector (TLCBN) were under effective investigation. The data obtained were subjected to appropriate statistical techniques such as descriptive statistics and multiple regression in testing the hypotheses. For the inferential statistics, the test for significance was done at 0.05 alpha levels. The result of the descriptive analysis proved that the mean of the food security (FOS) was 89270804.7516, which is very high compared to the mean of the interest rates on agricultural loans, which stood at (18.7805), but lower than that of agricultural loans from government (13345118492.9579). Besides, the calculated value (0.538) had its corresponding P=value of 0.065, which was observed to be greater than 0.05. Based on the results, the study concluded that agricultural loans and interest rates from government-owned development financial institutions have no significant effect on the attainment of food security in Nigeria. One of the recommendations made was that government should increase loans from government owned development financial institutions to enable them to continue to contribute positively and significantly to the attainment of food security in Nigeria. This is because the increase in loans from government owned development financial institutions increases the level of attainment of food security in Nigeria.

KEYWORDS: Total Loans and Total Interest Rates, Government owned development financial institutions, Attainment of Food Security and Nigeria

Introduction

Sustaining growth in agriculture is a major factor in the eradication of poverty and hunger as it aids reasonable stability in the prices and availability of food, apart from being the foundation of export earnings that sustains the balance of payment equilibrium. It is worthy to note that for agriculture to attain the food security of the country, it requires adequate funding, which could be from the public sector of the economy. The Nigerian government has over the years pursued the objective of attaining food security through public-sector agricultural financing. Public sector agricultural financing is a means by which the government acts as a frontier that provides finance to the agricultural sector through different ways and channels for the sustenance of agriculture and food security in Nigeria (Iganiga and Unemhilin, 2014). Agricultural Finance has to do with the acquisition and utilisation of capital (i.e., finance), the factor of production that facilitates the acquisition, procurement, and management of the other factors of production, namely, land, labour, capital physical, and entrepreneurs (management), in agriculture, which is not only a lubricant but the livelihood of the economy. The objective of agricultural financing policies is to establish an effective system of sustainable agricultural credit schemes, programmes, and institutions that could provide micro and macro credit facilities for small, medium, and large-scale producers, processors, and marketers in the agricultural sector of the economy. Public sector financing in Nigeria could be done through the granting of loans from government-owned development financial institutions, grants and aids from government and other agencies (Iganiga and Unemhilin, 2014).

Statement of the Problem

The government at various levels in Nigeria has supported agricultural development through the implementation of various agricultural policies, programmes, schemes and the establishment of development financial institutions. For instance, the Bank of Agriculture (BOA), as a development financial institution, was established by the federal government to provide technical and financial support for agricultural sector development in Nigeria. The CBN has equally provided intervention funds for different agricultural schemes and programmes across different levels of government in Nigeria. Despite the concerted efforts of the government through the establishment of development financial institutions in the agricultural sector, in addition to the provision of different agricultural support services to its citizenry, attainment of food security appears to have remained largely unrealizable judging by the increasing food scarcity and sky rocketing food prices in Nigeria.

Objectives of the Study

The broad objective of the study is to investigate the total loans and total interest rates from government owned development financial institutions as a determinant of attainment of food security in Nigeria. The specific objectives of the study were as follows:

1. To determine the effect of loans from government owned development financial institutions on the attainment of food security in Nigeria.

2. To investigate the effect of interest rates on loans from government owned development financial institutions on the attainment of food security in Nigeria.

Research Questions

1. To what extent did agricultural loans from government owned development financial institutions affect the attainment of food security in Nigeria?

2. To what extent did interest rates on agricultural loans from government owned financial institutions affect the attainment of food security in Nigeria?

Research Hypotheses

The following hypotheses were formulated in null form to guide the study:

$H0_1$: Agricultural loans from government owned development financial institutions had no significant effect on the attainment of food security in Nigeria.

$H0_2$: Interest rates on loans from government owned financial institutions had no significant effect on the attainment of food security in Nigeria.

Conceptual Review

Concept of Agricultural Loans

One of the main inputs for agricultural development is credit. Credit means a loan or advance. According to the Great Lifco Dictionary (2006), cited by Ananth (2012), credit is defined as the confidence in a person's morality and ability to pay. It also means "the belief of others that a person, business, or company can pay debts". In economic literature, credit means the "entitlement to resources." Appropriate credit institutions and credit policies can lead a society towards a sustainable track. Agricultural loans enhance productivity and promote a standard of living by breaking the vicious cycle of poverty for small-scale farmers. Adegeye and Dittoh (2005) defined agricultural credit as the process of obtaining control over the use of money, goods, and services in the present in exchange for a promise to repay at a future date. Ogunfowora, Essang, and Olayide (2002) reported that credit is needed not only for farming purposes, but also for family and consumption expenses, especially during the off-season period. The practise of kind loans has emerged to avoid the diversion of credit and to strengthen repayment capacity. Nowadays, agriculture credit is linked with marketing, which also aims to reduce the incidence of default (Jugale, 2001). Credit of any kind is also an effective way of avoiding or minimising defaults. According to Shetty (2000), credit supply is an important determinant of agricultural investment. As a result, formal institutions of credit provision, mainly commercial banks, emerged as important sources of finance for agriculture, moving moneylenders and landowners. Currently, the rural credit situation looks unattractive in the meanness of many measures and the constitution of several committees and task forces. It has been a constant target of policy limitation, which has manifested in three broad areas: enervation of institutional planning for rural credit; disinvestigation of credit flow to agriculture through the mechanical application of Basel norms; and a squeeze on resources available for agricultural credit operations (Satish, 2007).

Concept of Agricultural Interest Rates

Interest is the price paid for the use of money. It is always expressed as a percentage. According to the government of Alberta (2018), interest is the amount paid by a borrower to a lender in exchange for the use of the lender's money for a certain period of time. Interest is paid on loans or on debt securities, such as bonds, either at regular intervals or as part of a lump sum payment when the loan matures. Changes in interest rates directly affect profitability in the agricultural sector by influencing borrowing, spending, and investing since agriculture is a capital-intensive industry (Johan and Hamish, 2007). Changing interest rates indirectly impacts agriculture by affecting the level of general economic activity, such as output and employment, exchange rates, and international trade. Among the studies reviewed, little or none has successfully investigated the effects of interest rates on farmers' access to agro credit in Nigeria. Few of these studies concentrated on the impact of interest rate variability on the entire economy of Nigeria without any particular reference to agriculture. For instance, Onyishi, Arene, and Ifiorah (2015) examined the impact of interest rate reforms on agricultural growth and finance in Nigeria from 1970 to 2011. The underlying theory behind the study highlighted that deregulation of interest rates would increase the inflow of resources into the agricultural sector and propel its contribution to national development. They uncovered that interest rate deregulation did have a positive and significant effect on agricultural growth. Furthermore, they found that the average interest rate in addition to the exchange rate of the naira influenced the agricultural sector fragment of the country's GDP and economy in long, medium, and short-term estimations while inflation had no significant effect. Noting the contradictory effect that interest rates have on savings and investments, where high interest rates increase the supply of credit through savings but lower investment, they stressed the need to find a proper rate that can counter or at least minimise this effect. They also advised the need for the state to give incentives, for instance, through lower interest rates for agricultural businesses, in order to encourage both local and foreign investors to patronise this sector of the country. Similarly, Ehinomen and Charles (2012), in exploring ways for sustainable growth in Nigeria, investigated the agricultural sector in the country and how monetary policy impacted its development. They found that interest rates had a monumental effect on agricultural development, especially through the stimulation of investments. Though lauding the efforts of the central bank, they reiterated the need for further policies to support gains and punish banks and other financial institutions that do not conform to their policies.

Concept of Agricultural Financing

Finance is one input required for agricultural development as it represents the power to purchase all other inputs, and thus, it is an important precursor needed to determine the quantity and quality of inputs in terms of technology, materials, and labour that can be used on the farm (Miller and Jones, 2010). Agricultural finance has been defined differently by various authors from various perspectives. However, the International Finance Corporation (IFC, 2011) defined it as financial services provided for agricultural production, processing, and marketing, ranging from institutional and noninstitutional/informal financial sources to short-term, medium-term, and long-term loans, as well as leasing. According to Ejiogu (2018), agricultural finance is the process of obtaining control over the use of money, goods, and services (for agricultural purposes) in the present in exchange for a promise to repay an agreed amount at a future date. It is also access to credit that is used to improve the efficiency of farm production and as a means of adopting better technology (IFC, 2011). A combination of the two definitions of agricultural finance indicates that agricultural finance entails the availability of a source of finance, accessibility to the fund, utilisation of the fund for agricultural purposes, and a plan to repay the fund in the future (Fadeyi, 2018).

Several studies have been carried out on commercial banks and the finance of agriculture in the country. In 2010, total agricultural loans and advances was a mere 2% of the total bank loans and advances (CBN, 2012). Therefore, the Nigerian government, in collaboration with the Federal Ministry of Agriculture and Water Resources (FMAWR), through the Debt Management Office (DMO), in 2009, floated N200 billion agriculture development bonds from the capital market (long term market) to finance large commercial production of agriculture. The objective was to fast track the development of the agricultural sector of the economy by providing credit at a single digit rate. It also reaches out to small scale farmers through the on-lending scheme of state governments (Sansui, 2011). Similarly, Owo (2016) observed that the Nigerian Incentive-based Risk Sharing System for Agricultural Lending (NIRSAL) is a new model of financing agriculture, recently established by the Central Bank of Nigeria, the Bankers Committee and the Federal Ministry of Agriculture and Rural Development. It is a financing initiative that provides farmers with affordable financial products and reduces the risk of granting loans to farmers. Other formerly existing agricultural support frameworks like ACGS, CACS, etc. are assessed, modified, and integrated into the scheme. The scheme aims to reverse the trend of low credit to the agricultural sector by encouraging more banks to lend to the sector through an incentive-based system. Anyanwu (2010) enumerates the specific objectives of the scheme as: stimulating innovation in agricultural lending; encouraging banks that are lending to the agricultural sector; eliminating state dependency by banks for deploying loanable funds to agriculture; leveraging deposit money banks' balance sheets for lenders into agriculture; and ensuring a risk-sharing approach, that is a business approach where banks share the risk with the sector.

Concept of Food Security

Food security is the measure of the availability of food and an individual's ability to access it. According to the United Nations' Committee on World Food Security (2012), food security is defined as access by all people, at all times, having physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life (Food and Agriculture Organization, 2003). A more straightforward definition of food security concerns the availability of food in sufficient quantities to meet the sustenance of the population (Adetiloye, 2012). The United Nations (UN) recognised the Right to Food in the 1948 Declaration of Human Rights and has since said that it is vital for the enjoyment of all other rights (Ahluwalia, 2004). The 1996 World Summit on Food Security declared that "food should not be used as an instrument for political and economic pressure" (FAO, 1996). Multiple different international agreements and mechanisms have been developed to address food security issues since then. The main global policy to reduce hunger and poverty is in the Sustainable Development Goals. In particular, Goal 2: Zero Hunger sets globally agreed on targets to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture by 2030 (UN Sustainable Development Goals, 2014).

The Food and Agriculture Organization of the United Nations, or FAO, identified the four pillars of food security as availability, access, utilization, and stability (FAO, 2009). In terms of food availability, it is about food supply and trade, not just quantity but also the quality and diversity of food. Improving availability requires sustainable and productive farming systems, well-managed natural resources, and policies to enhance productivity. According to Weingärtner (2004), **access** to food is ensured when all households and all individuals within those households have sufficient resources to obtain appropriate foods for a nutritious diet. Food access is also a function of the physical environment, social environment, and policy environment, which determine how effectively households are able to utilise their resources to meet their food security objectives (Riely, 2005). Focusing on an individual's level of food security also requires taking the biological **utilisation** of food into consideration. This refers to the ability of the human body to take food and convert it into either energy, which is either used to undertake daily activities or stored. Utilization necessitates not only a healthy diet, but also a healthy physical environment, which includes safe drinking water, adequate sanitary facilities, and knowledge of proper health care, food preparation, and storage processes (Weingärtner, 2004). **Stability** is about being food secure at all times. Food insecurity can be transitory, with short-term shocks the result of a bad season, a change in employment status, conflict, or a rise in food prices. When prices rise, it is the poor who are most at risk because they spend a much higher portion of their income on food. Poor people in Malawi spend nearly 78% of their income on food, while the poor in the US spend just 21% (Vermeulen, 2014). Social nets can play an important role in supporting people through transitory food insecurity (Australian International Food Security Research Centre, 2015).

Prospects of Agriculture in Nigeria

***Increase in Agricultural Loans*:** Although the Nigerian agricultural sector has experienced drawbacks over the years, we can affirm that there are auspicious prospects for it. In accordance with the directive of the CBN (Central Bank of Nigeria), there will be a favourable increase in the distribution of loans for agricultural purposes. With a view to promoting agriculture and fostering Nigeria’s economic growth at large, banks are encouraged to grant loans to farmers. As implied in recent reports, the increase in agricultural loans has encouraged many farmers (especially in the rural areas) to continue adding to Nigeria’s volume of agricultural production.

***Future Improvement in Industrialization*:** Agriculture in Nigeria is the basis for industrial development as it provides raw materials used for industrial production. Improvements in agriculture will boost Nigeria’s industrial sector. If the Nigerian government channels robust investment into the agricultural sector, the volume of agricultural production will be increased, and this, in turn, will favour the growth of industrialization in the country. Also, primary agricultural activities such as the extraction of minerals are vital, and if they can be encouraged, there will be a vast supply of raw materials needed for industrial activities. Improved industrialization will surely enhance Nigeria’s level of economic growth, but for industrialization to peak in Nigeria, agricultural activities must be supported massively.

***Increase in the Credit Level*:** Based on the CBN’s credit guidelines, there will be a significant improvement in credit allocation for agricultural purposes. Also, more funds will be generated from merchant banks for the development of the agriculture sector.

Methodology

Ex-Post Facto research design was adopted for the study. The study area was Nigeria. Annual data for this study was sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin for the period 2000-2018 as the periods of major financial and economic reforms aimed at enhancing agricultural sector financing and food security and the economic recession. Hence, food security (FOS) (dependent variable), total loans from government owned development financial institutions (TLG), and total interest rates on agricultural loans (TIRL) (independent variable) were used. Besides, total Central Bank of Nigeria interventions to agricultural sector (TLCBN) were under effective investigation. The data obtained were subjected to appropriate statistical techniques such as descriptive statistics and multiple regression in testing the hypotheses. For the inferential statistics, the test for significance was done at 0.05 alpha levels.

Results

Hypotheses

The null hypothesis states that there is significant joint influence of agricultural loans and interest rates from government owned development financial institutions as a determinant of attainment of food security in Nigeria. In order to test the hypothesis multiple regression was used to analyse the data, (see table 1).

TABLE 1: Multiple regression of joint influence of total loans and total interest rates from government owned development financial institutions as a determinant of attainment of food security in Nigeria.

Model	R	R Square	Adjusted R Square	Std. error of the Estimate	R Square Change
1	0.538a	0.290	0.201	311085567.09700	0.290

***P>0.05, Meaning that R-cal is not significant at 0.05 level; df =17; N =19**

The result of the descriptive analysis proved that the mean of the food security (FOS) was 89270804.7516 which is very high compared to the mean of the interest rates on agricultural loans that stood at (18.7805), but lower than that of agricultural loans from government (13345118492.9579). Besides, the calculated value (0.538) had its corresponding P=value of 0.065, observed to be greater than 0.05. The results therefore mean that there is no significant joint effect of agricultural loans and interest rate from government owned development financial institutions on the attainment of food security in Nigeria.

It was also deemed necessary to find out the extent of the variance of each class of independent variable as responded by each respondent (see table 2).

TABLE 2: Analysis of variance of the difference in the influence of agricultural loans and interest rates from government owned development financial institutions as a determinant of attainment of food security in Nigeria.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	631836242689318910.000	2	315918121344659460.000	3.264	.065b
Residual	1548387680897033220.000	16	96774230056064576.000		
Total	2180223923586352130.000	18			

a. Predictors: (Constant), interest, loan
b. Dependent Variable: food security in Nigeria

The result therefore means that there is significant difference in the influence exerted by the independent variables (agricultural loans and interest rates from government owned development financial institutions) on the dependent variable which is food security in Nigeria. To test for the contribution of each of the independent variables, coefficient analysis was performed (see table 3).

TABLE 3: Coefficient analysis of the influence of each of independent variable on the dependent variable.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-231765949.852	585030764.801		-0.396	0.697
LOAN	0.011	0.004	0.570	2.398	0.029
INTEREST	9516432.314	29330977.388	0.077	0.324	0.750

a. Dependent Variable: food security in Nigeria.

From the above table, it was observed that the positive influencing factor was loan (t: 2.398, B: 0.011) while interest rate (t: 0.324, B: 9516432.314) did not influence food security in Nigeria.

Conclusion

Based on the findings of this study, it was concluded that agriculture is a major factor in the eradication of poverty and hunger as it aids reasonable stability in the prices and availability of food. Agricultural finance entails the availability of a source of finance, the accessibility to the fund, the utilisation of the fund for agricultural purposes, and a plan to repay the fund in the future. However, agricultural loans enhance productivity and promote a standard of living by breaking the vicious cycle of poverty for small-scale farmers. Thus, changes in interest rates directly affect the profitability of the agricultural sector by influencing borrowing, spending, and investing since agriculture is a capital-intensive industry. Also, interest rates indirectly impact agriculture through their effect on the level of general economic activity, such as output and employment, exchange rates, and international trade. Therefore, the results of the study reveal that agricultural loans from government owned development financial institutions had significant effect on the attainment of food security in Nigeria. Also, interest rates on loans from government owned financial institutions had significant effect on the attainment of food security in Nigeria.

Recommendations

1. Government should increase loans from government owned development financial institutions to enable them to continue to contribute positively and significantly to the attainment of food security in Nigeria. This is because the increase in loans from government owned development financial institutions increases the level of attainment of food security in Nigeria.

2. Government should reduce the interest rates charged on loans from government owned financial institutions so as accessibility and usage of agricultural loans thereby enhancing food security in Nigeria.

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