

Impact Of Agricultural Loans by Deposit Money Banks on Agricultural Output In Nigeria

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ABSTRACT

This study examines the impact of agricultural loan by deposit money bank credit on agricultural output in FCT Abuja, Nigeria. The study employed the Demand-following theory to explain the relationship between agricultural loan applicant access to deposit money bank credit and agricultural output. A sample of 295 (5 Agricultural loan desk officer from the five selected banks and 200 agricultural loan applicants) respondents were sampled using Multistage Cluster sampling technique. Data were analysed using descriptive statistic (mean Score) and logit regression analysis for inferential statistics. The results show that agricultural loan applicants' access to bank credit for deposits has a large direct impact on Nigerian agriculture. Based on the outcome of data analysis, the study recommends that the Apex bank should direct the deposit money banks to make credits available for agricultural loan applicants and upsurge the agricultural credits monetary base to farmers. This can be done by expanding and encouraging more farmers and also increasing the sum allotted to individual/cooperative units.

Keywords: Agricultural Loan, Agricultural Output, Deposit Money Banks, Binary Logit Model

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INTRODUCTION

Approximately 820 million people in the world still suffer from hunger, being the situation most alarming in Africa, where since 2015 the prevalence of undernourished people shows slight but steady increases in almost all sub-regions (FAO, 2019). Low food production is one of the major issues that require urgent attention in Africa, with over 50% of the people depending on subsistence farming coupled with low production as their sole means of survival (Bachewe, Berhane, Minten, and Taffesse, 2018).

According to the FAO (2018), 84% of Nigerians are employed in the agricultural industry, largely in private small businesses and family farms that are not well meshed into value chains. Although the Nigerian agricultural industry has a good chance of using the youth labour surplus, it is beset by a number of issues that have a negative impact on its productivity. The agriculture industry needs to be competitive in order to increase its allure.

As the largest industry in Nigeria and one that contributed an average of 24% to GDP between 2013 and 2019, it is impossible to overestimate the importance of the agriculture sector to GDP. Security of food and nutrition is one of the most critical issues on the current international political agenda and concerns governments all over the world. Despite the fact that there is enough food for everyone on the planet, over a billion people still go without enough nutrition. In Undernourishment is common in many countries, yet the prevalence of overweight and obesity are still major public health concerns.

One of the key components for achieving sustainable economic activity in every nation is credit finance. By providing farmers with essential resources like fertilizer, land, improved seedlings, machinery, storage facilities to prevent postharvest waste, and irrigation systems for farming during dry seasons, this will increase agricultural output. Access to loans can especially lessen entry barriers and inspire entrants to the sector, enhancing agricultural output generally. Despite this, banks still find the agricultural sector to be more risky and less desirable for a credit facility due to the volatility of commodity prices, unforeseen disease outbreaks, climate change flood and drought, and other factors. Additionally, the majority of Nigeria's smallholder farmers and rural residents, who control the country's agricultural sector, lack adequate collateral facilities to receive credit from reputable financial institutions, impeding potential agricultural performance. The central government established the Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1977 to encourage formal financial institutions to increase and sustain financing to agriculture in order to address this issue and attain food security (Magaji and Bature, 2004; Eyo, Nwaogu and Agenson, 2020).

According to Magaji, and Adamu (2011) agricultural sector is the highest employer of labour and one of the least financed sectors by commercial banks in Nigeria. In developing nations (like Nigeria), rural and small-farm holdings have a low capital base and limited access to financing. Therefore, the issue of low production efficiency has become more problematic as a result of these farmers' inability to acquire sufficient funding. Inadequate loan availability is a significant issue that negatively affects farmers' productivity and efficiency along with other agricultural issues. Obtaining credit requires a lot of administrative work and numerous procedural steps, which raises operation expenses. These institutions favor loans for non-agricultural purposes over loans for agriculture and favor large-scale transactions over small-scale transactions. For many years, graduates and technical officers whose main responsibilities included assisting farmers in improving their farming techniques have been created by universities and agricultural colleges.

Food production is significant because, shortage in the production of food leads to the deterioration of household's means of livelihood and food security (Magaji and Musa, 2015; Omondi, 2019). Because of this, it is important to research the effects of farmers' lack of access to credit facilities from the financial industry. This informs the focus of this study and,

as a result, the topic that is of interest to be investigated. Thus, the goal of this study is to explore how deposit money banks' agricultural loans have affected Nigerian agriculture.

1.1 Test of Hypothesis

The hypothesis to be tested are expressed in their null form as:

H₀: deposit money bank loan to agricultural sector has no significant impact on agricultural output in Nigeria.

2.0 LITERATURE REVIEW

2.1.1 Concept of Bank Credit

According to Onyeagocha (2001), in Aremu, Suberu and Oke, (2016), the term 'credit' is used specifically to refer to the faith placed by a creditor (lender) in a debtor (borrower) by extending a loan usually in the form of money, goods or securities to the debtor. In essence, the lender extends credit to the borrower when a loan is made, and he afterwards accepts the borrower's credit. Credit can therefore be defined as a transaction between two parties in which the creditor or lender supplies money, goods and services or securities in return for promised future payments by the debtor or borrower (Ayuba, Magaji, and Kuna, 2013).

Commercial credit includes bank credit including overdrafts, loans, and advances, trade credit from producers, commercial papers (or notes), invoice discounting, bill financing, hire purchase, factoring, commercial papers (or notes), and commercial papers (or notes) (to mention but a few). Consumer credit, often known as trade credit, is a type of authorization given to a person or a household to buy products like a refrigerator, television, car, or electronic sets for which instalment payments are made over time rather than in full. Investment credit allows a business concern such as corporate body, sole proprietorship, or partnership to obtain credit for capital goods for expansion of factory or procurement of machinery (Aremu, Suberu and Oke 2016).

2.1.2 Concept of Agricultural Output

A distinct area of the farm or horticulture business known as the enterprise contains valuations of unsold goods created by the enterprise in its production. The primary indicator of individual crop and livestock output is agricultural output (Farm Survey, 2016). It includes:

Crop enterprise output, or the value of all the crops the farm produces (other than losses in the field and in store). It comprises crops consumed in the farmhouse and by farm labour, as well as those utilized for feed and seed by the farming enterprise. With the exception of some horticultural crops, crop enterprise output is calculated on a "harvest year" rather than a "accounting year" basis. This means that it only includes crops that were fully or partially harvested during the accounting year and does not include crops that were carried over from the previous year. The total harvested yield of the crop is therefore valued at market prices and valuation differences (between the previous and current crops) are irrelevant (plus any subsidies). However, any difference between the opening valuation of any stocks of previous crops and their ultimate disposal value (sales, used on farm and any end-year stocks) is included in total farm output (Farm Survey, 2016).

By-products forage and cultivations, which include sales of fodder, changes in the value of fodder and cultivations, and the value of the output of agricultural by-products. It also covers revenue from the letting of bare land or forage on a short-term lease (Farm Survey, 2016).

Livestock enterprise output consists of the total sales of livestock and livestock products, including direct livestock subsidies and production grants received, part of the valuation change, produce consumed in the farmhouse and by labour, and the value of milk and milk products fed on the farm (excluding direct suckling), adjusted for debtors at the beginning and end of the year (except for direct livestock subsidies), as well as transfers between enterprises; However, changes in the value of production grants received, produce consumed in the farmhouse and by labour, and the value of produce consumed Livestock enterprise output is computed using an accounting year, in contrast to crop enterprise output (Farm Survey, 2016).

The value of production from those activities that still come within the agricultural cost centre but do not fall under the livestock or crop enterprise output is covered by the term "miscellaneous output." These will consist of wayleave income, agricultural hire income, various woodland sales, contract farming rent, various insurance receipts, and compensation payments. Total Farm Output is total crop enterprise output plus adjustment for output from previous year's crops plus total livestock enterprise output plus output from home grown fodder crops plus output from tillage's and forage plus output from non-agricultural diversified activities plus miscellaneous revenue plus single payment (Farm Survey, 2016).

2.2 Theoretical Review

The Demand-Following Theory

The idea holds that as the economy expands, there is a corresponding increase in demand for financial services, "which leads to a supply response in the growth of the financial system" (Patrick 1966). According to the hypothesis, financial and economic progress follow one another. Investors and savers are driven by high economic growth to want modern financial institutions' services, assets, liabilities, and arrangements. In this instance, the widespread and comprehensive process of economic development is continuing to have an impact on how the financial system is evolving. The increase in real output, commercialization, and monetization of agriculture, as well as other traditional substance sectors, determines the amount of demand for financial services (Patrick 1966). Real national income grows more quickly, which encourages businesses to seek out external financing more frequently since it becomes more challenging for them to fund expansion plans with internally generated income.

The financial system will also have a bigger responsibility to carry out the role of financial intermediation by diverting savings from slow-growing industries and businesses to fast-growing industries and companies as the disparities in growth rates across the various economic sectors increase. The system will be able to support and maintain the leading industries as they experience expansion in this way. The demand-following financial hypothesis makes the assumption that, to the extent that the number and variety of financial institution types sufficiently increase and are diverse, there is a high elasticity in the supply of

entrepreneurship in the financial services relative to growing opportunities for profit from provision of financial services. Additionally, it is believed that a favourable legal, institutional, and economic environment exists.

2.3 Empirical Review

In their article Udoka, Mbat and Duke (2016) discuss how loan from commercial banks affects Nigerian agriculture. The primary focus of the study is how loans from commercial banks affect Nigeria's agricultural output. The mentioned equation was estimated using the ordinary least squares regression method. The conclusion reached based on the results collected is that the agricultural loan guarantee plan fund and agricultural productivity in Nigeria have a positive and significant association.

Ogbuabor and Nwosu (2017) examine the impact of deposit money bank agricultural credit on agricultural productivity in Nigeria using an error correction model and annual time series data for the period 1981-2014. The findings show that the variables have an equilibrium relationship. Additionally, we discover that agricultural loan from deposit money banks has beneficial and considerable long-term effects on agricultural productivity, but this impact is quite little in the short-term. They also discover that agricultural land and labour force have detrimental long- and short-term effects on agricultural output. But throughout, the influence of climate change factors, such as annual rainfall and average temperature, remained minimal. The paper supports policies that will make it easier for farmers to access land for agricultural use, expand and sustain the availability of bank credits for the agricultural sector at cheap interest rates, and mechanize the agricultural system to appeal to the youth population.

Oyelade (2019) investigates the impact of commercial bank credits on agricultural output in Nigeria over the period 1980 to 2015 by setting three specific objectives which are to examine the trend of commercial bank credit and agricultural output in Nigeria; to investigate the effect of commercial bank credit on agricultural output in Nigeria and to investigate the effect of commercial bank credit on subsector of agriculture in Nigeria. This work is distinctive and distinct from other research in this field due to the trend analysis and the effect of commercial bank credit on the subsector of agriculture in Nigeria. The first goal was accomplished using trend analysis, while the second and third goals were accomplished using fully modified ordinary least square (OLS). Methodology. The Fully Modified Ordinary Least Squares (FMOLS) technique was used in the investigation. The results showed that interest rates on agricultural loans from commercial banks and the assets of deposit money institutions are statistically significant in determining agricultural output in Nigeria throughout the studied period. Additionally, commercial bank loans for agriculture and deposit money bank assets, commercial bank loans for agriculture and interest rates on commercial banks' credit to agriculture, commercial bank loans for agriculture and interest rates on commercial banks' credit to agriculture, as well as commercial bank loans for agriculture and interbank lending, determine the output of crop production in Nigeria.

In Nigeria, Ebere, Oresanwo, Omogboye, and Timothy (2021) investigate the viability of agricultural output through agricultural credit. Between 1981 and 2019, secondary data from the Statistical Bulletin of the Central Bank of Nigeria were used. The study's goal was examined using cointegration, DOLS, and Granger Causality. Furthermore, the study's findings revealed that Nigeria's agricultural productivity is significantly enhanced by credit provided to the sector. The direct relationship between agricultural spending and agricultural output in Nigeria, however, is minimal. Additionally, there is a unidirectional causal

relationship linking agricultural credit and agricultural expenditure. The relationship between agricultural output and agricultural spending in Nigeria also has a one-way feedback effect. The study is the first empirical investigation that evaluates the viability of agricultural credit in Nigeria. Because the agricultural sector has the potential to sustain agricultural output, food security and the eradication of hunger in the nation would be assured, policymakers in the nation are recommended to be devoted to financing it. Additionally, the national budget's allotment to Nigeria's agricultural sector needs to be increased.

Onuegbu, Ikeora and Ogini (2022) examine the effect of commercial bank credit on agricultural output in Nigeria. The data were examined using econometric methods, including the Ordinary Least Squares and Augmented Dickey Fuller Tests for Unit Roots (OLS). The analysis shows that whereas bank loans, government investment, and the Agricultural Credit Guarantee Scheme Fund all have positive and large effects on agricultural output, interest rates have a negative and tiny impact. As a result, the study concludes that deposit money bank credit has a positive effect on agricultural output in Nigeria and has raised agricultural production in Nigeria throughout the study. According to the analysis, strengthening the agricultural loan guarantee program through genuine financial support will dramatically increase its capital base. To make agricultural finance appealing to commercial banks, the Agricultural Credit Guarantee Scheme (ACGS) should enhance its credit guarantee requirements. A portion of the losses made by deposit money banks due to their exposure to the agriculture sector should be covered by the Central Bank of Nigeria.

Adewale, Lawal, Aberu and Toriola (2022) examine the effect of farmers credit on agricultural productivity from 1981 to 2016 using data from World Bank Development Index (WDI). Agricultural bank loans significantly increase agricultural output, according to the results of the Ordinary Least Squares (OLS) estimation ($=0.667173$, $t=5.961095$ and $P<0.05$). The bank lending rate ($=1.094792$, $t=1.295874$ and $P>0.05$) and the foreign exchange rate ($=0.124297$, $t=0.437929$ and $P>0.05$) have no discernible effects on agricultural output. It was argued that bank loans significantly increase Nigeria's agricultural productivity. It was suggested that the government encourage savings and bank credit to farmers.

A thorough analysis of the various theoretical and empirical literatures demonstrates that banks' lending to the agricultural sector is essential for increased production performance, which boosts economic growth in Nigeria.

3.0 METHODOLOGY

The survey study employs questionnaire as instrument of data collection. The questionnaires were administered among of all the Agric desk officers of commercial banks in Abuja and agricultural loan applicants using both purposive and convenient sampling techniques. The study was conducted in Federal capital Territory Abuja, Nigerian. In view of the foregoing, the sample size for the study is 295 respondents comprising 5 Agricultural desk officer of the deposit money banks in FCT Abuja and 290 agricultural loan applicants. The participants were selected using through Multistage Cluster Sampling technique. Five commercial banks were selected randomly by balloting out of twenty-four commercial banks present in Abuja. First Bank, Union Bank, Zenith Bank, Access Bank, and United Bank for Africa, Nigeria Plc are the deposit money banks.

The instrument for data collection is Agricultural Loan Administration Questionnaire (Appendix II) Agricultural Loan Administration Questionnaire consist of 21 choices of answers of Yes or No to determine the probability of the respondents. The questionnaires were administered by the researcher to the Agricultural loan applicant through the Agricultural desk officers of the selected commercial banks. This was done to make sure that the respondents are actually the respondent's banks customers. The research questionnaire on the effect of deposit money banks' loans on agricultural output in Nigeria was addressed to the applicants for agricultural loans.

3.1 MODEL SPECIFICATION

The study in a bid to assess the impact of loan on agricultural output employed a logit probability model owing to the qualitative nature of the variables of interest. The model is expressed as:

$$L = \frac{\ln(P)}{\ln(1-p)} = \beta_0 + \beta_1 NACGC + \mu \dots \dots \dots 3.1$$

Where:

L= 1, if agricultural loan administration promotes agricultural output in Nigeria; 0 otherwise.

NALS = Number of agricultural loan applicants

4.0 RESPONSE AND DISCUSSION OF RESULTS

Table 4.1: Mean Response on Impact of Agricultural Loan on agricultural Output

S/N	Items	Mean	Standard Deviation
1	Agric loan has increase my productivity	0.88	0.33
2	Timely disbursement of loan has increased my output	0.72	0.45
3	Volume of loan has increased my output	0.94	0.22
4	Low interest rate on Agric loan has increase my output	0.88	0.33
5	Loan duration has positively impacted my output	0.74	0.44
	Total Mean	0.83	

Table 4.1 Shows that respondents agreed with all the items with the mean values ranging from 0.72 to 0.94. While, the total mean is 0.83 indicated that the respondent agreed that the agricultural loan by commercial banks has positive impacts on agricultural output in Nigeria.

Result of Logit Regression

Table 4.2 Dependent Variable: L

Dependent Variable: L				
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)				
Date: 07/13/22 Time: 16:18				
Sample: 1 290				
Included observations: 290				
Convergence achieved after 3 iterations				
Coefficient covariance computed using observed Hessian				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
NACGS	0.053147	0.021255	2.500447	0.0207
C	0.498951	0.538603	0.926379	0.3542
McFadden R-squared	0.290149	Mean dependent var		0.677419
S.D. dependent var	0.475191	S.E. of regression		0.462709
Akaike info criterion	1.385838	Sum squared resid		6.769673
Schwarz criterion	1.478353	Log likelihood		-19.48048
Hannan-Quinn criter.	1.415995	Deviance		38.96097
Restr. deviance	38.98556	Restr. log likelihood		-19.49278
LR statistic	11.08374	Avg. log likelihood		-0.628403
Prob(LR statistic)	0.002978			
Obs with Dep=0	43	Total obs		290
Obs with Dep=1	247			

Source: Authors computation, 2022.

The regression above shows that the regressor is statistically significant even at 5 percent level, such that increasing agricultural loan from deposit money banks have the likelihood of increasing agricultural output in Nigeria by 5.3 percent. This outcome is in-line with a priori expectation. This variable is the number of agriculture loan applicants and commercial banks. The result shows that there exist a direct and significant association exist between agriculture loan from deposit money banks and agricultural output in FCT-Nigeria. This finding is in line with the findings of Udoka, Mbat andDuke, 2016; Ogbuabor andNwosu, 2017; Oyelade, 2019. Who conclude in their studies that deposit bank loan has significant positive impact on agricultural output in Nigeria. The implication of this finding is that when loans are adequately made available to farmers the higher the agricultural output. The timely disbursement of loans to agricultural loan seekers makes money available to farmers as at when due. For instance, loans are expected to be disbursed at the early stage of the rainy season to affect the agricultural output positively. It was also revealed that the volume of loan

has increased the agricultural output. The higher the volume of loans, the higher the agricultural output.

CONCLUSION

There are growing literature on the effort of the Apex Bank of Nigeria over the years in promoting the agricultural sector on deliberate policies including provision of agricultural credits to small, medium scale famers. However, there is perceived shortage of food and other agricultural produce which has led to unstable price in the domestic market and has adversely caused hardship in Nigerian economy. The study was motivated to assess the impact of agricultural credits in cash crops, food crop and livestock on the Nigeria economic growth. This motivates the desire to examine the impact of agricultural loan applicant access to credit from deposit money banks on agricultural output in FCT Abuja, Nigeria. Primary data were collected with the aid of questionnaires that were administered in FCT-Abuja. The study employed descriptive and logit regression to empirically determine the impact of agricultural loan applicant access to credit on agricultural output in Nigeria.

The result of findings that a positive significant correlation exists between agricultural loan applicant access to credit and agricultural output in Nigeria. Thus, in light of the result analysis the study has been able to established based on the research question and objective of the study that agricultural loan applicant access to credit have significant impact on agricultural output in Nigeria. Thus, in contribution to knowledge in line with the demand-following theory, the study has been able to establish that the growth of the economy driven by the growth of the various sector such as the agricultural sector generates additional and new demand for financial services, which further drives economic growth. Thus, it is suggested that rapid economic growth (farm output) generates a need for contemporary financial institutions' services, assets, liabilities, and arrangements to support the expansion of a variety of economic sectors.

RECOMMENDATION

Based on the result of data analysis the study recommends that the Apex bank should compel the deposit money banks to make credits available for agricultural loan applicants and upsurge the agricultural credits monetary base to farmers. This can be done by expanding and encouraging more farmers and also increasing the sum allotted to individual/cooperative units and.

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