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Impact of Commercial Banks' Loan on Agricultural Output in Nigeria

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Abstract: The study analyzed agricultural loan administration by some selected Commercial banks in Nigeria. It adopted the survey research design and uses primary data obtained from commercial banks and agricultural loan seekers in Federal Capital Territory Abuja. Mean and standard deviation was used to answer the research question and logistic regression was used to estimate the relationship between the responses of agricultural loan seekers and commercial banks the Findings revealed among others: there is positive impact of agricultural loan by commercial banks on agricultural output in Nigeria, there are barriers to Agricultural Loan Administration by commercial banks in Nigeria. The study recommends that government should legislate other sources of low-cost funding such as the pension funds and the housing scheme funds for commercial banks to finance farmers at low cost and long term.

Keyword: Commercial Banks' Loan, Agricultural Output, Nigeria

1 Introduction

The global human population could grow to 9.7 billion people by 2050. In 2018, there were nearly 821 million people (2017: 804 million) who regularly do not have enough food to eat, according to the United Nations (UN, 2020). Since 2014, there have been more persons who are undernourished. In 2017, 15.1% of the world's undernourished population lived in West Africa. Nigeria was placed 103rd out of 119 nations in the 2018 International Food Policy Research Institute (IFPRI) global hunger index, indicating a high level of hunger in the nation. Between 2018 and 2050, Nigeria is expected to grow from its existing 196 million population by no less than 202 million. By 2050, the nation is anticipated to overtake the United States, which is currently the third-most populous nation in the world.

Food security and nutrition has risen to the top of the worldwide political agenda in recent years and is a major concern for all countries. Over a billion people still go without nutritional food, despite the fact that there is adequate food available worldwide. Undernutrition is still a major public health issue in many nations around the world, as are the rising rates of overweight and obesity. There are still 820 million hungry people in the globe, with Africa experiencing the most dire conditions. Since 2015, practically all sub-regions of Africa have seen minor but persistent rises in the incidence of undernourished people (FAO, 2019).

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 integrated into value chains. Although the Nigerian agricultural industry has a good chance of using the youth labour surplus, it is beset by a variety of issues that have a negative impact on its productivity. The agriculture industry needs to be competitive in order to increase its allure.

Through access to vital inputs like fertiliser, land, better seedlings, machinery, storage facilities to reduce post-harvest waste, and irrigation infrastructure for dry season farming, credit financing for agriculture would result in increased agricultural productivity. More specifically, having access to loans can lower the barrier to entry and motivate newcomers to the industry, increasing overall agricultural output. However, agricultural industry continues to be highly risky and less appealing to banks for a loan facility due to the volatility of commodity prices, unanticipated disease outbreaks, and climate change - flood and drought. Additionally, the majority of Nigeria's smallholder farmers and rural residents, who control the country's agricultural sector, lack adequate collateral to receive financing from established financial institutions, which limits potential agricultural performance. To address this challenge and achieve food security, the central government introduced the Agricultural Credit Guarantee Scheme Fund

(ACGSF) in 1977 to encourage formal financial institutions to increase and sustain lending to agriculture and commercial banks were directed to lend the sector (Magaji & Bature, 2004; Eyo, Nwaogu & Agenson, 2020).

Rural and small holder famers in Nigeria have low capital base and poor access to finance (Magaji & Abubakar, 2011; Magaji, Musa & Yusuf, 2022). As a result, the issues with low production efficiency have gotten worse since these farmers are unable to get sufficient funding. Low savings and Inadequate credit supply are major problem with which other production factors exert negative influence on farmers' output and efficiency (Magaji & Yahaya, 2012). It is important to consider how credit or finance might aid agriculture and other industries, the study seeks to examine the impact of commercial banks loan on agricultural output in Nigeria.

1.2 Statement of the Problem

To improve food production, various strategies have been envisaged by government and stakeholders at all levels; one of such strategies is hinged on the need to increase farmers access to agricultural finance (credit) to increase productivity, while others focus on agricultural diversity (Osabohien, Adeleye, & De Alwis, 2020). These strategies are important because, in developing countries, especially in Africa, the agricultural sector accounts for more than 50% of the entire labour force and it contributes significantly to the Gross Domestic Product (GDP) (Osabohien et al., 2020). However, successive administrations over the years neglected agriculture and failed to diversify the economy away from over dependence on capital intensive oil sector (Usman, Adeniji & Odugbemi, 2018). In the same way, the production of food across the African continent, especially in Nigeria, agriculture represents a crucial proportion of activities engaged and captures about 80% of total industry size with livestock, forestry and fishing accounting for the balance of 20% (Osabohien et al., 2020). Despite its critical function, agriculture's contribution to GDP has decreased recently as a result of low yields brought on by farmers' limited or restricted access to financing, which has led to low yields.

1.3 Research Question

What is the impact of commercial banks loan on agricultural output in Nigeria?

1.4 Objectives of the Study

To investigate the impact of commercial banks loan on agricultural output in Nigeria

2.0 Literature Review

2.1 Credit Scoring System Theory

A borrower's creditworthiness is shown by their credit score, which is a figure derived from a statistical study of their credit record. Information from credit reports is the main source of a credit score. Lenders, like banks, use credit scores to assess the risk involved in loaning money to consumers and to reduce losses from bad debt.. According to Ashofteh, & Bravo, (2019) to assess credit risk, in developed markets lenders typically consider historical loan application and loan performance data collected regularly from a small number of sources on the basis of long-standing banking and credit relationships to develop credit-scoring models to evaluate the ability to repay, the willingness to repay and identify fraud. These strategies are less effective in developing nations and among low-income, unbanked populations since they frequently lack access to institutional funding and/or don't generate steady employment income. Banks and loan providers are increasingly employing non-traditional data sets (such as mobile operators, utilities, retailers, and direct-sales firms data) to sophisticate their credit bureaus and their credit rating services in order to deal with these restrictions and to better assess credit risk. Since non-traditional data must often be gathered from many sources and has a volume several times greater than traditional data, this presents significant issues for credit scoring modellers. By adopting this strategy, lenders want to have better information and an incentive to expand the lending market while maintaining a strong credit management structure. By utilising these new data sources more frequently, they hope to offer more lending to the general public while also better analysing loan requests, which will ultimately result in an increase in the loan ratio and a reduction in decision-making time (Usman, 2018). People will then have more monthly disposable money for spending which will contribute to the economy, but it can also make risks for financial institutions

2.2 Theory of Asymmetric Information

(Auronen, 2003) The theory of asymmetric information tells us that it may be difficult to distinguish the good from bad borrowers and Richard (2011), which may result into adverse selection and moral hazards problems. The theory explains that in the market, the party that possesses more information on a specific item to be transacted is able to negotiate optimal term for the transaction than the other party (Auronen, 2003). Therefore, the party with less knowledge about the same precise thing to be transacted is in a position to decide whether the transaction should be made correctly or incorrectly. Adverse selection and moral hazards have led to significant accumulation of non-performing loan in banks (Bester, 1994)

Studies on information asymmetry concentrate on the relationship between banks and borrowers and lenders. Relationship lending and transactions-based lending can generally be distinguished in bank lending (e.g., financial statement lending, asset-based lending, credit rating). The former class makes use of data that was relatively simple to obtain at the time the loan was originated. The latter type makes advantage of information obtained throughout the borrower relationship (Lehman & Neuberger, 2001).

2.2.1 Concept of Bank Credit (Loan)

According to Onyeagocha (2001), in Aremu, Suberu & 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. The lender essentially extends credit to the borrower when a loan is made, and he accepts the borrower's credit on that basis. 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, & Kuna, 2013). There are three major types of credit. These are Commercial credit, Consumer credit and Investment credit.

Commercial bank credit can be overdraft, loans, and advances; trade credit from suppliers; commercial papers (or note); invoice discounting; bill finance; hire purchase; factoring, (Ayuba, Magaji & Kuna, 2013). The tenor of a facility varies depending on the institutions, nature, and functions over the short, medium, and long terms. Credit serves basically two purposes:

i. It makes it easier to move money or capital to where it will be used most effectively and efficiently.
ii. Credit economies employ money in the form of coins or bills since extending credit increases the amount of money in circulation. Perhaps, we need to add here that the cost of credit (notably interest and discount rates) is one of the essential tools used to control and regulate money by the Central Bank of Nigeria through its monetary policy (Aremu, Suberu & Oke 2016).

2.3 Empirical Review

Florence & Nathan (2020) assess the impact of commercial banks' credit on agricultural growth in Uganda from 2008Q3 to 2018Q4 using Autoregressive Distributed Lag Model (ARDL). The findings showed that banks' credit has a significant positive impact on agricultural output in the long-run and an insignificant impact in the short-run.

Okafor (2020) examine the effect of commercial banks credit on agricultural development in Nigeria using the Augmented Dickey Fuller test, Phillip-Perron test and OLS technique. The results reveal that bank credit to agriculture and ACGSF have significant positive effects on agricultural output.

In another dimension, Orji, Ogbuabor, Anthony-Orji, & Alisigwe (2020) examine causality between agricultural financing and agricultural output in Nigeria using the Pairwise Granger causality test. The findings show no causal linkage between agricultural financing and agricultural output within the period under review.

Aziz Bilbas (2018) examines the Effect of Commercial Banks' Credit on Agricultural Investment Development. The result shows that there is a positive and significant influence of commercial bank's credit on Agricultural Development in Kurdistan.

Golley and Samuel (2021) The Impact of Commercial Bank Credit on Agricultural Sector in Nigeria (1993-2019). Their result of the study revealed that there was a significant positive relationship between Loan Assessment and Food Security in Nigeria.

George-Anokwuru (2018) examined deposit money banks' credit and agricultural sector output in Nigeria from 1985-2015. The results show that the regression coefficient of deposit money bank's credit to agricultural sector in explaining its contribution to agricultural output is positive and statistically significant. It also shows that interest rate appeared with negative sign but statistically not significant. Finally, the coefficient of money supply is positive and significantly related with agricultural output.

A careful review of different literatures (both theoretical and empirical) reveals that banks credit to the agriculture sector is necessary for improved output performance thereby enhancing economic growth in Nigeria.

In spite of the increased academic interest in the subject under discussion, several issues relating to Banks credit and agricultural sector performance remain unsettled, most of them focused on economic growth and used simple methodology such as ordinary least square. This study, however, will employ logit model to measure the long-run and short-run impact of bank credit administration on agricultural output in Nigeria in recent time as well as issue out questionnaires to assess the predictive power of bank credit on agricultural output.

3.0 METHODOLOGY

3.1 Research Design

This study is designed to look into the agricultural loan administration on agricultural productivity. The various methods used in the collection of data are as follows: Questionnaire, personal interview, observation and secondary data.

Model Specification

To assess the impact of commercial banks loan on agricultural output in Nigeria using the Federal Capital Territory as a case study, the study employed the Logit Probability Model given as follows:

$$L = \frac{In(P)}{In(1-P)} = \beta_0 + \beta_1 NACGS + \mu$$

Where:

L= 1, if agricultural loan administration promotes agricultural output in Nigeria; (1-P), if otherwise.

NALS= Number of agriculture loan seeker

CB= Commercial banks

4.0 Result and Discussion

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		

$$L = \frac{In(P)}{In(1-P)} = 0.498951 + 0.053147 NACGS$$

Std Error = (0.053860) (0.021255)

Z = (0.926379) (2.500447)

McFadeen $R^2 = 0.290149$

S.E. of Regression $= 0.462709$

The regression above shows that the variable is statistically significant even at 5 percent level. The result shows that there exist a positive and significant relationship between commercial bank loan and agricultural output in FCT-Nigeria.

Discussions of Findings

The objective was to determine the impact of agricultural loan by commercial banks on agricultural output in Nigeria. Findings showed clearly that there is positive impact of agricultural loan by commercial banks on agricultural output in Nigeria. The agricultural loan by commercial banks is directly proportional to the agricultural output. The more and adequate loan given out to the farmer 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 and Recommendation

The study analyzed the agricultural loan administration by selected commercial banks in Nigeria. The research was conducted in the Federal Capital Territory Abuja and based on the objectives of the study; the following conclusions were made: The agricultural loan administered by commercial banks is directly proportional to agricultural output. The more and adequate the loan given out to the farmers, the higher the output. The study therefore recommend that government should legislate other sources of low-cost funding such as the pension funds and the housing scheme funds for commercial banks to finance farmers at low cost and long term.

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