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BANKING SECTOR FINANCING AND AGRICULTURAL SECTOR OUTPUT IN NIGERIA

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Abstract

Credit from the banking sector is essential for agricultural output since it allows for investment, innovation, and efficient operation, all of which are necessary for high agricultural output. The main objective of the study is to examine banking sector financing and agricultural sector output in Nigeria. Specifically, the study examined the effect of bank loans and advances, lending rate, loans guaranteed under the ACGSF and the interaction between the repayment compliance rate of ACGSF on agricultural sector output in Nigeria. The study employed *ex-post* factor research design. The secondary data was analyzed using Augmented Dicker Fuller Text for Unit Root and The Ordinary Least Square analysis. The findings of the study revealed that there is no significant positive effect of bank loans and advances on agricultural output in Nigeria. There is no significant positive effect of lending rate on agricultural output in Nigeria. There is significant positive effect of the value of loans guaranteed under the ACGSF on agricultural sector output. There is significant positive interaction between the repayment compliance rate of ACGSF and agricultural sector output in Nigeria. It is therefore recommended that low-interest rates should be maintained to increase access to bank loans for agricultural output.

Key Word: Banking Sector Financing, Agricultural Sector Output, Nigeria

Introduction

Agricultural output comprises several components, including sales of agricultural products (including trade between agricultural entities), changes in inventory, products for self-consumption, output intended for further processing by agricultural producers, and internal consumption of livestock feed products (Wisdom & Amaegberi, 2025). Agricultural output, given in monetary terms, is the total value of agricultural produce less the value of intermediate inputs

from the agricultural sector. This total is referred to as "final output" and encompasses both monetary and non-monetary exchanges (e.g., barter, commerce, and self-consumption). The value of non- agricultural inputs is not subtracted, which sets it apart from agricultural GDP (Nomor & Udele, 2024). The primary indicator of the productivity of certain crops and livestock is agricultural output. The quantity and quality of agricultural products and goods generated by a nation, area, or farm over a certain time period is referred to in this research as agricultural output.

Economic growth, food security, and general well- being are all dependent on the output and performance of the agricultural sector, which is reflected in this production. The value of agricultural goods and associated activities, as well as the proportion of a nation's overall GDP that originates from agriculture, are taken into consideration while calculating it.

The phrase "agriculture finance" describes a range of funds given to Nigerian farmers in an effort to advance the socioeconomic standing of the country's citizens.

It includes both government money and non- governmental groups working toward sector growth, economic empowerment, and social empowerment (Mbelu & Ifionu, 2022). In the same vein, Adejumo and Bolarinwa (2017) hypothesized agricultural financing programs as part of financial arrangements set up by the government at all levels to assist farmers' access to finance and invariably boost agricultural productivity.

Agriculture is the primary source of income for a sizable section of Nigeria's population, who reside in rural areas. In this industry, financial obstacles are still prevalent. Because agriculture finance is still costly and unequally distributed, small-scale farmers are unable to raise their output. According to Nyoro (2002), lack of working capital and low liquidity limit the farmer's ability to purchase productivity enhancing input like seeds, fertilisers and pesticide. This was supported by Awudu and Huffman (2000) and Kimbaara (2005) stating that the average production efficiency levels are higher among producers who have access to formal credit.

As a result, agricultural finance increases output and improves living standards while ending the cycle of poverty among farmers. Numerous studies have examined the connection between financing and agricultural productivity. Nevertheless, previous research examining the relationship between agricultural financing and agricultural output has shown contradictory results. For instance Egwu (2016), Aina and Omojola (2017), Tiamiyu, Bwala and Ben Alawode, (2017), Olatunji, Ezenekwe and Uzonwanne (2018), Medugui, Musa & Abalis (2019), Abbas (2021), Toheeb and Dabo (2022) and James and Uduak (2022), all found that agricultural financing exerts significant positive effect on agricultural output, but other studies also came up with contrary findings that agricultural financing exerts significant negative affect on agricultural output (Matthew & Modecai, 2016; Ali, Jatau & Ekpe, 2016; and Odili, 2022). Other empirical studies such as that by Ademola, (2013) and Uger (2013) also revealed that agricultural financing does

not affect agricultural output. These disparate results may be explained by variations in the variables used, the technique used to measure the variables, the scope used, and the estimation methods used in their respective investigations. The mixed results could have been caused by all of them. The contradictory and unclear nature of these empirical investigations allows for more study in this field.

Nigeria's non-oil sub-sector and overall economy are inextricably linked to the success of the agriculture sector (Olowofeso, Adeboye, Adejo, Bassey & Abraham, 2017). Thus, agriculture is regarded as the major contributor to Nigeria's GDP, with small-scale farmers playing a vital role,

despite the fact that their productivity and expansion are hampered by restricted access to financial facilities (Afolabi, Ikpefan, Osuma, & Evbuomwan, (2021). According to Oji-Okoro (2011), the agricultural industry employs more than 70% of Nigeria's active labour population and generates 88 percent of non-oil foreign currency revenues.

Agriculture's importance to society cannot be overstated since it is the main means of eradicating poverty, unemployment, economic sustainability, and rural development. Thus, one key discussion that has gained relevance in both public and global fora has been the necessity to diversify the economy away from dependency on oil revenue and toward agricultural enterprise. It is critical for the growth of business prospects; the reduction of poverty; the enhancement of pay commitment; the acceleration of industrialization; and the alleviation of pressures on the installment balance (Olabanji, Adebisi, Ese & Emmanuel, 2017). Agriculture has been the basis of profitable business in many industrial and non-industrial countries. It has also been a source of essential food for the country's population, a regenerative source of foreign trade income, a way to supply local raw materials to the country's businesses, and a steady source of government revenue (FAO, 2020).

Agriculture, according to Egwu (2016), has a prominent position in the public economy, accounting for around 39 percent of GDP and employing more than 65 percent of the population. It is the main place where the country's growing population and businesses get their food and raw materials. Indeed, agricultural production is mostly expected by worker farmers who reside in rural regions. Smallholder farmers produce 85 percent of Nigeria's agricultural output. Thus, agriculture contributes significantly to the advancement of an economy in four ways: product contribution, factor contribution, market contribution, and foreign exchange contribution. Recognizing this, the Nigerian government has defined several policies and programmed aimed at boosting the sector's ability to continue performing its functions. This is because Nigeria has an extraordinarily extensive agro-ecological condition, which allows for the production of a broad range of rural commodities (Olabanji et al., 2017). Even though Nigeria has a lot of rural

resources, agric business has become one of the most important parts of the country's economy (Akanbi, , Onuk, & Umar, . (2019).

Several agricultural financing schemes has been proposed and implement in Nigeria (They include, Agricultural Credit Guarantee Fund Schemes) (ACGFS) established in 1977; the Small and Medium Enterprises Equity Investment Scheme (SMEEIS) established in 2001; the Refinancing and Rediscounting Facility; the Nigeria Incentive-Based and Risk Sharing System for Agricultural; the Nigeria Agricultural and Cooperative Bank (NACB) established in 1972; the Rural Banking Scheme (RBS) and many others) aimed at providing financial assistance to farmers. It is therefore, vital to examine how bank financing impacts on Nigerian agriculture in this circumstance.

Despite the consideration and driving motivations, the agriculture sector's performance in terms of usefulness and commitment to the country's absolute GDP remains extraordinarily low and falling. The goal of this study is to find out how funding from the banking sector affects agricultural production in Nigeria.

Statement of the Problem

The Nigeria Incentive-Based Risk Sharing System for Agricultural Finance (NIRSAL) is one of several programs that were put in place in 2013 to help banks with agricultural financing by giving them incentives, technical help, and risk-sharing facilities. The Agricultural Credit Support Scheme (ACSS) is one of several programs that are helping to increase agricultural output in the nation. This program provides low-interest loans to agro-allied businesses and farmers, with rates as low as 8%. Micro, Small, and Medium Enterprises Development Fund (MSMEDF) and other development finance interventions and regulatory measures are also in play. In 2019, for example, banks are required to lend a minimum of 65% of their deposits to agriculture under the Loan-to-Deposit Ratio (LDR) Policy.

Akinwale, and Ayodele, (2019) observed that one of the reasons for the fall in agricultural sector output is the lack of access to credit to enable them to take advantage of economic opportunities to increase their level of output, and hence move out of poverty. Credit constraints have plagued most farmers and rural dwellers for many years and were thought to be a critical part of a package of inputs needed to boost agricultural production. The majority of farmers lack access to formal credit and this has continued to be a constraint, limiting farmers' ability to adopt agricultural technologies and increase productivity. In spite of the importance of credit in agricultural production, its acquisition and repayment are fraught with a number of problems. Institutional problems such as the lending conditions that limit the access of investors to credit facilities have not been adequately addressed (Akinwale & Ayodele, 2019). There are contradictory reports on the effect of bank loans and advances on agricultural sector output. A number of studies have found bank loans and advances to have a significant effect on agricultural sector output (Asaleye,, Alege, Lawal, Popoola & Ogundipe, 2020) while some researchers have reported an insignificant effect Awunyo-Vitor, (2018).

Interest rates charged on loans to farmers in developing countries like Nigeria have generally been a contentious issue since the spring review of small farmer credit sponsored by the United States Agency for International Development (USAID) in 1973. Interest rates are an important economic price. One of the major problems responsible for inadequate credit facilities required by farmers for their agricultural activities is the constant and persistent increase in the cost of borrowing, despite the fact that these farmers produce the bulk of the food consumed in the country. Previous studies have shown contradictory reports on the effect of the lending rate on agricultural sector output in Nigeria. While some researchers have found it to have a negative relationship with agricultural sector output (Eleojo, & Eyo, (2019), some have found it to have a positive impact Mile, Ijirshar, Asom, Sokpo, & Fefa,2021; Mohammed, 2020). These contradictory findings call for further research. Hence, this study seeks to examine the effect of banking sector financing on agricultural sector output in Nigeria.

Review of Related Literature

Conceptual Review

Banking Sector Financing

The critical role that banks play in financing the agriculture and manufacturing sectors in Nigeria dates back to post independence. Their primary role in these sectors is credit extension. Amongst the various banking institutions in Nigeria, merchant, commercial and development banks have been the most effective in carrying out this function.

The manufacturing sector acts as a catalyst that accelerates the pace of structural transformation and diversification of the economy, thus enabling a country to utilize its factor endowments and to depend less on the foreign supply of finished goods or raw materials (Enilolobo, & Ode-Omenka, (2018). The manufacturing sector also creates investment capital at a faster rate than any other sector of the economy while promoting wider and more effective linkages among different sectors. On the other hand, the agricultural sector has a multiplier effect on a nation's socio-economic and industrial fabric, as a strong and efficient agricultural sector would enable a country to feed its growing population, generate employment, earn foreign exchange, and provide raw materials for industries (Lowofeso, , Adeboye, Adejo, Bassey, & Abraham, 2017). It has also the potential to be the industrial and economic springboard from which a country's development can take off, shape the landscape, and provide environmental benefits. Bank credit aids in generating self-employment, maintaining a business to take advantage of economies of scale and help prevent an economic activity from total collapse in the event of a natural disaster (Fowowe, 2020).

Keji, and Efuntade, (2020) argues that bank credit helps in reactivating, expanding and modernizing all types of agricultural enterprise, which are considered economically feasible and

desirable to the achievement of stated economic goals of self-sufficiency in agricultural production. In this context, bank credit provides incentives to adopt new technologies that would have been more slowly accepted (Fowowe, 2020). Credit to the agricultural sector could take the form of an overdraft, short, medium, or long-term credit, depending on the purpose and gestation

period of the project (Muftau, 2003). The works of George, (2017) identified that agricultural credit is a major input in the development of the agricultural sector in Nigeria, yet there has been a decline in banks' enthusiasm to lend to the sector because of the inherent problems associated with the sector. Iheanyi (2012), however, shows how commercial banks have exhibited their concerns for the agricultural sector in Nigeria by funding it extensively.

Ibitomi, and Ijaiya, (2020) has argued that the manufacturing sector is reputed to be an important engine of growth, an antidote for unemployment, a creator of wealth, and the threshold for sustainable development, thus it is expected to dominate, shape, and define the core path of industrialization. Iwedi, Okey-Nwala, bebi, and Nwosi, (2020) have noted that the manufacturing sector contributes to a nation's economic development, as it increases the chances of industrialization. Ibitomi, and Ijaiya, (2020) pointed out that low level of investments have constrained productivity in Nigeria. The low investments have been traced largely to banks unwillingness to make credits available to manufacturers, owing partly to the mis-match between the short-term nature of commercial banks' funds and the medium to long-term nature of funds needed by industries.

Agricultural Output

Agricultural output is defined as the value of production of a specific farming enterprise used or sold on the farm. Agriculture is the practice or science of farming including the cultivation of the soil for the growing of crops, the rearing of animals to provide food, and the preparation and marketing of agricultural and agro-allied products (Udeorah, & Vincent, (2018). Udoka, Mbat, & Duke, 2016). Thus, agricultural output is the sum total of the yield of crop production, domesticated animals, fishing forestry, and other agricultural products (Victor, Okoro, Bello, & Alozie, (2019). Specifically, agriculture output is simply divided into four sectors such as crop production, livestock, fishing, and forestry in Nigeria (National Bureau of Statistics [NBS], 2020). Crop production remains the largest segment and it accounts for about 87.6% of the sector's total output (NBS, 2020). There are different types of crop production namely cash crops and food crops. As opined by Francis (2013), cash crops are crops that are grown for sales at a profit. It incorporates cotton, oil palm, natural product trees, elastic, sugarcane, cocoa, espresso, and so forth. They are significantly created in the southern and western parts of Nigeria. Food crops are agricultural products produced for use as food either for sale commercially or for use by the farmer.

It includes cereals, legumes, vegetables, tubers, fruits, and so on. They are majorly produced in every region of the country.

Food Insecurity

Food insecurity, is defined as "a household-level economic and social condition of limited or uncertain access to adequate food," is an important national health problem and an under recognized social determinant of health (Wang, McGinnis, & Goulet, (2015). It is an important national health problem and an under recognized social determinant of health. It places a substantial burden on our society through health care and social costs. People experiencing food insecurity often consume a nutrient-poor diet, which may contribute to the development of obesity, heart disease, hypertension, diabetes, and other chronic diseases (Murthy, 2016). People who live in food-insecure households also have difficulties in managing diet-related chronic conditions (Herman, et al., 2015). For example, people with type 2 diabetes may find themselves limited to purchasing inexpensive, high-calorie, nutritionally poor foods (e.g., foods high in refined carbohydrates) instead of foods that are more healthful, such as vegetables, lean proteins, and whole grains (Werigbelegha, & Avery, (2018). In addition, low-income families might postpone needed medical care to buy food or might underuse medicine because of budget constraints, which can result in expensive and avoidable hospitalizations (Wang, 2015). Others might experience a drop-off in caloric intake when the money runs low. The resulting malnutrition can lead to longer hospital stays, reduced responsiveness to treatment, and an increased risk of developing infections after surgery (Kushel, 2006). Food insecurity represents a "nutrition quality gap," essentially a health inequity that we must address if we hope to reach our nation's targets for achieving healthful diets and reducing chronic disease (Coleman-Jensen et al., 2015).

Food Crises

Food crisis occurs when rates of hunger and malnutrition rise sharply at local, national, or global levels. In 2020, at least 155 million people in some of the planet's most fragile regions confronted the threat of a food crisis (World Vision, 2022). By April 2022, global food prices were the highest they had ever been. More than 276 million of the planet's people across 53 countries and territories were staring down severe food insecurity. That is double the pre-pandemic levels. But COVID has not been the only culprit. The crisis in Ukraine, a major grain exporter to hundreds of millions of people worldwide, has left many countries reeling. By May 2022, Ukrainian farmers had 20 million tonnes of grain they could not get into international markets. But even before 2022, global levels of hunger had surpassed all previous records previously reported by the Global Report on Food Crises. The most vulnerable regions were those that were already facing multiple threats such as climate change, violent conflict, and political and economic turmoil. Some examples are: the Democratic Republic of Congo, Afghanistan, Ethiopia, Yemen, Nigeria, Syria, and South

Sudan. (Armed conflict is the primary cause of food insecurity in many high-hungry countries (World Vision, 2022).

In Nigeria, the Food and Agriculture Organisation (FAO) has warned that the food crisis might hit over 16.9 million Nigerians in 2022, as consumption is expected to slightly worsen due to possible reductions in household, market stocks and prices (FAO, 2022). Conflict in Borno, Adamawa, and Yobe has disrupted livelihood activities, resulting in food crises in Nigeria. Many poor and conflict-affected households have depleted their own food supplies and are reliant on the market. High staple food prices and limited access to income are resulting in many households facing crisis (IPC Phase 3) outcomes. Households most affected by the conflict, as well as those in difficult-to-reach areas, have limited access to humanitarian aid and rely primarily on wild foods (FEWS NET, 2022).

Agricultural Extension Services

Agricultural extension service offers technical advice on agriculture to farmers and supplies them with the necessary inputs and services to support their agricultural production. It provides information to farmers and passes to the farmers' new ideas developed by agricultural research stations (Wanigasundera & Atapattu, 2019). Agricultural extension service can be defined as an educational opportunity provided by colleges and universities to people who are not enrolled as regular students. Synonyms: extension, university extension. type of: didactics, education, educational activity, instruction, pedagogy, teaching (FAO, 2020).Although farmers already have a lot of knowledge about their environment and their farming system, extension can bring them other knowledge and information which they do not have. For example, knowledge about the cause of the damage to a particular crop, the general principles of pest control, or the ways in which manure and compost are broken down to provide plant nutrients are all areas of knowledge that the agent can usefully bring to farmers (FAO, 2016).

The application of such knowledge often means that the farmer has to acquire new skills of various kinds: for example, technical skills to operate unfamiliar equipment, organizational skills to manage a group project, the skill to assess the economic aspects of technical advice given, or farm management skills for keeping records and allocating the use of farm resources and equipment(FAO, 2016).The transfer of knowledge and skills to farmers and their families is an important extension activity and the extension agent must prepare himself thoroughly. He must find out which skills or areas of knowledge are lacking among the farmers in his area, and then arrange suitable learning experiences through which the farmers can acquire them(FAO, 2016).

Bank Loans and Advances

Loans refer to a debt provided by a financial institution for a particular period while Advances are the funds provided by the banks to the business to fulfil working capital requirement which are to be payable within one year (Surbhi, 2017).One of the causes for the agricultural sector's GDP decline is a lack of access to commercial bank credit, which allows them to take advantage of

economic possibilities to improve production and so move out of poverty. Credit limits have long afflicted impoverished farmers and rural inhabitants, and were regarded to be a vital component of a package of inputs required to enhance agricultural productivity. The majority of farmers do not have access to formal loans, which has remained a barrier to farmers' capacity to embrace agricultural technology and enhance production. Despite the necessity of finance in agricultural output, obtaining and repaying it is riddled with complications. Institutional issues, such as lending rules that limit investors' access to credit facilities, have not been sufficiently addressed. A wide range of socioeconomic characteristics all influence farmers' capacity to get optimal loans. Loan default risk, farmer age, geography, and the high-interest rate imposed by financial providers are examples of such characteristics (Ajibade, 2011).

The literature on commercial bank loan and agricultural production has several arguments. Imoisi et al. (2012) study revealed a substantial link between deposit money, bank loans and advances, and agricultural production. Kolapo, Ayeni, and Oke (2012) empirical revealed that the impact of credit risk on bank performance, as measured by return on assets, was cross-sectionally invariant. A 100% rise in non-performing loans decreases profitability (ROA) by about 6.2 percent, a 100% increase in loan loss provision reduces profitability by around 0.65 percent, and a 100% increase in total loans and advances enhances profitability by about 9.6 percent (Kolapo, Ayeni & Oke 2012).

Theoretical Framework

This study is anchored on the Supply-leading finance theorists which assumed that economic growth in rural areas could be induced through the financial system. As a result financial incentives for the adoption of new agricultural technologies, often in the form of subsidized credit, were provided to farmers in advance of the demand for them. These theorists believed that most farmers could not save enough for the inputs they needed and could not pay the commercial cost of credit. Savings was the "forgotten half of rural finance" (Vogel 1984b)-because it was assumed that in rural areas of developing countries there were little or no savings to be mobilized. Thus, with the emergence of the green revolution in the late 1960s and 1970s, large-

scale subsidized credit programs proliferated in developing countries around the world. The approach was later expanded to nonagricultural borrowers.

Because it was assumed that subsidized credit was required to stimulate agricultural growth, agricultural finance came to be treated essentially as a crop input: its subsidies were considered similar to those provided for fertilizers and pesticides. Government planning for intervention in rural credit markets, as formulated by many policymakers of that period, was thus quite simple: large numbers of low and middle-income farmers would receive low-cost credit. Using the new agricultural technologies, these farmers would produce more crops and increase their incomes. It was even believed that the targeted farmers would graduate" from subsidized agricultural lending programs once their incomes had risen.

The facts, however, did not substantiate the theories. It is perhaps relevant to note in this context that most supply-leading finance theorists were not financial specialists, but economists concerned primarily with the development of the real sector. By the late 1960s and early 1970s serious difficulties with subsidized rural credit programs had begun to become apparent. A major turning point came in 1972-73 when the U.S. Agency for International Development supported a wide survey of credit programs (the Spring Review of Farmer Credit) in developing countries. This review (USAID 1973) analyzed for the first time many of the failures of subsidized credit programs. By late 1970s and the 1980s criticisms of the rationale behind these programs filled the development literature. However, many government and donors maintained large subsidized credit programs long after their intrinsic defects were well known, and many of these programs contained today.

Empirical Review

Wisdom and Amaegberi, (2025) used the Autoregressive Distributed Lag (ARDL) method to look at how bank loans affected agricultural production in Nigeria. The investigation made use of a yearly time series dataset that encompasses the entire period from 1981 to 2023, inclusive. While the agricultural sector enjoyed some short-term benefits from the loans and advances made available by deposit money banks, the sector as a whole reaped huge benefit in the long run. Loans and advances provided by deposit money banks to the agricultural sector have significant and favourable consequences in the short and long term. Government investment in capital projects also increased agricultural output, both immediately and over the long term, according to the results. The agricultural output in the crop's subsector was positively and substantially impacted by the consumer price index, both in the short and long term. Both the consumer price index and population expansion had a beneficial and lasting impact on the agricultural output of the cattle subsector. In addition, it was shown that annual rainfall significantly reduced agricultural productivity over time but had a big beneficial effect on output in the short term. The government ought to prioritise expanding access to affordable agricultural financing in order to promote the expansion of crops, animals, and overall agricultural production in the long run. Government

spending on agricultural infrastructure and support services should be maintained or increased by policymakers in order to sustainably increase agricultural output

Abu (2024) investigated how loans from commercial banks affected agricultural production in Nigeria. All of the years from 1992 to 2021 were considered in the study. In order to analyse the data, ordinary least squares (OLS) was employed. The research found that private bank loans and government grants greatly boosted agricultural output growth.

The impact of bank loans on agricultural output in Nigeria was examined by Aginam (2024). The research was conducted from 1981 to 2022 inclusive. In our search for trends, we employed correlation and least squares regression analyses. The value of loans insured by the ACGSF has a beneficial impact on agricultural productivity, according to research. The study found that the repayment compliance rate of ACGSF was positively correlated with agricultural sector output. It was also established that bank loans and advances did little to increase agricultural output.

Based on data collected between 1990 and 2022, Yusuf, Yusuf, Oladipo, Gajere, and Ojih

(2024) assessed the impact of loans made by deposit money banks in Nigeria to the agricultural sector. This research made use of the multiple regression technique to analyse the collected data. Funds from the agricultural credit guarantee scheme (ACGS) and loans from commercial banks to the agricultural sector (CBCA) had a positive and strongly significant impact on sector performance.

The impact of commercial bank loans on crop yields in Nigeria was investigated by Magaji, Usman, and Yusuf (2023). Researchers in Abuja, Nigeria's Federal Capital Territory, analysed information gathered directly from commercial banks and borrowers who were looking for loans for agriculture. Several descriptive statistics were employed to analyse the data, including logistic regression, standard deviation, and mean. The research found that crop yields were boosted by agricultural loans from commercial banks.

Using data collected from 1990 to 2019, Ngong, Onyejiaku, Fonchamnyo, and Onwumere (2023) analysed the impact of bank lending on agricultural output in CEMAC nations. The study utilized autoregressive distributed lag as its methodology. The findings revealed that local bank loans to the private sector, land, and physical capita all had a favourable effect on agriculture value added. Broad money supply, inflation, and labour all had a detrimental impact on the value of agriculture's contribution to GDP.

Rodríguez and Chávez (2023) examined the impact of commercial bank loans on economic activity across Mexico's industrial sector and seven particular industries, including food, beverage, and tobacco. Data sets utilised in the study were updated monthly from July 2009 to March 2020.

Here is the data The ARDL bounds test method was used to evaluate the results. The analysis shows that bank lending has a positive and statistically significant impact on production across the board and in special industries like food, drink, and tobacco.

The impact of commercial bank loans on agricultural production in Nigeria was examined by Onuegbu, Ikeora, and Promise (2022) from 1980 to 2013. The data was analyzed using Ordinary Least Squares (OLS). While interest rates had a negative but statistically insignificant impact on agricultural production, bank lending, government expenditure on the agricultural sector, and the Agricultural lending Guarantee Scheme Fund all had positive and statistically significant relationships with agricultural production.

The impact of commercial bank loans on the expansion of agricultural investment in Kurdistan was examined by Bilbas (2018) over the period of 1980 to 2017. The OLS method was utilised in this study. George-Anokwuru (2018) examined the impact of deposit money bank loans on agricultural production in Nigeria from 1985 to 2015 and found that these loans had a positive and statistically significant effect on agricultural development. In order to analyzed the data, the OLS method was employed. The study found that agricultural productivity was positively and significantly impacted by credit from deposit money institutions. Additionally, it was found that interest rates had a negative, but statistically negligible, impact on agricultural sector output.

Gap in Literature

Previous studies on bank loans and agricultural sector output has shown that a couple of the studies was carried out outside Nigeria example, Chisasa and Makina (2015) examined the dynamic relationship between bank credit and agricultural output in South Africa using time series data from 1970 to 2011, Islam (2020) who examined the effect of agricultural credit on agricultural productivity in Bangladesh from 2000 to 2019 and that of Anh, Gan & Anh (2020) who examined the impact of credit on agriculture performance in Vietnam from 2004Q4 to 2016Q4. The studies carried out in Nigeria has shown a contradictory findings on previous studies conducted on bank loans and advances and agricultural sector output. While the findings of Chisasa and Makina (2015), Udoka et al. (2016), Enilolobo and Ode-Omenka (2018) significant positive impact on agricultural output. Other researchers such as Olorunsola, Adeyemi, Valli, Kufre, and Ochoche (2017); Werigbelegha and Avery (2018) have reported that bank credit has not significantly contributed to the agricultural sector. These discrepancies have presented a gap that requires further investigation.

In addition, studies on bank lending rate and agricultural sector output has shown diverse opinions and view while so researchers such as Amassoma et al (2011), Onyishi et al (2015) Asekome and Ikojie (2017) and Abubakar (2019) have found interest rate negative relationship with agricultural sector output others such as Ogbonna and Osondu (2015), Westercamp et al (2015), Nwanyanwu

and Cookey (2020) have found a positive relationship between bank lending rate and agricultural sector output based on the contradictory findings, this study seeks to reconcile these contradictions.

However, there is paucity of studies on the value of loans guaranteed under the ACGSF and agricultural sector output. Most of the studies were on the impact of agricultural financing under Agricultural Credit Guarantee Scheme Fund Loan to Nigeria's Agricultural sector (ACGSF) on agricultural output and the thresholds of the agricultural credit guarantee scheme fund (ACGSF) on agricultural performance, relative effect of government and deposit money bank financing on Nigeria's agricultural sector performance. This study seeks to provide a precise empirical study on on the value of loans guaranteed under the ACGSF and agricultural sector output.

Methodology

Research Design

The study employed an *ex-post facto* research design because the variables of the study were collected based on data on past events documented in the CBN Statistical Bulletin, and the National Bureau of Statistics.

Model Specification

Model specification is the determination of the endogenous and exogenous variables to be included in the model as well as the a priori expectation about the sign and size of the parameters of the function (Ibenta, 2012). A model is a simplified view of reality deigned to enable a researcher describe the essence and inter relationship within the system or phenomenon it depicts (Yomere and Agbonifoh, 1999). 3.4 Model Specification

The model to be used for this investigation is the adaption and modification of the work of Efobi and Osabuohien (2011)

The model is stated thus:

ASO = f (BLAA, LENDING, LOANS)

Where:

ASO= Agric Sector Output

BLAA= Bank Loans and Advances to Agricultural Sector

LENDING= Lending Rate

LOANS= Loans Guaranteed Under the ACGSF

The Model was modified by introducing repayment compliance rate of ACGSF as one of the explanatory variables

ASO = f (BLAA, LENDING, LOANS, REPAYMENT)

The Econometric Equation Form of the Model will be:

$ASO = \beta_0 + \beta_1 BLAA + \beta_2 LENDING + \beta_3 LOANS + \beta_4 REPAYMENT\mu$- - -- - - - - - 1

Where:

ASO= Agric Sector Output

BLAA= Bank Loans And Advances to Agricultural Sector

LENDING= Lending Rate

LOANS= Loans Guaranteed Under the ACGSF

REPAYMENT= Repayment Compliance Rate of ACGSF

μ = Stochastic Disturbance (Error Term)

$\beta 0$ = Intercept of Relationship in the Model Constant $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, = are the Coefficients of the Independent Variables

Data Analysis and Results

Unit Root Test

Table 2: Results of Unit Root test for Stationarity

Variables	At Level 1(0)	At First Difference 1(1)	At Second Difference	Order of Integration	Probability
ASO	-4.561864			1(0)	0.0012
BLAA	3.718454			1(0)	0.0037
LENDING	-3.907281			1(0)	0.0053

LOANS	-4.968378	1(0)	0.0085
REPAYM	-5.045210	1(0)	0.0003

Source: Eviews 9.0

The variables were tested for stationarity. The test is aimed at understanding the state at which the variables can be held stable for regression analyses. This test becomes pertinent because time series variables are often prone to non-stationarity which is capable of distorting the reliability of regression results. The variables used in the analysis were subjected to Augmented Dickey Fuller

(ADF) tests, to determine whether they are stationary series or non-stationary series. The variables were tested for stationarity at "intercept only" and at "intercept and trend

The result on Table 4 revealed that at level, under the "intercept only", agric sector output, bank loans and advances, lending rate, loans guaranteed and repayment compliance rate were stationary at level [1(0)]

From the analyses of stationarity of the variables, it was seen that the variables have stationarity of level. The implication of the result of the stationarity test is that the Ordinary Least Square technique should be used for the data analysis. Since the study variables were all stationary at level. Thus, the most suitable tool of analyses is the Ordinary Least Squire method of analysis.

The Ordinary Least Square Regressions

The Ordinary Least Square

Dependent Variable: ASO

Method: Least Squares

Date: 19/03/26 Time: 16:32

Sample: 1999 2024

Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.045556	0.414446	2.348503	0.0010
BLAA	1.324803	0.027139	3.407683	0.0342

LEND	-0.004398	0.013946	-1.315386	0.7549
LOAD	2.035757	0.013555	2.637984	0.0137
REPAM	1.324435	0.130702	3.186949	0.0041

R-squared	0.766467	Mean dependent var	8.857538
Adjusted R-squared	0.725813	S.D. dependent var	2.090952
S.E. of regression	0.135299	Akaike info criterion	-0.999695
Sum squared resid	0.494256	Schwarz criterion	-0.727603
Log likelihood	22.49497	Hannan-Quinn criter.	-0.908144
F-statistic	15.23150	Durbin-Watson stat	2.976966
Prob(F-statistic)	0.000031		

Source: Eviews 9.0

Bank Loans and Advances to Agricultural Sector (BLAA): The coefficient of bank loans and advances to agricultural sector is positive at 1.324803 with t-Statistic of 3.407683 and probability value of 0.0342 which means that bank loans and advances to agricultural sector has positive and significant effect on agricultural sector output in Nigeria

Lending (LENDING): The coefficient of lending is negative at -0.004398 with t-Statistic of -1.315386 and probability value of 0.7549 which means that lending has no significant effect on agricultural sector output in Nigeria

Loans Guaranteed (LOANS**)**: The results showed that the coefficient of loans guaranteed is positive at 2.035757 with t-Statistic of 2.637984 and probability value of 0.0137 which suggests that loans guaranteed has positive and significant effect on agricultural sector output in Nigeria

Repayment Compliance Rate (REPAYMENT**):** The coefficient of repayment compliance rate is positive at 1.324435 with t-Statistic of 3.186949 and probability value of 0.004. showing that treasury bill rate has significant effect on agricultural sector output in Nigeria

The R2 of 76.645% and adjusted R2 of 72.58 indicate that the explanatory variables could exert a joint influence of 76.64% on the dependent variable, thus capable of coursing variations in the dependent variable

Conclusion

The study concludes that bank loans and advances, value of loans guaranteed under the ACGSF and repayment compliance rate of ACGSF are statistically useful in predicting agricultural output in Nigeria while Lending rate effective in predicting agricultural output in Nigeria.

Recommendations

Amongst the recommendations is that government should invest more money in the agricultural sector. The government needs to put in place policies that support low interest rates in order to make loans from banks more accessible for the purpose of increasing production from the agricultural sector. The government through the CBN should vigorously pursue the on-lending scheme to make the facility attractive to farmers. The rate of lending has a contradictory effect on the output of the agricultural sector. Since higher lending rates result in less investment being

made in the agricultural sector, it is necessary to determine an appropriate rate that can either negate or, at the very least, minimise the impact of this effect. Additionally, the government at the state level should encourage agricultural sector output by providing incentives to agricultural businesses, such as lowering interest rates, in order to encourage both domestic and international investors to patronise this sector of the country's economy. These types of incentives could include tax breaks and other financial benefits. The government should make an effort to maintain and provide larger loan cpver to farmers through ACGSF.

References

Adediran, O. & Obasan, K (2010). "The Role of Industrial Sector in the Economic Development of Nigeria", *Journal of Management and Society*, 1(2), 9-16.

Ademola, A. E. (2019). Impact of Agricultural Financing on Nigeria Economy. *Asian Journal of Agricultural Extension, Economics, and Sociology, 31*(2), 1-13.DOI: 10.9734/AJAEES/2019/v31i230130.

Adeola, O. & Ikpesu, F. (2016). An empirical investigation of the impact of bank lending on agricultural output in Nigeria. *The Journal of Developing Areas, 50*(6), 89-103.

Afolabi, M., Ikpefan, O. A., Osuma, G. O., & Evbuomwan, G. (2021). *Impact of agricultural credit on economic growth in Nigeria*. *18*, 511–523. https://doi.org/10.37394/23207.2021.18.52

Akanbi, O.O., Onuk, E.G & Umar, H.S. (2019). Effect of agricultural sector expenditure on Nigeria's economic growth. *Asian Journal of Agricultural Extension, Economics & Sociology, 32*(3), 1—11.

Akinwale, O., & Ayodele, A. P (2019). Effect of Government Expenditure Components on Agricultural Productivity in Nigeria. *Journal of Economics and Sustainable Development, 10*(18), 1-13.

Asaleye, A. J., Alege, P. O., Lawal, A. I., Popoola, O., & Ogundipe, A. A. (2020). Cash Crops Financing, Agricultural Performance, and Sustainability: Evidence from Nigeria. *African Journal of Economics and Management Studies, 3,* 1-23.

Asaleye, A. J., Lawal, A. I., Popoola, O., Alege, P. O., & Oyetade, O. O. (2019). Financial integration, employment, and wages nexus: evidence from Nigeria. *Montenegrin Journal of Economics, 15*(1), 141-154.

Awunyo-Vitor, *D.* (2018). Theoretical and conceptual framework of access to financial services by farmers in emerging economies: implication for empirical analysis.*Acta University of Sapientiae, Economics, and Business, 6,* 43–59. DOI: 10.1515/auseb-2018-0003

Bernanke, B. S., & Gertler, M. (1995). *Inside the Black Box: The Credit Channel of Monetary Policy Transmission*. *9*(4), 27–48.

Bernanke, B., & Gertler, M. (1989). Agency costs, net worth, and business fluctuations. *American Economic Review, 79,* 14–31.

Bernanke, B., Gertler, M., & Gilchrist, S. (1996). The financial accelerator and the flight to quality. *The Review of Economics and Statistics, 1,* 1–15.

Britannica. (n.d.). *subsistence farming | Definition, Characteristics, & Facts | Britannica*. Retrieved June 27, 2022, from https://www.britannica.com/topic/subsistence-farming.

Cawley, J., & Philipson, T. (1999). An empirical examination of information barriers to trade in insurance. *American Economic Review*, *89*(4), 827–846. https://doi.org/10.1257/AER.89.4.827

CBN. (2019). Central Bank of Nigeria Statistical Bulletin. Abuja.

Central Bank of Nigeria. (2017). Ebook of 2016 statistical bulletin on the real sector.

Chisasa, J., & Makina, D. (2015). Bank credit and agricultural output in South Africa: cointegration, short-run dynamics, and causality. *The Journal of Applied Business Research, 31*(2), 489–500.

Coleman-Jensen A, Rabbitt, M. P., Gregory, C., & Singh, A. (2015). *Household Food Security in the United States In 2014*. Washington, DC: US Department of Agriculture, Economic Research Service.

De Graeve, F. (2007). The external finance premium and the macroeconomy: US post-WWII evidence. Universiteit Gent Working Paper.

Dickey, D., & Fuller, W. (1979). Discussion of the estimators for an autoregressive time series with a unit root. *Journal of American Statistical Association, 74,* 427-431.

Eleojo, A. M., & Eyo, E. O. (2019). Impact of financial sector reforms on agricultural output in Nigeria. *Saudi Journal of Humanities and Social Sciences, 4*(8), 530-535.

Enilolobo, O. S., & Ode-Omenka, L. C. (2018). The impact of credits on agricultural output in Nigeria. *International Journal of Economics, Commerce and Management United Kingdom,6*(12), 232-247. http://ijecm.co.uk/

FAO (2016). *Understanding Extension***.** https://www.fao.org/3/t0060e/T0060E03.htm

FAO. (2016). *Climate change and food security: risks and responses. ISBN 978-92-5-108998-9.*

FEWS NET. (2020, January). *Nigeria - Food Security Outlook: Tue, 2022-02-01 to Thu, 2022-09-01 | Famine Early Warning Systems Network*. https://fews.net/west-africa/nigeria/food-security-outlook/february-2022.

FMARD. (2008). *Annual Report 2008*, Federal Ministry of Agriculture and Rural Development, Abuja, Nigeria

Fowowe, B. (2020). The effects of financial inclusion on agricultural productivity in Nigeria. *Journal of Economics and Development,* *22*(1), 61-79. https://doi.org/10.1108/JED-11-2019-0059

George, A. A. (2017). The Library of Economics and Liberty.

Herman, D., Afulani, P., Coleman-Jensen, A., Harrison, G. G. (2015). Food insecurity and cost-related medication underuse among non-elderly adults in a nationally representative sample. *American Journal Public Health*, 105:e48–e59.

Ibenta, S. N. O. (2012). Research monograph: guidelines for seminar papers, Theses Project Reports. Anambra State. 22-28.

Ibitomi, T., & Ijaiya, M. (2020). Impact of agricultural financing schemes on agricultural output in Nigeria. 111-122.

Iganiga, B.O. & Unemhilin, D.O. (2011). The impact of federal government agricultural expenditure on agricultural output in Nigeria. *Journal of Economics, 2*(2), 81-88.

Iwedi, M., Okey-Nwala, P. O., Ibebi, C., & Nwosi, A. A. (2020). Institutional funding and the growth of the agricultural sector in Nigeria. *World Journal of Finance and Investment Research, 5*(1), 1-12.

Keji, S. A., & Efuntade, O. O. (2020). Agricultural output and government expenditure in Nigeria. *Journal PerspekifPembiayaandan Pembangunan Daerah, 8*(2), 101-110.

Kiyotaki, N., & Moore, J. (1997). Credit cycles. *Journal of Political Economy,105,* 211–248.

Kushel, M. B., Gupta, R., Gee, L. & Haas, J. S. (2006). Housing instability and food insecurity as barriers to health care among low-income. *AmericansJournal of General Intern Med*; 21:71–77.

lowofeso, L., E., Adeboye, A. A., Adejo, V. T., Bassey, K. J., & Abraham, O. (2017). Agricultural Sector Credit and Output Relationship in Nigeria : Evidence from Nonlinear ARDL. *CBN Journal of Applied Statistics, 8*(1), 101-122.

Mile, B. N., Ijirshar, V. U., Asom, S. T., Sokpo, J. T., & Fefa, J. (2021). Empirical analysis of government agricultural spending and agricultural output in Nigeria. *Asian Journal of Economics, Business, and Accounting, 21*(7), 7-23. https://doi.org/10.9734/ajeba/2021/v21i730398

Mishkin, F. (1996). The channels of monetary transmission: lessons for monetary policy. NBER Working Paper Series w5464.

Mohammed, R. (2020). P-AADS Gets New Guidelines. *Central Bank of Nigeria (CBN), 2*(11), 5-6.

Muftau, A. I. (2003). "Commercial Bank Credit to the Agricultural Sector and the Nigerian Economy: An Analysis of the Future Trend" *Advances in Management*, 3(1), 86-94.

Muftaudeen, O. O., & Abdullahi, H. (2014). Macroeconomic policy and agricultural output in Nigeria: Implications for Food Security. *American Journal of Economics, 4*(2), 99-113. DOI:10.5923/j.economics.2014402.02.

Murthy, V. H. (2016). Food Insecurity: A Public Health Issue. *Public Health Reports*, *131*(5), 655. https://doi.org/10.1177/0033354916664154

Nations Encyclopedia (2022). Nigeria – Agriculture, https://www.nationsencyclopedia.com/economies/Africa/Nigeria-AGRICULTURE.html

NBS (2016). *National Bureau of Statistics*: Nigerian Gross Domestic Product Report.

Nnamocha, P. N., & Eke, C. N. (2016). Bank credit and agricultural output in Nigeria (1970 – 2013): An Error Correction Model (ECM) Approach. *British Journal of Economics, Management, and Trade, 10*(2), 1-12. https://doi.org/10.9734/BJEMT/2015/19884

Nwanyanwu, O.J. (2011). "An Analysis of Banks' Credit on the Nigerian Economic Growth (1992-2008)", *Jos Journal of Economics*, 4(1), 43-58.

Obilor, S. I. (2013). The impact of commercial banks' credit to agriculture on agricultural development in Nigeria: An Econometric Analysis. *International Journal of Business, Humanities, and Technology, 3*(1).

Ogen, O. (2007), "The Agricultural Sector and Nigeria's Development Comparative Perspectives from the Brazilan Agro-Industrial Economy, 1960-1995", *Nebula*, 4(1), 184-194.

Olabanji, E., Adebisi, F., Ese, U., & Emmanuel, O. (2017). Agricultural output and economic growth in Nigeria. *Journal of African Research in Business and Technology, 516093,* 11. https://doi.org/10.5171/2017.

Olowa, O. & Olowa, o. (2011). Issues, problems and policies in agricultural credit: A review of agricultural credit in Nigeria. *Bangladesh e-Journal of Sociology, 8*(2), 87-108.

Olowofeso, O., Adeboye, A. A., Adejo, V. T., Bassey, K. J., & Abraham, O. (2017). Agricultural Sector Credit and Output Relationship in Nigeria : Evidence from Nonlinear ARDL. *CBN Journal of Applied Statistics*, *8*(1), 101–122.

Osabohien, R., Olurinola, I. O., & Matthew, O. A. (2020). Agro-Financing and Agricultural Output in Nigeria. *Journal of Advanced Research in Law and Economics, 11*(4), 1262-1268. https://doi.org/10.14505//jarle.v11.4(50).22

Oyaniran, T. (2020). *Current state of Nigeria agriculture and agribusiness sectors.* AFCFTA Workshop.

Oyelade, A. (2019). Impact of commercial bank credit on agricultural output in Nigeria. *Review of innovation and competitiveness, 5*(1), 5 – 20. DOI:10.32728/ric.2019.51/1.

Seligman, H. K. & Schillinger, D. (2010). Hunger and socioeconomic disparities in chronic disease. The *New England Journal of Medicine* (*NEJM*)363:6–9.

Sulaimon, M. (2021). Agricultural credit guarantee scheme fund (ACGSF) and agricultural performance in Nigeria: A threshold regression analysis. Forthcoming in: CBN Journal of Applied Statistics.

Surbhi, S. (2017, July 26). *Difference Between Loans and Advances (with Comparison Chart) - Key Differences*. https://keydifferences.com/difference-between-loans-and-advances.html

Udeorah, S. F., & Vincent, M. O. (2018). Agriculture financing and performance of the agricultural sector in Nigeria, 1981-2015. 8(1), 32-46.

Udoka, C. O., Mbat, P. D. O., & Duke, S. B. (2016). The Effect of Commercial Banks' Credit on Agricultural Production in Nigeria. *Journal of Finance and Accounting*, *4*(1), 1-10.

Victor, N., Okoro, E. U. Bello, K., & Alozie, C. P. (2019). Agricultural financing and its impact on agricultural GDP: An ARDL. *International Journal of Sustainable Agricultural Research, 6*(1), 47-60.

Wang, E. A., McGinnis, K. A. & Goulet, J, (2015). Veterans aging cohort study project team. Food insecurity and health: data from the veterans aging cohort study project team. *Public Health Rep*. 130:261–268.

Wanigasundera, W. A. D. P. & Atapattu, N. (2019). Extension reforms in Sri Lanka: lessons and policy options. *Agricultural Extension Reforms in South Asia*, 79–98. https://doi.org/10.1016/B978-0-12-818752-4.00005-9

Werigbelegha, A. P., & Avery, B. P. (2018). Bank credit and agricultural sector growth in Nigeria, 1990-2016 : investigating the nexus. *International Journal of Economics, Commerce and Management, 6*(2), 176–187.

Werner, R. A. (1993). Towards a quantity theory of disaggregated credit and international capital flows. A Paper Presented at the Royal Economic Society Annual Conference in New York.

Wisdom, S.K. & Amaegberi, M. B. (2025). Banking sector credit and agricultural output in Nigerian: *International Journal of Scientific Research in Humanities Legal Studies and International Relations 1(3) 4-25*

World Bank. (2008). Rural Finance in Nigeria: Integrating New Approaches. Report No. 44741.

World Vision. (2022, June 2).*Food Crisis: Facts & How to Help | World Vision Canada*. https://www.worldvision.ca/stories/food/food-crisis-facts-and-how-to-help