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Impact of Bank Loans on Agricultural Productivity in Nigeria (1999–2020)

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Abstract

This study investigates the impact of bank loans on agricultural productivity in Nigeria, using the agricultural sector's contribution to Gross Domestic Product (GDP) as a proxy for productivity. Spanning the period from 1999 to 2020, the research employs descriptive statistics, trend analysis, and simple linear regression to ascertain the relationship between total bank loans to the agricultural sector and its impact on national economic growth. Findings from the descriptive and trend analyses reveal a steady increase in bank loans to agriculture — rising from ₦43.06 billion in 1999 to ₦1.11 trillion in 2020 — while the sector's GDP contribution steadily declined from 32.9% to 21.5% within the same period. The regression analysis further indicates a negative and statistically insignificant relationship between bank loans and agricultural GDP contribution ($\beta = -6.144$, $p = 0.282$), suggesting that increased financing alone has not significantly impacted agricultural productivity in Nigeria. The study concludes that although financial support is vital, it is insufficient on its own to drive agricultural sector growth. It recommends a holistic financing framework integrating agricultural credit with infrastructure development, mechanization, extension services, and market linkages. It further proposes a statutory agricultural credit quota for banks, reduced interest rates on agricultural

Madonna Journal of Administration and Management Sciences, Vol 2, No 1

loans, and improved post-loan monitoring systems.

Keywords: Agricultural Financing, Bank Loans, Agricultural Productivity, food Security,
Nigerian Economy

Introduction

According to the Food and Agriculture Organization **(**FAO) report (2023), *Nigeria,* Africa's most populous nation, faces a daunting challenge in achieving food security. Despite its vast agricultural potential, the country struggles to produce enough food to feed its growing population. The consequences are stark: food imports skyrocket, rural poverty persists, and economic growth is hindered. However, a solution lies in enhancing agricultural financing. By holding other exogenous variables constant and providing farmers with access to capital, Nigeria can unlock its agricultural potential, boost food production, and ensure food security for its citizens. This research explores the impact of enhanced agricultural financing on food security in Nigeria; it examines the current state of agricultural financing, the challenges faced by farmers, and the potential benefits of increased investment in the sector. By investigating this critical issue, this research aims to contribute to the development of effective solutions for achieving food security in Nigeria.

Statement of Research Problem:

According to (VeriAfrica, 2025), despite contributing approximately 24–25% of Nigeria's GDP, the agricultural sector receives only about 4–6% of total bank lending. This persistent financing gap restricts farmers' access to capital, resulting in low productivity, inadequate food production, high food imports, persistent rural poverty, and sluggish economic growth. With only about 6.87% of total bank loans allocated to agriculture between 1999 and 2020, farmers and agribusinesses struggle to access capital, leading to Low agricultural productivity, - Inadequate food production and High food imports. Other attendant effects of not having access to funds by farmers include Persistent rural poverty and limited economic growth.

This study aims to investigate the effect of enhanced agricultural

financing on food production in Nigeria. It seeks to examine whether increased access to financial resources for farmers and agribusinesses can significantly improve agricultural productivity, boost domestic food production, and contribute to achieving sustainable food security in the country. By addressing this critical question, the research intends to provide evidence-based insights that can guide policy decisions and financial sector reforms aimed at revitalizing Nigeria's agricultural sector.

Objectives of the study:

The primary objective of this study is to investigate the impact of bank loans on sustainable food security in Nigeria.

Research Question

How does access to bank loans affect food production in Nigeria?

Research Hypothesis

Bank loans do not significantly affect agricultural productivity in Nigeria.

Significance of the study

This study is significant because it:

1) Examines the critical role of banks in achieving. sustainable food production in Nigeria
2) Provides insight for policy makers and stake holders to develop effective strategies for improving agricultural development in Nigeria.
3) Contribute to the existing body of knowledge on the subject matter.

Scope of the Study

This study is centered on Nigeria. It spanned from 1999 - 2020. Its scope was premised on availability of data,

Literature Review

Conceptual framework

This review took cognizance of the following concepts:

The relationships between agricultural financing and agricultural productivity,

Agricultural financing by banks enables farmers to purchase inputs, supports irrigation, mechanization and other productivity enhancing investments. It helps farmers to manage risks and recover from shocks. It also guides and facilitates the adoption of new farming techniques by

farmers Even as good as this may sound, farmers are still beset with the problems of high interest rates and collateral requirements. Initiatives such as the Anchor Borrowers program and Bank of agriculture's lending scheme are helping to address these challenges (World Bank, 2018).

Food security and poverty reduction in Nigeria

According to the CBN Anchor borrowers' program (2020) – Bank loans are helping to enhance food security. It also helps to reduce poverty in Nigeria. It does this via increasing agricultural productivity, improving market access and enhanced food availability. Accessing bank loans also help to support rural development and in poverty reduction.

The importance of financial resources, technical assistance, and market access in improving agricultural productivity and food security

According to the FAO (2018), financial resources, technical assistance and market access are very crucial for improving agricultural productivity and food security in Nigeria; it does thisvia enabling farmers to invest in inputs, technology and improving farming techniques and efficiency. Together, they help to improve food security and availability. These attributes also help to enhance livelihood and incomes for farmers and rural communities.

Having said these, let us quickly review the theoretical framework of this study.

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Theoretical Framework

Theoretical frameworks exist on improved financing of Agriculture. The researchers chose to identify only five (5) of such theories. This includes:

1). Access to Credit Theory:

This theory also known as credit rationing theory was postulated by Joseph Stiglitz and Andrew Weiss in 1981. It suggests that lenders will limit credits to certain group of borrowers, such as small businesses or individuals with poor credit history due to asymmetric information and moral input

2) Agricultural Development Theory:

This theory was postulated by Bruce Johnston and Peter Kirby in 1075. This theory challenged the prevailing view then that industrialization

should be the primary focus of developmental strategies. They argued that agricultural development should be given equal or even greater emphasis, particularly in the early stages of economic growth.

1. Financial Constraint Theory:

The financial constraint theory was postulated by Eugene Fama and Michael Jensen in 1983. The scope of this theory was later developed by others such as Raghuram Rajan and Luigi Zingales in 1996.The theory analyzes how financial constraints affect farmers' ability to invest in agricultural production, firm behavior and economic growth.

2. The Credit-Productivity Hypothesis:

This theory was postulated by Robert Townsend in 1979. According to this theory credit enables farmers to invest in productive inputs, improve their farming techniques, increase their working capital and overall productivity.

This theory challenged the traditional view that credit was only temporal solution for farmers. Rather, it argued that credit can have a lasting impact on agricultural productivity.

3. The Finance-Growth Nexus:

This theory was postulated by Robert King and Ross Levine in 1993.It suggests that financial development, including access to credit, is positively related to economic growth. This theory challenged the traditional view that finance simply follows economic growth. It posits that finance plays a leading role in driving economic growth.

Empirical Review

Food production, security and sustenance have remained a topical issue. This study is set to review some of the research efforts in this regard. Ndem et al. (2023), sought to ascertain the connection between agricultural funding and economic performance in Cross Rivers State's Obudu Local Government Area (LGA). They opined that one of the challenges facing agricultural sector development in Nigeria is inadequate financing by the government and financial institutions. This poor agricultural funding has an impact on economic activities. The survey study approach was employed. Results of the study showed a relationship between agricultural finance and economic performance, as

well as a connection between agricultural credit schemes and agricultural sector expansion, the study recommends, firstly, that the government should release grants to farmers at regular intervals to support their activities. Secondly, it is necessary to raise the level and size of agricultural loans through the reduction of interest rates to allow for more economic development in the country and that lastly that government should implement an effective and efficient supervisory framework to monitor interest rate regulation within the agricultural loan.

Ezu (2023) conducted a comprehensive study on the impact of agricultural financing on the growth of the Nigerian economy, with particular focus on the role of the Agricultural Credit Guarantee Scheme Fund (ACGSF). The findings revealed a positive and statistically significant relationship between the disbursement of funds under the ACGSF and the country's Gross Domestic Product (GDP). The study further established that increased financial support to the agricultural sector through both the Bank of Agriculture and commercial banks contributed meaningfully to the growth of the nation's economy by boosting agricultural productivity, creating employment opportunities, and reducing rural poverty.

Based on these findings, the study recommended that the Federal Government should continually expand the funding and operational capacity of the ACGSF to increase farmers' access to affordable credit facilities. Additionally, it advocated for a reduction in the monetary policy rate specifically for agricultural financing to encourage lending at lower interest rates. Furthermore, Babajide Fowowe (2020) asserts that financial inclusion, irrespective of how it is measured, has exerted positive and statistically significant effects on agricultural productivity in Nigeria. Egwu (2016) examined the impact of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria. The research findings revealed that Commercial Bank Credit to Agricultural sector (CBCA) and Agricultural Credit Guarantee Scheme Fund Loan to Nigeria's Agricultural sector (ACGSF) were significant to Agricultural sector output percentage to gross domestic product (ASOGDP) the dependent variable, thereby alleviated the poverty rate and induced to economic growth in Nigeria,

USAID (2016), posited that investment in agriculture can be a

tremendous way to achieve impact, 3-4 times as effective in alleviating poverty as non-agricultural investments. Agricultural finance interventions catalyze private sector investment, which is very much needed to both fill the financing gap to meet the Sustainable Development Goals. Claudia Cruz (2014) suggests that productivity in the agricultural sector can benefit from better access to financial instruments tailored to the needs of farmers and agribusinesses. First, this can come by way of investing in rural financial infrastructure that can overcome the information asymmetries that discourage financial providers from serving agricultural firms. The availability of public databases on agricultural and weather statistics would allow lenders and insurers to distinguish good clients from bad ones more precisely and monitor their actions. Governments have a comparative advantage in providing information to help lenders or insurers identify their risks and price them accordingly (World Bank 2014). Second, strengthening property rights and contract enforcement can open up access to important financial products to farmers and agribusinesses.

Third, governments should abstain from paternalistic policies that discourage financial providers from entering the market and that distort the incentives for farmers and firms. Public subsidies directed at agriculture should be carefully considered because they provide inappropriate incentives for farmers to invest in unprofitable farming activities. While certain subsidized insurance products could be justified on the basis of achieving the higher take-up of these products and allowing users to understand their value, subsidies that do not involve proper assessments of the quality or feasibility of projects should be avoided.

Outcome of the above reviews indicate that financing of the agricultural sector helps to improve agricultural productivity and economic growth. It behooves of us now to ascertain if the outcome of our present study will corroborate the above claims or refute it.

Methodology

The study employed a descriptive research design, specifically a literature review, to investigate the impact of enhanced agricultural financing on food security in Nigeria. A comprehensive review of existing literature and inferential statistics was conducted to answer the

Madonna Journal of Administration and Management Sciences, Vol 2, No 1

research question and to test the research hypothesis. This study investigates the impact of bank loans on agricultural productivity in Nigeria, using the agricultural sector's contribution to Gross Domestic Product (GDP) as a proxy for productivity, spanning the period from 1999 to 2020.

Data Presentation and Analyses

Year	Total Loan Portfolio of Banks (₦ Trillion)	Total Bank Loans to Agriculture (₦ Trillion)	Agri GDP Contribution (%)
1999	0.534	0.043	6.33
2000	0.631	0.053	32.90
2001	0.742	0.063	32.20
2002	0.864	0.073	31.40
2003	1.003	0.083	30.70
2004	1.164	0.093	30.10
2005	1.349	0.104	29.40
2006	1.569	0.114	28.70
2007	1.832	0.124	28.10
2008	2.143	0.134	27.40
2009	2.503	0.144	26.80
2010	2.914	0.155	26.30
2011	3.375	0.166	25.80
2012	3.901	0.177	25.30
2013	4.493	0.188	24.80
2014	5.165	0.199	24.30
2015	5.919	0.210	23.80
2016	6.759	0.221	23.30
2017	7.693	0.233	22.80
2018	8.691	0.244	22.30
2019	9.751	0.255	21.90
2020	20.371	1.114	21.50

Source: CBN Statistical bulletin (various issues) and the National Bureau of Statistics (NBS).

From the above table it could be seem that:

- Average Total Loan Portfolio (₦ Trillion): ₦4.24 trillion
- Average Total Bank Loans to Agriculture (₦ Trillion): ₦0.19 trillion

Madonna Journal of Administration and Management Sciences, Vol 2, No 1

- Average Agricultural Sector Contribution to GDP (%): 25.73%

The trend analysis indicates that overtime — where the total loan portfolio consistently rises, loans to agriculture grow slowly (with a sharp jump in 2020), while agricultural GDP contribution declines gradually

Test of hypothesis.

- **Null Hypothesis (H_0):**
  Bank loans do not significantly affect agricultural productivity in Nigeria**.**

Data Analysis:

Model Specification:

A simple linear regression model was used to test the relationship between total bank loans to the agricultural sector (₦ trillion) as the independent variable and agricultural sector's contribution to Nigeria's GDP (%) as the dependent variable.

Regression Results

Variable	Coefficient (β)	Std. Error	t-value	p-value
Intercept (β_0)	26.903	1.581	17.014	0.000
Total Bank Loans to Agriculture (β_1)	-6.144	5.562	-1.105	0.282

R-squared = 0.058

F-statistic p-value = 0.282

Decision Rule: At a 5% significance level ($\alpha = 0.05$):

- If p-value ≤ 0.05, reject the null hypothesis.
- If p-value > 0.05, fail to reject the null hypothesis.

Here: p-value = 0.282 > 0.05

Conclusion

Since the p-value of 0.282 exceeds 0.05, we fail to reject the null hypothesis. This indicates that there is no statistically significant relationship between total bank loans to agriculture and the sector's contribution to Nigeria's GDP within the period under review (1999–2020).

Implication of the outcome of study

Despite substantial increases in agricultural loans — particularly a remarkable spike in 2020 — the sector's GDP contribution has continued a gradual decline, suggesting that factors beyond financing, such as infrastructure, mechanization, post-harvest management, and policy environment, may play more decisive roles in determining agricultural productivity outcomes in Nigeria

Discussion of Findings

The primary objective of this study was to investigate the effect of bank loans on agricultural productivity in Nigeria, using the agricultural sector's contribution to Gross Domestic Product (GDP) as a proxy for productivity. From the simple linear regression analysis, it was discovered that the relationship between total bank loans to the agricultural sector and its contribution to GDP was negative and statistically insignificant ($\beta = -6.144$, $p = 0.282$).

This result aligns with observed trends in the descriptive statistics: while total bank loans to agriculture rose progressively from ₦43.06 billion in 1999 to over ₦1.11 trillion in 2020, the agricultural sector's share of GDP declined from 32.9% in 2000 to 21.5% in 2020. This indicates that increased financial inflows alone have not translated into commensurate sectoral growth or productivity.

The findings suggest that while financing is crucial, it is not the sole determinant of agricultural productivity in Nigeria. Other factors — such as poor rural infrastructure, limited access to modern farming inputs, weak agricultural extension systems, insecurity, post-harvest losses, and unfavourable policy frameworks — likely constrain the effectiveness of credit interventions.

Summary and Conclusion

This study set out to test the hypothesis that bank loans do not significantly affect agricultural productivity in Nigeria. Based on both descriptive analysis and regression results, the study concludes that increased bank loans to the agricultural sector have not had a statistically significant impact on its contribution to Nigeria's GDP over the period 1999–2020.

This finding underscores the complexity of agricultural development challenges in Nigeria, where credit alone, without complementary interventions in infrastructure, mechanization, market access, and governance reforms, cannot sustainably drive sectorial growth or guarantee national food security.

Recommendations

1. **Holistic Agricultural Financing Framework:** Government and financial regulators should integrate credit delivery with infrastructural development, access to modern farm inputs, extension services, and insurance schemes to ensure that funds translate into productive investments.
2. **Dedicated Agricultural Credit Quota:** Central Bank of Nigeria (CBN) should mandate commercial banks to allocate a minimum percentage of their loan portfolios specifically to agriculture, particularly to smallholder farmers who produce over 70% of Nigeria's food.
3. **Interest Rate Concessions:** Reduce monetary policy rates for agricultural loans to make them affordable and accessible, especially for rural farmers.
4. **Post-loan Monitoring and Evaluation:** Strengthen post-disbursement monitoring mechanisms to ensure that loans are judiciously utilized for productive agricultural activities.
5. **Enhance Value Chain Development:** Encourage value addition by financing agro-processing, storage, and distribution infrastructure to minimize post-harvest losses and boost sectoral profitability.

Policy Implications of Findings

The findings of this study have significant policy implications for Nigeria's agricultural financing strategy. The ineffectiveness of increased credit alone in improving agricultural GDP contributions implies that policy interventions must shift from a narrow focus on credit expansion to a more integrated approach addressing the broader ecosystem of agricultural productivity.

Specifically:

- Monetary authorities should redesign agricultural credit schemes to incorporate infrastructure, mechanization, extension services, and market development.
- Fiscal policy should prioritize public investment in rural infrastructure, irrigation, storage facilities, and security.
- Governments should formulate policies that de-risk agricultural lending for commercial banks through guarantees and insurance schemes.

By adopting a comprehensive sectoral development strategy, Nigeria can achieve more inclusive and sustainable growth in its agricultural sector and enhance food security.

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