



The Effects of Agricultural Credit Financing and Foreign Investments on Nigeria's Non-Oil Exports

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ABSTRACT

Low-income countries with single export commodities usually have weak currencies, poor economic growth, and high inflation rates due to consistent balance of payment deficits. The situation is especially worsened by the fact that these low-income countries usually neglect the development of other sectors of their economies when there is an abundant mineral resource. Focusing on the Nigerian economy, I investigated the link between both investments and lending to Nigeria's agricultural sector and the volume of its non-oil exports. My objective was to investigate how the development of the country's agricultural sector could boost its net non-oil exports and subsequently increase growth, stabilize the exchange rate, and reduce inflation. Using time-series data obtained from the Nigerian Central Bank and the FAO, I observed a strong positive relationship between foreign investments into the country's agricultural sector and its non-oil exports.

Keywords: Agricultural credit, Agricultural development, Economic diversification, Exports, Foreign Investments.

JEL Codes: C10

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1 INTRODUCTION

1.1 Background to the study

Exports of goods and services earn foreign exchange for the exporting country. Exports guarantee a positive balance (surplus) in a country's current account. This surplus also sustains a stronger currency as well as facilitates monetary policy and currency management. Hence, every country would desire to maintain a net export (excess of exports over imports).

Countries that export oil may desire to diversify their economy by promoting the export of other goods and services alongside oil exports. Export diversification reduces dependency on a single product and mitigates risks arising from demand fluctuations (IGC, 2023). Issues surrounding resource control within countries with abundant oil supplies have shown the need for the diversification of such economies from a single oil product to multiple products and services. The Pristine School of Management (2025) had published a report that suggested that exporting non-oil products would create jobs, diversify the economy, and cause national growth and economic stability in Nigeria.

Non-oil exports in oil-abundant countries are thus a great means of economic diversification, political stability, and responsible revenue sharing.

Over the years, several exporters of single minerals have made efforts to diversify their economies, and hence save their countries from the instability that follows the struggle for resource control. Nigeria has witnessed several dimensions of deterioration in its economy following the fall in oil prices in 1982. Efforts have been made since then to re-diversify the Nigerian economy from predominant oil dependence; however, despite these efforts. The country continued to depend on oil export as its chief export product and foreign exchange earner. The implication of this is that fluctuations in the oil price cause serious exchange rate management and monetary policy issues. The struggle for resource control also intensifies in the federation.

This research paper explored how low-income countries (rich in natural and agriculturally productive resources) like Nigeria may diversify their economies through agricultural credit financing as well as foreign investments into the agricultural sector.

1.2 Statement of the Problem

Nigeria is a country abundant in mineral resources. The country earned foreign exchange through sustained exports of agricultural products in the 1960's. However, following the oil boom in 1973 to 1974 and in 1979, agriculture, which was the country's main non-oil sector, declined (Pinto, 1987). The country suddenly abandoned its palm produce, its cocoa exports, and its groundnut pyramids. Her currency plummeted in the international market, her exports declined, and the struggle for the control of oil opened the door to corruption, ethnicity, and a predominantly importing economy. Udemezue *et al* (2024) had described the current state of the Nigerian agricultural sector as a threat to the masses.

Several lip services have been paid to economic reforms, the diversification of the Nigerian economy, as well as the Financing and investments in the agricultural sector. However, the country lacks the political will to restructure the economy, finance agricultural production effectively, and direct investments towards the agricultural sector due to the perceived short-term gains from oil exports (usually seen as the national cake in the country).

1.3 Objectives of the Study

The major objective of the study is to measure the effects of agricultural development on non-oil exports in Nigeria.

However, the specific objectives of the study are:

- (i) To measure the effects of commercial bank loans on non-oil exports in Nigeria.
- (ii) To explore the relationship between the Agricultural Credit Guarantee Scheme Fund and non-oil exports in Nigeria.
- (iii) To ascertain the effectiveness of foreign investments in the Nigerian agricultural sector in boosting non-oil exports.

1.4 Research Questions

- (i) Do commercial bank loans to the agricultural sector affect non-oil exports in Nigeria?
- (ii) Is there a relationship between the Agricultural Credit Guarantee Scheme Fund and the volume of non-oil exports in Nigeria?
- (iv) Do foreign investments in the Nigerian agricultural sector increase non-oil exports?

1.5 Hypotheses of the Study

H₁: Commercial bank loans to the agricultural sector have no significant effects on Nigerian non-oil exports.

H₂: There is no significant relationship between the Agricultural Credit Guarantee Scheme Fund and the volume of non-oil exports in Nigeria.

H₃: Foreign investments in the Nigerian agricultural sector does not increase non-oil exports in Nigeria.

2. LITERATURE REVIEW

2.1 Introduction

This section reviews current literature on agricultural credit, agricultural development and export theories.

1.6 Conceptual Review

The conceptual review explored the concepts of agricultural credit, agricultural development and export theories.

2.2.1 The Concept of Agricultural Credit

Agricultural Credit is the granting of loans, overdrafts, and other advances to farmers for production and investments in their farms. Ali *et al* (2016) asserted that the provision of Credit is very important for the development of the Nigerian agricultural sector. In his definition of agricultural Credit, Murray (2013) mentioned that the funds are borrowed from agricultural lending agencies and banks to improve farm operations..

2.2.2 Concept of Agricultural Development

Agricultural development is all efforts made to improve farm yields, introduce new technology, and modernize all inputs with a view to increasing the output of farmers. Development may originate from farmers, the private sector, or the government. Credit alone cannot enhance agricultural output. Apart from Credit, which comes at some costs, farmers need to have access to new technologies, extension services, hybrid seedlings, and up-to-the-minute information on crop production and livestock rearing. Shinde (2023) had defined

agricultural development to include the use of new technologies, advances in genetic engineering, and new crop breeding techniques. Investments (both foreign and local) into the Nigerian agricultural sector, as well as the Agricultural Credit Guarantee Scheme Fund launched by the Nigerian government in 2000, are seen as developments in the country's agricultural sector. This scheme allowed the Nigerian Central Bank to guarantee all loans offered by Nigerian banks to farmers.

2.3 Theoretical Framework

This section explored the relevant theories of agricultural production, agricultural financing as well as export promotion.

2.3.1 Theories of Agricultural Production

The various theories of agricultural production offer explanations on how agricultural inputs (land for cultivation and livestock space, labour, capital, technological progress) are combined by farmers to produce output (food and cash crops, livestock and seeds for further cultivation. Some of these theories are.:

- Boserup's Theory
- Conservation Theory.
- Diffusion Theory.
- Frontier Model..
- High Payoff Input Model
- Induced Innovation Theory.
- Structural transformation Model.

2.3.1.1 Boserup's Theory

This theory holds that innovative means of agricultural production are made possible by increases in population. Hence, population growth is the key driver of technological progress in agriculture. This technological progress causes increases in agricultural yields. Brandt *et al* (2022) demonstrated that evidence from science technology and satellite data can be used to verify Esther Boserup's theory. Ringhofer *et al* (2014) also conducted studies in Laos, India, Nicaragua and Bolivia, which found the theory to be effective in early stages of agricultural development.

2.3.1.2 Conservation Theory

The conservation theory suggests that increased agricultural yields are as a result of improved agricultural and farm management practices by farmers. These farm management practices include soil water conservation, shifting cultivation, crop rotation, mulching, etc. Praharaj *et al* (2025), Mohammed *et al* (2024), and Rusu *et al* (2025) have verified the conservation theory of agriculture.

2.3.1.3 Diffusion Theory

The diffusion theory of agricultural production emphasizes the adoption of technology in improving agricultural yields. Technological knowledge (improved seedlings, fertilizers, more efficient methods may be shared by farmers who may employ these techniques in their farms so as to boost agricultural yields. Warnaen & Nurlaili (2026) were among the verifiers of this theory.

2.3.1.4 Frontier Model

The Frontier Model (also called Resource Exploitation Theory) suggests that agricultural output may be increased by increasing inputs. This is similar to returns to scale in Microeconomics theory. The theory holds that when inputs are increased, (specifically land) outputs (crop yields) expand. Saani *et al* (2025), Okere *et al* (2025) and Gamage *et al* (2024) among others have utilized this theory in their research.

2.3.1.5 High Payoff Input Model (Schultz Theory)

Almost similar to the Diffusion Theory, Schultz theory suggests that agricultural output may be boosted by avoiding the traditional and crude methods of agricultural production and investing in scientific research and development (in hybrid seedlings, quality fertilizers and state of the arts farming methods) which yield which higher outputs. Lundhal (1987) offered a good verification of this theory.

2.3.1.6 Induced Innovation Theory

Also called the Hayami and Ruttan model, this theory suggests that agricultural development is (ironically) a result of scarcity of resources. To explain this model, it is necessary to consider a given country like Nigeria, with agricultural challenges like scarce land space and land fragmentation due to land tenure systems. The scarcity of farm lands will ultimately lead to the development of biotechnology and greenhouse farming. These innovations will (*ceteris paribus*) improve farm yields. Consider also a developing country with scarce labour supply for agriculture. The scarcity of labour will lead to the development of mechanized systems of agriculture like the use of tractors, robots and machines. This will, on the long run increase farm yields. Plesse *et al* (2011) saw induced innovation from the point of view of increased machinery cost due to rising energy prices.

2.3.1.7 Structural Transformation Theory

Also known as the Lewis/Jorgenson model, this theory emphasizes the need for the movement of labour from traditional agriculture to the more modern industrial sectors of the economy so as to drive economic growth. Ultimately, the goal is to boost economic growth regardless of the fact that the growth comes from other sectors of the economy rather than agriculture. Herrendorf *et al* (2014) reviewed and evaluated recent advances based on the theory.

2.3.2 Theories of Agricultural Financing and Exports

Agricultural financing theories and models focus on the ease of acquiring the needed funds for enhancing agricultural production by farmers. Some theories of agricultural financing are:

- Agricultural Credit Theory.
- Financial Intermediation Theory.
- Rural Finance Theory.
- Export-Biased Growth Theory.
- Heckscher- Ohlin Theory.

2.3.2.1 Agricultural Credit Theory

This theory holds that credit is an essential agricultural input just like land and labour. This credit facilitates the purchase of essential inputs like new technology, hybrid seeds and fertilizers (Samridhi and Shushma, 2024). Olagunju *et al* (2023) asserted that rice production in Nigeria grew by forty-two percent due to farmers' access to credit financing while Zakari *et al* (2026) found that agricultural credit boosted agro production and economic growth in Nigeria.

2.3.2.2 Financial Intermediation Theory

This theory supports the general view that banks and other financial institutions are financial intermediaries which collect deposits from the owners of funds and lend the collected funds to those who need it for investment. Depositors keep their funds in the banks while the banks lend the funds to farmers who invest it in profitable agriculture. Kithanda (2025) asserted that the theory exists mainly due to the imperfection of financial markets while Enilolobo *et al* (2023) found that financial intermediation enhanced agricultural output.

2.3.2.3 Rural Finance Theory

Focuses on making credit available for development of the under developed sectors of the economy rather than just providing credit and charging interests. Rural financing anticipates the needs of the farmers and provides adequate credit with favourable conditions that suit farmers. Chen and Hu (2025) found that developments in rural finance greatly enhanced agricultural productivity in China from 2010 to 2023.

2.3.2.4 Export-Biased Growth Theory

This theory acknowledges the impact of technological breakthroughs in agriculture and their effects on outputs of a given country. Hence, improved irrigation methods, fertilizers and hybrid seeds may cause significant increases in the exports of a purely agrarian economy. Hiroyuki (2023) employed the use of this theory in combination with interest rates and exchange in studying the Japanese economy.

2.3.2.5 Heckscher- Ohlin Theory

This theory, also known as the factor endowment theory suggests that countries should produce and export those products for which they have abundant inputs. Hence, countries like Nigeria, with abundant labour should produce labour intensive products while the industrialized countries should produce and export capital intensive products. Hussain and Ahmed (2025) examined the usefulness of the Hecsher-Ohlin theory in explaining international trade and found the theory very effective in analyzing and explain global trade. Jeyarajay (2024) also evaluated the theory and confirmed its effectiveness in analyzing international trade.

2.4 Empirical Review

Many authors have attempted studies on the effects of agricultural Financing on Gross Domestic Product, agricultural outputs, and the development of agriculture.

Agbada (2024) studied the effects of agricultural Financing on output optimization for sustainable economic development in Nigeria. Using Agricultural Credit Guarantee Scheme (ACGS) loans as the independent variable, and Gross Domestic Product (GDP) as the dependent variable, he observed a positive relationship between ACGS loans and the Nigerian GDP. Data for his studies were obtained from the CBN statistical bulletin from 1994 to 2022. Multiple linear regression was used for the analysis.

Ibeinmo and Akidi (2023) also observed a strong positive relationship between agricultural Credit and the Gross Domestic Product of Nigeria from 1986 to 2022. Their study on Agricultural Financing and Economic Growth in Nigeria used the Agricultural Credit Guarantee Scheme, loans to farmers, and government spending on agriculture as the independent variables, while GDP was the dependent variable. The study employed the ordinary least squares method on time series data obtained from the CBN statistical bulletin.

Achumu *et al* (2022) studied the relationship between government and private sector financing of agriculture on the Nigerian Gross Domestic Product, utilizing data from 1981 to 2019. The Bayesian VAR approach was used in their study to obtain a positive relationship between agricultural Financing and GDP.

Also in 2022, Adewale *et al* studied the effects of agricultural Credit on Nigerian farmers utilizing data from the World Bank Development Index (1981-2016) and applying Ordinary Least Squares. Their results showed a positive relationship between Credit and agricultural productivity in Nigeria.

In 2021, Obioma *et al.*, in their study, The Effects of Agricultural Financing on the Performance of the Agricultural Sector in Nigeria, used commercial bank loans, rainfall, government expenditure on agriculture, and interest rates as the independent variables while GDP was used as the dependent variable. Using time series data from the CBN statistical bulletin and employing the VAR model, they observed a positive relationship between commercial bank loans, government spending on agriculture, rainfall, interest rates, and GDP.

Olubunmi and Okoroji (2021) investigated the effects of loans on agricultural production in Nigeria from 1990 to 2018. Adopting the Structural Change Theory by Arthur Lewis, and utilizing data from the Central Bank of Nigeria, Food and Agriculture Organization, National Bureau of Statistics, and the World Bank, the study employed correlation analysis on loans to the agricultural sector and the volume of food production. Their results suggested a positive relationship between agricultural credit and food production in Nigeria.

Also, Orji *et al* (2021) utilized the ARDL model on data obtained from 1981 to 2017 to study the effects of agricultural funding, production, and growth on job creation in Nigeria. Their results showed a positive relationship between agricultural Financing and job creation in the short run.

Adesina *et al* (2020) used a dataset from 1978 to 2017 to analyze the effects of agricultural Financing on Nigeria's economic performance. A positive relationship was observed using the Error Correction model. Awotide *et al* (2022) found that farmers in Nigeria categorized as Credit unconstrained actually produced 28% more than those farmers who were categorized as Credit constrained.

Onoh (2020) examined the impact of agricultural Financing on economic growth in Nigeria using data from 1981 to 2016. In his study, the independent variables (agricultural Credit, agricultural production, interest rates, and commercial bank loans to farmers) failed to explain the variations in the dependent variable.

Gaps in Literature

Several works exist on agricultural credit financing and economic growth. Other works have also explored the effects of agricultural Credit on agricultural production. A few works exist on the relationship between the Agricultural Credit Guarantee Scheme Fund (ACGSF) in Nigeria and agro exports. However, to date, there is still no available work in the current

literature linking agricultural Credit to non-oil exports. It is important to study the relationship between agricultural credit financing and non-oil exports so that purely agrarian countries like Nigeria that depend on oil export might look inwards and develop their minerals and resources for exports. This work also considered the level of foreign investments into the Nigerian agricultural sector as a catalyst for non-oil export. This work thus contributes to existing literature by considering non-oil exports and foreign investments into the agricultural sector. While previous works utilized data on agricultural Financing and output using the same time period, this work observed that Credit granted to farmers would take about a year or two to be transformed into modernized equipment, hybrid seeds, land expansion, and other methods of enhancing output. Thus, Credit granted to farmers this year (t1) would be compared to non-oil exports in the next year (t2). This has been a missing factor in previous research on agricultural production and would most often lead to spurious results.

3. RESEARCH METHODOLOGY

This section explained the methods used in conducting this research work. Several methods including: Case Studies, Descriptive Research, Experimental design, Explanatory/causal, Survey Design, Exploratory Design and Grounded Theory may be used to conduct both quantitative and qualitative researches.

3.1. Research Design

The study employed the explanatory/causal type of research and utilized both primary and secondary data in analyzing the effects of the independent variables (credit to the agricultural sector and agricultural development) on the dependent variable (non-oil exports).

This type of research tests hypotheses to locate a cause-and-effect relationship between the dependent and independent variables, as well as explain why and how the relationship occurs.

3.2. Data Collection and Analysis Techniques

The research adopted an annual time series data on commercial bank loans and advances to the agricultural sector in Nigeria. Data on foreign investment into the Nigerian agricultural sector was extracted from the Food and Agricultural Organization while data on commercial banks credit to the agricultural sector, Agricultural Credit Guarantee Scheme Fund (ACGSF), and Non-oil exports were obtained from the 2025 Statistical bulletin of the central bank of Nigeria. Multiple linear regression was used to obtain the results of the model.

3.3. Specification of the Model

The model for analyzing the effects of agricultural credit and agricultural development on non-oil exports in Nigeria was formulated as follows:

$$EXP_{Non-oil} = f(Loan_{Banks}, ACGSF, AgricInv_{Foreign})$$

Where: $EXP_{Non-oil}$ = Non-oil exports.

$Loan_{Banks}$ = Commercial bank loans and advances to the Nigerian agricultural sector.

$ACGSF$ = Agricultural Credit Guarantee Scheme Fund.

$AgricInv_{Foreign}$ = Foreign investment into the Nigerian agricultural sector.

When expressed in an econometric form,

$$EXP_{Non-oil} = \beta_0 + \beta_1 Loan_{Banks} + \beta_2 ACGSF + \beta_3 AgricInv_{Foreign} + \mu$$

Where:

$EXP_{Non-oil}$ = Non-oil exports

β_0 is the constant,

β_1 is the coefficient of the independent variable Credit to the agricultural sector,

β_2 is the coefficient of the independent variable level of agricultural development,

$Loan_{Banks}$ = Commercial bank loans and advances to the Nigerian agricultural sector,

$ACGSF$ = Agricultural Credit Guarantee Scheme Fund.

$AgricInv_{Foreign}$ = Foreign investment into the Nigerian agricultural sector.

μ is the error (stochastic) term.

3.4. A priori Expectation

Based on theoretical explanations, the researcher expected commercial bank loans, Agricultural Credit Guarantee Scheme Fund and Foreign investments in the Nigerian agricultural sector to have a positive effect on non-oil exports in Nigeria. This is as a result of the fact that the financing of the agricultural sector in Nigeria will ceteris paribus increase agricultural production and have multiple effects on other sectors of the country's economy that utilize agricultural produce. When other sectors are evenly developed, non-oil exports are expected to rise.

3.5. Econometric Test

Econometric tests were performed on the variables of the stated model. The performed econometric tests include the pre and post estimation tests.

3.6. Pre Estimation Test

Prior to the estimation of the model using linear regression method, several statistical/econometric tests were conducted on the data set to ensure compliance with acceptable research practices in economics and statistics. The performed tests included the Unit root tests, and the Co-integration tests. It has to be noted that in a situation where there exists co-integration among the variables, an Error Correction Model would be employed.

3.6.1. Stationarity (Unit Root) Test

The Stationarity test was used to determine whether or not a variable's mean value and variance varied over time. This test is imperative (so as to avoid spurious regression results) since time series data were used in the model. Several methods may be applied to dataset so as to test for stationarity/unit root. The researcher employed the **Augmented Dickey Fuller (ADF)** test using Eviews 12 edition.

3.6.2. Co-integration Test

Co-Integration test was used to establish whether or not there existed a long run relationship between the variables in the model. The researcher employed the **Johansen test** in establishing possible co-integration among the variables in the dataset.

3.6.3. Error Correction Model (ECM)

Should Co-Integration exist in the dataset, an error correction model would be employed. A positive **ECM** result means that the model was wrongly specified/formulated.

3.7. Post Estimation Tests

Post estimation tests were conducted to confirm/verify the reliability and validity of the estimated model. The tests confirm whether or not the ordinary least squares method may be used in obtaining results from the model. These tests include Autocorrelation, Normality, Residual and Stability tests.

3.7.1. Autocorrelation Test

The **Durbin-Watson** (DW) statistic at 5% was used to test for the presence of autocorrelation.

If the computed value of DW test was greater than the tabulated value (lies outside the acceptance region of the curve), then the variables are not serially auto correlated. Else, some statistical remedies would be applied to the model.

3.7.2. Normality Test

Following the assumptions of the ordinary least squares method, the error term (or stochastic term, U) is normally distributed with zero mean and constant variance $-U \sim N(0, \sigma^2)$. The **Jarque-Bera** test of normality was used to test for normality in the dataset.

3.7.3. Heteroscedacity Test

This test is essential to detect the possibility of a constant variance. When there is the possibility of non-constant variance, the results of the estimation may be biased. This research work employed the **White's General Heteroscedacity test** to detect possible constant variance.

3.7.4. Granger Causality Test

Regression analyses show the relationship between two or more variables. However, it should be noted that covariance does not necessarily imply causality (Gujarati, 2004). The **Granger causality test** was applied to ascertain whether or not a causal relationship existed between non-oil exports and the independent variables.

3.8. Sources of Data

Data for this research work were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletins of 2025 and the Food and Agricultural Organization (FAO).

4. RESULTS AND DISCUSSION

This section contains the presentation of the regression results and the discussion of the research findings.

4.1. Presentation and analysis of test results

Table 1. Results of Regression Analysis (Ulasi Joshua Ikechukwu, 2026, 04)

Variables	Coefficient	Std. Error	T-statistic
Bank loans	0.79 0.0000	0.11	7.00
ACGSF	1.65 0.8739	10.33	0.16
Foreign Agric. Inv. 0.0000	3828.44	685.21	5.59
R ²	0.94		
Adjusted R ²	0.93		
Durbin Watson statistic	1.79		
Standard Error	231469		
Unit Root	No unit root/Non Staionary		

Computed by the author from the regression analysis results

From the above results, commercial bank loans and foreign investments showed statistically significant and strong positive relationships with non-oil exports, with foreign investments to the agricultural sector having a stronger relationship (coefficient value of 3828.44). This is in line with a priori expectation. Agricultural Credit Guarantee scheme fund had a positive relationship with non-oil exports (although statistically insignificant) to the agricultural sector in Nigeria.

Result of Coefficient of Determination.

From the estimated equation, the R^2 result (coefficient of determination) was 0.94 which indicated that 94 percent of the variations in Non-oil exports were explained by variations in the independent variables of the model.

4.2. Test of Hypotheses

The null hypotheses were stated as follows:

H₁: Commercial bank loans to the agricultural sector have no significant impact on Nigerian non-oil exports.

H₂: There is no significant relationship between the Agricultural Credit Guarantee Scheme Fund and Non-oil exports in Nigeria.

H₃: There is no significant relationship between foreign investments in the agricultural sector and Non-oil exports in Nigeria.

From the above results (in table 1) null hypotheses H₁ and H₃ were rejected while null hypothesis H₂ was not rejected based on the probability results of the multiple linear regression.

4.3. Discussion of Major Findings

The study found a statistically significant relationship between commercial bank loans and agriculture. The relationship was both strong and positive. This is consistent with earlier studies conducted by Adewale *et al* (2022), Obioma *et al* (2021), Olubunmi and Okoroji (2021), and Orji *et al* (2021). Although the earlier research was based on the relationships between agricultural credit financing and productivity/Gross Domestic products or job creation. The results from this research were, however, in contrast with the findings of Onoh (2020), who conducted research on the effects of agricultural credit financing on economic growth in Nigeria using data from 1981 to 2016. His results provided evidence to suggest that commercial bank loans had no significant effects on economic growth in Nigeria. No earlier studies had linked agricultural credit financing to non-oil exports in Nigeria.

The study also observed a positive but statistically insignificant relationship between the Agricultural Credit Guarantee Scheme Fund and non-oil exports. This was somewhat consistent with Agbada (2024) and Ibeinmo and Akidi (2023), who studied the effects of the ACGSF on Nigeria's Gross Domestic Product.

The results of this study suggested that foreign investments into the Nigerian Agricultural sector had statistically significant, strong positive effects on non-oil exports. This result is consistent with the findings of Achumu *et al* (2022), who studied the effects of both government and private sector investments in the Nigerian agricultural sector using data from 1981 to 2019, and applying the Bayesian VAR model on time-series data.

5. CONCLUSION

5.1.Summary

Thus far, this study has examined the effects of commercial bank loans, the Agricultural Credit Guarantee Scheme Fund, and foreign investments on the Nigerian agricultural sector and Nigerian non-oil exports. The major problem of the study was the fact that, upon the discovery of oil in the 1970s in Nigeria, the country had since abandoned the development of other sectors of its economy. The over-dependence on oil as Nigeria's single export product had caused serious deteriorations in its terms of trade, balance of payments, exchange rate, and subsequently inflation and employment figures. This research work set out to investigate the effects of agricultural Credit and investments on Nigeria's non-oil exports. The objective was to find any relationships between non-oil exports, agricultural Credit, and investments into the Nigerian agricultural sector. Such a relationship would facilitate the development of the Nigerian agricultural sector, which would pave the way for the country to export itself out of the current economic mess.

The study utilized data from 1982 to 2024 sourced from both the Food and Agriculture Organization and from the statistical bulletin of the Central Bank of Nigeria. The ordinary least squares method was used in analyzing the time-series data.

5.2.Conclusion

The study found changes in commercial bank loans and foreign investments into the Nigerian agricultural sector to be consistent with changes in Nigeria's non-oil exports. However, as opposed to the results of previous studies by other authors, changes in the volume of the Nigerian Agricultural Credit Guarantee Scheme Funds were not statistically significant in explaining the changes to her non-oil exports.

5.3.Recommendations

Following the results of the model, this study made the following recommendations.

- Commercial bank loans to the Nigerian agricultural sector should be encouraged. The loan amounts, interest rates, and the loan duration (pay-back period) of such credit facilities need to be adequately reviewed to ensure more impact on the country's non-oil exports.
- The Agricultural Credit Guarantee Scheme Fund needs to be properly reviewed and its features reappraised by the Nigerian government to investigate whether the scheme has yet to have a significant impact on the country's non-oil exports.
- Foreign investments into the Nigerian agricultural sector need to be encouraged and efficiently managed/distributed to increase agricultural output, farm productivity, and exports of non-oil products. This will bring about economic stability, enhance the country's global competitiveness, increase foreign exchange reserves, and diversify the Nigerian economy beyond oil.

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APPENDIX I**Table 4.3: Non-oil Exports, Bank Credit Loans, ACGSF and Foreign Investments in Nigerian Agriculture (1982-2024)**

YEAR	NON-OIL EXPORTS	BANK LOANS	ACGSF	FOREIGN AGRIC INV
1982	342.8	790	0	0
1983	203.2	940	0	0
1984	301.3	1050	0	0
1985	247.4	1310	0	0
1986	497.1	1830	0	0
1987	552.1	2430	0	0
1988	2152	3070	0	0
1989	2757.4	3470	0	0
1990	2954.4	4220	0	0
1991	3259.6	5010	0	0
1992	4677.3	6980	0	0
1993	4227.8	10750	0	6.695023
1994	4991.3	17760	0	5.37149
1995	5349	25280	0	3.492372
1996	23096.1	33260	0	6.220846
1997	23327.5	27940	0	0.877014
1998	29163.3	27180	0	0.038531
1999	34070.2	31050	0	0.059019
2000	19492.9	41030	0	0.090657
2001	24822.9	55850	361.449	3.939349
2002	28008.6	59850	728.5454	6.295763
2003	94731.849	62100	1050.982	3.131718
2004	94776.443	67740	1151.015	5.339217
2005	113309.35	48560	2083.745	8.450218
2006	105955.88	49390	9366.393	18.554569
2007	133594.99	149580	4195.1	46.893817
2008	199257.94	106350	4087.448	30.030385
2009	525859.1822	135700	6497.959	31.379598
2010	500864.6007	128410	8328.566	48.13362
2011	710953.7477	255210	7840.497	84.783803
2012	913511.336	316360	10028.99	104.036736
2013	879335.228	343700	9332.484	93.837137
2014	1130170.524	478910	9256.677	131.035444
2015	955061.7891	449310	12456.25	207.965248
2016	660678.2903	525950	10857.38	182.784926
2017	656793.9503	528240	7858.643	148.518137
2018	1074901.874	610150	5849.389	281.760656
2019	1425374.299	772380	4377.626	216.951768
2020	3207099.737	1049680	4068.332	402.551108
2021	1555440.861	1457820	4321.664	266.285742
2022	2466831.245	1812470	5786.73	309.96476
2023	3029976.465	2255360	8481.235	280.716405
2024	3745404.033	2854510	8396.764	350.426038

Source: Computations from CBN Statistical Bulletins 2024 and FAO 2024 (www.cenbank.org & www.fao.org)

APPENDIX II

RESULTS OF REGRESSION ANALYSIS

Dependent Variable: NON_OIL_EXPORTS

Method: Least Squares

Date: 04/11/26 Time: 14:04

Sample (adjusted): 1 43

Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BANK_LOANS	0.786396	0.112305	7.002307	0.0000
ACGSF	1.649947	10.32706	0.159769	0.8739
FOREIGN_AGRIC_INV	3828.435	685.2141	5.587209	0.0000
R-squared	0.942310	Mean dependent var	567311.1	
Adjusted R-squared	0.939426	S.D. dependent var	940482.5	
S.E. of regression	231469.6	Akaike info criterion	27.60950	
Sum squared resid	2.14E+12	Schwarz criterion	27.73237	
Log likelihood	-590.6042	Hannan-Quinn criter.	27.65481	
Durbin-Watson stat	1.797007			

APPENDIX III

RESULTS OF UNIT ROOT TESTS

Null Hypothesis: BANK_LOANS has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	16.72964	1.0000
Test critical values:		
1% level	-3.596616	
5% level	-2.933158	
10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(BANK_LOANS)

Method: Least Squares

Date: 04/11/26 Time: 14:21

Sample (adjusted): 2 43

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BANK_LOANS(-1)	0.261557	0.015634	16.72964	0.0000
C	-6563.231	9004.818	-0.728858	0.4703
R-squared	0.874953	Mean dependent var	67945.71	
Adjusted R-squared	0.871827	S.D. dependent var	141672.1	
S.E. of regression	50720.33	Akaike info criterion	24.55249	
Sum squared resid	1.03E+11	Schwarz criterion	24.63524	
Log likelihood	-513.6023	Hannan-Quinn criter.	24.58282	
F-statistic	279.8808	Durbin-Watson stat	1.924829	
Prob(F-statistic)	0.000000			

Null Hypothesis: ACGSF has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.304969	0.6185
Test critical values: 1% level	-3.596616	
5% level	-2.933158	
10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(ACGSF)

Method: Least Squares

Date: 04/11/26 Time: 14:25

Sample (adjusted): 2 43

Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACGSF(-1)	-0.091007	0.069739	-1.304969	0.1994
C	499.7404	357.6627	1.397239	0.1700
R-squared	0.040835	Mean dependent var		199.9229
Adjusted R-squared	0.016856	S.D. dependent var		1791.612
S.E. of regression	1776.448	Akaike info criterion		17.84907
Sum squared resid	1.26E+08	Schwarz criterion		17.93181
Log likelihood	-372.8304	Hannan-Quinn criter.		17.87940
F-statistic	1.702945	Durbin-Watson stat		2.163415
Prob(F-statistic)	0.199361			

Null Hypothesis: FOREIGN_AGRIC_INV has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=11)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.757034	0.3986
Test critical values:		
1% level	-3.527045	
5% level	-2.903566	
10% level	-2.589227	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(FOREIGN_AGRIC_INV)

Method: Least Squares

Date: 04/11/26 Time: 14:28

Sample (adjusted): 3 72

Included observations: 70 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FOREIGN_AGRIC_INV(-1)	-0.118197	0.067271	-1.757034	0.0835
D(FOREIGN_AGRIC_INV(-1))	-0.313307	0.115858	-2.704226	0.0087
C	6.435508	6.975598	0.922574	0.3595
R-squared	0.176091	Mean dependent var		0.672208
Adjusted R-squared	0.151496	S.D. dependent var		56.35009
S.E. of regression	51.90647	Akaike info criterion		10.77868
Sum squared resid	180516.8	Schwarz criterion		10.87504
Log likelihood	-374.2536	Hannan-Quinn criter.		10.81695
F-statistic	7.159819	Durbin-Watson stat		1.888346
Prob(F-statistic)	0.001520			

APPENDIX IV RESULTS OF GRANGER CAUSALITY TESTS

Pairwise Granger Causality Tests

Date: 04/11/26 Time: 15:15

Sample: 1 72

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
BANK_LOANS does not Granger Cause NON_OIL_EXPORTS	41	6.97560	0.0028
NON_OIL_EXPORTS does not Granger Cause BANK_LOANS		3.13503	0.0556
ACGSF does not Granger Cause NON_OIL_EXPORTS	41	0.32119	0.7273
NON_OIL_EXPORTS does not Granger Cause ACGSF		0.97345	0.3875
FOREIGN_AGRIC_INV does not Granger Cause NON_OIL_EXPORTS	42	3.73906	0.0332
NON_OIL_EXPORTS does not Granger Cause FOREIGN_AGRIC_INV		11.8539	0.0001
ACGSF does not Granger Cause BANK_LOANS	41	3.85136	0.0305
BANK_LOANS does not Granger Cause ACGSF		1.12629	0.3354
FOREIGN_AGRIC_INV does not Granger Cause BANK_LOANS	41	0.75585	0.4769
BANK_LOANS does not Granger Cause FOREIGN_AGRIC_INV		1.38113	0.2643
FOREIGN_AGRIC_INV does not Granger Cause ACGSF	41	0.13532	0.8739
ACGSF does not Granger Cause FOREIGN_AGRIC_INV		2.64595	0.0847

APPENDIX V

Var

Vector Autoregression Estimates

Date: 04/11/26 Time: 15:21

Sample (adjusted): 3 43

Included observations: 41 after adjustments

Standard errors in () & t-statistics in []

NON_OIL_EXPORTS	
NON_OIL_EXPORTS(-1)	-0.258712 (0.13588) [-1.90402]
NON_OIL_EXPORTS(-2)	-0.261154 (0.13848) [-1.88584]
C	-11168.17 (48618.9) [-0.22971]
BANK_LOANS	1.208702 (0.20609) [5.86502]
ACGSF	14.21213 (12.4040) [1.14577]
FOREIGN_AGRIC_INV	4503.011 (733.079) [6.14260]
R-squared	0.949795
Adj. R-squared	0.942623
Sum sq. resids	1.83E+12
S.E. equation	228736.0
F-statistic	132.4296
Log likelihood	-560.8862
Akaike AIC	27.65298
Schwarz SC	27.90375
Mean dependent	594971.5
S.D. dependent	954919.8