



## IMPACT OF FINANCIAL DEVELOPMENT AND CASH CROP EXPORT GROWTH IN NIGERIA: IMPLICATIONS FOR THE EMERGING EXPORT 35 REDEFINED POLICY

\*<sup>1</sup>Ogbanje, C.E. and <sup>2</sup>Nyiatagher, Z.T.

<sup>1</sup>Department of Agricultural Marketing and Cooperatives, Joseph Sarwuan Tarka University, Makurdi, Benue State-Nigeria <sup>2</sup>Department of Agribusiness, Joseph Sarwuan Tarka University, Makurdi, Benue State-Nigeria \*Corresponding Author's Email: ogbanje.christopher@uam.edu.ng; GSM: +234 803 635 0197

## ABSTRACT

The study evaluates the impact of financial development on agricultural export growth in Nigeria: implications for the emerging export 35 redefined policy. From the Central Bank of Nigeria and Food and Agriculture Organisation databases, time series data were obtained between 1988 and 2022. The compound annual growth model, Johansen-Juselius cointegration test, and long-run estimation techniques were applied to the data with the aid of EViews statistical package. Findings on growth rate showed that while CLG export had the highest growth rate (14.69%), LCFG decelerated by 10.99%; LCBLA accelerated by 24.57% while PLR recorded a decline of -0.83%; LCLG in monetary terms had the highest growth rate of 31.74%. Furthermore, financial development indicators significantly exhibited asymmetric effect on the exportation of cash crops in the long-run. It was recommended that the Federal Ministry of Agriculture and Food Security, Nigerian Export Promotion Council, the Central Bank of Nigeria and Boards of Commercial Banks should collaborate to improve agricultural financing and secure a favourble exchange rate policy for cash crop exportation to increase the growth of the agricultural sector for sustainable economic growth.

Keywords: Export, Compound, Annual growth, Development, Finance-led hypothesis, Long-run.

#### **INTRODUCTION**

Agriculture is still crucial to the survival of Sub-Saharan African countries. Agriculture accounts for about 60% of Nigeria's Gross Domestic Product (GDP) and 70% of Nigeria's export (Nwogwugwu et al., 2023) as well as 14% of agricultural GDP in Africa in 2017 (Ngozi and Patricia, 2022). The sector contributes to food security because it is the sole source of food availability in Nigeria (Fomyol and Tata, 2019; Asghar and Salman, 2018). Apart from these traditional roles, the sector facilitates industrial development through the supply of raw materials and is a major foreign exchange earner (Ngozi and Patricia, 2022; Adeniyi and Ogunsola, 2014). The major impediment to the sector is inadequate financing cum ineffective financial policy. Financial development spurs economic growth and creates enabling conditions for growth through either a supply-leading (financial development spurs growth) or a demand-following (growth generates demand for financial products) channel. Financial development facilitates production, the excess of which is usually exported. Finance is used for the procurement of all factors of production. It is also essential along the value chain of every commodity. Noting that agriculture is prone to a variety of risks, Kisaka et al. (2023) indicated that financial deepening is a process that includes risk sharing, credit intermediation and market turnover, and financial access.





Channeling financial development towards increase in agricultural investment improve the levels of agricultural production, consumption and exportation. However, agricultural financing in Nigeria is inefficient, ineffective and unstable. According to Adegbola *et al.* (2016), funding and investment in agriculture in Sub-Saharan Africa is low. Smallholder farmers that dominate the agricultural production landscape of Nigeria have low capital base and constrained access to credit (Danso-abbeam *et al.*, 2021; Silong *et al.*, 2020). Consequently, agricultural production as well as export can be low or fluctuate widely. Samuel and Augustine (2021) reported that the constant decline in funding agriculture by the Nigerian government and private entities adversely affect the nation's development. Hence, the global financial crisis has exacerbated debate on the nexus between financial development and growth. Guei and Choga (2022) observed that while this debate has become popular in advanced countries, less attention has been given to developing countries. Thus, it is expedient to investigate the impact of financial development on the export of selected cash crops in Nigeria.

Countries resort to food importation in times of shortfalls in domestic production. Amao *et al.* (2021) stated that a nation devoid of sustainable agricultural practices will always rely on importation. However, with large agricultural potentials in Sub-Saharan Africa, in 2014, total import of agricultural commodities was estimated at \$485 billion (United States Dollars), representing the second of the largest in the world. This was about 27 times higher than the import of Asian countries, although India is more populated than the SSA countries (Osabohien *et al.*, 2019). Excessive importation worsens balance of trade and batters exchange rate with attendant consequences. According to Bakari and Tiba (2022), agricultural imports have negative impact on economic growth. On the other hand, Utuk *et al.* (2023) established that agricultural exports had a positive effect on real gross domestic product, yet, Taiga and Ameji (2020) reported that the contribution of agricultural exports to economic growth in Nigeria is low.

Most of the previous studies in this area (Okuduwor et al., 2023; Ibrahim, 2020; Tuaneh and Ewubare, 2019; Kamil et al., 2017) were not commodity-specific but generalized. Others concentrated on a single commodity like Nurchaini et al. (2024), Nse-Nelson et al. (2020) and Murindahabi et al. (2019) which worked on natural rubber, Nguyen & Vo (2021) and Onwusiribe et al. (2022) that focused on coffee export, Najib et al. (2022) that dealt with cotton and Olife et al. (2013) who worked on only cashew. The specific objectives of the study were to: examine the growth rate of agricultural export and financial development in Nigeria; determine the cointegration between financial development and agricultural export; and estimate the long-run relationship between financial development and agricultural export. The two theories underlying this work are finance-led hypothesis and theory of financial intermediation. An important viewpoint of the finance-led growth hypothesis (Tuaneh and Ewubare (2019) is the role and capacity of financial development in mobilizing domestic savings and investment through a more open and more liberalized financial system, and in promoting productivity through an efficient financial market. A low rate of expansion of credit volume is not only a symptom of weak economic growth, but can be one of its causes. The theory forms the basis for investigating the impact of financial depth on agricultural productivity. Finance-led decisions include financial structure capital structure (Ikapel and Kajirwa, 2017). The theory of financial intermediation is concerned with agricultural financing-induced rural economic growth. As postulated by Allen and Santomero (1998), the theory states that the development of intermediaries tends to lead the development of the financial markets. Invariably, the development of the financial sector leads to the development of the economy (John & Nwekemezie, 2019). The implication is that the





financial sector, through financial intermediaries, provides upfront loans for farm production, a precursor for export through subsidized credits and other agricultural inputs.

# MATERIALS AND METHODS

## Study Area

Nigeria, Africa's most populous country, is the study area. It is Africa's largest economy (Ismail and Kabuga, 2016), with an estimated population of 200 million. The country is located between latitudes  $4^{\circ}16$  and  $13^{\circ}53$  north and between longitudes  $2^{\circ}4^{1}$  and  $14^{\circ}4^{1}$  east. It has a highly diversified agro-ecological climatic condition (Ogbanje and Salami, 2022; Hamzat *et al.*, 2006). The forestry subsector houses the bulk of Nigeria's export potentials from such crops as cocoa, cashew, cotton, coffee and rubber. While cocoa, coffee and rubber are predominantly produced in the southern region, cotton is found mainly in the north and cashew spreads from the forest region to guinea savannah region (Esekhade *et al.*, 2014).

## **Data Collection**

Time series data on the volume of export of cocoa beans, cocoa butter, cashew nut, cotton lint, coffee green and natural rubber were obtained from the Food and Agriculture Organization. Exchange rate, agricultural credit guarantee scheme fund for cash crops, commercial banks loan to agricultural sector, prime lending rate, ratio of money supply to GDP and ratio of private sector credit to GDP from the Central Bank of Nigeria. These datasets spanned from 1988 to 2022.

## Data Analysis

# Compound Annual Growth Model

The model for calculating the compound annual growth rate (CAGR) was specified in equation (1) as follows:

$$CAGR = \left(\frac{V_n}{V_0}\right)^{\frac{1}{n}} - 1 \qquad \dots (1)$$

Where:

CAGR = Compound Annual Growth Rate  $V_n$  = the ending value  $V_0$  = the beginning value n = the number of periods

## **Stationarity Test**

The study used the ADF to test for stationarity of the series. As stated by Gujarati and Porter (2009) and observed by Ogbanje and Ihemezie (2021), the ADF is the most popular unit root test. The PP was used confirmation. The model for ADF is as follows:

$$\Delta Y_{t} = \beta_{1} + \beta_{1t} + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_{i} \Delta Y_{t-1} + \varepsilon_{t} \qquad \dots (2)$$

Ho:  $\delta = 0$  (*There is unit root*) Ha:  $\delta < 0$  (*There is no unit root*) where,

Yt = time series variables; Y<sub>t-1</sub> = lagged value of Yt;  $\beta$ ,  $\delta$  = parameters to be estimated;  $\Delta$  = first – difference operator





 $\mathcal{E}t = pure$  white noise or error term which is assumed to be serially uncorrelated **Johansen-Juselius test** 

Johansen-Juselius' (JJ) cointegration was used to predict the existence of a cointegration among a given set of series as emphasised by (Ogbanje and Ihemezie, 2021) and Adongo *et al.* (2020). While the confirmation of co-integration recommends the adoption of vector error-correction model (VECM), the absence recommends the use of vector autoregression model for estimation.

## Vector Error-Correction Model

The VECM was used to estimate the long-run relationship among the series. In the VECM, all variables are endogenous. Following the works of Andrei and Andrei (2015) and Ogbanje and Tor (2022a), the VEC model for financial development and agricultural export growth was specified in equations (3) to (9):

$$\Delta LCBNMT_{t} = \theta_{1} + \sum_{i=1}^{k} \beta_{1i} \Delta LCBNMT_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LEXR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCBLA_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCBSGD_{t-1} + \lambda_{1} \Sigma_{t-1} + \mu_{1t} \quad (3) + \sum_{i=1}^{k} \beta_{1i} \Delta LCBTMT_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCBSWMT_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCSWMT_{t-1} + \sum_{i=1}^{k} \delta_{$$





$$\begin{split} \Delta LCSWMT_{t} &= \theta_{1} \\ &+ \sum_{i=1}^{k} \beta_{1i} \Delta LCSWMT_{t-1} \\ &+ \sum_{i=1}^{k} \delta_{1i} \Delta LEXR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LACGCC_{t-1} + \sum_{i=1}^{k} \gamma_{1i} \Delta LCBLA_{t-1} \\ &+ \sum_{i=1}^{k} \alpha_{1i} \Delta LPLR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LM3GDP_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCPSGD_{t-1} + \lambda_{1}\Sigma_{t-1} \\ &+ \mu_{1t} \qquad \dots (6) \\ \Delta LCLGMT_{t} &= \theta_{1} \\ &+ \sum_{i=1}^{k} \beta_{1i} \Delta LCLGMT_{t-1} \\ &+ \sum_{i=1}^{k} \delta_{1i} \Delta LCLGMT_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LACGCC_{t-1} + \sum_{i=1}^{k} \gamma_{1i} \Delta LCBLA_{t-1} \\ &+ \sum_{i=1}^{k} \alpha_{1i} \Delta LPLR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LM3GDP_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCPSGD_{t-1} + \lambda_{1}\Sigma_{t-1} \\ &+ \sum_{i=1}^{k} \alpha_{1i} \Delta LPLR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LM3GDP_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCPSGD_{t-1} + \lambda_{1}\Sigma_{t-1} \\ &+ \mu_{1t} \qquad \dots (7) \end{split}$$

$$\Delta LCLFMT_{t} = \theta_{1}$$

$$+ \sum_{i=1}^{k} \beta_{1i} \Delta LCFGMT_{t-1}$$

$$+ \sum_{i=1}^{k} \delta_{1i} \Delta LEXR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LACGCC_{t-1} + \sum_{i=1}^{k} \gamma_{1i} \Delta LCBLA_{t-1}$$

$$+ \sum_{i=1}^{k} \alpha_{1i} \Delta LPLR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LM3GDP_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCPSGD_{t-1} + \lambda_{1}\Sigma_{t-1}$$

$$+ \mu_{1t} \qquad \dots (8)$$

$$\Delta LNRMT_{t} = \theta_{1} + \sum_{i=1}^{k} \beta_{1i} \Delta LNRMT_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LEXR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LACGCC_{t-1} + \sum_{i=1}^{k} \gamma_{1i} \Delta LCBLA_{t-1} + \sum_{i=1}^{k} \alpha_{1i} \Delta LPLR_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LM3GDP_{t-1} + \sum_{i=1}^{k} \delta_{1i} \Delta LCPSGD_{t-1} + \lambda_{1}\Sigma_{t-1} + \mu_{1t} \dots (9)$$





### Where,

EXR = exchange rate (naira equivalence of the US dollar); ACGCC = agricultural credit guarantee to cash crop (million naira); CBLA = commercial banks loan to agricultural sector (million naira); PLR = prime lending rate (%); M3GDP = ratio of money supply to GDP; CPSGD = ratio of private sector credit to GDP; CBNMT = cocoa beans export (mt); CBTMT = cocoa butter export (mt); CSWMT = cashew nut export (mt); CLGMT = cotton lint ginned export (mt); CFGMT = coffee green export (mt); NRMT = natural rubber export (mt); L = symbol of logarithm

## **RESULTS AND DISCUSSION**

## Growth Rate of Financial Development and Agricultural Export

The analysis of the growth rate of financial development and agricultural export is presented in Table 1. The result shows that, among the indicators of financial development in the study, CBLA had the highest (24.57%) growth rate. Commercial banks in Nigeria have a standing directive to fund agriculture. Since the sector itself is thriving, reliable returns from agricultural investment along the value chain, with controllable risk and uncertainties, would have encouraged commercial banks to increase loans to the sector. The ACGCC had the second highest (16.49%) growth rate within the period of assessment. The ACGCC increases access to agricultural finance due to its guarantee feature and is therefore most popular among smallholder farmers who are resource-poor as they can scarcely meet the collateral requirements of the formal lending institutions. Ogbanje and Tor (2022) and Sulaimon (2021) reported that government intervention in commercial agriculture lending was expressed in CACS and ACGS through the provision of fiscal stimulus in response to the global financial crisis and economic melt-down. The intervention largely consisted of capital infusions into the banking sector for on ending to agriculture.

On the other hand, PLR recorded a deceleration (0.83%). High lending rate discourages borrowing as well as debt financing and consequently retards investment and growth. Olomola and Yaro (2015) reported that debt capital was not flowing into the agricultural sector as expected due to obstacles faced by lenders and borrowers. At a low lending rate, more investors are attracted to borrow more fund. This scenario is beneficial to both the lending institutions in terms of volume of credit advanced and the economy in terms of increased investment and velocity of money. The result further shows that in terms of the volume of export, cotton lint ginned had the highest (14.69%) growth rate within the period of evaluation. The export (mt) rose from 39.00 in 1988 to 4,722.00 in 2022. This result suggests increased production as well since export derives from local production. Cotton lint is the major raw material for fabrics. It was the commodity that contributed to the growth of northern Nigeria due to the establishment of textile industries. The high growth rate would have been informed by the export demand for the commodity. The rising demand implies that Nigeria is yet to have viable competitors in the cotton export market. Singh et al. (2022) indicated that cotton, which is referred to as the "White gold", is premier industrial crop of major cotton growing countries like China, India, United States, Pakistan, Brazil, Uzbekistan, Egypt, Argentina, Australia and Turkey. On the other hand, coffee green recorded a decline of 10.99%. This is an estimation of substantial decline in demand, which could be attributed to the emergence of competing alternatives in the market or its increased production in countries that are closer to the importing countries as well as factors that relate to internalization.





Although, coffee is widespread throughout the tropics and adapting to both tropical highlands and lowlands (Pohlan, 2000) and is the second most traded commodity in the world after oil and the most valuable primary agricultural product in international trade (Ziad *et al.*, 2023).

The growth rate of rubber export, a one-time reliable foreign exchange earner, was as low as 2.03%, suggesting a very low growth rate in local production as well. This result is lower to Nse-Nelson *et al.* (2020) that the compound rate of rubber export in Nigeria was 4.23% between 1986 and 2016. Anuja *et al.* (2019) reported a growth rate in rubber of 5.40% in Kerala. The low growth rate could be attributed to the long gestation period of the crop. Giroh *et al.* (2012) stated that although, natural rubber production is profitable, it takes five to seven years to mature for tapping. Among the selected commodities, cashew had the second highest export volume growth rate (6.25%). Cashew has high industrial demand especially in the Asian continent.

S/No	Variable	Ending value	Beginning value	CGR (%)	Remarks
1	LEXR	448.00	4.54	14.02	Acceleration
2	LACGCC	757.59	3.62	16.49	Acceleration
3	LCBLA	6,705,610.00	3,066.70	24.57	Acceleration
4	LPLR	12.34	16.50	(0.83)	Deceleration
5	LM3GDP	23.95	12.15	1.96	Acceleration
6	LCPSGD	19.25	8.66	2.31	Acceleration
7	LCBNMT	260,387.26	211,766.00	0.59	Acceleration
8	LCBTMT	12,498.35	5,275.00	2.50	Acceleration
9	LCSWMT	81,352.17	9,753.00	6.25	Acceleration
10	LCLGMT	4,722.00	39.00	14.69	Acceleration
11	LCFGMT	13.81	813.00	(10.99)	Deceleration
12	LNRMT	72,963.00	36,107.00	2.03	Acceleration
13	LGDPA	47,944,062.80	73,764.51	20.33	Acceleration

## **Table 1**: Growth Rate of Financial Development and Agricultural Export

**Source:** Central Bank of Nigeria (2022); Food and Agriculture Organisation, (2022) n = 35 years

# **Summary Result of Stationarity Test**

The summary result of unit roots test is shown in Table 2. The result shows that no variable was stationary at levels Hence, the null hypothesis of the presence of unit roots could not be rejected. However, after the first differencing, the absolute value of every series became stationary.





Variables	At levels			At first difference			
	ADF	PP	Remarks	ADF	PP	Remarks	
LEXR	-3.0453	-2.8931	Not	-4.3478**	-4.4409**	Stationary	
	(-3.5485)	(-3.5485)	stationary	(-3.5529)	(-3.5529		
LACGCC	-1.1235	-1.0019	Not	-5.4782***	-5.4640	Stationary	
	(-2.9511)	(-2.9511)	stationary	(-2.9540)	(-2.9540)		
LCBLA	0.6256	0.6826	Not	-4.6353***	-4.6414***	Stationary	
	(-2.9511)	(-2.9511)	stationary	(-2.9540)	(-2.9540)		
LPLR	-0.4686	-0.4689	Not	-6.7086***	10.1843***	Stationary	
	(-1.9513)	(-1.9513)	stationary	(-1.9521)	(-1.9517)		
LM3GDP	-0.8882	-0.7522	Not	-5.3154***	-5.9346***	Stationary	
	(-2.9511)	(-2.9511)	stationary	(-2.9540)	(-2.9540)		
LCPSGD	-0.9467	-0.8053	Not	-5.0513***	-7.9289***	Stationary	
	(-2.9511)	(-2.9511)	stationary	(-2.9540)	(-2.9540)		
LCBNMT	-2.3766	-2.3427	Not	-9.2187***	-12.7582***	Stationary	
	(-2.9511)	(-2.9511)	stationary	(2.9540)	(-2.9540)		
LCBTMT	-0.1180	0.0626	Not	-11.1425***	-16.7411	Stationary	
	(-1.9513)	(-1.9510)	stationary	(-1.9513)	(-1.9513)		
LCSWMT	-2.1200	-1.8686	Not	-7.9287***	-10.7144***	Stationary	
	(-2.9511)	(-2.9511)	stationary	(-2.9540)	(-2.9540)		
LCLGMT	0.0707	0.2289	Not	-8.4893***	-10.6236***	Stationary	
	(-1.9513)	(-1.9510	stationary	(-1.9513)	(-1.9513)		
LCFGMT	-0.7727	-2.5504	Not	-3.8949**	-7.1054***	Stationary	
	(-2.9604)	(-2.9511)	stationary	(-2.9639)	(-2.9540)		
LNRMT	-2.3353	-2.4955	Not	-5.3601***	-5.3601***	Stationary	
	(-2.9511)	(-2.9511)	stationary	(-2.9540)	(2.9540)		

 Table 2: Summary Result of Stationarity Test

**Source:** Computed with EViews from CBN (2022) and FAO (2022); Figures in parentheses represent the critical values at 5%; I(1) = Integrated of order one \*\*, \*\*\* Statistical significance at 5% and 1% levels

## **Cointegration between Financial Development and Export Volumes**

Each crop was cointegrated with financial development as shown in Table 3. The results showed that, at varying number of cointegrating equations, both the trace and Maximum Eigenvalue statistics concurred that there was a long-run relationship between the export volume of each selected cash crop and financial development in Nigeria. These findings add to empirical literature on the relevance of finance to the growth of the agricultural sector. These results study validate the works of Osabohien *et al.* (2019) and Ogbanje and Ihemezie (2023) that agricultural export and finance have long-run relationships.





 Table 3: Cointegration Test Statistics

	Cocoa beans		Cocoa butter		Cashew nut		Cotton li	nt ginned	Coffee green		Natural rubber	
Hypothesized No. of CE(s)	Trace	Maximum Eigenvalue	Trace	Maximum Eigenvalue	Trace	Maximum Eigenvalue	Trace	Maximum Eigenvalue	Trace	Maximum Eigenvalue	Trace	Maximum Eigenvalue
	258.18	99.87	242.50	89.05	251.01	106.47	253.78	95.01	344.70	121.49	259.54	79.31
None *	(125.61)	(46.23)	(125.61)	(46.23)	(125.61)	(46.23)	(125.61)	(46.23)	(125.61)	(46.23)	(125.61)	(46.23)
At most 1 *	158.31	51.39	153.45	57.04	144.53	50.74	158.76	55.94	223.21	98.53	180.22	67.69
	(95.75)	(40.07)	(95.75)	(40.07)	(95.75)	(40.07)	(95.75)	(40.07)	(95.75)	(40.07)	(95.75)	(40.07)
At most 2 *	106.91	41.23	96.40	40.05	93.78	37.07	102.82	39.74	124.67	42.38	112.53	42.14
	(69.81)	(33.87)	(69.81)	(33.87)	(69.81)	(33.87)	(69.81)	(33.87)	(69.81)	(33.87)	(69.81)	(33.87)
At most 3 *	65.68	31.33	56.34	29.20	56.71	28.65	63.08	32.53	82.29	41.14	70.38	29.94
	(47.85)	(27.58)	(47.85)	(27.58)	(47.85)	(27.58)	(47.85)	(27.58)	(47.85)	(27.58)	(47.85)	(27.58)
At most 4 *	34.34	19.75	27.14	20.39	28.05	17.62	30.54	22.14	41.14	18.24	40.43	26.67
	(29.79)	(21.13)	(29.79)	(21.13)	(29.79)	(21.13)	(29.79)	(21.13)	(29.79)	(21.13)	(29.79)	(21.13)
At most 5	14.59	9.76	6.750	6.44	10.43	10.23	8.39	7.95	22.90	13.91	13.75	10.63
	(15.49)	(14.26)	(15.49)	(14.26)	(15.49)	(14.26)	(15.49)	(14.26)	(15.49)	(14.26)	(15.49)	(14.26)
At most 6	4.83	4.83	0.31	0.31	0.19	0.19	0.44	0.44	8.99	8.99	3.12	3.12
	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)

() 5% critical value; \* Rejection on null hypothesis; Computed with EViews from CBN (2022) and FAO (2022)





## Long-run Estimation of Financial Development-export Growth Nexus

The analysis of the estimation of long-run relationship between financial development and agricultural export growth is presented in Table 4. The results showed that EXR statistically (p<0.01) decreased the export of cocoa beans, cocoa butter and natural rubber. In other words, the export of these crops significantly responded to changes in exchange rate in the long-run. The cost of the resources for the production and management of these crops would have been exacerbated by the decline of the local currency against the standard currency, thereby reducing exportable volumes of these commodities. Conversely, exchange rate statistically (p<0.01) increased the export of cashew, cotton lint ginned and coffee green. The results indicate that the export of cashew, cotton lint ginned and coffee green defied the probable rise in the cost of production and management of these crops. The asymmetric effect of exchange rate of agricultural exportation implies that different crops respond differently to vagaries of exchange rate within the same economy and time frame. These results have implications for export planning and economic development.

The results further showed that ACGCC statistically (p<0.01) decreased the exportation of cocoa beans, cocoa butter, coffee green and natural rubber. A unit increase in ACGCC led to decline in the exportation of cocoa beans, cocoa butter, coffee green and natural rubber by 0.21%, 0.47%, 0.18% and 1.50%, respectively. Hence, natural rubber was more elastic to the ACGCC in terms of relativity. These results suggest that the management of Nigeria's credit guarantee scheme was antagonistic to the exportation of cocoa beans, cocoa butter, coffee green and natural rubber. This could be attributed to the mandate of the scheme or some levels of ineffectiveness. This finding is similar to Egwu (2016) that agriculture credit guarantee scheme had a significantly negative effect on agricultural sector output percentage to gross domestic product in Nigeria in the long-run. Mesike et al. (2010) reported that the response of rubber farmers to price was low in the long-run due to price sustainability and the emergence of other supply determinants. Conversely, ACGCC statistically (p<0.01) increased the exportation of cashew nut and cotton lint green in a manner that a unit increase in ACGCC led to the increase in the exportation of cashew nut and cotton lint green by 0.69% and 1.39%, respectively. This result showed that cotton lint ginned was more elastic to changes in ACGCC than cashew nut. The credit guarantee fund is more accessible to more farmers as a measure of ameliorating financial challenge that is the bane of agricultural production in Nigeria. The result can also be attributed to the direct intervention and effectiveness of ACGCC or supply response to price changes in the substitute crops (Ogundari, 2018). The finding is similar to Ngozi and Patricia (2022) who found that the agricultural credit guarantee scheme fund showed a positive and significant influence on the gross domestic product in Nigeria.

The results further showed that CBLA statistically (p<0.01) increased the exportation of cocoa beans, cocoa butter and natural rubber in the long-run. A unit increase in CBLA led to increase in the exportation of cocoa beans, cocoa butter and natural rubber by 1.25%, 20.44%, and 14.68%, respectively. The results thus revealed that cocoa butter responded more positively to CBLA. It can be inferred that there was greater monitoring to ensure the productivity of CBLA to these crop subsectors. However, cashew nut, cotton lint ginned and coffee green responded negatively to changes in CBLA as a unit increase in CBLA led to decline in their exportation by 17.52%, 8.10% and 6.89%, respectively in the long-run. Thus,





cotton lint ginned responded more negatively to increase in CBLA. These results indicated that some level of wastages, inappropriate credit application, loan fungibility, loan diversion and negligence among others. These results and other similar results portray the assertion on reliance on the oil sector to the neglect and subsequent underdevelopment of other sectors of the country. This finding is similar to Egwu (2016) that commercial banks credit to agriculture had a significantly positive effect on agricultural sector output percentage to gross domestic product in Nigeria in the long-run. Also, Erhijakpor (2021) found that bank credit to the agricultural sector (% of GDP) negatively impacted on the Nigerian agricultural sector between 1989 and 2018.

The results also showed that PLR statistically (p<0.01) increased the exportation of cocoa beans, cocoa butter and natural rubber in the long-run. A unit increase in PLR led to increase in the exportation of cocoa beans, cocoa butter and natural rubber by 9.36%, 118.96%, and 90.17%, respectively. The results thus revealed that cocoa butter responded more positively to changes in PLR. Increase in lending rate increases the cost of capital and thus inhibits debt financing. However, the size of returns can negate this challenge. Thus, it can be inferred that the associated adverse consequences of increasing lending rate were defied by cocoa beans, cocoa butter and natural rubber exportation. Another plausible reason is that the farmers had sufficient capital base from equity retaining profit pool to sustain their production and export thereby avoiding the consequences of increased lending rate. The result is similar to Camillus (2019) who found a unidirectional causality from agricultural output to PLR in Nigeria from 1986 to 2017. The result similar to Erhijakpor (2021) that prime lending rate positively impacted the Nigerian agricultural sector between 1989 and 2018. However, cashew nut, cotton lint ginned and coffee green responded negatively to changes in PLR as a unit increase in PLR led to decline in their exportation by 89.14%, 41.04% and 30.61%, respectively in the long-run. Thus, cashew nut responded more negatively to increase in PLR. This result suggests that cashew nut depended more on debt financing than the utilization of equity capital, profit retention or sources other than borrowing.

The result further showed that m3gdp statistically (p<0.01) increased the exportation of cashew nut, cotton lint ginned and coffee green in the long-run. A unit increase in m3gdp led to an increase in the exportation of cashew nut, cotton lint ginned and coffee green by 97.88%, 47.97%, and 32.25%, respectively. In relative terms, cashew nut responded more to changes in m3gdp. m3gdp is a dimension of financial deepening which measures the ratio of money supply (MS) to the Gross Domestic Supply (GDP). Thus, the operations of these financial institutions have implications for the exportation of cashew nut, cotton lint ginned and coffee green in the long-run. This finding is at variance with Adeniyi et al. (2012) that financial deepening reduced economic growth in the Gambia in the long-run. However, the result is in agreement with Erhijakpor (2021) that broad money supply (% of GDP) positively impacted the Nigerian agricultural sector between 1989 and 2018. On the other hand, m3gdp statistically (p<0.01) reduced the exportation of cocoa beans, cocoa butter and natural rubber in the long-run. A unit increase in m3gdp led to a decrease in cocoa beans, cocoa butter and natural rubber by 8.47%, 125.05% and 102.64%, respectively. This result shows that natural rubber exportation was more adversely affected by changes in m3gdp. It can be inferred that the total liquid liabilities in the economy did not favour the exportation of cocoa beans, cocoa butter and natural rubber in the long-run.





The result also showed that CPSGD statistically (p<0.01) increased the exportation of cocoa beans, cocoa butter and natural rubber in the long-run. A unit increase in CPSGD led to an increase in the exportation of cocoa beans, cocoa butter and natural rubber by 5.50%, 72.17% and 59.37%, respectively. In relative terms, cocoa butter was more elastic to CPSGD. In Nigeria, agriculture and export are in the hands of the private sector just as the commercial banks and most financial institutions are but regulated by the apex bank. This finding is similar to Erhijakpor (2021) who found that credit to the private sector (% of GDP) positively impacted the Nigerian agricultural sector between 1989 and 2018. However, CPSGD statistically (p<0.01) decreased the exportation of cashew nut, cotton lint ginned and coffee green in the long-run. A unit increase in CPSGD led to a decrease in the exportation of cashew nut, cotton lint ginned and coffee green by 46.76%, 27.13% and 14.71%, respectively. Thus, cashew nut was more adversely affected by changes in CPSGD. This result contradicts Camillus (2019) who found that CPSGD had no significant effect on agricultural output in Nigeria between 1986 and 2017 and Guei & Choga (2022) who found that the credit to the private sector enhanced domestic growth in Sub-Saharan Africa.

Financial	Cocoa	Cocoa	Cashew	Cotton	lintCoffee	Natural
development	beans	butter	nut	green	green	rubber
Constant	17.46248	347.9593	-266.2859	-125.8637	-105.3070	244.2860
I F X P(-1)	0 233667	9 614357	-9 446914	-5 248600	-4 358126	6 551225
	(0.06985)	(1.63672)	(0.97046)	(0.65354)	(0.52820)	(1.86454)
	[3.35]***	[5.878] ***	[-9.74] ***	[-8.04] ***	[-8.25] ***	[ 3.51] ***
LACGCC(-1)	0.207094	2.459902	-0.692111	-1.391897	0.182161	1.502180
	(0.02326)	(0.47454)	(0.29562)	(0.14843)	(0.14234)	(0.45123)
	[8.90] ***	[5.18] ***	[-2.34] **	[-9.38] ***	[1.27980]	[ 3.33] ***
LCBLA(-1)	-1.245313	-20.44197	17.51818	8.099827	6.891859	-14.67639
	(0.10976)	(2.21736)	(1.30372)	(0.82655)	(0.67638)	(2.29998)
	[-11.35] ***	[-9.22] ***	[13.44] ***	* [`9.79] ***	[ 10.19] ***	[-6.38] ***
LPLR(-1)	-9.355287	-118.9586	89.13792	41.03890	32.60896	-90.16791
( )	(0.57795)	(8.42447)	(4.92057)	(2.80293)	(2.19644)	(7.76080)
	[-16.19] ***	[-14.12] ***	[18.12] ***	[14.64] ***	* [14.85] ***	[-11.62] ***
LM3GDP(-1)	8.474599	125.0493	-97.88219	-47.97240	-32.24496	102.6358
( )	(0.66308)	(11.7046)	(6.64047)	(4.00067)	(3.57780)	(10.9443)
	[12.78] ***	[10.68] ***	[-14.74] ***	* [-11.99] **	* [-9.01] ***	[9.38] ***
LCPSGD(-1)	-5.503168	-72.17054	46.76122	27.13343	14.70755	-59.37013
	(0.41293)	(7.55628)	(4.47106)	(2.40403)	(2.23866)	(7.46270)
	[-13.33] ***	[-9.55] ***	[ 10.46] ***	* [11.29] ***	· [6.57] ***	[-7.96] ***

**Table 4**: Vector Error Correction Estimates for Financial Development-export Growth Nexus

\*\*, \*\*\* Statistical significance at 5% and 1% levels; Computed with EViews from CBN (2022) and FAO (2022);

In presentation, the coefficients were normalized with reversed signs; Standard errors in ( ) & t-statistics in [ ]





## CONCLUSION AND RECOMMENDATIONS

Cocoa beans, cocoa butter, cashew nut, cotton lint and natural rubber exportation had but positive low growth rates while coffee green exhibited a downward trend, implying loss of foreign exchange earnings. The positive growth of ACGCC and CBLA implied increased agricultural funding which can spur increased production and export. The PLR declined overtime, thus favouring debt capital financing of cash crop production for more export and economic development. Accelerated financial deepening indicate robustness of the financial system for the growth of the agricultural sector.

In the long-run, the presence of credit guarantee was associated with the exportation of CSW and CLG through enhanced credit access for input procurement. The negative longrun effect of ACGCC on CBN, CBT, CFG and NR suggest counter productivity of or inaccessibility of ACGCC most likely due to the small-size of ACGCC. Also, CBLA would move in the same direction with CBN, CBT and NR. Conversely, CSW, CTG and CFG were inversely related to CBLA in the long-run. The producers and exporters of these crops would been wary of the unfavourable loan conditions of commercial banks and got the unintended consequences of export decline. PLR would lead to increase in CBN, CBT and NR. The potential high rate of return from the exportation of these commodities would have defied the negative impact of rising lending rate, thereby making the commodities suitable for survival in times of economic depression. However, CSW, CTG and CFG were vulnerable to changes in PLR. Where producers rely on debt capital financing, export performance suffers setback.

The MSGDP exhibited a positive impact on CSW, CTG and CFG but CSW was more responsive. Where money supply increases relative to economic growth, funds used for CSW, CTG and CFG exportation yields result that increase growth in the long-run. The benefits of CSW will accrue over a longer period of time. On the other hand, CBN, CBT and NR would decrease in the long-run as money supply increases relative to economic growth. When the credit to private sector increases relative to GDP in the long-run, the volume of CBN, CBT and NR export would increase. The production and exportation of CBN, CBT and NR are largely in the hands of the private sector. Hence, increase in private sector credit would enhance of the growth in the exportation of the commodities. Based on the analysis of the results, the following recommendations have been made:

- i. The Central Bank of Nigeria, through its monetary policy autonomy, should raise and expand the scope ACGCC as well as increase the level of investment by commercial banks in agriculture;
- ii. The Federal Ministry of Agriculture and Food Security and NEPC in collaboration with the relevant export commodity associations should systematically increase the exportation of cash crops to attract more foreign exchange earnings, increase foreign reserves, raise the level of non-oil revenue so as to reduce the current regime of deficit budgeting and spate of external borrowing; and
- iii. The Central Bank of Nigeria, in collaboration of NEPC, should grant some waivers to some exporters to ameliorate the adverse effect of exchange rate. This measure will ensure that the falling value of the naira does not adversely affect the exportation of cash crops; and





## REFERENCES

- Adegbola, P. Y., Adjovi, N. R. A., Zofoun, G. A., Arodokoun, D. Y., Bello, S. and Arodokoun, U. A. (2016). Financial innovations investment for agricultural development and food security in Benin. *Policy Brief*, 1–4.
- Adeniyi, O., Omisakin, O., Egwaikhide, F. O. and Oyinlola, A. (2012). Foreign Direct Investment, Economic Growth and Financial Sector Development in Small Open Developing Economies. *Economic Analysis and Policy*, 42(1): 105–127. https://doi.org/10.1016/S0313-5926(12)50008-1
- Adeniyi, O. R. and Ogunsola, G. O. (2014). Cocoa Production and Related Social-Economic and Climate Factors: A Case Study of Ayedire Local Government Area of Osun State, Nigeria. Agricultural Science, 2(4): 1–13. https://doi.org/10.12735/as.v2i4p01
- Adongo, S. O., John, S. O., Zeph, P. and Muyima, R. N. (2020). Impact of Monetary Policy on the Performance of Agricultural Sector in Kenya. *International Journal of Research* and Innovation in Social Science, 4(7): 562–568.
- Allen, F. & Santomero, A. M. (1998). Theory of Financial Intermediation. *Journal of Banking and Finance*, **21**, 1461-1485.
- Amao, O. D., Antwi, M. A., Samuel, O., Oduniyi, Oni, T. O. and Rubhara, T. T. (2021).
   Performance of agricultural export products on economic growth in Nigeria. Asian Journal of Agriculture and Rural Development, 11(1): 47–52.
   https://doi.org/10.18488/journal.ajard.2021.111.47.52
- Andrei, D. M. and Andrei, L. C. (2015). Vector Error Correction Model in Explaining the Association of Some Macroeconomic Variables in Romania. *Procedia Economics and Finance*, 22 (November 2014): 568–576. https://doi.org/10.1016/s2212-5671(15)00261-0
- Anuja, A. R., Kar, A., Mathur, V. C., Jha, G. K. and Kumar, P. (2019). Economic Scenario of Natural Rubber Production and Marketing in Kerala. *Economic Affairs*, **57**(4): 1–12.
- Asghar, N. and Salman, A. (2018). Impact of agriculture credit on food production and food security in Pakistan. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 12(3): 851–864.
- Bakari, S. and Tiba, S. (2022). Agricultural Exports, Agricultural Imports and Economic Growth in China. In *MPRA Paper No. 114415*.
- Camillus, O. N. (2019). Financial deepening and agricultural sector output in Nigeria. *International Journal of Advanced Educational Research*, **4**(2): 1–9.
- Central Bank of Nigeria (2022). *Statistical Bulletin of the Central Bank of Nigeria*. Central Bank of Nigeria, 2023. Online version.
- Danso-abbeam, G., Cobbina, M. T. and Antwi, R. A. (2021). Agricultural credit utilization among farmers in Bole district of northern region, Ghana. *Russian Journal of Agricultural and Socio-Economic Sciences*, 3(51): 1–15. https://doi.org/10.18551/rjoas.2016-03.07
- Ee, C. Y. (2016). Export-led Growth Hypothesis: Empirical Evidence from Selected Subsaharan African Countries. *Procedia Economics and Finance*, 35(October 2015): 232–240. https://doi.org/10.1016/s2212-5671(16)00029-0
- Egwu, P. N. (2016). Impact of Agricultural Financing on Agricultural Output, Economic Growth and Poverty Alleviation in Nigeria. *Journal of Biology, Agriculture and Healthcare*, **6**(2): 36–42.
- Erhijakpor, A. E. (2021). Financial Depth Indicators and Agricultural Sector Performance in Nigeria. *International Journal of Intellectual Discourse*, **4**(4): 268–282.
- Esekhade, T., Mesike, S., Idoko, S. O. and Okore, I. K. (2014). Gross margin analysis of





rubber based cropping systems in Nigeria. *African Journal of Agricultural Research*, **9**(37): 2834–2840. https://doi.org/10.5897/AJAR2014.8942

- Food and Agriculture Organisation (2022). Food and Agriculture Organisation of the United Nations Organisation, FAOSTAT. Online version.
- Fomyol, P. E. and Tata, L. A. (2019). Evaluation of the National Special Programme on Food Security (SPFS) in Plateau State, Nigeria. *Journal of Agriculture and Sustainability*, 12(1): 1–12.
- Giroh, D. Y., Francis, Y. S., Jen, E. I., Giroh, D. Y., Francis, Y. S. and Jen, E. I. (2012). Economic analysis of intercropping rubber (Hevea brasiliensis) in the rubber growing areas of Edo and Delta States, Nigeria. *Global Journal of Pure and Applied Sciences*, 18(1): 15–18.
- Guei, K. M. and Choga, I. (2022). Assessing the finance led growth hypothesis: Empirical evidence from sub-Saharan Africa. *African Journal of Science, Technology, Innovation and Development*, 14(1): 114–120. https://doi.org/10.1080/20421338.2020.1815945
- Gujarati, D. N. and Porter, D. C. (2009). Basic Econometrics. Fifth Edition. McGraw-Hill/Irwin, New York. In *Introductory Econometrics: A Practical Approach*.
- Hamzat, R. A., Olaiya, A. O., Sanusi, R. A. and Adedeji, A. R. (2006). State of Cocoa growing, Quality and research in Nigeria: need for intervention. In *The Biannual Patnership Programme of the World Cocoa Foundation (WCF)* (pp. 2–9).
- Ibrahim, T. (2020). Impact of Agricultural Export on Inclusive Growth in Nigeria. MPRA Paper No. 100366.
- Ikapel, O. F. and Kajirwa, I. H. (2017). Analysis of Long Term Debt and Financial Performance of State Owned Sugar Firms in Kenya. *International Journal of Commerce and Management Research*, 3(2): 108–111.
- Ismail, A. A. and Kabuga, N. A. (2016). Impact of Agricultural Output on Economic Growth In Nigeria Using ARDL Econometric Approach. Nigerian Journal of Agricultural and Development Economics (NIJADE), 6(1): 127–138.
- John, E. I. & Nwekemezie, O. A. (2019). Effect of Financial Intermediation on Economic Development of Nigeria. *Journal of Economics and Finance (IOSR-JEF)*, **10**(1): 23– 32. https://doi.org/10.9790/5933-1001012332
- Kamil, S., Ugural, S. and Bekun, F. V. (2017). The Contribution of Agricultural Sector on the Economic Growth of Nigeria. *International Journal of Economics and Financial Issues*, 7(1): 547–552.
  - https://www.econjournals.com/index.php/ijefi/article/viewFile/3941/pdf
- Kisaka, S. E., Adhiambo, O. C., Ndege, D. M. and Muio, A. K. (2023). The Effect of Financial Deepening on the Performance of Smallholder Farmers in Homa Bay County, Kenya. *Research Journal of Finance and Accounting*, 6(10): 141–156.
- Mesike, S., Okoh, R. and Inoni, O. (2010). Supply Response of Rubber Farmers in Nigeria: An Application of Vector Error Correction Model. *Agricultural Journal*, 5(3): 146– 150. https://doi.org/10.3923/aj.2010.146.150
- Murindahabi, T., Li, Q., Nisingizwe, E. and Ekanayake, E. M. B. P. (2019). Do coffee exports have impact on long-term economic growth of countries? *Agricultural Economics (Zemědělská Ekonomika):* 65(8): 385–393. https://doi.org/10.17221/283/2018-AGRICECON
- Najib, S., Fei, C., Dilanchiev, A. and Romaric, S. (2022). Modeling the Impact of Cotton Production on Economic Development in Benin: A Technological Innovation Perspective. *Frontiers in Environmental Science*, 10(July): 1–11.





https://doi.org/10.3389/fenvs.2022.926350

- Ngozi, M. O. and Patricia, I. E. (2022). Agricultural financing and economic growth in Nigeria. *African Journal of Accounting and Financial Research*, **5**(3): 30–48. https://doi.org/10.52589/AJAFR-VV0CKXM8.
- Nguyen, H. A. T. and Vo, T. H. T. (2021). The role of the coffee industry in sustainable economic development in Vietnam. *Accounting*, **7**: 683–690. https://doi.org/10.5267/j.ac.2020.12.008
- Nse-Nelson, F. A., Onyebinama, I. C. and Obike, K. C. (2020). Growth Rates and Determinants of Rubber Export in Nigeria. *Journal of Sustainable Agriculture and Development*, **18**(1): 227–239.
- Nurchaini, D. S., Nainggolan, S. and Sari, D. M. (2024). Analysis of the contribution of rubber plantations to economic growth in Tebo District. GSC Advanced Research and Reviews, 18(01): 328–335.
- Nwogwugwu, U. C. C., Nwokoye, E. and Osai, V. A. (2023). The Role of Agriculture in Economic Development in Nigeria. *Journal of International Economic Relations and Development Economics*, **3**(1): 103–111.
- Ogbanje, E. C. and Ihemezie, E. J. (2021). Impact of broad money and exchange rate on agricultural gross domestic product: An unrestricted VAR model approach. *Journal of Agripreneurship and Sustainable Development (JASD)*, **4**(4): 115–127.
- Ogbanje, E. C. and Ihemezie, E. J. (2023). Cocoa export growth and long-run export drivers in Nigeria: A vector error correction model approach. *Agricultural Economics and Extension Research Studies*, **11**(2): 85–102.
- Ogbanje, E. C. and Salami, A. O. (2022). Impact of Foreign Direct Investment on Nigeria's Agricultural Sector (1981 to 2019). *International Journal of Environment, Agriculture and Biotechnology*, 7(4): 161–171. https://doi.org/10.22161/ijeab
- Ogbanje, E. C. and Tor, I. E. (2022). Cattle financing and production in Nigeria: A VECM Approach. Proceedings of 1st Biennial International Conference on Sustainable Tropical Agriculture and Food Security Held from 14th to 18th December, 2022 at New Faculty of Agriculture Auditorium, University of Nigeria, 40–51.
- Ogundari, K. (2018). Maize supply response to price and nonprice determinants in Nigeria: bounds testing approach. *International Transactions in Operational Research*, **25**(5): 1537–1551. https://doi.org/10.1111/itor.12284
- Okuduwor, A. A., Amadi, R. C. C. and Udi, O. F. (2023). Assessing Agricultural Export Evidence on Economic Growth in Nigeria (1999-2020). *International Journal of Business and Applied Economics*, 2(2): 79–96.
- Olife, I., Jolaoso, M. A. and Onwualu, P. A. (2013). Cashew Processing for Economic Development in Nigeria. *Agricultural Journal*, **8**(1): 45–50.
- Olomola, A. S. and Yaro, M. (2015). Commercial banks' response to government's financial stimulus for improved agricultural financing in Nigeria. IFPRI Discussion Paper 01403. http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/129209
- Onwusiribe, N. C., Mbanasor, J. A. and Oteh, O. U. (2022). Dynamics of coffee output in Nigeria. *Gestão & Produção*, 29, 1–25.
- Osabohien, R., Akinpelumi, D., Matthew, O., Okafor, V., Iku, E., Olawande, T. and Okorie, U. (2019). Agricultural Exports and Economic Growth in Nigeria: An Econometric Analysis. *IOP Conference Series: Earth and Environmental Science*, **331**(1);1 - 11. page no.? https://doi.org/10.1088/1755-1315/331/1/012002

Pohlan, H. A. J. (2000). Growth and production of coffee.

Samuel, O. A. and Augustine, A. A. (2021). Agricultural finance and economic growth in





the 21st century Nigeria perspective and matter for policy consideration. *Revista de Educacion*, **392**, 27–42.

- Silong, A., Fada, K. and Gadanakis, Y. (2020). Credit sources, access and factors influencing credit demand among rural livestock farmers in Nigeria. Agricultural Finance Review, 80(1): 68–90. https://doi.org/10.1108/AFR-10-2018-0090
- Singh, G., Bajwan, A. and Sain, V. (2022). An economic analysis of production and marketing of cotton in Haryana. *The Pharma Innovation Journal*, **11**(12): 6329–6335.
- Sulaimon, M. (2021). Agricultural credit guarantee scheme fund (ACGSF) and agricultural performance in Nigeria: A threshold regression analysis - Munich Personal RePEc Archive. CBN Journal of Applied Statistics, 105564. https://mpra.ub.unimuenchen.de/105564/
- Taiga, U. U. and Ameji, N. E. (2020). Agricultural Exports and its Impact on Economic Growth in Nigeria. *Greener Journal of Agricultural Sciences*, **10**(1): 43–50.
- Tuaneh, G. L. & Ewubare, D. B. (2019). Financial Deepening: Implications on Agricultural Performance (1981-2014). *International Journal of Applied Research and Technology*, 5(2): 38 – 46.
- Utuk, I. O., Akpan, B. L., Eduno, E. B. and Udo, A. B. (2023). Agricultural Export and Economic Growth in Nigeria : Does Agriculture Value Added Matter ? *Interntational Journal of Research and Innovation in Social Sciences*, 8(11): 880–892. https://doi.org/10.47772/IJRISS
- Ziad, A. A., Yousif, I. E. and Alsultan, M. M. (2023). Economics of Coffee Production in Saudi Arabia : A Case Study of Jazan Region. *JASAC*, **19**(03): 1515–1522.