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Globalization and Agricultural Sector Output in Nigeria

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Abstract :

This study examined the effect of globalization on agricultural sector development in Nigeria. The study employed annual time series data from Central Bank of Nigeria Statistical Bulletin between 1986 and 2018 which were analyzed with Autoregressive Distributed Lag technique. The result of the Bound co-integration test indicated that there is long run relationship among agricultural sector output, foreign direct investment, foreign portfolio investment as a percentage of gross domestic product, trade openness and exchange rate. The result of the ARDL revealed that trade openness, foreign portfolio investment and exchange rate stimulate agricultural sector output while foreign direct investment negatively influence agricultural sector output in Nigeria. It was concluded that globalization plays important role in the development and enhancement of agricultural sector output in Nigeria through openness and financial inflow to the sector. Thus, government should formulate policy frameworks that will enhance the trade relationship between the agricultural sector and other developed nations to facilitate the inflow of important raw materials for the sector's productivity, government should formulate policies that will ease direct investment inflow into the agricultural sector by creating linkage

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between foreign multi-national companies and agricultural sector in Nigeria. Finally, it was recommended that exchange rate stability should be prioritized by the government and more foreign exchange subsidy should be given to the agricultural sector to facilitate the of importation of raw materials.

Keywords: Agriculture, Economic Policy, Co-integration, Globalization.

JEL Classification: E23, F21, F62.

1. Introduction

Agriculture is perceive as one of the major sectors that could promote the growth and development of developing nation through its capacity to generate employment opportunities, export revenue and contributes to gross domestic product. Thus, government focused has been directed towards the enhancement of agricultural sector's contribution to economic growth in most oil dependent and mono product economy in developing countries. Agricultural sector is one of the major sectors in most developing countries Nigeria inclusive. According to Ewubare and Eyitope (2015); Akinwale, Adekunle and Obagun (2018), agriculture sector contributes to the growth of an economy through increased productivity, contribution to factors and generation of foreign reserves for the economy.

Before the discovery of oil early 1960s, the Nigeria agriculture was the dominating sector in terms of contribution to gross domestic product and foreign exchange earnings through the export of cash crops. Udoka, Mbat and Duke (2016) maintained that during this period, the Nigerian economy was dominated by agriculture and solid minerals which are export earner of the economy. Nigeria was a key exporter cash crop like rubber, cotton, groundnut, timber, palm oil, cocoa and palm kernel contributing about 3% and 4% to the annual growth rate of food and agricultural crops in 50s and 60s respectively (Osuntogun, 1997). Ayeomoni and Aladejana (2016) opined that the agriculture contributed 90% to Nigeria gross domestic product and foreign exchange before oil boom was discovered in early 1970s and also provides means of livings for two third (2/3) of Nigerians who are low income earners in the economy. However, following the discovery of oil in Nigeria the agricultural sector was neglected. The dominance of the crude oil as major export revenue resulted in the neglect of the agricultural sector (Aigbokhan, 2001; Udoka, *et al.*, 2016).

The need to give a new lease of life to the agricultural sector and enhance the sector's contribution to the Nigerian economy has resulted in the need to focus on external source of supporting the sector through globalization rather that the internal source which has not adequately sustain

the agricultural sector. Globalization has been claimed to be a vital tools of promoting growth and development in literature (Round & Whalley, 2002; Abid & Anila, 2005; Atif Srivastav, Sauybekova & Udeni, 2012). Ishmael, Oluwalami, James and Osamor (2014) argued that globalization reduces the gap between economic agents through advanced and sophisticated technologies thereby making it possible for domestic markets to emerge into a global system thereby facilitating the inflow of capital and investment which is important for sectoral growth. Opening of the economy to international relation through globalization would facilitate technological innovation, strengthening of trade relationship, ensure increase in investment by multinational companies and encourage the inflow of foreign financial resources which can promote agricultural growth (Akinmulegun, 2018).

The agricultural sector has long be neglected following discovery of crude oil with banks and other institutions focusing on sector with higher return and lower risk (Itodo, Apeh & Adeshina, 2012). Promoting agricultural sector devevelopmnet came to center stage in Nigeria given the need of the government to diverse the revenue based of the economy with nation relying mainly on oil sector. Nigeria blessed with abundant human potentials and natural resources has continued to wallow in poverty, unemployment, inflationary pressure, falling foreign exchange earnings and gross domestic product which agricultural sector expected to play leading role in solving these economic challenges. However, with several uncertainties such as inadequate funding, resource scarcity and risk of climate changes among others, the agricultural sector of the nation's economy remains gloomy (Ibe, 2014).

Studies have been conducted on the contribution of globalization to the Nigerian economy with majority of literature focusing on economic growth. Very few studies focused on the effect of globalization on agricultural sector in Nigeria (Akinmulgeun, 2018; **Usenobong** & Atan, 2015). Also, while Akinmulgeun (2018) employed foreign exchange rate, foreign direct investment, degree of openness and consumer price index, his study did not employed foreign portfolio investment as important variable of globalization which measures financial globalization. Finally, the direction of causality among globalization varaibles and agricultural sector productivity was not established in previous studies. Thus, in line with the above gap and the current efforts of government promote international cooperation with the objective of promoting sectoral and overall growth in the economy, this study examined the effect of globalization on agricultural sector in Nigeria.

2. Literature Review

Agriculture involves the cultivation of crop and keeping of live stocks mainly for industrial and human consumptions. According to Ebomuche and Ihugba (2010); Ewubare and Eyitope (2015) agriculture is the cultivation land, planting of crops and nurturing of animals to produce food for man, feed for animals and raw materials for industrial use. It involves cropping, livestock, and forestry, fishing, processing and marketing of agricultural products (Ihugba, Chinedu & Njoku, 2013). Acknowledging the role of agricultural sector in Nigeria, Udoka, *et al.*, (2016); Fakun and Evbuomwan (2017) affirmed that the sector provides food for the teeming population, raw materials for industrial production, provision of employment opportunities to growing rural population and thus stimulating growth and development.

Globalization is the interdependency and interrelation among the nations of the world through trade, commerce and technological innovation. Akinwale and Adekunle (2019) defined globalization as the integration and harmonization of the world economy through cooperation and interdependency which result in economic, political and social benefits. The need of the government to promote sectoral growth in the economy and achieve sustainable development resulted in the opening of the Nigerian economy to foreign cooperation. However, the economy became more open in 1986 through the adoption of Structural Adjusted Programme. Oluwole (2014); Akinmulegun (2018) opined that the objective of SAP to attract foreign investment and capital inflow by abolishing trade and investment regulations, enhance foreign reserves by boosting exports of major sector like agriculture and promote economic growth.

Iddrisu, Immurana and Halidu (2015) studied impact of FDI on the performance of the agricultural sector in Ghana from 1980 to 2013. The results of the study revealed that FDI negatively impacts the agricultural sector productivity in the long run but with positive relationship in the short run and also depreciation of the cedi negatively impacts the growth of the agricultural sector in the long run while trade openness on the other hand had positive and significant long run impact on the agricultural sector. However, Ogbanje, Okwu and Saror (2010) used pearson product moment correlation analysis to determine the relationship between agricultural FDI and agricultural GDP and found a positive and strong relationship. Oloyede (2014) examined the impact of FDI on the agricultural sector development of the Nigerian economy from 1981 to 2012 which were analyzed using ADF test for stationarity and a granger causality test, the study found a relationship among the variables as affirmed by the error parameter. The

study revealed that FDI positively impacted on agriculture not only in the short run but also in the long run. Using descriptive analysis and simple linear regression,

Yusuff, Afoloyan and Adamu (2015) examined the level of foreign direct investment on agricultural sector and the consequential effect on the contribution of the sector to the country's Gross Domestic Product (GDP) and it was revealed that the inflow of FDI to agricultural sector does not follow a regular pattern and the sector's contribution to GDP is in direct relationship with the inflow of FDI. Ewubare and Eytlope (2015) examined the effects of government spending on the agricultural sector in Nigeria. The ordinary least square of multiple regression, the Johansson co-integration techniques and the error correction model were used for the analysis. The results showed that the coefficient of determination is 0.9468 and the coefficient of the Error Correction Model (ECM) appeared with negative sign and statistically significant. The lag two and three forms of the explanatory variable, Government Expenditure on Agriculture were positive and statistically significant. Based on the findings, the study recommended for an increased funding of the agricultural sector in Nigeria.

Shuaib, Igbinosun and Ahmed (2015) examined the impact of government agricultural expenditure on the growth of the Nigerian economy from 1960 to 2012 analyzed with OLS. The results revealed that government agricultural expenditure has a significant direct relationship with economic growth. Akinmulegun (2015) examined the effect of agricultural financing on economic growth using time series which was analyzed using Vector Error Correction Approach (VECA). The result revealed that a unidirectional casualty runs from budgetary allocation to agricultural sector (BAAGRIC) to contribution of Agriculture to Real Gross Domestic Product. The result of the co-integration revealed that there is a long run relationship between budgetary allocations to agricultural sector (BAAGRIC) and Agriculture to Real Gross Domestic Product.

Usenobong and Atan (2015) used the error correction framework to examine the effect of globalization on selected sectors of the Nigerian economy from 1970 to 2011. It was indicated that globalization had positive impact on the selected sectors, although the magnitude and significance of these impacts varied from one sector to another. Kabir (2015) examined the impact of foreign direct investment on agricultural output in Nigeria from 1970 to 2012 using an autoregressive distributed lag (ARDL) model. Results from the analysis revealed that foreign direct investment, government expenditure and exchange rates in the period under

study had significant and positive effects on agricultural output, whereas interest rate and inflation rate had negative effect on agricultural output.

Akinwale, *et al.*, (2018) explored the impact of foreign direct investment on agricultural productivity in Nigeria using Augmented Dickey – Fuller (ADF), Johansen test and Error Correction Mode to examine the effect of foreign direct investment and agricultural development. The result of the error correction model indicated that both foreign direct investment and bank credit to agricultural sector had significant effect on agricultural productivity while it was established insignificant relationship between exist between government expenditure to agricultural sector and agricultural productivity. Akinmulegun (2018) examined the effect of globalization on agricultural sector in Nigeria. The study made use of annual time series data spanning from 1986 to 2015. It was found that foreign exchange, degree of openness and foreign direct investment were not statistically significant in influencing the favorable trend of agricultural productivity in Nigeria, thus, its growth potential while consumer price index impacted positively on agricultural productivity to a larger extent.

Studies have been widely conducted on implication of globalization on the Nigeria economy with study mainly focusing on economic growth (Akinmulegun, 2012; Akinmulegun, 2015). Also, some reviewed studies focused on the effect of foreign direct investment on agricultural sectoral sector in Nigeria (Oloyede, 2014; Kabir, 2015; Yussuf, *et al.*, 2015; Akinwale, *et al.*, 2018).

However, few studies focused on the effect of globalization on agricultural sector in Nigeria (Akinmulgeun, 2018; Useobong, 2015). Also, while Akinmulgeun (2018) employed foreign exchange rate, foreign direct investment, degree of openness and consumer price index, his study did not employed foreign portfolio investment as important variable of globalization. Finally, the direction of causality among globalization variables and agricultural sector productivity was not established in reviewed studies. Thus, this filled the above gap by investigating the effect globalization on agricultural sector via globalization variables which are trade openness, foreign direct investment, foreign portfolio investment and exchange rate.

3. Methodology

This study employed annual time series data covering the period 1986 to 2018. Data on agricultural sector output, trade openness, foreign direct investment, exchange rate and foreign portfolio investment were obtained from Central Bank of Nigeria (CBN) Statistical Bulletin (2018). However,

given the fact that the data for this study is annual time series, it will be of importance to determine the stationarity properties of the data. For this purpose, Augmented Dickey-Fuller Test unit root test was used to test the stationarity level of the series in order to determine the order of integration of the variables.

Furthermore, the existence of long run relationship among the variables adopted in this study was ascertained using Bound Co-integration Test. The Bound Co-integration is suitable for variables that are integrated at level and first difference. The study employed Autoregressive Distributed Lag technique to examine short run and long run effect of trade openness, foreign direct investment, exchange rate and foreign portfolio investment on agricultural sector output in Nigeria. This approach takes into account the short and long estimation of coefficients as well as the speed of adjustment of the coefficients. It therefore measures the speed at which agricultural sector output will revert to its equilibrium following a short term shock. Finally, Pairwise granger causality technique is adopted to determine the direction of causality among trade openness, foreign direct investment, exchange rate, foreign portfolio investment and agricultural sector output.

3.1 Model Specification

This study employed multivariate econometric model the effect of globalization on agricultural sector in Nigeria by adapting the empirical model of Akinmulegun (2018) who modeled $\text{AgricG} = f(\text{DOO}, \text{FEX}, \text{FDI}, \text{CPI})$.

Where:

AgricG= agricultural growth

DOO = Degree of Openness

FEX = foreign exchange regime

FDI = foreign direct investment

CPI = Consumer price index.

By modification, this study employs foreign portfolio investment as important variable of financial globalization. Thus, this study model is given as:

$$\text{ASO} = f(\text{TOP}, \text{FDI}, \text{FPIGDP}, \text{EXR})$$

This is econometrically given as:

$$\text{LASO} = \alpha_0 + \alpha_1 \text{TOP}_t + \alpha_2 \text{LFDI} + \alpha_3 \text{FPIGDP} + \alpha_4 \text{LEXR} + \epsilon_t$$

Where:

LASO = Log of Agricultural Sector Output

TOP = Trade Openness

LFDI = Log of Foreign Direct Investment

FPIGDP = Foreign Portfolio Investment as a percentage of Gross Domestic Product. This study used net foreign portfolio investment

LEXR = Log of Exchange Rate

α_0 = Constant Term

$\alpha_1 - \alpha_4$ = Coefficient of the parameters.

ϵ = Error Term.

4. Discussion of Results

Multicollinearity Test

This study adopted Pearson correlation to determine whether there is presence of multicollinearity among the variables. This is reported in Table1.

Table 1: Correlation Matrix

	LASO	TOP	LFDI	FPIGDP	LEXR
LASO	1.000000				
TOP	0.358099	1.000000			
LFDI	-0.274050	-0.066733	1.000000		
FPIGDP	-0.371819	-0.123327	0.336317	1.000000	
LEXR	-0.350793	-0.220241	0.179504	0.333313	1.000000

Source: Researchers' Computation, 2020

The result of the correlation matrix which is reported in Table 1 shows the absence of multi co-linearity since the explanatory variables are not perfectly co-linear with the dependent variable. The result also indicates that log of foreign direct investment, foreign portfolio investment as a percentage of gross domestic product and log of exchange rate are negatively correlated with log of agricultural sector output while trade openness is positively correlated with log of agricultural sector output.

Tests for Unit Root

This study employed Augmented-Dickey Fuller technique to test for unit and order of integration of the data used in this study. This is necessary to avoid the problem of false results resulting from the estimating of relationship among non-stationary data series.

Table 2: ADF Unit Root Result

Series	ADF Test @ Level	Critical Value at 5% (P-value)	ADF Test @ First Difference (P-value)	Critical Value at 5% (P-value)	Remarks
LASO	-3.263694	-2.957110 (0.0253)	-	-	1(0)
TOP	-3.221243	-2.957110 (0.0279)	-	-	1(0)
LFDI	-2.123468	-2.960411 (0.2373)	-7.100035	-2.960411 (0.0000)	1(1)
FPIGDP	-5.588050	-2.957110 (0.0001)	-	-	1(0)
LEXR	-2.544865	-2.957110 (0.1148)	-9.283858	-2.960411 (0.0000)	1(1)

Source: Researchers' Computation, 2020

The result which is reported in Table 2 shows that log of agricultural sector output, foreign portfolio investment as a percentage of gross domestic product and trade openness are stationary at level while log of foreign direct investment and log of exchange rate have unit root problem at level. However, when tested at first difference, the ADF result as reported in Table 2 shows log of foreign direct investment and log of exchange rate become stationary at first difference. Base on the fact that the data are integrated at order zero and one, the study proceed to long run relationship using ARDL Bound Co-integration technique after the selection of the optimum lag.

Lag Selection Criteria

Table 3: Lag Selection Result

Lag	0	1	2	3
LR	-NA	171.1730*	28.57274	24.09183
FPE	30136.45	130.9938*	179.4079	262.7155
AIC	24.50275	19.03721*	19.20005	19.14587
SC	24.73629	20.43841*	21.76891	22.88240
HQ	24.57746	19.48547*	20.02185	20.34122

Source: Researchers' Computation, 2020

The result of the lag selection is reported in table 3 and shows base on the Akaike Information Criterion that the optimum lag is one. Thus, the ARDL technique would be estimate using lag one.

Residual Diagnostic Test

This is conducted to determine the stability and robustness of the regression estimate. The result is reported in Table 4.

Table 4: Diagnostics Result

i. Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.040267	Prob. F(1,23)	0.8427
Obs*R-squared	0.055925	Prob. Chi-Square(1)	0.8131
ii. Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.667254	Prob. F(7,24)	0.1649
Obs*R-squared	10.46977	Prob. Chi-Square(7)	0.1635
Scaled explained SS	22.00367	Prob. Chi-Square(7)	0.0025
iii. Ramsey RESET Test			
	Value	df	Probability
t-statistic	0.499722	23	0.6220
F-statistic	0.249722	(1, 23)	0.6220
iv. Normality Test:			
Jarque-Bera	1.877657	Probability	0.3910

Source: Researchers' Computation, 2020

The result presented in Table 4 reveals that the residual is not serially correlated as indicated by Breusch-Godfrey Serial Correlation LM Test with a probability value of 0.8427 which is greater than 0.05 acceptance region. Furthermore, the result indicates the absence of Heteroskedasticity Test in the regression's residual with a probability of 0.1635 which is greater than the probability value of 0.05. The Ramsey Reset test shows that the regression result is stable with a probability value of 0.6220 which is greater than 0.05. Finally, the Jarque-Bera normality test indicates that the residual is normally distributed.

Co-integration Test Result

This long run co-integration relationship between globalization and agricultural sector is determine using ARDL Bound Co-integration approach. This is conducted base on lag according to the Akaike Information Criterion and presented in Table 5.

Table 5: Bound Co-integration Test

Test Statistic	Value	K
F-statistic	4.564213	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Researchers' Computation, 2020

The Bound Co-integration test result reported in table 5 indicates that there is long run relationship among log of agriculture sector output, log of foreign direct investment, foreign portfolio investment as a percentage of gross domestic product, trade openness and log of exchange rate. This is evident by the Bound F-statistic value of 4.564213 which is greater than the lower bound critical value of 2.86 at 5%. The implication of this is that globalization influence movement and changes of agricultural sector output in Nigeria.

ARDL Short and Long Run Coefficients

The result of short and long run coefficients on the effect of globalization on manufacturing sector is presented in Take 6 and 7 respectively.

Table 6: Short Run Co-integrating Result

Dependent Variable: LASO				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOP)	0.046724	0.057488	0.812753	0.4243
D(LFDI)	-0.027718	0.013241	-2.093294	0.0471
D(FPIGDP)	0.000061	0.000005	11.519291	0.0000
D(LEXR)	-0.063972	0.024557	-2.605011	0.0155
CointEq(-1)	-0.119444	0.021680	-5.509445	0.0000

Source: Researchers' Computation, 2020

Table 6 reports the ARDL short run co-integration result. The result shows that log of trade openness has positive and insignificant effect on log of agricultural sector output in Nigeria. Also, log of foreign direct investment has negative and significant effect on log of agricultural sector output in Nigeria. However, foreign portfolio investment as a percentage of gross domestic product is found to have positive and significant effect on

log of agricultural sector output in Nigeria. The result of the short run ARDL further reveals that log of exchange rate has negative and significant effect on log of agricultural sector output in Nigeria. Finally, the coefficient of the co-integration which measures the speed of adjustment to equilibrium state has a value of -0.119444 which is significant at 5% with a probability value of 0.0000. This implies that model would correct itself against disequilibrium at speed of 11.9% annually.

Table 7: Long Run Coefficients

Dependent Variable: LASO				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOP	0.391175	0.154188	2.861262	0.0076
LFDI	-0.232056	0.098966	-2.344806	0.0276
FPIGDP	0.001044	0.000271	3.847975	0.0008
LEXR	1.077919	0.057957	18.598631	0.0000

Source: Researchers' Computation, 2020

The result of the ARDL long run coefficient which is reported in Table 8 shows that trade openness has a coefficient of 0.391175 which is significant at 5% which implies that 1% increase in trade openness will lead to 39% increase in log of agricultural sector output. The t-statistic value is given as 2.861262 with probability value of 0.0076 which lead to the rejection of the null hypothesis that trade openness has no significant effect on agricultural sector output in Nigeria.

Furthermore, the result shows that log of foreign direct investment has a coefficient of -0.232056 which is significant at 5% indicating that 1% increase in foreign direct investment will lead to 23% fall in log of agricultural sector output. Furthermore, the t-statistic value is given as -2.344806 with a probability value of 0.0276 which implies that foreign direct investment has significant effect on agricultural output lead to the rejection of the null hypothesis that there is no significant relationship between foreign direct investment and agricultural sector output in Nigeria

However, foreign portfolio investment as a percentage of gross domestic product has a coefficient of 0.001044 which is significant at 5% which implies that 1% increase in foreign portfolio investment will lead to 0.01% increase in agricultural sector output. The result shows that the t-statistic value for foreign portfolio investment is given as 3.847975 with a corresponding probability value of 0.0008 which is significant at 5% which result in the rejection of the null hypothesis that foreign portfolio investment has no significant effect on agricultural sector output in Nigeria.

Finally, positive relationship is found between log of exchange rate and log of agricultural sector output with a coefficient of 1.077919 which implies that increase in exchange rate will lead to increase in agricultural sector output. The t-statistic value of exchange rate is given as 18.598631 with a probability value of 0.0000 which lead to the rejection of the null hypothesis that exchange rate has no significant effect on agricultural sector output in Nigeria.

Causality Test

The directions of causality among the variables were evaluated using Pairwise granger causality technique and presented Table 8.

Table 8: Pairwise Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Prob.
TOP does not Granger Cause LASO	31	0.02813	0.9723
LASO does not Granger Cause TOP		0.40209	0.6730
LFDI does not Granger Cause LASO	31	1.09979	0.3479
LASO does not Granger Cause LFDI		0.68925	0.5109
FPIGDP does not Granger Cause LASO	31	0.34932	0.7084
LASO does not Granger Cause FPIGDP		2.57016	0.0958
LEXR does not Granger Cause LASO	31	5.79114	0.0083
LASO does not Granger Cause LEXR		1.58874	0.2234

Source: Researchers' Computation, 2020

The result of the Pairwise granger causality result is indicated in Table 8. The result shows that there is independent relationship between trade openness and log of agricultural output as indicated by their respective probability values which are greater than 0.05. Also, independent relationship is found between log of foreign direct investment and log of agricultural output. Similarly, independent causality is found between foreign portfolio investment as a percentage of gross domestic product and log of agricultural output. Finally, unidirectional causality is found between exchange rate and log of agricultural output.

5. Conclusion

Globalization plays important role in the development of emerging nations through the openness of the economy to foreign opportunities. The need to promote sectoral growth led to the adoption of diverse policies to open the Nigeria economy in the recent years to foreign partnership through globalization. Thus, this study investigated the relationship between globalization and agricultural sector output in Nigeria. It was found that trade openness and foreign portfolio investment had positive effect on agricultural sector output in the short and long run while foreign portfolio

investment had negative effect on short and long run in Nigeria. Finally, exchange rate was established to have positive effect in short run but positive influence on agricultural sector output in the long run.

It was concluded that globalization plays important role in the development and enhancement of agricultural sector output in Nigeria through openness and financial inflow to the sector. Thus, government should formulate policy frameworks that will enhance the trade relationship between the agricultural sector and other developed nations to facilitate the inflow of important raw materials and technologies for the sector's productivity. More suitable and high interest yielding agricultural financial instruments should be developed to attract the inflow of financial resources from foreign investors. Government should formulate policies that will ease direct investment inflow into the agricultural sector by creating linkage between foreign multi-national companies and agricultural sector in Nigeria. Finally, exchange rate stability should be prioritized by the government and more foreign exchange subsidy should be given to the agricultural sector to facilitate the importation of raw materials.

This study is limited by inability to use more recent and also important variables like foreign direct investment into agriculture. Thus, studies should be conducted using more recent data and also in other sector like mainlining, tourism and telecommunication industry.

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