

Research Article

Impact of Trade Liberalisation of Agricultural Sector on Economic Growth in Nigeria: An Empirical Investigation

Ibrahim Abubakar Sani¹, Amina Abdullahi Yunusa²¹Department of Economics, Umaru Musa Yar'adua University, Katsina²Department of Economics and Development Studies, Federal University Dutsin-Ma

*Corresponding Author

Ibrahim Abubakar Sani

Abstract: This paper assessed the impact of trade liberalization of agricultural sector on economic growth in Nigeria from 1981-2016. The specific objectives of the paper are to assess the long run relationship between trade liberalisation and economic growth in Nigeria and to find out the short run dynamic between economic growth and trade liberalization as well as the causal relationship between them. Data for the period, 1981-2016, was elicited via secondary means of sourcing data from CBN statistical bulletin, NBS Book of abstract and WDI data. The empirical analysis starts by analyzing the time series properties of the data which is followed by examining the nature of causality among the variables. Furthermore, the Johansen VAR-based cointegration technique is applied to examine the sensitivity of real economic growth to trade liberalization policy in the long-run while the short run dynamics was checked using a Vector Error Correction model (VECM). Results from ADF and PP tests show that all the variables are stationary at first difference, Granger causality test revealed unidirectional causality emanates from exchange rate to RGDP at weak level of significance (10%) and also a unidirectional causality runs from agricultural export to import and from exchange rate to import at 5% and 1% respectively. However, no evidence of causality was found from GDP to the proxies of trade liberalization and vice-versa. Findings further show that trade liberalization and appreciation in the level of exchange rate exert positive impact on real economic growth in Nigeria. Thus, the study concluded that trade liberalization is good for the Nigerian economy and thus the study recommend for economic diversification to agriculture in order to boost the agricultural production and its export; although it has to be handled carefully as it also has some negative effects. Hence, government should give utmost priority to agricultural sector.

Keywords: Trade liberalization, Agriculture, Economic Growth, ADF, PP, VECM.

INTRODUCTION

Until recently, researches on the impact of trade liberalization of agricultural sector on economic growth in Nigeria are not considered a prioritized matter of discourse. However, today, the topic had gained increasing momentum over the years. Trade liberalization is a market-oriented economic reform which started in many developing countries in early 1980s and intensified in the 1990s (John and Bright, 2016).

Trade liberalization is the process of reducing or removing restrictions on international trade. This may include the reduction or removal of tariffs, abolition or enlargement of import quotas, abolition of multiple exchange rates, and removal of requirements for administrative permits for imports or allocations of foreign exchange. Liberalization of agriculture was

more pronounced during the Uruguay Round 1986-1990 (Anowor, Ukwenti, and Martins, 2013).

Olowe and Ibraheem (2015) stated that earlier thought on the trade liberalization policy was grounded by the works of Little, Scitovsky and Scott (1970), Balassa (1971), Bhagwati (1978) and Kruenger (1978). These studies provided the basis of trade liberalization policy and the manner to which they are implemented. Subsequent to these studies many developing countries embraced liberalization policies (Nigeria inclusive). In 1986 Nigeria adopted structural adjustment programmes (SAPs) with the aim of structuring its economy through this well-documented structural adjustment programmes (SAPs). SAPs are a package of policies that aimed at liberalizing various aspects of the Nigerian economy (agricultural sector inclusive).

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Historically agriculture was the mainstay of the Nigerian economy in terms of foreign exchange earnings, contribution to GDP, employment generation and government fiscal revenue. Agricultural sector in 1960 accounted for 70% of Gross Domestic Product (GDP) and employment generation and 90% of foreign exchange (Bashir and Abubakar, 2018). However, following the oil boom era of 1970s, the nation shifted its attention and hopes to oil sector leaving behind the glories and fortunes of agriculture. This metamorphosed into dramatic changes in the country's general structure and superstructure, making the country an oil dependent economy. This fathered a lot of economic tensions, shocks and responses that engineered diverse policy formulations.

In view of the above scenario, the focus of the Nigerian government was redirected toward diversification thereby lifting off restriction on trade export/import of agricultural products (known as trade liberalization of agriculture). Consequently, flurries of empirical researches have been written on the topic such as the works of Anowor, Ukweni, and Martins (2013); Olowe and Ibraheem (2015) and John and Bright (2016), regrettably, these studies report conflicting result and the studies usually utilized few variables with small time frame (see for example John and Bright, 2016). Despite their varied conclusions, a common standpoint in these studies is the emphasis on the need for continued empirical research on the topic in order to keep abreast with the current happening in the economy. This study tends to contribute to the theoretical and empirical literature on the impact of trade liberalization of agricultural sector on economic growth in Nigeria from 1981 before the implementation of SAP and its aftermath in Nigeria (i.e. up to 2016).

It is on the above premise that this study seeks to broadly examine the impact of trade liberalization of agricultural sector on economic growth in Nigeria from 1981 to 2016. However, the specific objectives of this study is to examine the long run relationship between trade liberalisation and economic growth in Nigeria and to find out the short run dynamic between economic growth and trade liberalization as well as the causal relationship between them. Beside this section one which is the introductory part, section two covers literature review, methodology is in section three, section four is termed as result and discussion. Finally, section five is the conclusion and recommendations.

Literature Review

This section reviews two different kinds of literatures i.e. the empirical studies and the theoretical literature. These are reviewed below:

Empirical Literature Review

Trade liberalization of agricultural sector and economic growth nexus has attracted the attention of researchers, who empirically tested this relationship

using various econometrics techniques. In this regard, in the foreign scene, Nirodha, Jaime and Jeff (2013) investigated the effect of trade liberalization on agricultural production growth in Sri Lanka from 1960 to 2010. Multiple regression models were employed to investigate whether the trade policy reforms increase the agricultural sector growth or not. The empirical results suggest that the trade liberalization on agricultural sector growth and eventually lead to improved agricultural proclivity in Sri Lanka. Moreover, this analysis concludes that the trade openness, investment, interest rate, Free Trade Agreements are significant factors that are positively related to agricultural sector growth. Their research also confirms that the agricultural sector growth has made a wide contribution to total GDP to accelerate the economic growth in post-liberalization period in Sri Lanka.

Meanwhile, in the African context, Adam and Sayed (1998) used survey data to examine the operations of the agrarian credit market, formal and informal, in Sudan under conditions of economic liberalization and Islamization. In addition to descriptive analysis, the study specifies and estimates a model of farm household participation in the credit market. The survey results show a substantial increase in formal borrowing in agriculture, but relatively low informal credit. Implicit interest rates are found to be high in the formal segment compared with their previous levels, and the levels of formal and informal agrarian rates of interest are comparable. The study concludes that there is a need for enhanced institutional financial intermediation in the agrarian credit market as well as scope for the promotion of savings and credit associations among farmers.

However, in the Nigerian context, Olowe and Ibraheem (2015) investigated the impact of trade liberalization on the growth of the Nigerian economy from 1970-2012. The study used trade openness, dummy variable for nature of regime of administration in Nigeria at a particular period, exchange rate and dummy variable for structural adjustment program SAP periods. The study employed both descriptive and econometric analysis techniques. The descriptive analysis shows that the trend of trade openness in Nigeria and economic growth has been positive but relatively unstable. The Ordinary Least Square estimating technique shows that there is a negative relationship between trade openness and the GDP of Nigeria which is the proxy for economic growth. While other variables such as exchange rate, regime of administration and SAP showed positive non-significant relationship with growth. In this regard, the major conclusion from the study is that trade liberalization has not improved the growth of the Nigerian economy significantly. Ultimately, the results have shown that Nigeria has not adequately benefited from her trade openness. This might be the reason while

SAP fails to show significant impact on growth of the Nigerian economy.

In contrast to the above findings, John and Bright (2016) explores the relationship between trade liberalization and economic growth in Nigeria from 1980-2013. Two equations were estimated in which index of industrial production proxied as yearly average capacity utilization as a function of degree of openness, terms of trade and real export. Similarly, in the second equation, real gross domestic product as a function of degree of openness, terms of trade, real export and trade liberalization dummy was estimated. The study employed Vector Error Correction Model (VECM) in which results show that openness of the foreign sector and trade liberalization dummy have positive significant impact on both industrial performance and economic growth in Nigeria within the period under review.

Using a different approach to the study of John and Bright (2016), Aisha (2016) assessed the relationship between trade liberalization of Agricultural sector. The study employed Ordinary Least Squares (OLS) regression technique and Moving Average techniques of data analysis. The results from the regression analysis provided clear indication that trade liberalisation of agricultural sector significantly and positively affect economic growth in Nigeria. Moreover, the forecasted results via moving average shows that the trend pattern of GDP and the variant of agricultural sector in Nigeria will decline in the next ten years.

Similar to works of Olowe and Ibraheem (2015) is the study of Echekoba, Okonkwo and Adigwe (2015) who explored the relationship between trade liberalization and economic growth in Nigeria. Data for the period, 1971-2012, was analyzed with the help of the Ordinary Least Squares (OLS) regression technique. The results provided clear indication that imports and exports significantly and positively affect economic growth in Nigeria. Thus, the study concluded that trade liberalization is good for the Nigerian economy; although it has to be handled carefully as it also has some negative effects. In this regard, the duo studies employed the same techniques, but their findings differ.

Therefore, with the above review of various current and latest literatures on the theme of discussion, this study is conducted to contribute to stock of knowledge by filling the missing gap in the aforementioned studies specifically by using a different technique that most of the studies adopted and by also extending the timeframe.

Theoretical Framework

The study adopted the classical trade theory of absolute and comparative advantage championed by Adam Smith (1776) and David Ricardo (1817) respectively to help in explaining the problem under

consideration. In the year 1776, Smith questioned the mercantilist assumption that trade was a zero-sum game. By assuming that each country could produce some commodities using fewer resources than its trading partners, Smith showed that all parties to international trade could benefit. How could this be possible? According to Smith, all nations would gain simultaneously if they practiced free trade and specialized in accordance with their absolute advantage.

In essence trade here improved allocation of resources, ensuring that goods production requires fewest resources. The result would be a large total quantity of goods produced in the world. In a nut shell, according to the theory of absolute advantage, it would benefit each country to specialize in producing the goods in which it has an absolute advantage and to import the goods in which it has an absolute disadvantage, (Smith, 1937).

However, Smith's trade theory was later fine tuned by David Ricardo in 1817. Ricardo in his further argued that even when one country has an absolute advantage in the production of two goods against another country; it might still be more beneficial to both countries if each of them specializes in the production of only one of the goods.

Ricardo opined that a country can produce and export a particular commodity in which it has comparative advantage, while importing a commodity in which it has comparative disadvantage and thereby maximize its welfare. Such specialization and trade makes both countries potentially better off by expanding their consumption opportunity sets. Residents can choose to consume combination of goods that would be impossible to produce domestically, (Yarbrough, 1994).

Therefore as a corollary to these theories, we would examine the trade liberalisation of agricultural sector and Nigerian economic growth nexus by adopting the aforementioned theories for this present research.

METHODOLOGY

This study adopts annual time series data for the period of 1981-2016. The data was sourced from World Development Index (WDI), National Bureau of Statistics (NBS) and the Central Bank of Nigeria (CBN) statistical bulletin.

Descriptive Statistics of the Variables

The study begins by examining the descriptive nature of the variables used in the study. In this regard, descriptive statistics is employed to describe the data by exploring the mean of the series, standard deviation, minimum, maximum, kurtosis and skewness. The analysis was done with an econometric package (specifically using E-views 9.0).

Unit Root Test

Furthermore, the study continued with examining the underlying properties that generate our time series variables, in order to determine whether the variables are stationary or non-stationary using Augmented Dickey Fuller (ADF) and Phillips and Perron (PP) tests for stationary. This will aid in detecting the appropriate econometric framework to be adopted for analysis. Moreover, unit root test safeguards against obtaining spurious result. In line with this, the study employed Augmented Dickey Fuller (ADF) test (1979, 1981), which adjusts the Dickey Fuller test to take care of possible serial correlation in the error term by adding the lagged differenced terms of the regressand and Phillip-Perron (PP) test (1988), which corrects for any serial correlation and Heteroskedasticity in the errors non-parametrically by modifying the Dickey Fuller test statistics. Unit root equation is specified in the following forms.

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_i \sum_{i=1}^n \Delta Y_{t-1} + U_t \tag{3.1}$$

Where Δ denotes the first difference, y_t is the time series being tested, t is the time trend variable, and n is the number of lags which are added to the model to ensure that the residuals, U_t are white noise.

A generalized Philips Perron unit root test is also presented in equation 2 below.

$$\Delta y_{t-1} = \alpha_0 + \gamma y_{t-1} + e_t \tag{3.2}$$

The null hypothesis to be tested is $H_0: \rho = 1$ indicating the presence of a unit root.

Model Specification

Furthermore, we carried out the Granger causality test where Granger (1969) proposed a time series data based approach in order to determine causality. Because the Granger-causality test is very sensitive to the number of lags included in the regression, both the Akaike (AIC) and Schwarz Information Criteria have been used in order to find an appropriate number of lags.

Since the main objective of this paper is to assess not only the nature of causality among the variables, but, also the short run and long run dynamic impact as well, we tested for cointegration using two well known approaches: the one developed by Engle and Granger (1987) and the other one by Johansen (1988) and Johansen and Juselius (1990). In addition, vector error correction methodology (VECM) was applied. Economically speaking, cointegration of two variables indicates a long-term or equilibrium relationship between them, given by their stationary linear combination (called the cointegrating equation). The Engle-Granger test is a procedure that involves an OLS estimation of a pre-specified cointegrating regression between the variables. This was followed by a unit root test performed on the regression residuals

previously identified. We applied the Engle-Granger two-step procedure by estimating equation (3.2) using OLS and then testing the level of stationarity of the residual term.

$$RGDP_t = \beta_0 + \beta_1 AEXP_t + \beta_2 IMP_t + \beta_3 EXR_t + \mu_i \tag{3.3}$$

Where, RGDP = Real Gross Domestic Product

AEXP = Agricultural Export

IMP = Agricultural Import

EXR = Exchange rate

β_0 = Constant

β_1, β_2 and β_3 = Slope/coefficient

μ_i = Error term

Subscript t = is called the Time

The above equation is represented in logarithmic form to enable the researcher standardize all the values and interpret the variables' coefficients as elasticity. This is shown in the equation below as thus:

$$\ln RGDP_t = \beta_0 + \beta_1 \ln AEXP_t + \beta_2 \ln IMP_t + \beta_3 \ln EXR_t + \mu_i \tag{3.4}$$

The null hypothesis of no cointegration is rejected if it is found that the regression residuals are stationary at level. This procedure has some weaknesses, as the test is sensitive to which variable is used as a conditioning left-hand-side variable, which is problematic in the case of more than two variables.

On the other hand, Johansen and Juselius (1990) developed the maximum likelihood estimator for cointegration analysis. Johansen's cointegration test is used as a starting point in the vector autoregression (VAR) model. The vector autoregression model of order p (VAR (p)) is constructed as a following equation.

$$\Delta y_t = \Phi_0 + \sum \Gamma_i \Delta y_{t-i} + \Pi y_{t-1} + \epsilon_t \tag{3.5}$$

Where y_t is a (4x1) vector of the log of real GDP ($LRGDP$), the log of agricultural export ($LAEXP$) log of import ($LIMP$) and the exchange rate (EXR). Φ_0 is the (4x1) intercept vector and ϵ_t is a vector white noise process. Γ_i denotes an (4x4) matrix of coefficients and contains information regarding the short-run relationships among the variables. The matrix Π conveys the long-run information contained in the data. If the rank of Π is r , where $r \leq n - 1$, then Π can be decomposed into two $n \times r$ matrices α and β such that $\Pi = \alpha\beta'$ and β is the matrix of cointegrating vectors; the elements of α are known as the adjustment parameters in the vector error correction model. The Johansen-Juselius procedure is based on the maximum likelihood estimation in a VAR model, and calculates two statistics – the trace statistic and the maximum Eigenvalue in order to test for the presence of r cointegrating vectors. While the null hypothesis of no cointegration is rejected in the Engle and Granger test if the regression residuals are found to be stationary at levels, the trace statistic in the Johansen procedure tests the null hypothesis that there are at most r cointegrating vectors against the hypothesis of r or more cointegrating

vectors. The maximum Eigen-value statistic also tests for r cointegrating vectors against the hypothesis of $r+1$ cointegrating vectors.

Economic a Priori Expectation

This shows whether each independent variable in the equation is consistent with the postulations of economic theory. That is, if the sign and size of the

parameters of economic relationships follows the expectation of the economic theory. This must be based on the theoretical framework of the subject matter. For the current study, theory suggests some relationships or effects of some of the variables on economic growth; ordinarily referred to as a priori expectation. Below is the a priori expectation:

Table-3.1: Summary of the a priori expectation

S/No.	Independent variables	Dependent variable	Expected sign
1	AEXP	RGDP	Positive
2	IMP	RGDP	Positive/Negative
3	EXR	RGDP	Negative

However, if the estimates of the parameters turn up with signs or size not conforming to economic theory, they would be rejected, unless there is a good reason to believe that in the particular instance, the principles of economic theory do not hold.

Analysis and Discussion of Results

Descriptive analysis of the variables

Descriptive statistics is conducted to check the normality properties of the data. From the descriptive statistics in table 4.1 below, it is affirmed that all the variables under investigation are normally and identically distributed based on the Jarque-Bera probability.

Table- 4.1: Descriptive Statistics of the variables

	LRGDP	LAEXP	LIMP	LEXR
Mean	7.438	5.835	5.685	1.450
Median	7.350	6.105	5.931	1.660
Maximum	7.839	7.187	7.158	2.483
Minimum	7.139	3.875	3.776	-0.195
Std. Dev.	0.232	1.156	1.139	0.834
Skewness	0.443	-0.460	-0.363	-0.740
Kurtosis	1.774	1.784	1.742	2.268
Jarque-Bera	3.431	3.485	3.162	4.089
Probability	0.179	0.175	0.205	0.129
Sum	267.790	210.070	204.677	52.206
Sum Sq. Dev.	1.892	46.833	45.428	24.351
Observations	36	36	36	36

Source: Researcher’s computation using E-views v.9.0

4.2 Unit Root Tests

Consequently, the result of the ADF and PP unit root tests in table 4.2 show that all the variables have unit roots at their levels; hence the null hypothesis could not be rejected, thereby concluding that the

variables are not stationary at levels. However, the ADF and PP tests revealed that the unit roots in the variables disappear after taking first difference all the variables, therefore, the variables become stationary, which implies that they are integrated of order one $I(1)$.

Table- 4.2: Results of ADF and PP unit Root Tests

Variables	ADF		PP		stationary status
	Level	1 st difference	Level	1 st difference	
LRGDP	0.097	-3.229**	1.212	-3.044**	I(1)
LnAEXP	-1.186	-6.260***	-1.256	-6.310***	I(1)
LnIMP	-0.772	-6.954***	-0.548	-6.928***	I(1)
EXR	-1.793	-5.229***	-1.959	-5.229***	I(1)

Source: Researcher’s Computations using E-views 9.0

Note: Schwarz Information criterion (SIC) is used to select optimal lag length in the ADF test *** and ** indicate statistical significant at 1% and 5%

4.3 Granger Causality test

Table 4.3 presents the results of Granger causality among the real GDP, agricultural export, import and exchange rate. The results show that a unidirectional causality emanates from exchange rate to GDP at weak level of significance (10%), also a unidirectional

causality runs from agricultural export to import and from exchange rate to import at 5% and 1% respectively. However, no evidence of causality was found from GDP to the proxy of trade liberalization and vice-versa

Table- 4.3: Granger Causality test

Null Hypothesis:	Obs	F-stat	Prob.
LAEXP does not Granger Cause LRGDP	34	2.362	0.112
LRGDP does not Granger Cause LAEXP		0.180	0.835
LIMP does not Granger Cause LRGDP	34	1.320	0.282
LRGDP does not Granger Cause LIMP		0.691	0.508
LEXR does not Granger Cause LRGDP	34	2.709	0.083*
LRGDP does not Granger Cause LEXR		0.343	0.712
LIMP does not Granger Cause LAEXP	34	0.045	0.955
LAEXP does not Granger Cause LIMP		3.894	0.031**
LEXR does not Granger Cause LAEXP	34	6.385	0.005***
LAEXP does not Granger Cause LEXR		1.377	0.268
LEXR does not Granger Cause LIMP	34	7.466	0.002***
LIMP does not Granger Cause LEXR		0.487	0.619

Source: Researcher’s Computations using E-views 9.0

***, ** and * denotes significant at 1%, 5% and 10% respectively

Johansen Cointegrating Relation

Having established the order of integration of our series in table 4.2, the next task is to determine the number of long run equilibrium relationships or cointegrating vectors among the variables. Note that when series are found to be integrated of the same order, such as I(1) as in this case, it implies that an equilibrium relationship exists among the variables. Therefore, since the main focus of the paper is to assess how real GDP in the long run reacts to trade liberalization policy and real exchange, we conduct a cointegration test in line with the Johansen test specified in equation (3.3).

Table 4.4 presents the test results for the number of cointegrating vectors. The results show that both the maximum eigenvalue and the trace statistic suggest the presence of one cointegrating equation among the three variables in the Nigerian economy at 5% level of significance. This unveils the existence of a long run equilibrium relationship between real GDP and the variables used in the model. This result went in consistency with many of the studies reviewed. For example, John and Bright (2016) reported the similar result. Moreover, giving the importance of agriculture in the Nigerian context in which higher proportion of the populace are peasant farmers, thus it is plausible to opine that trade liberalisation of agricultural has a long run relationship with Nigerian economic growth.

Table-4.4: Cointegrating Relation

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.583	50.496	47.856	0.027**
At most 1	0.271	20.682	29.797	0.377
At most 2	0.228	9.898	15.494	0.288
At most 3	0.030	1.064	3.8414	0.302

Eigen-value and Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

Next we apply the Johansen procedure to obtain the long run coefficients of the model. Table 4.5 presents the normalized (β) of the variables in the model. All the coefficients with the exception of exchange rate were correctly signed and statistically significant with the exception of import. Agricultural export and exchange rate depict positive relationship

with the log of real GDP, while import depicts a negative relationship. This is consistent with our a priori expectation in the case of agricultural export and import; however exchange rate does not conform to our expectation. Similar findings were reported by Jin (2008) for the Russian economy.

Table -4.5: Normalized cointegration Eigen-vectors

One co-integrating equation		log likelihood		175.465
LRGDP	LEXP	LIMP	LEXR	
1.000	0.772	-3.359	0.084	
(0.000)	(0.048)	(0.625)	(0.007)	

Source: Researcher’s Computations using E-views 9.0, standard errors in parenthesis

Short run Vector Error Correction Model (VECM)

The analysis in this section seeks to examine the short run effects of trade liberalization on real GDP in Nigeria. The two-step Engle and Granger model suggests that any set of cointegrated time series has an error-correction representation, which reflects the short-run adjustment mechanism. The motive of the analysis is to discover whether the short-run dynamics are influenced by the estimated long-run equilibrium conditions, that is, the cointegrating vectors.

The result in table 4.6 below show that the parameter of the error-correction terms in the model is statistically significant. This suggests that real GDP in Nigeria has an automatic adjustment mechanism and that the economy responds to deviations from equilibrium in a balancing manner. The estimated value for the coefficient of error correction term suggests that the Nigerian economy will converge towards its long run equilibrium level in a moderate speed after trade liberalization. This support the classical trade theory that countries benefit from producing goods that it has absolute and comparative advantage.

Table-4.6: Short Run Estimate

Error Correction:	D(LRGDP)	D(LEXR)	D(LIMP)	D(LEXP)
CointEq1	0.021 (0.009) [2.206]	-0.193 (0.092) [-2.086]	0.268 (0.091) [2.943]	0.321 (0.104) [3.083]
D(LRGDP(-1))	0.179 (0.205) [0.871]	2.845 (1.987) [1.431]	-2.990 (1.956) [-1.528]	-5.118 (2.241) [-2.283]
D(LRGDP(-2))	-0.203 (0.201) [-1.008]	-0.4217 (1.944) [-0.216]	-0.7960 (1.914) [-0.415]	-1.044 (2.192) [-0.476]
D(LEXR(-1))	-0.048 (0.026) [-1.861]	0.456 (0.251) [1.815]	-0.211 (0.247) [-0.856]	-0.240 (0.283) [-0.849]
D(LEXR(-2))	-0.033 (0.025) [-1.308]	0.324 (0.244) [1.328]	-0.206 (0.240) [-0.856]	-0.491 (0.275) [-1.785]
D(LIMP(-1))	-0.004 (0.026) [-0.178]	0.275 (0.260) [1.061]	-0.046 (0.255) [-0.181]	-0.004 (0.293) [-0.015]
D(LIMP(-2))	-0.010 (0.025) [-0.434]	0.080 (0.241) [0.333]	-0.079 (0.237) [-0.334]	0.197 (0.272) [0.724]
D(LEXP(-1))	0.015 (0.023) [0.667]	-0.420 (0.231) [-1.821]	-0.183 (0.227) [-0.808]	-0.111 (0.260) [-0.429]
D(LEXP(-2))	-0.016 (0.023) [-0.679]	-0.003 (0.228) [-0.016]	0.139 (0.224) [0.621]	-0.304 (0.257) [-1.183]
C	0.028 (0.008) [3.389]	-0.021 (0.082) [-0.265]	0.219 (0.080) [2.714]	0.295 (0.092) [3.190]

Source: Researcher’s Computations using E-views 9.0, () stand for standard errors in and [] stand for t-statistics]

In the residual diagnostic test the model was found to be free from problem of Heteroskedasticity and serial correlation as shown in the appendix.

CONCLUSION AND RECOMMENDATIONS

There is a positive relationship between trade liberalization of agriculture and economic growth in Nigeria. Result from the Granger causality test revealed unidirectional causality emanates from exchange rate to RGDP at weak level of significance (10%) and also a unidirectional causality runs from agricultural export to import and from exchange rate to import at 5% and 1% respectively. However, no evidence of causality was found from GDP to the proxies of trade liberalization and vice-versa. Findings from Johansen VAR-based cointegration technique which is applied to examine the

sensitivity of real economic growth to trade liberalization policy in the long-run while the short run dynamics was checked using a Vector Error Correction model (VECM) further show that trade liberalization and appreciation in the level of exchange rate exert positive impact on real economic growth in Nigeria. Thus, the study concluded that trade liberalization is good for the Nigerian economy and thus the study recommend for economic diversification to agriculture in order to boost the agricultural production and its export; although it has to be handled carefully as it also has some negative effects. Hence, government should give utmost priority to agricultural sector. However, care must be taken not to over-depend on the international sector as this would result in exploitation, dumping and stifling of domestic industries.

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