EFFECT OF VEGETABLE EXPORTS ON NIGERIA'S ECONOMY

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ABSTRACT: *Nigeria's heavy dependence on crude oil has rendered its economy vulnerable to fluctuations in world crude prices hence the intense prospect for exportation of cultivable vegetables to the global market in pursuant to the compelling need for Nigeria to diversify its economy. This study investigates the effect of vegetable exports on Nigeria's economy from 1988 to 2018 with the new growth theory as its theoretical framework. Time series data were sourced from World Integrated Trade Solution (WITS), World Development Indication (WDI) and Central Bank of Nigeria (CBN) Statistical bulletin. The autoregressive distributive lag (ARDL) bounds testing technique and the error correction model were adopted for the study. Our results show that although the coefficient for vegetable exports was negative, it significantly impacted on Nigeria's economic growth. More so, total agricultural exports had positive impact on economic growth. On this basis, we recommend that Nigeria should revisit its exports composition and pattern regarding all vegetable products and provide quality inputs so as to improve the quality and consistency in supply of vegetable exportables to the world market.*

INTRODUCTION

The size of an economy, which generally refers to an increase in the level of national output over time, is a very important issue for every country across the globe. It is an increase in production of goods and services over a specific period, connotes an outward shift in production possibility curve and is measured by the gross domestic product (Aidi, Emecheta & Ngwudiobu, 2016). A sustainable expansion of the economy is a crucial factor not only in improving people's standard of living but also in reducing a country's level of poverty (World Bank, 2012).

From 1961 to 1969, Nigeria's gross domestic product (GDP) recorded an annual growth rate of 2.3 per cent. During the oil boom era of 1970-1978, GDP grew positively by 7.0 per cent. However in the 1980's, GDP had negative growth rates. This was as a result of collapse of oil market due to glut and high reliance of the Nigerian economy on oil production and price. Oil sector provided 80 percent of government revenue and over 96 percent of export earnings (Anyanwu et al., 1997). The decrease in GDP as a result of collapse of the oil market led to emergence of economic crises in Nigeria. This resulted to fall in government revenue, foreign exchange receipts and external reserve. Foreign debt rose, unemployment rate and inflation

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rate also increased. In the period 1988 to 1997 coinciding with the era of Structural Adjustment Programme and economic liberalization, GDP responded to economic adjustment policies and grew at a positive rate of 3.7 per cent per annum. The fall in oil price and production made Nigeria's economic growth fall as low as -1.5% in 2016. The economic crises experienced in 2016 was worse than that witnessed in the past (Okpala, 2018).

For several decades, Nigeria remained mono-cultural a monocultural economy with crude oil as its main source of revenue. Sectors such as agriculture and solid minerals, among others, which were the mainstay of the nation's economy before the discovery of oil were needlessly sidelined. Previous attempts to alter this trend ended with no concrete action to bring the idea to fruition. Diversification implies creating new means and using the right strategy to boost revenue generated from other sectors of the economy in order to foster economic growth. For the Nigerian economy, it does not necessitate a neglect of the oil and gas sector but entails a maximization of the revenue potentials of all the sectors.

Before the discovery of crude oil in 1956, Nigeria was a major producer and exporter of cash crops such as oil palm, cocoa, rubber, timber, groundnut, among others. Currently, crude oil has contributed and assisted Nigeria's economic prosperity but the fall of oil prices since June 2014, after five years of windfall, has immensely affected the country's economy. There is, therefore, widespread clamor for government's towards diversification of the economy in a bid to sustain economic growth especially with continuously falling price of crude oil at the international market (Nwokoye, Uwajumogu, & Dimnwobi, 2019).

Presently, agriculture in Nigeria is within the purview of entrepreneurship and is no longer a development program. A number of investors have taken up the challenge and supports have come from the Federal Government, the Federal Ministry of Agriculture and Rural Development, Central Bank of Nigeria, Bank of Industry, Nigerian Investment Promotion Commission, and the African Development Bank, for exportation of cultivable vegetables to the global markets.

Evidence show that in 2013, the Nigeria's exports were worth $46.32 billion, of which $3.83 billion came from vegetables exported to Europe and the USA. Between 2014 and 2015, Nigeria's export of vegetables amounted to an average of ₦400billion annually. In 2016, vegetable exports generated ₦413billion and in 2017, it generated ₦426.6billion of, 3.14% more than the entire export in 2016 (Nigeria, 2018).

Anambra state became the first in Nigeria to export vegetables (Ugu and Onugbu) valued at $5 million to Europe (Obiano, 2016) and this is an encouragement for state governors to sustain this remarkable trend as overseas demand for vegetables are on the increase Isegbe, 2013; Abdullahi, 2018; Agbugba, 2018; Ozumba, 2018; Oseghale, 2018). With increasing yields,

previously marginalized rural women farmers now realize an average income of about $3,376 in a year from the sale of indigenous vegetables (Obiano, 2016). Nigeria Export Statistics, (2018) revealed that 23% to the country's GDP comes from ginger export. Food and confectionaries companies use ginger for their biscuits, drinks, sweets among others. The oil of ginger is also extracted from drugs, perfumes, foods, and drinks (Nigeria Export Statistics, 2018).

Although so much has been said regarding the compelling need for Nigeria to urgently diversify its economy, there is paucity of research in the area of the contribution of vegetable export on economic growth in Nigeria. Empirical studies are abundant on the contributions of agricultural exports to Nigeria's economic growth but not much empirical studies have been conducted for Nigeria. Our study therefore is germane and aims at filling this research gap empirically establishing vegetable exports as critical for diversifying the Nigeria's economy.

The main objective of this study is to examine the effect of vegetables export on Nigeria's economy. Our paper is presented thus: the literature review comes after Introduction, thereafter the method of study and our major findings. We concluded the paper with the policy implications of our findings and our recommendations.

REVIEW OF EXISTING LITERATURE

Our paper has the new growth theory which comprises of the endogenous growth models as its basic theory. The new growth theory is based on the assumptions that there are many firms in a market, knowledge or technology advance is non-rival good, there are increasing returns to scale to all factors taken together and constant returns to a single factor at least for one, technological advance comes from things people do, this means that technological advance is based on the creation of new ideas, many industries and firms have market power and earn profits from their discoveries and this assumption arises from increasing return to scale in production that leads to imperfect competition.

This theory was developed in 1980's by Romer, Lucas, Rebelo, among other economists as a response to criticisms of the neoclassical growth model. The endogenous growth models are the ones in which the long-term growth rate is determined by variables within the system, meaning that economic growth is generated from within a system as a direct result of internal processes. It holds that investments in human capital, innovation and knowledge are significant contributors to economic growth. The endogenous growth models emphasize technical progress resulting from the rate of investment, the size of the capital stock, and the stock of human capital. It notes that the enhancement of nation's human capital will lead to economic growth by means of the development of new forms of technology and efficient and effective means of production. It also holds that the long run growth rate of an economy depends on

policy measures, for example, subsidies for research and development or education increase the growth rate by increasing the incentive for innovation.

The empirical literature herein are research works closely related to the study under review which examined the impact of vegetable export on economic growth with different techniques of analysis. All of these studies were conducted for oversea economies, including other African economies, signifying a gap in empirical investigation into the place of vegetable exports in Nigeria's economic growth.

Among these oversea studies are the works of Mgeni and Temu (2010) for Tanzania, Hoq and Sultana (2012) for Bangladesh, Subashini, Malathi and Rasika (2015) for Sri Lanka, Stefan and Imre (2016) for European Union member countries, Bakari (2017) for Tunisia, Dilek and Seda (2018) for Turkey; Kondal (2018) for the south asian association for regional cooperation economies (SAARC); and Mohandas, Indhusree and Kuruvila (2018) for the Indian economy. These studies provided evidences of a huge market for vegetables in the global vegetable and fruit market especially in the United Kingdom, as well as evidences that vegetable exports are very lucrative and therefore positively re-enforce economic growth in the exporting countries.

Policy interventions targeted at generally improving agriculture in Nigeria included the Green Alternative Agriculture Promotion Policy; the Staple Crops Processing Zones (SCPZ); the Nigeria Incentive-Based Risk-Sharing System for Agricultural Lending (NIRSAL); the Rural Finance Institution Building Programme (RUFIN); the Anchor Borrowers' Programme (ABP) of the Central Bank of Nigeria which complements the Growth Enhancement Support (GES) Scheme of the Federal Ministry of Agriculture by graduating GES farmers from subsistence farming to commercial production; the Commercial Agricultural Credit Scheme (CACS) of the CBN which is a sub component of the Federal Government of Nigeria's Commercial Agriculture Development Programme (CADP) and which includes the Agricultural Credit Guarantee Scheme (ACGS) mostly for small scale farmers; the Interest Draw-Back Scheme; and Agricultural Credit Support scheme among others.

Despite its hug potentials and these policy interventions, Nigeria's vegetable market is still prone to: poor post-harvest treatment of the vegetables; poor chemical fertilizer and pesticides use; poor storage practices which result to storage pests; loss of quality due to delay in accessing the export terminals; poor storage in refrigerated conditions due to inconsistent power supply and the inefficient transportation system makes speedy movement of vegetables from farms to supermarkets, airports and seaports. For instance, Nigeria is the 16th largest producer of tomatoes, a staple vegetable but with a national demand of 2-3 million tonnes annually, 65% of tomato harvest in Nigeria is lost on the farm, during transportation, in the market and in storages due to poor preservation. Nigeria has been exporting cocoa, rubber, cashew and groundnut for decades but the Nigerian vegetable export market is relatively new

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and as such needs to receive adequate attention. This makes the need for the sensitization of vegetable farmers on how to cultivate, package and store their produce for exports, a matter of urgency.

This paper is justified on the grounds that Nigeria's heavy dependence on crude oil has rendered its economy vulnerable to fluctuations in world crude prices hence the intense prospect for exportation of cultivable vegetables to the global market in pursuant to its compelling need for economic diversification. More so, Nigeria has huge potentials to lead Africa in the vegetable market therefore a study of this nature is beneficial for policy making a bid to achieve the Sustainable Development Goals.

The issue of export diversification has been contentious in Nigeria due to the country's unstable growth hugely associated with the international oil price instability and poor performance of Nigeria's agricultural, industrial, and service sector in their contributions to the GDP. Our paper therefore provides policy insights to Nigerian policy makers on the imperatives for prompting vegetable export policies as a diversification alternative away from the vagaries of oil and its price shocks on the Nigerian economy.

While majority of scholarly works for the Nigerian economy (including Omotor, 2008; Ugochukwu & Uruakpa, 2013; Ewelan & Okodua, 2013; Akanegbu, 2017; Nwosa, 2019) focused on aggregate agricultural exports, we focus on a component of the aggregate – vegetable which has been proven to be a sustainer in arid countries including Israel. This is a paradigm shift in Nigeria's economic literature. Hence the model construct and the analytical framework which enhances the empirical validation the paper for policy inference on prudent vegetable agricultural export policies further justifies the need for our paper.

RESEARCH METHODS AND PROCEDURES

Theoretical Framework and Empirical Model

The new growth theory provides the theoretical framework for this study. The study starts with the decisive work on the endogenous growth model and hinged on the neo-classical production function is specified in terms of traditional inputs like labour (L) and capital (K).

$$Y_t = f(L_t, K_t) \qquad\qquad 1$$

The aim of the present study is to estimate a market-size equation for the Nigerian economy and thus explore how vegetable exports affect economy. By incorporating both vegetable exports and non-vegetable exports into Solow's aggregate production function, we have that

$$Y_t = f(L_t, K_t, X^v, X^{nv}) \qquad\qquad 2$$

Where $v + nv = 1$

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Based on Equation 2, our empirical model is specified as:

$$GDP = (VEGEX + OAX + NAX + K + L + EXR) \qquad 3$$

The mathematical form of the model is written as:

$$GDP = \beta_0 + \beta_1\, VEGEX + \beta_2\, OAX + \beta_3\, NAX + \beta_4 K +$$
$$\beta_5 L + \beta_6 EXR \qquad 4$$

Where *GDP* is gross domestic product (a proxy for the market size of the Nigerian economy), *VEGEX* is vegetable exports, *OAX* is other agricultural exports, *NAX* is non-agricultural exports. *K* is capital, *L* is human capital and *EXR* is official exchange rate.

Expressing Equation 4 in an econometric form, we have:

$$GDP = \beta_0 + \beta_1\, VEGEX + \beta_2\, OAX + \beta_3\, NAX + \beta_4 K +$$
$$\beta_5 L + \beta_6 EXR + \mu \qquad 5$$

Taking the natural logs in order to rule-out the differences in the units of measurements for our variables leads to:

$$LnGDP = \beta_0 + \beta_1 Lnvegex + \beta_2 LnOAX + \beta_3 LnNAX +$$
$$\beta_4 LnK + \beta_5 LnL + \beta_6 LnEXR + \mu \qquad 6$$

Where β_0 = intercept, β_1, β_2, β_3, β_4 β_5 and β_6 are coefficient of the independent variables to be estimated respectively, μ is the error term, and Ln is natural logarithm.

Sources of Data and Estimation Techniques

We engaged annual data spanning 1988 to 2018. This translated to 31 observations. Data were sourced from Central Bank of Nigeria Statistical Bulletin (CBN, 2018), World Development Indicator (WDI, 2018), and World Integrated Trade Solution (WITS, 2018). The data set was transformed by logging them so as to introduce a common base. The estimation was carried out using econometric software version 10.

We investigated the economic effect of vegetable export using the inferential statistics generated from autoregressive distributed lag (ARDL) bound test, its cointegration approach, and its error correction mechanism.

RESULTS AND DISCUSSION

Descriptive statistics, as shown on Table 1, depict the basic features of the data. They present the quantitative descriptions of the data set in a manageable form and provide simple summaries about the data.

Table 1: Summary of Descriptive Statistics Result

Date: 08/17/21							
Time: 17:00							
Sample: 1988 2018							
	GDP	VEGEX	OAX	NAX	L	K	EXR
Mean	3.94E+13	1206470.	335.0216	5552.256	58.65419	5.23E+12	108.2331
Median	3.33E+13	794292.2	94.78000	2993.110	59.91000	3.00E+12	120.5782
Maximum	7.05E+13	3671914.	1425.708	17282.25	61.20000	1.12E+13	306.0837
Minimum	1.90E+13	4645.400	2.760000	28.43540	53.19000	1.44E+12	4.536967
Std. Dev.	1.85E+13	1118451.	428.6053	5477.523	2.658712	3.48E+12	84.79220
Skewness	0.523553	0.758421	1.036767	0.587432	-1.040007	0.641449	0.614869
Kurtosis	1.715125	2.416536	2.723086	1.954018	2.381829	1.683686	2.928636
Jarque-Bera	3.548642	3.411602	5.652624	3.196081	6.081936	4.363908	1.959911
Probability	0.169599	0.181627	0.059231	0.202293	0.047789	0.112821	0.375328
Sum	1.22E+15	37400576	10385.67	172119.9	1818.280	1.62E+14	3355.228
Sum Sq. Dev.	1.03E+28	3.75E+13	5511074.	9.00E+08	212.0626	3.64E+26	215691.5
Observations	31	31	31	31	31	31	31

On Table 1, the mean of variables VEGEX, OAX, NAX, L, K and EXR are 1206470, 335.021, 5552.25, 58.6541, 5.23E+1 and 108.233, respectively. The standard deviation, a measure of dispersion in the series of variables: VEGEX, OAX, NAX, L, K and EXR are 1118451, 428.6053, 5477.523, 2.658712, 3.48E+12, and 84.79220 respectively. The values of skewness indicate that some distributions are negatively and positively skewed. Comparing the values of skewness of different variables under consideration, it is obvious that the skewness of variable OAX is highly positively skewed as compared to values of   VEGEX, NAX, L, K, and EXR. So, the data of VEGEX, NAX, K and EXR are nearly normally distributed for the period of study. The Kurtosis of normal distributions is 3, the Kurtosis for all the variables VEGEX, OAX, NAX, L, K and EXR are less than 3 which show Platykurtic distribution.

Data Purification

Test of Linear Association

Prior to result analysis, test of linear association was conducted using correlation matrix to know whether or not a linear relationship can be established among the variables and also to check for multicollinearity.

Table 2   Correlation Matrix Result

VARIABLES	LNGDP	LNVEGEX	LNOAX	LNNAX	LNK	LNL	LNEXR
LNGDP	1.000000						
LNVEGEX	0.815465	1.000000					
LNOAX	0.961389	0.897961	1.000000				
LNNAX	0.890451	0.952551	0.957569	1.000000			
LNK	0.955936	0.748745	0.895846	0.804039	1.000000		
LNL	-0.864590	-0.643123	-0.802560	-0.692936	-0.862788	1.000000	
LNEXR	0.861477	0.917288	0.896712	0.940918	0.759266	-0.662304	1.000000

Table 2 shows that the GDP is positively correlated with all the variables. Correlation of any of the regressors or independent variables with another regressor was not equal to 1. This shows the absence of multicollinearity in the data set.

Stationarity Test

Econometric studies have shown that most exports and macro-economic time series variables are non-stationary and using non-stationary variables leads to spurious regression (Engel & Granger, 1987). Thus, the variables were investigated for their stochastic properties, using unit roots test. The test employed is the Augmented Dickey-Fuller (ADF) and Philip Perron (PP) tests. The tests were used to test for consistency and where conflicts exist, to decide on the most appropriate option (Hamilton, 1994). The results of unit root test are presented on Table 3.

Table 3: Unit Root Test Result

VARIABLES	ADF	CV 5%	O/I	PROB	PP	CV 5%	O/I	PROB
Dependent Variable								
LNRGDP	-3.4000180	-2.967767	I(1)	0.0193	-3.4000180	-2.967767	I(1)	0.0193
Independent Variables								
LNVEGEX	-3.415700	-2.963972	I(0)	0.0183	-8.966641	-2.963972	I(0)	0.0000
LNOAX	--5.821968	-2.967767	I(1)	0.0000	-7.266629	-2.967767	I(1)	0.0000
LNNAX	-5.815116	-2.963972	I(0)	0.0000	-5.815116	-2.963972	I(0)	0.0000
LNK	-5.431286	-2.967767	I(1)	0.0001	-5.431286	-2.967767	I(1)	0.0001
LNL	-2.686831	-1.952910	I(1)	0.0091	-2.525787	-1.952910	I(1)	0.0135
LNEXR	-5.252189	-2.967767	I(1)	0.0002	-5.279757	-2.967767	I(1)	0.0000

From Table 3, the unit root tests of the augmented dickey fuller and Philip peron indicates that some variables such as LNVEGEX and LNNAX tend to be stationary at level while variables such as LNOAX, LNK, LNL and LNEXR become stationary at first. The purpose of testing for the stationarity properties of the variables in bounds approach to co-integration is because the (ARDL) bounds testing approach becomes applicable only in the presence of I (1) and I (0) variables or a mixture of both. This means that the assumption of bounds testing will collapse in the presence of I (2) variable. Both the ADF and PP unit root results presented on Table 3, implies that the bounds testing approach is applicable in this study, as all the variables are a mixture of I(1) and I(0).

Data Analyses

Co-integration Test

Having established the order of integration, the ADRL-bounds testing approach was engaged to determine whether a long-run co-integration relationship exists between vegetable exports and economic growth. The result of the co-integration test is presented on Table 4.

Table 4   Result of ARDL Bounds Test for Co-integration

Null Hypothesis: No Long-run Relationships Exist		
Test Statistic	Value	K
F-Statistic	4.317164	6
Critical Value Bounds		
Significance	Lower Bound	Upper Bound
5%	2.55	3.61

The co-integration test result showed that the F-statistic was greater than the lower and upper bound critical value at the 5% significance level. Thus, the null hypothesis of no long-run relationship was rejected at the 5% significance level. It can therefore be inferred that the variables are co-integrated.

ARDL Baseline Regression

In view of the co-integration between all the variables in our model, we proceeded to estimate the long-run coefficients of the explanatory variables as presented on Table 5.

Table 5   ARDL BASELINE REGRESSION

DEPENDABLE VARIABLE	LNGDP			
LNGDP	1.082611	0.180582	5.995117	0.0000
VARIABLES	COEFFICIENT	STD ERROR	T-STATISTICS	PROBABILITY
LNVEGEX	-0.046747	0.015222	-3.070973	0.0069
LNOAX	0.050801	0.016338	3.109348	0.0064
LNNAX	-0.008293	0.019542	-0.424338	0.6766
LNK	0.011807	0.035026	0.337102	0.7402
LNL	-0.107314	0.245675	-0.436813	0.6677
LNEXR	0.035713	0.015393	2.320027	0.0330
C	7.396165	2.404707	3.075703	0.0069
Other test statistics				
Variables				
R-Squared	0.998033			
Adjusted Squared	0.996761			
Prob (Statistic)	0.000000			
Durbin Watson Stat	1.936524			

From results on Table 5, we observe that the coefficient of vegetable exports is -0.046747 which suggests that a one percent increase in the vegetable export results in reduction in Nigeria's GDP by 4 percent. It also shows a negative relationship between vegetable exports and Nigeria's GDP, which is also statistically significant. The reason for the negative coefficient for vegetable exports may be that vegetable exports of Nigeria are exported as raw materials rather than value-added products. Thus the receipts from these exports are low and costs associated with their exports may outweigh contributions to the GDP. Our result agrees with Subashini, Malathi and Rasika (2015), Stefan and Imre (2016), and Kondal (2018) whose works report negative effects of vegetable exports on economic growth and contrasts with the works by Dilek, Aytaç and Seda (2018), Mohandas, Indhusree and Kuruvila (2018), Bakari (2017) and Mgeni and Temu (2010) which found positive effects of vegetable exports on economic growth.

The coefficient of other agricultural exports is 0.050801 which suggests that a one percent increase in the other agricultural export results in an increase in GDP by 5 percent. This shows the positive effect on GDP and this is statistically significant.

The coefficient of non- agricultural exports is -0.008293 which suggests that a one percent reduction in other agricultural export results in GDP by 0.8 percent. The result shows a negative on the GDP even though this is not statistically significant.

The negative impact of non-agricultural exports on Nigeria's GDP is explained because as is with the case of vegetable exports, receipts from these exports are low and costs associated with their exports may outweigh their contributions to the GDP. These non-agricultural exportables may not be value-added products.

The coefficient of capital is 0.011807 which indicates that a one percent increase in the capital stock leads to rise in GDP by less than 1 percent. This coefficient, though positively sign, is not statistically significant. The value of the coefficient is quite low which shows that the strength of the impact is minute. There are many reasons of this result. First, in Nigeria there is near absence of financial depth in rural areas. Second, Nigeria still engages obsolete technology and inefficient managerial skills in its agricultural sector. Third, non-development expenditures for instance defense expenditures and debt servicing do not increase the productive capacity of the economy as they crowd out spending on agricultural infrastructures.

The coefficient of human capital is -0.107314 demonstrating that one percent addition in human capital results reduction in GDP by 10 percent. This shows that there is an inverse relationship between human capital (HC) and GDP. The coefficient of HC is also not statistically significant and this contradicts economic theory. Again, this contradictory result is justifiable in Nigeria. It has been observed that in developing countries, Nigeria inclusive, productivity of factor inputs, especially labour is very low. Factors which drive low labour productivity in Nigeria include labour immobility, low human capital development, defective patterns of investment in education, shortage of health and nutrition facilities, sluggish and shirk work practices, etc.

The coefficient of exchange rate is 0.035713, which reveals that a one percent increase in GDP contributes positively by 3 percent increase in the GDP. The result is statistically significant and economically justifiable.

Error Correction Model

Table 6: Results of Estimation of ARDL Error Correction Regression

VARIABLES	COEFFICIENT	STD ERROR	T-STATISTICS	PROBABILITY
D (LNGDP)	0.309042	0.099333	3.111184	0.0064
D(LNVEGEX)	-0.046747	0.009566	-4.886695	0.0001
D (LNVEGEX (-1))	0.031683	0.008038	3.941475	0.0011
99999D(LNNAX)	-0.008293	0.011073	-0.748927	0.4641
CointEq(-1)*	-0.226430	0.032427	-6.982732	0.0001

Result on Table 6 show that the coefficient of the error correction term is -0.226430 with probability value of 0.0001. This means that the error correction term is significant, rightly signed and that the short run disequilibrium converges in the long run. The coefficient of the error correction term shows the speed of adjustment of economic growth to the vegetable exports.

Post-estimation Tests

Test for Model Stability

Model Stability test was used to test for correct specification of the model. This means that it was used to rule out the possibility of specification error i.e; inclusion of irrelevant variables and exclusion of relevant variables. We used Ramsey Regression Error Specification Test (RESET) and Recursive Estimate CUSUM test to confirm the stability of the model and the results are shown below:

Table 7: Ramsey Regression Error Specification Test (RESET)

	Value	df	Probability
t-statistic	0.541989	10	0.5997
F-statistic	0.293752	(1, 10)	0.5997

The probability values of F-statistics and the T-statistics indicate that the null hypothesis of the model is correctly specified and can convincingly be accepted. This also indicates that the model has no specification error. This is also confirmed by the result of CUSUM test present in Figure 1.
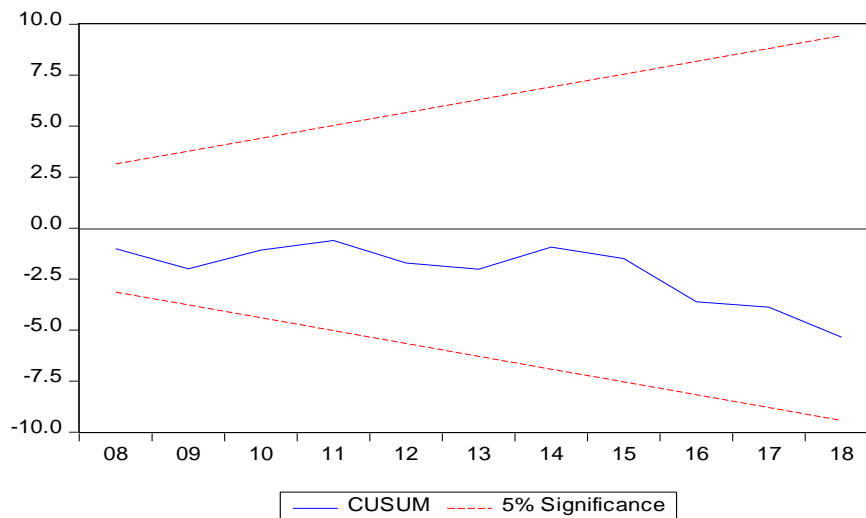

Figure 1: Recursive Estimate CUSUM Test Graph

The results for this test reported in Figure 4.1 indicate that all the coefficients of estimated model are stable over time within the critical bounds 5%. According to this stability test we can accept the results of this model. The model which is represented by the line in the middle is within the upper and lower bounds which is an evidence of the stability of the model. It showed that there is no specification error in the model. The model as well as the estimated parameters is adjudged to be stable.

CONCLUSION AND RECOMMENDATIONS

Before the discovery of oil in 1956 in Nigeria, Nigeria was famous in her agrarian economy and was a major exporter for cash crops including palm produce, cocoa, rubber, timber, ground nuts, etc. At present, Nigeria is no longer a major producer of these crops. Undoubtedly, the discovery of crude oil has contributed and assisted Nigeria's economic prosperity and growth. Nevertheless, the current dwindling in world oil price since June 2014, after five years of oil windfall, has immensely affected the economy of major oil exporters like Nigeria, Saudi Arabia, Iraq and Libya, etc. as was majorly aggravated by Middle East unrest and wars. Another huge blow to crude oil exporters was America's reduction in the number of barrels it imported from the world market. It has been established that for Nigeria to attain a sustained growth in economic progress, its mono-economy needs to give way to the productive development of various sectors of the economy.

As a contribution toward the process of food security and foreign exchange generation for the Nigerian economy, our study investigated the vegetable export effects on the Nigerian economy. We observe the negative effect of vegetable export on the GDP which may be as a result of increasing dis-economics of scale prevalent with the use of obsolete farm techniques. Research and Development remains a veritable tool with which to solve economic advancement issues.

We therefore recommend that Nigeria should revisit its exports composition and patterns with regards to all vegetable products and provide quality inputs so as to improve the quality and consistency in supply of vegetable exportables to the world market. Due to international competition faced by local producers, efforts should be geared towards improved method of production and packaging to improve the quantity and quality of commodities which would result in more foreign exchange revenues for enhanced economic growth. There is need for sensitization of vegetable farmers on how to cultivate, package and store their produce for exports in line with best practices.

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