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Impact of Trade Liberalization on the Export of Non-Oil Sector in the Nigeria Economy

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Abstract

This study examines the impact of trade liberalization on the export of non-oil sector of the Nigeria Economy within the period 1986-2018. The main objective of this study is to determine the impact of trade liberalization on the non-oil sector in the Nigeria economy. Using time series data generated from secondary sources, Unit root ADF was conducted to test the stationarity of the variables and it was found that Non-oil sector which is the dependent variable, Export, Inflation, Exchange rate were found to be stationary at first difference, while only Trade openness which is a proxy for trade liberalization was found to be stationary at level. This justifies the adoption of Autoregressive distributed lag model (ARDL) for the analysis. The ARDL results affirmed that EXT, INF, EXG had a positive and significance relationship with Non-Oil sector with the coefficients of 1.2505, 0.317783 and 4.391912 respectively. However, TON was found to be negative with a coefficient of -121.0153. The regression results show that R-squared to be 0.942084 and adjusted R-squared to be 0.928184 which shows an excellent goodness of fit, that is, 94% variation of NOL was accounted for by joint variation of a combination of the independent variables. The post diagnostic test results conducted acknowledged that the model was stable, normal and free from serial correlation problem. In view of this, the study recommends that there is need for the diversification of the economy from oil to non-oil sector, in order to encourage the export of the non-oil sector during trade liberalization. Furthermore, government should make effort to be consistent with policies that will bring about sustainable growth of the export of the non-oil sector that will bring about the growth of the economy in general.

Keywords:
Nigeria, Non-oil sector, Trade openness, Export, Exchange rate, Inflation and ARDL

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Background to the Study

The Nigeria exports have been described as a catalyst for the overall development which increase earnings of the nation's economy and thereby has created an avenue for growth by raising the National income of the country (Adenugba & Dipo, 2013). It has been seen that over the years a prominent characteristics of the Nigeria's export sector has remained basically the same since 1960, characterized by the dominance of a single export commodity. In 1960 and 1970s the Nations export was dominated by agricultural commodities such as Cotton, groundnuts, coco and palm produce. From the Mid-1970s crude oil became the main export product of the Nigerian economy. The economy is said to be suffering from the Dutch disease as a result of the over reliance on oil export (Bature 2013).

At independence, agriculture accounted for well over 50% of gross domestic products (GDP) and was the source of export earnings and public revenue with agriculture marketing boards playing a leading role in Nigeria. Prior to Nigeria independence in 1960, cash crops were introduced, railways and roads were developed and a market for consumers' goods began to emerge. For almost three decades now, oil has emerged a major contributors to the Nigeria Gross domestic product (GDP) thereby making it highly dependent within the Nigeria economy. Its dominance and over-whelming importance has left Nigerian operating a mono-economy with oil accounting for more than 78% of federal government revenue, more than 95% of export earnings, and about 11% of GDP at factor cost.

In 1979, the nation's sales of petroleum product had fallen drastically, basically due to the actions of the United States of America and her collaborators after the Arab-Israelis war. It was in light of the dwindling oil prices that the Nigerian government embarked on non-oil export promotion in order to boost the foreign exchange earnings and export substitution for efficient liberalization policy known as Nigeria export promotion council (NEPC) since the policy concern over the years has therefore been to expand non-oil export in a bid to diversify the Nigerian economy to export base.

It is imperative to evaluate economic liberalization policy implementation in 1986 through the adoption of the structural adjustment programme (SAP) and the successive reforms aimed at further liberalizing the economy. With the liberalization policy, it is expected that Nigerian economy would be further open to the rest of the world with attendant economic growth. But the reverse is the case as the nation's economy is still faced with epileptic power supply, low manufacturing capacity utilization, infinitesimal marginal productivity in the agricultural sector and monumental infrastructural decay. More importantly this precarious situation has been in the face of increasing indexes of aggregate industrial production, manufacturing production and mining production. For instance, the index of manufacturing production for the period 1970Q1, 1986Q2 increased on the average by more than double from 42.8% to 89.31%. While the indexes of mining production and industrial aggregate grew marginally from 102.08% and 100.41% to 116.36% and 107.24% respectively, that of electricity grew by more than double from

49.42% to 137.54% (CBN 2007; 2012). Also, the growth of sectorial GDP shows that the industrial sector recorded a negative growth of -3.4 in 2008 and increased dramatically to 5.6% in 2010. Thereafter, it declined such that by 2012 its growth was only 1.2% as compared to the agricultural sector which grew at the rate of 6.3% in 2008 and an average of 5.7% between 2009 and 2011 (CBN 2012).

The policy concern over the years is the diversification of the Nigerian economy, which has been necessary for paramount reasons. Firstly, the volatility of the international oil market with the attendant volatility of government revenue gives credence to any argument for diversification of exports. Secondly, the fact that the crude oil is an exhaustible asset makes it unreliable for sustainable development of the Nigerian economy. The Nigerian trade policies since its adoption of trade liberalization in 1986 has aimed at liberalization of the economy as well as achievement of greater openness and greater integration with the world economy. In a bid to expand her market, Nigeria has signed a bilateral, regional, multilateral and preferential agreements with different countries of the world among which are China, United states of America, Turkey, Benin republic, Indian, European countries etc. in recent times Nigeria has renewed her investment promotion and protection treaties with France, China, United kingdom, and United states of America. Nigeria is one of the founding members of Economic Community of West African states and World Trade Organization and a signatory of the Lome convention (Ogunkola & Oyejide, 2001) despite the nation's efforts non-oil exports have dwindled in the period of great openness. Dastidar (2015) "The introduction of the index of openness in Nigeria". Given this scenario, the dependency syndrome is likely to continue leading to dumping, imported inflation, high cost of production further deterioration of the terms of trade, lower standard of living and increased urban and rural unemployment as well as poverty (Okoh & Egbon, 1999).

The growth rate of the export of the non-oil sector during trade liberalization is declining and is generally disappointing. Therefore there is a need to address this dwindling decline and problems faced by the non-oil of the Nigerian economy. Hence the need for this study, which seeks to critically examined the impact of trade liberalization on the growth of export of the non-oil sector in the Nigeria economy and to investigate the effect of exchange rate on non-oil exports in Nigeria.

Statement of the Problem

It has been observed that Nigeria since independence is yet to attain the rank of a developed economy due to its structural change, among other factors. However, the factor crucial to this lack of economic progress is the inability to diversify the economy which has caused the economy to rely heavily on crude oil for revenues and as the major export commodity in the economy.

Objective of the Study

This study intends to fill the gap by taking a critical look on the impact of trade liberalization on the export of the non-oil sector outputs in Nigeria economy, by extending the period to cover up to year 1986 to 2018 when full liberalization of the external trade took place in Nigeria.

Statement of Hypothesis

1. H_0: Trade liberalization has no significant impact on the non-oil sector outputs growth in Nigeria.

H_1: Trade liberalization have significant impact on the non-oil sector outputs growth in Nigeria.

The study is divided into five sections with the introduction, statement of hypothesis in section one. Section two of the study covers the literature review, (conceptual, theoretical and empirical review) while section three present the methodology, sources of data and model specifications. Result, data presentations and discussion of findings is embedded in section four. The paper concludes with the appropriate policy recommendations and conclusion.

Literature Review

Conceptual Framework

Concept of Non-oil Export and Non-oil Sector

The non-oil exports are basically those commodities excluding crude oil (Petroleum products), which are sold in the international markets for the sole purpose of generating revenue. In order to achieve this there must be open trade which could facilitates the sales of this commodities between countries which engage in international trade. Non-oil exports products are unlimited as they include agricultural crops, manufacturing goods, entertainment, tourism services and solid minerals e.t.c. (Baruwa, Abogan & Akinola, 2014).The non-oil exports sector in Nigeria is categorized into four broad constituents which are the agricultural exports, manufactured exports, services exports(telecommunication service, finance, tourism, real estate, construction and health sector) and solid mineral exports (Akeem, 2011). The definition of non-oil exports by (Baruwa, Abogan & Akinola, 2014) is applicable to this study.

Concept of Trade Liberalization

According to Todaro and Bakare (2011) trade liberalization is the removal of obstacles to free trade (obstacles such as quotas, nominal and effective rates protection and exchange controls. Trade liberalization involves the abolishing of non-tariff barriers to imports, the rationalization and restriction of tariffs, the institution of market determined exchange rate and removal of fiscal disincentives and regulatory deterrents to exports. The motive is to create a competitive environment between local and foreign industries.

Increased trade openness is usually considered as an increase in the size of a country's traded sector in relation to total output. Increased openness can be the result of trade liberalization. Therefore, trade liberalization is the removal or reduction of all barriers to trade to ensure a free flow of trade between countries of the world.

Theoretical Framework

The study is hinged on the following theoretical foundations in economics. These theories offered bases upon which the study is justified and explains within the premise of economics. It is this theory that guides empirical study, gives it backings and differentiates it from mere enquiry. In brief the new trade theory (NTT) is an economic theory that came up in the 1970s, this theory was propounded by Paul Krugman (1979) and others (Helpman & Krugman, 1986) as a way to predict international trade pattern or trading between countries of the world. This theory tells us why countries are trade partners when they are trading similar goods and services, this is true as most Nigerians patronize foreign goods made from other countries despite the country has manufacturing companies who produce similar goods. The fact is that trading similar goods can result in a lot of profit to the firm that first gain entry into the market and still maintains the quality and standard of his product and tries to make more innovations and improve his product. These are usually product that comes from large global firms that directly impact the flow of international trade. NTT explains trading pattern by the economics of scale and network effect. Apparently the Nigeria non-oil sector outputs lack the requisite skills in terms of production than the advance countries that have gain grounds in the international market because most of her product gains first entry into the market.

The idea of advocating for the practice of opening up the economy to facilitate trade and cooperation amongst countries in the world are enamored in the arguments postulated by Adams Smith, Messers and David Ricardo. But Comparative Advantage which was postulated by David Ricardo is intellectually accepted and seen as the driving force of international trade. When countries moves out of autarky and embrace open economy, it is indicative of specialization and exchange. Countries exports commodities in which they have a competitive edge over all others i.e comparative advantage and imports those commodities in which the possess the least comparative disadvantage in. Usman and Salami (2005) opine that a country can procure the desired goods and services at considerable savings especially capital and intermediate goods that are needed to support efficient productive activities in the export sector.

The export led growth hypothesis was prevalent in Developing countries (DCs) according to this hypothesis the DCs possess large domestic market due to the large population size that characterize them and that the supportive measures and incentives are not available to encourage producers to explore the export market. This policy strategy was resorted to by Developing Countries in the context of declining world markets for their primary commodities, rising balance of payments deficits on current account (Olorunshola 2001). The major features of this strategy are that:

i. It is characterized by overvalued exchange rates and
ii. Production is carried out behind infant industries under protection of high tariffs and quotas on imports-an array of import measures required to sustain the process.

Empirical Literature

It has been reported in literatures studies abound that establishes the export trade enhances economic growth. Government investment in the non-oil sector will lead to growth of the export of the non-oil commodities this will accelerate the nation's economy growth. Riti, Daniel and Ali (2016) in their study on the growth of non-oil sectors: A key to Diversification and Economic performance in Nigeria. They study uses a secondary data and employ the ARDL and VECM Granger causality model to estimates the short run and long run parameters as well as the direction of causation of the variables. The result revealed that the non-oil sector variables which are Agricultural, Manufacturing component and telecommunication component are statistically significant with a positive coefficient respectively. The study recommend that the government should realize effective macro-economic policies along with momentous improvements in the structure and functioning systems of governance for stabilizing economic growth along with the diversification of the economy and economic reforms towards the development of the non-oil sectors.

Nahanga and Becuarova (2016) studied the impact of Agricultural exports on economic growth in Nigeria. They employed OLS regression, Granger causality impulse response function and variance decomposition approaches. The result shows an inverse relationship between Agricultural degree of openness and economic growth in the country. The study recommends that importation of Agricultural commodities should be discouraged so as to reduce the countries over reliance on food imports and increase the rate of agricultural production for self-sufficiency, exports and its contributions to economic growth in the country. Table 1 below shows some summarized relevant empirical findings in literature concerning the chosen study.

Table 1: Selected Empirical Findings

Author(s)	Country(s)	Investigations	Main results	Recommendations
Ogbonna, Uwajumogu, Chijiok and Agu (2013)	Nigeria	Economic globalization; its impact on the growth of non-oil supply.	Negative and Insignificant impact both in the long run and short run	Improving on the quality, packaging and marketing of Nigeria's NOX is paramount in order to reverse the growth of non-oil export in Nigeria, and to gain from greater integration and trade.
Anthony, Onyinye, Jonathan and Emmanuel (2017)	Nigeria	An empirical re-examination of non-oil export capital formation and economic growth nexus 1980-2013	Non-oil Positive impact on capital formation and economic growth	the problem of infrastructural deficits (water supply, transport system, telecommunication and energy) should be tackled by massive public expenditure and private Investment, as this will enhance productivity in the non-oil sectors.
Ugwuegbe and Uruakpa (2013)	Nigeria	The impact of export trading on economic growth 1986-2011	Positive impact on economic growth	Introduction of more policies and program that will adequately boost the non-oil sector of the economy so that it will impact more meaningfully on economic growth of the country;
Onodugo, Marius and Oluchuwu (2013)	Nigeria	Non-oil export and economic growth 1981-2012	Infinitesimal impact in influencing economic growth	Development of capital base of non-oil sector both in depth and capacity through implementation of public private partnership.
Imoughele and Ismaila (2015)	Nigeria	The impact of exchange rate on Nigeria non-oil exports 1986-2013	Exchange rate has a negative and insignificant effect on non-oil export	Monetary authority should ensure exchange rate stability in order to stem inflation which has adverse effect on non-oil exports.
Emmanuel, Nwosu and Eweke(2017)	Nigeria	Causality between non-oil export, financial sector development and economic growth 1985-2015	Long run relationship exist and Bi-directional causality	government should formulate policies that will enhance credit to the private sector, such as not operating the Treasury Single Account (TSA) Policy in a holistic manner
Onayemi and Ishola (2009)	Nigeria	Diversifying the productive base	Negative and insignificant impact	Government need to initiate policy that will enhance the export of the non-oil export through it export promotion strategies.

Methodology and Sources of Data

This study utilized the method of pre-test, post-test and Autoregressive Distributed Lag model and error correction model for investigation. This involves testing the variables for unit root using (Augumented Dicky-fuller tests) and if the order of stationarity varies i.e. if the order of integration of the variables are at level and first difference, 1(0) and 1(1), this will require the adoption of ARDL the reason for the choice of ARDL is influenced by its advantageous positions over other estimation techniques like the Granger causality, Engle and Granger (1987), Johansen (1991), Johansen and Juselius (1990) and Gregory and Hansen (1996) which often require that the variables are of the same order of integration, besides their preference for large data size for validity of results to hold (Babajide, Lawal & Somoye, 2016). We shall proceed to estimate an error correction model to represent the short run dynamic relationship, essentially, the error correction term in the short run model indicates the speed of convergence to equilibrium once the equation is shocked.

In addition, in order to avoid producing parameter estimates that may be detrimental to policy making, considering the period covered is fairly lengthy; it becomes imperative to conduct the bound test for cointegration, autocorrelation test, and to also construct the structural stability test using the Cumulative Sum of Recursive residual (CUSUM).

The Data

The data set for this study consists of annual time series spanning the period 1986-2018 is obtained from Central Bank of Nigeria, National Bureau of Statistics, World Bank and pertinent derivatives there from.

Variable Definition

The variables under consideration are Non-oil Sector outputs (NOL), Trade Openness (TON) is a proxy for trade liberalization, and Export as a proxy for Non-oil exports (EXP), Exchange rate (EXR) and Inflation (INF) are defined and specified in table 2.The endogenous variable or dependent variable is NOL; the choice of the variable is inspired by both the topic, background discussion above and the findings of the related literature. While the exogenous or independent variables are TON, EXP, EXR and INF.

Table 2: Definition of Variables

Variable	Definition
NOL	Total volume of the output of Non-oil goods and services produced in the country on yearly basis
TON	Is a proxy for trade liberalization, In line with Yinikkays (2003) it is computed by adding up the values of IMT plus EXT divided by the values of GNP of the Nigerian economy for the given study period (1986-2018).
EXT	Values of goods and services produced domestically and purchased by foreigners.
EXG	The price of naira in terms of US dollars
INF	The sustained increase in the price level of goods and services in an economy over a period of time

Model Specification

The study employs the ARDL to investigate the impact of trade liberalization on the export of the non-oil sector in Nigeria economy. Thus, drawing on literature reviewed and the theoretical underpinnings, the following simple model is hypothesized as follows;

NOL= f (TONt, EXTt, EXGt, INFt) ----------(1)

Equation (1) is transformed into an econometric model and is expressed as

$Y = \beta o + \beta_1 OPT + \beta_2 EXT + \beta_3 IMT + \beta_4 EXG + \mu t$---------- (2)

$NOL = \beta o + \beta_1 TON + \beta_2 EXT + \beta_3 EXG + \beta_4 INF + \mu t$---------- (3)

Where :

NOL = Non-Oïl Outputs
TON = Trade openness
EXT = Export
EXG = Exchange rate
INF = Inflation
B_0 = Constant Term of stocastic terms
β_1 to $\beta_{4=}$ Coefficient of explanatory variables
U = error term
T = time period

Based on the Autoregressive Distributed Lag (ARDL) which includes the lag of the dependent variable as part of the independent variables automatically transformed our behavioural equation (equation 1) which is expressed to the ARDL form below using the lag length one (1),

$NOL = \beta(1)*NOL(-1) + \beta(2)*TOP + \beta(3)*EXT + \beta(4)*EXG + \beta(5)*EXG(-1) + \beta(6)*INF + \beta..$ (7)

Economic Apriori Expectation

This refers to the supposed relationship as between or among the dependent or independent variables of the model as determined by the postulations of economic theory. Koutsoiannis (1977), states that a priori definition is the theoretical criterion on basis of which the results of the estimation of the model are evaluated. They are expectations about the sign and size of the parameters of the function in the model specified. Therefore, in order to determine if the magnitude and size of the parameters estimate conforms to economic theory.

Table 3: Summary of the Apriori Expectation

Regressand	Relationship	Regressors
NOL	+	TON
NOL	+	EXT
NOL	+	EXG
PSI	-	INF

Result and Discussions

Table 4: Unit Root (ADF) Result

Variables	Order of Integration	ADF Tests Statistics	Critical ADF Test Statistics	Remark
NOL	I(1)	-3.879965	-2.960411	Stationary
TON	I(0)	-3.104754	-2.957110	Stationary
EXT	I(1)	-7.009062	-2.960411	Stationary
EXG	I(1)	-4.819800	-2.960411	Stationary
INF	I(1)	-4.745099	-2.971853	Stationary

Source: Author computation

E-views 10. Note: * significant at 5%; Mackinnon critical. 2018

Table 4 above shows the result of the unit root test estimated via ADF for all the variables both in levels and first difference form. The result shows that the order of integration for the variables is a mixture of I(0) and I(1) which implies that we cannot reject the null hypothesis of unit root for all the variables except the variable TON which is found to be stationary at level 1(0), while the rest variables NOL, EXT, EXG and INF were found to be stationary at first difference. Therefore, this justifies the application of Autoregressive distributed lag (ARDL) in this study to estimate the equation of variables exhibiting a unit root like this, where some variables are stationary at level and some stationary after first differencing (Pesaran and Shin, 1999).

Table 5: ARDL Model Estimation Result, Selected Model (1,0,0,0,1,0)

Variable	Coefficient	Standard Error	t-Statistic	Probability
NOL	0.721530	0.102762	7.021368	0.0000
TON	-121.0153	201.0767	-0.601836	0.5527
EXT	1.25605	4.758606	2.634020	0.0143
EXG	4.391912	1.059952	4.143501	0,0003
INF	0.317783	1.224420	0.259537	0.7973
	-2786953	4071076	-6.845721	0.0000

Source: Author's Computation using Eviews 10. 2018
R-squared=0.942084 Adjusted R-squared=0.928184 F-statistics =67.77683 Probability (F-statistics) =0.000000

The ARDL result in table 5 above show that NOL has a positive and significant relationship with a coefficient of 0.721530 and a P-value of 0.0000. The coefficient of TON stood at -121.0153 and a p- value of 0.5527 which implies a negative and weak relationship with NOL this does not conform to the apriori expectation. EXT and EXGwere found to have a positive strong relationship with NOL with a coefficient of 1.25605 and 4.391912 and a p-value of 0.0143 and 0.0003 respectively this conforms to the apriori expectation. INF on the other hand has a coefficient of 0.317783 and a p- value of 0.7173 this does not conform to the apriori expectation was expected to have a negative relationship to NOL.

The constant terms of the equation (c) 19.85532 revealed the value NOL when it was not affected by any of the independent variables. This implies that the NOL would be 19.85532 if all the explanatory variables were zero. The value of R-squared (0.942084) shows all goodness of fit of the model; this implies that 94.20% of the variable of NOL was accounted for by joint variation of a combination of the independent variables. Also, the value of Adjusted R-squared (0.928184) depicts an overall goodness of fit of the model of 92.81%; it therefore shows that the model was corrected and has a good fit. This is supported by the values of the F-statistic (67.77683) with a probability value of 0.000000 which is less than 5% level of significance. The F-statistics measures the joint statistical influence of the explanatory variables in explaining the dependent variables, thus the influence of the explanatory variables on the dependent variable was statistically significant. The Akaike (AIC), Schwarz (SC) and Hannan-Quinn (HQ) criteria with the value of 12.23347 and 12.33975 respectively suggests that the model was better fit.

Bounds for Cointegration Test Result
Bound test was carried out to determine the presence of long run relationship between the dependent variable NOL and the independent variables (TON, EXT, EXG, and INF). The result is presented below:

Table 6: Bounds Test Result

ARDL Bounds Test		
Test Statistic	Value	K
F-statistic	4.591994	4
Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound
5%	2.56	3.49

Source: Researcher's computation with E-views 10. 2018

Table 6 above shows the result of the Bound test for co-integration for all the variables, based on the result the F-statistics value of 4.591994is greater than the chosen critical value of 1(0) and 1(1) at 5% level of significance (2.56) and (3.49) respectively, this indicate the presence of co-integration and long run relationship in the model; therefore, rejecting the null hypothesis which means that there is a long run relationship in the model.

Table 7: ARDL Cointegration for Short Run and Long Run Relationship Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.85532	91.96362	0.215904	0.8308
NOL(-1)	-0.278470	0.102762	-2.709847	0.0120
EXT	1.256005	4.75E-06	2.634020	0.0143
INF	0.317783	1.224420	0.259537	0.7973
EXG(-1)	0.777907	0.378096	2.057436	0.0502
TON	-121.0153	201.0767	-0.601836	0.5527
D(EXG)	-3.614005	1.090730	-3.313380	0.0028
EXT	4.506005	1.38E-05	3.251208	0.0033
INF	1.141176	4.376406	0.260756	0.7964
EXG	2.793509	1.223383	2.283430	0.0312
TON	-434.5728	675.1663	-0.643653	0.5257
ECM(-1)	**-0.278470**	**0.054758**	**-5.085505**	**0.0000**

Source: Authors computation using E-view 10. 2018

Table 7, above presented both the short run and the long run estimation result. From the table the short run cointegrating form revealed a positive relationship between Non-oil sector (NOL) and Export, Exchange rate and Inflation (EXT, EXG, INF) with the coefficients of 0.0721530, 1.25605, 4.391912 and 0.317783 respectively, while only Trade openness (TON) was found to be negatively related with NOL. The ECM (-1) which

denotes the rate of adjustment from short-run to long run revealed that about 27% of disequilibrium in an economy will be adjusted annually as indicated by the coefficient of -0.278470 and it was also significant with the probability value of 0.0000.

The long run coefficient of TON was found to have a negative insignificant relationship with NOL (-434.5728), This implies that in the long run, TON will lead to about 0.4% decrease in the non-oil sector revenue (NOL) in Nigeria if not properly manage. EXT, EXG and INF had a positive coefficient with the following coefficients;4.50605, 2.793509 and 1.141176 respectively. The implication of these on economic growth are, in the long run, a unit increase in EXT, EXG and INF will lead to about 4.5%, 2.7% and 1.1% increase in Non-oil sector (NOL) in Nigeria respectively.

Granger Causality Test

The granger causality test helps to determine the direction of causality between variables (Gujarati and Porter, 2009). For the purpose of this study, the test is performed in order to determine the direction of causality between the dependent and the independent variables.

Table 8: Pairwise Granger Causality Test

Null Hypothesis	Obs	F-Statistics	Prob	Decision	Direction
TON does not granger cause NOL	30	0.12625	0.8820	Accept Ho	
NOL does not granger cause TON		2.17523	0.1346	Accept Ho	No relationship
EXT does not granger cause NOL	30	0.47541	0.6271	Accept Ho	EXT-NOL
NOL does not granger cause EXT		6.55343	0.0051	Reject Ho	Unidirectional
INF does not granger cause NOL	30	0.25713	0.7753	Accept Ho	
NOL does not granger cause INF		0.89957	0.4195	Accept Ho	No relationship
EXT does not granger cause TON	30	1.71941	0.1997	Accept Ho	

TON does not granger cause EXT		0.71848	0.4973	Accept Ho	No relationship
EXG does not granger cause TON	30	0.90090	0.4190	Accept Ho	
TON does not granger cause EXG		1.18864	0.3213	Accept Ho	No relationship
INF does not granger cause TON	30	3.58928	0.0426	Reject Ho	INF-TON
TON does not granger cause INF		0.48755	0.6198	Accept Ho	Unidirectional
EXG does not granger cause EXT	30	2.76396	0.0823	Accept Ho	
EXT does not granger cause EXG		0.75937	0.4785	Accept Ho	No relationship
INF does not granger cause EXT	30	0.26280	0.7710	Accept Ho	

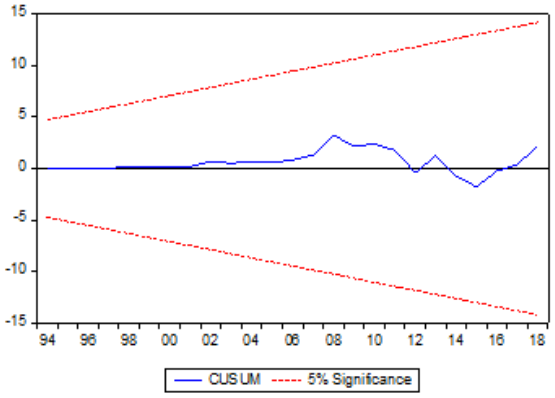
Source: Authors computation Using E-view 10. 2018

Decision rule for Granger Causality Test

If probability value (P-value) is less than (P<0.05) is said to granger caused the other variable vice versa, If (P<0.05, P<0.05) they caused one another(bi-directional relationship), If the p- value of one variable is greater than the p- value of the other while the p-value of the other variable is less than the other it is said to be (uni-directional relationship) If the both (P>0.05) is greater than, that means that there is no relationship established.

The causality test in table 6 above shows that TON does not granger does not cause NOL, nor does NOL does the reverse hold. Meanwhile, EXT does not granger cause NOL at 5% level of significance, but NOL cause EXT with a P- value of 0.0051 this implies a uni-directional relationship. This hold also for INF which also cause TON, with a p- value of 0.0426. On the other hand the rest variables does not granger cause the other.

Figure 1: Stability Test ARDL



Source: Researcher's Plot Using E-views 10. 2018

The result of the CUSUM in figure 1showed that cusum line graph (middle line) fell within the 5% level of significance region; hence, the model is stable.
H_0 = the residuals are not normally distributed.
H_1 = the residuals are normally distributed.
Decision rule: If the p value is less than 0.05 we accept H_0 and reject H_1 otherwise reject H_0.

Table 8: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.256865	Prob. F(2,22)	0.7758
Obs*R-squared	0.707373	Prob. Chi-Square(2)	0.7021

Source: Authors computation using Eviews 10. 2018

The Breusch-Godfrey serial correlation LM test was used to detect whether the model has autocorrelation problem or not, given the hypothesis as;
H_o: There is no autocorrelation in the model
H_1: There is autocorrelation in the model.

The serial correlation result was generated using E-views 10 and it shows that the P-value is 0.7758, which is greater than the level of significance at 0.05.Therefore, the null hypothesis is accepted and conclusion is made that there is no autocorrelation problem in the model.

Conclusions

There has been an increasing pressure in Nigeria on the need to diversify the economy from oil to non-oil sector with highlights of the gains from trade liberalization. These haveled to series of research to find out, if actually the country will benefit both in the short and long run. Based on the findings of the study it is pertinent to stress, that trade liberalization was expected to have a significant relationship with the non-oil sector of the

Nigeria economy, but rather the reverse is the case, it is crystal clear that much needs to be done in order to improve the nation's non-oil sector.

Recommendations

i. There is need for the diversification of the economy from oil to non-oil sector, in order to encourage the export of the non-oil sector during trade liberalization.
ii. Government should make effort to be consistent with policies that will bring about sustainable growth of the export of the non-oil sector that will bring about the growth of the economy in general.

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