

Trade Liberalization and Economic Growth in Nigeria

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Abstract:

This study investigated the impact of trade liberalization on economic growth in Nigeria. In order to achieve the objectives of examining the trend in trade and growth and impact of trade liberalization on economic growth, times series data were sourced and analysed using the Autoregressive Distributed Lag model (ARDL). Findings from the study revealed that oil export and non-oil import impacted positively and significantly on economic growth both in the short and long runs. The results also show that oil and non-oil imports retarded economic growth in both short and long run periods. Specifically, oil import was found to significantly diminished economic growth in Nigeria. Nigeria imports refined petroleum products hence spends huge financial resources to finance its imports. This has affected the economy negatively as funds meant for other developmental purposes are spent on petroleum products importation. Based on these findings, the study suggests increase in oil export by providing conducive environment for oil operations, improvement in non-oil export by diversifying the products base of the economy and building local capacity in oil exploration and refining in order to end petroleum products imports in Nigeria.

1. Introduction

Theorists of economics have over the years applied the principle of specialization and comparative advantage to the exchange of goods and services between countries in the form of theory of international trade. Economists since after the emergence of David Ricardo have also tried to provide answers to what determines which goods are traded and why some countries produce some goods while others produce different things. According to Todaro (1994), economists have sought the answer in terms of international differences in production costs and the prices of different products. The theory of comparative advantage holds that the promotion of free international trade both maximizes global output and allows countries to escape from the confines of their resource endowments. The factor endowment theory by Heckscher-Ohlin also took into consideration the effect of differences in factor supplies (natural resources, labour and capital) on the specialization in international production. These theories try to provide justifications for trade amongst countries of the world.

Trade liberalization implies the reduction or complete removal of trade barriers by a country or countries involved in foreign trade. There are so many forms of trade like; the transfer of technology, education flow and ideas sharing besides the trade in terms of commodities and countries impose various forms of restrictions or liberalization on these items depending on what such country wants to achieve. The restrictive trade policies were embraced by most developing economies in their early drive for economic growth and development but most of them relaxed the policy and moved towards the liberalization of trade as the world moved towards globalization. Very strong support

exists in the literature of the argument that trade liberalization tends to stimulate economic growth and the existing literature support the positive relation between them (see Dornbush 1992; Krueger 1997). Empirical evidence from the Asian Tigers appeared to suggest that liberal trade policies are also growth-enhancing. For instance, Desai and Potter (2008) argued that growth performance of the so-called gang of four: Hong Kong, Taiwan, Korea and Singapore were traced to high level of trade liberalization.

Nigeria over the years has opened her borders for trading with high imports and exports of goods and services. For instance, non-oil imports trade grew from a mean value of N36.55 billion; representing 96.8 percent of aggregate import into Nigeria during the period 1970-1979, to N118.36 billion; representing 93.4 percent of aggregate import trade over the period 1980-1989, N3.48 trillion for the period 1990-1999; representing 79.9 percent of total import demand and N19.33 trillion; representing 82.0 percent of aggregate imports demand over the period 2000-2008. Presently, value of Imports for goods and services in Nigeria stood at \$85,354,940,000 as at 2014. In similar vein, Nigeria's exports grew to about 9.9 percent year-on-year basis to N747760 million in last quarter of 2016. Considering the third quarter of the year, exports decreased by 1% from a year earlier to N2309 billion. The country exported goods mainly to India, the USA, France and Spain. Exports in Nigeria averaged N370305.54 million from 1981 until 2016, reaching an all-time high of N2648881.76 million in December of 2011 and a record low of N322.93million in February of 1983. Nigeria exports mostly primary products (oil and natural gas) and its accounts for over 90 percent of export trade. In 2014, 43% of total sales

went to Europe; 29% to Asia; 13% to America and 12% to Africa.

Given these high level of trade (imports and exports) by Nigeria over the years and the sluggish growth recorded in the five decades of her political history (growth rate in Nigeria averaged 4.3 per cent 1980 – 2015), it is necessary to examine the extent to which trade liberalization has affected the performance of the economy. Hence this study seeks to determine the trend in trade and analyse the extent to which trade liberalization has affected economic growth in Nigeria. The study continued by reviewing some relevant literature on the topic, providing the methodology for achieving the objectives of the study, analyse and discuss the results of the findings and provide the concluding remarks for the study.

2. Literature Review

(a) Theoretical Literature

The four (4) related theories reviewed in this research are as follows:

- i. Heckscher-Ohlin Model of Resources and Trade;
- ii. Specific Factors and Income Distribution Model;
- iii. Export Led Growth Hypothesis; and
- iv. Ricardo's Theory of Comparative Advantage.

i) Heckscher-Ohlin Model of Resources and Trade

A theory credited to Eli Heckscher and Bertil Ohlin, Heckscher-Ohlin model tried to provide an explanation to the rationale for trade between countries. The theory emphasized on relative abundance of resources among countries and account for the need for trade between countries. The preceding shows that comparative advantage follows through from a mix of a nation's abundant resources and technology adopted in harnessing the resources and also for production (Tebekew, 2014).

The model is built on the following presumptions:

- i) A nation produces only two commodities i.e. X (Food) and Y (Textiles);
- ii) A nation requires only two inputs to produce its output i.e. Input A ('Land' also referred to as Territory) and Input B (Labour)

Moreover, the desired output requires more relative production input. For instant, the production of food will require more land than labour; hence, a territory-intensive production process (Tebekew, 2014). Based on the above presumptions of this model, the authors explained that a country tend to focus on producing output that utilizes its abundant resources. Countries tend to exhibit efficiency when goods produced are made from resources with which they have in abundance (Mahajan, 2017).

Moreover, the Heckscher-Ohlin model also attributes specialization among nations to trade. A country will specialize on producing a commodity with which it has abundance resources to produce and import commodities it has limited resources to produce. For example, a country with abundance of land (i.e. territory) will specialize in the production of food since the production of food is territory-intensive (Tebekew, 2014).

ii) Specific Factors and Income Distribution Model

This model was authored by Paul Samuelson and Ronald Jones. The model provided a broad explanation on factors responsible for trade. Three (3) factors were specifically identified by the authors. They are: a) Labour (L); b) Capital (K); and c) Territory (T) or Land.

Countries that has abundant territory of land and labour would specialize on the production of commodities like cash crops and other types of food irrespective of the price. Also, a country with abundance of labour and capital will produce more manufactured commodities. Thus, labour exhibits mobility between both sectors; while territory or land and capital proved to be the specific factors. Holding other inputs constant, an increase in the unit of capital will lead to a rise in the marginal productivity from the manufactured sector. Alternatively, a rise in the supply of land will lead to a fall in manufacturing output but a rise in the production of food (Tebekew, 2014).

An integrated global economy is created when countries trade among themselves. For example, if two countries (A as a producer of manufactured goods and B as a producer of food) choose to trade, the aggregate food and manufactured goods consumed by both countries is a summation of the food and manufactured goods produced by both countries. Hence, the value of goods consumed by a country that does not engage in trade with other country (ies) equals its production. The benefits of exports for a country obviously outweighs imports (Mahajan, 2017).

iii) Export Led Growth Hypothesis

This hypothesis establishes a strong relationship between the performance of an economy and its level of export. Expansion of export was postulated to be one of the main predictor of the growth in each economy (Echekoba et al, 2015). The export-led hypothesis holds that overall growth of different economies depends, not on the level of capital and labour it has in abundance, but on expansion in export. This hypothesis is premised, among others, on the position of Feder (1983) who stated that export expansion has the ability to generate positive externalities on non-export sectors as these sectors are made to become efficient in their managements of resources and implementation of production technique. Moreover, the works of Helpman and Krugman (1985) also provided a rationale for the export-led growth hypothesis. For these authors, expansion in export will yield increase in productivity. Furthermore, the

hypothesis may have also relied on the work of Esfahani (1991) which associated increase in export with access to foreign exchange and international market (Echekoba et al, 2015).

iv. Ricardo's Theory of Comparative Advantage

According to Ricardo's comparative advantage theory, global trade openness is seen as the panacea for efficiency. The theory emphasized the importance of external trade and investment from abroad in the growth of each nation. For the neo-liberals, trade liberalization promotes both local and international competition. The preceding position is based on the expectation that entry and competition of local firm in foreign markets will lead to efficiency, improvement in the quality of goods, and a reduction in the cost of production. The theory further mentioned that entry into foreign market will require the acquisition of new and modern technology for effective competition at the international market (Adewuyi 2000; Thirlwall 2000).

The central plank in the theories of trade reviewed is that countries are not sufficiently endowed with all the resources needed for growth and development. Hence for a country to grow, trade is necessary in order to produce and sell commodities it can produce at a relatively cheaper cost or has strong technical capacity to produce and import goods it cannot produce at a cheaper cost or has less technical ability to do so. In this process of trade, countries produced efficiently and earn higher income/growth. The theories reviewed above also provide the theoretical basis and evidence for a priori expectations for the selected variables as well.

(b) Empirical Review

The existence of empirical evidence on the subject of this study also provides the authors with empirical fact on the validity of the theoretical expectations in the case of group of countries and specific country cases. Empirical evidence on the impact of trade liberalization on the economy of different countries abounds. Hence, this section focused on a review of these empirical evidence starting from other countries of the world and then down to the country of focus for this study i.e. Nigeria.

The effect of trade liberalization on the growth of selected East Asian countries was examined by Jin (2000) using the VAR econometric technique. The Impulse Response Functions (IRF) and Forecast Error Variance Decomposition (FEVD) results shows that increase in liberalization did not significantly promote growth in the selected countries. Moreover, economic growth tends to respond positively to fiscal and foreign policy shocks.

Using the statistical technique of D-in-D (i.e. difference-in-difference) in the exploring the heterogeneity level of selected thirty-seven (37) already liberalized economies of the world, Morgan and Kanchanahatakij (2008) found no

significant relationship between their liberalization policies and economic growth. Hence a study that investigate the effect of liberalization on economic growth for specific country was recommended.

The effect of trade on poverty level in liberalized LDCs was investigated by McCulloch (2005). A linkage relationship from liberalization to economic growth and to poverty reduction was established from the two approaches adopted by the author. The author observed that the more liberalized an economy is, the more chances of an increase in the per capita income in the economy.

In a study that reviewed trade policy literature to confirm the existence of empirical evidence on the relationship between trade liberalization and economic growth, Edwards (1993) identified two categories of empirical investigations namely the one involving many countries and the other involving two countries. The review found that while studies involving many countries have been found adequate in the provision of vital detail and influencing political decisions.

Again Edwards (1998) used cross-sectional data collected from selected ninety-three (93) countries to conduct a study that covered the period 1960 to 1990 and analysed the robustness of the relationship between liberalization and productivity. Using panel regression, the author found that each of the nine (9) selected indices for measuring liberalization has relative issues. Moreover, the study also found that growth in countries characterized by liberal trade policies proved to be faster than their counterpart with strict and protectionism trade policies.

Gundlach (1996) examined the magnitude of impact trade openness has on economic growth in selected developing countries. The study was premised on the growth theory of the neo-classical school of thought. With the assumption of partial capital mobility, the author found that physical capital's share in factor income determines the difference in the predicted convergence rates for open and closed economies. The study concluded that openness only doesn't impact significantly on economic growth. Rather the author mentioned that trade openness accompanied by productive factor accumulation accounts for the growth in especially developing countries.

Greenway et al (2002) used dynamic panel to investigate the effect of trade liberalization on the growth of developing countries (DCs). The study examined the effect of three (3) liberalization indicator variables on growth of the selected developing countries. Among others, it was found that per capita income did not respond favourably to trade liberalization. The authors concluded that liberalization in itself is not a final step but rather the first step to openness of an economy. Hence, until improvements in other sectors like transport and communication after some years of

liberalization, growth will not be affected positively and significantly by just trade liberalization.

The role of trade liberalization in the growth of selected African countries was investigated by Mwaba (2000). From results derived in the study, the author concluded that though openness of a country's economy may be a necessary step to enhancing growth, it is not sufficient for achieving positive growth rate. Rather, friendly trade restriction and lower import and export tariffs would enhance a positive net international trade and economic growth.

Shafaeddin (2005) examined how developing countries that liberalized their economies beginning in the early 1980 has fared in terms of performance since the reforms. The result shows that the performance of the one developing countries varied from the other. Based on the findings, the author concluded that a certain level of maturity is required for liberalization to thrive well and enhance growth.

Ebrill et al (1999) examined the implication of trade liberalization for revenue generation in a study conducted for the International Monetary Fund (IMF). The study found that the level of revenue generated is significantly determined by the level and form of trade liberalization policy implemented in the economy under review. The study concluded, among others, that a trade liberalization policy is characterized by high tariffs custom duties or tax will surely hamper on the level of revenue generated. For Krugman (1990), developing countries are characterised by a labour intensive service, agriculture and manufacturing sector and low per capita income. Hence, the need for trade liberalization to ensure the flow of goods from other countries to help support output from the small markets.

Frankel and Romer (1999) examined the impact of trade on income generation among some selected countries. Employing the econometric technique "cross country regression analysis", the study found that trade has a significant, large and positive impact on income generated in those countries.

The role trade liberalization played in the growth of export, import, and per capita income of selected countries under the membership of Organization of the Islamic Conference (OIC) was examined by Ghani (2011). The study based the selection of member countries on the period of liberalization i.e. only countries that commenced trade liberalization in 1970s. Adopting a technique that factored in changes in countries over time, he found that a variation occurs in the effect of trade liberalization on the selected outcome variables from one country to another. Moreover, the study also found that, though the per capita income of all the countries responded positively to trade liberalization, trade openness was not improved by trade liberalization.

The effect of trade liberalization of the economic performance of Bangladesh from 1980 to 2010 was investigated by Manni and Ibne Afzal (2012). The estimated ordinary least square regression line showed that trade liberalization had a positive significant effect on GDP growth rate but an insignificant impact on inflation.

The growth in tax revenue accounted for by trade liberalization between the year 1970 and 2009 in Nigeria was examined by Nwosa et al (2012). The authors found that, among others, trade liberalization proved to be a positive and significant predictor of tax revenue from trade. Moreover, the study found a negative relationship between exchange rate and tax revenue from trade. The formulation and implementation of effective macroeconomic policy was recommended by the authors as a necessary action to improve the contribution of trade liberalization to tax revenue in Nigeria.

Using a dynamic equilibrium econometric technique to estimate a poverty model in their investigation, Nwafor et al (2007) selected, among others, trade liberalization as a predictor in Nigeria. The authors found that the effect of trade liberalization for different household type varies from one household type to the other. While a positive effect was found in the case of urban households, trade liberalization impacted negatively on rural households characterised by mainly agricultural production driven by land and labour.

Ogujiuba et al (2004) used the cointegration econometric technique to access the long-run effect of trade liberalization on economic growth in Nigeria. The authors found that trade openness (a proxy for trade liberalization) and economic growth and that unbridled openness could have implications for the growth of local industries, the real sector and government revenue.

Again, the effect of trade liberalization on economic growth during the Structural Adjustment Programme (SAP) period (starting from 1986) in Nigeria was investigated by Olowe and Ibraheem (2015). Using trade openness as a proxy for trade liberalization, the estimated OLS regression model showed that trade openness had a negative effect on economic growth under the Structural Adjustment Programme (SAP) period. Though the indicator variable SAP had a positive but insignificant impact on economic growth, trade liberalization did not contribute to growth. It had a negative and significant impact on economic growth in Nigerian under the Structural Adjustment Programme (SAP) period.

The OLS econometric technique was again used by Olaifa et al (2013) to estimate a model that tried to investigate the relationship between trade liberalization and economic growth in Nigeria from 1970 to 2012. A structural break analysis was also conducted to ascertain the effectiveness of the free trade policy on the Nigerian economy since it was

implemented in 1986. The authors found that economic growth had a long run relationship with trade liberalization. A significant structural break was also identified from 1986 to 2012 (the SAP period) implying that the free trade policy was a significant policy in the Nigerian economy.

3. Methodology

In order to achieve the objectives of this study, data on growth rate of GDP, oil import, non-oil import, oil export, non-oil export and exchange rate of the US dollar to the Naira was sourced from the World bank country reports and Central bank of Nigeria statistical bulletin.

Estimation Procedure

After describing the data using mean, minimum, maximum, standard deviation and graphs, the ordinary least squares (OLS) was also utilized in the analysis of the model being the best linear unbiased estimator. This is premised on the condition that the variables in the model in their behaviour conform to the assumption of the classical regression model. The stability test was conducted using the Augmented Dickey Fuller (ADF) and Philip-Perron (PP) to determine the unit roots characteristics of the variables in the model. The level of integration of the residual error term of a set of non-stationary time series aggregate should be zero (i.e $U_t \sim I(0)$) in order to qualify as an error correction model. The analysis was concluded with test for autocorrelation, autoregressive, normality and heteroskedasticity (sensitivity analysis).

The Autoregressive Distributed lags (ARDL) Bound Testing procedure

The results of the unit roots tests indicate that GDPR, the dependent variable was stationary at order one $i(0)$ while the independent variables were stationary at order one $i(1)$. This shows evidence of structural breaks. According to Feridun (2016), the conventional Johansen cointegration technique is applicable if all the underlying series are all $i(1)$. However, in the case where the presence of structural breaks

$$\Delta GDPR_{t-1} = \sum_{i=1}^n \alpha_0 \Delta \ln GDP_{t-1} + \sum_{i=1}^n \alpha_1 \Delta \ln OMP_{t-1} + \sum_{i=1}^n \alpha_2 \Delta \ln NOMP_{t-1} + \sum_{i=1}^n \alpha_3 \Delta \ln OEX_{t-1} + \sum_{i=1}^n \alpha_4 \Delta \ln NOEX_{t-1} + \sum_{i=1}^n \alpha_5 \Delta \ln EXR_{t-1} + \gamma_1 \Delta \ln GDPR_{t-1} + \gamma_2 \Delta \ln OMP_{t-1} + \gamma_3 \Delta \ln NOMP_{t-1} + \gamma_4 \Delta \ln OEX_{t-1} + \gamma_5 \Delta \ln NOEX_{t-1} + \gamma_2 \Delta \ln EXR_{t-1} + \varepsilon_t$$

For the parameter γ_i , $i=1,2,3,4,5$ are the corresponding long-run multipliers, whereas, for the parameter α_i , $i=1,2,3,4,5$ are coefficients of the short-run dynamic of the ARDL model. ε_t is serially uncorrelated stochastic term with zero mean and constant variance, and Δ is the first difference operator. After the confirmation of the long-run relationship amongst the variables, then we shall proceed to estimate the following long-run model for economic growth:

introduces uncertainty as to the true order of integration of the variables, the autoregressive distributed lag (ARDL) bounds testing procedure introduced by Pesaran and Pesaran (1997), Pesaran and Shin (1999), and Pesaran et al (2001) is preferred. This technique is advantageous because it yields valid results regardless of whether the underlying variables are $i(1)$ or $i(0)$, or a combination of both. The autoregressive distributed lag (ARDL) model used in this study is:

$$GDPR_t = f(OMP_t, NOMP_t, OEX_t, NOEX_t, EXR_t) + U_t \quad 1$$

In the process of estimation, parameters and a random term "U" are introduced into the model to capture variables not included in the model but influenced economic growth. Hence, equation 1 above could be stated thus:

$$GDPR_t = \alpha_0(OMP_t) + \alpha_1(NOMP_t) + \alpha_2(OEX_t) + \alpha_3(NOEX_t) + \alpha_4(EXR_t) + \varepsilon_t \quad 2$$

In order to estimate the above model using ARDL technique, equation (2) could be transformed into a log - linear form by taking the natural log of the variables as follows:

$$GDPR_t = \alpha_0 + \alpha_1 \ln OMP_t + \alpha_2 \ln NOMP_t + \alpha_3 \ln OEX_t + \alpha_4 \ln NOEX_t + \alpha_5 \ln EXR_t + \varepsilon_t \quad 3$$

Where: Ln = Natural logarithm, GDPR = growth rate of real GDP, OMP = oil import, NOMP = non-oil imports, OEX = oil export, NOEX = non-oil exports, EXR = exchange rate of the naira to the United States Dollar, U = stochastic term

$\alpha_1, \alpha_2, \alpha_3, \alpha_4,$ and α_5 are elasticities of oil imports, non-oil imports, oil exports, non-oil export, and exchange rate in Nigeria. Apriori expectation is that $\alpha_1 < 0, \alpha_2 < 0, \alpha_3 > 0, \alpha_4 > 0,$ and $\alpha_5 < 0.$

The error correction model of ARDL framework for the variables as shown in equation (i) is given thus:

$$GDPR_t = \beta_0 + \theta_1 \ln GDPR_{t-1} + \theta_2 \ln OMP_{t-1} + \theta_3 \ln NOMP_{t-1} + \theta_4 \ln OEX_{t-1} + \theta_5 \ln NOEX_{t-1} + \theta_6 \ln EXR_{t-1} + \varepsilon_t \quad \dots 5$$

In choosing the ideal lag length for the ARDL model, we refer to literature and the rules to find out the number of lags to be used. Though, there are several selections criteria that may be used to determine the order of the ARDL model e.g the adjusted R^2 , the Schwarz Bayesian Criterion (BIC) and the Akaike Information Criterion (AIC). However, given our

sample size, we used the Akaike Information Criterion (AIC) to determine the lag length of the ARDL model. Also

in order to estimate the short-run dynamics, the error correction model below was formed:

$$\Delta GDP R_{t-1} = \sum_{i=1}^n \alpha_0 \Delta \ln GDP R_{t-1} + \sum_{i=1}^n \alpha_1 \Delta \ln O M P_{t-1} + \sum_{i=1}^n \alpha_2 \Delta \ln N O M P_{t-1} + \sum_{i=1}^n \alpha_3 \Delta \ln O E X_{t-1} + \sum_{i=1}^n \alpha_4 \Delta \ln N O E X_{t-1} + \sum_{i=1}^n \alpha_5 \Delta \ln E X R_{t-1} + \sum ECM_{t-1} + \varepsilon_t \text{-----6}$$

Where: α_i $i=1,2,3,4,5$ are the short-run parameters. ECM is the lagged error correction term estimated from the long-run dynamics. It symbolizes the adjustment in the coefficient,

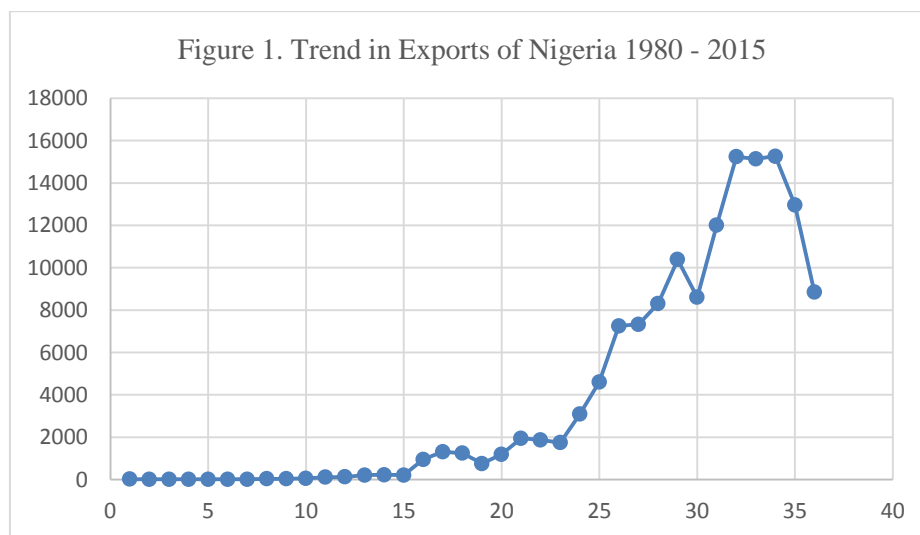
and it is always negative and statistically significant in order to confirm the existence of cointegration relationship.

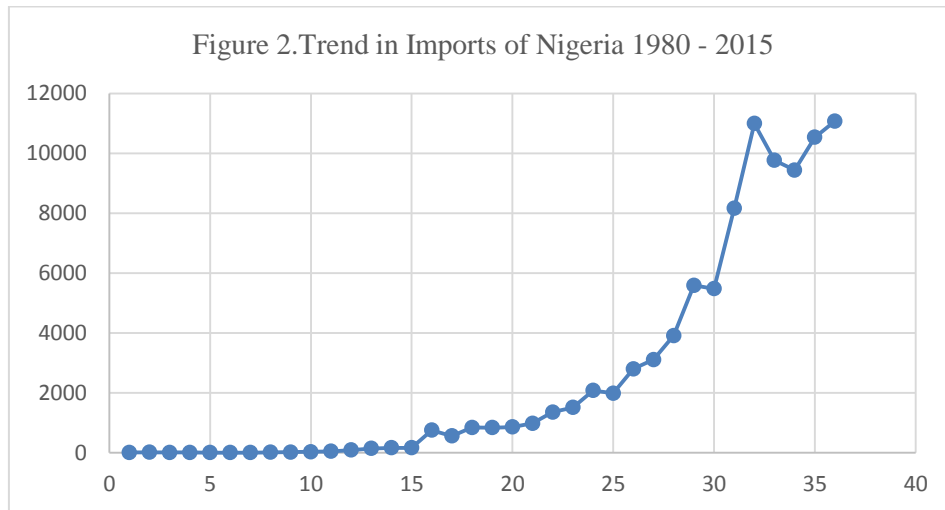
Table 1. Descriptive Statistics

Variable	GDP R	OMP	NOMP	OEX	NOEX	EXR
Mean	4.368889	595.4083	1999.053	3717.828	200.8861	70.24561
Median	4.805000	171.4000	656.2500	1191.000	24.05000	22.25850
Maximum	11.36000	3064.300	9350.800	14323.20	1130.200	193.2792
Minimum	-6.630000	0.100000	5.100000	7.200000	0.200000	0.550000
Std. Dev.	3.769633	894.7600	2824.833	4857.493	334.4714	66.59920
Skewness	-0.567837	1.621838	1.380868	1.068115	1.575846	0.257309
Kurtosis	3.587653	4.448955	3.499281	2.671394	3.988227	1.343230
Jarque-Bera	2.452637	18.93137	11.81470	7.007186	16.36464	4.514576
Probability	0.293371	0.000077	0.002719	0.030089	0.000280	0.104634
Sum	157.2800	21434.70	71965.90	133841.8	7231.900	2528.842
Sum Sq. Dev.	497.3548	28020843	2.79E+08	8.26E+08	3915489.	155240.9
Observations	36	36	36	36	36	36

Result in table 1 shows that Nigeria recorded an average economic growth of 4.3%, maximum growth rate of 11.3%, minimum growth rate of -6.6% and standard deviation of 3.8% during the period 1980 – 2015. Oil import on an average stood at N565.1billion with a minimum value of N0.1billion, maximum value of N3064.3billion and standard deviation of N886.3billion. During the period under review, non-oil imports on the average stood at N1789.0billion with minimum value of N5.1billion, maximum of N8323.7billion and standard deviation of N2565.0billion. Oil export in Nigeria during the period averaged N3590.2billion with minimum oil export value of N7.2billion, maximum value

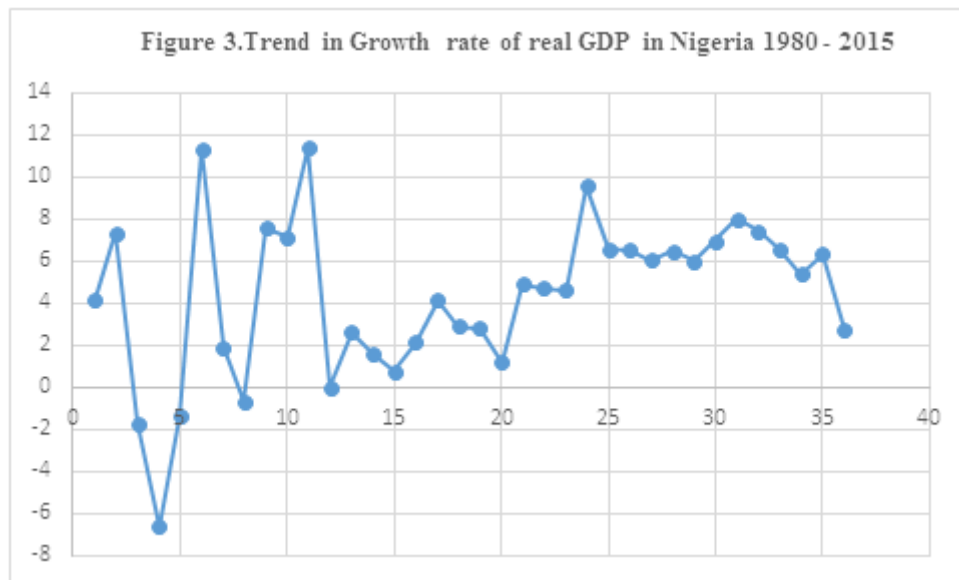
of N14323.2billion and standard deviation of N4866.8billion. Nigeria’s non-oil export has an average value of N187.7billion, minimum value of N0.2billion, maximum value of N1130.2billion and standard deviation of N329.8billion. Exchange rate of the naira to the United States Dollar stood at N66.7 on an average with minimum rate of N0.56 to \$1, maximum rate of N158.6 to \$1 and standard deviation of N64.1 to \$1. The trend in the variables show an increasing rate except that of economic growth (GDP R) which has negative minimum value. The behaviour of the variables was further analysed using line graph as shown in figure 1.





The graph figure 1 and 2 shows that exports and imports have been rising over the period. Nigeria is a net exporter of primary commodities like crude oil and gas and an importer

of refined petroleum products, raw materials and consumables. This development has spurred both imports and exports values.



The graph in figure 3 demonstrates that economic growth fluctuated seriously during the period under investigation. Though positive in most years, the growth rate of GDP was

negative in most years (1982, 1983 & 1986). This implies, the economy contracted in this years. Also the high growth rate recorded in most years have been without development as poverty and unemployment continue to rise.

Table 2: Unit Root Tests Result

Augmented Dickey Fuller (ADF) Test Statistic						Philip-Perron (PP) Test Statistic				
Variable	ADF Statistic	1%	5%	10%	Decision	PP Statistic	1%	5%	10%	Decision
GDPR	-4.221965	-3.632900	-2.948404	-2.612874	i(0)	-4.141762	-3.632900	-2.948404	-2.612874	i(0)
Log (Omp)	-6.899154	-3.639407	-2.951125	-2.614300	i(1)	-6.892795	-3.639407	-2.951125	-2.614300	i(1)
Log (Nomp)	-7.320029	-3.639407	-2.951125	-2.614300	i(1)	-7.223385	-3.639407	-2.951125	-2.614300	i(1)
Log (Oex)	-5.790116	-3.639407	-2.951125	-2.614300	i(1)	-5.789090	-3.639407	-2.951125	-2.614300	i(1)
Log (Noex)	-6.477332	-3.639407	-2.951125	-2.614300	i(1)	-7.517711	-3.639407	-2.951125	-2.614300	i(1)
Log(Exr)	-5.257780	-3.639407	-2.951125	-2.614300	i(1)	-5.257780	-3.639407	-2.951125	-2.614300	i(1)

The unit root test estimated in table 2 show that only the dependent variable attained stability at level while the independent variables, oil import (OMP) non-oil import (NOMP), oil export (OEX), Non-oil export (NOEX) and exchange rate (EXR) were all stationary at first difference.

This implies that economic growth was stationary at order zero $i(0)$ while the independent variables were stationary at order one $i(1)$. The variation in the order of stability in the variables necessitate the use of ARDL in the estimation of the long run relationship among the variables and the error correction model.

Table 3: ARDL Bounds Test

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	8.396466	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Table 3 displays the calculated F- statistics (F-statistic = 8.397), showing that the null hypothesis of no long run relationship can be rejected at all critical levels. This is because the estimated bound test (F-calculated) is higher than the upper bound critical value of 4.68 as tabulated in Pesaran et al (2001). This implies that there exists a long run

relationship or cointegration between economic growth and trade liberalization in Nigeria. After establishing the cointegration relationship, we proceed to estimate the long run coefficients by estimating an ARDL of the order 4,3,4,4,4,1.

Table 4: Estimated Long-Run Coefficients of ARDL (4,3,4,4,4,1)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(OMP)	-3.483959	0.419286	-8.309256	0.0002
LOG(NOMP)	-1.165404	0.997156	-1.168728	0.2868
LOG(OEX)	1.845300	0.731625	2.522195	0.0452
LOG(NOEX)	2.731631	0.233173	11.715039	0.0000
LOG(EXR)	1.974214	0.234946	8.402838	0.0002
C	-2.453077	1.843522	-1.330647	0.2316
$R^2 = 0.98$; R^2 adjusted = 0.91; F- statistic = 14.2 (0.0017) Durbin Watson = 3.3				

Cointeq = GDPGR - (-3.4840*LOG (OMP) -1.1654*LOG (NOMP) + 1.8453

***LOG (OEX) + 2.7316*LOG (NOEX) + 1.9742*LOG (EXR) -2.4531)**

The long-run result estimated in table 4 indicates that the overall growth model is well fitted as the explanatory variables explained over 91 percent (R^2 –adjusted) variation in economic growth. The result also shows that oil import exhibits a negative and significant relationship with economic growth. This implies that oil import significantly retarded economic growth. This result is in consonance with theoretical apriori expectation and theory. Nigeria imports final product of oil which has no value addition, this has depleted the productive and revenue base of the economy.

According to the CIA World fact book, Nigeria spent more than N100billion monthly on petroleum products imports as at 2015. Also OEC statistics revealed that in recent years imports are led by Refined Petroleum which represent 15% of the total imports of Nigeria, followed by automobile vehicles, which account for 3.35% of total imports. The balance covers other products like food, machineries and other consumables.

Changes in non-oil import is also negatively related to economic growth but insignificant at 5 percent level. This result implies that non-oil imports diminishes economic growth. This result also conforms with the theoretical apriori expectation. Imports generally constitute leakage to the economy and income level. According to OEC statistics (2015), In 2014 Nigeria imported \$52.3B, making it the

52nd largest importer in the world. The report also shows that for the last five years the Nigeria's imports have risen at an annual rate of 3.2%, from \$44.6b in 2009 to \$52.3b in 2014. The report by the OEC also show that Nigeria is the 38th largest export economy in the world and the 125th most complex economy according to the Economic Complexity Index (ECI). The leading trading partners of Nigeria in terms of import are China with total yearly imports value \$13.6B, this is followed by the United States with imports value of \$5.54B, the Netherlands with total imports value of \$3.4B, India with import value of \$2.98B and Belgium-Luxembourg the least with total imports value of \$2.59B.

Oil and non-oil exports were found to be positively and significantly related to economic growth. This result is in tandem with theoretical expectation and indicates that increases in oil and non-oil exports stimulated economic growth in Nigeria. Nigeria in 2014 realized \$99b from exports and spent \$52.3b on imports, resulting in a positive trade balance of \$47.4b. In 2014 the GDP of Nigeria was \$568b and its GDP per capita was \$5.91b. The leading exports commodity in Nigeria are crude oil (\$74b), Petroleum Gas (\$13.2b), Refined Petroleum (\$4.23b), Pyrophoric Alloys (\$1.9b) and Special Purpose Ships (\$1.25b), using the 1992 revision of the HS (Harmonized System) classification. Its top imports are Refined Petroleum (\$7.83b), Cars (\$1.75b), Wheat (\$1.46b), Motorcycles (\$877m) and Iron Structures (\$780m). The leading export countries and trading partners of Nigeria are India with total export values of \$15.2B, followed by Spain with export value of \$9.7B, Brazil \$8.77B, the Netherlands \$5.59B and the lowest France with export value of \$5.48B.

Exchange rate is positively and significantly related to economic growth from the long run ARDL model result. This implies that changes in exchange rate significantly spurred economic growth. This result deviated from theoretical expectation. Though exchange rate depreciation makes exports cheaper and imports expensive hence the rise in exchange rate should stimulate export and growth, the Nigeria's case is different. The country depends so much on crude oil for export hence earns very little from export trade due to shocks and fluctuation that most times characterized the crude oil trade in the international market.

The Granger representation theory posited that when variables are cointegrated, there must also exist an error correction model (ECM) that shows that short run dynamics of the cointegrated variables towards their equilibrium values. The result of the error correction model reported in table shows that the error term is negative and significant. The error term coefficient of -0.858137 shows an evidence of speedy adjustment towards long run equilibrium (i.e about 86 percent disequilibrium is corrected on yearly basis by changes in economic growth). This implies that if there is a shock, the long-run equilibrium will return to its steady state easily. The high of the coefficient of the error term also indicates that it will take very short time to restore the steady-state relation if the system is distorted. Also, from equation 6, both the short run and long run results yielded the same sign for the variables which signifies consistency in the effects of the independent variables on economic growth in Nigeria.

Table 5. Error Correction Estimates of the ARDL Model

Dependent Variable: GDPR				
Method: Least Squares				
Sample (adjusted): 1985 2015				
Included observations: 31 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPR(-1)	-0.515749	0.140594	-3.668356	0.0214
GDPR(-2)	-0.886608	0.165281	-5.364232	0.0058
GDPR(-3)	-0.468584	0.122832	-3.814829	0.0189
GDPR(-4)	-0.461824	0.164159	-2.813275	0.0482
LOG(OMP)	-7.157209	0.721450	-9.920583	0.0006
LOG(OMP(-1))	-0.554540	0.935993	-0.592462	0.5854
LOG(OMP(-2))	-1.384939	0.809940	-1.709929	0.1625
LOG(OMP(-3))	-2.888495	0.860893	-3.355230	0.0284
LOG(NOMP)	-3.280844	1.907459	-1.720008	0.1605
LOG(NOMP(-1))	4.717288	2.017032	2.338727	0.0795
LOG(NOMP(-2))	-0.382967	1.589453	-0.240943	0.8214

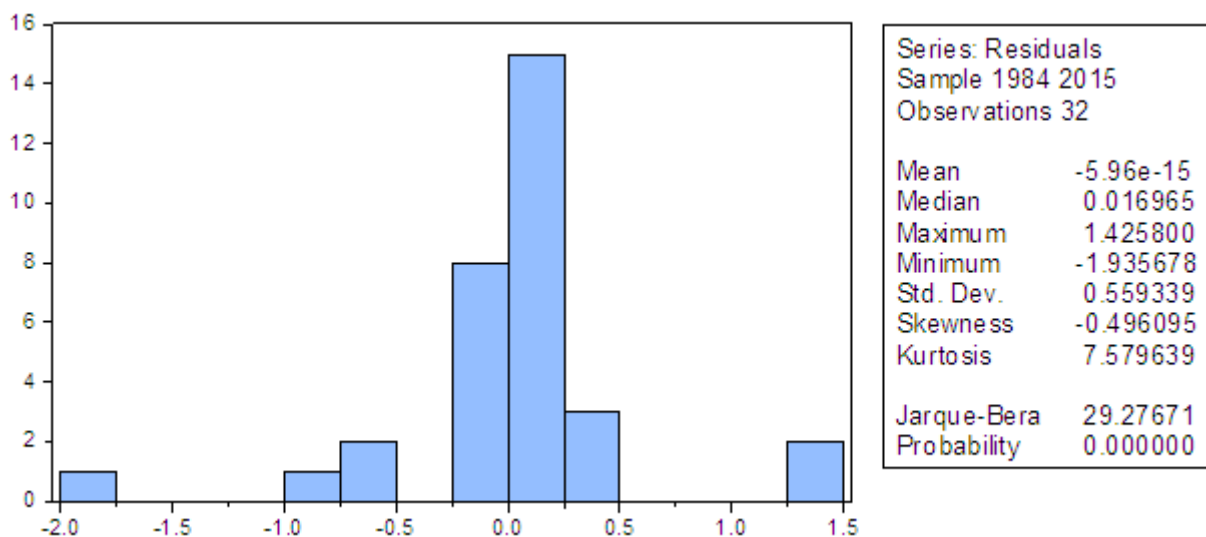
LOG(NOMP(-3))	-1.371770	1.567015	-0.875403	0.4308
LOG(NOMP(-4))	-2.848777	1.473669	-1.933118	0.1254
LOG(OEX)	8.665954	1.483370	5.842071	0.0043
LOG(OEX(-1))	-3.936523	1.861509	-2.114694	0.1019
LOG(OEX(-2))	4.792857	2.158900	2.220046	0.0906
LOG(OEX(-3))	-0.808134	1.602057	-0.504435	0.6405
LOG(OEX(-4))	-2.845875	1.205911	-2.359937	0.0777
LOG(NOEX)	3.230431	1.064507	3.034674	0.0386
LOG(NOEX(-1))	1.794236	1.079465	1.662153	0.1718
LOG(NOEX(-2))	-0.447696	0.863181	-0.518659	0.6314
LOG(NOEX(-3))	5.566467	1.120538	4.967674	0.0077
LOG(NOEX(-4))	-1.012316	0.885573	-1.143120	0.3168
LOG(EXR)	4.660385	1.908159	2.442347	0.0710
LOG(EXR(-1))	1.940941	1.683136	1.153169	0.3131
ECM(-1)	-0.858137	0.365372	-2.348665	0.0586
C	-9.032568	5.045687	-1.790156	0.1479
R-squared	0.986116	Mean dependent var		5.015806
Adjusted R-squared	0.895869	S.D. dependent var		3.081617
S.E. of regression	0.994417	Akaike info criterion		2.520922
Sum squared resid	3.955460	Schwarz criterion		3.769879
Log likelihood	-12.07429	Hannan-Quinn criter.		2.928051
F-statistic	10.92688	Durbin-Watson stat		2.520101
Prob(F-statistic)	0.015701			

Sensitivity Analysis and Stability Tests

Table 6. Diagnostics Test

Serial Correlation LM Test	F(2,4) 6.609993	0.0540
Functional form	F(1,5) 0.197124	0.6756
Heteroskedasticity	F(25,6) 1.497096	0.3238

Figure 4. Normality Test



The empirical estimations for autocorrelation, autoregressive, normality and heteroskedasticity (sensitivity analysis) are reported above to test the following null hypotheses:

- There is no serial correlation.
- There is no functional form misspecification.
- There is no heteroscedasticity
- There is no non-normal error.

The results of the above tests show that the short-run model passed the diagnostic tests. The results revealed that there is no trace of autocorrelation at 5% level of significance and that the model passes the test for normality, there is also evidence to show that the error term is normally distributed.

The test also indicates that there is no existence of heteroscedasticity in the model

In testing the stability of the long-run coefficients along with the short-run dynamics, the recursive residual and cumulative sum (CUSUM) were used. A graphical illustration of recursive residual and CUSUM as shown in Figures 5 and 6. As shown in the graphs, the recursive residuals and CUSUM lines stayed within the 5 percent critical bound. As depicted in figure 5 and 6 neither the recursive residual nor CUSUM plots across the 5 percent critical lines, hence these statistics prove the stability of the long-run coefficients of the regressors that have an effect on the economic growth in Nigeria.

Figure 5. Recursive Residual Test

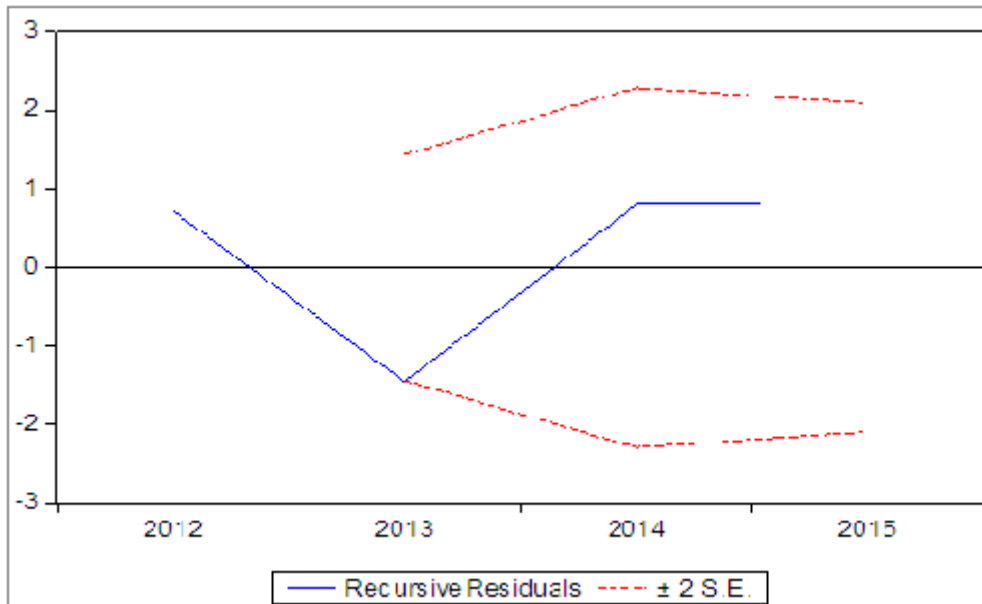
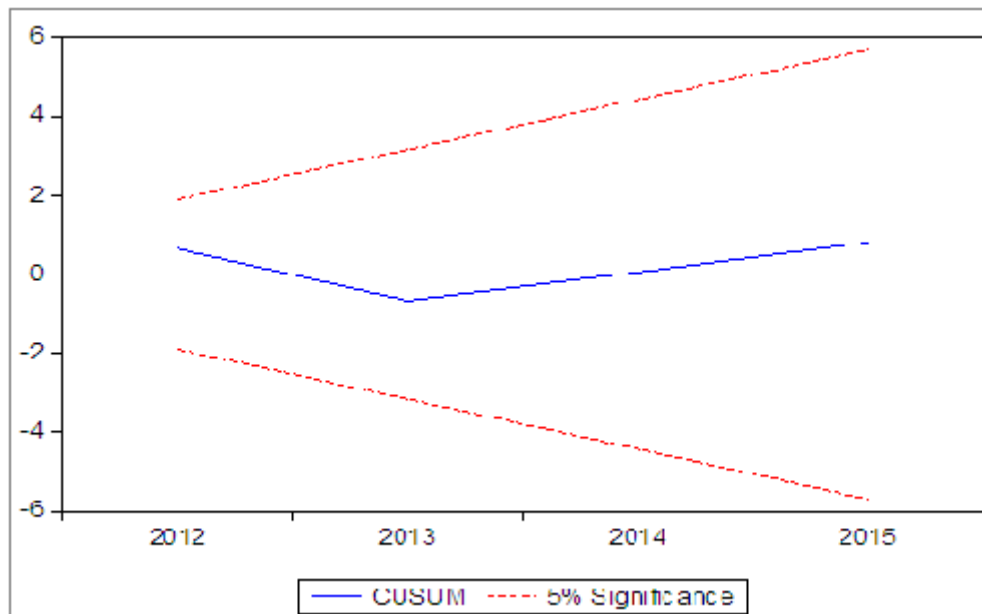


Figure 6. CUSUM Test



3. Concluding Remarks

This study investigated the impact of trade liberalization on economic growth in Nigeria. In order to achieve its objectives time series data were used and analysed using the Autoregressive Distributed Lag model (ARDL). Findings from the study revealed that oil export and non-oil import impacted positively and significantly on economic growth both in the short and long runs. The results also show that oil and non-oil imports retarded economic growth in both short and long run periods. Specifically, oil import was found to significantly diminished economic growth in Nigeria. Nigeria imports refined petroleum products hence spends huge financial resources to finance its imports. This has affected the economy negatively as funds meant for other developmental purposes are spent on petroleum products importation. Based on these findings, the study concludes that Nigeria has gained very little from trade liberalization due to poor local capacity in the production of basic goods which trigger imports, depletes domestic financial resource and hampered economic growth. The paper therefore suggests increase in oil export by providing conducive environment for oil operations, improvement in non-oil export by diversifying the products base of the economy and building local capacity in oil exploration and refining in order to end oil imports as possible strategies of making trade liberalization profitable in Nigeria.

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