TRADE LIBERALIZATION AND ECONOMIC GROWTH IN NIGERIA; A COINTEGRATION ANALYSIS

Felix Gbenga Olaifa[1]*, Kolawole Subair[1], Musa Ilias Biala[1]

[1]Kwara State University, Email: deleconns@yahoo.com, felix.olaifa@kwasu.edu.ng.

KEYWORDS	ABSTRACT
Openness, trade liberalization, economic growth and structural change.	Trade liberalization is one of the most controversial policies in international economics and finance. Copious of arguments have been put forward about if free trade and reduction of trade barriers will help the economy or not. Those in favour of the policy believe that it can stimulate economic growth of African economies while others maintained that trade liberalization may not provide positive contribution to long run growth of African economies. This study adopts the ordinary least squares in estimating the influence of trade liberalization on economic growth in Nigeria between1970 and 2012 with a view to examining whether a long term relationship exists between the two and also to check for structural change that may have occurred with the implementation of a free trade regime in 1986.Trade liberalization was conceived as openness and proxied as the ratio of total trade to GDP. Time series data sourced from the World Development indicator (WDI) of the World Bank and the Central Bank of Nigeria (CBN) statistical bulletin and annual reports were analysed. Result shows that liberalization supports economic growth in Nigeria with an evidence of a long run relationship. Strong evidence was found to support a structural change taking place in 1986 with the adoption of free trade policy. However export was reported to be negatively related to growth. The study concluded by recommending that an enabling environment that will engender further growth such as better infrastructural base, adequate financing support adherence to international best practice in export and sound institutional structure be put in place for sustainability.

* Corresponding Author: FELIX GBENGA OLAIFA. +2347031942274 E-mail Address: deleconns@yahoo.com, felix.olaifa@kwasu.edu.ng

1. INTRODUCTION

Trade liberalization is central to the Structural Adjustment Programme implemented by most countries in sub-Saharan Africa including Nigeria. According to Effiom*et al* (2011), the corner stone of the SAP induced policy was the opening up of domestic economies to face increased competition in order to ensure efficiency in resource use, removal of wastages, elimination of persistent misalignment in the external and domestic sectors and a general redirection of the economy to the path of recovery and growth. Trade liberalization is one of the most controversial policies in international economics and finance. The relationship between open trade and growth has been the subject of numerous theoretical and empirical studies (Edward, 1992; Chaudhry*et al.,* 2010; Ersoy and Deniz, 2011; Sakyi, 2011). This is because in a competitive environment prices get lower and products become diversified through which increased welfare emerges. Gains from specialization and efficiency are also further advantages of economic openness, therefore it is quite reasonable that economies generally desire to be economically open.

The growth of the industrial sector in Nigeria in the 1970s was the outcome of a policy of import substitution (Ayorinde and Olayinka, 2012), such policy harmed export partly through the increasing overvaluation of the domestic currency, partly through the encouragement of low return investments by preferential credit policies. Exposure to world prices generated a process of competitive selection in which some firms could not survive because they owe their existence largely to previously sheltered markets or subsidized input supplies.

In this study an empirical investigation of the effect of trade liberalization on economic growth using Nigerian data was carried out. Also carried out was a test for its impact on the growth trajectory via a structural change test which is an area often not considered by most studies. The study is therefore structured thus: section one is the introduction, section two covers literature review, methodology of the study is stated in section three, section four presents results and discussions while section five concludes and presents recommendations.

2. LITERATURE REVIEW

Economic theory traditionally considers trade liberalization to be the reduction or complete removal of existing trade restrictions and economists typically endorse it as allowing for efficiency (Elana, 2005). While removal of trade barriers is the most direct to free trade, many countries have chosen more gradual and flexible approaches. David Ricardo's theory of competitive advantage is central to the efficiency hoped to derivable from global trade openness. One of the enduring legacies of the new growth theory is its emphasis on the role of trade and foreign direct investment as the major drivers of economic growth. The neo-liberals have argued that liberalizing trade has the potentials to promote competition locally and globally. This argument is premised on the fact that in an attempt to enter the foreign market or compete with foreign firms, domestic exporting firms have to eliminate inefficiency and produce high quality goods at low cost. They can only do this by acquiring new and modern technology that will make them competitive at the international market (Adewuyi 2000; Thirlwall 2000).

Nwafor*et al* (2007) examined the effect of trade liberalization on poverty in Nigeria. Using dynamic equilibrium model, their result showed that liberalization has a positive implications for urban household while having negative implications for rural households whose income is land and labour dependent. Ogujiuba*et al* (2004) attempted to answer the questions; should Nigeria liberalize on all countries on all products or opt for a discriminatory approach through unilateral trade agreements?, where should Nigeria liberalize and on what issue should it be closed. Using thecointegration approach for assessing the validity of trade openness for Nigeria's long-run growth, their result showed that there is no significant relationship between trade openness and

economic growth and that unbridled openness could have implications for the growth of local industries, the real sector and government revenue.

In a seminar paper for the International Monetary Fund (IMF), Ebrill*et al* (1999) found that the revenue implications of trade liberalization depend significantly on the form of liberalization and the circumstances under which it occurs. More specifically, trade liberalization would have the fewest consequences on revenue mobilization provided that, (i) the initial position is highly restrictive, (ii) trade liberalization involves the tariffication of quantitative restrictions, (iii) trade liberalization includes such reforms as reduction in tariff dispersion, introduction of minimum tariff or the elimination of exemptions, (iv) trade liberalization is accompanied by reforms in customs and tax administrations which reduce the incentives to evade taxes and (v) trade liberalization is supported by sound macroeconomic policies that ensure liberalization is consistent with external balance. Krugman (1990) summarized the reasons why trade liberalization is good for growth in developing countries. Firstly, developing countries have production patterns that are tended towards labour intensive service, agriculture and manufacturing. People have low per capita income and markets are usually small.

Manni and Afzal (2012) assessed the impact of trade liberalization on Bangladesh economy between 1980 and 2010. Using the OLS technique their results indicated that GDP growth increased consequent to liberalization. Liberalizing trade however does not seem to affect inflation. Nwosa*et al* (2012) examined the relative contribution of trade liberalization trade tax revenue in Nigeria between 1970 and 2009. Their findings revealed that trade liberalization, public debt, gross domestic product and labour force impacted positively on trade tax revenue while exchange rate had a negative effect. They concluded that there is the need for appropriate macroeconomic policy to enhance trade liberalization in Nigeria. Frankel and Romer (1999) using a cross country regression analysis observed that trade has a quantitative large, significant and robust positive effect on income. Dollar and Kraay (2001) provide evidence to conclude that one third of developing countries of the world described as rapid globalizers did extremely well in terms of income growth and poverty reduction over the past two decades. These countries include Bangladesh, India and Sri Lanka in south Asia who have experienced large increases in trade and significant reduction in both tariff and non tariff barriers. In contrast the remaining two third of the developing world with large concentration in Africa did not experience trade expansion due to a lack of sufficient outward orientation performed poorly both in terms of growth and poverty reduction.

2.1 The Nature of Trade Liberalization in Nigeria.

The earliest form of liberalizing trade prior to the Structural Adjustment Programme (SAP) was the import substitution policies in the 1970s. This policy did not record much success as a result of an unconducive macroeconomic environment. The Adoption of SAP in 1986 however brought about the emergence of trade liberalization which was accompanied by the elimination of foreign exchange control to reflect economic realities, removal of price control and disbandment of commodity boards. The policy thrust of SAP in Nigeria was to create an environment conducive to enhance increased capital inflows, transfers, adoption of appropriate technologies and increase the share of trade revenue to government as another means of reducing the total reliance of the economy on crude oil revenue.

Table 1: Economic Indicators in the Pre and Post Liberalization Periods in Nigeria.

	Pre-Liberalization			Post-Liberalization			
Economic Indicators (In US $M)	**1973-77**	**1978-82**	**1983-86**	**1987-91**	**1992-97**	**1998-2002**	**2008-2012**
GDP Growth Rate (%)	4.8	4.2	2.1	6.4	2.5	2.6	7.2
GDP per capita	413	772	331	273	314	445	1443
FDI inflow	373	401	455	712	1.079 $B	2.140 $B	7.548 $B
Exchange Rate	0.50	0.67	1.01	9.90	21.88	102.10	139.30
Interest Rate	1.2	3.5	3.8	5.7	7.1	4.2	18.8
Trade % of GDP	11.2	19.8	13.4	27.0	45.2	42.7	52.1
Total Population	67	74	85	97	112	123	156
Inflation Rate	9.0	17.8	44.6	57.2	10.0	15.2	11.7

Source: World Development Indicators 2013.

The economic indicators in table 1 shows that trade as a percentage of GDP per capita rose from the pre-liberalization period but increased significantly in the post-liberalization period. Inflow of foreign direct investment also revealed a similar trend. Virtually all the indicators showed an upward trend from the pre liberalization to post liberalization period. Of interest however is the behaviour of interest rate which continued to rise even significantly in the post liberalization period. This negates the expectation that the availability of cheaper imported products ought to lower prices.

3. METHODOLOGY AND DATA

Time series data covering the period between 1970 and 2012 were collected from the Central Bank of Nigeria (CBN) from 1970 – 2012 for the following variables: openness, foreign direct investment, exchange rates and total population. Using the E-views 7, ordinary least squares, Johansen cointegration technique and Chows breakpoint test were the time series techniques employed for the analysis. The ordinary least squares regression to be estimated is presented below

$$GDP_t = b_o + b_1OPN_t + b_2FDI_t + b_3EXP_t + b_4IMP_t + u_t \qquad (3.1)$$

Where OPN is Openness (Import + export/GDP), FDI is Foreign Direct Investment, EXP is Export, IMP is Import, while u_t is the residual terms. A *priori*, $b_1 > 0$, $b_2 > 0$, $b_3 > 0$ and $b_4 > 0$.

The co-integrating relationship was estimated using Johansen Co-integration presented below:

$$Z_t = \sum_{i=1}^{m} A_i Z_{t-i} + E_t \qquad (3.2)$$

where Z_t contains all *n* variables of the model and E_t is a vector of random errors. This model can also be represented in the form of

$$\Delta Z_t = \sum_{i=1}^{m-1} \Gamma_i Z_{t-i} + \Pi Z_{t-m} + E_t$$

(3.3)

where

$$\Gamma_i = -I + A_1 + \ldots + A_i \quad (I \text{ is a unit matrix})$$

$$\Pi = -(I - A_1 - \ldots - A_m).$$

Matrix Π can be represented in the following form: $\Pi = \alpha.\beta$, where α and β are both *nxr* matrices. Matrix β is called the *cointegrating matrix* whereas matrix α is referred to as the *adjustment matrix* or the *feedback matrix*. The Johansen method does not only provide direct estimates of the cointegrating vectors but also enables us to construct tests for the order (or rank) of cointegration, *r* and there can be at most *r = N-1* cointegrating vectors. All time series used were tested for unit root using the Augumented Dickey Fuller (ADF) test.

4. EMPIRICAL RESULTS

The ADF test showed that all the variables were stationary after first differencing therefore all are I(1) series. The results are as summarized in table 2 below.

Table 2: Unit Root Test on Variables

Augumented Dickey-Fuller test			
Variables	ADF at level	ADF at 1st Difference	Status
GDP	0.833573	6.973197*	I(1)
OPN	-2.047507	-8.730712*	I(1)
FDI	0.072270	-7.805025*	I(1)
EXP	0.092243	3.187912**	I(1)
IMP	0.064518	3.613547*	I(1)

*/** denotes stationarity at 1% and 5% respectively.

With regard to the central objective of the study which is to examine the effect of trade liberalization on economic growth, appendix 1 presents the summarized result while the linear representation of the estimated ordinary least squares equation 3.1 is as thus;

GDP = 272339.8 + 998334.2OPN + 8.7556FDI − 2.7859EXP + 3.3357IMP

(1.1353)   (2.1031)   (3.2972)   (-5.3327)   (9.4739)

$R^2 = 0.8941$ $\overline{R}^2 = 0.8734$ F = 152.14   D-W = 2.26

(t- statistics are in parentheses)

The overall performance of the model as evidenced in the probability of the F-statistics is good. The R-squared and adjusted R-squared were high and statistically significant. The Durbin-Watson

statistics of 2.26 is not far from 2.0 and rules out the problem of autocorrelation. The results revealed a positive and significant relationship between openness and GDP. This implies that liberalizing trade has enhanced economic growth. Only export though significant, has a negative effect on the GDP. The negative relationship may not be totally unexpected because of the uncompetitive nature of Nigeria's manufacturing sector beset with inadequate infrastructural facilities coupled with unconducive macroeconomic environment. Foreign direct investment and import turned out with the expected signs and are also both statistically significant signifying that FDI and imports support growth in Nigeria.

The pairwise Granger Causality test result presented in table 3 further lend credence to the direct effect of openness in causing growth. This is because the null hypothesis of OPN not causing GDP was rejected as informed by the probability value.

Table 3: Pairwise Granger Causality Tests

Sample: 1970 2012

Null Hypothesis:	Lag	F-Statistic	Prob.	Decision
GDP does not Granger Cause OPN	1	0.02187	0.88354	ACCEPT
OPN does not Granger Cause GDP		0.01229	0.00450	REJECT

Next, the Johansen cointegration test was employed to investigate for possible long term relationship between the variables especially between openness and growth. The choice of Johansen cointegration is informed by the fact that all the series are integrated of order one. Our result (see appendix 2) shows that three variables are cointegrated with GDP. This is because at one percent critical value, the likelihood ratio is greater. When compared to the 5 percent critical value, all the variables are cointegrated. This implies the existence of a long run relationship between the variables. Lastly we employed the Chow's breakpoint test to investigate whether openness impact on the growth trajectory effective from 1986 as breakpoint date. The result as presented below (Table 4).

Table 4: Chow Breakpoint Test: 1986

Null Hypothesis: No breaks at specified breakpoints

Varying regressors: All equation variables

Equation Sample: 1971 2011

F-statistic	2.641247	Prob. F(5,31)	0.0281
Log likelihood ratio	4.035250	Prob. Chi-Square(5)	0.0040
Wald Statistic	3.206235	Prob. Chi-Square(5)	0.6682

The hypothesis of no structural change at breakpoint date was rejected as indicated by the probability of the F-statistics, suggesting that openness impacted on growth trajectory of Nigeria.

5. CONCLUSION

The quantitative analysis undertaken in this study suggests that openness has a favourable effect on economic growth of Nigeria. Export however was found to be negatively related to growth. This runs contrary to expectation and it calls for urgent measures in terms of policies targeted at boosting domestic production by revitalizing domestic industries, adherence to international best practices in export processing, export duties collection at ports, financing support for exporters and so on. The co-integrated behaviour of our explanatory variables suggests that, in the long run, movement in openness, foreign direct investment, export and import could be used to raise growth in Nigeria.

REFERENCES

Ayorinde, F. and Olayinka, O. (2002). Trade Liberalization and Technology Acquisition in the Manufacturing Sector: Evidence from Nigeria. *AERC Research Paper*, No. 117, August.

Chaudhry, I.S., Malik, A. and Faridi, M.Z. (2010). Exploring the Causality Relationship Between Trade Liberalization, Human Capital and Economic Growth: Empirical Evidence from Pakistan. *Journal of Economics and International Finance*, 2(8): 175-182.

Dollar, D. and Kraay, A. (2001).Trade, Growth and Poverty.*World Bank Development Research Group*. Washington D.C.

Ebrill, L., Stotsky, J. and Gropp, R. (1999).Revenue Implication of Trade Liberalization.*IMF Occasional Paper 180 IMF Washington D.C.*

Effiom, L., Ubi, P.S., Okon, E.O. and Itam, E.E. (2011). Trade Liberalization and Human Capital in Nigeria: A Vector Autoregressive Analysis. *European Journal of Economics, Finance and Administrative Sciences*, (40): 154-168.

Ersoy, I. and Deniz, P. (2011). Financial and Trade openness: Evidence on Emerging Market Regional Groups. European Journal of Economics, Finance and Administrative Sciences, (39): 71-78.

Frankel, J.A. and Romer, D. (1999). Does Trade Cause Growth? *The American Economic Review*, 89(3): 379-399.

Krugman, P.R. (1990). Rethinking International Trade. Massachusetts: The MIT press.

Manni, U.H.; and Afzal M.N.I. (2012). Effect of Trade Liberalization on Economic Growth of Developing Countries: A Case of Bangladesh Economy. *Journal of Business, Economics and Finance*, 1(2): 37-44.

Nwafor, M.C., Adenikinju, A.F. and Ogujiuba, K.K. (2007). The Impact of Trade Liberalization on Poverty in Nigeria: Dynamic Simulations in CGE Model. *Poverty and Economic Policy Research Network Working Paper,* No.MPIA-2007-16.

Nwosa, P.I., Saibu, M.O. and Fakunle, O.O. (2012).The Effect of Trade Liberalization on Trade Tax Revenue in Nigeria.*African Economic and Business Review*, 10(2): 28-43.

Sakyi, D. (2011). Trade Openness, Foreign Aid and Economic Growth in Post Liberalization Ghana: An Application of ARDL Bounds test. *Journal of Economics and International Finance*, 3(3):146-156.

Thirlwall, A.P. (2000). Trade Liberalization and Economic Growth: Theory and Evidence. *African Development Bank Economic Research* Paper, No 63.

Appendix 1

Regression Result Outputs

Dependent Variable: D(GDP)

Method: Least Squares

Date: 04/17/13   Time: 22:31

Sample: 1970 2011

Included observations: 42				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	272339.8	239867.6	1.135375	0.2635
D(OPN)	998334.2	474691.0	2.103124	0.0125
D(FDI)	8.755613	2.655413	3.297270	0.0022
D(EXP)	-2.785968	0.522430	-5.332710	0.0000
D(IMP)	3.335716	0.352095	9.473917	0.0000
R-squared	0.894114	Mean dependent var		5563255.
Adjusted R-squared	0.873477	S.D. dependent var		8862107.
S.E. of regression	715742.0	Akaike info criterion		29.91137
Sum squared resid	1.90E+13	Schwarz criterion		30.11824
Log likelihood	-623.1388	Hannan-Quinn criter.		29.98720
F-statistic	152.143	Durbin-Watson stat		2.262080
Prob(F-statistic)	0.000000			

Appendix 2

Johansen Cointegration Test Result

Test assumption: No deterministic trend in the data

Series: D(GDP) D(OPN) D(FDI) D(EXP) D(IMP)

Lags interval: 1 to 1				
	Likelihood	5 Percent	1 Percent	Hypothesized
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)
0.891919	126.5612	81.49	90.45	None **
0.749318	96.78951	59.46	66.52	At most 1 **
0.677332	59.43307	39.89	45.58	At most 2 **
0.410949	28.89250	24.31	29.75	At most 3 *
0.149607	4.375516	3.84	6.51	At most 4 *

*/** denotes rejection of the hypothesis at 5%/1% significance level

L.R. test indicates 5 cointegrating equation(s) at 5% significance level