TRADE OPENNESS AND ECONOMIC GROWTH: EVIDENCE FROM NIGERIA

Muhammad M. Yakubu
Nile Univ. of Nigeria
Abuja
&
Benedict N. Akanegbu
Nile Univ. of Nigeria
Abuja

ABSTRACT

This study has empirically examined the impact of trade openness on economic growth in Nigeria for the period 1981-2017. Using degree of openness as independent variable, the ordinary least squares technique was used on series data to examine the impact of trade openness on Gross Domestic Product (GDP). The series data were extracted from World Bank data 2017. The result of the Analysis shows that all the variables Real Gross Domestic Product (RGDP) Degree of Openness (DOP), FX and Per Capita Income (PCI) were positive and statistically significant at first difference, the study found that the variables are cointegrated and unidirectional causality was found from RGDP to DOP. Therefore, the study recommends that policy makers should adopt policies on trade liberalization such as reduction of non-tariff barriers, reducing tariffs, reducing or eliminating quotas that will enable the economy grow at spectacular rates.

Keywords: Trade, Openness, OLS, GDP, Nigeria.

INTRODUCTION

Trade has been an area of interest to policy makers as well as economists. It enables nations to sell their domestically produced goods to other countries of the world. And it has been regarded as an engine of growth which leads to steady improvement in human status by expanding the range of people's standard of living and preferences (Adewuyi, 2002).

Nigeria as a developing country has been grappling with realities of developmental process not only politically and socially but also economically. In 1960s, agriculture was the main stay of the economy and the greatest foreign exchange earner; and Nigerian government was able to execute investment projects through domestic savings, earnings from exports of agricultural products and foreign aids (Ezike, et. al, 2012). But since the advent of oil as a major source of foreign exchange earning in Nigeria in 1974, the picture has been almost that of general stagnation in agricultural exports. This led to loss of Nigeria's position as an important producer and exporter of palm oil produce, groundnut, cocoa and rubber (CBN, 2006). Between the year 1960 and 1980, agricultural and agro-allied exports constituted an average of sixty percent of total export in Nigeria, which is now accounted for, by petroleum oil export, (CBN, 2004).
Therefore, this study seeks to answer the following questions thus:
    a. Does trade openness stimulate economic growth in Nigeria? **b.** Do trade policies have

impact on economic growth in Nigeria? **c.** What are the factors that hinder trade in Nigeria?

This research will test the following propositions as follows:

H_0:   Trade openness has no impact on economic growth in Nigeria.

H_0:   There is no relationship between trade policies and economic growth in Nigeria.

H_0:   There is no relationship between factors that determine openness and economic growth in Nigeria.

Therefore, this study seeks to examine the impact of openness on economic growth in Nigeria; in other words, how does activities in trade transmit to economic growth in Nigeria.

LITERATURE REVIEW

The impact of trade openness on economic growth in Nigeria and other countries has generated large volume of empirical studies with mixed findings using cross sectional, time series and panel data. Trade is generally believed to be positively related with growth (Smith, 1776). This idea prevailed until World War II. More precisely, it is held that appropriate trade policies in particular circumstances can be used to stimulate economic growth and development. Therefore, this section of the study seeks to review relevant empirical studies that have examined the impact of openness in the actualization of sustainable growth.

However, differing opinions have indeed continued to emerge on how trade openness can affect economic activities. The genesis of these controversies has been traced to the theoretical exposition of Adam Smith and David Ricardo.

Adam Smith first described the principle of absolute advantage in the context of trade, using labor as the only input, since absolute advantage is determined by a simple comparison of labour productivities; it is possible for a party to have no absolute advantage in anything, in that case, according to the theory of absolute advantage no trade will occur with the other party.

The principle of absolute advantage is the ability of a party (an individual, or firm, or country) to produce more of a good product or service than competitors, using the same amount of resources.

David Ricardo was opposed to tariffs and other restrictions on trade. Ricardo devised an idea that is well known as the theory of comparative advantage. Ricardo states that comparative advantage is a specialization technique used to create more efficient production and describes opportunity cost between producers with perfect competition and undistorted markets where countries that tend to export goods in which they have a comparative advantage.

In addition to the controversies among the different schools of thought on the possible linkage between trade openness and economic growth, efforts have been made by researchers to authenticate or refute the arguments of these prominent schools of thought.

Ogbokor (2001) analyzed the macroeconomic impact of oil exports on the economy of Nigeria. With the use of OLS technique, he observed that economic growth reacted in an expected way to changes in the variables used in the study. He also found that 10% increase in oil exports would

lead to 5.2% increase in economic growth. He concluded that export-oriented strategies should be given a more favorable support.

Similarly, Akerele (2001) with the use of appropriate quantitative techniques, identified sources of instability in export earnings for the Nigeria economy for the period of 17years (1980-1997). He observed that both political and economic factors were the major sources of instability in Nigeria's export earnings. The influence of political factors on export earnings is not surprising, since the period of study coincided with the imposition of various sanctions on Nigeria for failing to adopt western-style democracy.

Rodriquez and Rodrik (2001) argued that trade policy does affect the volume of trade, but there is no strong reason to expect the effect of growth to be quantitatively similar to the consequences of change in trade volumes that arise as reductions in transport cause or increases in world demand. Trade restrictions should represent policy responses to real or perceived market imperfections or are used as mechanism for rent extraction. They believed that trade policy works differently from natural or geographical barriers to trade and other exogenous determinants.

Greenway, Morgan, and Wright (2002) having carried an empirical study on the impact of international trade on 70 developing countries found a significant positive relationship between trade and economic growth, i.e., international trade is a bedrock for economic growth. Irwin and Tervio (2002) suggested that countries that are more open to trade tends to experience higher growth rates and per-capita income than closed economy.

Liu, Burridge and Sinclair (2002) examined the relationship between economic growth, foreign direct investment and trade in China. The study found long run relationship between the variables and a bidirectional causality between economic growth, trade and foreign direct investment.

In other stimulating study, Weisbrot and Baker (2003) argued that trade may not be the only key to rapid economic growth and development. They noted that the success of some countries that experienced accelerated growth did not follow simple path to trade liberalization because the government directs the economy through the use of subsidies.

Ajayi (2003) reports that the removal of barriers to trade has increased the flow of trade by 16 percent fold in the last 50 years, with the world exports of goods and services almost tripled in real terms between 1970 and year 2000. However, the share of developing countries or third world countries contribution to world trade is still very low because their exports are predominantly primary products which do not contribute much to GDP of such countries compared to trade on manufactured or finished goods.

Yew-Wah (2004) in his study reported that for the past forty years (1961-2000), the Malaysian economy grew at an impressive average rate of 6.8% per annum. The rapid growth was attributed, in part, to the remarkable success in the export-oriented industrialization policy. Shafaeddin (2005) posits that trade is necessary when an industry reaches a certain level of maturity provided it is undertaken gradually and selectively.

Oviemuno (2007) studied foreign trade as an engine of growth in developing countries taking Nigeria (1980-2003) as a case study; the findings showed that Nigeria's export value does not act as an engine of growth in Nigeria. Nigeria's import does not act as an engine of growth in Nigeria and that Nigeria's inflation rate also does not act as an engine of growth.

Chang and Ying (2008) confirmed the positive growth effects of trade and air freight for a sample of Economic Commission for Africa (ECA) countries.

Kim and Lin (2009) applied the instrument-variable threshold regression approach to 61 countries and find an income threshold level above which greater trade enhances economic growth. Below the threshold level, however, trade openness has detrimental effects on growth. Chang et al. (2009) found a positive relationship between trade openness and economic growth. For a sample of 34 African countries, Vlastou (2010) found that openness to trade has a negative impact on economic growth. He also reports a causal relationship running from openness to growth. Afzal and Hussain (2010) found no causal relationship between exports and economic growth as well as between imports and economic growth in Pakistan.

However, in more recent studies, Kim, Lin, and Suen (2012) provided evidence that trade promotes economic growth in high-income, low-inflation, and non-agricultural countries but has a negative impact in countries with the opposite attributes. In a study of 27 African least developed countries, Tekin (2012) found no significant causality between foreign aid, trade openness and real per capita GDP.

Sakyi, Villaverde, Maza, and Chittedi (2012) investigated the relationship between trade openness, growth and development for 85 middle income countries for the period 1970 to 2009. The study found that there is a significant long run relationship between trade openness and development. Additionally a bidirectional causality was found between the variables which implies that higher development tends to increase trade openness and vice-versa. On the other hand, short-run causality between the variables was not found.

Asfaw (2014) examined the impact of trade liberalization on economic growth in a sample of 47 Sub-Saharan African countries. The results reveal that openness to trade stimulates both economic growth and investment. Besides, trade policies such as average weighted tariff rate and real effective exchange rate affect economic performance through trade. Menyah, Nazlioglu, and Wolde-Rufael (2014) analyzed the causal nexus among financial development, trade openness and economic growth for 21 Sub-Saharan African countries. They found limited support for the trade-led growth hypothesis. The trade-led growth hypothesis holds only for Benin, Sierra Leone, and South Africa.

Were (2015) examined the differential effects of trade on economic growth and investment using cross country data over the period 1991 to 2011. He found that trade has positively impacted economic growth in developed and developing countries, its effect is insignificant for least developed countries (LDCs), which largely include African countries. Tahir and Azid (2015) examined the relationship between trade openness and economic growth in 50 developing economies for the period 1990 to 2009. The results show trade openness has impacted economic growth positively and significantly in developing countries. Vogiatzoglou and Nguyen (2016)

investigated the economic openness and economic growth for 5 ASEAN countries over the period 1980 to 2014. The study found that there is a long-run relationship between economic openness and GDP in all the 5 ASEAN economies. Additionally it was found that FDI, imports and exports have a significantly positive long-run impact on the economic growth. On the contrary, short-run causality was not found between the variables.

Lawal, Nwanji, Asaleye, and Ahmed (2016) apply the ARDL methodology to Nigeria and find a negative long-run impact of trade openness on economic growth but a positive growth effect in the short run. Further, a two-way causality was found between the two variables. In a study of China, Hye, Wizarat, and Lau (2016) show that trade openness is positively related to growth in the long and short run.

Sunde (2017) confirmed the FDI-led growth hypothesis by empirically investigating economic growth as a function of foreign direct investment and exports in South Africa. The long run relationship between economic growth, foreign direct investment and exports was tested using the autoregressive distributed lag (ARDL) model. The empirical results confirmed co-integration between economic growth, foreign direct investment and exports. The results indicate that both foreign direct investment and exports stimulate economic growth. The VECM Granger causality analysis found uni-directional causality running from foreign direct investment to economic growth and exports and a bidirectional causality between economic growth and exports.

Keho (2017) analyzed the impact of trade openness on economic growth in Cote d'Ivoire for the period 1965 to 2014 employing the autoregressive distributed lag (ARDL) bounds test and the Toda and Yamamoto Granger causality tests. The results revealed that trade openness has a positive effect on economic growth both in the short and long run. More so, the study found a positive and strong complementary relationship between trade openness and capital formation in enhancing economic growth.

Tsaurai (2017) examined the relationship between financial development, economic growth and trade openness in Argentina over the period 1994 to 2014. The study found the existence of a positive but weak uni-directional causality from financial development to trade openness to economic growth and from economic growth to trade openness in the long run. This study improves on some of the existing studies; it also updates these studies in terms of currency and detailed analysis, and contributes to the existing literature on the nexus between trade openness and economic growth in Nigeria.

METHODOLOGY
Secondary data was used for this study. The data used for both dependent and independent variables were obtained from World Bank data 2017.

This study analyses the impact of trade openness on economic growth in Nigeria. For this purpose, GDP was used as dependent variable and degree of openness was used as independent variable. The econometric technique used is ordinary least squares (OLS) in form of multiple linear regressions; the computational device is Stata 13 software. Among the tests conducted are stationarity test using Augmented Dickey Fuller (ADF) test, co-integration and causality test to determine whether one time series data is useful in forecasting another.

TESTING FRAMEWORK

Considering the above, the methodology adopted for this study involves 3 steps thus:

Step 1: In order to avoid spurious result the study employed the use of the Augmented Dickey Fuller (ADF) to test the stationarity of the variables used. This is achieved by including a constant term and a time trend in the ADF equation when testing the data at its original form (level), whereas when testing the first differences of the ADF equation includes a constant. The general expectation is that the variables will be I(0) in levels and I(1) in first differences. However, the necessary condition for testing a long-run relationship between two variables is that these variables are I(1), i.e., stationary in first differences or the variables are integrated of the same order. In this study, therefore, classical unit root tests will be used (ADF) test (see Dickey and Fuller, 1981; Said and Dickey, 1984). ADF test is based on the null hypothesis that a unit root exists within the time series. Note that if the variables are I(1), i.e., stationary in first differences we proceed to test for co-integration.

In view of the above to tackle autocorrelation problem Dickey-Fuller developed a test called ADF test presented below (equation 1, 2 and 3)

    a. Delta $*Y_t = B_1 + dY_{t-1} + a_i + e_t$ ………… (1) > Intercept only

    b. Delta $*Y_t = B_1 + B_2 t + dY_{t-1} + a_i + e_t$ …… (2) > Trend and intercept

    c. Delta $*Y_t = dY_{t-1} + a_i + e_t$ ………… (3) > No trend, No intercept only

Hypothesis:

H_0: Variable is not stationary or got unit root.

H_1: Variable is stationary

Step 2: Furthermore, Co-integration will be tested by using two co-integration techniques that were devised by Johansen and Juselius (JJ) (1990). In the JJ method, two tests are used for the determination of the number of co-integrating vectors (r): the maximum eigenvalue test and the trace test. For consistency, the specification that allows for a linear trend in the data with an intercept but no trend in the co-integrating vector is utilized. Co-integration is accepted if both the Trace and Max-eigenvalue test statistics indicate one co-integrating vector at the 5% level of significance. From this if, co-integration is found, proceed to test for long-run causality between the variables using Vector Error Correction Model (VECM) and on the other hand if co-integration is not found proceed to test for the short-run causality between the variables using Vector Autoregressive Model (VAR).

Step 3: To test for causality from x to y (and y to x) Granger Causality test will be used to see the direction of causality between the variables. According to Granger (1969) a time series X is said to Granger-cause Y if it can be shown, usually through a series of t-tests and F-tests on lagged values of X (and with lagged values of Y also included), that those X values provide statistically significant information about future values of Y.

Figure 1. Testing Framework
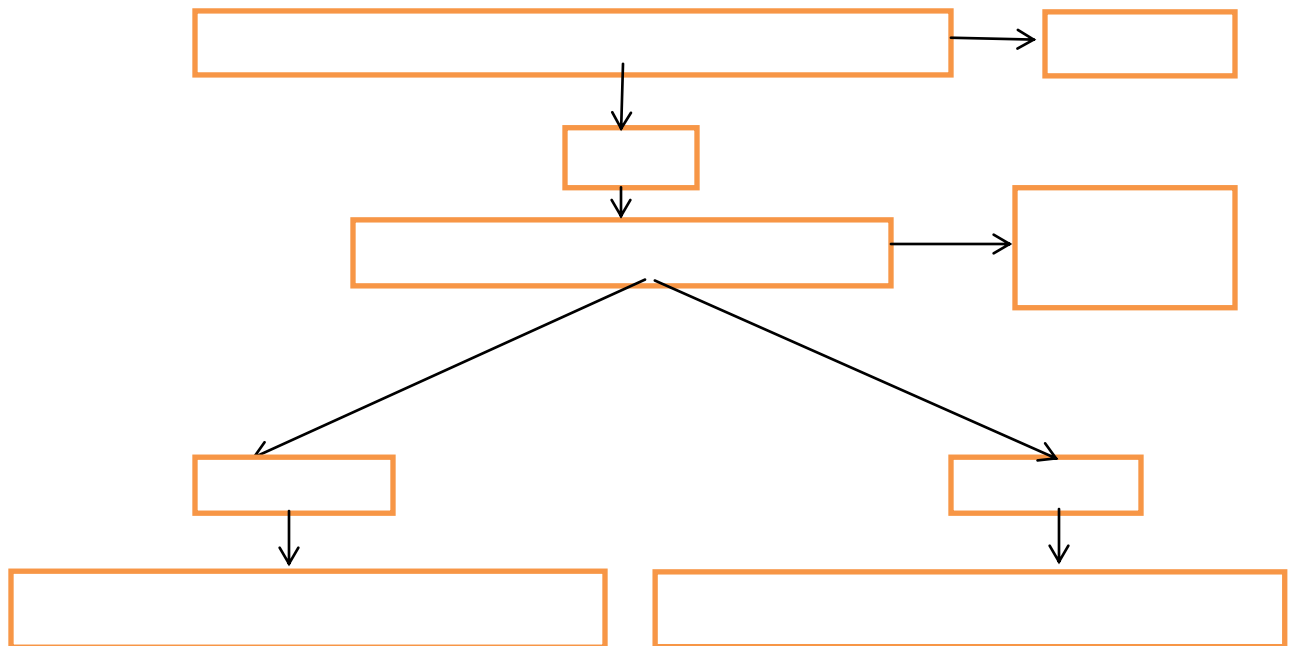
Source: Chontanawat, et. al, 2006

MODEL SPECIFICATION

The model that seeks to examine the impact of some selected trade variables on economic growth in Nigeria will be used. Therefore, ordinary least square (OLS) method will be used to examine the relationship between GDP and these variables in the study, in order to determine the impact of these variables on GDP. The multiple regression equation is explicitly specified following Mankiw, Romer and Weil (1992); we specify a model of type thus:

$$RGDP = F(DOP, FX, PCI) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.1)$$

The above model can be expressed in a linearized form thus;

$$RGDPt = \beta_0 + \beta_1 DOPt + \beta_2 FXt + \beta_3 PCIt + \mu t \dots\dots \dots\dots (3.2)$$

Where:

RGDP = Gross Domestic Product at time t

DOP = Degree of Openness at time t

FX = Foreign Exchange rate at time t

PCI = Per Capita Income at time t

$\beta_1, \beta_2, \beta_3$ = The parameters to be measured

μ = Stochastic term or error term at time t

t = time or scope of the study ranging from 1981 − 2015.

However, the expected signs of the coefficient of the explanatory variables are,
$$\beta 0 > 0, \beta 1 > 0, \beta 2 > 0, \beta 3 > 0$$

DATA ANALYSIS AND RESULTS
Table 1. Diagnostic Stationarity Test Result for the variables used in the Study
ADF unit Root Test for the series of RGDP, DOP, FX and PCI

	Test Statistics			Significance Level/Remark
Series	**A: Level**			
	Intercept	**Trend & Intercept**	**No Trend & No Intercept**	
RGDP	3.525 (0)*	-1.586 (0)	5.951(0)*	Not stationary at level
DOP	0.515 (0)	-3.317(0)	1.490(0)	Not stationary at level
FX	0.327(0)	-2.217(0)	1.897 (0)	Not stationary at level
PCI	0.340(0)	-1.696(0)	1.065(0)	Not stationary at level
B: First Difference				
ΔRGDP	-3.605(0)*	-5.378(0) *	-2.663(0)*	stationary at first difference
ΔDOP	-5.906(0)*	-6.286(0) *	-5.566(0)*	stationary at first difference
ΔFX	-5.219(0)*	-5.291 (0) *	-4.509(0)*	stationary at first difference
ΔPCI	-5.466 (0) *	-6.359(0) *	-5.250(0) *	stationary at first difference

 Source; Author's computation, 2018

Note: Asterisks (*) show significance at 5% level of significance. Figures in parentheses indicate the lag length. ADF test examines the null hypothesis of a unit root against the stationary alternative.

The result of the estimated model is presented below:

Table 2. The Result of the Estimated Model

rgdp	Coef.	Std. Err.	T	P>|t|
dop	.8832884	.2939469	3.00	0.005
fx	8.915510	1.394410	6.40	0.000
pci	8.674509	1.393409	6.25	0.000
_cons	1.093413	1.182312	9.18	0.000
R^2=0.97	$\hat{R}^2$ = 0.96	F= 334.64	Prob> F= 0.0000	

Source: Stata Regression Output, 2018

DISCUSSION OF RESULTS

The results have demonstrated a considerable support for the argument that proper management of trade activities would impact positively on the growth of the Nigerian economy. From the above, R^2 shows that all the explanatory variables in terms of degree of openness (DOP), foreign exchange rate (FX) and per capita income (PCI) explained 97% variability in the real gross domestic product (RGDP). This implies that the model explains 97% of the changes in RGDP and the remaining 3% cannot be explained by the model. Since R^2 measures the fitness of the model so this model has good fit i.e. the data is fitted well. Considering the adjusted R^2 (which can be less than or equal to R^2) after considering the degrees of freedom, the $\hat{R}^2$ explained 96% variability in RGDP. Therefore, we can still conclude that the explanatory variables perfectly explained the behavior of the dependent variable.

To check if the independent variables are jointly significant to explain the dependent variable or the overall significance of the model we use F-statistic. So given the F-statistic value to be 334.64 with the Probability value of 0.0000 we can conclude that there is a statistically significant relationship between the explanatory variables and the dependent variable. This is because the probability value of 0.0000 is less than 0.05 i.e. at 5% level of significance which led to the rejection of the null hypothesis which states that there exists no significant relationship between the explanatory variables and the dependent variable; hence, the acceptance of alternative hypothesis which states that there exists significant relationship between the explanatory variables and the dependent variable.

The coefficient of DOP is 0.88 and it gives a positive and significant relationship with RGDP and it shows that a unit increase in DOP will lead to 88% increases in RGDP or vice versa. This is in line with economic theories that hold that open economies would experience increased economic growth while closed economies with restrictive tariffs and not open to trade would experience stagnant economic growth. This result agrees with the notion that economic growth cannot exist without degree of openness of the countries involved since it is the measure of economic policies that either restrict or liberalized trade. With this result we conclude that trade openness has significant impact on economic growth in Nigeria and we reject null hypothesis which states otherwise.

The coefficient of FX is positive and statistically significant therefore, there is a relationship between trade policies and economic growth in Nigeria during the period of study so we reject null hypothesis and accept the alternative hypothesis. Foreign exchange rate plays a vital role in Nigeria's level of trade and its movements affect the country's trading relationships with other countries. The higher the exchange rate the more expensive the exports and more cheaper the imports in foreign markets, and the lower the exchange rate the cheaper the exports and more expensive the imports in foreign markets, so the higher the exchange rate the lower the GDP while a lower exchange rate will increase the GDP.

The coefficient of PCI is positive and in line with the 'a priori' expectation that there is positive relationship between per capita income and RGDP. Given the value of Per Capita Income to be 8.67, per capita income explained positive and significant relationship with RGDP. An increase in per capita income is expected to lead to an increase in RGDP and vice versa. If per capita

income of Nigeria goes up the standard of living of the people engaged in trade will increase. However, if trade is positive there will be an increase in per capita income and if trade is negative then there will be adverse decrease in per capita income. Therefore, there is a positive and statistically significant relationship between factors that determine openness and economic growth in Nigeria during the period of study.

As earlier noted in table 1, the variables underwent stationarity test, where all the variables are stationary at first difference I(1). So the variables are integrated of the same order.

Post diagnostic tests
The post diagnostic tests carried out in this study are co-integration and causality tests and the results are discussed below:
From table 1 above, the variables are stationary at first difference I(1) this implies that the variables are integrated of the same order. And to test the long run relationship between the variables we use Johansen co-integration test. The result is explained thus:

Table 3. Johansen Tests for Co-integration

Trace Test			
Maximum rank	Eigenvalue	Trace statistic	5% critical value
0	-	54.2513	47.21
1	0.63852	20.6724*	29.68
2	0.42960	2.1457	15.41
3	0.06295	0.0000	3.76
4	0.00000		

Source: Stata output, 2018

Trace test indicates 1 co-integrating eqn(s) at the 0.05 level, the trace statistic of 54.25 is more than 5% critical value of 47.21. Hence we reject the null hypothesis that there is no co-integration and accept the alternative hypothesis that there is co-integration.

Table 4. Johansen Tests for Co-integration

Max Test			
Maximum rank	Eigenvalue	Max statistic	5% critical value
0	-	33.5789	27.07
1	0.63852	18.5268	20.97
2	0.42960	2.1457	14.07
3	0.06295	0.0000	3.76
4	0.00000		

Source: Stata output, 2018

Max test indicates 1 co-integrating eqn(s) at the 0.05 level, the Max-Eigen statistic of 33.57 is more than 5% critical value of 27.07 so we reject the null hypothesis that there is no co-integration between the variables and accept the alternative hypothesis that there is co-integration between the variables.

From the above; the variables used in the study are co-integrated meaning that they have long-run relationship i.e. they move together in the long-run. Since the variables are co-integrated using VECM (Vector Error Correction) model; we then test the long-run causality between the variables using granger causality test.

The result of Granger Causality test is explained below:

Here there are three possibilities: it's either bi-directional, uni-directional or no causality at all. It is important to note that if causality flows from trade to growth, then it is an appropriate policy for a country to carry out export promotion strategies.
However, if causality flows from economic growth to trade, then it is likely that a certain degree of development is required for a country to increase its trading activities, which indicates the importance of economic policies in expanding exports. Also if there is a bi-causal relationship between trade and growth, then it means that both strategies could be necessary as long as they work hand in hand (Gökmen and Temiz, 2010).

Table 5. Granger Causality Wald Tests

Equation	Excluded	chi2	df	Prob> chi2
rgdp	Dop	.27323	2	0.872
rgdp	fx	10.845	2	0.004
rgdp	pci	.22775	2	0.892
rgdp	ALL	15.518	6	0.017
dop	Rgdp	30.42	2	0.000
dop	fx	3.715	2	0.156
dop	pci	.53719	2	0.764
dop	ALL	68.844	6	0.000
fx	Rgdp	-	0	-
fx	dop	-	0	-
fx	pci	.45178	2	0.789
fx	ALL	.45178	2	0.789
pci	Rgdp	-	0	-
pci	dop	-	0	-
pci	fx	1.2208	2	0.543
pci	ALL	1.2208	2	0.543

Source: Stata output, 2018

Furthermore, from the above result, RGDP was found to granger cause DOP as mentioned above, if causality flows from economic growth to trade, then it is likely that a certain degree of development is required for a country to increase its trading activities, which indicates the importance of economic policies in expanding exports. The above finding truly depicts Nigeria's international trade. Nigeria as an import dependent economy, trade has remained unbalanced as the volume of import continues to surpass that of export which implies that certain degree of development is required for Nigeria to increase its trading activities, which indicates the importance of economic policies in expanding exports.

And again FX was found to granger cause RGDP i.e. one-way causation in this case ceteris paribus. This implies that there is long-run causality running from RGDP to DOP and from FX to RGDP during the period of study.

From the above, we would normally reject the hypothesis that X does not Granger causes Y if the p-value is significant at 5%. But we do not reject the hypothesis that Y does not Granger cause X. Therefore in this case Granger causality runs one-way (uni-directional causality) from GDP to DOP and not the other way.

CONCLUSIONS

Empirical studies have shown that openness is linked to economic growth. This study has empirically examined the impact of openness on economic growth in Nigeria using GDP as the dependent variable and degree of openness, foreign exchange and per capita income as independent variables from 1981-2017. Data analysis revealed that relationship exists between openness and economic growth, and all the components of trade exerted positive and significant effect on growth. Furthermore, the result shows that all the regressors were statistically significant at 5% level of significance; this implies that degree of openness within the period of study has impacted positively on growth (Which in turn increases growth). However, the components of trade considered in this study are important variables in explaining economic growth in Nigeria.

Finally, the study further concludes that openness has significant impact on economic growth in Nigeria.

RECOMMENDATIONS

Based on the findings, it is important to provide a set of policy recommendations that would be helpful and applicable to the Nigerian economy. Since all the coefficients are statistically significant and exhibit the correct signs according to economic theory.

For degree of openness; in line with Heckscher-Ohlin theory of trade, Nigeria is blessed with abundant labor to produce and export agricultural products, policy makers should adopt policies that will help to revive the Nigeria's agricultural sector so as to reap and maximize the benefits of trade openness, and this will enable the economy to grow at spectacular rates.

The finding with respect to exchange rate implies that policy makers should adopt long term policies because in the long term, a strong currency depends on economic fundamentals. To have a stronger exchange rate, countries will need a combination of low inflation, productivity growth, economic and political stability.

The finding with respect to per capita income suggests that policy makers should implement policies that will stimulate export growth by combining short-term and long-term export policies, which will increase per capita income. Increasing the number of exports directly increases income per capita thereby raising the standard of living of people engaged in trade.

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