
TRADE OPENNESS AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

This study empirically analysed the relationship between trade openness and economic growth in Nigeria from 1990 to 2021. The study adopted descriptive statistics; Augmented Dickey Fuller (ADF) unit root test for stationarity, Johansen Cointegration test for long run relationship and Error Correction Mechanism (ECM) model as the methods of estimation. The data for the empirical analysis were sourced from secondary sources like CBN Statistical Bulletin for the period under investigation. The results indicate that a long-run relationship exists between trade openness (volume of export, import and international trade) on economic growth in Nigeria. Furthermore, the result reveal that trade openness has positive and statistically significant impact on economic growth in Nigeria; and that import has a negative significant impact on economic growth in Nigeria. The study concludes that Nigerian economy has benefited from other countries therefore; the country should open the boarders for foreign goods to come into the country. The study recommends that government should encourage external trade and open the boarders, but with caution to avoid dumping of some irrelevant goods to the country.

Keywords: Trade openness, economic growth, Nigeria.

INTRODUCTION

Economic productivity is important to a nation's fiscal health. It transforms the economy by increasing employment, reducing absolute poverty, increasing spending on public service, national income, and national output per capita as well as improves material standard of living (Al-Hemzawia et al., 2021; Hess, 2013). In order to achieve this, trade openness is necessary for improvement of international trade and integration with international markets. Economic growth is often measured in terms of Gross domestic product (GDP) - the value of goods and services produced in a country, minus the value of goods and services consumed in production (Dynan, 2018).

Trade openness is the flexibility of a host country and how accessible international trade is to foreign investors (Gupta et al., 2020). Imports and exports, trade volume are concepts for measuring trade openness. Export is part of international trade where goods produced in one country are transported to another country for sale or trade and as a crucial element of a country's economy. It stimulates economic growth of exporting countries (Gruzina et. al., 2021).

Import is also international trade where one country purchases goods and services from another country for domestic needs. Although trade is an economic concept, it is the exchange of goods or services between parties. It may take place within one country, or involve two or more countries. International trade occurs when goods and services are exchanged between two countries (Mahembe & Odhiambo, 2014). International trade usually involves certain risks caused by change in exchange rates, government policies, laws, judicial systems and financial markets (Grozdanovska et. al., 2018). International trade is

important for countries because it allows them to expand markets for goods and services that would otherwise be unavailable.

However, in Nigeria, government policies do not encourage exports with proper import implementation measures. Nigeria's economy is import dependent with very little non-oil exports. It relies heavily on crude oil and gas exports with other sectors trailing far behind. This has caused delays in turnaround time and has effected Nigeria's trade volume adversely. It has also led to a permanent direct annual decrease in GDP (Adegboyega, 2017). The economy is, therefore, susceptible to external shocks via the oil industry.

Fatima et al. (2020) in their study found intriguing indirect relationship between trade openness and gross domestic product growth. Wong (2006) revealed evidence of positive significant effect of trade openness on productivity of manufacturing industries in export-oriented countries. Amirkhalkhali and Dar (2019) in their study revealed that total export, import, labor accumulation and total factor productivity have significant and positive relationship with economic growth. Kilavuz and Topcu (2012) found that only high-tech manufacturing industry export, investment and population and low-tech manufacturing industry import have positive and significant effect on growth.

However, to the best of our knowledge, there is scarcity of empirical studies the influence of trade openness on Nigeria's economic growth. Against this backdrop, this study investigated the association between trade openness and economic growth in Nigeria. Trade openness is proxied by volume of export, import and trade, while real GDP is used to represent economic growth. The units of observation were real exchange rate and inflation rate from 1990 to 2020 (30 years), to examine the relationship between trade openness and economic growth.

LITERATURE REVIEW

Concept of Economic Growth

Economic growth is the most powerful tool a country can use to reduce poverty and improve quality of life. Rodrik (2007) provides evidence that rapid and sustained economic growth is critical to making faster progress. Growth generate virtuous circles of prosperity and opportunity. Strong growth and employment opportunities improve incentives for parents to invest in children's education.

Economic growth stimulate entrepreneurship and generate pressure for improved governance in a nation. Strong economic growth therefore advances human development, which, in turn, promotes further economic growth. Therefore, Son and Kakwani (2004) states that economic growth is "continuous improvement in the capacity to satisfy the demand for goods and services, resulting from increased production scale, and improved innovations in products and processes.

Economic growth is obtained by efficient use of available resources and by increasing capacity of production. It facilitates redistribution of income in a society (Haller, 2012). The cumulative effects, the small differences of the increase rates, become big for periods of one decade or more. It is easier to redistribute income in a dynamic, growing society, than in a static one. Despite the benefits of high economic growth, researchers still believe that economic growth is a complex, long-run phenomenon that is subject to constraints (Khalid, 2016).

Concept of Trade Openness

The level of openness to international trade has been a critical concern to many African countries. Indeed, more opened economies allow for enhanced international trade and integration with international markets (Osei et al., 2019). Trade openness is a key driver of progress, skill transfer and productivity in many countries. For this reason, Khalid (2016) provide information on various aspects of the importance of trade openness to economic growth, income distribution, government spending and the environment.

The opening of trade increases industrial production, increase income and wealth of those involved in the economy. Increased income from increased trade improves living standards, enabling people to adopt healthier lifestyles and better maintain their health, leading to longer life expectancy. Open trade is made possible by globalization. Globalization is a continuous process, and the expansion of economic ties between nations is reflected in increased volume of international trade, increased volume of international financial flows, and increased flow of labor (Pigka-Balanika, 2013). This integration has accelerated movement of people to participate in international trade activities. The concepts of trade liberalization is closely related to globalization, and many researchers use both terms interchangeably (Shah et al., 2021).

Volume of export

Exports of goods and services has significant impact on economic growth. A country's growth, prosperity and progress depends heavily on its export volume. When excess production of goods and services are sent abroad to earn foreign exchange, it also provides more employment opportunities, increases economic efficiency, and ultimately increases competition among nations (Usman et. al., 2012). Increased export volumes also have positive impact on overall production by easing exchange rate controls, stimulating technological change and investment, and spilling over to other sectors of the economy (Kilavuz & Topcu, 2012).

Hence, producing countries achieve extraordinary growth and return on investment by expanding the domestic markets into international markets. On the one hand, countries that expand their global presence have greater opportunities to compete with nations and other trading groups. On the other hand, countries that export less goods and services have weaker economic growth and development, as is the case with Nigeria.

Exporting goods and services is one of the most important sources of foreign exchange earnings, reducing pressure on the balance of payments and creating employment opportunities. It is therefore important for governments in developing countries to encourage their citizens through incentives, good economic policies and programs, to participate in the production of goods and services for export.

This will increase their ability to produce goods and services that can compete in the global market. Achieving this will require advanced technology and use of foreign exchange to import capital goods (Ullah (2018). This will also increase exports and intra-industry trade, integrate the country into the global economy, and mitigate the effects of external shocks, as well as contribute to labour mobilization and capital accumulation (Usman et al (2012).

Volume of import

Imports are considered to be expenditure of an economy's budget in post liberalization era. Nevertheless, world economies have realized the importance and value of imports in accomplishing requirements of growing economic development. Import driven nations can be a channel for long-ran economic growth because it provides domestic firms with access to needed intermediate and foreign technology. Growth in imports serve as a medium for transfer of growth-enhancing foreign Research and Development knowledge from developed to developing countries (Umoh & Effiong (2013).

This suggests that learning, innovation, and competitive pressures resulting from imports may be important channels for enhancing productivity at the firm and economy levels. Recent endogenous growth models emphasize the importance of imports as important channels for foreign technology and knowledge to flow into the domestic economy (Ugur, 2008). It means that new technologies could be embodied in imports of intermediate goods such as machines and equipment and labour productivity could increase over time as workers acquire the knowledge to 'unbundle' the new embodied technology.

Cetintas and Barisik (2008) widely acknowledged that imports play a central role in countries whose manufacturing base is built on export oriented industries. If foreign exchange accumulation is sufficient, economic growth is promoted by importing high quality goods and services, which in turn expand the production possibilities (Uddin & Khanam, 2017).

International trade

International business includes all commercial activities undertaken to facilitate the movement of goods, services, resources, people, ideas and technology across national borders (Mena et al., 2022). It also include services such as international transportation, travel and tourism, banking, warehousing, telecommunications, distribution and advertising (Sohn, 2013). Offshore investment and production allow companies to be closer to overseas customers, allowing them to offer goods and services at very competitive prices.

Free trade, which allows traders to interact without government restrictions, lower prices and improve people's living standards by increasing the variety of goods and services available to them. It also create new jobs opportunities and encourage innovative use of resources. But while free trade benefit the economy as a whole, it also harm certain groups. Jobs will increase in certain sectors, while others will face job losses. However, throughout history societies have found that benefits of international trade outweigh its costs (Mena et al., 2022).

Trade Openness and Economic Growth

Cheung and Ljungqvist (2021) states that human capital development, investment-to-gross domestic product share, technological progress, trade restriction and institutional quality have positive significant impact on economic growth. Ijirshar (2019) show that government expenditure, foreign direct investment, gross fixed capital formation, labour force and official exchange rate have positive effects on growth in Economic Community of West African States (ECOWAS) countries in the long-run but mixed effects in the short-run.

Bunje et al. (2022) revealed that gross fixed capital formation, exchange rate, gross domestic product per capita positively impacted economic growth while, labour force and foreign direct investment negatively impact gross domestic product per capita in African countries; while Akuffo (2012) showed that trade openness has positive effect on gross domestic product growth and also has significantly impact on exchange rate. Ullah (2018) reports that key factors like trade openness, investment and human capital development significant impact and play very crucial role for the economic growth and development of a country.

Also, Hye et al. (2016) opine both individual trade and composite trade indicators of trade openness positively relate to economic growth in the long and short-run. Umoh and Effiong (2013) suggest that trade openness has significant positive impact on manufacturing productivity in Nigeria both in the short and long run. In a related view, Azhar (2014) show that trade openness have positive significant effect on sectorial export performance in Pakistan, and that manufacturing sector exports are more responsive to trade openness policies, compared to primary and service sectors.

Çevik et al. (2019) provide empirical evidence of distinct temporal ordering in a feedback relationship between trade openness and economic growth. However, Onakoya et al. (2012) shows that trade openness positively relate to performance of the manufacturing sector while exchange and inflation rates have negative impact on the sector's performance. Similarly, Soderbom and Teal (2014) reported positive significant effect of trade openness on productivity growth. Intisar et al. (2020) states that trade openness and human capital have significant positive relationship while labor force participation has negative effect on economic growth in Southern Asia.

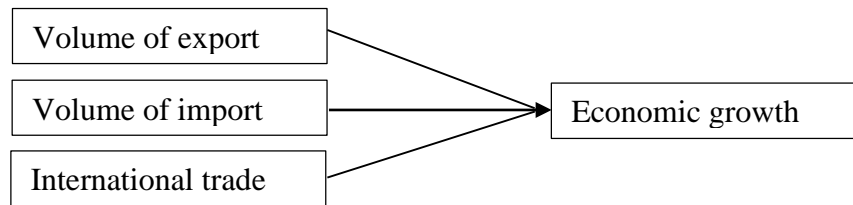


Fig. 1: Conceptual framework of the relationship between trade openness and economic growth

Theoretical Framework

Economists have canvassed several trade theories to explain details that address the relationship between trade openness and economic growth. However, this study is anchored on Export-Led-Growth theory. This is because the theory explained and established strong relationship between trade openness and economic growth. Export-led growth theory is part of consensus among economists about the gains of economic openness that took hold in the 1970s (Alimi, 2014). The theory postulate that export expansion is one of the main determinants of growth. It provides the economy with the foreign exchange needed for imports of goods and services that cannot be produced domestically and encourages the overall development of an economy through the provision of employment opportunities for the people (Yasiru et al., 2016).

The theory further stated that greater capacity utilization, economies of scale, technological progress, labour productivity, improved allocation of scarce resources; relaxation of current account pressures, and foreign investment attraction (Medina-Smith, 2001) are benefits export led-growth. The Asian Tiger economies (South Korea, Hong Kong, Taiwan, Singapore, China, India) have over the past three decades adopted export-led growth theory and achieved spectacular success. Hence, Nigeria present economic problems can be solved with good leaders in government to put policies in place to stimulate production of non-oil sectors of the economy.

METHODOLOGY

A descriptive study design was used in this study. For this empirical study, the population is real gross domestic product, volume of export, import and trade from 1960 to 2023. Sampling was not applied in this study based on knowledge that the population was too large. The sample size is from 1990-2021 based on availability of data from Central Bank of Nigeria Statistical Bulletin. The study utilized secondary data sourced from Central Bank of Nigeria Statistical Bulletin. The data was annual time series on the real gross domestic product, volume of export, import and trade from 1990 to 2021 (32 years), to examine the relationship between trade openness and economic growth.

The study employed Autoregressive Distributed lag (ARDL) model techniques to estimate the relevant equations. The choice of ARDL is influenced by its wide range of economic relationship which gives satisfactory result, as well as the sound statistical econometric technique appropriate for empirical problems. This becomes so standard that its estimates are presented as a point of reference even when results from other estimation technique are used. More so, the reliability of this method lies on its desirability properties which are efficiency, consistency and unbiased. The ARDL model is preceded by unit root, bound test for cointegration or long run relationship between trade openness and economic growth in Nigeria. The rationale behind this is to avoid the problem of spurious regression which is commonly associated with a time series data.

The variables used in the model are:

Real Gross Domestic Product (RGDP): Real gross domestic product is used as a proxy for economic growth. It is the persistent increase in the output of goods and services produced in an economy over a

given period of time preferably one year. In this study real gross domestic product (RGDP) is the dependent variable.

Volume of Export: Export volume refers to the total quantity of goods being exported. Export value refers to the total price value of the total goods being exported. It is expected that volume of export has positive (+) impact on economic growth in Nigeria.

Import: Imports of goods (P71) consist of transactions in goods (purchases, barter, and gifts) from non-residents to residents. Imports of goods occur when economic ownership of goods changes between residents and non-residents. From theory it is expected import has negative impact on economic growth in Nigeria.

International Trade: International trade is the purchase and sale of goods and services by companies in different countries. Consumer goods, raw materials, food, and machinery all are bought and sold in the international marketplace.

Model Specification

The objective of this section is to formulate models that will assist in achieving the stated objectives. Econometric technique is used to establish a model of economic growth and trade. The openness model which captures the contributions of trade openness to the growth of the Nigerian economy could be represented in its functional form as:

$$RGDP = f(VEXP, IMP, TRD) \quad (1)$$

Where:

RGDP = Real Gross Domestic Product proxy for economic growth.

VEXP = Volume of Export.

IMP = Import

TRD = Trade (international)

For the purpose of empirical computation, equation (1) converges to:

$$RGDP = \beta_0 + \beta_1 VEXP + \beta_2 IMP + \beta_3 TRD + \mu \quad (2)$$

Where:

β_0 = The constant term

$\beta_1 - \beta_3$ = The parameters of the estimates

μ = The error terms

Dependent variable response to the set of the explanatory variables in the above model may not be automatic, in other words, it is rarely instantaneous. Sometime the dependent variable responds to the explanatory variables with a lapse of time (Gujarati, 2004). Hence, equation (3.2) transforms into a dynamic model as follow:

$$RGDP_t = \beta_0 + \beta_1 VEXP_{t-1} + \beta_2 IMP_{t-1} + \beta_3 TRD_{t-1} + \mu_{t-1} \quad (3)$$

Where t-i = the lag length. We shall use Akaike Information Criteria (AIC) to determine the optimal lag length of the model.

To linearize the model we take the log of each of the variables to form equation 3.4 which is given below.

$$\log(RGDP_t) = \beta_0 + \beta_1 \log(VEXP_{t-1}) + \beta_2 \log(IMP_{t-1}) + \beta_3 \log(TRD_{t-1}) + \log(\mu_{t-1}) \quad (4)$$

Diagnostics

Some of the diagnostic test are conducted in this study. These diagnostic test are normality test, LM test for serial correlation, heteroscedasticity for constant variance, Ramsey Reset test for correctness for the model and CUSUM test for stability of the model.

RESULTS AND DISCUSSION

Unit Root Analysis

It is necessary to conduct a unit root test to determine the right model to be used. For instance error correction mechanism (ECM) model can be applied on the variables that are integrated of order one. So, in order to ascertain that none of the variable is integrated of higher order, the Augmented Dickey Fuller

(ADF) unit root test was employed. The results of the ADF unit root test are presented and discussed in Table 1.

Table 1: Unit Root Test using Augmented Dickey-Fuller (ADF) Test

Variables	<i>Augmented Dickey-Fuller Test</i>				Order of int.	Remark
	@ level	@ 1 st Diff	5% C. V	Lag		
Log(RGDP)	-1.642658	-3.885823	-3.562882	Max	I (1)	Stationary
Log(VEXP)	-1.868877	-5.512770	-3.562882	Max	I (1)	Stationary
Log(IMP)	-3.166098	-8.157741	-3.562882	Max	I (1)	Stationary
Log(TRD)	-2.113080	-6.361609	-3.562882	Max	I (1)	Stationary

Source: Author's own computation using E view 10

The unit root test in the Table 1 above shows that all variables were stationary at first difference and is statistically significant at 5%. Therefore, the time series data used in this study are stationary at first difference that is I(1). This justifies the use of the error correction Mechanism (ECM) model. However, the long-run relationships among the variables were examined using Johansen co-integration test.

Johansen Cointegration for Long Run Equilibrium

The essence of Johansen cointegration is to know the long run equilibrium among the variables stated in the method of study. The condition for using the Johansen cointegration is satisfied. Hence, the cointegration bounds tests was employed and the value of the Trace and Max-Eigen statistics was use to determine whether the variables have a long run relationship.

Table 2: Johansen Cointegration Test for the Model (Trace)

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.561202	56.31038	47.85613	0.0066
At most 1 *	0.389056	31.59888	29.79707	0.0307
At most 2 *	0.313776	16.81639	15.49471	0.0315
At most 3 *	0.168060	5.519865	3.841466	0.0188

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: Author's own computation using E view 10

The existence of four cointegrating equations at 5 percent significance level indicates long-run relationship between the variables. These co-integrating variables are real gross domestic product (RGDP), volume of export (VEXP), import (IMP) and trade volume (TRD).

Parsimonious Error Correction Model

The Error Correction Modeling involves three steps. The first is to estimate a long-run model; the second is to include the error term from the long model in a dynamic over-parameterized model and the third is to work on this model until one obtains the parsimonious model which is then interpreted. The results of the long run models and over-parameterized models are not interpreted in this study because of it less important. What are normally interpreted are the parsimonious results which are given below. The parsimonious interaction involves dropping insignificant variables. Therefore, the size of the model was reduced by imposing zero coefficients on those lags where t^{*} statistic is low.

Table 3: Parsimonious Error Correction Mechanism (ECM) for Model 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.072692	0.016791	4.329103	0.0007
DLOG(RGDP(-1))	0.321338	0.115212	2.789105	0.0145
DLOG(RGDP(-2))	0.464915	0.116450	3.992412	0.0013
DLOG(VEXP)	0.219445	0.044851	3.896237	0.0053
DLOG(VEXP(-2))	0.185058	0.049363	3.748914	0.0022
DLOG(VEXP(-3))	1.503850	0.271701	5.534939	0.0001
DLOG(IMP)	-0.265055	0.074633	-3.551431	0.0032
DLOG(IMP(-1))	0.237697	0.197636	1.202701	0.2490
DLOG(IMP(-2))	-0.346304	0.051473	-6.727935	0.0000
DLOG(IMP(-3))	1.097149	0.178834	6.135014	0.0000
DLOG(TRD)	0.517507	0.075209	6.880886	0.0000
DLOG(TRD(-1))	-0.668934	0.444382	-1.505312	0.1545
DLOG(TRD(-3))	-2.724664	0.449751	-6.058161	0.0000
ECM(-1)	-0.146129	0.060214	-2.426827	0.0293

R Square = 0.949269, Adjusted R Square = 0.902161 F-Stat. = 20.15106, Prob. (F-Stat) = 0.000001. Durbin Watson = 2.066846

Dependent Variable: Dlog(RGDP)

Source: Authors Computation using E view 10

The parsimonious result shown in the table above. According to the result, the adjusted R Square value of 0.902161 shows that all the explanatory variables (volume of export, import and the volume of trade) can explain about 90% of economic growth in Nigeria. F-statistic of 20.15106 ($P < 0.05$) shows that volume of export, import and the volume of trade are jointly significant in determining economic growth and the Durbin Watson value of 2.066846 implies that the model does not suffer from autocorrelation problem. The ECM has the correct sign of negative meaning that about 15% of the errors are corrected yearly. Precisely, this speed of adjustment shows that about 15 percent of errors generated in each period is automatically corrected by the system in the subsequent period and is statistically significant. In terms of the significance of the individual variables, it is observed that all the explanatory variables were significant.

The error correction model result presented in Table 3 shows that the current value of volume of export (VEXP) has a positive effect on economic growth in Nigeria. This is seen from the result as the coefficient of D(VEXP) has a positive value of 0.219445. This implies that if export of goods and services increases by 1 unit, it would result to about 0.219445 units increase in output produced in Nigeria holding other factors constant. The probability value of 0.0053 for volume of export indicated that export is statistically significant at 5 percent (0.05) level. This result conform to our apriori or theoretical expectation.

On the contrary, Table 3 revealed that the current value of import (IMP) has a negative impact on economic growth with a coefficient of -0.265055 units. The negative value of import indicated that a one unit increase in import would result to about -0.265055 units decrease in the output of goods and services, holding every other variable constant. The corresponding probability value of 0.0032 showed that import was statistically significant at 5 percent as the probability value is less than 0.05. This result also agreed with our theoretical expectation.

Finally, the current value of trade volume (TRD) has a positive effect on economic growth in Nigeria as expected with a coefficient of 0.517507. This implies that if the trade volume (TRD) increases by 1 unit, this would lead to increase in economic growth by 0.517507 units all things being equal. This result is in

agreement with expected result and as well with some empirical results. The probability value of 0.0000 for trade volume further indicated that trade volume is statistically significant at 5 percent (0.05) level.

Table 4: Model Diagnostic Test Results

Diagnostic Tests for the Model	Obs*R-Square	Prob.	Decision
Normality Test (JarqueBera)	0.880154	0.6440	Reject
Heteroskedasticity (Glejser Test)	12.77357	0.4655	Reject
Ramsey Rerset Test	0.823991	0.3805	Reject
Breusch-Godfrey LM Test	4.756329	0.0927	Reject

Source: Author’s own computation using E view 10

The various Obs*R-Square and F-Statistic results in table 4.4 revealed that the Error term is normally distributed with a zero mean, there is Homoscedasticity (implying that the variance of the error term are constant irrespective of the period), No serial dependence of the error term and the model is correctly specified.

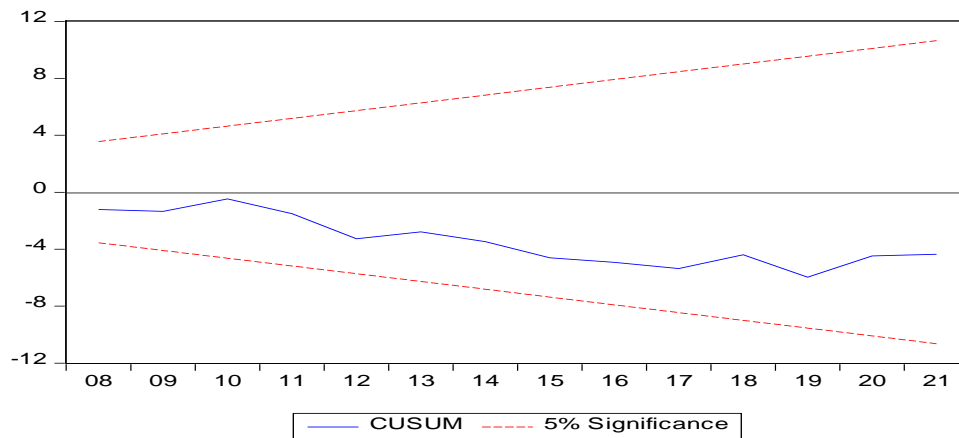


Fig. 1: Cumulative Sum for the Model

The CUSUM-Squared graph expressed in Figure 4.1 revealed that the residuals of the estimated ARDL model is stable, as the cumulative sum of squares plot lie in between the upper- and lower-5 per cent significance bounds.

CONCLUSION AND RECOMMENDATIONS

On the basis of our analyses and findings, the study concludes that the Nigerian economy has benefited from other countries by opening her boarders. Trade openness variables, did meet our a priori expectation in terms of their contribution to the growth of the economy. It has a positive coefficient. This means that opening the boarders has benefited Nigerian. Therefore we would say that trade openness has benefited the Nigerian economy both in the short and long-run. Based on our findings, the study hereby gives the following recommendations to aid future policy and for further studies.

- 1) Government needs to encourage external trade by opening our boarders, but with caution to avoid dumping ground of some goods. This is because we observed that the trade openness (OPN) contributed positively to the growth of the economy.
- 2) Government need to create a conducive environment that would encourage favourable balance of trade as this will boost the income level of the economy and as well increase output level.

- 3) Government needs to ensure that Nigeria export more goods to neighboring countries as this will boost the value of our naira which is seriously declining the foreign exchange market which is causing a serious concern for business men in the country, mostly importers.
- 4) From the empirical result, we discovered that import has negative impact on the economy of Nigeria. Therefore caution should be taken by the government to avoid importation of those goods that can be produced here in Nigeria at a cheaper rate.

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