Trade Openness and Economic Growth (A Comparative Study Between Nigeria and Ghana)

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Abstract: **This study examines the impact of trade openness on economic growth in Nigeria and Ghana covering the period of SAP and POST-SAP from 1986-2016. The study made use of the following theories; Comparative Cost Advantage Theory and Endogenous Growth Model (New Growth Theory). Secondary data were sourced from OECD/World Bank Statistical Publications, CBN Statistical Bulletin, Nigerian Bureau of Statistics and other research publications on the following variables; RGDP which is the dependent variable is used as a proxy for economic growth while TOP, GFCF, FDI and EXR are the explanatory variables. Both descriptive and econometrical techniques such as Unit Root Test and ARDL Bounds Test were employed. The Unit root test reveals that all variables were stationary at first difference while ARDL Bounds test indicated a long-run relationship among the variables. From the findings of this study, trade openness has an insignificant positive relationship on economic growth in Nigeria and Ghana under the period of study. This research work therefore recommends that policies of exchange rate stability and structural trade oriented policies should be adopted in Nigeria and Ghana in order to boost output growth in the economy. In addition, the Ghanaian government needs to invest heavily on infrastructural development and transport related cost. Finally, the government of both economies should create an investment friendly environment and also restructure its financial market so as to propel FDI in the economy.**

***Keywords*- Trade openness, and Economic Growth**

I. INTRODUCTION

Economists have long been interested in factors which cause different countries to grow at different rates and achieve different levels of wealth. One of such factors is trade openness. One of the basic interests in development and international economics is to check if trade openness promotes economic growth. With regards to globalization, two major trends are visible: first is the emergence of multinational firms with strong presence in different, strategically located markets; and the second is the convergence of consumer tastes for the most demanded products, not minding from which country they are produced (World Bank, 2002).

The openness of a nation influences a country's growth rate by impacting upon the level of economic activities and facilitating the transfer of resources across borders. Nigeria is basically an open economy with international transactions constituting a significant proportion of her output (Emeka, Frederick & Peter, 2012), so also is Ghana's economy (Bawumia, 2010). Their trade openness has increased the participation of foreigners in the economy by allowing the inflow of foreign capital and expertise, thereby impacting on her economic growth.

It has been argued in literature that trade affects economic growth through different channels. First, trade openness may increase a country's market size and, thus, may provide innovators with new business opportunities and allow domestic firms to take advantage of scale economies. Alesina, Spolaore and Wacziarg (2005) find evidence supporting this hypothesis —especially, for smaller countries. Second, trade can enhance technological diffusion and transmit know-how and managerial practices thanks to stronger interactions with foreign firms and markets (Keller, 2004; Sachs and Warner, 1995). Third, trade may enhance product market competition, thus reducing anti-competitive practices of domestic firms and leading to higher specialization due to exploitation of comparative advantages of domestic firms. Trefler (2004) finds evidence supporting this hypothesis for Canada. In addition, Aghion, Fedderke, Howitt, Kularatne and Viegi (2008) find that trade liberalization stimulated productivity growth in South Africa through product market competition and pricing power of domestic producers.

The performance of the economy of the African continent in the late 1970s and early parts of the 1980s became progressively worse as a result of; structural and institutional bottlenecks, adverse external developments and policies. While other nations in the rest of the world were busily trying to restore growth after the lost decade of the 1980s, Africa continued in stagnation and decline during the first half of the 1990s. Most of the African countries adopted structural adjustment programs during the Bretton Woods era which were made up of rapid and extensive liberalization, deregulation and privatization of economic activity in search of a solution to the stagnation and decline (UNCTAD, 2001).

Trade in Africa as a share of GDP increased from 38% to 43% between 1988 to 1989 and 1999 to 2000, respectively. The marginalization of the African continent is the outcome of the interaction of declining terms of trade with the inability of the region to expand its productive capacity and shift to dynamic products. The region has been resisting open trade regimes. African countries need to focus on growth enhancing policies including promotion of exports of dynamic products which ECOWAS as an economic body has strived to achieve (UNCTAD, 2001).

It is not that ECOWAS Members are not abundantly endowed with resources. In fact, they are very rich in both mineral and human resources. For instance, Nigeria had earned US$350 billion between 1965 and 2000. But while oil revenues per capita rose from US$33 to US$325 during the period, Gross Domestic Product (GDP) per capita declined from $1000 in 1980 to a trifling value of $300 in 2001 (Obadan, 2003). Thus, what she earned during the period did not add meaningful value to the people's living standard (Sala-i-Martin and Subramanian, 2003). Similarly, Ghana is endowed with gold, diamond, manganese ore, and bauxite; Liberia with iron, timber and rubber; and Sierra Leone has one of the world's largest deposits of rutile, titanium ore (Johnson, 2003).

African countries have experienced low performances economically, for instance, Ghana inherited industrial sector was underdeveloped mainly because the colonial rulers had focused on the extraction of raw materials from the gold coast while at the same time creating economic system heavily dependent on manufacture products from Britain (Sakyi, 2010). Nigeria's export performance has also been lackluster. Unlike some other fuel producing countries like United Arab Emirate, Russia and Saudi-Arabia, Nigeria has not been able to diversify its export-base so that the oil sector continues to dominate almost all merchandise exports and contributes over 70 percent of its total foreign earnings (Nduka, 2013). Both Nigeria and Ghana have experimented with different exchange rates regimes, which might have implications for the trade-growth relationship.

The relationship between trade and productivity has not been established theoretically even though some researchers have indeed found some, if not complete, support for the view that increasing openness has a positive impact on productivity. Bernard and Jensen (1999) reported that mainly through reallocation of resources from less efficient to more efficient plants (Ricardian theory); manufacturing exporters within the same industry tend to grow faster than non-exporters. Lawrence (2000) also established that trade with developing countries boosts total factor productivity (TFP) growth in manufacturing industries with a relatively large share of imports from developing countries.

1.1 Statement of the problem

The magnitude of the distortions in the economy of Nigeria and Ghana ushered in by the culture of controls made it imperative for their government to take urgent and drastic actions to ameliorate the situation. With appropriate pressures from the IMF and the World Bank, Nigeria and Ghana adopted structural Adjustment Program like most developing economies in 1986 as a way of ensuring the long term survival of the country, thereby making the economy more open to trade. Thus, in July, 1986, the Structural Adjustment Programme (SAP) was introduced to tackle the problem of imbalances in the economy (Ominyi and Ehoda, 2017). Given the outcome of this step, one may again be forced to ask, has these ongoing processes of opening and international integration truly accelerated economic growth or not? The study, therefore, is going to take a position, whether or not trade openness has played any significant role in the progress of Nigeria and Ghana in terms of their economic growth comparatively.

1.2 Objectives of the study

The broad objective of the study is to examine the impact of trade openness on the economic growth of Nigeria and Ghana. While the specific objectives are as follows;

a. To examine the relationship between Nigeria and Ghana's trade openness and economic growth
b. To determine the direction of causality between Nigeria and Ghana's trade openness and economic growth.

1.3 Hypotheses Testing

In order to carry out an adequate research work, and to analyze the relationship of the needed variables, the following hypotheses shall be made;

1) There is no significant relationship between trade openness and economic growth in Nigeria and Ghana.
2) There is a significant relationship between trade openness and economic growth in Nigeria and Ghana.
3) There is no causality between trade openness and economic growth in Nigeria and Ghana.
4) There is a causal relationship between trade openness and economic growth in Nigeria and Ghana.

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This section discusses trade openness and economic growth in Nigeria and Ghana. It presents the theoretical as well as the empirical framework for the study.

2.1 Theoretical Framework

2.1.1 Comparative Cost Advantage Theory

This was a modification of Adam Smith's theory. According to Ricardo (1817), it is not the absolute but the comparative advantage in costs that determines relations between two countries. Traditional explanation of trade as "the engine of growth" and the impact of trade on economic growth are rooted in the principles of comparative cost advantage. The theory of comparative cost doctrine arises from the nineteenth century free trade models associated with Ricardo and Mill, which were modified by trade theories embodied in the factor proportions or Ohlin (1933) theory and Samuelson (1941) and Rybznski (1955) effects. These trade models collectively and in various ways predict that an economy will tend to be relatively well endowed. In other words, comparative cost advantage provides that when nations specialize, they become more efficient in producing a product (and indeed a service), and thus if they can trade for their other needs, they and the world will benefit. According to Mwaba (2000) trade has the impact of integrating the two economies as through exchange,

they produce the economically efficient levels of both food and manufactures.

The principles stated above are also in line with the theories advanced in early writing by Mill, stating that trade according to comparative cost advantage, results in a more efficient employment of the productive forces of the world. According to Mill, this was considered as the direct economic advantage of international trade (Meier, 1995).

2.1.1.1 Theoretical Linkage

Nigeria and Ghana are referred to as developing economies because of their level of development as manifested in their production techniques. Examples are the unprocessed mineral ores and agricultural products. From the foregoing, one can infer that, two theories provide the channels through which foreign trade affect economic growth. First is the comparative advantage theory. It suggests that specialization yields unambiguously better economic performance (i.e specializing in the production of a particular commodity which the country is well endowed in and thus trading for other needs), the nation and the world will benefit. The second is the new growth (endogenous growth) theories which suggest that higher long run rate of growth of output can result from greater openness. This can occur either through the favourable impact of openness on technological change or through expansion in the size of market facing domestic exporters thereby rising returns to innovation and thus enhancing the country's specialization.

Rivera-Batiz (1995), demonstrated that by augmenting the rivalry facing producers in the local market, trade could induce domestic total factor productivity. Studies of long-run growth also suggest that the invention and development of new goods and inputs constitute one of the major sources of economic growth. If trade stimulates competition, leading to creation of new inputs and products, long-term growth will arise. When two countries engage in trade, each has available the ideas of the other represented by the stock of blueprints for the capital goods. The large body of ideas and knowledge doubles the rate of innovation and results in productivity growth in both economies.

Jhingan (1997) observed that substantial free trade with marginal insubstantial corrections and deviations is the best policy from the point of view of economic growth. That is, the development of export manufacturing industries, which is much desired in Nigeria and other developing countries in general, may be attained through technological change in the economy and involvement in free trade with other countries.

2.2 Literature Review

A plethora of research studies on Trade openness and economic growth exist around the world, in developing and developed countries. Briefly, we present some of their findings below;

Khobai, Nwabisa and Clement (2017), while investigating on the relationship between trade openness and economic growth nexus, a comparative of Nigeria and Ghana from 1980-2016 using ADF test, Philips and Perron test and others found out that there is long run relationship between trade openness and economic growth in both countries, although a positive impact of trade openness on the economic growth of Ghana and a negative impact on Nigeria were found to exist between the variables of interest. The study recommended that Nigeria and Ghana should ensure that the policies are initiated and implemented with needed speed if they need to partake in the gains that are in trade openness and willing to stimulate the economic levels of performance.

Eleanya (2013) empirically tested whether openness leads to economic growth in Nigeria. The ordinary Least Squares (OLS) technique and data from 1970 – 2008 from CBN statistical bulletin were employed. The unit root tests showed that all the variables, but lagged GDP are stationary only after first difference, and the cointegration test shows that there exists long run equilibrium between economic growth, trade openness, investment, and government expenditure in Nigeria. The study reveals that openness impact significantly on economic growth in Nigeria. It was recommended that in Nigeria, there is need for the government to move aggressively to address infrastructure, transport related and transaction cost while also opening sectors that will strengthen the competitiveness of domestic suppliers which has the potential to turn the nation into a net exporter of services.

Egbulonu and Ezeocha (2018) examined the relationship between Trade openness and Economic growth in Nigeria. The study covered the period 1990 – 2015, using ARDL approach to cointegration. The ARDL result confirmed the existence of a long-run relationship between Economic Growth, Trade Openness, Foreign Direct Investment and Gross Capital Formation. It was found that Trade Openness and Gross Capital Formation had positive and negative impacts respectively on growth rate of GDP in the short run. The study concluded by recommending that; FDI should be encouraged as it was seen to have significantly improved economic growth in Nigeria, while regulating the degree of her trade openness.

Christopher and Damilola (2014) in their research work evaluated the relationship between trade openness and output growth in Nigeria, using secondary data covering the period 1970 to 2010. Econometric techniques of the Non-Monotonic modelling was adopted, while the Ordinary Least Square (OLS), Unit root test and co-integration test were also used. The variables used were real gross domestic product (RGDP) as the dependent variable, degree of openness, squared term of the degree of openness to capture the long run effect, real exchange rate, real interest rate and unemployment rate as the independent variables. The result showed that there is positive relationship between trade openness and output growth in Nigeria. It was recommended that the government should focus on the other sectors in Nigeria such as the agricultural and manufacturing sectors other than petroleum, while the revenue generated from the export of crude oil can be used to develop

the basic infrastructural facilities and essential social amenities needed in the country.

The paper by Kwame, Ellen and Daniel (2017) evaluated Trade openness and economic growth volatility in Ghana, covering the period 1970 to 2013. Their study adopted the Autoregressive Distributed Lags (ARDL) approach to cointegration using the bounds test and error correction techniques. Their findings show that both the long and short run economic growth volatility is positively influenced by changes in trade openness. Volatility in domestic credit to private sector, shocks after the economic liberalization and financial openness contributed negative to economic growth volatility in the short run. They recommended that developing economies should take into consideration their own realities in their trade policies to limit economic growth volatility.

Ude and Agodi (2015) conducted a research to know whether trade openness makes sense, using Nigeria trade policy as a yardstick. Their study employed Autoregressive Conditional Heteroscedasticity (ARCH), Generalized Autoregressive Conditional Heteroscedasticity (GARCH) and Pairwise-Granger causality methodology using secondary data from 1984 to 2013. Results show that trade openness has a significant impact on economic growth. This implies that trade openness make sense in Nigeria given that most of the period under investigation ranged from when Nigeria adopted unrestricted trade policies. The control variables (interest rate and exchange rate) have significant positive effect on economic growth in Nigeria. The pairwise Granger causality test shows that there is a unidirectional causality between economic growth and trade openness at lag one only. It was recommended that efforts should be made in formulating policies that will enhance trade (both domestic and foreign) as the economy strives to attain growth through trade. Also, there is need for effective regulation of trade inflow to avoid conversion of the economy into a dumping ground for sub-standard and harmful goods.

Felix, Kolawole and Musa (2013) in their study adopts the ordinary least squares in estimating the influence of trade liberalization on economic growth in Nigeria between 1970 and 2012. 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 showed 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 while FDI had a positive relationship with economic growth. Their 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.

Mohamed (2015) examined the impact of trade openness on economic growth in 82 developing countries from 1996 to 2012. Applying the OLS (Least Square Dummy Variables) technique in his estimation, he found out that trade openness has a weak contribution to economic growth by the deterioration of external balance caused by the preferences erosion phenomenon, the OECD countries support to their agricultural producers and the losses in taxes revenue. It was recommended that these countries had to conform with international agencies recommendations in order to obtain loans.

The study by Eleanya, Chukwu, Ugbor and Onuzuruike (2013) empirically evaluated and compared the causal relationship between trade openness and economic growth in Nigeria in the pre and post SAP (1970Q1-1985Q4 and 1986-2011) periods. The study employed Augmented-Dickey Fuller and Phillips-Perron tests for unit root and Engle-Granger approach for cointegration. The results of the cointegration test confirmed that long-run relationship exist between economic growth and its determinants: trade openness, investment, and government expenditure respectively. The study employed Engle-Granger causality to test the direction of causality. The results revealed a unidirectional causality ranging from economic growth to openness without a feedback in the pre SAP period (growth-led trade), whereas there exists a bi-directional causality going from economic growth to openness with a feedback effect in the post SAP period (growth-led trade and trade-led growth respectively). It was concluded that economic growth leads to opening the economy to international trade, which again leads to more economic growth in Nigeria. Hence, it was recommended that to achieve more economic growth, managers of the economy should direct policies towards opening the borders more for external trade.

Ishola, Ajayi, Onafowokan and Giwa (2013) examined the effect of trade openness and economic growth on Nigeria from 1981-2009 using time series data and variables such as GDP, FDI, OP, TRD, BOP, NOILEXP and EXCH. Employing the ordinary least square regression method, the result showed trade openness, FDI and other intervening external sector variables do not determine economic growth in Nigeria. The study recommended that the government needs to invest heavily on infrastructural development by encouraging private sector participation through enabling acts and policy formulation. Also, the government should restructure the financial market in terms of physical and human structure so as to propel FDI into the economy.

Fatih, Hakan and Mohamane (2017) carried out an empirical analysis of the relationship between trade openness and economic growth in Niger from 1970 to 2015. Haven found evidence of long run relationship between the variables by employing the Johansen cointegration approach and Vector

Error Correction (VEC) technique, it was also discovered by the use of the Granger causality test that bi-directional causation exist between the variables of interest the economy of Niger. Their work recommended that economic policies should be geared towards developing a business environment and opportunities for supporting trade.

2.2.1 Gap in Empirical Literature

Most of the above empirical studies reviewed so far indicated that, the trade liberalization-economic growth linkage is an unsettled issue that needs further investigation. Most studies reviewed indicated that the trade liberalization-economic growth nexus is predominantly positive and significant. Scrutinizing the above empirical studies reviewed, most prominent recent empirical studies on the relationships between trade openness and economic growth are country specific, that is; there is a focus on a particular country when investigating the relationship between trade openness and economic growth while also failing to capture an important economic variable such as the gross fixed capital formation in their model. This study attempts to add to the existing literature by carrying out a comparative study between Nigeria and Ghana to ascertain what is obtainable in both countries as it relates to the relationship between trade openness and economic growth using appropriate econometric methods while also using an appropriate co-integrating framework that is based on the order of integration for a relatively longer and more recent period with particular focus to the period when SAP was introduced (1986) till 2016, while also including the gross fixed capital formation in the model.

III. METHODOLOGY

This study is comparative in nature, on the impact of trade openness on economic growth in Nigeria and Ghana. The study covered the scope of 1986-2016. The study will be using quantitative data to investigate the research questions noted in this work by using times-series panel data for the period of 1986-2016. The data collected was analysed using the Auto-Regressive Distributed Lag (ARDL) model and the Granger causality test.

To achieve the stated objectives of the study, the kind of data that was used is the Secondary data, which are annual time-series panel data on each of the variables of interest covering the period 1986-2016.

The data for this study was sourced mainly from the OECD/World Bank Statistical publications, Central Bank of Nigeria Statistical Bulletin, and the Nigerian Bureau of statistics, and other research publications.

3.1 Model Specification

There have been series of models in the area of Trade Openness and economic growth. In this work, the model built by Ude and Agodi (2015) from the empirics who investigated empirically the relationship between, trade openness, Interest rate, exchange rate and economic growth in Nigeria was adapted and modified, incorporating relevant economic variables of interest into the model.

Multiple regression will be adopted for the specification of the model in the form;

RGDP = f(TOP, GFCF, FDI, EXR) - - - -- - - - - - -- -(1)

Where; RGDP (Real Gross Domestic Product), TOP (Trade Openness), GFCF (Gross Fixed Capital Formation), FDI (Foreign Direct Investment) and EXR (Exchange Rate) are the variables of interest.

Specificially, the following functional relationship is stated for this study;

Expressing explicitly, this translates into

$RGDP_{it} = b_o + b_1TOP_{it} + b_2GFCF_{it} + b_3FDI_{it} + b_4EXR_{it} + U_{it}$ -(2)

According to economic theory, all the explanatory variables TOP, FDI, GFCF, and EXR are expected to have a positive relationship with the dependent variable. When there is an increase in Foreign Direct Investment, Gross Fixed Capital Formation, and a favourable Exchange rate the resulting effect on RGDP will be Positive.

IV. DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Pre-Estimation Analysis

Descriptive statistics, trend analysis and unit root test results were presented to examine the pattern and behavior of data for the variables incorporated in the model.

4.1.1 Trend Analysis

The trend analysis and descriptive statistics of the variables used in this study are presented for Nigeria and Ghana in Figure 4.1 and 4.2, and Table 4.1 and 4.2 respectively.

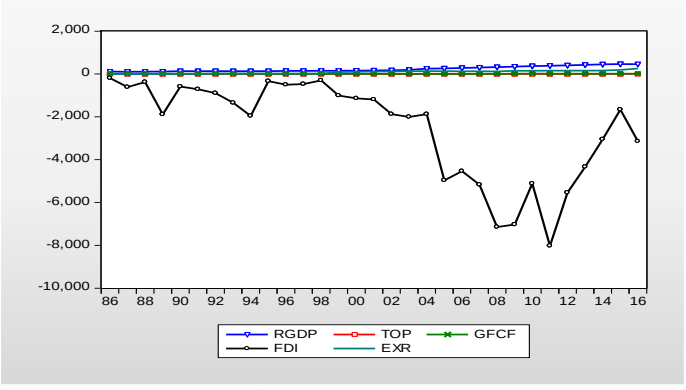

Figure 4.1: Trend Analysis of Real Gross Domestic Product (RGDP), Trade Openness (TOP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI) and Exchange Rate (EXR) for Nigeria.

The trend of RGDP, TOP, EXR and GFCF falls into same trend lines, but RGDP a slight gradual and stable rise, while TOP, GFCF, and EXR shows a constant flat trend throughout the study period. FDI showed an unstable rapid fall, until 2011 when there was a sharp rise and then falls in 2015.

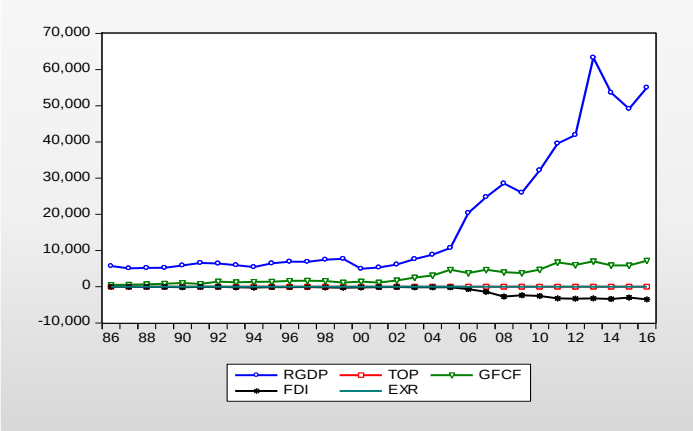

Figure 4.2: Trend Analysis of Gross Domestic Product (GDP), Trade Openness(TOP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI) and Exchange Rate (EXR) for Ghana.

RGDP maintained a slightly stable low until the year 2000 when a sustained stable rise followed. TOP, EXR and GFCF falls into same trend lines, but RGDP a slight gradual and stable rise, while GFCF experienced a creeping trend until 2002 when a gradual rise ensued, TOP and EXR shows a constant flat trend throughout the study period. FDI shows a gradual decreasing trend.

4.1.2 Descriptive statistics

The descriptive statistics are presented in Table 4.1 and 4.2 below;

Table 4.1: Descriptive Statistics of the Variables for the Study (Nigeria)

Tools	RGDP	TOP	GFCF	FDI	EXR
Mean	232.7618	1.026745	11.05000	-2547.688	88.82697
Median	164.4210	0.961200	11.20000	-1874.061	111.9433
Maximum	464.2820	2.490000	17.29000	-193.2149	253.4923
Minimum	101.4160	0.250000	5.470000	-8024.349	2.020575
Std. Dev.	123.2485	0.438831	3.433735	2309.680	70.29011
Skewness	0.684418	1.665241	0.135583	-0.935112	0.209984
Kurtosis	1.928397	6.319795	1.661757	2.642450	1.996446
Jarque-Bera	3.903471	28.56283	2.408215	4.683043	1.528680
Probability	0.142027	0.000001	0.299960	0.096181	0.465641
Sum	7215.617	31.82910	342.5500	-78978.34	2753.636
Sum Sq. Dev.	455705.7	5.777171	353.7160	1.60E+08	148221.0
Observations	31	31	31	31	31

Source: Author's Computation from E-views 9.0 Output

Table 4.2: Descriptive Statistics of the Variables for the Study (Ghana)

Tools	RGDP	TOP	GFCF	FDI	EXR
Mean	18231.87	0.641821	2921.376	-1006.442	0.762631
Median	7480.969	0.616345	1673.010	-148.0000	0.544919
Maximum	63277.22	1.007665	7226.128	-4.300000	3.668025
Minimum	4983.024	0.321051	525.7687	-3470.668	0.005434
Std. Dev.	18064.23	0.180673	2184.731	1346.135	0.895821
Skewness	1.203432	0.269912	0.676036	-0.906136	1.569921
Kurtosis	3.043823	2.388414	2.003631	1.985475	5.312834
Jarque-Bera	7.485093	0.859536	3.643601	5.571717	19.64341
Probability	0.023694	0.650660	0.161734	0.061676	0.000054
Sum	565187.9	19.89646	90562.65	-31199.69	23.64157
Sum Sq. Dev.	9.79E+09	0.979282	1.43E+08	54362356	24.07486
Observations	31	31	31	31	31

Source: Author's Computation from E-views 9.0 Output

The descriptive statistics results for Nigeria and Ghana in Table 4.1 and 4.2 show that Real Gross Domestic Product (GDP) averaged $232.7618 billion over the review period with a standard deviation of 123.2485 in Nigeria, while

in Ghana it averaged $18231.87 million with a standard deviation of 18064.23. The Mean value of Trade openness (TOP) was 1.026745 with a standard deviation of 0.438831 in Nigeria, while in Ghana it averaged 0.641821 with a standard deviation of 0.180673. GFCF averaged $11.0500 billion with a standard deviation of 3.433735 in Nigeria, while it averaged $2921.376 million with a standard deviation of 2184.731 in Ghana. The Mean value of FDI (net inflows) was -2547.688 with a standard deviation of 2309.680 in Nigeria, while in Ghana it averaged -1006.442 with a standard deviation of 1346.135. Exchange rate (EXR) averaged ₦88.82697 with a standard deviation of 70.29011 in Nigeria, while in Ghana it averaged ₵0.762631 with a standard deviation of 0.895821. These high standard deviations imply a wide dispersion of the variables from their respective mean values.

The Jarque-Bera test of normality for Nigeria indicates that all the variables except TOP are all not normally distributed since the variables have their probability values above the critical value of 0.05, while for Ghana shows that only RGDP and EXR are normally distributed while TOP, GFCF and FDI were not.

The table also contains the results of skewness (that is, distribution of the skewedness along its mean) and Kurtosis i.e. the peakness and flatness of a normal statistics. It is pertinent to note that the skewness gives a measure of how symmetric the observations are about the mean. For a normal distribution the skewness is zero. From the skewness portion of the table for both Nigeria and Ghana, it can be deduced that all the series except FDI are skewed to the right.

The result of Kurtosis for Nigeria reveals that the data for RGDP, GFCF, FDI and EXR is flat (Platykurtic) because K is less than 3. This implies that the distribution is spread far from the mean value. Data for TOP is peaked (Leptokurtic). Ghana's kurtosis result reveals that data for RGDP and EXR are peaked, while that of TOP GFCF and FDI are flat.

4.1.3 Unit Root Test Results

The result of the unit root test for Nigeria and Ghana is presented in Table 4.3and 4.5 below;

Table 4.3: Results of Unit Root Test for the Order of Integration of the Variables (ADF) for Nigeria

	ADF Statistics of Variables		
Variables	**At levels**	**First difference**	**Order of Integration**
RGDP	-1.676251	-4.047185	1(1)
Prob	0.7368	0.0181	
5% CV	-3.568379	-3.574244	
TOP	-3.452511	-5.208083	1(1)
Prob	0.0633	0.0013	
5% CV	-3.568379	-3.580623	
GFCF	-2.014600	-5.747313	1(1)
Prob	0.5701	0.0003	
5% CV	-3.568379	-3.580623	
FDI	-1.982844	-6.710289	1(1)
Prob	0.5867	0.0000	
5% CV	-3.568379	-3.574244	
EXR	-1.630327	-3.645969	1(1)
Prob	0.7565	0.0431	
5% CV	-3.568379	-3.574244	

Source: Extraction from E-views Output. Note: CV=Critical Value

Table 4.4: Results of Unit Root Test for the Order of Integration of the Variables (ADF) for Ghana;

	ADF Statistics of Variables		
Variables	**At levels**	**First difference**	**Order of Integration**
RGDP	0.483951	-5.844381	1(1)
Prob	0.9832	0.0000	
5% CV	-2.963972	-2.967767	
TOP	-2.223103	-5.291621	1(1)
Prob	0.2027	0.0002	
5% CV	-2.963972	-2.967767	
GFCF	-0.093311	-6.764097	1(1)
Prob	0.9414	0.0000	
5% CV	-2.963972	-2.967767	
FDI	0.413346	-4.484864	1(1)
Prob	0.9802	0.0013	
5% CV	-2.963972	-2.967767	
EXR	5.491458	1.543605	1(1)
Prob	1.0000	0.9989	
5% CV	-2.963972	-2.986225	

Source: Extraction from E-views Output. Note: CV=Critical Value

From the unit root test, it was discovered that all the variables (RGDP, TOP, GFCF, FDI and EXR) are integrated or stationary (that is, does not have a unit root) at the first difference that is I(1). This is because the ADF test statistic of Real Gross Domestic Product, Trade openness, Gross Fixed capital formation, Foreign Direct Investment and exchange rate are greater than the Critical Values at 5% not minding the signs. This shows that the variables have violated the assumption of OLS requesting for stationarity at levels, which means the variables have simultaneous equation characteristics and cannot be estimated using the Ordinary Least Square method. Thus, the Autoregressive Distributed Lag method will be use to estimate the equation, because it is one of the methods among others that takes care of the simultaneous equation characteristics of the variables.

4.2 Granger Causality Test Results

The result of pairwise granger causality test for Nigeria and Ghana is presented in Table 4.5 and 4.6 below;

Table 4.5: Results of causality test for Nigeria

Null Hypothesis:	Obs	F-Statistic	Prob.
TOP does not Granger Cause RGDP	30	0.00108	0.9741
RGDP does not Granger Cause TOP		0.07041	0.7928
GFCF does not Granger Cause RGDP	30	1.56964	0.2210
RGDP does not Granger Cause GFCF		4.40303	0.0454
FDI does not Granger Cause RGDP	30	6.69684	0.0154
RGDP does not Granger Cause FDI		0.71453	0.4054
EXR does not Granger Cause RGDP	30	8.32399	0.0076
RGDP does not Granger Cause EXR		1.64583	0.2104

Source: Extract from E-views 9.0 Output

From the granger causality test result, TOP does not Granger cause RGDP neither does RGDP granger cause TOP. While a unidirectional relationship exists between RGDP and GFCF which runs from RGDP, FDI and RGDP running from FDI to RGDP, EXR and RGDP running from EXR to RGDP, FDI and GFCF. The result also revealed that there is no causal relationship between EXR and FDI, EXR and GFCF, EXR and TOP, FDI and TOP, TOP and RGDP, GFCF and RGDP because their probability value is greater than 0.05 critical value.

Table 4.6: Results of causality test for Ghana.

Null Hypothesis:	Obs	F-Statistic	Prob.
TOP does not Granger Cause RGDP	29	1.27926	0.2965
RGDP does not Granger Cause TOP		0.20431	0.8166
GFCF does not Granger Cause RGDP	29	7.70436	0.0026
RGDP does not Granger Cause GFCF		0.43757	0.6506
FDI does not Granger Cause RGDP	29	3.21920	0.0577
RGDP does not Granger Cause FDI		1.64258	0.2145
EXR does not Granger Cause RGDP	29	3.16432	0.0603
RGDP does not Granger Cause EXR		48.2446	4.E-09
FDI does not Granger Cause GFCF	29	1.39927	0.2662
GFCF does not Granger Cause FDI		4.82287	0.0174
EXR does not Granger Cause GFCF	29	5.12343	0.0140
GFCF does not Granger Cause EXR		8.96564	0.0012
EXR does not Granger Cause FDI	29	2.79453	0.0811
FDI does not Granger Cause EXR		1.93357	0.1665

Source: Extract from E-views 9.0 Output

From the granger causality test result, TOP does not Granger cause RGDP neither does RGDP granger cause TOP. While a unidirectional relationship exists between RGDP and GFCF which runs from GFCF, GFCF and EXR which runs from EXR, FDI and GFCF which runs from GFCF. The result also revealed that there is no causal relationship between EXR and FDI, EXR and TOP, FDI and TOP, because their probability value is greater than 0.05 critical values.

4.3 ARDL Bounds Test

This is to examine whether there is long run relationship existing among the variables. The result of ARDL Bonds Test for the variables is presented in the table below:

Table 4.7 ARDL Bounds Test result for Nigeria.

Null Hypothesis: No long-run relationships exist				
Test Statistic	Value	k		
F-statistic	4.228513	4		
Critical Value Bounds				
Significance	I0 Bound	I1 Bound		
10%	2.45	3.52		
5%	2.86	4.01		
2.5%	3.25	4.49		
1%	3.74	5.06		

Source: E-views 9 Output.

ARDL Bound test was employed to examine the whether there is a long-run relationship existing among the variables incorporated in the model. The F Statistics (4.228513) is greater than the lower (2.86) and upper (4.01) bound at 5% significance level; so we reject the null hypothesis that there is no equilibrating relationship and conclude that that there exist a long-run relationship among the variables used in the model.

Table 4.8 ARDL Bounds Test result for Ghana.

Null Hypothesis: No long-run relationships exist				
Test Statistic	Value	k		
F-statistic	4.172692	4		
Critical Value Bounds				
Significance	I0 Bound	I1 Bound		
10%	2.45	3.52		
5%	2.86	4.01		
2.5%	3.25	4.49		
1%	3.74	5.06		

Source: E-views 9 Output

The F Statistics (4.172692) is greater than the lower (2.86) and upper (4.01) bound at 5% significance level; so we reject the null hypothesis that there is no equilibrating relationship and conclude that that there exist a long-run relationship among the variables used in the model.

4.4 Co-integration and Long Run Form

Given that there is long run relationship among the variables, the ARDL long-run coefficients were estimated and the result for Nigeria and Ghana presented in table 4.7 and 4.8 below with their corresponding equation;

Table 4.9. Long Run Coefficients for Nigeria				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOP	-383.081004	1718.229304	-0.222951	0.8255

GFCF	-25.607933	155.009248	-0.165203	0.8702
FDI	-0.000000	0.000000	-0.262334	0.7953
EXR	5.168125	16.486631	0.313474	0.7566
C	935.390225	4076.245942	0.229473	0.8204

Source: E-views 9 Output.

The result of Co-integration and Long Run Form is to show the form of long-run relationship of the variables as summarised below;

Cointeq = RGDP - (-383.0810*TOP -25.6079*GFCF-0.0000*FDI + 5.1681*EXR + 935.3902)

Table 4.10. Long Run Coefficients for Ghana

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOP	-5345.008017	8809.911880	-0.606704	0.5506
GFCF	5.277614	2.932285	1.799830	0.0863
FDI	-10.435827	3.664830	-2.847561	0.0096
EXR	-11080.431744	8878.939839	-1.247945	0.2258
C	3704.406871	5486.358464	0.675203	0.5069

The result of Co-integration and Long Run Form is to show the form of long-run relationship of the variables as summarised below;

Cointeq = RGDP - (-5345.0080*TOP + 5.2776*GFCF -10.4358*FDI-11080.4317*EXR + 3704.4069)

The coefficients of the variables reveal that in both Nigeria and Ghana, Trade openness (TOP) exerts an insignificant positive impact on economic growth. The coefficients reveals that, a 1.0 ratio change in Trade openness will increase RGDP in Nigeria by $383.08 billion. While in Ghana a 1.0 ratio change in trade openness will increase RGDP by $5345.0 million. This positive relationship conforms to the a priori expectation. This literally means that the wider the nation opens its economy to foreign trade, the better the economy. This finding is in line with that of Felix, Kolawole and Musa (2013), Ude and Agodi (2015), Kwame, Ellen and Daniel (2017), Christopher and Damilola (2014) and Egbulonu and Ezeocha (2018) who found out in their work that trade openness impacts positively on economic growth and disagrees with that of Khobai, Nwabisa and Clement (2017), who found out that trade openness impacts negatively the economic growth of Nigeria.

Also, Gross fixed capital formation impacts positively and negatively on economic growth in Nigeria and Ghana respectively. Thus, a unit change in GFCF will increase RGDP in Nigeria by $25.6 billion, while same will decrease RGDP in Ghana by $5.28 million.

However, Foreign Direct Investment (net inflows) was found to exert a positive impact on economic growth in both countries, while it was statistically insignificant in Nigeria; it was significant in Ghana. This finding conforms to the a priori expectation; implying that the influx of foreign direct investment into the country helps in busting the economy which is critical to the idea of trade openness. No nation can afford to open its borders for trade only to be at a disadvantage point always. This finding is in line with that of Felix, Kolawole and Musa (2013) who also found a positive relationship between FDI and economic growth.

Furthermore, Exchange rate was found to impact negatively on economic growth in Nigeria which does not conform to the a priori expectation while it impacted positively on Ghana's economic growth, the impact is insignificant in both countries. For every $1 change in exchange rate RGDP will decrease by $5.17 billion in Nigeria, while a $1 change in exchange rate will increase RGDP in Ghana by $11080.43 million.

Lastly, the constant term C shows that if other variables are held constant, the value of RGDP in Nigeria will decrease by $935.39 billion while that of Ghana will also decrease by $3704.40 million.

V. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

In conclusion, the quantitative analysis undertaken in this work affirms that trade openness and economic growth are positively related. However, the economy of Nigeria and Ghana has not really enjoyed much benefit from the inflow of foreign capital into the economy as established by this study as a result of various constraints. Such constraints include; low technological know-how, lack of sound infrastructural base, lack of security of life and property, lack of quality human capital, political instability, undeveloped financial markets among others.

Finally, this study is therefore in tandem with the school of thought which posits that trade openness has a positive impact on the economic growth of Nigeria and Ghana.

5.2 Recommendation

Based on the results and findings above, it is recommended that structural trade oriented policies should be adopted to enhance economic growth in Nigeria and Ghana through high export flows in order to accumulate more foreign proceeds to boost output growth rate in the economy. There is also need to invest heavily on infrastructural development and transport related cost most especially the Ghanaian economy which had a poor gross fixed capital formation. Furthermore, the Nigerian and Ghanaian government should restructure its financial market in terms of physical and human structure so as to propel FDI in the economy.

REFERENCES

[1] Aghion, P., J. Fedderke, P. Howitt, C. Kularatne and N. Viegi, (2008). "Testing Creative Destruction in an Opening Economy: the Case of the South African Manufacturing Industries." Observatoire
[2] Alesina, A., E. Spolaore, and R. Wacziarg, (2005). "'Can Free Trade Guarantee Gains from Trade?', United Nations University World Institute for Development Economics Research (Research Paper No. 2008/97.pg 19)
[3] Bawumia, M. (2010). Monetary policy and financial sector reform in Africa: Ghana's experience. Accra: Combert Impressions Ghana.

[4] Bernard.D and Jensen.F (1999) On Exports and Economic Growth. Journal of Development Economics, 12, 59-73
[5] Christopher. E and Damilola. D. (2014). Impact of Trade Openness on the Output Growth in the Nigerian Economy. British Journal of Economics, Management & Trade. 4(5): 755-768.
[6] Egbulonu, K. G and Ezeocha, J. A. (2018). Trade Openness And Nigeria's Economic Growth. International Journal of Development and Economic Sustainability. 6(3);1-11
[7] Eleanya, K. N., Chukwu , J. O., Ugbor, K. I., & Onuzuruike, N. N. (2013). Trade Openness And Economic Growth: A Comparative Analysis Of The Pre And Post Structural Adjustment Programme (Sap) Periods In Nigeria. Asian Journal of Business and Economics.3(3.4);1-12
[8] Emeka, E.J., Frederick, I. & Peter, A. (2012). Macroeconomic Impact of Trade on Nigerian Growth: An Empirical Evaluation. Research Journal of Business Management and Accounting, 1(4), 079-083
[9] Fatih. M, Hakan. A and Mohamane, M. B. (2017). An Emperical Analysis on the Relationship between Trade Openness and Economic Growth in Nigeria. EconWorld 2017@ParisProceedings.
[10] Felix, G. O., Kolawole. S and Musa, I. B. (2013). Trade Liberalization And Economic Growth In Nigeria; A Cointegration Analysis. Journal of Business, Economics & Finance. 2(5);2-11.
[11] Ishola, S. A., Ajayi, E. O., Onafowokan. I and Giwa, A. B. (2013). Trade Openness and Economic Growth in Nigeria (1981-2009). An Emperical Analysis. International Journal of Humanities and Social Sciences Invention.
[12] Jhingan.M.L (1997) Economic Development and Planning, 35th Edition. Vrinda Publications (P) LTD.
[13] Johnson, G. (2003). The Labour Market Implications of International Trade. In Handbook of Labour Economics, 3. Ed. O. Ash-enfelter and D. Card. Elsevier Science B. B.
[14] Keller, 2004; The Long-Run Relationship between Outward FDI and Total Factor Productivity: Evidence for Developing Countries (Discussion Paper, No. 199). Gottingen: Ibero-America Institute for Economic Research, Georg-August University of Gottingen.
[15] Khobai. H, Nwabisa.H and Clement.M (2017) The relationship between trade openness and economic growth: The case of Ghana and Nigeria. MPRA Paper No. 81317
[16] Kwame.M, Ellen.A and Daniel.D (2017). Trade openness and economic growth volatility: An empirical investigation. Cogent Journal of General and Applied Economics. 5: 1385438
[17] Lawrence, R.(2000) Does a Kick in the Pants Get You or Does It Just Hurt? The Impact of International Trade on Wages. University of Chicago Press, 197-224
[18] Meier, G. (1995). Leading Issues in Economic Development. Oxford, University Press.
[19] Mohamed. F. (2015). Trade Openness And Economic Growth In Developing Countries: An Analysis Of The Relationship After Comparing Trade Indicators. Asian Economic and Financial Review. 5(3): 468-482.
[20] Mwaba, A. (2000). "Accounting for The Sources of Economic Growth: The Experiences of Kenya, Zambia, Tanzania and the Sudan" Unpublished Mimeo, Program in Economic Policy Management, Columbia University.
[21] National Economic Empowerment and Development Strategy (NEEDS, 2005) Report.
[22] Nduka, E. K. (2013). "Openness and Economic Growth in Nigeria":Journal of Education Practice, Enugu.2(23);45-57
[23] Obadan, M.(2003) Prospects for Diversification in Nigeria's Export Trade in Annual Conference of the Nigerian Economic Society, Heinemann press, Ibadan, 33-53.
[24] Ominyi, S. O. & Ehoda, S. N. (2017). Foreign trade and economic growth in Nigeria. Polac International Journal of Economics and Management Science, 3(1),118-135
[25] Ricardo, D. (1817), The principles of political economy and taxation, [3ª Edição em Português: Princípios de economia política e de tributação, Fundação Calouste Gulbenkiam, Lisboa, 1983.
[26] Rivera-Batiz, L. A. (1995). International Trade with Endogenous Technological Change. European Economic Review, 35, 971-1001.
[27] Sakyi.G., Villaverde, J., Maza, A.,and Chittedi,K.(2010)."Trade penness, rowth and Development: Evidence from Heterogeneous Panel Cointegration Analysis for Middle-Income Countries". Cuadernos de Economía 31(57);21-40.
[28] Sala-i-Martin and Subramanian, (2003) Export Growth in India: Has FDI Played a Role? Working Paper No. 816, Economic Growth Center, Yale University, New Haven, Connecticut.
[29] Samuelson.P (1941) "Openness, Trade Liberalization, and Growth in Developing Countries," Journal of Economic Literature, 31(3):1358-1393.
[30] Trefler, D., 2004. "The Long and Short of the Canada-U.S. Free Trade Agreement." American Economic Review 94(4), 870-895
[31] Ude, D. K and Agodi, J. E. (2015). Does Trade Openness Make Sense? Investigation of Nigeria Trade Policy. International Journal of Academic Research in Economics and Management Sciences. 4(10;12-29.
[32] UNCTAD. (2001). United Nations Conference on Trade and Development Key statistics and trends in international trade.
[33] World Bank (2002) World Bank World Development Report ,Oxford University press.