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Correlational Analysis of Trade Openness and Economic Growth: A Case Study of Nigeria

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Abstract

This study examined the relationship between the ratio of trade openness on economic growth of Nigeria economy as well as its impact. The study becomes necessary considering the current state of the country's economy as she strives to retain her position and pedigree as the giant of Africa coupled with her involvement international trade. The study employed the descriptive research of the correlational design and made use of economic data that entails the nominal GDP, real GDP, nominal export and import of year range from 2008 to 2018 while research question and hypothesis were answered and tested using descriptive and inferential statistic. the outcome of the study made it clear that the ratio of the country's trade openness was on the increase why that of economic growth is a bit low, meanwhile a positive and strong relationship was established between trade openness and economic growth why trade openness was found to influenced and contributed significantly to economic growth of Nigeria. it was therefore recommended that the country Nigeria should get more involved in international trade while she diversify her economy to gain more of foreign earnings, the country was also admonished to protect infant industries, promote SMEs and discourage importations where necessary through a good fiscal policy.

Keywords: Trade Openness, Economic Growth, International Trade, Export, Import, Gross Domestic Product, Balance of Trade.

Introduction

Human being has always been on the verge to survive even from the Stone Age, individual or set of people in the quest to survive and live had put in place so many measures to ensure good life as much as they can afford. Though this has to do with their immediate environment, yet they were committed to taking the advantage of their immediate environment to meet their inevitable needs.

The major need of human at this stage was all about what to eat while they successfully met this need by hunting for animals as their major source of food. They end up developing weapons in order to hunt for more dangerous but big animals by increase their chances of survival, however some of these weapon were as well made used for protection purposes even against wild animals.

Many other opportunities did surface as they continue to find a means of survival, the discovery of sea foods majorly fish came into being while the cultivation of land was as well introduced. Then the selfish interest of human now set in as every group of individuals want to own everything in his or her immediate to him/herself and the quest to protect their resources from strangers lead to the identification and protection of sovereignty.

Various communities now have their well defined sovereignty with every one developing his community and as well developing more weapons and strategies to protect their people and resources against external forces. Stronger communities end up colonizing other communities and the issue of slavery cropped in, this eventually became a popular business in that era.

Nevertheless, every community was endowed by one natural resources or the other and this actually forms and dictates their major activities. Those communities with good and fertile land for agriculture end up in farm production while other communities with big rivers end up with fish farming and some with mineral resources majored in mining.

This various communities grew to the level of selecting or adopting a particular system of government to spearhead the affairs of the people. The individual communities came to realized that each of their communities are well endowed in one area than the other and that they can not sufficiently produced or meet all their needs while they in view of that sees the need for exchange they then introduced trade by barter.

Barter is the direct exchange of goods or services without an intervening medium of exchange or money either according to established rates of exchange or by bargaining. It is considered the oldest form of commerce. Barter is common among traditional societies, particularly in those communities with some developed form of market. Trade by Barter is simply an act of trading goods and services between two or more people without the use of money. Trade by Barter is sometimes referred to as Barter System. Barter is a form of trading in which goods are exchanged directly for other goods, or used as a medium of exchange, without the use of money

Through trade by barter, every community now had the privilege to access products, goods or services produced in other communities by exchanging good for goods or service for goods with individual taking the advantage of her specialization in terms of comparative advantage to meet all her needs. The introduction of money became necessary for a proper and easier means of exchange following the shortcomings of the trade by barter system.

In our contemporary world today where money has become the standard means of exchange and trade between one or two countries are been referred to as international trade, no country can still survive wholesomely on her own, which is while there is no absolute closed economy. Every country are said to be naturally endowed in one area or the other even today and this has promote and encourage specialization. Some countries today specializes in technology, some oil production even services like health and education.

Comparative advantage and economic theory firs developed by David Ricardo occurs when one country can produce a good or service at a lower opportunity cost than another. This means a country can produce a good relatively cheaper than other countries. The theory of comparative advantage states that if countries specialize in producing goods where they have a lower opportunity cost – then there will be an increase in economic welfare.

International trade was introduced to create a well enable environment for every country to make use of her comparative advantage not only to access goods and services from other countries but to as well gain foreign earnings. Countries were found exporting goods in which they do enjoyed comparative advantage to other countries and import goods and services where they have less comparative advantages. The difference between the rate of importation and exportation of goods and services has a major role to play in determining the balance of payment or balance of trade of a country.

Balance of trade has to do with the difference between the imported goods and services and the exported goods and services in values. Country with more exportation compared to what is imported in value will end up having a trade surplus which an addition or injection to the economy while a country with more importations compared to her exportation will end up having a trade deficit which is a subtraction or leakage to the economy. Any country who continues to experience a trade surplus will end up developing a strong currency against other currencies in terms of exchange rate and purchasing power priority and vice versa.

A trade restriction is an artificial restriction on the trade of goods and/or services between two or more countries. It is the byproduct of protectionism. However, the term is controversial because what one part may see as a trade restriction another may see as a way to protect consumers from inferior, harmful or dangerous products. In economics, a trade restriction is any government policy that limits the free flow of goods and services across borders. it is majorly the policies put in place by the government of any country to encourage or discourage importations.

Countries do introduce trade tariff mostly to discourage importation or encourage exportation of goods and services without total closure of boarders against external trade knowing full well that they cannot practice a closed economy. Restriction policies are introduced sometimes to discourage importations so as to protect infant industries that specialize in the production of likes goods and services while some restrict external trade to avoid dumping or harmful products. It's majorly used for check and balances of a country's trade balance to protect the value of the currency and the economy from recession.

Mostly during the colonial era, Nigeria which is one of the most populated countries in Africa depends majorly on tax generation and the returns from slavery business. Many of the companies established by the European companies at the Nigeria coast were the source of meaningful tax generation coupled with the foreign exchanged earned through slavery which happened to be the popular trade then in Africa.

The agricultural sector which has been the major and traditional source of income for the Nigerians became more populous at this period. Many of the agricultural products coupled with cash crops generated most of the country foreign exchange while agriculture successfully formed the 90% of the Nigeria export. Nigeria at this period became the country with the largest economy in Africa and then nicknamed the "Giant of Africa". The country Nigeria through agriculture surpasses the U.S in exchange rate with Nigeria naira gaining more purchasing power priority than American dollar.

Nigeria in the 1970s discovered the oil and embraced it as the major product for exportation and source of foreign exchange. Though the discovery and exportation of oil increased the foreign earnings of the country very rapidly and appears to be more promising to the agricultural products as means of earning foreign exchange. The military government then abandoned the agricultural sector and focused majorly on the oil sector paying little or no attention to internal generated revenue through tax.

The military government having unhindered access to steady robust foreign earnings decided to convert the system of government then from the regional system to federal system of government. Meanwhile the regional system of government gives room for each region to develop on their own and made judicious use of the natural resources at their disposal to generate income and foreign earnings for survival.

The northern area of the country at the this period major in the production of grains and rearing of animals like cows even in large quantities, the people at the eastern part of the country do also focused of the production of palm oil while very many of them were involved in trade and related industrial activities while the southwestern people major in the production of cash crops like cocoa alongside with the production of yam and cassava among other agricultural products.

The new system of government introduced which is the federal system did not only discourage a regional development, it also successfully made all the state and region to over depend on the federal government for survival. The federal government at this period made so much of foreign earnings to the extent that the then government came out to say that the problem of the country is not money but how to spend it.

The economy boom in this era crippled other sources of foreign exchanged and means of exportation of the country as attentions shifted from the agricultural sector to the oil sector. Even when subsequent military and civilian government had made effort to revive other sectors including the agricultural sector, the country end up becoming a mono economy as effort put in place for diversification got frustrated by corruption. the overdependence on oil coupled with a fall in the price of oil in the world market had now drag Nigeria economy into mess and a continuing increase in internal and external debt with the Naira in no place compared to the American dollar.

The government and the people having neglected the other sector to focus and wholesomely rely on the oil sector now end up importing virtually everything. This importation cut across virtually all the sectors. Agricultural products which Nigeria do make available for local and international consumption now forms part of their importation. Daily importation in the information and communication technology where Nigeria has a very comparative advantage continues on the increase coupled with importation of luxuries and machineries. Demands for the foreign services in technological, health and industrial sector are also second to none.

This has actually increased the exchange rate and reduces the value of the Naira drastically compared to other currencies. The country is actively active in the world market with a daily increase in importation and a continuing decrease in the exportation of goods and services. In recent years, the government of this country had been majorly concerned about how they diversify the economy such that other sectors like Agricultural and mining can function so as to increase the exportation of goods and services and as well discourage importation.

Trade openness has to do with the degree of involvement of a particular country in the global or world market; it is the extent to which a country's economy is being free from trade restriction. It entails the rate at which a country allows importation of goods and services from other countries in the world coupled with her involvement in exportation of goods and services to other countries. Economic growth however has to do with to do with an increase in the amount and value of goods and services produced in a country over a period of time, usually a year.

Economic growth is an increase in the production of economic goods and services, compared from one period of time to another. It can be measured in nominal or real (adjusted for inflation) terms. Traditionally, aggregate economic growth is measured in terms of gross_national_product (GNP) or gross domestic product (GDP) (Jim, 2019). To Mladen (2015) Economic growth includes changes in material production and during a relative short period of time, usually one year. He further submitted that economic growth implies an annual increase of material production expressed in value, the rate of growth of GDP or national income.

According to the World Bank, oil exploration continues to promote the economic growth of Nigeria from year 2000 to 2014 while the country's gross domestic product grew at an average rate of 7% yearly. Set back witness in oil sector in the year 2014 through 2016 coupled with negative production shocks and the gross domestic product fell to 2.7% in 2015. The recession witnessed by the country in 2016 brought the economic growth rate to a negative value of 1.6%. even though the economic picked back a little in 2017, reduction in the world oil price has gulped into the major source of the country's importation and reduced her foreign earnings while the increased in the level of insecurity has eventually resulted in low production of agricultural product majorly in the north and end up reducing the country's exportation in that wise.

An Overview of Nigeria Economy

According to Economic Complex Index, Nigeria was ranked number 23 in the world in terms of her GDP which stood at 398.19 Billion Dollar compared to that of 2017 which is 376.36 Billion Dollar, Nigeria recorded a value of $59.5 billion as export and a total of $48.7 billion as the value of import which result to a total value of $10.9 billion as trade balance while the total value of export per capital stood at $304 billion and a total of import per capital of $ 248 billon.

The major components of variables of the Nigeria export and import were revealed to have cover the following products viz a viz there value. the major export includes crude petroleum ($44.8B), petroleum gas ($8.61B), redefined petroleum ($940M), Cocoa Beans ($621M) and Gold ($577M) while the redefined petroleum ($9.95B), Special purpose ships ($4B), wheat ($1.64B), Cars ($1.27B) and Package Medicaments ($1.04B) form the major imports. It can however be deduced from the above analysis that Nigeria would have arrived at a better trade balance only if the country has a functional refineries and end up exporting only crude petroleum without corresponding importation of redefined petroleum which even forms her major importation.

Countries in the world that serves as the major destinations of the Nigeria exportation includes the India which imported products worth of ($10B) in 2018 while the likes of Spain, United States, France, and South Africa end up importing product valued at $6.12B, $5.74B, $4.02B and $3.87B respectively. Nigeria also imported most of her foreign goods from countries like China, Netherland, South Korea, Belgium and Luxembourg in value of $13.4B, $5B, $4.76B and $3.37B respectively. This implies that Nigeria do import most of her goods and services from China.

The major services exported by Nigeria cut across the sea port services, financial services, miscellaneous business, professional and technical services and air transport while Nigeria major in the importation of services like sea port, air port, miscellaneous business, professional and technical services and business travel. This however implies that most of the services that form the Nigeria exportation also do form her importation in reverse. In 2015, Nigeria exported sea port value stood at $1.77B while imported sea port service stood at $4.29B while the country exported miscellaneous business, professional, and technical services worth of $93.2M and imported a category of the same service worth of $2B. Air transport services exported by Nigeria stood at $77.9M while the country imported Air transport service worth of $3.51B which indicates that importation of services contributes majorly to the total values of Nigeria importation and drive a balance of trade deficit in terms of foreign services.

Though it is certain that no country can operate a total closed economy while it's important for every country to look into what makes up her importation and importation so as to keep a balance of trade and payment, the strive to increase the exportation of goods and services and keep the importation of goods and services at minimum level also persist. While Nigeria which was once the country with the largest and fastest growing economy now strives for survival, it becomes inevitable to investigate the relationship between trade openness and economic growth to guide in making relevant policies capable of enhancing economic growth.

Empirical Literatures on the Effect of Trade Openness on Economic Growth

Series of studies had at one time or the other examined the effect of trade openness on the economic growth of some individual countries or couples of countries in a region or with common characteristics; some of this studies are reviewed to know the trend of the effect of trade openness on economic growth. the likes of Das and Paul (2011), Marelli and Signorelli (2011), Nowbutsing (2014) and Zarra-Nezhad, Hosseinpour, and Arman (2014) in their various studies examined the effect of trade openness on economic growth and ascertained that trade openness do positively affect economic growth. Meanwhile Fenira (2015) finds a weak relationship between trade openness and economic growth. According to Rassekh (2007) who examined the trade openness nexus of 150 countries and established that countries with lower income are of more benefit compared to countries with higher income. A non casual relationship between import, export and economic growth was ascertained for Pakistan in 2010 by Afzal and Hussain, his study was in contrary with that of by Klasra (2011) and Shahbaz (2012), they both found out a trade-led growth for Pakistan in their various studies. In 2010 Dufrenot, Mignon, and Tsangarides made use of 75 countries that comprises of developed and underdeveloped countries to examine the effect of trade openness on the economic growth and how it's related to economic development, they discovered a positive impact of trade openness on economic development for high-growth economic countries and a negative impact for low-growth economic countries. in that vein . Kim (2011) also shows that openness to trade has positive effects on economic growth and real income in developed countries but negative effects in developing countries. Furthermore, the real effect of trade also depends on the level of financial development and inflation. Openness to trade has negative effect on growth in countries with low financial development, but has insignificant impact in countries with high financial development.

Brueckner and Lederman (2015) employ the instrumental variable approach to a panel of 41 Sub-Saharan African countries. They find that trade openness increases economic growth both in the short and long run. Musila and Yiheyis (2015) investigate the case of Kenya and find that trade openness has positive effect on investment ratio but not on the rate of economic growth. Polat.(2015) find that trade openness impedes economic growth in South Africa.

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 while Kim (2011) shows that openness to trade has positive effects on economic growth and real income in developed countries but negative effects in developing countries. Lawal, Nwanji, Asaleye, and Ahmed in 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.

Statement of the Problem

Nigeria economy had witness a serious setback in recent years, these problems however ranges from economic recession, high unemployment rate, high poverty rate, trade deficit coupled with high debt profile and slow economic growth. All the above mention issues is assumed or seems to have relationship with the country's participation in the global market, meanwhile the effect or contribution of international trade to the economic growth of the country Nigeria is uncertain.

Purpose of the Study

The purpose of the study is to examine the trend and direction of which the trade openness and economic growth actually follows in the last 10 years from 2009 to 2018. It will examine the relationship between the trade openness and economic growth, while the contribution of trade openness to economic growth of Nigeria will also be verified.

Research Questions

The following research questions were raised to guide the study

1. What pattern or direction did the trade openness ratio of Nigeria follows
2. What pattern or direction did the economic growth of Nigeria follows

Research Hypothesis

The following research hypothesis were formulated for the study

1. There is no significant relationship between trade openness and economic growth of Nigeria
2. Trade openness will not significantly contribute to the economic growth of Nigeria
3. Trade openness will not significantly influence the economic growth of Nigeria

Methodology

This study adopted the descriptive research of the correlation design, simply because the study intends to examine and describe the relationship between the ratio of trade openness and the economic growth of Nigeria in the last 10 years without any manipulation. Data on GDP, nominal export and import of Nigeria for the year 2009 through 2018 actually forms the sample for the study.

The trade openness ration was gotten by dividing the sum of the nominal import and export by the nominal GDP while the economic growth is been derived by finding the ratio of current GDP to that of the previous year. Data were sourced from the official website of the Central Bank of Nigeria, International Monetary fund and World Bank. The generated research hypothesis was answered using descriptive statistics while the entire hypothesis was tested using inferential statistics at 0.05 level of significance.

Results

Research Question 1

What pattern or direction did the trade openness ratio of Nigeria follows

The above research question is answered using descriptive statistics and the result is presented in table 1 below

Table1: descriptive statistics of the direction of the ratio of Nigeria trade openness.

N	Mean	Variance	Skewness
10	1.90	0.685	-0.66

The table 1 above reveals that data on of the ratio of trade openness in Nigeria is negatively skewed, this implies that some of the data is higher than the mean value i.e. there are few low score or value of trade openness ratio. This is an indication that the ratio of the country's trade openness is relatively high across the year, which simply implies that Nigeria is actively involved international trade.

Research Question 2

What pattern or direction did the economic growth of Nigeria follows

The above research question is answered using descriptive statistics and the result is presented in table 2 below

Table 2: descriptive statistics of the direction of economic growth of Nigeria

N	Mean	Variance	Skewness
10	4.44	14.063	0.269

The table above shows that data on the economic growth of the country from 2009 to 2018is positively skewed, this implies that the value of the economic growth over the years is very low compared to the mean value. This implies that the economic growth of the country is unstable and relatively low when compared in-between the years.

Hypothesis 1

There is no significant relationship between trade openness and economic growth of Nigeria

This hypothesis was tested using Pearson Product Moment Correlation and the result is presented in table 3 below.

Table 3: Correlation analysis of the relationship between trade openness and economic growth of Nigeria

Variable	**N**	**Mean**	**r**	**P-value**
Trade Openness	10	1.90	0.803	0.005
Economic Growth	10	4.44		

P<0.005

This table reveals a strong, positive and significant relationship between the trade openness and the economic growth of the country at r (0.803) and P-value (0.005). This connotes that both the trade openness and economic growth of the country do moves at the same direction i.e. the higher the involvement of the country in international trade, the higher her economic growth.

Hypothesis 2

Trade openness will not significantly contribute to the economic growth of Nigeria

This hypothesis was tested using simple regression analysis and the result is presented in the table 4 below

Table 4: Regression analysis of the contribution of trade openness to the economic growth of Nigeria

Model	**B**	**Std Error**	**Beta**	**R**	**R^2**	**Sig.**
Constant	-2.469	1.964	0.803	0.803	0.644	0.005
Trade Openness	3.636	0.955				

Table 4 reveals that trade openness significantly contributed to the economic growth of Nigeria at R (0.803), R^2 (0.644) and P-value (0.005). The value of R squared indicated that 64% variation or change in the economic growth of Nigeria is a function of the changes in the trade openness or activities of the country in international trade. The positive value of B there connotes that for every increase in trade openness ratio there is a responsive increase in the economic growth. The regression line therefore is Y= -2.469 + 3.636 (trade openness), where Y is the Economic growth.

Hypothesis 3

Trade openness will not significantly influence the economic growth of Nigeria

This hypothesis was tested using analysis of variance (ANOVA) and the result is presented in the table 5 below

Table 5: Analysis of variance of the effect of trade openness on the economic growth of Nigeria

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	81.543	1	81.543	14.490	.005[b]
	Residual	45.021	8	5.628		
	Total	126.564	9			

The table above reveals that trade openness do significantly influence the economic growth of the country Nigeria at F (14.490) and P-value (0.005). This implies that the economic growth of Nigeria in being affected by variation in the trade openness or participation of the country in international trade.

Discussion

This study examined the relationship between the ratio of trade openness of Nigeria and her economic growth basically to establish the possible effect or influence of the country activities in the international on the trends in her economic growth.

It was however established that the ratio of Nigeria trade openness is high and on the increase having examined the data on the 10 years of active participation in international trade from 2009 to 2018, this implies that the country's involvement in international is on the increase meanwhile the data on the economic growth reveals that the economic growth of the country is low.

The study shows a positive relationship between the country's ratio of trade openness and economic growth, this connotes that the economic growth of the country has to do with the change in activities of the country Nigeria in international trade. This finding is in agreement with the study of Dufrenot, Mignon, and Tsangarides (2010) who found out a positive relationship between trade openness and economic growth when examined the economy of 75 countries that entails both developed and underdeveloped countries meanwhile the outcome is at variance with the study of Fenira (2015) who found a weak relationship between trade openness and economic growth.

The study also verified the contribution of the trade openness to economic growth, and it was established that trade openness significantly contributes to economic growth of Nigeria while it was made known that as much as 64% variation in the economic growth of the country can be explained or accounted for by trade openness. A significant impact of trade openness on economic growth of Nigeria was also found in this study and this in concord with the study of Das and Paul (2011), Marelli and Signorelli (2011), Nowbutsing (2014) and Zarra-Nezhad, Hosseinpour, and Arman (2014) who in their various studies examined the effect of trade openness on economic growth and ascertained that trade openness do positively affect economic growth.

The study of Brueckner and Lederman (2015) also has it that trade openness increases economic growth both in the short and long run, meanwhile the study disagrees with that of Kim (2011) who shows that openness to trade has positive effects on economic growth and real income in developed countries but negative effects in developing countries and that of Lawal, Nwanji, Asaleye, and Ahmed in 2016 who in their study 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.

Conclusion

Base on the findings of the study, it is therefore concluded that to improve on the economic growth of the country Nigeria, trade openness which determines a 64% variation in the economic growth of the country should taken into vivid consideration for a substantial and significant economic growth. Since a positive and strong relationship exist between the country's ratio of trade openness and economic growth, what constitutes the exportation and importation of Nigeria whoever should be taking into consideration to ensure a balance of payment surplus.

Recommendations

In relations to the findings of the study, it is therefore recommended that:

1. the country Nigeria should be more committed to international trade while they tends to export more and import less.
2. the country should diversify her economy in order to increase her chance of gaining more foreign earnings rather than relying wholesomely on crude oil.
3. Nigeria should invest more in education and ICT to reduce her service importation while they strive to have a standard refinery to discourage the importation of crude oil product.

4. reasonable fiscal policies should be put in place to encourage SMEs and help infant industries grows.
5. trade restriction can also be introduced where necessary to discourage excess importations.

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