

**TRADE OPENNESS AND ITS EFFECT ON THE NIGERIAN ECONOMY
(1970 -2010)**

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ABSTRACT

Foreign trade plays a vital role in estimating economic and social attributes of countries around the world. The workings of an economy in terms of growth rate and per-capita income have been based on the domestic production and consumption activities and in conjunction with foreign transactions of goods and services. The study focuses on the workings of trade openness on the Nigerian economy. In carrying out this objectives, linear multiple regression analysis was used in assessing various components of trade openness. Ordinary Least Square, (OLS) techniques was used as a statistical tool to achieve these objectives.

Data used in this study were extracted from CBN statistical bulletin. From the study findings, export, import, and the degree of openness are all positively related to output (proxy by GDP) by 10% r and adjusted R^2 of 0.83 from the period of 1970-2010. From the unit root test, it is seen that, all the variables are integrated of order zero. This suggests a long run relationship between the variables. We can also infer from the Engle-Granger Co-integration test that the variables are co-integrated considering the probability values which are all greater than the 5% significance level. The estimated model used in this research work implies that a unit increase in Import and Trade Openness will increase Real Gross Domestic Product by 0.023006 and 29166.11 units respectively. Thus, indicating a positive relationship between Import, Trade Openness and economic growth.

Also, Export, Import and Trade Openness contribute about 83% to the total variation in Real Gross Domestic Product in the Nigerian economy. The research findings show that economies grow faster when they are open to international competition. With this, it could be said that, openness to trade is very vital to the Nigerian economy. And so policies that will make export trade more favourably to the Nigerian economy should be encouraged by trade policies arm of the economy.

1.0 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. Dollar (1992) defines openness as the combination of two dimensions: (i) a low level of protection, hence of trade distortions, and (ii) a stable real exchange so that incentives remain constant over time. In theory, the openness of an economy is the degree to which nationals and foreigners can transact without artificial (that is, governmentally imposed) costs (including delays and uncertainty) that are not imposed on transactions among domestic citizens. Thus, trade distortions such as tariffs and non-tariff barriers; domestic content requirement among other raises the cost of buying from abroad. Nigeria's external trade (exports and imports) constitutes a substantial component of her GDP, and both exports and imports have grown explosively in the past years. Trade openness is based on the principle of non-interference by the government involving the exchange of capital goods and services across international borders and territories. This trade begins with a single consumer, his wants, his needs and his desire to maximize satisfaction.

Nigeria is basically an open economy with international transactions constituting a significant proportion of her aggregate output. To a large extent, Nigeria's economic development depends on the prospects of her export trade with other nations. Trade provides both foreign exchange earnings and market stimulus for accelerated economic growth. Openness to trade may generate significant gains that enhance economic transformation. This means that, there will be diffusion of knowledge and innovation amongst other open economies of the world. Trade openness has been hailed for its beneficial effects on productivity, the adoption and use of better technology and investment promotion – which are channels for stimulating economic growth. Nigeria identified deeper trade integration as a means to foster economic growth and alleviate poverty.

Trade liberalization is a key economic reform policy and institutional change adopted by Nigeria in 1986 to stimulate its exports. Trade openness also aims at liberalization of the economy as well achievement of greater openness and greater integration of the world economy. Trade liberalization has analytical support in counter-revolutionary paradigm of the "Bretton Wood School". One of the paradigms propositions is that low levels of exports particularly agriculture, is caused by agricultural taxes. This proposition leads to Bretton Woods School to predict that liberal trade policies alter domestic price incentives structure in favour of tradable goods; and promote external competitiveness of Nigeria's tradable goods.

Nigeria's export performance has been backward. Unlike some other fuel producers, the country has not managed to diversify its economy, so that petroleum continues to account for almost all merchandise exports. This dominance of fuel exports has made Nigeria highly dependent on developments in the world oil market and prevented it from taking advantage of dynamic opportunities in other sectors. Past attempts to foster non-fuel merchandise exports through export subsidies and other incentive measures have had very limited success, as many of the programs have been undermined by fraud.

Trade openness may generate significant gains that enhance economic improvement. This means that it encourages lower prices of imported goods and services, or at least prevents increase in prices, by preventing the growth of monopolies. Here, the country specializes in the production of certain products and tries to maximize cost of production, and to keep price at a competitive level. Despite its advantages and economic benefits, it also has its own shortcomings. Nigeria's relatively large domestic market can support growth but alone, cannot deliver sustained growth at the rates needed to make a visible impact on poverty reduction. Hence Nigeria has continued to rely on foreign markets for survival.

Overall, it may be fair to say that openness, by leading to lower prices, better information and newer technologies, has a useful role to play in promoting growth. But it must be accompanied by appropriate complementary policies (most notably, education, infrastructure, financial and macroeconomic policies) to yield strong growth results. The precise mix of trade and other policies that is needed will strongly depend on the specific circumstances of the country. It is therefore important to focus on how open trade affects the aggregate economy of Nigeria.

Lately, Nigeria is regarded to have the largest economy in sub-Saharan Africa, excluding South Africa. In the last four decades there has been little or no progress realized in alleviating poverty despite the massive effort made and the many programmes established for that purpose. Indeed, as in many other sub-Saharan Africa countries, both the number of poor and the proportion of poor have been increasing in Nigeria. In particular, the 1998 United Nations human development report declares that 48% of Nigeria's population lives below the poverty line.

Doug Addison (unpublished) further explained that the Nigeria economy is not merely volatile; it is one of the most volatile economies in the world. There is evidence that this volatility is adversely affecting the real growth rate of Nigeria's gross domestic product (GDP)

by inhibiting investment and reducing the productivity of investment, both public and private. Economic theory and empirical evidence suggest that sustained high future growth and poverty reduction are unlikely without a significant reduction in volatility. Oil price fluctuations drive only part of Nigeria's volatility policy choices have also contributed to the problem. Yet policy choices are available that can help accelerate growth and thus help reduce the percentage of people living in poverty, despite the severity of Nigeria's problems.

In 1960 agricultural exports accounted for only 2.6%. Exports of other commodities like tin and processed goods amounted to 26.6% of total exports. By 1970 agricultural exports only accounted for 33% of total exports while petroleum exports had started to establish dominance by exceeding 58% of total exports. By the time the oil boom began in earnest in 1974, petroleum exports accounted for approximately 93% of all exports.

The relative share of agricultural exports in total exports had shrunk to 5.4% while other products accounted for the remaining 1.9%. Since 1974, with the exception of 1978 when the relative share of petroleum in total exports has exceeded 90%. Indeed, since 1990, the relative share of petroleum in total exports has exceeded 96%. Agriculture's contribution has fluctuated between 0.5% and 2.3% while the share of other products has fluctuated between 0.5% and 1.7%. Thus petroleum exportation has totally dominated the economy and indeed government finances since the mid-1970s. The introduction of oil export into the Nigerian economy did not seem to be long lasting or to have had a significant effect in changing the structure of the economy. For instance, in the 1970's there was a major increase in measured GDP but the structure of the economy remained basically unchanged. This led professor Yesufu (1995) to describe the Nigerian economy as one that had experienced "growth without development".

Today, as part of moving with the trend of globalization and liberal trade in the global economic system, Nigeria is a member of many international and regional trade agreements such as international monetary fund (IMF), world trade organization (WTO), Economic Community of West African States (ECOWAS), and so many others. The policy response of such economic partnership on trade has been to remove trade barriers, reduce tariffs, and embark on outward-oriented trade policies. Despite all her effort to meet up with the demands to these economic partnerships in terms of opening up her border, according to the 2007 assessment of the trade policy review, Nigeria's trade freedom was rate 56% making her the world's 131st freest economy while in 2009, it was ranked 117th freest economy, the country's GDP was also ranked 161st in

the world in February, 2009. The economy has struggled vigorously to stimulate growth through openness to trade.

However, questions beckoning for answers are; To what extent can a liberal trade policy affect economic growth and development? Is there any significant relationship between trade openness and output growth in Nigeria? And Does total import of goods and services have any impact on exports in Nigeria? To this end the purpose of this study seeks to analyze and provide answers to the effect of trade openness on the economy specifically; the study tends to provide answers to the following: to empirically investigate the effects of trade openness on economic growth in Nigeria, to investigate if there exist any significant relationship between trade openness and output growth in Nigeria, and finally to evaluate the impact of total import of goods and services on exports in Nigeria.

2.1 CONCEPTUAL AND LITERATURE REVIEW

“Openness” refers to the degree of dependence of an economy on international trade and financial flows. Trade openness measures the international competitiveness of a country in the global market. Thus, we may talk of trade openness and financial openness. Trade openness is often measured by the ratio of import to GDP or alternatively, the ratio of trade to GDP. It is now generally accepted that increase openness with respect to both trade and capital flows will be beneficial to a country.

Increase openness facilitates greater integration into global markets. Integration and globalization are beneficial to developing countries although there are also some potential risks (Iyoha and Oriakhi, 2002). Trade openness is interpreted to include import and export taxes, as well as explicit non tariff distortions of trade or in varying degrees of broadness to cover such matters as exchange-rate policies, domestic taxes and subsidies, competition and other regulatory policies, education policies, the nature of the legal system, the form of government, and the general nature of institution and culture (Baldwin, 2002).

One of the policy measures of the Structural Adjustment Programme (SAP) adopted by Nigeria in 1986 is Trade Openness. This means the dismantling of trade and exchange control domestically. Trade liberalization has been found to perform the role of engine of growth, especially via high real productivity export (Obadan, 1993). He argued that with export, a nation

can take advantage of division of labour and procure desired goods and services from abroad, at considerable savings in terms of inputs of productive resources, thereby helping to increase the efficiency of the export industry. Export growth sets up a circle of growth, so that once a country is on the growth path, it maintains this momentum, of competitive position in world trade and performs continually better relative to other countries.

The doctrine that trade enhances welfare and growth has a long and distinguished ancestry dating back to Adam Smith (1723-90). In his famous book, *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), Smith stressed the importance of trade as a vent for surplus production and as a means of widening the market thereby improving the division of labor and the level of productivity. He asserts that “between whatever places foreign trade is carried on, all of them derive two distinct benefits from it. It carries the surplus part of the produce of their land and labour for which there is no demand among them, and brings back in return something else for which there is a demand. It gives value to their superfluities, by exchanging them for something else, which may satisfy part of their wants and increase their satisfaction.

By means of it, the narrowness of the labour market does not hinder the division of labour in any particular branch of art or manufacture from being carried to the highest perfection. By opening a more extensive market for whatever part of the produce of their labour may exceed the home consumption, it encourages them to improve its productive powers and to augment its annual produce to the utmost, and thereby to increase the real revenue of wealth and society”. (Thirl Wall, 2000). We may summarize the absolute advantage trade theory of Adam Smith, thus, countries should specialize in and export those commodities in which they had an absolute advantage and should import those commodities in which the trading partner had an absolute advantage. That is to say, each country should export those commodities it produced more efficiently because the absolute labour required per unit was less than that of the prospective trading partners. (Appleyard and Field, 1998)

In the 19th century, the Smithian trade theory generated a lot of arguments. This led to David Ricardo (1772-1823) to develop the theory of comparative advantage and showed rigorously in his *Principles of Political Economy and Taxation* (1817) that on the assumptions of perfect competition and the full employment of resources, countries can reap welfare gains by specializing in the production of those goods with the lowest opportunity over domestic demand,

provided that the international rate of exchange between commodities lies between the domestic opportunity cost ratios. These are essentially static gains that arise from the reallocation of resources from one sector to another as increased specialization, based on comparative advantage, takes place. These are the trade creation gains that arise within customs to trade are removed between members, but the gains are once-for-all. Once the tariff barriers have been removed, and no further reallocation takes place, the static gains are exhausted. The static gains from trade stem from the basic fact that countries are differently endowed with resources and because of this the opportunity cost of producing products varies from country to country.

The law of comparative advantage states that countries will benefit if they specialize in the production of those goods for which the opportunity cost is low and exchange those goods for other goods, the opportunity cost of which is higher. That is to say, the static gains from trade are measured by the resource gains to be obtained by exporting to obtain imports more cheaply in terms of resources given up, compared to producing the goods oneself. In other words, the static gains from trade are measured by the excess cost of import substitution, by what is saved by not producing the imported good domestically. The resource gains can then be used in a variety of ways including increased domestic consumption of both goods (Thirl Wall, 2000).

2.2.2 THEORY OF CUSTOMS UNIONS AND FREE TRADE AREAS.

Since the end of the World War II, there had been several attempts to promote trade through the creation of international and regional trade agreements in the form of customs unions and free trade areas. Free trade area is a form of economic union in which all members of the group remove tariffs on each other's products, while at the same time each member retain its independence in establishing trading policies with non-members. De Melo, Panagariya and Rodick (1993). This arrangement encourages free internal trade among members while proceeds of customs revenues generated by common external tariffs are shared among members according to agreed formula. An example of this type of arrangement is the Central African Customs and Economic Union (CACEU), formed in 1964 by Cameroun, Central African Republic, Congo and Gabon. In other words, the members of a free trade area can maintain individual tariffs and other trade barriers on the outside world. That is to say, in a free trade area, barriers to trade are brought down within the area, but there is no common external tariff. Also, free trade areas create trade, but the extent of trade diversion is likely to be much less, with the presumption that on narrow economic grounds free trade areas are superior. In most cases, 'rules of origin' are

specified within the area. This is to control trade products produced or originated in the area in order to prevent trade deflection- a redirection of trade from a low tariff area in order to profit from tariff differentials. An example of this type of association is the Latin American Free Trade Association (LAFTA) formed in 1960 with 11 countries.

On the other hand, a customs union is a form of economic integration in which all tariffs are removed between members and the group adopts a common external commercial policy toward non-members. Furthermore, the group acts as one body in the negotiation of all trade agreements with non-members. The existence of the common external tariff takes away the possibility of transshipment by non-members. Customs unions create trade, but also divert it from lower cost suppliers to higher cost suppliers within the union. Thus, the question is whether the benefits of trade creation exceed the costs of trade diversion.

Apart from trade creation and trade diversion, customs unions may also have other important effects associated with the enlargement of the market which are neglected by the static analysis. Firstly, the larger market may generate economies of scale. Secondly, integration is likely to promote increased competition which is likely to affect favourably prices and costs, and the growth of output. Thirdly, the widening of markets within a customs union is likely to attract international investment. Producers will prefer to produce within the union rather than face a common external tariff from outside. Finally if the world supply of output is not infinitely elastic, there are terms of trade effects to consider.

2.2.3 MODELS OF EXPORT- LED GROWTH.

Kaldor (1970) developed an export-led growth model built on the notion of cumulative causation and takes into consideration the fact that exports are the main components of demand. Static trade models suggest movements toward openness can temporarily increase the rate of growth due to short - run gains from the reallocation of resources, which would imply a positive relationship between changes in openness and GDP growth.

The three main models of export-led growth that will be discussed are the neo classical supply – side model, the balance of payments constrained model which is also known as the Hicks super-multiplier model, and the virtuous circle model.

2.2.3.1 The Neoclassical Supply-Side Model: This model shows the relationship between exports and growth, and assumes that the export sector confers externalities on the non export

sector, because of its exposure to foreign competition; and secondly that the export sector has a higher level of productivity than the non export sector. Thus, the share of exports in GDP, and the growth of exports, matter for overall growth performance.

Feder (1983) was the first to prove a formal model of this type to explain the relation between export growth and output growth. The output of the export growth sector is assumed to be a function of labour and capital in the sector, the output of the non-export sector is assumed to be a function of labour, capital and the output of the export sector (so as to capture externalities), and the ratio of respective marginal factor productivities in the two sector is assumed to deviate from unity by a factor d .

Feder tests the model taking a cross section of 19 semi industrialized countries and a larger sample of 31 countries over the period 1964-73. He finds that there are substantial differences in productivity between the export and non-export sector are also evidence of externalities. The externalities conferred are part of the dynamic gains from trade which are associated with the transmission and diffusion of new ideas from abroad relating to both production techniques and efficient management practices. The cross-section work on exports and growth assumes, however that all countries in a sample conform to the same model, with the same intercept and coefficient parameters linking exports and growth. In practice, this is highly unlikely to be the case; and it transpires, in fact, that when time series studies are conducted for individual countries, the relation between exports and growth is much weaker.

2.2.3.2 Balance Of Payments Constrained Growth Model

The balance of payment is defined as a systematic record of all economic transactions between the residents of the country and residents of foreign countries during a certain period of time. Economic transactions include all such transactions that involve the transfer of title or ownership. The balance of payments utilizes the principle of double entry bookkeeping in its accounting convention. This means that any debit items must be offset by a corresponding total credit in a BOP table. In general, following the principle of double entry bookkeeping, any transaction that gives rise to a receipt is recorded as a credit.

No country can grow faster than rate consistent with balance of payments equilibrium on current account in the long run, unless it can finance ever-growing deficits which, in general, it cannot. Ratios of deficit to GDP of more than 2%-3% to make the international financial markets nervous and all borrowing eventually have to be repaid. According to Nureldin-Hussain (1995)

exports are unique as a growth inducing force from the demand side because it is the only component of demand that provides foreign exchange to pay for the import requirements for growth. In this sense, it allows all other components of demand to grow faster in a way that consumption-led growth or investment-led growth does not.

A country's balance of payments equilibrium growth rate can be modelled by stating the balance of payments equilibrium condition specifying multiplicative (constant elasticity) import and export demand functions in which imports and exports are a function of domestic and foreign income, respectively, and of relative prices, and substituting these functions in the equilibrium conditions. Since imports are a function of domestic income, the model can be easily solved for the growth of income consistent with balance of payments equilibrium. Nureldin-Hussain (1995) applied this model to Africa to contrast the experience of slow growing African countries with the faster growing countries of Asia over the period 1970-90. He uses an extended model which also includes terms of trade effects and the effects of capital flows.

2.2.3.3 Virtuous Circle Models of Export-Led Growth: These models provide a challenge to both orthodox growth theory and trade theory which predict the long run convergence of living standards across the world. A simple cumulative model, driven by exports as the major component of autonomous demand, is to assume that (i) output growth is a function of export growth, (ii) export growth is a function of price competitiveness and foreign income growth, (iii) price competitiveness is a function of wage growth and productivity growth, and (iv) productivity growth is a function of output growth.

From the ongoing, we can conclude that trade openness does not necessarily imply faster export growth, but impractical the two appear to be highly correlated. Impact of the openness on economic growth probably works mainly through improving efficiency and stimulating exports which have powerful effects on both supply and demand within an economy. Likewise there are several different studies of the relation between exports and growth and the evidence seem overwhelming that the two are highly correlated in a causal sense, but the relative importance of the precise mechanisms by which export growth impacts on economic growth are not always easy to discern or qualify.

Empirical evidence from the experience of most developing countries has shown that the orthodox features of trade openness (currency devaluation, removal of tariffs, abolition of quotas, etc), neglects the importance of long-run development of supply capacity and the

limitation of market forces in building up such capacity (Shafaeddin1994:2). It also overemphasized currency devaluation and overlooked its adverse effects on productivity. In addition, it did not consider the importance of the importation of capital goods and raw materials in improving capital utilization and increasing export. The existing empirical literature however does not provide clear evidence on relationship between trade openness and growth. Many studies provide evidence that increasing openness has a positive effect on GDP growth.

Dollar (1992) brought an important contribution to the trade and growth debate. The author defines openness as the combination of two diversions: (i) A low level of protection, hence of trade distortions and (ii) A stable real exchange rate so that incentives remain constant over time. From that very definition, follow two measures openness: a trade distortion index, and a real exchange rate variability index. The distortion index measures the deviation from the law of one price after controlling for the impact of non-tradable. The variability index captures the variance of the real exchange rate. The author considers a sample of 95 countries over the period 1976 -1985 and regresses average per capital growth upon his openness indexes and the average investment rate. Both the distortion index and the variability index are significantly negatively correlated with growth and the investment rate comes out with a significantly positive coefficient.

Dow Rick (1994) tests whether trade openness affects output growth and /or investment. He considers a sample of 74 countries over the period 1960-1990. As openness indicator, the author considers the residuals of an OLS cross-country regression of the average trade intensity upon a constant and average population. In a second stage, the author runs cross-country OLS regressions of average per capita GDP growth upon the average investment rate, the initial GDP level and his openness indicator. The coefficient on openness is significant and positive. Moreover, dropping the investment rate considerably lowers the overall fit of the model but enhance the coefficient on openness, which according to the author “suggests that openness works partly through increased investment rates”.

Dollar and Kraay (2004) and Loayza, Fajnzylber, and Calderon (2005) run growth regressions on panel data of large samples of countries. Both papers use openness indicators based on trade on trade volumes and control for their joint endogeneity and correlation with country-specific factors through GMM methods that involve taking differences of data and instruments. This implies that, although they continue to use cross –country data, these papers

favors within-country changes as the main sources of relevant variation. Both papers conclude that opening the economy to international trade brings about significant growth improvements.

Wacziarg and Welch (2003) arrive to a similar, though more nuanced, conclusion from a methodological different stand point. Using an event-study methodology –where the event is defined as the year of substantial trade policy liberalization–, they find that liberalizing countries tend to experience significantly higher volume of trade, investment rates, and most importantly, growth rates. However, in an examination of 13 country-case studies Wacziarg and Welch find noticeable heterogeneity in the growth response to trade liberalization. Although their small sample does not allow for definite conclusions, it appears that the growth response after liberalization is positively related to conditions of political stability.

Joffrey (2003) in his work tries to clarify a number of issues related to the “trade openness and growth debate”. He considers a number of sector specialization indicators and examine whether they indeed affect the link between openness and growth. Using both cross-section and panel data techniques, he finds that both its pattern are likely to affect significantly the link between openness and growth.

Kandiero and Chitiga (2003) investigate the impact of openness to trade on the FDI inflow to Africa. Specifically, in addition to economy wide trade openness, they analyze the impact on FDI of openness and manufactured goods, primary commodities and services. The empirical work is conducted using cross-country data comprising of African countries observed over four periods: 1980-1985, 1985-1990, 1990-1995, and 1995-2001, they find that FDI to GDP ratio responds well to increased openness in the whole economy and in the services sector in particular.

Frankel and Romer (1999) claim that openness, as measured by the ratio of total trade to GDP, should not be used as explanatory variable in the growth regressions. The trade ratio, the authors argue, is endogenous, and needs to be instrumented. To construct their instrument, the authors first argue that “as the literature on the gravity model of trade demonstrates, geography is a powerful determinant of bilateral trade. And they claim this is also true for total trade. Moreover, geography is completely exogenous. Therefore, the authors consider a database of bilateral trade between 63 countries for 1985 using purely geographical indicators.

The authors then estimate growth equations for a cross-section of 150 countries in 1985. They reported a substantial impact of trade openness on income growth: increasing the trade share by

1% should raise income by between 0.5% and 2%. These findings are robust to various changes in specifications. The results also suggest that, controlling for openness; larger countries tend to experience higher growth rates, which could simply reflect that citizens living in larger countries engage more in within country trade.

On research studies that relate to Africa and Nigeria in specific, Sarkar (2007) examines the relationship between openness (trade-GDP ratio) and growth. The cross-country panel data analysis of a sample 51 countries of the South during 1981-2002 shows that for only 11 rich and highly trade-dependent countries a higher real growth is associated with a higher trade share. Time series study of individual country experiences shows that the majority of the countries covered in the sample including the East Asian countries experienced no positive long-term relationship between openness and growth during 1961-2002. He finds that the experience of various regions and groups shows that only the middle income group exhibited a positive long-term relationship.

3.0 METHODOLOGY AND ESTIMATION TECHNIQUES

In order to contribute empirically to this argument, this study will employ econometric method as the research technique. The choice of method is necessitated by the nature of the study which in this case is an analysis of relationship among variables. Time study makes use of time series data were past and present trends shall analyzed, to explain the effects of trade openness on the Nigerian economy. For the study, data needed would be gotten from Central Bank of Nigeria bullion and Statistical bulletins (2007, 2009 and 2011 editions). Viable information's would also be gotten from international trade journals, textbooks, newspapers, and some past research work on liberal trade. Also, import and export statistics would be used to test for the degree of openness in the economy using an econometric approach (OLS estimation technique).

3.3 MODEL SPECIFICATION AND ESTIMATION TECHNIQUES.

3.3.1 MODEL SPECIFICATION.

In order to properly estimate the effects of trade openness on the Nigerian economy, we state our dependent variable and independent variables of trade. The equation is specified below:

$$\ln\text{RGDP}_t = \beta_0 + \beta_1 \ln X_t + \beta_2 \ln M_t + \text{TRN}_t + U_t \dots\dots\dots (1)$$

Apriori expectations for the coefficients of the parameter are:

$$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0, \beta_6 < 0 \dots\dots\dots (2)$$

Where:

GDP = logGross Domestic Product

Xt = logExport

Mt = logImport

TRNt = Degree of openness of the economy measured by (X+M)/GDP

Expectedly, A-prori expectations for the study are that we expect a positive functional relationship between real GDP and the level of export. When RGDP is high, there tends to be raise in the level of export. Similarly, we envisage a positive relationship of export to trade openness and a negative relationship between the import variable and gross domestic product. Note that a positive functional relationship between the degree of openness and the level of export, that is, the more open an economy is the higher the level of export.

Table 1: Augmented Dickey-Fuller Unit Roots Test: 1985-2010

Variables	At Level	1 st Difference	Order of Integration
Gross domestic product (GDP)	-2.329466	-5.829830	I(1)
Export (X)	-2.936942	-2.938987***	I(1)
Import (M)	-7.187006	-2.936942***	I(1)
Degree of Openness (TRN)	-2.938987	-2.938987***	I(1)

Source: Author’s Data analysis, 2012.

Note: *** stationary at 1%; ** stationary at 5%; * stationary at 10%; Note: Variables are defined above

Table 2: Co-Integration Test (Granger Procedure)

Series: LOGRGDP LOGEXPORT LOGIMPORT TRN
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.551379	60.23470	47.85613	0.0023

At most 1	0.434122	28.97318	29.79707	0.0620
At most 2	0.140842	6.767465	15.49471	0.6048
At most 3	0.021488	0.847176	3.841466	0.3574

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

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

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.551379	31.26153	27.58434	0.0161
At most 1 *	0.434122	22.20571	21.13162	0.0352
At most 2	0.140842	5.920289	14.26460	0.6235
At most 3	0.021488	0.847176	3.841466	0.3574

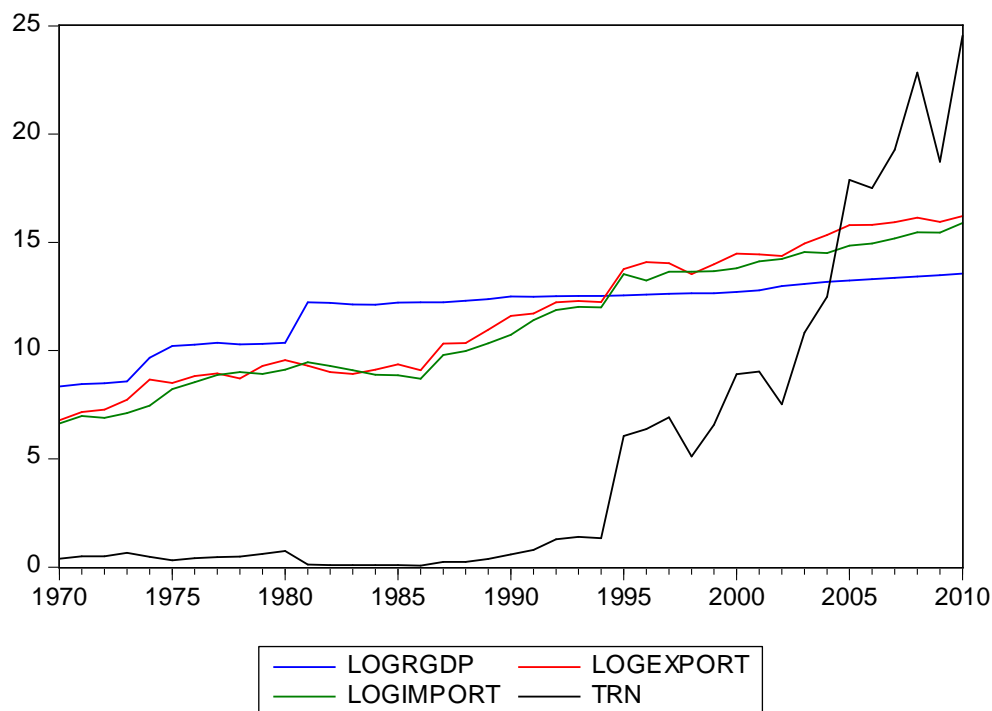
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

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

4.0 DATA ANALYSIS AND INTERPRETATION

Figure 1: A Graphical Representation of the Behavior of the Economic Variables Used



4.1 DATA DIAGNOSTICS

As specified earlier, the variables to be employed in this study in line with the respective model specifications are: RGDP (real gross domestic product), EXPORT (export of domestic products), IMPORT (import of goods from the rest of the world), and TRN (trade openness). A graphical diagnostic representation of the behavior of the economic variables used in this study (in their log forms) is presented in the following figure1 above.

Table 3: Stage I: Ordinary Least Squares (OLS) Estimate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGEXPORT	-0.004406	0.389457	-0.011312	0.9910
LOGIMPORT	0.632601	0.389619	1.623640	0.1129
TRN	-0.088001	0.032170	-2.735480	0.0095
C	5.252869	0.762945	6.884995	0.0000
R-squared	0.768666	Mean dependent var		11.85554
Adjusted R-squared	0.749910	S.D. dependent var		1.515055
S.E. of regression	0.757664	Akaike info criterion		2.375315
Sum squared resid	21.24005	Schwarz criterion		2.542493
Log likelihood	-44.69396	Hannan-Quinn criter.		2.436192
F-statistic	40.98073	Durbin-Watson stat		0.237944
Prob(F-statistic)	0.000000			

Table 4: Stage II: Error Correction Mechanism Based In Co-Integration Regression on Eagle-Granger Procedure

Dependent Variable: LOGRGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.072608	0.374917	16.19720	0.0000
LOGEXPORT(-1)	0.293948	0.178855	1.643502	0.1107
LOGEXPORT(-3)	-0.457129	0.253759	-1.801427	0.0817
LOGIMPORT(-1)	0.351513	0.256510	1.370367	0.1807
LOGIMPORT(-3)	-0.374535	0.166734	2.246309	0.0322
TRN(-1)	-0.119674	0.037003	-3.234123	0.0030
TRN(-3)	0.060951	0.044727	1.362719	0.1831
ECM(-1)	-0.822154	0.073820	-11.13726	0.0000
R-squared	0.949219	Mean dependent var		12.12567
Adjusted R-squared	0.937370	S.D. dependent var		1.207035
S.E. of regression	0.302072	Akaike info criterion		0.628364
Sum squared resid	2.737432	Schwarz criterion		0.973119
Log likelihood	-3.938915	Hannan-Quinn criter.		0.751025
F-statistic	80.11018	Durbin-Watson stat		2.313422
Prob(F-statistic)	0.000000			

Source: Author's Data Analysis, 2012.

Model Interpretation:

Table 2 above presents the cointegration result for the combined variables. Here, it is observed that the variables in the equation are cointegrated; the existence of this cointegration implies that there is a long-run equilibrium relationship existing between the variables in the equation. Table 3, above shows the initial ordinary least square analysis which indicate a case of non conformity to apriori expectation and the presence of heteroscedacity problem which is the basis for the short-run disequilibrium adjustment in the model generally known as error correction mechanism (ECM), the result of which is presented in table 4 above.

It is observable from the results, given the value of the R^2 (adjusted), that the independent variable in the model significantly explain changes in the gross domestic product position of Nigeria as about 93 per cent of changes in the gross domestic product of the country are attributed to the independent variable. The model is overall significant given the probability

value of the F-statistic. The Durbin-Watson statistic only corroborates findings that the residual of the model contains insignificant serial correlation.

Coming down to the variables in the model, it is evident from thence that the inclusion of the immediate past period lagged of the dependent variable captures part of the changes in the gross domestic product accumulation.

The result for export trade to gross domestic product is positive and significant in the first period lag but for the third period lag is otherwise. As regards the effect and significance of the variable on the contribution to the gross domestic product (GDP), the result found out is in line with the anticipation of this study that positive increases in export with time have the tendency to increase the gross domestic product. The estimated results further shows that import shows the expected negative sign and overall significance but in the third period. This complies with the a priori expectation. Regarding the trade openness variable there is a positive and significant relationship between openness and gross domestic product. That is, the more open an economy is the higher the level of export. Conclusively, from the above results; it can further be seen that are significant at 5 percent level of significance.

5.0 CONCLUSION AND POLICY RECOMMENDATIONS

This paper principal focus was to unravel the effect of trade openness on the Nigerian economy from 1970 to 2010. To achieve these goals, details analysis of the effects of trade openness on the economy was carried out in section 3. The result indicates that there is very strong positive relationships between all the variables and each variables based on the analysis and discussion of results above have a significant effect on economic growth (in terms of contribution to the gross domestic product) in Nigeria.

Based on the finding of this research work discussed above, we hereby proffer the following policy measures for growth in the economy. First of all, there should be optimal control of trade through the borders of the economy. The underground economic activities of bunkering, smuggling, child and drug trafficking, and other related illegal activities should be properly checked. This will help the economy to fully account for every trade/transaction through the border and determine its impact on the output growth of the economy. In order to achieve this, governments trade policy must be liberal. Also, government should properly regulate import tariff so that it will not be discouraging in such a way that it will aid illegal importation.

Secondly, government should encourage import liberalization through reduction in tariff rates, gradual removal of Non-Tariff Barriers (NTB), outright banning of certain goods which will ensure that our imports, following trade liberalization, is directed mainly on intermediate and capital goods. Imports of consumables would be brought to nil and therefore there would be a corresponding increase in the production of competitive import. Consequently, a higher component of intermediate and capital goods in total import will bring about an improvement in the production of tradable goods, which in turn can provoke increase in exports. This by implication would increase the level of export in the country thereby leading to economic growth in the country.

Thirdly, there is a dire need for adequate infrastructural development in the country. Nigeria has been recently noted to be one of those Africa countries that have difficult geographic condition. The country is the largest oil producer in Africa and the 6th largest oil producer in the world. Yet, the country's infrastructure is at serious decay. This has negative effect on output growth as cost of production is high due to high transportation, communication, and other services costs. Government should devote much of its resources to the development of infrastructure.

Excess crude oil revenue should be properly allocated for infrastructural development such as good roads, potable waters, standard rail system, buildings and other public utilities. Also, there is still need for greater development in the financial sector of the economy. The financial sector is said to be hub of every economy. The ongoing capital markets as well as the money market reform are examples towards the development of the financial sector. The government needs to put in place proper and non- partisan machineries for supervision and regulation of this sector so as to achieve optimum performance.

Furthermore, there is an urgent need for diversification of the economy. The Nigerian economy has been depending on crude oil exportation. But today, this strange dependency has really dampened the growth of the economy as the country is open to every international shock associated with the oil market. Government should look inward to seek for other fallow grounds where it can explore and generate resources. Government should explore other sector of the economy such as manufacturing, agriculture, mining and quarrying.

Finally, the government should vigorously seek to improve the international stand of the economy with other economies of the world so as to enlarge the market for Nigerian exports. It should also re-orient its policy towards the external sector and ensure that the sector contribute optimally to output growth.

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