AN EMPIRICAL STUDY OF GROWTH THROUGH TRADE: NIGERIA EVIDENCE

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ABSTRACT
International trade has been identified by many economists to be an engine for growth and development. Presently there is virtually no country around the world that does not trade with another country. There has been an increase in the number of bilateral trade agreement and multilateral trade agreement across the globe.

The objective of this paper is to make a positive policy contribution that will help policymakers in Nigeria map out appropriate policies that can determine the source of productivity growth with respect to international trade in order to achieve economic development.

In this study, secondary data was collected from CBN bulletins, National Bureau of Statistics and UNCTAD covering periods from 1975 to 2012. The OLS regression method of statistical analysis was employed to analyse the multiple econometric model. The result indicates that total trade, FDI flow, exchange rate and degree of openness are statistically significant to growth. Total trade, FDI flow and exchange rate are positively contributing to growth while degree of openness of the Nigeria economy is negatively contributing to growth. The dummy variable, political stability is not statistically significant to growth in Nigeria.

The finding shows that trade contribute positively to economic growth but Nigeria’s trade policies, and implementation is still not growth friendly. As a result of the findings, some policy recommendations were made among which is trade policies in Nigeria need to be reviewed, reappraised and reinvigorated to encourage the gain of trade in order to foster growth, through diversification of the economy to areas such as agriculture, industrialisation, privatisation of the power sector, and building of oil refineries to reduce importation of petroleum produce, among others. The port and border system should be critically looked into in the areas of adequate personnel, the personnel should be trained and equipped in order to carry out their duty, such as curbing smuggling.

KEYWORDS: International Trade, Growth, FDI Flow, Openness, Political Stability.
1. INTRODUCTION

International trade has been identified by many economists as an engine for growth and development but trade as engine for growth and development was first identified by Smith in 1772. For the past four decades, trade among nations has gained significant attention among both developed and developing countries and this can be hugely attributed to the impact of technology and globalisation. Presently there is virtually no country around the world that does not trade with another country. This has led to an increase in the number of bilateral trade agreement and multilateral trade agreement across the globe.

International trade in Nigeria has experienced mixed result on growth and development. Fajana (1979) investigates the link between trade and growth and finds out that a strong positive relationship exists between export and output changes. His result also suggests that exports have a more significant impact on Nigeria’s economic performance vis-a-vis foreign capital flow. On the other hand, Eravwoke, K. E and Oyovwi, D. O, (2012) examined growth perspective via trade in Nigeria and they concludes that total trade and export is not statistically significant in explaining economic growth in Nigeria, and suggested a diversification of Nigeria’s economy in other to reap the gains of trade.

From the above, it can be deduced that there exist a relationship between trade and growth which can either be a positive or negative one. There is no doubt that Nigeria is blessed with vast natural resources that can make the country become a big player in international market and thus achieve economic growth through trade but only crude oil constitute the largest portion of Nigeria’s export. Thus, conducting a study on the effects of international trade on economic growth is of great significance in this globalized and technologically advanced era.

The objective of this paper is to make a positive policy contribution that will help policymakers in Nigeria map out appropriate policies that can determine the source of productivity growth with respect to international trade in order to achieve economic development.

2. REVIEW OF LITERATURE

There are many comprehensive literatures on the impact of trade on economic growth. This span from theories formulated as far back as the sixteenth centuries to the empirical studies carried out by researchers around the world. Óscar. A (2001) carried out a study, since Adam Smith, on the impact of commercial and technological aspects, resulting from international trade, on the physical accumulation and quality of productive factors. Oscar wrote

“We remark that the theory of economic growth and the theory of international trade, during the ‘classic period’, constituted two inseparable branches of economics. In this epoch, it was believed that international trade has a positive effect on the economic growth. Later, during the ‘neoclassic period’, these two theories of the economic thought became autonomous relatively to each other. Consequently, the importance of international trade was neglected in the context of economic growth, especially until the 1960’s. Recently, with the introduction of models of endogenous growth, both theories have merged again.
The modelling frameworks advanced by the new models, as well as the recent developments inside the international trade theory, have allowed us to obtain a better understanding of the relation between economic growth and international trade.” (Oscar, 2001:1).

Balassa (1978) made a comparison of export promotion against import substitution, making use of samples from ten (10) developing economies. From the neoclassical production function, he argued that export growth is significant and that the countries with higher export growth rates more than the average are the best in term of economic growth. In the same vein, Balassa (1986) and dollar (1992) wrote that externally focused developing economies performed better in terms of economic growth than the internally focused developing economies. The Organisation for Economic Co-operation and Development (OECD) (2003) examined the impact of trade on average income per population. It finds out that, the elasticity of international trade was statistically significant. Saggi, (2000) investigates Trade, foreign direct investment, and international technology transfer. He argued that international trade based on comparative advantage leads to the enjoyment economies of scale as a result of production expansion which is the direct result of increase in global market demand. This lead to reduction in production costs, an increase in capital accumulation, and increase in employment. Also, international trade encourages transfer of technology internationally and this affects production positively.

Rodriguez and Rodrik (2000) examined trade policy and economic growth using economic data from more than 100 countries. They find out that their result is in support of Dollar and Kraay (2000) which provided a criticism of the various studies that concluded that trade leads to growth. They found fault with the various data, variables, specifications and methodologies adopted by many of these studies on the ground that they were based on hearsay and case studies. Lin (2000) studies the relationship between trade and economic growth in China using data from 1952-1997. He concludes that export, import, trade and labour force growths were positively related to economic growth in china. Winters (2002), examined the effect of trade on poverty and concludes that trade, through different channels as economic growth, price changes, market and government revenue, can affect poverty. Baldwin (2003) in his work “openness and growth” find out those countries with less trade restrictions policies achieves more rapid economic growth than countries with high trade restrictive policies. Medina-Smith (2001) and Obadan, (2008) examines the export-led hypothesis in developing economies and states that trade were actually the main engine of growth among the Asian Tigers; Hong Kong, Taiwan, Singapore and South Korea.

2.1 Theoretical literature

There exist vast numbers of theories on international trade and economic growth which have started as far back as the sixteenth century. Some of these theories are discussed by Usman, O. A (2011) as follows:

2.1.1 Mercantilist Trade Theory: This theory identifies the fact that a country can only be rich and be powerful if it ensures that its export is more than its import. Some of the propagandist of this theory is Jean Baptiste Colbert and Thomas Hobbes. It was understood
then, that, the most important way in which a country could be rich was by acquiring precious metals such as gold. This was achieved by ensuring that the volume of export was better than the volume of import.

2.1.2 Absolute Advantage Trade Theory: This theory was propounded by Adam Smith in his book “wealth of the nation” 1776. As a criticism against mercantilism, the theory advocates free trade for the nations of the world. Smith argued that each nation could specialize in the production of those commodities it could produce more efficiently, and import those commodities in which it could produces less efficiently in a free trade environment.

2.1.3 Comparative Advantage Theory: This theory, advocated by David Ricardo attempt to answer the question of a situation where a country has absolute advantage in production of two or more goods, will trade still be profitable with other countries? Ricardo demonstrates that external trade arises not from differences in absolute advantage but from difference in comparative advantage. In a model of two countries, two commodities and one factor of production, he maintains that a country should export the commodity it has comparative advantage in relation to the comparative cost of producing the commodity. In other word, a country should export the commodity which its comparative cost of production is lower and import that commodity which its comparative cost is higher in pre-trade evaluation with other country. The Ricardian theory is unrealistic because it is based on labour theory of values which states that the price or the values of a commodity is equal to or can be inferred by the quality of labour time going into its production process, despite the disadvantages of the theory of comparative advantage, the theory is found applicable in the study of economics.

2.1.4 Hecksher – Ohlin Trade Theory: Two Swedish economists, Eli Hecksher and Bertil Ohlin promulgate this theory. The theory explains two issues in the theory of comparative advantage. First, what are the factors that determine comparative advantage of countries and second, what are the effects of trade on factor income in the trading countries? On the assumption of equal or similar technology and tastes, Hecksher – Ohlin theory focuses on the differences in relative factors endowments and factors prices between nations as the most determinants of trade. The model identified difference in pre-trade product prices between nations as the basis for trade. The theory assumed two countries, two commodities and two factors. There is perfect competition in both factor and product market. It assumed that factor inputs; labour and capital in the two countries are homogeneous. Production function also exhibits constant return to scale. Production possibility curve is concave to the origin. The model suggests that the less develop countries that are labour abundant should specialize in the production of primary product especially agricultural product because the labour requirement of agricultural is high except in the mechanized form of farming. On the other hand, the less developed countries should import capital-intensive product mostly the manufactured goods from developed countries that are capital intensive (Usman, O. A. 2011). Hecksher Ohlin theory concludes that trade increase total world output, all countries gain from trade, trade enables countries to secure capital and consumption of goods from other parts of the world. Thus, trade stimulates economic growth.
Economic growth means the steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output and income. The following growth models are identified:

2.1.5 Harrod-Domar Growth Model: According to this theory investment is considered fundamental in the process of economic growth. Investment creates income and also increases the capital stock in an economy hence, leading to an increased production capacity of the economy. The theory often referred to as the AK model is based on the linear production function with output given by the capital stock $K$ times a constant, labelled $A$. In order to grow, new investments representing net additions to the capital stock are necessary. In order to grow, an economy must be able to save and invest a certain proportion of their GDP.

2.1.6 Traditional Neoclassical Growth Theory: This theory is an expansion of the Harrod-Domar formulation. The traditionalist added a third variable, technology, to the growth model. According to the theory, output growth results from one or more of three factors; increase in labour quantity and quality, increase in capital, and improvements in technology. Closed economies with lower saving rates grow slowly in short run and achieve a lower per capita income. While in an open economies, where returns on investments are higher, will experience higher income levels as capital flows from economies where capital-labour ratios are lower. In addition, openness is said to encourage greater access to foreign production ideas that can raise the rate of technological progress, while a closed economies will retard growth.

2.1.7 Endogenous Growth Theory: the endogenous growth economist stress the need for government and private sector institutions to encourage innovation, by creating the right economic environment for individuals and businesses thrive on innovations. The main points of the endogenous growth theory are;

- Technological progress should not be taken as a constant in growth model. Government policies can raise a country’s growth rate by encouraging competition in the markets and helping to stimulate product and process innovation.
- Protection of private property rights and patents, as a means of incentives to encourage businesses and entrepreneurs engage in research and development. Thus, Investment in human capital is an essential ingredient for a long-term growth, government policy should encourage entrepreneurship.

2.2 Empirical literature

Ezike et al (2012) investigates the macroeconomic impact of trade on Nigerian growth. Using the Ordinary Least Square (OLS) regression technique and applying a combination of bivariate and multivariate models from the data covering the period 1970 – 2008 observed that the two predictors used in the study for trade, namely exports and foreign direct investment have a positive and significant impact on Nigeria’s growth during the period.
Omoju, O and Adesanya, O (2012), investigate trade and growth in developing country using Nigeria as a case study. They make use of secondary data from 1980 – 2010 and applying the Ordinary Least Square (OLS) regression method, they find out that foreign trade, foreign direct investment, government expenditure and exchange rate have a significant positive impact on economic growth in developing countries.

Sun, P and Heshmati, A (2010), examine the effects of international trade on China’s economic growth. Applying econometric and non-parametric techniques on six (6) year data of 31 provinces in China from 2002 to 2007, their finding reveals that an increase participation in international trade helps stimulate rapid national economic growth in china. Thus, international trade volume and china’s trade structure on technological exports positively affects China’s regional productions.

In the same vein, Eravwoke, K. E and Oyivwi, D. O (2012) studies growth perspective via trade in Nigeria, employ the Ordinary Least Square (OLS) method, Augmented Dickey Fuller (ADF) and the Johansenco-integration statistical approach on data covering the period 1970 - 2009. They find that the ADF reveals that the series are integrated of order one 1(1), but for total trade the series became stationary after taking the second difference 1(2) and concludes that the variables are non-stationary. The Johansen co-integration test shows that there exist one co-integration equation at 5% level of significance which means that there is long run relationship between total trade, exchange rate, export and gross domestic product of Nigeria. The OLS result revealed that total trade and export are not statistically significant in explaining economic growth in Nigeria but exchange rate is statistically significant in explaining growth in Nigeria.

Finally, from the above, it can be deduced that empirical findings are sceptical about the impact of trade on economic growth because of the difference in approach and the composition of data and methodology applied through the studies. This paper is aimed at contributing positively to the debate.

3. METHODOLOGY

The Ordinary Least Square (OLS) technique was used in analysing the secondary data employed for the study. Data was sourced from the Central Bank of Nigeria (CBN) Statistical bulletin, National Bureau of Statistics, United Nations Conference on Trade and Development Reports. The sample covers a period from 1975 – 2012.

Model specification

The model used for this research, in its functional form is express as:

$$\text{GDP} = F (\text{TOTRD, FDIF, EXCR, OPEN, POST})$$

Where GDP=Gross Domestic Product, TOTRD=Total Trade, FDIF=Inward-Outward Foreign Direct Investment Flows, EXCR=Exchange Rate of a Naira to the US$, OPEN=Degree of Openness, POST=Political Stability.

The econometric form is written as:

$$\text{GDP} = \beta_0 + \beta_1\text{TOTRD} + \beta_2\text{FDIF} + \beta_3\text{EXCR} + \beta_4\text{OPEN} + \beta_5\text{POST} + \mu$$

Where $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ represents the coefficients of the independent variables respectively and $\mu$ represents the disturbance term.

GDP as a variable is used to measure economic growth in Nigeria, it is the dependent variable. The annual data was obtained from the CBN statistical bulletin.
TOTRD is an independent variable is the annual total of import and export trade in Nigeria. It was obtained from the CBN Bulletin and National Bureau of statistics.

FDIF also an independent variable is the inward-outward annual Foreign Direct Investment Flow. It is obtained from the United Nations Conference on Trade and Development (UNCTAD). The FDI flow is used because it is a measure of the annual FDI flow that relates to Nigeria and the rest of the world which is measured in relation to the prevailing exchange rate of the particular period.

EXCR as another independent variable is the Exchange rate of a Naira to the US$. It is used as a measure of macroeconomic stability to assess currency risk in Nigeria’s international trade. The data was extracted from CBN statistical bulletin.

OPEN as an independent variable measures the degree of Nigeria’s trade openness with the rest of the world. It is obtain from the addition export and import divided by GDP i.e. X + M/GDP.

POST as the last independent variable is a dummy variable introduce to measure political stability in the Nigerian economy, which may influence to a large extent the workability of the impact of the international trade on growth. 1 represents democratic regime while 0 represents military regime.

The a priori expectation set by economic theory for this research is expected to be as follows for the parameters: 
\( \beta_1>0, \beta_2<0, \beta_3>0, \beta_4=0or<0, \beta_5>0or<0. \)

The above simply means that total trade, FDI flow and exchange rate are expected to positively impact growth of the economy, while the degree of openness and political stability can have either positive or negative impact on economic growth depending on on what constitute the variables.

4. ANALYSIS OF FINDINGS

The following is the econometric result of the data analysed using the e-view econometric software,

Dependent Variable: GDP
Method: Least Squares
Date: 08/27/13   Time: 13:25
Sample: 1975 2012
Included observations: 38

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTRD</td>
<td>1.189472</td>
<td>0.053663</td>
<td>22.16558</td>
<td>0.0000</td>
</tr>
<tr>
<td>FDIF</td>
<td>537.6693</td>
<td>161.0908</td>
<td>3.337679</td>
<td>0.0022</td>
</tr>
<tr>
<td>EXCR</td>
<td>19.66540</td>
<td>7.088962</td>
<td>2.774088</td>
<td>0.0092</td>
</tr>
<tr>
<td>OPEN</td>
<td>-3365.917</td>
<td>1479.169</td>
<td>-2.275546</td>
<td>0.0297</td>
</tr>
<tr>
<td>POST</td>
<td>52.74141</td>
<td>553.0583</td>
<td>0.095363</td>
<td>0.9246</td>
</tr>
<tr>
<td>C</td>
<td>1126.735</td>
<td>782.7724</td>
<td>1.439415</td>
<td>0.1597</td>
</tr>
</tbody>
</table>

R-squared 0.991564  Mean dependent var 6926.629
Adjusted R-squared 0.990246  S.D. dependent var 11142.23
From the result presented above, the coefficient of TOTRD is 1.1895, means that holding other variables constant, 1billion naira increase in total trade will lead to 1.1895 billion naira increase in GDP, the coefficient of FDIF 537.669 means that 1billion dollar increase in FDI flow, holding other variables constant will lead to 537.669 billion naira increase in GDP, and the coefficient of EXCR 19.665 means that 1 naira appreciation in the value of the naira against the US$, without the influence of other variables, leads to an increase in GDP by 19.6654billion naira. The probability of TOTRD, FDIF and EXCR is 0.0000, 0.0022 and 0.0092 respectively, indicates that total trade, FDI flow and exchange rate are all statistically significant to gross domestic product in Nigeria. The coefficient of OPEN is negatively signed at -3365.917, indicates that without the influence of other variables, 1% increase in the degree of openness of the Nigerian economy, lead to a reduction of 3365.917billion naira in GDP, with a probability value of 0.0297, shows that this assertion is statistically significant, at 3% level of significance, in Nigeria. POST with a coefficient of 52.7414 means that political stability in Nigeria leads to an increase of 52.7414billion naira in GDP but with a probability of 0.925 shows that political stability is not statistically significant to gross domestic product in Nigeria. The constant coefficient is 1126.735 means that without the explanatory variables, the GDP will average 1126.735billion naira but with a probability of 0.1597 shows that this figure is not statistically significant, although the intercept is always taken not to have any economic viability from the onset.

The Durbin-Watson statistics suggest that we accept the null hypothesis that there is no autocorrelation, positive or negative in the residuals. This simply means that the variables that belong in the model are not included in the error term, meaning that there is no specification error in the model.

A look at the $R^2$ which is 0.992 means that the explanatory variables used (TOTRD, FDIF, EXCR, OPEN and POST) explain 99.2% variation in GDP, while the Adjusted $R^2$ of 0.99 means that if an additional explanatory variable is included in the model, the variables used in this paper will still explain 99% variation in GDP. In testing for the overall statistical significance of the model, the F-statistic shows a figure of 752.29 with a probability of 0.0000, shows that the variable is statistically significant, meaning that total TOTRD, FDIF, EXCR, OPEN and POST have joint effect on GDP, that is trade and growth are related.

5. SUMMARY, CONCLUSION AND POLICY RECOMENDATIONS

This paper examines the impact of trade on the Nigerian economic growth. Using the OLS regression technique to analyse the secondary data used in the paper, we found that total trade, FDI flow and exchange rate have positive impact on growth of the economy, openness is observed to have a negative impact on the growth of the economy, this is in contrast to the finding of Ayanwale (2007) which shows that openness has a positive and significant relationship with economic growth. However, it agrees with Odozi (1995), Anyanwu (1998), and Usman (2011) who have also observed the negative impact of openness on the Nigerian
Odozi (1995) and Anyanwu (1998) blamed the negative effect of openness in Nigeria on capital flight and unfavourable trade policy, while Usman (2011) observed that there is more of import than export. Despite their earlier observations, this simply shows that Nigeria’s trade policies, and implementation is still not growth friendly. Looking at the dummy variable, political stability, it shows that the type of political dispensation in place have no effect on growth, this is in conformity with the result of Asiedu (2001) and Ayanwale (2007). This can be seen in the growth of GDP over the years through the military and the democratic political periods. This can be attributed to the importance of petroleum product in international market, which is the bulk of Nigeria’s export and source of foreign exchange earnings.

In conclusion, despite the shortcomings observed in openness, the paper still shows that Nigeria is still gaining from trade but this gain yet to be maximised. Thus, the paper indicates that there is gain in trade and that government can rigorously pursue growth and economic development through international trade.

As a result of the findings in this paper, the following recommendations were put forward;

As a result of the negative impact of Nigeria’s openness, trade policies in Nigeria need to be reviewed, reappraised and reinvigorated to encourage the gain of trade in order to foster growth, through diversification of the economy to areas such as agriculture, industrialisation, privatisation of the power sector, and building of oil refineries to reduce importation of petroleum produce, among others.

The port and border system should be critically looked into in the areas of adequate personnel, the personnel should be trained and equipped in order to carry out their duty, such as curbing smuggling.

Conscious effort should be made to encourage mass production of exportable goods, which will leads to injection into the economy, by the industry and individual entrepreneurs.

The government should make frantic effort to improving infrastructural facilities in order for the manufacturing firms be able to add value to the natural endowment abound in the country.

Nigerians should be massively educated as to the importance of consuming locally produced good and the effect of consuming foreign goods, as withdrawal, on the economic growth of Nigeria.

Importation of some goods that can be produced locally at low cost should be banned and massive production of such goods, locally, with the required quality and standard, should be encouraged.

Goods that are deemed not to meet the quality standard of Nigeria that are smuggled into the country should be communicated to the masses at the earliest time to discourage the consumption of such goods in order to forestall the withdrawal effect on growth, caused as a result of consuming such goods.

REFERENCES


