External Trade and Nigeria Economy: An Impact Analysis

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Abstract
This study tried to examine the determinants of the external trade in Nigeria. The objective of the study is to identify the major factors influencing external trade growth and make policy suggestions. This study made use of time series secondary data from Central Bank of Nigeria, International Financial Statistics, World Bank, etc. and test the significant relationship between the level of total trade as dependent variable while GDP, inflation rate, capacity utilization, exchange rate, government expenditure, interest rate, import and export are independent variables. The result reveals that GDP, inflation rate, capacity utilization, exchange rate and export are all positively significant while government expenditure, interest rate and import are negatively signed. Empirical investigations using E-View package reveals that the $R^2$ adjusted explain 75 percent of the total variation in the model showing a good fit. The econometric results suggested that the focus of the country’s trade should be on the development of dynamic, rather than static comparative advantage of the nation i.e promotion of non-primary exports and non-oil export, government should take necessary measures to enhance productivity and competitiveness of enterprises in the export sector by upgrading infrastructures, enhancement of human capital development, development and improvement of technology through increase allocation of resources to research and development etc.,

Keywords: External Trade, Economic Growth and Government Expenditure.

1.1 INTRODUCTION
Economic theorists like Smith have argued that countries engage in external trade to reap the gains that arise from specialized production with each country concentrating on production of those goods and service that involve the least opportunity cost. Various studies on international trade recognize trade as a vital catalyst for economic development. For developing countries, the contribution of trade to overall economic development is immense, owing largely to the obvious fact that most of the essential elements for development such as, capital goods, raw materials and technical know-how, are almost entirely imported because of inadequate domestic supply. Increased domestic demand invariably solicits corresponding expansion in exports. To enhance export capacity therefore, improved technology must be required, and this in turn further pushes up demand for imports. This circle of activities has the tendency of pushing imports far ahead of exports and in consequence exerts undue pressures on the balance of payments. Prolonged pressures on the balance of payments constitute constraints to economic development and thus, appropriate economic policy measures have to be put in place to streamline external trade transactions to conform to desired goal of economic development. One of such policies is the external trade policy. External trade policy regulates external trade in line with the domestic requirements of a country. Adak (2010) investigates the international trade and Economic Growth interrelation in Turkey using econometric model and Ordinary Least Square test with the analysis covering the years between 1981 and 2007 and found that there is a significant causality between foreign trade and economic growth. He observed that the foreign trade growth rate has pushed up the GPD per capita growth rate in the past three decades after the integration of Turkey into the global economy. The findings affirm that international trade is one of the economic growth determinants of Turkey.

Also, Kotil and Konur (2010) investigate the relationship between the Gross Domestic Product (GDP) and foreign trade (FT) for the Turkish Economy in the period 1989 to 2007 using the Granger Causality Test. It was found that there is a direct relationship between Gross Domestic Product and foreign trades during the period considered and show posit that the result accessed in this study renders support to the export-led development hypothesis in agreement with preceding studies on many countries. Ozdeser and Ozyigit (2007) analyze the role of foreign trade in Turkish Republic of Northern Cyprus (T.R.N.C’s) economic growth using regression analysis with the data for the period 1985-2005 and found that trade is very beneficial to the level of national income and highly correlated with GNP growth. Their finding suggests that the volume of trade helps explains the growth of GNP in Northern Cyprus signifying that trade openness, regardless of the level of concentration helps Turkish Cypriot per capita income and economic growth. International trade has, by and large, been an “engine of growth” for global economy and Nigeria. But there have been large dissenting voices in the 20th century, claiming that international trade only perpetuates the underdevelopment of poor countries due to the fact that there is a disproportionate share of gains from trade that accrues to industrialized countries. This paper is to examine the impact of international trade on the economic growth of Nigeria; to identify the factors that influencing international trade progress of Nigeria and make policy suggestions base on the findings. The rest of the paper is organized as follows: in section 2, a brief review of the literature is provided while the methodology
of the study is presented in section 3. Section 4 presents the results of the estimated model and interpretation. The conclusion and suggestions are presented in section 5.

2.1 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.2 Modern Theory of Trade

The Heckscher-Ohlin theory explains why countries trade in goods and services with each other. One condition for trade between two countries is that the countries differ with respect to the availability of the factors of production. They differ if one country, for example, has many machines (capital) but few workers, which another country has a lot of workers but few machines. According to the Heckscher-Ohlin theory, a country specializes in the production of goods that it is particularly suited to produce. Countries in which capital is abundant and workers few, therefore, specialize in production of goods that it is particularly require capital. Specialization in production and trade between countries generates, according to this a higher standard-of-living for the countries involved.

The production of goods and services requires capital and workers. Some goods require more capital - technical equipment and machinery - and are called capital intensive. For instance these goods are cars, computers, and cell phones, other goods require less equipment to produce and rely mostly on the efforts of the workers. These goods are called labour intensive. Examples of these goods are shoes and textile products such as jeans.

The Heckscher-Ohlin theory says that two countries trade in goods with each other (and thereby achieves greater economic welfare), if the following assumptions hold:

- The major factors of production, namely labour and capital are not available in the same proportion in both countries.
- The two goods produced either require relatively more capital or relatively more labour.
- labour and capital do not move between the two countries.
- There are no costs associated with transporting the goods between countries.

The citizens of the two trading countries have the same needs. Of the above conditions, the central one is the assumption that capital and labour are not available in the same proportion in the two countries. This condition leads to specialization. The country with relatively more capital, specializes - but not necessarily fully - in production of capital-intensive goods (which it exports in exchange labour for intensive goods) while the country with relatively little capital specializes in Production of labour-intensive goods (which it exports in exchange for capital - intensive goods).

According to the theory, the more different the countries are regarding the capital-to-labour ratio – the greater the economic gain from specialization and trade.

2.3 Empirical Review

The importance of reforms on governance and policy framework cannot be over-emphasised. Over the years, policies have long played a significant role in the development strategies of many countries; It is widely accepted, not even least in the agreement establishing the WorldTrade Organization, with the aim to raise living standards all over the world (i.e 1950s – import-substituting industrialization and export promotion policy). This policy has led many developing countries to choose import-substituting industrialization, where domestic industry was encouraged and protected from international competition by highly protectionist trade barriers Harrigan (1993).

Very good example is the East Asian tigers of export-led growth, with liberalized trade policies facilitating industrial diversification and technological advancement. Of course recently, a consensus emerged that deeper determinants of economic growth and development are not only centered on trade policies as well as macroeconomic policies and political will such as the rule of law, the legal and political systems, and bureaucratic corruption also played a much more significant impact on economic growth and level of development (Abayomi and Wafure 2011).

Ades and Di Tella (1997, 1999) and Treisman (2000) find the determinants of international trade and corruption use (X + M)/GDP or M/GDP as a measure of openness. But Rodrik and Rodriguez (2000) disputed this as an indirect measure of trade restrictions and are notoriously unreliable. In Treisman’s (2000) findings show that the effect of import volumes on corruption is surprisingly small. Trade policies’ effects on corruption will also work differently from natural or geographical barriers to trade and other exogenous determinants that are subsumed in the trade volume measures. Ades and Di Tella (1999) also use fuel and mineral exports as a measure of rents, but this variable fails to be significant and sometimes enters with the wrong sign. Even this variable may suffer from endogeneity problems, as pointed out by Easterly (2002). Masse, (2001) observed that the impact of trade in an economy varies from one industry to another. He noted that some industries are more exposed or sensitive to trade than others. Some may have particular characteristics (e.g. type of production technology) that interact with trade, resulting in sector-specific policy challenges. As a result, industry-level analyses are required to enhance the assessment of the impact of trade and its implications for adjustment in terms of employment and wages, he maintained.

Edward (2000) notes the effects of international trade on earnings inequality have produced very mixed results. He observed that some researchers have found significant effects while some other found little or no effect. He
further observed that the studies that have looked at specific effects of trade on the relative price of manufacturing industries or factor prices within particular manufacturing sectors have failed to find confirmation of the Stolper-Samuelson theorem (with the exception of Sachs and Shatz, 1994). As a several studies have indicated, movements in the price of low skilled manufactures relatives to high skill manufactures have not changed in the direction predicted by Stolper-Samuelson.

With regard to the effects of international trade on average real wages, Edward, (2000) opined that there are too limited studies to draw much in the way of conclusion. He however said the only notable study to deal with this issue is Lawrence and Slaughter (1993), who found almost no effect of expanded international trade on the wage stagnation of the post-1973 period. He concluded that there is no compelling evidence that the expansion of international trade since the early 1970s played a substantial role in either the reduction in the real wage or in the increase of the wage differential between skilled and unskilled labour.

Gurushri (2004) reveals that trade expansion typically results in an increase in labour-intensive exports from developing countries, arguing that employers in these industries often prefer to hire women, and the growth of exports such as garments, shoes, jewelry, and electronics has almost always been accompanied by a significant number of female wage employment in the formal sector. He noted that policymakers need to consider a broad range of issues unrelated to trade if both women and men- and the economy as a whole- are to reap the full benefits of trade expansion. These include skills acquisition, a nondiscriminatory labour market, and unemployment benefits. He added that women’s education and skill acquisition are the most important factors determining the impact of trade on women’s employment and the gender wage gap. In sub-Saharan Africa, “an important issue is how to enhance female farmers’ control over resources so that they can share the benefits from trade expansion” (Gurushri, 2004).

Thirlwall (2000) argues that there can be little doubt that, historically, trade has acted as an important engine of growth for countries at different stages of development, not only by contributing to a more efficient allocation of resources within another. He observes that recent research suggests that regional trade agreements reduce growth and investment, but generalized trade liberalization in the form of unilateral tariff reductions (or the reduction of non-tariff barriers to trade) improves growth performance. He explained that export growth relax the balance of payments constraint on demand by providing the foreign exchange to pay for the import content of higher levels of consumption, investment and government expenditure. Besides, most developing countries are constrained in their growth performance by a shortage of foreign exchange and could therefore grow faster with more exports. Ashok (2002) argues that despite the liberalization in trade and finance, private capital is less likely to move in required amounts to developing countries to promote higher economic growth so that they can catch up with the developed countries’ per capita income and reduce the disparity in per capita incomes. He observed that trade liberalization has increased the imports of developing countries by and large and although after the initial phase of import growth, he noted that exports picked up in some developing countries, on the whole it remained insufficient to narrow the trade deficits.

Ashok (2002) stresses that if developed economies of the world would like to see the prospects of faster growth for developing countries, trade and financial liberalization to facilitate a change in developing economies. He further noted that until the structure of the economy becomes favourable for growth, trade and financial liberalization alone will produce short-term reversal in growth rates and divergence in per capita income. Mengistae and Teal (1998) conducted a survey in Africa’s manufacturing sector to assess the effects of trade liberalization on the performance of firms in the sector. They noted that in the past, regional integration has been seen as a protective measure. They opined that there is clear evidence that access to regional markets does improve the efficiency with which firms operate. They however, stressed that these efficiency gains are not large enough to enable the firms to become internationally competitive. Mengistae and Teal (1998) state that regional arrangements may, with other appropriate policies, be able to play a role in enabling the manufacturing sector to grow. They maintained that such an arrangement may provide an element of macroeconomic stability that can greatly enhance the prospects for exports. Lardy (2003) reviewed the trade liberalization policy of China prior to its accession to the World Trade Organization and analyzed the implications of increased openness for economic growth. The central theme was that increased openness dramatically increased competition in the domestic market and that competition contributed to a substantial transformation of the economy, particularly in the state-owned sector.

Todaro (2000) examines the idea of free trade in the context of developing countries and says that even though it is desirable, it depends on the fact that “countries differ in their resource endowments, their economic and social institutions, and their capacities for growth and development”. It stands to reason, therefore, that the impact of trade liberalization on export orientation in Sub-Sahara Africa (SSA) will differ from country to country, and for that matter from firm to firm, depending on the extent of investments, infrastructure, economies of scale and so on. Harris and Cher (2005) found that despite the fact that internationalization at the firm level is a new area of research, there was already a considerable consensus (based on limited empirical evidence) that dynamic restructuring of the economy results in larger market shares for the most efficient (and usually larger) firms that export, and this has a sizeable impact on boosting aggregate productivity. They however, noted that more
evidence is needed in covering a wider range of countries on how important such restructuring, due to increased internationalization, really is. Agbeyegbe et al. (2004) investigate the relationship between the tax revenue-to-GDP ratio, trade liberalization, and changes in the exchange rate using a panel data set of Sub-Saharan countries. Their results suggest that trade liberalization, accompanied by appropriately supportive monetary policies, may preserve tax yield. This result has important implications for countries that have been reluctant to undertake trade liberalization for fear of the revenue consequences. Shuichiro (2005) examines the international trade of developed countries with the Heckscher-Ohlin-Vanek (HOV) model. He opined that even though conventional factors are necessary inputs in the production function, historical R&D efforts play crucial roles to determine comparative advantage. Thus, knowledge capital determines the direction of trades between developed countries. Egwaikhide (2000) analyses the trade data to ascertain the determinants and components of Nigeria’s import over the period. Among other things, the study found out that short-run change in industrial output, foreign exchange availability and movements in relative prices had significant influence on the import of raw materials. He noted that any improvement in the industrial sector that manifestly raised its output growth would increase the demand for raw material, especially in the absence of any increased domestic supply of needed inputs. He also observed that annual changes in investment, foreign exchange availability and relative prices were important determinants of capital goods imports. For import of consumer goods, Egwaikhide, (2000) opined that the availability of foreign exchange is critical noting that any rapid growth in domestic consumption would spill over to the external sector in the form of increased demand for consumer goods. Hassan, Olawoye and Nnadozie, (2002) observed that in an effort to increase national income and encourage more trade, national laws and regulations that protect local businesses, jobs and resources have been relaxed. They argued that governments provide massive support financially and otherwise for the infrastructure necessary to facilitate and sustain the oil economy in a globalizing world.

3.1 Methodology and Model Specification.

This study focused on the determinants of international trade in Nigerian economy from 1970 – 2010. Time series secondary data were used for the analysis. The secondary data were obtained from such publications as World Bank Digest of Statistics, Central Bank of Nigeria Statistical Bulletin, International Financial Statistics etc.

The secondary data used for the study were processed using E-view for windows econometric packages. The E-view is preferred to the SSPS because it enables us to have data corrected, that is, the serial correlation in the data will be corrected. It involves the use of Error Correction Mechanism (ECM) to overcome the problem of spurious regression. The ECM reveals that the change in a variable at time \( t \) is not only dependent on lagged changes in its independent variables, but also on its own lagged changes.

3.2 Model Specification

This study adapted an economic model previously used by Edward (2000) to estimate the determinants of economic growth. His work which had earlier been reviewed in the empirical studies. However, study tried to modify his work by employing additional independent variables. The new model is of the general form. Thus, external trade trend model for Nigeria can be specified in a function form as:

\[
Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8)
\]

Where:

- \( Y \) = Total Trade (export plus import)
- \( X_1 \) = GDP
- \( X_2 \) = Inflation Rate
- \( X_3 \) = Capacity Utilisation Rate
- \( X_4 \) = Exchange Rate
- \( X_5 \) = Government Expenditure
- \( X_6 \) = Interest Rate
- \( X_7 \) = Import
- \( X_8 \) = Export

Therefore:

\[
Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + U_i
\]

In log linear the model becomes:

\[
\log Y = \beta_0 + \log \beta_1 X_1 + \log \beta_2 X_2 + \log \beta_3 X_3 + \log \beta_4 X_4 + \log \beta_5 X_5 + \log \beta_6 X_6 + \log \beta_7 X_7 + \log \beta_8 X_8 + U_i
\]
4.1 DATA ANALYSIS AND INTERPRETATION OF RESULTS

Dependent Variable: Y
Method: Least Squares
Date: 05/11/12   Time: 02:04
Sample (adjusted): 1 38
Included observations: 38 after adjustments

\[ Y = C(1) + C(2) \times X_1 + C(3) \times X_2 + C(4) \times X_3 + C(5) \times X_4 + C(6) \times X_5 + C(7) \times X_6 + C(8) \times X_7 + C(9) \times X_8 \]

<table>
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<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<td>0.9004</td>
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<tr>
<td>C(2)</td>
<td>3.033573</td>
<td>0.969932</td>
<td>0.3401</td>
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<td>C(3)</td>
<td>8287.626</td>
<td>0.838511</td>
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<td>C(4)</td>
<td>1579.563</td>
<td>0.097572</td>
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<td>C(5)</td>
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<td>C(7)</td>
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<td>C(8)</td>
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<td>C(9)</td>
<td>0.866863</td>
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</tr>
</tbody>
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R-squared 0.804695
Adjusted R-squared 0.750817
S.E. of regression 769881.8
Akaike info criterion 30.14926
Schwarz criterion 30.53710
Log likelihood -563.8359
Hannan-Quinn criter. 30.28725
F-statistic 14.93569
Durbin-Watson stat 1.577541
Prob(F-statistic) 0.000000

Source: Computed by Author 2012

This section focused on the data analysis, interpretation of results and discussions. The results show the econometric effect of some explanatory variables such as, GDP, inflation rate, capacity utilization rate, exchange rate, government expenditure, interest rate, import and export on the total trade in Nigeria. The regression analysis is explained in this section with a test for ordinary least square (OLS). Furthermore, this section also examines the problem of social correlation (Auto correlation) and the first of the serial correlation. Various statistical tests such as standard error, t-test statistics, adjusted R-square, Durbin Watson and F-statistics were used to validate the result. That; GDP, inflation rate, capacity utilization rate, exchange rate, government expenditure, interest rate, import and export were stationary at 1 percent and 5 percent respectively.

4.2 The Statistical Significance of the Parameter Estimate

The statistical significance of the parameter estimate can be verified by standard error test; the adjusted R squared and the Durbin-Watson statistics. This shows that the estimated values are all statistically significant. The value of the adjusted R-squared ($R^2$) for the model is very high, pegged at 75 percent. It implies that GDP, inflation rate, capacity utilization rate, exchange rate, government expenditure, interest rate, import and export explained about 75 percent systematic variations in the level of total trade over the observed years in the Nigeria economy while the remaining 25 percent variation is explained by other determining variables outside the model. The value of Durbin Watson is 1.5 for the model. This falls within the determinate region and implies that there is a negative first order serial autocorrelation among the explanatory variables in the model.

The result of the coefficient shows that GDP, inflation rate, capacity utilization, exchange rate, and export are positively significant to country total trade. An increase in these variables eventually leads to increase in total volume of international trade. This means the deregulation policy of the government; trade liberalization policy, infrastructural development of the government and the inflationary policy of the government had a positive and significant impact on international trade level and economic growth of the country. Meanwhile, the result also reveals that government expenditure, interest rate, and import are insignificant to the total trade and wrongly signed.

5.1 CONCLUSION AND POLICY RECOMMENDATIONS

In conclusion, since all the econometric test applied in this study show a statistically significant relationship between the dependent and independent variables from the model in both the long and short runs thus, we accept that GDP, inflation rate, capacity utilization rate, exchange rate, government expenditure, interest rate, import and export has significant implications on the level of total trade in Nigeria. However, on the whole, the
empirical findings reveal that international trade is a catalyst for economic growth. We recommend that the country’s trade should be on the development of dynamic, rather than static comparative advantage, emphasis should be on the promotion of non-primary exports and non-oil export i.e. manufactured goods. International trade strategy must be based on the recognition of the fact that the international economic environment is not a “level playing field” government has to take necessary measures to enhance productivity and competitiveness of enterprises in the export sector, i.e. upgrading infrastructures, enhancement of human capital development, development and improvement of technology through increase allocation of resources to research and development through government spending. Also Central Bank of Nigeria should intensify the deregulation policy of the exchange rate sector of the country made available foreign currency to exporters and investors. Promotion of exports within the context of sub-regional and regional economic integration should be vigorously pursued to expand Nigerian international market and the importation policy of the government should adhere to in order to control dumping and to encourage the local investors. Finally, the monetary authority of the country should maintain a double digit inflation and interest rate for now to motivate foreign investors and the commercial banks until development level of Nigeria economy reach a significant level where both inflation and interest rate can be reduced to single digit or zero free.

References

