FOREIGN TRADE AND ECONOMIC GROWTH IN AFRICA: A COMPARISON BETWEEN WEST AFRICA AND EAST AFRICA (PANEL DATA APPROACH)

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Abstract: The influence of foreign trade on economic growth has been an issue of intellectual discourse by development economists for decades. This study therefore, examined the relationship between foreign trade and economic growth in Africa: A comparison between West Africa and East Africa over a period of 1991 -2011. The study utilizes panel data set of 31 African countries that comprises two regions in the continent. The study documents that export has a positive significant influence on economic growth in both West Africa and East Africa Regions while import on the other hand, has positive significant influence on economic growth in east Africa alone.The findings revealed that foreign exchange do not have significant influence on economic growth. On the basis of the findings, the study concludes that exports exert positive influence on economic growth of the two regions. The study therefore recommends that African governments should promote robust export and import substitution strategies, guard against the menace of dumping and deregulate their exchange rate systems in order to achieve higher economic growth.

Keywords: Foreign Trade, Economic Growth, Africa

Introduction:

Background To The Study: Economists have 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. Foreign trade has been an area of interest to decision makers, policy makers, as well as economists. It enables nations to sell their domestically produced goods to other countries of the world (Adewuyi, 2002). Foreign trade means exchange of goods and services across international borders. The working of an economy in terms of growth rate and per capita income has been on the domestic production, consumption activities and in conjunction with foreign transaction of goods and services (Usman, 2011).

Foreign trade has been regarded as an engine of economic growth (Adewuyi 2002). Since foreign trade has been regarded as an engine of growth, it is expected to lead to steady improvement in human status by expanding the range of people's standard and preference. Since no country has grown without trade, foreign trade plays a vital role in restructuring economic and social attributes of countries around the world, particularly, the less developed countries.

Africa is basically an open economy with international transactions constituting a significant proportion of its aggregate output. To a large extent, Africa's economic development depends on the prospects of its export trade with other nations. Foreign trade provides both foreign exchange earnings and market stimulus for accelerated economic growth (Adewuyi 2002).

Economic growth means an increase in the average rate of output produced per person usually measured on a per annum basis. Thus, the relationship between trade and growth is envisaged through an export-led growth strategy, following the theory that sustained trade is the main engine of economic growth. Many studies have sought to analyze export-growth nexus using ordinary least squares and cross section data to demonstrate the advantages of export promotion strategy in comparison with import substitution policy (Obadan and Okojie, nd).

The dismal performance in Africa's trade is closely reflected in developments in the growth of GDP. Africa's GDP growth averaged 0.8 percent over the period 1965-1990. Growth in the fastest growing developing countries outside Africa averaged 5.8 percent, while that for the rest of the developing world was 1.8 percent (Sachs and Warner, 1997).

It is against this background that, this study seeks to empirically examine the impact of foreign trade on economic growth in Sampled countries. The study seeks to specifically compare the results of West Africa and East Africa by utilizing panel data from 1991 to 2011. This paper is divided in to five sections. Section one is this introduction. Section two reviews literature. Section three presents the methodology for the study. Section four analyses data and interprets results. Finally section five concludes the paper and states recommendations.

Literature Review:

Conceptual Issues: It is conventional in this type of work to define the key concepts to be used in the study. The key concepts used in this work are Foreign Trade and Economic Growth. Usman (2011) conceives foreign trade as exchange of goods and services across international borders. Lipsey and Chrystal (1999) defined foreign trade as exchange of goods and services that take place across international boundaries. On the other hand, economic growth is defined as a sustained increase in the per capita

income over a period of time (Clunnies Rose et.al, 2009). Kuznet defined economic growth (as cited by Todaro, 1995) as a country's long-term rise in capacity to supply increasingly diverse economic goods and services to its population; this growth capacity is based on advancing technologies, the institutional and ideological advancement that its demand.

Empirical Review on the relationship between Foreign Trade and Economic Growth: Several researches have been conducted on the impact of foreign trade on economic growth, Asher (1970) points out that more than eighty percent of the foreign exchange of less developed countries is earned through exports of goods and services. Massel et al (1972), upon investigating the pattern of the economic growth of selected less developed countries using regression methods observed a high degree of association between exports and economic growth. They suggested that countries should aim at 2.5% expansion in export activities to obtain 1% increase in performance. Michaely (1977) focuses attention on correlation between the rate of growth of export and GNP; he finds that the correlation between rates of growth of the economy is particularly strong among the countries with successful growth experiences. Balassa (1978) in his study of eleven countries that have an established industrial base discovers that the positive correlation between export growth and the GDP growth will provide indication of the total effects of exports on economic growth. Similarly, Bairam (1988) estimated the model for a large sample of developed countries and arrived at the conclusion that the growth performance of a country is a function of the values of its income elasticity of both exports and imports. In the same vein, Perraton (1990) solves the model for 59 developing countries for the period between 1970 and 1984 and reports that the model provides a good fit for almost one half of the sampled countries. This study also suggests that a country growth performance depends on income elasticity of both exports and imports

In another study, Wah (2004) reported that for the past four decades (1961-2000), the Malaysian economy grew at an impressive average rate of 6.8% per annum. The rapid growth was attributed, in part, to the tremendous success in the export oriented Industrialization policy. Edwards (1998) explained that after taking into account the roles of all other factors including capital accumulation, growth in labour force including differences in level of technology, countries with lower degrees of protectionism, on the average tend to grow at a much faster pace than countries with higher trade restrictions.

Fosu (1990) and Sachs and Warner (1997) through studies on various African countries, agreed that trade restrictions impact negatively on growth. In fact, Sachs and Warner (1997) found that lack of openness was the most significant contributor to the dismal economic growth performance in sub-Saharan African. While a substantial part of earlier studies showed evidence of correlation between exports and growth which was used to support the export led growth hypothesis, this tends to hold only for cross section studies. Recent evidence on time series analysis cast doubts on the positive effects of exports on growth in the long run (Medina, 2001). Krueger (1997) expressed in his work additional empirical demonstration of a strong association between export performance and economic growth by undertaking a comprehensive study of the role of export on the economic growth of 10 countries from 1954-1974. A single non –linear regression equation was specifically estimated for each of the chosen countries and she found exports and GNP to be highly correlated. Frankel and Romer (1999) enlarge the study to include 150 countries, in the 1985, and concluded, for example, that trade appears to raise income by spurring the accumulation on physical and human capital and by increasing output for given levels of capital. The most basic measure of openness is the simple trade shares, which is exports plus imports divided by GDP. A large number of studies used trade shares in GDP and found (as reviewed in Harrison, 1996) a positive and strong relationship with growth. Oviemuno (2007) looked at international trade as an engine of growth in developing countries taking Nigeria (1960-2003) a case study. He used four important variables, which are export, import, inflation and exchange rate. The finding showed that Nigeria's export value does not act as an engine of growth in Nigeria, and that Nigeria's inflation rate does not act as an engine of growth in Nigeria. Usman (2011) further examined the performance evaluation of foreign trade and economic growth in Nigeria using OLS techniques. He observed that export, import and exchange rate are all negatively related to real output.

Theoretical framework:

Neoclassical Growth Theory: Some of the main proponents of the neoclassical growth theory are Ramsey (1928), Solow (1956), Phelps (1961) and Koopmans (1965). The widespread use of the neoclassical model centers on the important role it plays in coordinating and integrating various works in macroeconomics, public finance and international economics. This model enjoys a wide usage in aggregate economic analysis. Solow (1956) essentially argues that when production takes place under usually neoclassical conditions of variable proportions and constant returns to scale, there will be no opposition between natural and unwarranted

rates of growth. The system of self adjusting approaches a state of steady proportional expansion. The major innovation introduced by Solow was to allow for factor substitutability so that stable equilibrium growth could be attained. The model is consistent with a number of stylized facts related to economic growth such as the relative constancy over time of capital output ratio. Following the shortcoming of the traditional neo-classical theories led to adoption of endogenous growth theories which (Todaro and Smith 2009) identified as Solow's inability to explain the determinants to technological advancement.

Endogenous Growth Models: Given the empirical and policy problems associated with the Solow's model, a number of new models which attempts to 'endogenize' the growth process have been approved. The dependence of growth on exogenous technological progress in the neoclassical growth model and the apparent inconsistency of the "unconditional convergence" hypothesis led to the renewed search for alternative models that can generate economic growth endogenously. The major proponents are Grossman and Helpman (1991), Jones (1995), Lucas (1988)and Uzama (1965). Endogenous growth theory means economic growth from within a system, usually a nation state. Problems identified in this model are that growth in per capita output converges to zero in the steady state and that there is a positive correlation across countries between investment rates and growth. However, in the Solow's model, this will affect the long-run level of output but not growth rate. This theory offers hope to the newly industrialized countries (NICs) an alternative ways to develop without being dependent on trade. Traditional theories of trade focus on trade as an engine of growth. The endogenous theory focuses on education, on the job training and development of new technologies for the world market and this account for it increasing relevance.

Therefore, the new growth theory has provided important insights into an understanding of the relationship between foreign trade and economic growth; for example, if growth is driven by research and development activities, then trade provides access for a country to the advances of technological knowledge of its trade partners. Further, trade allows producers to access bigger markets and encourage the development of R&D through increasing return to innovation. Therefore the theoretical framework of this study is based on endogenous growth model.

Methodology:

Method of Data Collection: Data for this study was obtained from secondary sources, specifically, from World Bank's Data Base of Macroeconomic Indicators and Selected Statistics of African countries, an annual publication of ADB for a period of twenty one years (1991-2011).

Sample Size: The study covers a total number of thirty one (31) countries out of 36 Countries across West Africa and East Africa, over a period of 1991 – 2011.The countries were selected based on data availability.

Variable Measurements:

Dependent Variable:

Economic growth: this was expressed as annual GDP per capita at current prices for a given country which is in line with study of Obadan (2008), and Usman (2011).

Independent Variables:

a. Export; measured as value of total exports expressed in million of U.S dollars. The value for exports were in current price of the US$ and later expressed as a percentage of nominal GDP (Perraton, 1990).

b. **Import**; computed as value of total imports expressed in million of U.S dollar. The value for import were in current prices of the US$ and later expressed as a percentage of nominal GDP (Perraton, 1990).

c. Foreign exchange rate; expressed as the rate of national currency per US dollar at the end period (Oviemuno, 2007; Usman, 2011).

Method of Data Analysis: A panel dataset was analyzed using STATA econometric software version 10.0. According to Yaffee (2005) the ordinary least squares (OLS) regression, fixed effect and random effect models are among the commonly used models in analyzing panel data. The slope of coefficients, intercept and error term were also used as basis for selection of diagnostic tools. The choice between Fixed Effect and Random Effect models was influenced by the result of Hausman test (1978) which is commonly used as a way of choosing between fixed and random effects (Gujarati and Sajeetha, 2007). The diagnostic method employed is the Hausman test which tests the null hypothesis of non existence of a correlation between unobservable individual effects and the growth determinants against the alternative hypothesis of an existence of a correlation. If the null hypothesis is not rejected we can conclude that correlation is not relevant and therefore a panel model of random effect is the most correct way of carrying out the analysis of the relationship between foreign trade and economic growth.

Model Specification: In order to estimate the relationship between economic growth and the set of explanatory variables, this study specifies the following model:

$$\mathbf{Growth}_{it} = \beta o + \beta 1 \mathbf{export}_{it} + \beta 2 \mathbf{import}_{it} + \beta 3 \mathbf{fer}_{it} + \mu_{it}$$

Where:growth = GDP growth
export = Export
import= Import
fer = Foreign Exchange Rate
μ_{it} = Stochastic Disturbance Term
β_0 = Intercept
β_1 = Coefficient of Export
β_2 = Coefficient of Import
β_3 = Coefficient of Foreign Exchange Rate

Data Analysis And Discussion:

Inferential Analysis:

Results of Panel Regression Model for the Africa: The table below provides results of panel regression model estimated using the combine dataset. Both Random Effect (RE) and Fixed Effect (FE) models were ran with the view to identifying the model with consistent and efficient parameter estimates, Hausman specification test for best model selection was performed. On the basis of the Hausman test, FE model is more appropriate than the RE model because the p value (0.0000) indicate the significance of the test at 1%, leading to acceptance of the alternative hypothesis that FE model is more appropriate than RE model.

Table 4.1. Regression results for African countries Dependent variable = GDP Growth		
Independent variable	coefficient estimates (and t-ratios)	
RE Regression	FE Regression	
Exports	34.60454(8.01)***	27.12305(5.94)***
Imports	-28.26086(-8.26)***	-30.1188(-8.51)***
Foreign exchange	-.020531(-0.33)	0113954(0.18)
Constant term	1352.781(5.52)***	1640.644(9.67)***
R^2	0.0930	0.0980
F	94.36***	26.97***
Significant at 1% (***)		

Source: Computed with STATA 10.0 using data from ADB and World Bank (2012).

As can be seen from column three (FE Regression) of the table 4.2, parameter estimates for exports, is positively related and statistically significant to GDP growth at 1% level of significance, as the table depicts, on average, an economy gains approximately 27% increase in GDP growth due to 1% increase in the level of exports. The assertion that exports is positively related to GDP growth is in conformity with our prior expectation. However parameter estimates for imports is negatively related to GDP growth although statistically significant at 1% level which is also in conformity with our a priori expectation. The parameter of estimates of exports and imports portray similar result using RE model regression. Moreover, the parameter estimate of foreign exchange is positively related to GDP but statistically not significant. The R2 value for FE is 0.0980 showing that 98% of the variation in GDP growth is explained by the predictors.

Regression Results for Split Data (Regional Analysis)":

Results of Panel Regression Model for West Africa: Separate regression has been estimated for West African region as well, table 4.2 presents the results. Random effect regression was used in drawing conclusion on the relationship. This follows the rejection of alternative hypothesis which consider fixed effect model as more appropriate and consistent

Table 4.2. Regression results for West Africa Dependent variable = GDP Growth		
Independent variable	coefficient estimates (and t-ratios)	
RE Regression	FE Regression	
Exports	5.106061(2.96)***	5.052326(2.86)***
Imports .	4115808(0.32)	.2310013(0.18)
Foreign exchange	-.0442693(-1.69)*	-.0411977(-1.53)
Constant term	344.1073(3.25)***	377.0544(5.92)***
R^2	0.0409	0.0409
F	10.92**	3.20**
Significant at 1% (***), 5% (**)		

Source: Computed with STATA 10.0 using data from ADB and World Bank (2012).

Table 4.2 present results of both RE and FE regression models estimated for West African region as contained in columns two and three respectively. The coefficients of exports and imports are both positively related to GDP but statistically significant in exports, therefore, exports spurs growth in the region. Both RE and FE portrays similar results. While foreign exchange is found to be negatively related and statistically significant to GDP growth.

Results of Panel Regression Model for East Africa: Table 4.3 Depicts results obtained from panel regression analysis for East Africa. Hausman specification text favour fixed effect regression.

Table 4.3. Regression results for East Africa
Dependent variable = GDP Growth

Independent variable	coefficient estimates (and t-ratios)	
RE Regression	FE Regression	
Exports	32.15392(4.91)*	25.17111(3.77)***
Imports	12.18407 (2.74)***	12.9096(2.94)***
Foreign exchange	.0529017(1.42)	.0507731(1.39)
Constant term	-302.7058(-0.90)	-145.3301(-0.88)
R^2	0.1994	0.2005
F	79.53***	19.51***
Significant at 1% (***)		

Source: Computed with STATA 10.0 using data from ADB and World Bank (2012).

As can be seen from column three (FE regression) of the table 4.3, coefficients of exports and imports are both positively related to GDP growth and the relationship is not just positive but statistically significant at 1% level of significant. While the foreign exchange coefficient is positive and statistically insignificance. Thus exports and import exerts significant influence on GDP growth.

Comparison of Results Between West Africa and East Africa:

Table 4.4 Comparison of Results between West Africa and East Africa

Independent Variables	Dependent variable: GDP Growth					
	Regression for West Africa			Regression for East Africa		
	RE Model	FE Model	Selected model	RE Model	FE Model	Selected Model
Exports	5.106061 (2.96)***	5.05236 (2.86)***	RE ELECTED	32.15392 (4.91)***	25.17111 (3.77)***	**FE SELECTED**
Imports	.4115808 (0.32)	.2310013 (0.18)		12.18407 (2.74)***	12.9096 (2.94)***	
Foreign Exchange	-.044269 (-1.69)*	-.0411977 (-1.53)		.0529017 (1.42)	.0507731 (1.39)	
Constants	344.1073 (3.25)***	377.0544 (5.92)***		-302.7058 (-0.90)	-145.3301 (-0.88)	
R^2	0.0409	0.0409		0.1994	0.2005	
F	10.92**	3.20**		79.53***	19.51***	

Significant at 1% (***), 5% (**), 10% (*)

Source: Computed with STATA 10.0 using data from ADB and World Bank (2012).

Cursory glance on table 4.4 shows the summary of result obtained from the panel analysis of data using (STATA VERSION 10.0) Column 2-4 shows result of West Africa while column 5-7 reports that of East Africa. Although most of the variables portray positive and statistical significant, there are slight variation in the figures recorded. For example, in West Africa, the results shows that a units rise in Exports variable will result in 5.11 increase in growth of GDP, while in East Africa a unit rise in Exports

variable will result in 25.17 increase in GDP growth using the chosen model . This by implication implies that Exports spurs GDP growth in West Africa and East Africa.

Imports are positively related and statistically significant in East Africa alone, while foreign exchange is negatively related to GDP growth and statistically significant at 10% in West Africa. In addition, the R^2 varies and the F Statistic of both regions are statistically significant which shows the adequacy of the models.

Discussion of Results: The aim of this study is to empirically investigate the relationship between foreign trade and economic growth in West Africa and East Africa regions, and also to compare the result. This section analyze the extent to which finding of this study conform to or deviate from those of other researches of similar interest. This study found an evidence of positive and significant relationship between exports and economic growth in West Africa and East African countries which is in conformity with our a priori expectation that exports spurs growth. This finding concurs with that of Massel et al (1972), upon investigating the pattern of economic growth of selected less developed countries using regression methods, observed a high degree of association between exports and economic growth. They suggested that countries should aim at 2.5% expansion in exports activities to obtained 1% increase in performance. In addition, this finding confirms that of Wah (2004) reported that for the past four decades (1961-2000) the Malaysian economy grew at an impressive average rate of 6.8% per annum. The rapid growth was attributed, in part, to the tremendous success in the exports oriented industrialization policy. Furthermore, these result also consistent with the studies of Krueger (1997), Oyejide (1997) and Ogbokor (2001) they all reported that exportexerts not only positive impact on economic growth but also statistically significant relationship. On the other hand, our finding in respect to export does not concur with the result of Oviemuno (2007) who reported that exports does not act as an engine of economic growth.The findings revealed that import is positive related to GDP growth and statistically significant in East Africa. Finally foreign exchange is negatively related to GDP growth and statistically significant at 10% in West Africa.

Conclusions And Recommendations: On the basis of the findings of this study, the following conclusions are drawn: there is evidence of correlation between exports and growth which support the export-led growth hypothesis in both regions. This is evidenced by the positive significant relationship observed between exports and economic growth. We may also conclude that imports have positive impact on economic growth in East Africa; as such imports influence growth in East Africa. It is also concluded that foreign exchange rate does not exert economic growth in the two regions. Consequently, a number of recommendations have been identified. First, there is the need for governments across the African continent to make efforts in boosting export promotion and import substitution strategies. This may be done through establishment of relevant agencies, such as Export Promotion Council, and Import Substitution Industrialization Strategy and so on.

Second, there is a need for Africa to reduce excessive consumption of foreign goods and services and importation of capital goods should be emphasized. Third, governments in African countries should consider the need of guarding exchange rate deregulation policy. The floating exchange rate system should be guided by the nations' monetary authorities. This will go along way of stabilizing the local currency in relation to other currencies of the world. Finally, serious surveillance and supervisory efforts should be stepped up to curb dumping activities of some foreign goods especially second-hand goods. The role of NAFDAC and other law enforcement agencies such as Custom, Immigration and Police in this battle is commendable but should be intensified.

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