The Impact of Trade Openness on Economic Growth: A Comparative Study of Selected West Africa Countries (1986-2016)

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ABSTRACT

The study examined the impact of trade openness on economic growth in some selected countries in West Africa (Ghana, Nigeria, Gambia, Côte d’Ivoire, Burkina Faso and Sierra Leone). We use the Panel dataset comprising 6 countries from West Africa during this period 1986-2016. The study used the Fixed effect panel analysis for the estimation. The study tested for descriptive statistics and found that Côte d’Ivoire has the highest trade openness followed by Ghana, Burkina Faso, Nigeria, Sierra Leone and Gambia that has the least trade openness. The study tested for unit root, at first difference I(1), the variables are stationary, only inflation that was stationary at level I(0). The study uses the Pedroni Co-integration test for long-run association among trade openness, real gross domestic product, foreign direct investment, inflation and exchange rate and found that there exists a long run relationship. The result of the study reveals that trade openness has a positive and significant relationship between gross domestic product, it means that trade openness has an impact to economic growth in the selected West Africa countries.

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1. INTRODUCTION

According to theories on openness to trade, an economy with open trade would experience robust economic growth, while an economy with tight tariffs would not experience economic growth. Trade is indispensable in the economy as regards to marking available goods and services across countries of the world and able to enhance better standards of living. Various countries of the world have made an effort to improve trade relations and promote activities within and across national borders. Using Smith's Wealth of Nations (1776) as an example, Smith highlights the positive impact of international trade on the world economy and makes an argument for free trade and global competition as being more beneficial to a nation than the
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mercantilist policy prevalent in Europe during the early 18th century. To clarify, free trade (producing and exchanging goods freely) and markets became more competitive both domestically and internationally would, in conjunction with strict government regulations, promote greater prosperity.

Openness to trade might also have a long-term positive impact on growth in as much as it will bring an increase in investment’s rate or stimulate technology spread and growth in which China represent an example of one of the best-case studies on trade liberalization and openness together with their positive effect (WTO, 2003). In literature, trade is very well described as a very important element of economic growth. Trade allows countries that are partners to benefit equally and contribute to the growth of their economies. (Khalid, 2016). Openness to trade is one of the most significant factors affecting the growth of an economy since it enables the adoption of cutting-edge and know-how from technologically advanced regions, resulting in increases output. It is generally believed that no country has experienced substantial improvements in the quality of life for its people without the assistance of free trade (IMF, 2001). That is to say, that economic growth is associated with free trade. By facilitating the diffusion of technology and knowledge through direct importation of high-tech goods, an increase in international trade may have a positive impact on economic growth, (Almeida & Fernandes, 2008; Baldwin, Bracanier, & Forslid, 2005). Through the opening of their economies to the global economy, many developing countries in West Africa have gained a competitive advantage in manufacturing certain products. This practice, dubbed the new globalization by the World Bank, has led to a significant reduction in absolute poverty. In all, trade enables addition with regard to the sources of innovation and contributes to the improvement of foreign direct investment. Further, the level of trade openness enhances new technology transfer, thus increasing technological advancement and productivity, and all of these benefits result from the level of economic openness.

Nigeria witnessed a significant shift from the inward-looking oriented growth strategy of the Import Substitution Industrialization Policy (ISI) to an outward-orientated growth by adopting a liberal regime under the Structural Adjustment Program in 1986. A seven-year tariff regime (1988-1994) was established by the Harmonized System of Customs Goods Classification Code to achieve predictability and transparency in tariff rates. Ghana adopted trade liberalization policy in 1983 as part of the reforms and adjustment program of the World Bank and IMF. Before 1983, Ghana pursued the Import Substitution Industrialization Strategy since her independence in 1957 which lasted until 1982. In addition to eliminating quantitative import restrictions, import licenses were abolished in 1989.

West African countries are marginally participating in the world economy as a result of the lack of involvement in trade openness in their economic and development processes. There are a number of measures of trade openness, including foreign direct investment (FDI), inflows of capital and information and rapid growth of international trade which could be a reason for the establishment of numerous regional economic groups throughout the world, like Organization of Petroleum Exporting Cooperation (OPEC), Economic Community of West African States (ECOWAS) among others (Osabuohien, 2007). Members of ECOWAS are experiencing an uneven distribution of natural resources in West Africa. Several of west African countries, even before their independence, possessed a variety of minerals, including diamonds, gold, iron ore, crude oil among others. Diamonds are known as being abundant in Sierra Leone, Liberia, and Cote d'Ivoire, however gold and crude oil are prevalent in Ghana and Nigeria. Bauxite and iron ore are also major contributors to countries like Guinea, Guinea Bissau, Sierra Leone, and Liberia. Senegal, Mali, Guinea Bissau, and Togo are also rich in phosphate. Besides Nigeria, oil has only recently been discovered in Ghana, Cote d'Ivoire, Liberia and Sierra Leone, (Jalloh, 2013).
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Figure 1. Export Comparison of Ghana, Nigeria, Gambia, Cote d’ Ivory, Burkina Faso and Sierra Leone in Billions

The graph above shows that Nigeria has been on top of other West African countries selected in this study with respect to exportation. Nigeria is followed by Ghana, Cote d’ Ivory, Burkina Faso and Sierra Leone. The lowest exporting country in the graph is Gambia.

Figure 2. Imports Comparison of Ghana, Nigeria, Gambia, Cote d’ Ivory, Burkina Faso and Sierra Leone in Billions

Knowing that Nigeria is an importing nation, the graph above shows that Nigeria took the lead of importation from 1986-2014, before Cote d’ Ivory importation increase in 2015 and fell in 2016 where Nigeria continues to lead in importation. Apart from Nigeria and Cote d’ Ivory, Ghana was the next in line when it comes to importation followed by Burkina Faso, Sierra Leone and the least was the Gambia.

Since the last trade policy review (TPR) in 2010, Gambia has sustained a mostly open trade and investment regime. One of the principal policy reforms has been the adaptation of the five-band ECOWAS Common External Tariff (CET) in 2017. In 2016, Gambia’s economy is mainly driven by services 66% and Agriculture accounted for 21% of GDP, a sector that is highly unpredictable and prone to drought. In recent times, textile re-exports accounted for 70 to 80% of total exports. Exports far outnumber imports in The Gambia. In 2015, the export base was relatively small (19.1 million dollars), consisting primarily of groundnuts and fish in which...
most of the exports were sent to Europe. In addition to Vietnam, India, and China, the countries receiving the most imports are the European Union, Cote d'Ivoire, Senegal, Brazil, and China. (WTO, 2018).

Ghana, upon gaining independence in 1957, turned to import-substitution policies as a means of industrializing her economy. Ghana has maintained a strong connection with the European single market, resulting in about 35% of Ghana's market being owned by the EU. There has been an increase over the years in imports from China and India into Ghana and most sectors of the Ghanaian economy have positively been affected by the investment from Asia. In light of Nigeria's status as a developing country, its import dependence must not be ignored or underestimated. Before the introduction of the Structural Adjustment Programme, the macroeconomic model that rests on inward orientation and strategy of import substitution of urban industrial development was adopted in Nigeria. But since the formation of SAP in 1986, the economy of Nigeria has become relatively more open due to the application of policy directives, which are protection and trade openness. According to Obaseki and Ojo (1998) in their work, trend analysis shows that Nigeria's economy has remained moderately open since 1986 because of the SAP policy measures.

In 1994, Cote d'Ivoire began a program of trade liberalization after three decades of industrial protection. The country has abolished or reduced quantitative restrictions on imports; import duties, which are generally ad valorem, have been reduced by half and stood at 23.5% at the end of 1994. Although there are still export taxes on commodities, it has been announced that these charges will be gradually reduced by extending the fiscal base. Ivory Coast is to a large extent dependent on agricultural products, which account for approximately one-third of its GDP; this makes it extremely vulnerable to fluctuations in both price and demand on global markets.

Sierra Leone has continued its reconstruction efforts since the last trade policy review in 2005, supported by significant external assistance. As a result of structural reforms, improvements in governance, and progress in human development, the business atmosphere has improved. In 2013, Sierra Leone during the review period, the real GDP growth of Sierra Leone increased by 20.7% as a result of the production and export of iron ore. Sierra Leone's export base has diversified away from diamonds, and now encompasses iron ore, rutile, and agricultural products like cocoa and coffee.

Figure 3. Comparison of Ghana, Nigeria, Gambia, Cote d’Ivoire, Burkina Faso and Sierra Leone Trade Openness (Export + Import/GDP)
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From the above figures, it reveals that economic growth has been on the increase in Nigeria, followed by Ghana, Cote d’Ivory, Burkina Faso, Sierra Leone and Gambia which has the lowest GDP. In fig 3 above, the diagram shows that Ghana benefited more in trade openness followed by Burkina Faso, Sierra Leone, Nigeria and Gambia which has the least trade openness. Extensive research has demonstrated that nations with a global presence tend to be more productive than those that simply produce for the home market. Openness to trade encourages the efficient deployment of resources and contributes to better economic growth. If firms are exposed to trade liberalization, the most productive firms will gain access to foreign markets and generate more profits from their foreign ventures while firms with intermediate levels of productivity may survive but will not be productive enough to gain access to foreign markets and their market shares will decrease. As a consequence of being more open to trade workers, you may face job displacement, wage decreases, job destruction, and uncertainty as a result of less secure employment and more unstable income. As the economy becomes more open to trade, the cost of goods and services will change, which will impact households as consumers and income earners and produce inequalities.

As an economy becomes more open, it will be exposed to a greater number of adverse shocks. Despite the recent downturn in world trade and world demand, many developing countries have been experiencing recession as well. The recent world economic crisis was largely centered on the financial markets of the industrialized world. One of the most affected economies by the crisis were those that rely heavily on exports (West Africa in particular). Many developing countries in west Africa are affected by higher tariffs. Their tariffs on the industrial products they import on average are three or four times greater than those of industrialized countries, and they reflect the same patterns of tariff escalation and peaks. Their agricultural tariffs are higher than their industrial tariffs. The literature suggests that an economy can improve its growth rate by opening up its international trade, however significant institutional issues on the importation side inhibit this process. Once trade openness occurs, most countries, in particular Nigeria, can increase imports quickly by arranging a payment arrangement that meets their needs. To maintain a healthy balance of trade, exports should also be increased. As a result, many countries face serious difficulties and barriers, as Nigeria and Ghana are two countries that import more than they export (Hare, 2006). The undersized growth...
of the less developed countries (LDCs), according to Maigels (1986) and Massel (1970), was caused by the instability of exportation.

Openness to trade generally has been seen as one of the primary policies expected to allow developing countries such as Ghana, Nigeria, Gambia, Burkina Faso, Cote d’Ivory, and Sierra Leone to alter both the pace, pattern and the structure of participating in the international market scene, thereby overcoming the balance of payments problem, accelerating technical progress, and hence promoting economic growth and development. In this regard, this study contributes to the literature by examining the impact of trade openness on economic growth on selected West African countries (Ghana, Nigeria, Cote d'Ivoire, Gambia, Burkina Faso, and Sierra Leone) using the Panel data analysis methodology.

**Theoretical Literature**

J.S. Mill proposed the theory of reciprocal demand. According to the reciprocal demand theory, the terms of trade are based on two countries and two commodities. In such a scenario, full employment conditions exist in the economy, as well as healthy competition on both the product and factor markets within different economies. The study also assumes that government officials from various countries follow a free trade policy and do not restrict foreign trade by imposing tariffs or adopting any other means to restrict imports. Furthermore, this theory assumes that there is a free movement of factors within the economies of the two nations (Mill, 2007). David Ricardo (1817) is credited with originating the concept of Comparative cost or Comparative advantage. According to this theory, countries tend to specialize in producing goods that they have a relative advantage over. There is an established theory that states that the fundamental cause of international specialization and hence open trade is the difference in production costs. The principle of comparative advantage is the cornerstone of international trade theory. According to the document, a country should focus in manufacturing and distributing merchandise that has a comparative advantage against other countries in price, and import those goods from other countries that have a comparative disadvantage in price.

This study also looks at the theory of absolute cost advantage originated by Adam Smith in 1776. This theory suggests that different countries have comparative advantages in the production of certain goods that constitute the basis of trade between them. Smith stated that open trade should not be restricted by tariffs and quotes but should be allowed to unfold according to the dynamics of the economy. Furthermore, he argued that the wealth of a country is not solely determined by its gold reserves, but also by what its citizens have access to. Further, the Ricardian theory of international trade assumes that the goods produced by different nations and firms in the same industry are homogeneous. Labour is homogenous within a country but may have different products across countries. Within a country, labour is costless mobile in different industries, but immobile between countries (Ricardo, 1817).

**Empirical Literature**

In developing and developed countries, a significant and positive effect of trade on economic development has been observed (Were, 2015). Using robust empirical evidence from Trejos and Barboza (2015), they demonstrate that trade openness has no significant effect on trade. Further, some researchers have conducted studies on the relationship between openness to trade and economic growth. According to these studies (Das & Paul, 2011; Zarra-Nezhad, Hosseinpour, & Arman, 2014), openness to trade is positively correlated with economic growth. Similarly, based on Kim's (2011) study, there is a positive correlation between economic growth and trade openness. Similar studies in this aspect were conducted in 115 developing countries by Sakyi, Villaverde and Maza (2015) and it was that was a positive bidirectional causal association between economic growth and trade. Using a dynamic growth model, Zahonogo
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(2016) examined 42 SSA countries and concluded that countries in SSA must have effective trade openness in order to grow economically. A study conducted by Bourdon, Le Mouel, and Vijil (2011) also revealed that exporting countries with high-quality goods and countries exporting more diversified goods experienced faster economic growth. As Hye, Wizarat, and Lau (2016) have demonstrated in their study, openness to trade has both short- and long-term positive effects on economic growth.

Using the ARDL model, Khalid (2016) to examine trade openness on economic growth in Turkey between 1960 and 2014. In the study, it was found that openness to trade has a positive impact on growth in the short run. However, in the long run, it does not have any significant impact on growth. In accordance with the results of Zeren and Ari (2013), openness of trade is positively correlated with economic growth. Also, Das and Paul (2011) have analyzed trade openness and economic growth using the general moment method (GMM), and the findings indicate that trade openings have a favourable effect on economic growth. The economic growth of Kenya is positively affected by openness to trade as demonstrated by Musila and Yiheyis (2015) while in South Africa, trade openness is negatively affecting economic growth Polot et al. (2015).

In the same way that Kim, Lin, and Suen (2012) investigation on trade and economic growth revealed that trade promotes economic growth in non-agricultural, high-income, and low-inflation countries, however, it is detrimental to countries with the opposite characteristics. In a study conducted in Nigeria, Lawal, Nwaanji, Asaleye, and Ahmed (2016) employ the ARDL method and it was found that trade openness has a negative long-term impact but a positive short-term impact. According to Nduka (2013), trade openness has a positive correlation with growth in Nigeria. Additionally, Kwame (2013) Concluded that liberalization contributes to Ghana's economic growth in the long run, but hinders it in the short run. Ehinomen and Da' Silva (2014) conducted research in Nigeria on the impact of trade openness on output growth using OLS and found that trade and output growth in Nigeria have a positive relationship. A study carried out by Ishola, Ajayi, Onafowokan, and Giwa (2013) explored the relationship between trade and economic growth in Nigeria using the Ordinary Least Squares. In particular, the study observed that non-oil exports and trade openness have a positive relationship with GDP.

In order to contribute to knowledge, it is necessary to compare the impact of trade openness on economic growth of selected countries in West Africa (Ghana, Nigeria, Gambia, Côte d'Ivoire, Burkina Faso and Sierra Leone) on the basis of panel data for 1986-2016, due to the availability of data.

2. METHOD

As this is a cross-country study, the panel method was adopted. Researchers can control for unobserved characteristics in individual countries by adopting panel data. Panel data results in increased modelling capacity because the statistical tests for estimation significance are more powerful than using time series data for individual countries.

A panel data set is based on a sample of N (countries) that are observed at different points in time. Consider a simple model with one explanatory variable.

\[ Y_{it} = a_i + \beta X_{it} + \mu_{it}. \]  

(3.1)
Model Specification

To investigate the impact of trade openness on the economic growth of selected countries in West Africa.

\[ RGDP = f(TROP, FDI, EXR, INF) \] .........................................................(3.2)

where

\[ RGDP = \text{Real gross domestic product for the selected countries in West Africa} \]
\[ TROP = \frac{\text{EXP+IMP}}{\text{GDP}} = \text{Trade openness for the selected countries in West Africa.} \]
\[ EXP = \text{Exchange rate for the selected countries in West Africa.} \]
\[ FDI = \text{Foreign direct investment for the selected countries in West Africa.} \]
\[ INF = \text{Inflation for the selected countries in West Africa} \]

The data generating process for equation one is defined in Econometric form as

\[ RGDP_{it} = \alpha_i + \beta_1 TROP_{it} + \beta_2 EXP_{it} + \beta_3 FDI_{it} + \beta_4 INF_{it} + \mu_{it} \] .........................................................(3.3)

Diagnostics Test

Panel Data Unit Root Test (The Im, Pesaran and Shin (IPS) Test)

Separate estimations are provided for each I section of the IPS test, allowing for specific specifications of the parametric values, the residual variance, and the lag lengths. Their model is as follows:

\[ \Delta Y_{it} = a_i + \rho i Y_{it-1} + \sum_{k=1}^{g} \phi_k \Delta Y_{it-k} + \delta_{it} + \mu_{it} \] .........................................................(3.4)

Panel Data Co-Integration Test (The Pedroni Test)

Pedroni (2000) has suggested alternative methods for testing co-integration when using panel data that are heterogeneous in nature. Pedroni's test has the advantage of allowing multiple regression, allowing the cointegration vector to differ between different sections of the panel, and allowing its error to vary between sections. The panel regression model that Pedroni suggests is as follows

\[ Y_{it} = a_i \delta_i + \sum_{m=1}^{M} \beta_m X_{it} + \mu_{it} \] .........................................................(3.5)

The Hausman’s Test

In this study, Hausman’s test was utilized to choose between fixed effect and random effect estimators. The test was conducted with the null hypothesis that the individual specific effects are random. If this null hypothesis is rejected, a fixed effect can be inferred. Using the Hausman test, the following test statistic is used:

\[ H = (\hat{\beta}^{FE} - \hat{\beta}^{RE})' [\text{Var}(\hat{\beta}^{FE}) - \text{Var}(\hat{\beta}^{RE})]^{-1} (\hat{\beta}^{FE} - \hat{\beta}^{RE}) \sim \chi^2 (k) \] .........................................................(3.6)
3. RESULTS AND DISCUSSION

3.1. Results

**Descriptive Analysis of the Variables (The Mean)**

From the graph above it can be seen that Cote d’Ivory has the highest trade openness followed by Ghana, Burkina Faso, Nigeria, Sierra Leone and the last of them is Gambia. The country that has the highest gross domestic product is Nigeria, followed by Ghana, Cote d’Ivory, Burkina Faso, Gambia and the least of them is Sierra Leone.

**Panel Unit root Test**

The below table will show the Im, Pesaran and Shin (IPS) unit root test which will be carried out by 5%

**Table 1.** Pesaran and Shin (IPS) unit root test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level</th>
<th>First Diff</th>
<th>Prob</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP</td>
<td>0.86490*</td>
<td>-4.13932**</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>IMP</td>
<td>2.87901*</td>
<td>-3.13204**</td>
<td>0.0009</td>
<td>I(1)</td>
</tr>
<tr>
<td>RGDP</td>
<td>3.32129*</td>
<td>-4.36176**</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>TROP</td>
<td>2.72848*</td>
<td>-2.72061**</td>
<td>0.0033</td>
<td>I(1)</td>
</tr>
<tr>
<td>INF</td>
<td>-5.01594**</td>
<td>-5.69833**</td>
<td>0.0000</td>
<td>I(0)</td>
</tr>
<tr>
<td>FDI</td>
<td>-1.94119*</td>
<td>-5.69833**</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>
The null hypothesis (H₀) is that there is present of unit root meaning that the variables are not stationary while the alternative hypothesis (Hₐ) is that there is no unit root, meaning that the variables are stationary. The specification levels are indicated by * unit root is present and ** no unit root is present. Based on the above table using IPS to test for unit root, Export (EXP), Import (IMP), Gross domestic product (RGDP), Exchange rate (EXR) and Foreign direct investment (FDI) are stationary at first difference I(1), while inflation (INF) is stationary at level I(0). The next step is to test whether the variables are cointegrated.

**The Co-integration test Using the Pedroni Panel Co-integration test**

To determine whether to reject or accept the null, the probability level must be less than 5% to reject the null hypotheses otherwise accept.

**Table 2. Pedroni Residual Co-Integration Test**

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Prob</th>
<th>Weighted Stat</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel v-Statistic</td>
<td>-0.148856</td>
<td>0.5592</td>
<td>-1.145828</td>
</tr>
<tr>
<td>Panel rho-Statistic</td>
<td>-5221153</td>
<td>0.0000</td>
<td>-5.847404</td>
</tr>
<tr>
<td>Panel PP-Statistic</td>
<td>-10.19985</td>
<td>0.0000</td>
<td>-30.29035</td>
</tr>
<tr>
<td>Panel ADF-Statistic</td>
<td>4.015395</td>
<td>1.0000</td>
<td>1.972325</td>
</tr>
</tbody>
</table>

**Table 3. Alternative hypothesis: individual AR coefficients (between-dimension)**

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group rho-Statistic</td>
<td>-5.635592</td>
</tr>
<tr>
<td>Group PP-Statistic</td>
<td>-55.48891</td>
</tr>
<tr>
<td>Group ADF-Statistic</td>
<td>1.611321</td>
</tr>
</tbody>
</table>

Series: EXP IMP RGDP TROP EXR INF FDI

Alternative hypothesis: common AR coefficients. (within-dimension)

In the table above, the probability that is less than 5% is greater than the probability that is greater than 5%, and since the rho and PP statistics are below 5%, we accept the alternative hypothesis, stating that the variables are associated over the long run. In the regression, we can be able to determine the long run and short run relationships based on these two variables. To determine which of the panel regressions is appropriate, we run the Hausman test.

**The Hausman Test**

**Table 4. Correlated Random Effects-Hausman Test**

<table>
<thead>
<tr>
<th>Test Summary</th>
<th>Chi-Square Statistic</th>
<th>Chi-Square d.f</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period random</td>
<td>49.299490</td>
<td>6</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

From the above Hausman test table, since the probability is 0.0000 and is lesser than 5% (0.05), it means that the null hypothesis is rejected and alternative accepted. The result suggested that the fixed panel data analysis is more appropriate, consistent and effective for the analysis.

To investigate the impact of trade openness on the economic growth of selected countries in West Africa.

**Table 5. Impact of trade openness on the economic growth of selected countries**

<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>C</td>
<td>417.4678</td>
<td>7.707216</td>
<td>54.16583</td>
<td>0.0000</td>
</tr>
<tr>
<td>TROP</td>
<td>19.53602</td>
<td>2.893564</td>
<td>6.751542</td>
<td>0.0000</td>
</tr>
<tr>
<td>EXR</td>
<td>0.052735</td>
<td>0.019366</td>
<td>2.723034</td>
<td>0.0071</td>
</tr>
</tbody>
</table>

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As can be seen from the regression table above, trade openness (TROP), exchange rate (EXR), and foreign direct investment (FDI) have a significant impact on real gross domestic product in the selected countries in West Africa. Only inflation is statistically insignificant. The residual (UHAT) was made as a result of spurious regression. Using the fixed panel regression model, one percent increase in trade openness (TROP) will result in a 19.53 percent increase in the real gross domestic product of the selected countries in West Africa. One percent increased exchange rate (EXR) will result in a 0.05 percent increase in the real gross domestic product of the selected countries in West Africa. By increasing foreign direct investment by one percent, the real gross domestic product of West African countries will increase by 6.6%. Also, from the result above, it can be seen that the residual is positive and significant. Having an adjusted R² of 98%, the goodness of fit is high.

3.2. Discussion

In this study, the panel data model has been estimated to know the impact of trade openness on the economic growth on six selected countries in West Africa namely Ghana, Nigeria, Gambia, Cote d’Ivory, Burkina Faso and Sierra Leone for the period 1986 to 2016. This study made some findings that are interesting. After testing for the Hausman test, the Fixed effect panel estimation was found to be more appropriate, consistent and effective for the analysis. The study also used the mean of the variables to do a comparative analysis among the selected countries and it was found that Cote d’Ivory has the highest trade openness followed by Ghana, Burkina Faso, Nigeria, Sierra Leone and the last of them is Gambia. The country that has the highest gross domestic product is Nigeria, followed by Ghana, Cote D’ivoire, Ivory, Burkina Faso, Gambia and the least of them is Sierra Leone.

The fixed effect panel analysis was conducted to investigate the impact of trade openness on economic growth on the selected countries in West Africa. On the result, it was found that trade openness (TROP), exchange rate (EXR) and foreign direct investment (FDI) are positive and statistically significant to economic growth on the selected West African countries while inflation is negatively significant to economic growth. The result of the test shows that trade openness has a positive impact on the economic growth of the selected West African countries. There is no doubt that countries trade openness is her import and export. When a country opens its trade and market to other countries, they try to produce and supply what they have absolute advantage of and buy what they are lacking they will expose those goods to the market and also knows what other countries have in stock. These will help to increase her economic growth. Trade openness is measured by export +import/gross domestic product of a particular country.

4. CONCLUSION

1. That the governments of the selected countries in West Africa should remove strict tariff on trade to that their product will be well known to international market and also will know other products that are not familiar to them. This will help to raise the economic growth in West Africa.
2. The governments of these selected counties most especially in Gambia and Sierra Leone should pay attention on developing human capital, financial sector and trade expansion through proper trade and economic policies for sustainable long run economic growth.

3. The governments of these counties should control the rate of inflation so that good that will be imported from other countries will not be expenses for its citizens.

4. The governments should also invite foreigners to invest in their country, so that new skills and technology will be introducing, this helps to boost the economy of a country.

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