Exports Trade and Economic Development in Nigeria

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Abstract: **This study examined the impact of export trade on economic development in Nigeria from 1981 to 2021. The increasing clamour for the diversification of the Nigerian economy from oil and the rising level of unemployment, poverty and price level informed the choice of carrying out this study. To achieve the objectives of the study, data on gross domestic product per capita, non-oil export and oil export was sourced from the Central Bank of Nigeria Statistical Bulletin and analysed using the Parsimonious Error Correction Model (PECM) after conducting basic analyses like descriptive statistic and unit roots test. The short run results showed that: oil export has positive and significant impact on gross domestic product per capita. Also, non-oil export has positive and significant relationship on gross domestic product per capita. The study also showed that a long run relationship exist amongst gross domestic product per capita, non-oil export and oil export in Nigeria over the period of study. Based on these findings, the study concludes that; the development of Nigerian in terms of gross domestic product per capita was significantly influenced by changes in oil export. Based on the findings it was recommended that; government should ensure oil export revenue is properly utilised. Government should invest more in the real sector to improve non-oil export and improve the well-being of Nigerians.**

Keywords: **Economic development, Export trade, Oil export, Non-oil exports and Parsimonious.**

1. INTRODUCTION

Exports are products or services produced in one country but sold to a buyer abroad. Thus, exports are the oldest forms of economic transfer and occur on a large scale between nations and represent the most important source of foreign exchange earning that help the development process vis-à-vis stimulation of economic growth, creation of employments opportunities, ease the pressure on the balance payments, and trade balance (Ruba & Thikraiat, 2014). Generally export led growth is said to be a development strategy in which export expansion play a central role in a country's growth and development. Although practical evidence in support of export led growth may not be universal, it is widely acknowledged that carefully managed openness to trade through an export led growth can be a mechanism for achieving rapid growth (Elisha & Omekwe, 2022).

Generally, exports can be divided into oil and non-oil exports. Export oil means crude oil of Iraqi standard export blend that will result from the possible blending of crude oil with crude oils from other fields of similar quality to the crude oil stream(s) produced from the field. On the other hand, nonoil export can be defined as those visible and invisible exports which do not form part of oil export but contributes to the growth of the total export, it includes; manufactured products, agricultural products, services, solid minerals like tin; coal, Conversely, non-oil activities can be broadly classified into three, namely: agricultural produce, manufactured activities or industries and machineries (Ozurumba & Chigbu, 2013).

Nigeria has been involved in the exportation of some goods and services to earn foreign exchange and also gain other benefits that arise from export; such as, increased output, employment generation, improvement in balance of payment position, development of export-oriented industries in the manufacturing sector and general increases in government revenue through taxes, levies and tariffs. These benefits boost development of the nation. In 1960s and 1970s, the Nigeria

economy was dominated by non-oil exports, particularly agricultural commodities which played significant roles in the economy before the advent of crude oil. Agricultural commodities exports include cocoa, groundnut, cotton, rubber, hide and skin and palm produce. By the mid-1970s, crude oil became the main export produce of the Nigerian economy and contributes a greater percentage of foreign exchange earnings to the economy.

Since 70's, till the present moment, oil has been playing the leading role in the Nigeria economy. This mono cultural nature of the economy makes Nigeria susceptible to the effects of oil price shock which in 2015 push her into recession. It shows that exports and the composition are important for the survival of an economy. Apart from the increased share of oil in GDP composition between 1960 and 2009, total oil export became the main commodity in the export basket of the country within this period and Nigeria's crude oil exports have appeared to be on a continuous rise (OPEC, 2020).

Meanwhile, Nigeria as a developing country, has been struggling with the realities of developmental process not only politically and socially but also economically. In the 1960s, agriculture contributed about 80% of the total export making agriculture the main stay of the Nigeria economy and the greatest foreign exchange earner. By the middle of 1970, the situation changed in favour of oil which then contributes about 94% of total export making oil the main stay and the greatest foreign exchange earner of the Nigeria economy. Since 70's, till the present moment, oil has been playing the leading role in the Nigeria economy being the major source of foreign exchange (Yusuf, 2015). But, the mono cultural nature of the economy makes Nigeria susceptible to the effects of oil price shock and manifested in the inability of the country to manage her economy as a result of fall in the price of oil globally towards the end of 2015 which then pushed Nigeria economy into recession. The ripple effects are high rate of unemployment and inflation as well as stunted growth of the Nigerian economy.

Given the above, Sangoleye (2021) raised the concern that the slow economic development-manifested in low productivity, high unemployment and Nigeria rated the poverty capital of the world was largely as a result of poor oil and non-oil sector performance, culminating into low exports of finished products. Also, several researchers which include, Javad, Abbsi and Basiri (2014); Kilavuz and Topcu (2012) among others studied the impact of export on economic growth and development within the neo-classical framework. Noula, Sama and Gwah (2013) found negative relationship and mixed effect of export on economic growth. Researchers such as Abayomi, Adam and Alumbugu (2015), Adedokun (2012), Baghebo and Atima (2013) among others had also focus attention on the relationship between oil export and economic growth. But empirical research such as Mohsen (2015) examined the effect of oil and non-oil exports on economic development. It is important therefore to contribute to this area by investigating the impact of export trade in terms both oil and non-oil exports on economic development in term of per capita GDP in Nigeria and to offer appropriate suggestions based on the findings of the study. Thus, the specific objectives of the study are to: determine the impact of oil exports on gross domestic product per capita in Nigeria and investigate the impact of non oil export on gross domestic product per capita in Nigeria from 1981 to 2021. The remaining parts of the study examined literature review, methodology, results and discussion and concluding remarks.

2.   LITERATURE REVIEW

2.1 Theoretical Literature Review: Theory of Absolute Advantage

Adam Smith in the year 1776, postulated the trade theory of absolute advantage. His analysis states that, there exists two nations, two commodities and one input (labour). It is concerned with the labour theory of value as the amount of labour employed in a particular commodity determines the exchange of goods between countries. Based on this, a nation is said to enjoy an absolute advantage over another if it uses fewer labour resources to produce a particular commodity than another.

The theory states that, for free trade which contradicts the mercantilists' support of import restrictions. Adam Smith's supports for free trade stems from the fact that countries have an absolute advantage in the production of some commodities due to factor endowments. According to Gbosi, (2007), Adam Smith argued that using the same unit of labour, two nations tends to gain an absolute advantage. Absolute advantage means the ability of a country to produce a specific good with fewer resources than other countries (Gbosi, 2005). For instance, two nations say Ghana and Nigeria producing cocoa and groundnut respectively. Using the same unit of the same amount of labour by the two countries and fewer resources by Nigeria, Nigeria can produce more units of groundnuts than Ghana. The reverse will be the case for Ghana in the production of cocoa. Therefore, Nigeria has an absolute advantage over Ghana. Thus, Adams Smith (1776) argues that the excess

production will be sent to another country and the revenue generated will be used to finance the importation of the goods the country cannot produce.

However, the theory of absolute advantage came under attack as it fails to explain the nature of international trade when a country enjoys absolute advantage in more than one commodity while other countries enjoy in none. But, the theory is relevant to this study because it advocated for free trade that will bring about technological transfer, foreign exchange earnings which contradicts the mercantilists' support of import restrictions.

2.2 Empirical Literature Review

Several studies have examined exports and economic development nexuses and the findings from the empirical literature point to the possibility of several types of relationships between exports and economic development. For instance, Ewere and Iwegbu (2022) examined the impact of crude oil traded goods on economic growth using annual data from 1986-2019. The study adopted the error correction model (ECM) technique and the empirical findings from the ECM indicated that importation of automotive gas oil was significant and negatively related to economic growth in Nigeria. On the contrary, premium motor spirit import impacts on economic growth positively and quite significantly in the period under review. Other variables such as dual purpose kerosene and liquefied petroleum gas are also have negative and positive relationship on economic growth in Nigeria respectively. Similarly, the study further finds that oil export exhibits a hugely significant impact on economic growth in Nigeria.

Okeke and Eze (2019) examined oil and non-oil products and gross domestic product in Nigeria from 1981-2016. Descriptive statistics and multiple linear regression approach was used, Oil, and non-oil products serves as independent variables and Gross Domestic Product was the dependent variable. From the analysis, oil, and non-oil products contributes immensely to gross domestic product in Nigeria. Also, Ahmad and Ibrahim (2019) examined the comparative dynamic impact of oil and non-oil export compositions on the economic growth Nigeria, using VAR based approach on a Time series data set for the period 1975-2015. Findings from the paper indicated that the oil export composition has significantly greater impact on the Nigerian economic growth in the short run, while non-oil export composition has significantly positive long-run impact on the economy. Also, external shocks to both oil and non-oil compositions evoke positive response from the GDP.

Mohsen (2015) investigated the role of oil and non-oil exports in the Syrian economic over the period of 1975-2010. The cointegration test indicates that GDP is positively and significantly related to oil and non-oil exports. The Granger causality test indicates bidirectional short-run causality relationships between GDP, oil exports and non-oil exports. There are also bidirectional long-run causality relationship between non-oil exports to GDP, and unidirectional long-run causality relationship running from oil exports to GDP. The result indicated that oil exports have the biggest effect on the GDP. Ogbonna (2015) investigated whether it is the import-led or export-led growth hypothesis that holds for Nigeria. In other words, the study seeks to examine the economic growth impact of import and export trade as well as to ascertain the component of trade that drive growth more. The Johansen testing approach to co-integration and the standard desk top pairwise Granger-causality test technique were adopted to achieve this objective. The co-integration test results demonstrated that a long-run relationship exists between economic growth and decomposed import variables in Nigeria.

Abogan, Akinola and Baruwa (2014) researched the impact of non-oil export on economic growth in Nigeria between 1980 and 2010. The Ordinary Least Square (OLS) methods were adopted as well as conducting the Augmented Dickey-Fuller (ADF) and Phillips-Perron in testing for the time series properties. The researchers noted that the impact of non-oil export on the economic growth was moderate and not all that heartening as a unit increase in non-oil export impacted positively by 26% of the productive capacity of goods and services in Nigeria during the period. Adenugba (2013) studied the performance of non-oil export in the economic growth of Nigeria. As a study of agriculture and mineral resources, the study applied the Ordinary Least Square (OLS) analysis spanning from 1981 to 2010. Findings from the study showed that non-oil export has performed below expectations, giving reasons to doubt the effectiveness of the export promotion strategies that have been adopted in the Nigerian economy.

Safdari and Zaroki (2012) observed the effect of exports on economic growth from 1961-2006. The data collected was analyzed using Ordinary Least Squares model. The results of this study showed that each section exports growth has a positive effect on the growth of value added in the same section. But the effect of export growth on the value added in

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industry and mining sector is more than other sectors. Udude and Okulegu (2012) examined whether there is bi-directional relationship between exports and economic growth in Nigeria. It was found that there exist a long-run relationship with economic growth and export in Nigeria. Having integrated the short run dynamics and long run equilibrium, imports and exchange rate were positively correlated with GDP while exports was negatively related with GDP.

3. METHODOLOGY

The paper adopted the ex-post facto research design in order to explain the casual relationship between variables at a time. The choice of this design is informed by the nature of data that were sourced for this study which were mostly secondary and time series in nature. It is important to note that the development of the Nigerian economy depend on both the oil and non-oil exports component of aggregate demand. Thus secondary data was collected on the independent variables (oil revenue and non-oil revenue) and the dependent variable (per capita gross domestic product proxy for economic development). The study thereafter used the parsimonious error correction method to analyse the data collected through secondary source.

3.1 Model Specification

On the analytical spectrum, the study is tailored toward the work of Okeke and Eze (2019) which investigated the impact of oil and non-oil products on Nigeria gross domestic product (GDP) from 1981-2016 with the use of multiple regression approach, but with slight modification in terms of the dependent variables. Hence, based on these theoretical and analytical frameworks, the study will specify a development model incorporating oil export and non-oil export thus:

$$GDPc = f(OXP, NXP) \qquad (3.1)$$

For ease of estimation equation ii could be transformed into log-linear form thus:

$$LnGDPc = \alpha_0 + \alpha_1 LnOXP_t + \alpha_2 LnNXP_t + U_t \qquad (3.2)$$

Where: Ln = natural logarithm, α_0 = autonomous component of GDPc proxy for economic development, $\alpha_1 - \alpha_3$ = the slope/coefficient of the parameter estimates, GDPc = Gross Domestic Product per capita (Proxy for economic development), NXP = Non-oil export, OXP= Oil export, U = Random/stochastic term, t = Time

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics of the Variables

The descriptive statistics helps to determine the characteristics and nature of the variables under consideration by considering the measure of central tendency via mean in order to identify the central point of a dataset; measure of dispersion via standard deviation in order to describes the spread of data around a central mean value and measure of symmetry via skewness and kurtosis to measure the asymmetric and lack of symmetry.

Table 1: Descriptive Statistic Result

	GDPc	OXP	NXP
Mean	253.3488	5369852.	458418.8
Maximum	375.5749	20475872	3788036.
Minimum	168.4918	7201.200	203.2000
Std. Dev.	75.53271	6141615.	787887.8
Skewness	0.430983	0.872025	2.447206
Kurtosis	1.464734	2.573483	9.572114
Jarque-Bera	5.295877	5.507035	114.7111
Probability	0.070797	0.063703	0.000000
Observations	41	41	41

Source: Computed Result (E-view 12)

The descriptive statistic result reported in Table 1 above shows that the dependent variable namely Gross Domestic Product per capita (GDPc) in Nigeria has an approximate mean of ₦253. This implies that the country experienced worsening per capita GDP or economic well-being over the period of this study. An average non-oil export earnings of ₦458419 billion

compared to an average oil export revenue of ₦5369852 billion shows that oil was the major revenue earner for the country over the period under investigation. The result further revealed a wide variation in all the variables under investigation. Per capita GDP has a standard deviation of ₦75.5. Similarly, non-oil export has standard deviation of ₦787887.8 billion, while oil export has standard deviation of ₦6141615 billion.

4.2 Analysis of Multicollinearity Test Results

Pairwise correlation was applied to check the possibility of regressing the explanatory variables together without encountering the problem of multicollinearity. The result of this test is showed in Table 2.

Table 2: Correlation Coefficients of the Series

	GDPC	NXP	OXP
GDPC	1.000000	0.712578	0.922798
FDI	0.685958	0.242534	0.595693
MSI	-0.181754	0.028725	-0.114416
NXP	0.712578	1.000000	0.829306
OXP	0.922798	0.829306	1.000000

Source: Computed Result (E-view 12)

The test for multicollinearity was primarily employed to check the possibility of regressing the explanatory/predictor variables together. The results of the correlations matrix in Table 2 indicated that, the correlation coefficients of each of the paired regressors are not too high. This is indication that the explanatory variables can be regressed together without having the problem of multicollinearity. This finding provides a necessary condition for estimating the model using the underlying variables. Nevertheless, the relationship between the explanatory variable and the dependent variable is very high, especially, the relationship between oil export and GDPc which is 92%. This situation warranted the need to stabilize the data using the Augmented Dickey Fuller (ADF) unit root test.

4.3 Unit Root Test Results

This study used the Augmented Dickey Fuller (ADF) unit root test to establish the order of integration or stationarity of the variables. The Augmented Dickey Fuller unit root test was conducted based on constant and time trend at level and first difference using the 5 percent critical values. The stationarity status of the data series are presented in Table 3.

Table 3: Unit Root Test Result @ level Using ADF Technique

Variable	ADF Statistic	1%	5%	10%	Decision
GDPc	-0.5688	-3.6104	-2.9389	-2.6068	Not stationary
OXP	0.8108	-3.6104	-2.9389	-2.6068	Not stationary
NXP	-0.1825	-3.6104	-2.9389	-2.6068	Not stationary

Source: Computed Result (E-view 12)

The unit root test result at level reported in Table 3 indicates that none of the variable was stationary at level. This implies that, the null hypotheses that GDPc, non-oil export and oil export all have unit root was accepted, hence the variables are not feasible for estimation, prediction and forecast. Thus, the need to differencing at order one arises.

Table 4: Unit Root Test Result @ 1st Difference Using ADF Technique

Variable	ADF Statistic	1%	5%	10%	Decision
GDPc	-3.8188	-3.616	-2.941	-2.6068	Stationary
OXP	-6.0996	-3.616	-2.941	-2.6068	Stationary
NXP	-5.3144	-3.616	-2.941	-2.6068	Stationary

Source: Computed Result (E-view 12)

Subjecting the variables to first difference unit root test brought stability to the variables as reported in Table 4. The result indicates that GDP per capita, non-oil revenue and oil revenue all attained stationarity at first difference. This implies that, the null hypotheses of GDPc, non-oil export and oil export are rejected. The stability of the variables at first difference lead

to application of the Johansen cointegration test and error correction model in analysing the possibility of long and short-run dynamics among the variables under investigation in the estimated model.

4.4 Co-integration Test Results

The Johansen co-integration test was used to examine the long run relationship among the variable in an estimated model (Johansen, 1998). This was done by comparing both the trace statistic and Max Eigen statistic values with the critical value at 5% level of significance. The result of Johansen Co-integration test for the estimated Model is presented below.

Table 5: Johansen Co-integration Test Result for the Estimated Model

Eigenvalue K=3, r=3	Trace Statistic	5% Critical Value	Prob.**	Hypothesis of CE(s)
0.593971	76.77068	47.85613	0.0000	None *
0.522250	43.42142	29.79707	0.0008	At most 1*
0.332364	16.09068	15.49471	0.0406	At most 2*
Eigenvalue K=3, r=3	Max-Eigen Statistic	5% Critical Value	Prob.**	Hypothesis of CE(s)
0.593971	33.34927	27.58434	0.0081	None *
0.522250	27.33074	21.13162	0.0059	At most 1*
0.332364	14.94847	14.26460	0.0389	At most 2*

*Note: r= number of co-integrating vectors and k = number of lags in model. * rejection of the H0*

The Johansen co-integration test results in the model as reported in Table 5 showed that there are three (3) co- integrating equations at 5% level of significance. This is because both the Trace Statistic and Max-Eigen Statistic were greater than critical values at 5%. The reason for the existence of co-integrating equations is not far from the existence of a unit root test at orders one. Therefore, there exists a long-run relationship among the variables. Given the existence of co-integrating equations, the requirement for fitting in a parsimonious error correction mechanism for the estimated model is satisfied.

4.5 The Error Correction Model (ECM)

According to Iyoha and Ekanem (2011), established the dynamic relationship amongst the variables in an estimated model. The general-to-specific rule was followed by analyzing an over parameterized ECM and thereafter the parsimonious error correction mechanism (ECM). In the meantime, time series modeling requires that the over-parameterized model is transform to achieve a parsimonious model, which would be data admissible, theory consistent and interpretable. The results of the parsimonious error correction representation for the estimated model is presented in Table 6.

Table 6: Parsimonious Error Correction Mechanism for the Estimated Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constance	0.011718	0.004367	2.683420	0.0119
DLOG(GDPc(-1))	-0.310112	0.186692	-1.661095	0.1075
DLOG(GDPc(-2))	-0.114049	0.179294	-0.636102	0.5297
DLOG(GDPc(-3))	-0.026246	0.143722	-0.182616	0.8564
DLOG(OXP(-1))	0.006143	0.010514	2.584278	0.0063
DLOG(NXP(-1))	0.015378	0.009054	1.698520	0.1001
ECM(-1)	-0.269811	0.134343	-2.108369	0.0450
R-squared	0.675114	Mean dependent var		0.004595
Adjusted R-squared	0.572556	S.D. dependent var		0.029872
F-statistic	5.607662	Durbin-Watson stat		1.665585
Prob(F-statistic)	0.000368			

Source: Computed Result (E-view 12)

The results of the parsimonious error correction model for the estimated model as presented in Table 6 showed that the coefficient of ECM has the estimated negative sign and statistically significant at 5% level. Thus, the speed of adjustment (correction) depicted by the coefficient of ECM is 0.26981 per year, which implies that about 27percent of the disturbance in the short-run was adjusted for in each year. Also, the Adjusted R-squared value of 0.5725 showed that the model is a good fit. Thus, about 57 percent variation in the per capita GDP is explained by the systematic changes in exports trade depicted by two independent variables (oil-exports and non-oil exports). The Durbin Watson (DW) statistics value of 1.6655

which is very close to 2.0 bench mark for DW statistics, suggested that the model is free from positive first order correlation. Thus, the explanatory variables in the model are not serially correlated. Therefore, the estimated model is valid for policy recommendation and implementation. Also, the probability of f-statistic value of 0.00036 which is less than 0.05 critical values showed that the two explanatory variables (oil-exports, and non-oil exports revenue) are significant in explaining increase in per capita GDP in Nigeria during the period of study.

Furthermore, the coefficient of oil-exports is positively signed and statistically significant with per capita GDP at 5 percent level. Thus, a proportionate rise in oil-exports will increase per capita GDP by 0.6143per cent. Also, given that the said variable is statistically significant with per capita GDP, the alternative hypothesis which states that there is a significant relationship between oil-exports and per capita GDP was accepted. What this suggested is that the strength of the Nigerian economy depicted by GDP per capita could be determined by exports trade depicted by oil-exports. Thus, by implication, oil-exports has the capacity to spur economic development via increase in per capita GDP. The finding is instructive, as it corroborated Ewere and Iwegbu (2022) who examined the impact of crude oil traded goods on economic growth from 1986-2019 using Error correction model (ECM) technique. They found that, oil exports exhibits a hugely significant impact on economic growth in Nigeria in the period under study.

The coefficient of non-oil-exports is positively signed but statistically not significant with per capita GDP at 5 percent level. Thus, a proportionate rise in non-oil-exports will increase per capita GDP by 1.5378per cent. Also, given that the said variable is not statistically significant with per capita GDP, the null hypothesis which states that there is no significant relationship between non-oil-exports and per capita GDP was accepted. What this suggested is that, the economic development in Nigeria has been galvanized by oil exports rather than non-oil exports. The implication of this finding is that, the impact of non-oil exports on the economic development in-term of per capita GDP has been limited due to lack of exports of non-oil products that have been transformed to finished products. The finding is in line with the scholars like Ogunjimi, Aderinto and Ogunro (2015) who studies the significant relationship between the non-oil sector and economic growth from 1980-2012 and revealed that non-oil export has dismal performance on the growth of the economy.

4.6 Post Estimation Tests Results

The study employed the Breusch-Godfrey (B-G) Lagrange Multiplier (LM) test for serial correlation and normality test, heteroschedasticity test, Wald test, stability test and normality test as the post-estimation tests to validate the ARDL short and long run estimations tests.

4.6.1 Wald Test for Coefficient of Restrictions

The Wald test was employed to check if the coefficients of the explanatory variables in the estimated PECM model are jointly equal to zero. Specifically, the F-statistic was employed for the test. The null hypothesis of the of which states that the explanatory variables are not significant in explaining the dependent variable will be accepted if the f(prob) value is greater than the critical p-value at 5%, if not the alternative hypothesis will be accepted.

Table 7: Wald Test for Coefficient of Restrictions in the GDP Model

Test Stat.	Value	Df	P-Value	Critical Value
F-Statistics	3.801458	(7, 29)	0.0048	0.05
Chi-square	26.61021	7	0.0004	0.05

Source: Computed Result (E-view 12)

The Wald test was employed to check if the coefficients of the explanatory variables in the estimated PECM model are jointly equal to zero. Specifically, the F-statistic was employed for the test. Thus, the result presented in Table 47 showed that the F-statistic is 3.801458 and the probability value of (0.0048) is less than critical value at 5% level. Thus, the independent variables in the estimated model are jointly significant in explaining per capita GDP in Nigeria over the study period.

4.6.2 Serial Correlation Test

The serial correlation test was conducted using Breusch-Godfrey test LM test in order to test the null hypothesis of no serial correlation against the alternative hypothesis of serial correlation in the estimated at 5% level. Thus, if the probability of

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the chi-square p-value of is greater than the critical probability value at 5%; the study will conclude that, serial autocorrelation does not exist. Thus, the null hypothesis of no serial correlation will be accepted, while the alternative hypothesis will be rejected.

Table 8: Breusch-Godfrey test for Serial Correlation Test for the GDP Model

Test Statistics	Value	P-value		Critical value @ 5%
F-statistic	0.942251	Prob. F(2,27)	0.4022	0.05
Obs*R-squared	2.413979	Prob. Chi-Square(2)	0.2991	0.05

Source: Computed Result (E-view 12)

Based on the serial correlation test using Breusch-Godfrey test LM test to test the null hypothesis of no serial correlation against the alternative hypothesis of serial correlation in the estimated short run and long-run models at 5% level. The result showed that, serial autocorrelation does not exist in the PECM model. This is because the chi-square p-value for the estimated model which is 0.3633 is greater than the critical value at 5% (0.05).

4.6.3 Stability Test

The stability test helps to determine if the parameter estimate is stable. Stability test is measure via CUSUM (cumulative sum). In order to determine the stability of the estimated model, using the CUSUM test, the plot of the CUSUM must be between the 5% critical bound lines. See Figures 1
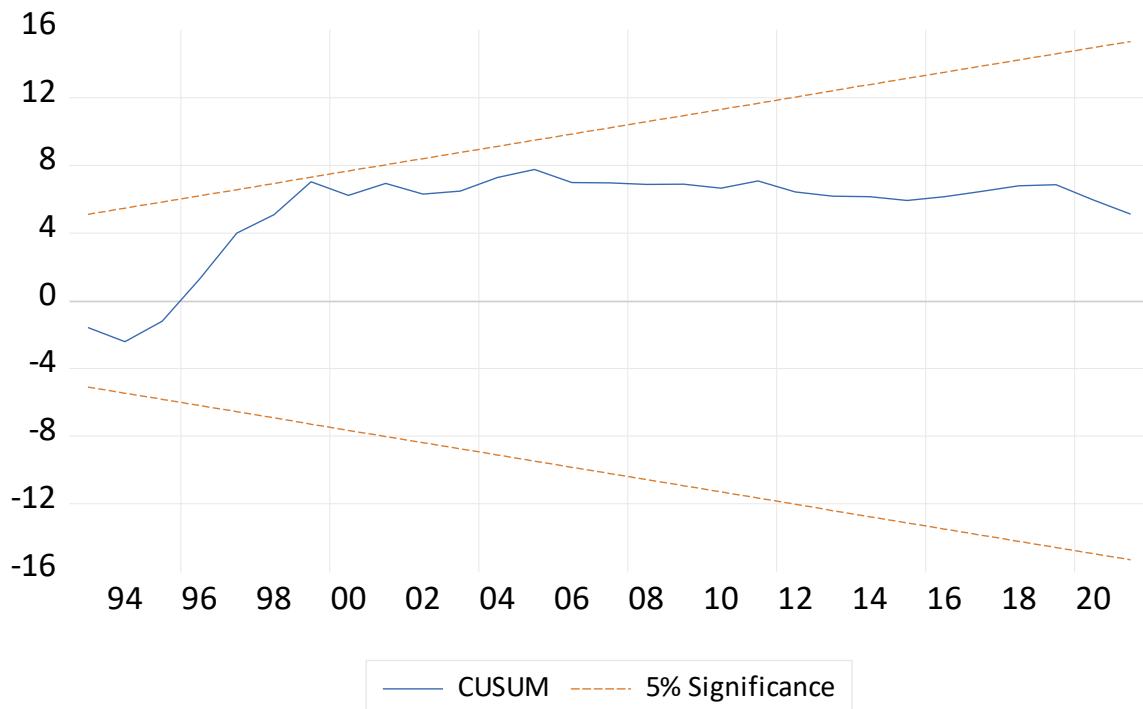

Figure 1: Stability Test for the Estimated Model

The stability test results showed that the estimated PECM model is stable. This is because the plot of CUSUM for the model under study is within the five percent (5%) critical bound as indicated by two lines that bounded the trend curve. The implication of this for the model is that the parameters of the models do not suffer from any structural instability over the period of study. Thus, the estimate economic growth model is stable and useful for policy decision.

4.6.4 Normality Test Results for the Estimated Model

The Jarque-Bera statistic is applied to examine whether the error term in the model is normally distributed. Thus, the probability of Jarque-Bera statistic is compared with the critical p-value at 5 per cent significance level. The null hypothesis is upheld if the probability of the Jarque-Bera statistic is greater than the critical p-value at 5 per cent significance level.
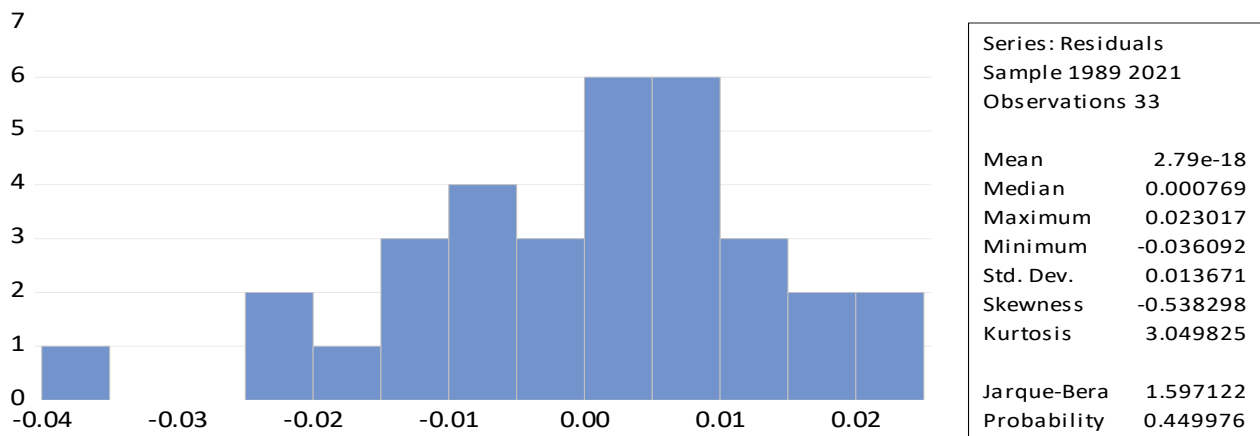
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Series: Residuals	
Sample 1989 2021	
Observations 33	
Mean	2.79e-18
Median	0.000769
Maximum	0.023017
Minimum	-0.036092
Std. Dev.	0.013671
Skewness	-0.538298
Kurtosis	3.049825
Jarque-Bera	1.597122
Probability	0.449976

Figure 2: Normality Test for the Estimated Model

The normality test result in Figure 2 showed that, the error term is normally distributed at 5% level of significance. This is because, the probability value of the Jarque-Bera statistic is 0.4499; and this value is greater than 5% critical value. Meaning that, the Jarque-Bera statistic hypothesis of normally distributed residuals in the model is accepted.

5. CONCLUDING REMARKS

The study used the Parsimonious Error Correction Mechanism (PECM to examine the impact of export trade on economic development in Nigeria between the period of 1981 and 2021. The increasing clamour for the diversification of the Nigerian economy from oil and the rising level of unemployment, poverty and price level informed the choice of carrying out this study. The finding from the study shows that, both oil and non-exports contributes positively to bring about increase in the growth of the Nigerian economy. Based on these findings, the study concludes that; the development of Nigerian in terms of per capita GDP was influenced by changes in oil export over the period of this study. Based on the findings and conclusion of this study, the following recommendations are made; **(i)** The result shows that oil export increase per capita gross domestic product in Nigeria significantly over the period of study, thus, government should ensure oil export revenue is properly utilised. Thus, the gains from the oil export, should be well managed for sustainable development. **(ii)** Government should invest more in the non-oil sector in order to improve non-oil export and improve the well-being of Nigerians. Thus, increasing investment in agriculture and manufacturing will improve non-oil export and create additional jobs.

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