International Journal of Economics and Development Policy (IJEDP)
Vol. 6 No. 2, December, 2023
Print - ISSN: 2651-5644
Online - ISSN: 2651-5644

Examining the Impact of Non-oil Export on Economic Growth in Nigeria: Vector Error Correction Model Approach

[1] Adetunji[*] D. A., [2] Muktar M., [3] Duru M., [4] Saheed Z. S., [5] Alfa Y., [6] Salihu A., & [7] Ikubor J.O.

[1, 4,5,6 & 7] Department of Economics, Nigerian Defence Academy, Kaduna - Nigeria
[2] Department of Economics, Bayero University Kano – Nigeria
[3] Department of Economics, Ahmadu Bello University, Zaria, Kaduna – Nigeria

[*] Corresponding Author's; E – mail: tunjitops@gmail.com

Abstract

This study uses annual data spanning 1980 to 2022 to examine the impact of non-oil exports on economic growth in Nigeria. Data for the study were analyzed using the Johansen co-integration model. Findings from the study reveal the existence of a long-run relationship among the variables of the study. The estimated error correction model revealed that non-oil export and exchange rates have positive and significant effects on economic growth while the inflation rate has an insignificant positive effect on economic growth. Hence, the study concludes that non-oil export significantly contributed to economic growth in Nigeria both in the short run and long run under the studied period. Based on the finding, it is recommended that the government diversify the economy to other non-oil sectors (Agriculture, manufacturing, mining, financial services) to augment the revenues from the oil sector; more funds and improvement should be appropriated to the non-oil sector to make our produce compete in the world market.

Keywords: Economic Growth, Johansen co-integration, Non-oil Export
JEL Classification: O4, 40, O43, O47, C22

Contribution to/Originality Knowledge
In addition to adding value to the body of knowledge, this study provides an indebt knowledge on how non-oil export contribute to economic growth within the period of study.

1.0 Introduction

Non-oil exports include both visible and invisible exports that do not make up any portion of a country's oil export but nevertheless help contribute to the total amount of goods that may be exported from that nation. Commodities such as chemicals, papers, textiles, and clothes are examples of manufactured goods; agricultural goods such as cocoa, cotton, and ground nuts are examples of exports from the agricultural sector; columbite, iron ore, and tin are examples of exports from the solid mineral sector. On the other hand, invisible non-oil exports are those that don't possess an apparent physical presence. Some examples of invisible non-oil exports are tourism, knowledge, and insurance underwriting.

The overall value of Nigerian's non-oil exports rose from US$ 57 billion in 1995 to US$ 4.820 billion in 2022 first quarter and is projected to reach US$ 198 billion in 2015. This is a

significant increase from the previous value of US$ 57 billion. By the third quarter of the year 2022, the entire value of Africa's non-oil exports had reached 213 and 217 US dollars respectively. The expansion of exports to Asia-Pacific and other parts of the world was the primary factor in driving the growth. On the other hand, Africa's total export performance as a percentage of the total global exports has been steadily falling throughout these same time periods. To be more specific, Africa's portion of total global exports will increase by just 2.4 percent in the year 2022 (Usama, 2022).

Over the years, the federal government of Nigeria has maintained its dedication to strengthening the non-oil sector, particularly the export segment. As a result, the contribution of this sector to overall economic expansion has been steadily growing. For instance, even though exports of crude oil accounted for 5.62 trillion naira during the first quarter of 2022, the non-oil export component was 1.48 trillion naira of overall exports. This represents a considerable increase in comparison to past performances. The country's total non-oil commerce grew to N13 trillion in the first quarter of 2022 (Q1 2022), according to data from the National Bureau of Statistics (NBS) (Q4 2022), which is higher than the N11.70 trillion reported in Q4 2021 and even higher than the N7.86 trillion in Q1 2021.

The impact that an increase in non-oil exports might have on the expansion of the economy has been well researched and recorded in scholarly economic literature. However, the concept economic growth mean a discernible rise in the level of performance of several macroeconomic measures of growth over the course of time. According to Todaro and Smith (2010), one of the most important issues facing every country is its rate of economic growth. This is because economic growth eventually constitutes the core of economic development, which is the goal of any economy. The dividend of growth is what is digested into every aspect of development indices that the impacted economy enjoys. These indices show the progression of various aspects of economic development. According to Stephen and Obah (2017), it has thus become a primary concern for nations to make the most of any and all resources at their disposal in order to foster more sustainable economic growth and development. Exportation of goods other than oil is a driving force that is essential to the expansion of an economy. This occurs as a result of the economy's connection with other economies across the world, particularly through the practice of commerce, which boosts the economy's overall productivity. Therefore, the major purpose of non-oil commerce in any country is to raise the total amount of economic activity in that economy.

Cocoa, palm kernels, rubber, and groundnuts are some of Nigeria's key non-oil exportables that have made considerable contributions to the country's GDP over the years. At the moment, Nigeria is the fourth greatest producer of cocoa in the world, behind only Ivory Coast, Indonesia, and Ghana. However, the country is now the third largest exporter of cocoa in the world, behind Ivory Coast and Ghana. According to Adeyeye (2014), cocoa was an extremely important factor in the expansion of the Nigerian economy in the 1970s. For instance, it functioned as a source of raw materials, helped provide job opportunities, and made a major addition to the country's gross domestic product (GDP).

In accordance with Onunze (2012), the contributions of non-oil (agricultural output) exports to Nigeria's GDP in 2012 account for less than 5% of the country's total value. The proportion of Nigeria's non-oil exports to the country's gross domestic product was 2.95 percent from the 1990s to the year 2000, but this figure increased to 3.88 percent in 2001, 4.25 percent in 2002, and 7.40 percent in 2006 (CBN, 2015). The share of non-oil exports to the GDP went down somewhat to 7.20 percent in 2007, then it went down even more to 6.30 percent in 2008 and 5.90 percent in 2009; from 2010 to 2012, it went down to 4 percent, and it went down to 2.61 percent in 2013 (CBN, 2016). According to the National Bureau of Statistics (NBS), the production of the non-oil sector increased to 4.23 percent in 2017, up from 3.06 percent in the previous year.

According to the National Bureau of Statistics (NBS), the non-oil sector's contribution to Nigeria's Gross Domestic Product dropped to 93.79 percent in the first Quarter of 2023 from 95.66 percent in the Fourth Quarter of 2022.

The continuation of this pattern demonstrates that Nigeria's non-oil exports have not contributed to the country's overall economic expansion

2.0 Literature Review

2.1 Conceptual Review

Non-Oil Exports

Abogan et al (2014) defined non-oil exports as those commodities, with the exception of crude oil (petroleum products), that are offered for sale on the international market in order to generate money for the country. The non-oil exports sector of Nigeria's economy is broken down into four primary components: agricultural exports, manufacturing exports, solid mineral exports, and service exports.

Akeem (2008) described non-oil sector of the Nigerian economy as the whole economy excluding the oil and gas sub-sector. This includes the sub-sectors of agriculture, industry, and solid minerals, as well as the transportation, communication, and distribution industries, as well as the financial services, insurance, and government sectors. In the same vein, Onayemi and Ishola (2009) described non-oil exports to consist of agricultural items that are transferred beyond international boundaries. These products are regarded as a vital component of the policies that are designed to promote the momentum of expansion when productive job possibilities become available. Although the contribution of domestic demand to economic growth in less-developed countries (LDCs) is essential, the importance of exports of agricultural commodities should not be overlooked.

Faridi (2019) posit that the export of non-oil commodities is nothing more than the export of agricultural products. In most developing nations, a significant proportion of their overall export is comprised of agricultural products.

In the opinion of Yifru (2015), non-oil export refers to the shipment of agricultural commodities or products (such as cocoa, rubber, palm kernels, cotton, and groundnuts) whether

raw or processed out of the port of a country or the selling of agricultural items produced in the home country to markets outside of that nation. These types of commodities are typically produced in excess numbers because the nation that is responsible for their production may have a production advantage over other nations that are responsible for the importation of them. While Ijirsha (2015) explain that agricultural exports have the potential to provide returns on investment that are just as attractive and profitable as those generated by any other sector of the economy. Therefore, the prejudice against agriculture and the unfavourable view of the agricultural sector should be remedied in order for the sector to be able to contribute optimally to GDP upon channeling investment into agriculture due to the high potential for employment, food security, and exports. In doing so, the sector will be able to take advantage of the great potential for exports, food security, and employment.

Economic Growth

Dwivedi (2006) defined economic growth as an increase that is both sustainable and long-term in either the per capita national production or the net national product. He went on to say that the pace of rise in the overall output of production needs to be far higher than the pace of growth in population. According to Samuelson and Nordhaus (2005), economic growth, measured as the increase in production per capita, is an essential purpose of government. This is because economic growth is related with growing average real incomes and living standards, making it the single most significant determinant in the success of a nation throughout the course of a nation's whole history. In the same vein, Imimole and Imoughele (2012), believe that a nation cannot reach a stage of advancement without taking economic growth into consideration, they argue that this is the case. This serves as a concrete illustration of the way in which growth consistently takes precedence over the primary policy focus of the government's developmental goals in Nigeria

2.2 Theoretical Review

The export-led growth hypothesis (ELG hypothesis) serves as the foundation for this study. According to Richards (2001), the so-called Export-Led Growth (ELG) hypothesis has been around for at least as long as the classical school. Adam Smith and David Ricardo were both in favour of this theory. Mishkin (2015), one of the more recent economists, attributed the positive impact of exports primarily to the production efficiency gains stemming from improved resource allocation. Jahid (2016) and John (2020), on the other hand, emphasized the significance of dynamics benefits, such as the increased accessibility of foreign capital and technology through the release of the balance of payments constraint. Vernon (1966), referenced in John (2020), concentrated on the reverse causation channel, in which the self-propelled growth of the domestic economy leads to better competitiveness and, finally, to the expansion of exports. John (2020) acknowledged Vernon's research. More contemporary theories of "endogenous growth" place an emphasis on the advantages that arise from a dynamic export sector. These theories are framed within a framework that is characterised by growing returns to scale as well as by virtuous technical and managerial spill-over effects towards other sectors (Fedor, 2020). Helpman (2019) expanded on some of the ideas presented by Beckerman and Vernon. He argued that the initial growth spurt favoured by non-oil export

expansion by means of the efficiency and allocation effects reverberates in improved international competitiveness, which in turn fosters a new round of non-oil export expansion and paves the way for a virtuous path of economic growth. Beckerman and Vernon both contributed to the development of these ideas.

In spite of this, "No consensus has emerged on the theoretical appropriateness of the export-led growth hypothesis" despite a number of decades and the accumulation of an ever-expanding body of study material. According to Jin (2017) and Richards (2001), "theoretical disagreement on the role of exports is matched by mixed empirical evidence." To this purpose, it is necessary to take into consideration the fact that attempts to demonstrate econometrically that exports are an important factor of growth run into two fundamental challenges. To begin, given that exports are themselves a component of GDP, the evidence of a correlation is insufficient to show consistently any genuine causal link which could exist. This is because exports are themselves a component of GDP. Second, other significant macroeconomic variables, and notably other components of aggregate demand, are also linked with GDP growth, and as a result, a missing variables problem of model misspecification necessarily occurs (Sheehey 2014).

2.3 Empirical Review

The study conducted by Okoli et al. (2023) aimed to analyze the influence of Nigeria's non-oil exports on the country's real GDP during a period spanning from 1981 to 2021. To do this, the researchers employed two statistical approaches, namely the Auto Regressive Distributed Lag (ARDL) bound test and the CUSUM stability test. The findings of the study indicate the presence of both short-term and long-term associations between the dependent and independent variables in both models. The findings of the Engel-Granger (ECM) analysis indicate a positive relationship between non-oil exports and economic development in Nigeria. Conversely, the results of the ARDL bound test suggest a negative association between the terms of trade of non-oil exports and economic growth in Nigeria. The results of the CUSUM stability test indicate that non-oil exports have a positive and stable influence on economic growth in Nigeria. Conversely, the impact of non-oil exports terms of trade on economic growth is shown to be negative and unstable.

Amaoa et al. (2021) conducted an analysis on the impact of non-oil export items on the economic growth of Nigeria over the period of 1960 to 2016. The data included in this study were obtained from the World Bank development Indicators and afterwards subjected to analysis with the Generalized Method of Moments (GMM). The study of the data reveals that food and live animals, drinks, and tobacco exert a statistically significant negative influence on agricultural exports. Conversely, agricultural exports (total) and crude materials, excluding fats, were determined to have a negative impact but lacked statistical significance. Nevertheless, it is imperative to expand the temporal range of the data beyond the year 2016 in order to include up-to-date information into the research.

Ideh et. al. (2021) examines the impact of expansion in non-oil sector on sustainable economic growth of Nigeria economy. The study sourced data from the Central bank of Nigeria (CBN) statistical bulletin covering the periods of 2000 – 2019. An economic growth model was

formulated using the study variables and the model was estimated using vector auto-regression (VAR) techniques, other diagnostic tests such as Roots of Characteristic Polynomial for VAR model stability, Augmented Dickey-Fuller test for time series stationarity, and granger causality tests were conducted to ensure the reliability of the model estimates. The analysis revealed that the estimated model is stable while the VAR and variance decomposition results shows that real gross domestic product is strongly endogenous in the short run but weakly endogenous in the long run. Further findings suggest that in the long run non-oil sector is strongly endogenous to real gross domestic product (92% contribution).

Olojede and Michael (2020) investigated the relationship between disaggregated non-oil exports and economic development from 1981 to 2018. They employed the Ordinary Least Square and Granger Causality Approach to analyze the data. The study's findings indicate a robust and enduring correlation between cocoa, oil palm, and economic growth. The obtained granger causality analysis revealed a unidirectional causal relationship, indicating that there is a causality running from the export of oil palm and cocoa to the expansion of the economy. Taiga and Ameji (2020) conducted a research that investigated the influence and correlation between agricultural exports and economic growth in Nigeria by employing the Vector Autoregressive Model. The findings derived from the ordinary least squares (OLS) regression model indicate a statistically significant and positive association between agricultural exports and economic growth.

Maria (2020) investigated the contribution of Nigeria's non-oil exports to the country's overall economic development using quarterly time series data ranging from 2010 to 2017. The real GDP was employed as a proxy for economic growth, and the results of the ARDL model indicated that exports of rubber and plastic, textiles and textile articles, and hides and skins all had positive impacts on GDP, although these effects are not substantial. Second, the findings indicate that the real GDP and the non-oil export items are both subject to a flow of causation that operates in both directions simultaneously.

Osabohien et al. (2019) conducted an analysis on the influence of agricultural export on the economic growth of Nigeria over the period spanning from 1980 to 2016. The researchers employed the ARDL Model as their analytical framework. The results of the analysis indicate a positive and statistically significant relationship between agricultural exports and Nigeria's economic development over the studied period.

Sajo and Li (2017) also investigated the nexus between financial development, non-oil export, and economic growth in Nigeria between the years 1994 and 2015 using Johansen co-integration, Granger causality test, and ordinary least square (OLS) approach. The findings of the study indicate that exports and the development of transport have a major positive influence on economic growth, but financial development, the structure of international commerce, and the energy sector have a substantial negative effect on economic growth.

Abiodun (2017) evaluated the relationship between Nigeria's non-oil exports and the country's overall economic development from 1981 to 2014. The Granger causality test was utilised to analyse the data. Findings of the study showed that a link between economic expansion and

international commerce had been established; this relationship was found to be unidirectional, which suggested that there is, on the whole, a beneficial association between the two factors.

Stephen and Obah (2017) conducted an investigation of the impact that foreign commerce has on the expansion of Nigeria's economy between the years 1981 and 2015. The model assumed that economic growth, as measured by gross domestic product, was contingent on international commerce, with non-oil imports serving as a proxy for oil imports, oil imports serving as a proxy for non-oil exports, and oil exports serving as a proxy for non-oil exports. It was demonstrated that economic expansion in Nigeria is significantly influenced by international commerce in a way that is favourable to the country.

3.0 Methodology

3.1 Sources of Data

The study used secondary annual time series data sourced from the Central Bank of Nigeria (CBN). The data covers a period of fifty-one years from 1980 to 2022. The variables on which data were collected are gross domestic product (GDP), Non-oil export volume (NXP)**,** Exchange rate (EXR) and Inflation rate (INF). Gross domestic product (GDP) was the dependent variable, while Non-oil export volume (NXP)**,** Exchange rate (EXR) and Inflation rate (INF) were the independent variables.

3.2 Model Specification and Technique of Analysis of Data

The Johansen Co-integration model is utilised in this study in order to provide an estimate of the long-term effect that the export of non-oil goods has on the expansion of the Nigerian economy. Johansen's test is a way to determine if three or more time series are cointegrated. More specifically, it assesses the validity of a cointegrating relationship, using a maximum likelihood estimates (MLE) approach. It is also used to find the number of relationships and as a tool to estimating those relationships (Wee & Tan, 1997). Johansen and Julius (1991) are credited with developing the model. calculating the rank of the vector of variables provides information on whether or not there is a long-run link among the variables, as well as the number of these co-integrating equations that are present in the system, according to Johansen's co-integration model, which is predicated on the idea that calculating the rank of the vector of variables. According to Alfa and Sa'ad (2016), one of the key advantages of Johansen co-integration is that it eliminates the problem of selecting a dependent variable and the problems that arise when errors are carried over from one phase to the next. As a result, the test is able to identify many cointegrating vectors and is superior than the Engle-Granger method in terms of its applicability to multivariate analysis.

On the other hand, the Johansen co-integration that was applied in this study was derived from the work that Lawal and Ezeuchenne (2017) had done. According to the findings of this investigation, the following is the functional form of the relationship that exists between the variables:

$$GDP = f\left(NXP, EXR, INF\right) \tag{1}$$

The econometric representation of (1) above is given as:

$$GDP = \beta_0 + \beta_1 NXP + \beta_2 EXR + \beta_3 INF + \mu_t \quad (2)$$

Where:

NXP = Non-oil export volume

EXR = Exchange rate

INF = Inflation rate

GDP = Gross Domestic Product

μt = error term.

f = Functional notation

The Johansen co-integration model is specified by starting with the vector autoregression (VAR) of order p given by:

$$Y_t = \mu + A_1 Y_{t-1} + \ldots + A_p Y_{t-p} + \infty_t \quad (3)$$

Given equation (3), the Johansen Co-integration model can be stated in terms of the variables of this study as:

$$GDP_t = \mu + A_1 NXP_{t-1} + A_2 EXR_{t-1} + A_3 INF_{t-1} + \infty_t \quad (4)$$

Where:

$\mathbf{Y_t}$ is an nx1 vector of variables that are integrated of order and $\infty_\mathbf{t}$ is an nx1 vector of innovations. This VAR can be re-written as:

$$\Delta Y_t = \mu + \pi Y_{t-1} + \sum_{i=1}^{p-1} \alpha_i \Delta Y_{t-i} + \infty_t \quad (5)$$

$$\pi = \sum_{i=1}^{p-1} A_{i-1} \qquad \text{and} \qquad \alpha_i = \sum_{j=i+1}^{p} A_j \quad (6)$$

Where

If the coefficient matrix $\boldsymbol{\pi}$ has reduced rank r<n, then there exist nxr matrices α and β each with rank r such that β'α and $Y_t\beta'$ is stationary. r is the number of cointegrating relationships, the elements of α are known as the adjustment parameters in the vector error correction model and each column of β is a cointegrating vector. It can be shown that for a given r, the maximum likelihood estimator of β defines the combination of $1-Y_t$ that yields the r largest canonical correlations of ΔYt with 1−Yt after correcting for lagged differences and deterministic variables when present. Johansen proposes two different likelihood ratio tests of the

significance of these canonical correlations which are the trace test and maximum eigenvalue test. These tests are shown in equations (7) and (8) respectively;

$$Y_{\text{trace}} = -T \sum_{i=r+1}^{n} \ln\left(1-Y_r\right) \tag{7}$$

$$Y_{\max} = -T \sum_{i=r+1}^{n} \ln\left(1-Y_r+1\right) \tag{8}$$

From the equations above, T is the sample size and **Yr** is the i[th] largest canonical correlation. The trace statistics test the null hypothesis of r co-integrating vectors against the alternative hypothesis of n cointegrating vectors. The maximum eigenvalue on the other hand, tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of 1+r cointegrating vectors.

3.3 Definitions and measurement of Variables

GDP: This is the proxy for Economic Growth. Economic Growth is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. GDP is measured in 2010 at constant prices.

NXP: this is proxied by Non-Oil Total Trade. It refers to the total value received from non-oil export and import during a period.

Exchange Rate (EXR): This is a means of changing one country's currency to another country's currency.

Inflation rate (INF): This is a quantitative measure of the rate at which the average price level of goods and services in an economy increases over time.

4.0 Result and Discussions

Table 1: Result of Descriptive Statistics

DESCRIPTIVE	GDP	NXP	EXR	INF
Mean	3.0912	2.6802	1.6124	1.1321
Std. Dev.	0.3490	0.5532	0.9311	0.1834
Skewness	-0.5152	-0.2136	-1.8142	0.2342
Kurtosis	1.8460	2.3908	2.9737	2.8517
Jarque-Bera	2.6443	3.7209	6.2245	4.5143
Probability	0.2116	0.2732	0.0352	0.0756

Source: *computed by the Researcher using E-views 12*

Table 1 shows the result of descriptive statistics of the variables. The result shows that the mean value of GDP, NXP, EXR and INF are 3.0912, 2.6802, 1.6124 and 1.1321 respectively. This implies that the average values of the variables of the study are as small as possible. The

standard deviations of all the variables are also small, implying that the errors that may be due to the estimates are insignificant. Table 1 further revealed that INF has positive skewness which implied that it has long right tails while GDP, NXP and EXR have negative skewness which implied that they have long left tails. Kurtosis measures the peakedness or flatness of the distribution of the series. If the kurtosis is above three, the distribution is peaked or leptokurtic relative to the normal and if the kurtosis is less than three, the distribution is flat or platykurtic relative to normal. From the Table 1 GDP (1.8460), NXP (2.3908), EXR (2.9737) and INF (2.8517) are less than three which implies flat or platykurtic, that is, flatter than a normal distribution with a wide peak. As the value of skewness and kurtosis of the non-oil export series are not equal to 0 and 3 respectively, this suggests that data are not normally distributed.

The Jarque-bera measures the difference of the skewness and kurtosis of the series with those which have a normal distribution. From Table 1, only EXR variables do not follow a normal distribution as evident from the probability value which is less than 5% while all other variables (GDP, NXP and INF) are normally distributed.

Table 2: Unit Root Test of Stationarity

Variables	**ADF (Levels)**	**ADF (1st Diff)**	*ADF Critical value*	**Integration**
GDP	-2.1231	-4.1510*	-3.5629	I(1)
NXP	-2.436	-9.1029*	-3.5629	I(1)
EXR	-3.3182	-6.9267*	-3.5629	I(1)
INF	-2.4391	-3.6463*	-3.5629	I(1)

*Note: * implies Significant at a 5% level of significant*

Source: computed by the Researcher using E-views 12

The above Table 2 shows the result of the ADF unit root test of stationarity. The result shows that at 5%, all the variables are not stationary at levels but stationary only at the first difference. This implies that NXP, EXR, INF and GDP are all integrated of order one [I(1)]. Therefore, it could be inferred from the result that the variables of the study are integrated of the same order and the order of integration is I (1). This order of integration satisfies the condition for the use of the Johansen cointegration model. Hence, the study proceeded to long run test which will involve the Johansen cointegration test

Table 3: Result of Johansen Co-Integration Test

Hypothesized No. of CE(s)	**Trace Statistic**	**0.05 Critical Value of**	**Max-Eigen Statistic**	**0.05 Critical Value**
None *	191.6263	125.6154	70.85031	46.23142
At most 1	83.83207	89.81889	36.94390	30.07757
At most 2	51.78646	57.85613	23.13061	17.58434
At most 3	28.65585	29.79707	21.13162	22.2552

Note: Both Trace and Max eigen test indicates 1 cointegrating eqn(s) at the 0.05 level denotes rejection of the hypothesis at the 0.05 level*

Source: computed by the Researcher using E-views 12

Table 3 shows the unrestricted co-integration rank test which showed the Trace Statistics test and the Max-Eigen Statistics test. However, Table 3 revealed that the Trace test indicated 1 co-integrating equation at 5% level of significance while the Max-Eigen value test also indicated 1 cointegrating equation at 5% level of significance. This implies that this one co-integrating equation in the system, suggests the variables have a long-run equilibrium relationship. Hence, the variables move together over the long run.

Table 4: Estimated long Run Normalized Co-integrating Coefficients

Variables	GDP	NXP	EXR	INF
Coefficients	1.000000	0.722515	0.833160	-0.319978
Prob.	(0.13935)	(0.00015)	(0.07276)	(0.04716)

Source: computed by the Researcher using E-views 12

Table 4 indicates the long-run cointegration equation among the variables. It can be inferred that all the explanatory variables have positive long-run equilibrium with gross domestic product in the long run. The estimated long-run model revealed a positive and significant impact of non-oil export on gross domestic product. This implied that a 1% increase in the non-oil export increases GDP by 0.72%. The positive impact of non-oil export on gross domestic product conforms to the apriori expectation and supports Emmanuel, Akpan, Eleazar, and Gamaliel (2017).

Similarly, the estimated long-run model revealed a positive and significant impact of the exchange rate on gross domestic product. This implied that 1% appreciation in exchange rate increases GDP by 0.83%. The positive impact of the exchange rate on gross domestic product conforms to the apriori expectation. This is because when the exchange rate (foreign currency) appreciates, the value of the domestic currency falls. A fall in the value of a domestic currency is synonymous with the devaluation of the domestic currency. This makes exports cheaper relative to imports, increases demand for exports, increases export revenue and then adds to the real sector output.

However, the coefficient of inflation is negative but statistically significant. It shows that a unit increase in INF decreases GDP by about 0.32%. This conforms to the *a priori* expectation and supports the classical theory that inflation is a disaster to any economy where it exists. The negative relationship between inflation and economic growth is consistent with the findings of Saeed (2007) for Kuwait for the periods of 1985 to 2005. Similarly, Ahmed and Mortaza (2005) established an inverse relationship for Bangladesh in which they used data on real GDP growth rate and CPI.

Table 5: Result of Parsimonious Short-run Error Correction Model Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.005122	0.030208	-0.169573	0.8668
NXP(-1)	0.112607	0.048229	2.334846	0.0282
D(EXR(-1)	0.111778	0.048473	2.305972	0.0301
D(INF(-1)	0.035291	0.018597	1.897680	0.0698

ECM(-1)	-0.527975	0.175803	-3003229	0.0065
R-squared	0.740029			
Adjusted R-squared	0.723368			

Source: computed by the Researcher using E-views 12

Table 5 contains the findings of the parsimonious error correction model, which reveals the estimated coefficients of the parameters, as well as the standard errors, t-values, and probability values that are utilised in the process of diagnostic testing to validate the consistency of the series and its capacity to accurately forecast future outcomes. The findings demonstrated that there was a feedback loop between the long-run trends of the series and the disequilibria that occurred in the prior time period. To be more specific, the findings pointed to feed-backs amounting to around 52.79 percent carried over from the prior period's disequilibria between the current and previous values of variables. The findings demonstrated that the ECM coefficients of the series are significant and appropriately signed, hence verifying the existence of a long-run link among the variables, and that about 52.8 percent of the short-run inconsistencies are fixed and integrated into the long-run dynamics on an annual basis.

According to the findings of the study, the growth of non-oil export is both positive and statistically significant at a level of 0.05%. The end result validated the hypothesis that there is a positive correlation between the two variables. The conclusion drawn from these findings is that each effort made by the government to raise the volume of exports of goods other than oil by one percent would result in an increase of 0.11% in the rate at which the economy of the country grows. In addition, the variable of the exchange rate has an influence that is both positive and substantial on the expansion of the economy in Nigeria. As a consequence of this, a percentage point change in the level of the exchange rate will generate a large and beneficial influence on economic growth equivalent to around 0.112% higher growth. In addition, the rate of inflation had an influence on economic growth, and that influence was both positive and substantial. Therefore, any attempt to further increase the value of the inflation rate would lead to a modest rise of roughly 0.352% on economic growth in Nigeria. This is because the value of the inflation rate has been steadily increasing since the beginning of the year. All of the factors pointed to a positive link with the dependent variable, which meant that the conclusion reached by the researchers regarding the long-run relationship was supported by the findings. Additionally, the outcome demonstrated that the model as a whole is noteworthy. Because of this, we may deduce that the value of adjusted R-square, which is 72%, is substantially different from zero. Therefore, the series is an appropriate choice.

Table 6: Post-estimation Statistics

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.77470	Prob. F(2,44)	0.4520
Obs*R-squared	3.23768	Prob. Chi-Square(2)	0.4311

Source: Computed by the Researcher Using Eviews 10

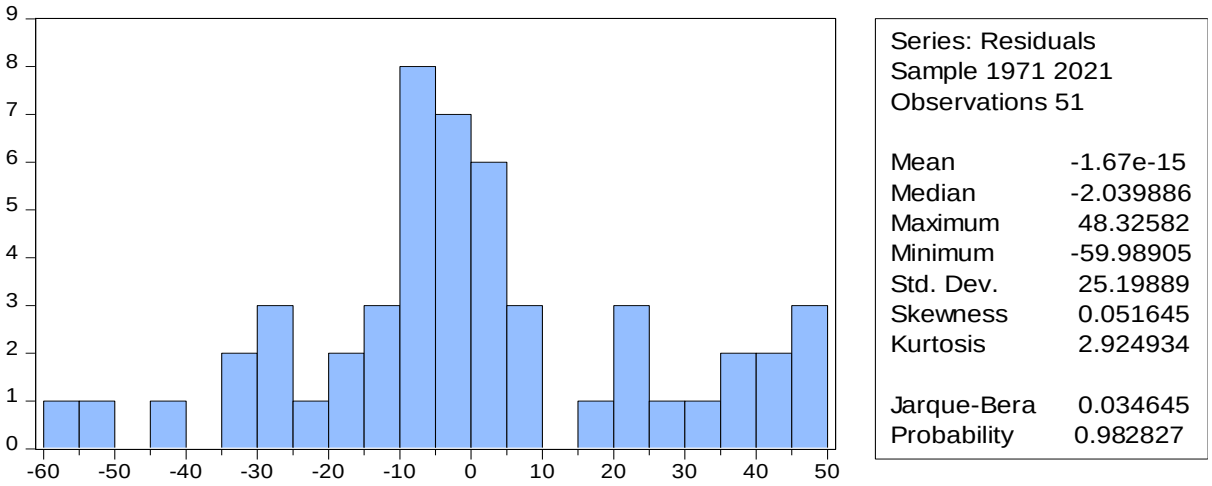

Figure 1: Test of normality

The data for the post estimates are presented in Table 4. The probability value of the serial correlation LM test is 0.452, which is higher than the significance threshold of 0.05. This leads one to believe that it is not possible to reject the null hypothesis that the model does not include any autocorrelation. Similarly, the result is considered normal since the normality plot, which is presented in Figure 1, demonstrates that the Jarque-Bera value is 0.035, and its probability is 0.928. This indicates that the result passes the normality test. As a result, the alternative hypothesis, which states that the error terms of the data utilised in the study are distributed in a normal fashion, cannot be adopted.

5.0 Conclusion and Recommendations

This study uses annual data spanning 1980 – 2022 to examine the long-run impact of non-oil exports on economic growth in Nigeria. Findings from the study reveal that there is a long-run relationship between the variables. This is evident from the co-integration result where there was one co-integrating equation at a 5% level of significance. The long-run co-integration result is in connection with the existing study of Emmanuel et al (2017). The estimation of the error correction model revealed that the control variables of non-oil export and exchange rate have positive and significant impacts on economic growth while the inflation rate has an insignificant positive effect on economic growth. The main variable of non-oil export has a positive and significant impact on economic growth in Nigeria during the studied period. Hence, the study concludes that non-oil export significantly contributed to economic growth in Nigeria both in the short run and long run under the studied period.

Based on the findings of this paper, the following recommendation has been advanced;

i. Governments should diversify the economy into other non-oil sectors (Agriculture, manufacturing, mining, financial services) to augment the revenues from the oil sector.
ii. More funds should be appropriated to the non-oil sector so as to make the Country's produce compete in the world market.

REFERENCES

Abiodun, K. (2017). Contribution of international trade to economic growth in Nigeria. 2017 *Awards for Excellence in Student Research and Creative Activity – Documents*, 1. Eastern Illinois University

Abogan, O. P.; Akinola, E. B. & Baruwa, O. I. (2014). Non-oil Export and Economic Growth in Nigeria (1980-2011). *Journal of Research in Economics and International Finance, 3* (1), 1-11.

Adeyeye J.O. (2014). Impact of international trade on economic growth in Nigeria (1988-2012). *International Journal of Financial Research*, 6 (3), 163-172.

Akeem, U. O. (2008). Non-oil export determinant and economic growth in Nigeria. *European Journal of Business and management*, *3*(3), 1-23.

Alfa Y. & Sa'ad (2016). A comparative study of the channels of monetary transmission mechanism and inflation targeting in Nigeria, *Abuja Journal of Business and Management, 143-151*

Amaoa, U., Antwi, O., Oduniyi, M., & Rubhara (2021).The Foreign Exchange Market in Nigeria. CBN Briefs, Research Department, 197(08), 1-6.

Central Bank of Nigeria (2015)

Central Bank of Nigeria (2016)

Dwivedi, D. N. (2006). *Principles of economics*. New Delhi: Vikas Publishing House PVT.

Faridi R. (2019). North–South trade liberalization and returns to skill in the south: The case of Mexico. *The Journal of International Trade & Economic Development,* 20(4), 449-465. doi. 10.1080/09638190903003028.

Fedor, G. (2020). On exports and economic growth. *Journal of Development Economics* 12, 59-73.

Helpman, E. (2019). *Market Structure and Foreign Trade*. Cambridge: MIT Press.

Ideh, A. O., Okolo, N. M., & Emengini, E. S. (2021)) Non-Oil Sector and Economic Growth in Nigeria: The National Accounts Perspective. *European Journal of Sustainable Development 10*(1),185-202 ISSN: 2239-5938 Doi: 10.14207/ejsd.2021.v10n1p185

Ijirshar, V.U., (2015). The Empirical Analysis of Agricultural Exports and Economic Growth in Nigeria. *Journal of Development and Agricultural Economics.*

Imimole, B. & Imuoghele, L. E (2012). Impact of public debt on an emerging economy: Evidence from Nigeria (1980–2009). *International Journal of Innovative Research and Development*, 1(8), 59-71.

Jahid, M. (2016). Exploring Corporate Strategy: Text and Cases, 8th Ed. New Jersey: Prentice Hall Inc.

Jin, J. C. (2017). Exports and growth: Is the export-led Growth Hypothesis valid for Provincial Economies? *Applied Economics,* 34(1),63-76.

John, J. (2020). Why recession may persist. Guardian Newspaper". September 1. [Retrieved from]. Approach. *General & Applied Economics Research Article, Cogent Economics & Finance,* 4, 1-15.

Maria, C.U. (2020). Non-oil export and economic growth in Nigeria: A disaggregated analysis. Turkish Economic Review, 7(1), 1 – 15

Mishkin, V. (2015). Liberalization attempts and consequences; Foreign Trade Regimes and Economic Development series, Vol. 10, Cambridge M.A.: Ballinger publishing.

NBS, (2017). Gross Domestic Products to Nigeria 2010-2011/3

NBS, (2023). Nigerian Gross Domestic Product Report (Q4 2022) 2023/02/22

Okoli, Chisom Loveth; Ezenekwe, Uju R.; Geraldine Nzeribe and Collins Umeghalu (2023). Impact of Non-Oil Export on Economic Growth in Nigeria. *Journal of International Economic Relations and Development Economics,* 3(1), 44-63

Olojede, M.J. and Michael, K. (2020). Agricultural export and economic growth in Nigeria: A multivariate Johansen cointegration analysis". *International Journal of Arts and Commerce,* 3(3), 89-98.

Onayemi, S. O. & Ishola, I. R. (2009). Diversifying the Productive Base of Nigeria, an Econometric Approach to the Assessment of Non-oil Export Promotion Strategies. *International Research Journal of Finance and Economics,* 1(24), 209-222.

Onunze R. (2012). Can Private Sectors Facilitate Economic Growth and Realization of MDG in Developing Countries? Evidence from Nigeria, *African Journal of Social Sciences,* 3(1), 83-96

Osabohien, R., Akinpelumi, D., Matthew, O., Okafor, V., Iku, E., Olawande, T., Okorie, U. (2019).Agricultural Exports and Economic Growth in Nigeria: An Econometric Analysis. International Conference on Energy and Sustainable Environment. IOP Conf. Series: Earth and Environmental Science 331 (2019) 012002 IOP Publishing doi:10.1088/1755-1315/331/1/012002

Richards, D. G. (2001). Export as a Determinant of Long run Growth in Paraguay, 1966-1996. *Journal of Development Studies.* 38(1), 128-146.

Sajo, I. A., & Li, B. (2017). Financial development, export and economic growth in Nigeria. *Theoretical Economics Letters*, *7*(07), 22-39.

Samuelson, P. A. & Nordhaus, W. D. (2005). *Economics, Eighteenth Edition*. New Delhi: Tata McGraw-Hill Publishing Company Limited.

Sheehey, E. J. (2014). Exports as a Factor of Production: A Consistency Test. *World Development* 21, 155-160.

Stephen, E. A. & Obah, O. D. (2017). The Impact of International Trade on Economic Growth in Nigeria: An econometric analysis. *Asian Finance & Banking Review*, 1 (1), 28-47.

Todaro, M. & Smith, S. (2010). *Economic Development (10th ed.)*. Boston: Addison Wesley

Usama, M. (2022). Performance evaluation of foreign trade and economic growth in Nigeria. *Research Journal Of Finance And Accounting*, 2(2), 12-24.

Vernon, R. (1966). International Investment and International Trade in the Product Cycle. *Quarterly Journal of Economics*, 80, 209-307.

Wee, P. & Tan, R. (1997). *Performance of Johansen's Cointegration Test.* In East Asian Economic Issues (Applied Economics Research Series) (v. 3).

Yifru, S. (2015). Macroeconomic, monetary and financial sector developments on financial and payment system reforms in the country. Economic and Financial Review, 30(1): 32-69.