



## **MODELING NON-OIL EXPORTS AND ECONOMIC GROWTH IN NIGERIA (1986 – 2021)**

**Puepet Nancy Naanzem**

Department of Economics, University of Jos, Jos, Plateau State, Nigeria  
olufekonancy@gmail.com

**Ikande Ezekiel Uwondo**

Department of Economics, University of Jos, Jos, Plateau State, Nigeria  
ikande83@gmail.com

**Azi Istifanus Madaki** 

Jinhe Center for Economic Research (JCER), Xi'an Jiaotong University, China  
azimadakijnr@gmail.com

**Timnan Bindap Ndam**

Department of Economics, University of Jos, Jos, Plateau State, Nigeria  
timnanbindapndam88@gmail.com

### **Abstract**

*This study examined the effects of Non-oil exports on economic growth in Nigeria. Specifically, the study focused on the exports from the agricultural, manufacturing, and services sectors for the period 1986 – 2021. The ARDL technique of estimation was used to determine the effect of Non-oil exports on economic growth. The findings of the study showed that agricultural and services exports have a positive and statistically significant impact on economic growth in the short and long run. It was found that a 1% increase in agricultural exports would increase economic growth by 0.0181% and 0.1270% in the short and long run, respectively while a 1% increase in services export will raise economic growth by 0.0370% and 0.2043%, respectively in the short and long run. Similarly, the findings revealed that manufacturing exports have a*

*positive impact on economic growth in the short-run. The study, therefore, concluded that agricultural and services exports are important for the economic growth of Nigeria in the short and long run while manufacturing export is necessary for economic growth only in the short run. The study recommended that agricultural, manufacturing, and services exports should be greatly promoted in Nigeria by granting tax concessions to companies, organizations, or individuals that export services, agricultural and manufacturing outputs to other countries.*

*Keywords: Agricultural export, Economic growth, Manufacturing, Non-oil, and Service sector*

## **INTRODUCTION**

### **Background to the Study**

One of the greatest desires of every nation is to put together a pliant economic system that is externally noticeable, highly cutthroat, and healthy. Growing the economy is often pursued by most governments in the developing world. Governments adopt several measures aimed at accelerating the economic growth of their nations. The need to raise citizen living standards, lower unemployment, increase capacity utilization that boosts productivity, and increase foreign exchange earnings among other things has prompted Nigeria and other developing nations around the world to look for alternative sources of income besides relying on their endowment of natural resources. Economic growth is an inherent objective that is hunted after by both developed and developing economies worldwide. In recent times economic growth has become a major necessity because the processes of meeting the basic needs of the present generation can threaten the needs of the next generation, thus, economists and policymakers all over the world make every effort to attain economic growth and development using growth models and policies (Kromtit & Gukat, 2016).

The impact of exports on economic growth is a contemporary issue that draws the attention of economists and other researchers. Abou (2005) asserts that non-oil Export is necessary for the overall growth of any economy. When the export sector is properly developed, employment opportunities are created for the populace, unemployment is reduced, the crime rate or social vices, the cost of living is improved and infrastructures are developed. Increasing export earnings assisted in lessening the pressure on the balance of payment disequilibrium in every economy. Usman and Salami (2008), noted that export aid in improving the level of aggregate economic activities through its multipliers effects on the level of a country's national income. The move to increase the export base by countries is a policy aimed at improving the growth of the real sector of the economy in every nation of the world.

According to Krugman (1977), exports open up overseas markets, lower obstacles to foreign exchange, and result in a lot of advantages (external economies of scale). On-oil exports in Nigeria consist of agricultural products (cattle, palm kernel, palm oil, cocoa, rubber, hides, groundnuts, cotton, coffee, beans, forestry products, fish-hunting, tin, columbite, coal, apiary, and skin), manufactured goods (electronics, paper, textile, chemical, leather, food, footwear, furniture, metal,) and Services (insurance, banking, cleaning, education, expertise, medical treatment, consultancy, tourism, and transportation).

In Nigeria, agricultural products dominated export trade in the 1960s. They served as a major source of revenue. However, in the 1970s, the discovery of crude oil in commercial quantity led to a shift in priority from the non-oil to the crude oil industry. In Nigeria, from 1960-1964, the nonoil sector contributed an average of N332.2 million against the N34.16 million from the oil sector. Merely ten years later, specifically from 1970-1974, the nonoil sector contributed an average of N357.68 million as opposed to an impressive N1979.6 million from the oil sector (Adeyemi and Abiodun, 2013). The challenge of this development is that the change of the economy is at the mercy of the highly volatile price of crude oil which is also an exhaustible resource. The trend remains the same with the nonoil sector contributing an average of 2,950.6 billion naira in 2013 against a whopping 6,809.2 billion naira from the oil sector (Central Bank of Nigeria, 2013).

To increase the growth of the non-oil sector in Nigeria, several policies were embarked upon. The structural adjustment programme (SAP) was familiarized in 1986. Ekhosuehi and Ibietan (2013), highlighted specific objectives of SAP to include; diversifying and restructuring the economy's productive base, trade and exchange rate policies combined with enhanced market liberalization and institutional changes. Again, the government embarked on several economic actions and arrangements to promote non-oil exports' institutional support. Trade and Exchange Reforms were introduced which scrapped the various commodity boards (cocoa, cotton, rubber, palm produce, and groundnuts) and other quantitative restrictions that, hitherto, hindered private sector participation in Nigeria's export trade. Foreign exchange was also deregulated. Also, the devaluation of the Nigerian currency to make Nigeria's exports competitive in the world market. Another measure was the abolition of Export Duty and the establishment of the Export Development Fund (EDF). Monetary and Fiscal policy measures were taken to enhance exports. Import Drawback Scheme, which allows the importer to claim repayment of the import duty paid on raw materials used in producing export products.

Establishment of Export Processing Zones (EPZs), for example, EPZ Calabar, and the Nigerian Export Promotion Council (NEPC), Establishment of the Nigerian Export-Import Bank (NEIM) in 1991.

Agricultural Transformational Agenda (ATA) was also introduced from 2011-2015 as a strategy that will reinforce the Nigerian non-oil exports which are driven by the private sector. Agricultural promotion policy (APP) was introduced in 2016-2020 with the intention of cure food shortage for local consumption and foreign exchange earnings.

Nigeria's economy has gone through periods of success and poor performance. From 1971 to 1975, Nigeria's economy recorded an average growth rate of 5.8%. Within the same period, international trade contributed 31.9% to the GDP. The country's average growth rate then fell to 4.1% over the period 1976 to 1980. This notwithstanding, international trade contributed above 41.5% to GDP over the same period. Afterward, the economy recorded negative growth rates in the first half of the 1980s with an average of -2.6% as the contribution of international trade to GDP also decreased to 32.5%. The economy began to recover in the second half of the 1980s with an average growth rate of 1.5%. Within the same period, international trade contributed 42.8% to the GDP. In the 1990s, the growth rate only averaged 60%, from 2000 to 2015, Nigeria's average growth rate and trade performance reached 7.5% and 54.4%, respectively. However, by 2016 the economic growth rate declined to -1.6% as the contribution of international trade to the GDP also fell to 11.2% (World Development Indicators, 2017).

The pressing issue of governments in Nigeria over the years has been to improve the non-oil export in view to diversify the nation's export sector. This sector is underperforming, as well as the external sector's weakness in the international market motivated an immediate revision of the developmental policies' direction and contents in Nigeria, as well as pledges to their implementation. If the Nigerian economy is to return to a path of economic growth, there must be a shift in policy focus and an industrialization plan is both needed. The price of non-oil exports in Nigeria has been on the decrease since independence and it became worst in 2020 during the COVID-19 pandemic. This begs another question of what alternative needs to be done to diversify Nigeria's economic base and develop its non-oil export to fully achieve its potential. There is none of the existing literature that is disaggregated the non-oil sector into agricultural export at time  $t$ , manufactured exports at time  $t$ , services sector at time  $t$ , and Exchange rate at time  $t$ . These concerns serve as a necessity for this study. Based on this, the current study aimed to determine the contributions of non-oil exports to Nigerian economic growth from 1986 – 2021. Although before the period under study, several attempts had been made to diversify the Nigerian economy since the introduction of the Structural Adjustment Programme (SAP) in 1986, no meaningful success has been achieved. The rest of the paper is organized as follows; part two is the review of selected literature relevant to the subject matter. Part three focuses on methodology, part four focuses on the result of data analysis and discussion, and part five deals with the conclusion and recommendations of the study.

## LITERATURE REVIEW

### Export-Led Growth Hypothesis

The export-led growth hypothesis postulates that exports are the main determinant of overall economic growth toward achieving sustainable growth and development. These arguments have recently been extended by the literature on “endogenous” growth theory which emphasizes the role of exports in long-run growth via a higher rate of technological innovation and dynamic learning from abroad. It is crucial to investigate whether export growth might accelerate growth to reduce the balance of payments deficit and to undoubtedly determine whether there is a causal link between exports and economic growth in nations like Nigeria. This theory serves as the foundation for an effective substitution for import substitution, a development plan with an inward focus. Before now, developing nations had adopted internally focused development strategies for boosting industrial growth that would translate into growth and development. These strategies are intended to replace imported goods with domestically produced goods to preserve foreign exchange and support employment. Due to their huge populations and the prevalence of this method, Developing Countries (DCs) with big domestic markets frequently lack the incentives and supportive policies that would encourage producers to go outside of their domestic market. Developing countries used this policy option in response to dwindling global markets for their essential commodities and mounting balance of payments deficits on current accounts (Olorunshola 1996). The following are the main components of this tactic: exchange rates overvalued and high tariffs behind infant industries.

However, Olorunshola (1996) opined that an export strategy oriented is more efficient in achieving rapid growth than import substitution, leading to progressive development. Countries like Taiwan, Singapore, Korea, Hong Kong, and Latin American including successfully attained Newly Industrialized Countries (NIC) or Semi-Industrialized Countries (SIC) through this theory (Idowu 2005). For example, the global market competitive pressure may result to force domestic suppliers to produce quality products and reduce their inefficiencies.

The export-led-growth hypothesis is justified in the following:

1. It increases the country's demand for output which accelerate real output
2. Export expansion due to specialization.
3. Export efficiency force can be enjoyed as a result of access to the global market that promotes competition and motivation and less production cost for the firm.
4. Foreign exchange is attracted because of a pro-trade strategy.
5. Internal economies of scale are reaping by local industries.

This paper is anchored on the Export-Led Growth hypothesis. A major reason in support of the export-led growth strategy is that export growth is the only component of aggregate demand that can relax the balance of payments restriction on economic growth (Thirlwall and Dixon, 1979). Nigeria's Balance of Payments situation has over the years been in deficit. For there to be a turnaround in the trend, an outward approach on the supply side, looking at foreign markets for our goods and services should be pursued, thus hinging this paper on the Export-Led Growth Hypothesis.

## Empirical Literature

Awoke *et al* (2019) investigated the impact of non-oil export on economic growth in Nigeria using the autoregressive distributive lag method (ARDL). The results demonstrate that exchange rate, real gross domestic product, non-oil export, trade openness, and inflation trend together in the long run. Yet, the effect of non-oil exports on economic growth is not substantial enough to take Nigeria to a fortunate economic level within the period studied. This is similar to this study even though there is a slight difference in terms of some variables; which are trade openness and inflation in Nigeria.

Onuarah (2018) investigated the effect of non-oil exports on the economic development of Nigeria. The study analyzed data from 1985 – 2017. The research employed the ARDL technique, and the variables used were technology as a proxy of non-oil exports, FDI, and government expenditure. The study revealed that a significant long-run relationship exists between non-oil exports and the growth of the economy in Nigeria. This is similar to this study in terms of the variable of non-oil exports but differs in capturing the variables of FDI, technology, and government expenditure.

Vincent (2017) used the Real Gross Domestic Product (RGDP) as a measure of economic development in Nigeria, the Service Sector (SS), Agricultural Export (AGEX), and Exchange Rate (EXRA) as explanatory variables to analyze the specific effects of non-oil export on the expansion of the Nigerian economy. The Engel Granger Model (EGM) for co-integration was used in the study's adoption of Phillips Perron. The results demonstrated a convincing correlation between non-oil export and the rate of change in Nigeria's level of economic growth. This analysis is distinct from that one in that it considers exports of variable manufacturing.

In Nigeria, the long-term relationship between agricultural output and economic growth was explored by Ewetan, *et al* (2017). Results from the Vector error correction model and the Johansen maximum likelihood co-integration technique provide evidence of a long-term link between agricultural output and economic growth in Nigeria. The results of the Granger causality test further support the co-integration findings that show a connection between

agricultural output and Nigeria's economic growth. On the other hand, the variable used to gauge agricultural output determines the nature of the causality. Agriculture output, inflation, and exchange rate are the study's variables. The study is distinct from this study in that it focused exclusively on agricultural rather than non-oil export.

Kromtit, *et al* (2017) investigated the impact of non-oil export on the growth of Nigeria's economy from the period of 1985 – 2015. The idea of this theory was the endogenous model. Using the ARDL technique model with the RGDP as a component for economic growth (as a regressand variable), non-oil exports, and exchange rates as independent variables, their study found that a positive significant relationship existed between economic growth and non-oil exports in Nigeria. This is similar to this study even though there is a difference in the period of 1986 – 2021.

Nwodo and Asogwa (2017) examined non-oil export, global integration, and economic growth in Nigeria from 1986 – 2014, employed the ADRL technique also to analyze the research objective with Gross Domestic Product (RGDP) as the dependent variable while the degree of trade openness, government final expenditure, credit to the private sector, non-oil exports, size of the labor force and as independent variables. The study indicated that non-oil exports significantly impacted the economic growth of Nigeria in the short run and consequently in the long run. Given the signs of their coefficients, it was discovered that trade and financial openness had an insignificant effect on economic growth. The study is similar to this study by capturing the non-oil sector in the topic but differs from 1986 – 2019 employed in this research.

Adewale (2016) examined the impact of non-oil export on the Nigerian economy. The empirical analysis used GDP as a dependent variable and non-oil exports, oil exports, non-oil imports, the exchange rate (EXR), and trade openness as independent variables. OLS method of estimation was used and the result concluded that oil has a greater contribution to the economic growth of Nigeria due to the neglect of agriculture since the beginning of the oil boom. The study differs in the areas of oil exports, non-oil imports, and trade openness as independent variables.

Raheem (2016) looked into how oil and non-oil exports affected the Nigerian economy. The study's analysis employed the ADF and PP unit root test, Johansen co-integration test, Granger causality test, impulse response functions (IRF), and variance decomposition (VD). According to the co-integration test, the GDP, oil, and non-oil exports were all correlated. The Granger causality test shows that there is a short-term, unidirectional causal relationship between oil export and GDP. Additionally, there is a long-term, causal relationship running in both directions from non-oil export to GDP and between oil export and GDP. The study result indicates that oil exports have an inverse relationship with economic growth while non-oil



exports have a positive relationship with economic growth and recommended that diversification of the economy is inevitable. The Research is in line with this study in terms of non-oil exports as an independent variable but differs in the scope of 1981 – 2015 and oil export as another independent variable.

Omojolaibi, *et al* (2015) discovered the relationship between non-oil export and domestic investment in Nigeria. The finding revealed that the impact of non-oil export on domestic investment was positive but significant. The study differs in the scope of 1980-2011 and it also considered a domestic investment as an independent variable.

Olayiwola and Okodua (2015), examined the contributions of FDI, non-oil exports, and economic growth in Nigeria. They examined the applicability of the export-led growth (ELG) hypothesis using empirical evidence from Nigeria. The empirical evidence from available data failed to support the export-led growth hypothesis in Nigeria. The result of the variance decomposition revealed that unidirectional causality runs from FDI to non-oil exports using the gross domestic product, foreign direct investment, and non-oil exports as variables. They failed to consider inflation, exchange, and trade openness in their analyses but considered FDI in their studies.

Igwe, *et al* (2015) used the export-led growth hypothesis to investigate how Nigeria's non-oil exports affected economic growth from 1981 to 2012. Using Johansen co-integration and the vector error correction model, the model defined economic growth as a function of capital stock, labor, and non-oil export. The results of the VEC research showed that non-oil export determines economic growth in both short and long periods. Additionally, across the study period, the co-integration analysis revealed a long-term connection between non-oil export and economic growth. The Granger causality analysis, however, found no link between non-oil exports and economic expansion. Capital stock and economic growth are causally related in a single direction. Additionally, there is a one-way causal link between the labor force and economic growth. In their analysis, they neglected to take inflation, exchange rates, and trade openness into account.

## RESEARCH METHODOLOGY

### Research Design

This study adopted the non-experimental research design. In non-experimental research, either a phenomenon or situation is described as it exists or a relationship between two or more variables is described as it occurs. One important feature of non-experimental research is the absence of researcher control over the variables being studied (Dimsdale, 2004). This research is usually considered naturalistic since researchers insert themselves



into an already existing situation and simply observe events that take place even without their presence (McEwan and McEwan, 2003). This research tends to have a relatively stronger element of external validity (Shadish, *et al* 2002). Non-experimental research involves the collection of data after which the collected data are systematically analyzed to assess the nature of the relationship that exists between the dependent and independent variables of this study.

## The Data

The data were sourced from the National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN) Statistical Bulletin, World Trade Organization (WTO), and World Bank Development Indicators.

## Model Specification

To achieve its objectives, the study will estimate the following models:

$$GDP_t = f(AEX_t, MEX_t, EXS_t, EXR_t) \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad (1)$$

Where:

$GDP_t$  = Economic Growth at time t.  $AEX_t$  = Agricultural Exports at time t.  $MEX_t$  = Manufacturing Exports at time t.  $EXS_t$  = Services Exports at time t.  $EXR_t$  = Exchange Rate at time t.

Stating Equation 1 in natural loge form we have Equation 2.

$$\Delta \ln GDP_t = \beta_0 + \beta_1 \ln AEX_t + \beta_2 \ln MEX_t + \beta_3 \ln EXS_t + \beta_4 \ln EXR_t + \mu_t \quad - \quad - \quad (2)$$

Where:

$\beta_0$ ,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  are respectively intercept of the model, coefficient of agricultural export, coefficient of manufacturing export, coefficient of services export, and coefficient of exchange rate while  $\mu_t$  is the error term.

## A Priori Expectation

The *a priori* expectation for the relationship between agricultural exports, manufacturing exports, export of services, exchange rate, and economic growth is stated below:

$$\beta_2, \beta_3, \beta_4 > 0 \text{ and } \beta_4 < 0 \text{ or } > 0.$$

This implies that the coefficient of agricultural exports, manufacturing exports, and export of services are expected to be positive, while the coefficient of the exchange rate is expected to be negative or positive.

The variables used for the estimation were defined and measured as shown in table 1.

Table 1: Definition and Measurement of Variables

Variable	Definition	Measurement
Economic Growth (GDP)	The sustained increase in the aggregate production of goods and services in an economy over a period of time.	Nominal Gross Domestic Product (GDP) in Naira.
Agricultural Exports (AEX)	The share of the output of the agricultural sector of a country that is exported to other countries over a particular period of time.	Raw materials export (% merchandise exports)
Manufacturing Exports (MEX)	The share of the output of the manufacturing sector of a country that is exported to other countries during a particular period.	Manufacture exports (% merchandise export).
Service Exports (EXS)	The share of services sector output of an economy that is exported to other countries over a period of time.	Service exports (BoP, current US\$).
Exchange Rate (EXR)	The rate at which a currency is exchanged for one unit of another currency	The Naira/US Dollar exchange rate.

### Unit Root Test

A unit root test is a common procedure to determine whether a time series variable follows a random walk or not. It is important to examine the stability of time series data to avoid spurious results. The study, therefore, utilized the Phillips and Perron (1988) test for the stationarity status of agricultural exports, manufacturing exports, service exports exchange rate, and economic growth. The model for this paper is stated below.

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{i=1}^Z \beta_i \Delta Y_{t-i} + \varepsilon_t \quad - \quad - \quad - \quad - \quad - \quad - \quad (3)$$

Where:

Z in the equation is the maximum lag length included in the test,  $\Delta$  is the deference operator,

$\varepsilon_t$  is the error time at time t,  $\alpha_0$ ,  $\alpha_1$ ,  $\alpha_3$  and  $\beta_i$  are parameters.

The null and alternative hypotheses of the unit root test are the series has a unit root and the series does not have a unit root respective. Thus, a rejection of the null hypothesis implies that the series does not have a unit root.

## ANALYSIS AND RESULTS

### Descriptive Statistics

The descriptive statistics of the variables employed in the analysis of the paper are shown in table 2:

Table 2: Descriptive Statistics

	$\ln GDP_t$	$\ln AEX_t$	$\ln MEX_t$	$\ln EXS_t$	$\ln EXR_t$
Mean	31.2178	24.0755	23.1231	20.9551	4.1411
Median	31.1822	24.6514	22.4324	21.2573	4.8135
Maximum	31.9090	27.2255	27.4491	22.2382	6.0267
Minimum	30.4748	18.6532	18.5291	19.0576	0.5622
Std. Dev.	0.5070	2.1919	2.3162	0.9963	1.4555
Skewness	0.1110	-0.3890	0.1515	-0.6108	-0.7867
Kurtosis	1.4244	2.1740	2.5568	2.1256	2.5002
Jarque-Bera	3.7979	1.9315	0.4323	3.3855	4.0878
Probability	0.1497	0.3807	0.8056	0.1840	0.1295
Observations	36	36	36	36	36

Table 2 reveals that the median value of each variable does not differ significantly from their respective mean values, suggesting that the variables are consistent. The standard deviation values of the variables show that manufacturing exports with a standard deviation value of 2.3162 have the highest variability while economic growth with a standard deviation value of 0.5070 has the least variability. Values of the standard deviation suggest that economic growth, exchange rate, agricultural, manufacturing, and service exports are less variable since the standard deviation values are small. The maximum values of economic growth, exchange rate, agricultural, manufacturing, and service exports are respectively 31.9090, 6.0267, 27.2255, 27.4491, and 22.2382 while their respective minimum values are 30.4748, 0.5622, 18.6532, 18.5291 and 19.0576. This means that during the period under study, the values of these variables were not the same for all the variables and were also not constant. Economic growth and manufacturing export with skewness values of 0.110 and 0.1515, respectively are positively skewed whereas exchange rate, agricultural, and service exports with respective skewness values of -0.7867, -0.3890, and -0.6108 are negatively skewed. The kurtosis values indicate that all the variables are platykurtic, that is, have flatter distribution than the normal. The study fails to reject the null hypothesis that the variables are not normally distributed since the Jarque-Bera statistic of each variable is not statistically significant, thus the study concluded that the variables are normally distributed. All the variables have a complete number of observations.

### Unit Root Test Result

The Phillips and Perron (1988) unit root test was employed to assess the integration order of the variables used for the study. The result of the unit root test is reported in Table 3.

Table 3: Phillips-Perron Unit Root Test Result

Variable	Level	First Difference	I(d)	Conclusion
$\ln GDP_t$	-0.6139	-3.5655**	I(1)	Stationary
$\ln AEX_t$	-2.8051*	-9.9312***	I(0)	Stationary
$\ln MEX_t$	-1.9329	-7.6149***	I(1)	Stationary
$\ln EXS_t$	-1.6923	-5.1505***	I(1)	Stationary
$\ln EXR_t$	-3.0937**	-6.1325***	I(0)	Stationary

Note: \*\*\*, \*\*, and \* signify statistically significant at 1%, 5% and 10%, respectively.

The unit root test result shows that the study rejected the null hypothesis that the series has a unit root at level for agricultural exports and exchange rate at 10% and 5%, respectively in favor of the alternative hypothesis that the series does not have a unit root. This means that these variables are stationary at level. In contrast, the study failed to reject the null hypothesis at level for economic growth, manufacturing exports, and services exports, indicating that the variables are not stationary at level. The integration order of these variables was examined at the first difference and the study rejected the null hypothesis in favor of the alternative hypothesis, suggesting that the variables are stationary at the first difference. The result of the unit root test indicates the variables are a mixture of I(0) and I(1). This necessitated carrying out a co-integration test to find out if the variables have a long-run relationship (Pesaran, Shin, and Smith, 2001; Sakanko & David, 2018; Timnan *et al*, 2023).

### Cointegration Test Result

To find out whether or not a long-run relationship exists between the dependent and independent variables used in this study, the ARDL bounds cointegration test was utilized and the result is presented in Table 4.

Table 4: ARDL Bounds Cointegration Test Result

	Value	Significance Level	Lower Bound	Upper Bound
F-statistic	5.6135**	1%	4.4	5.72
K	4	5%	3.47	4.57
		10%	3.03	4.06

Note: \*\* signifies statistically significant at 5%. The automatic lag selection was used to determine the maximum lag length.

At a 5% level of significance, the F-statistic of the ARDL limits co-integration test result is higher than the upper bound critical threshold. As a result, the study chose the alternative hypothesis that there is co-integration above the null hypothesis that there is no co-integration. The study concluded that the dependent and independent variables have a long-term association. Therefore, it was decided that the ARDL estimate method was adequate.

### The ARDL Result

The variables included in this study were determined to have an integration order that was a combination of  $I(0)$  and  $I(1)$ , hence the study used the ARDL approach of estimating to investigate the effects of exports of goods and services, the exchange rate, and agricultural exports on economic growth. Table 5 displays the outcome.

Table 5: Short and Long Run ARDL Results

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob. Val.</i>
Short Run Estimates				
$\Delta \ln AEX_t$	0.0181***	0.0041	4.4386	0.0002
$\Delta \ln MEX_t$	0.0058*	0.0030	1.8922	0.0701
$\Delta \ln EXS_t$	0.0370***	0.0101	3.6728	0.0011
$\Delta \ln EXR_t$	-0.0522**	0.0212	-2.4677	0.0208
$ECT(-1)$	-0.1811**	0.0761	-2.3791	0.0253
$R^2$		0.9982		
Adjusted $R^2$		0.9976		
F		1565.110***		0.0000
Long Run Estimates				
Constant	24.1667***	1.9910	12.1377	0.0000
$\Delta \ln AEX_t$	0.1270**	0.0491	2.5860	0.0159
$\Delta \ln MEX_t$	0.0025	0.0198	0.1280	0.8992
$\Delta \ln EXS_t$	0.2043***	0.0697	2.9306	0.0071
$\Delta \ln EXR_t$	-0.1586**	0.0733	-2.1648	0.0401
Post-Estimation Tests Results				
Test		T-statistic	P-value	
Normality (Jarque-Bera Test)		0.4806	0.7943	
Heteroskedasticity (Breusch-Pagan-Godfrey Test)		1.3527	0.2611	
Serial Correlation (Breusch-Godfrey Serial Correlation LM Test)		0.4652	0.6338	
Functional Form (Ramey RESET Test)		1.4454	0.1613	

Note: \*\*\*, \*\* and \* signify statistically significant at 1%, 5%, and 10%, respectively.

The validity of the ARDL model estimates was investigated in this study using four post-estimation tests. These tests were performed using the Jarque-Bera, Breusch-Godfrey Serial Correlation LM, and Breusch-Pagan-Godfrey tests, respectively. They include normalcy, serial correlation, heteroskedasticity, and functional form tests. Table 5 reports the results of these testing. The results of the post-estimation tests show that none of the test statistics' p-values are statistically significant at any level of significance. As a result, none of the tests' null hypotheses were refuted by the study. As a result, the study concluded that the model is accurately stated and that the model's residuals are normally distributed, serially independent, and have homoskedastic variance. This suggests that the estimates from the ARDL model are accurate.

However, the short-run agricultural export coefficient is 0.0181 and is statistically significant at 1%, indicating that there is a short-term positive and statistically significant association between agricultural export and economic growth. Keeping everything else unchanged, a 1% increase in agricultural exports will boost short-term economic growth by 0.0181%. Similar to this, there is a positive and statistically significant short-term association between manufacturing exports and economic growth. According to the table above, the short-term improvement in GDP growth will be 0.0058% if manufacturing exports rise by 1%. Service exports have a positive and statistically significant impact on short-term economic growth, indicating that increasing service export levels will accelerate this growth. In other words, a 1% increase in service exports corresponds to a 0.0370% increase in GDP growth. In contrast, there is a negative significant relationship between the exchange rate and economic growth in the short run, suggesting that a rise in the exchange rate (a decline in the value of the Naira) has a negative significant relationship with economic growth in the short run. In terms of the magnitude of the impact of the exchange rate on economic growth, Table 5 above shows that a 1% rise in the exchange rate (fall in the value of the Naira) corresponds to a 0.0552% fall in economic growth in the short run.

Economic growth and the model's regressors have a long-term link, according to estimates from the ARDL model. At the 5% level of significance, the Error Correction Term's ( $ECT_{t-1}$ ) one-year lag coefficient, which is -0.1811, is statistically significant. It means that until the equilibrium is restored, 18.11% of a shock or shocks to economic growth from the prior year are adjusted this year. The value of  $R^2$  of the estimated model is 0.9982 while that of the adjusted  $R^2$  is 0.9976. *Ceteris Paribus*, it means that exchange rate, agricultural, manufacturing, and services exports accounted for about 99.82% of variations in economic growth and if the model is adjusted for the number of regressors, 99.76% of variations in economic growth are accounted for by regressors of the model. The combined effect of exports of goods and

services, as well as the exchange rate, is statistically significant, according to the f-statistic value of 1565.110, which is statistically significant at the 1% level of significance.

Manufacturing exports and service exports have a positive, statistically significant long-term impact on economic growth, suggesting that, all other things being equal, an increase in the variables will result in better economic growth overall. *Ceteris Paribus*, a 1% rise in service exports and agricultural exports corresponds to 0.1270% and 0.2043% of long-term economic growth, respectively. Likewise, the long-run effect of manufacturing export on economic growth is positive but not statistically significant. An increase in manufacturing export by 1% will result in a 0.0025% rise in economic growth in the long run, *Ceteris Paribus*. The long-run coefficient of the exchange rate is -0.1586, suggesting that economic growth declines by 0.1586% in the long run if the exchange rate increases (the value of the Naira falls) by 1%, all other things remaining constant.

## CONCLUSION AND RECOMMENDATIONS

According to the findings, the result demonstrates just a minor marginal contribution of non-oil exports to GDP as a result of the economy's excessive reliance on oil while ignoring other economic sectors. However, if handled effectively, the non-oil sector will perform better and contribute significantly to the country's economic growth, which will lower the level of unemployment either temporarily or permanently. The study's main finding is the demonstration of a positive time-series relationship between non-oil exports and economic growth in Nigeria as well as the non-oil sector's extremely low industrial capital base. Thus, The government should lower the existing exchange rate because, as shown by the outcome, ongoing exchange rate reductions will support both short- and long-term economic growth and to achieve expansion of the non-oil sector, the government should examine and improve current policies and incentives that will spur the non-oil exports to Nigeria's economic performance were recommended.

## REFERENCES

- Abou-Stait, F. (2005). Are Exports The Engine Of Economic Growth? An Application of Cointegration and Causality Analysis for Egypt, 1977-2003. African Development Bank, Economic Research Working Paper.
- Adeyemi, K.S. & Abiodun, A.J. (2013). Development of nonoil sector in Nigeria: Challenges and Lessons for less developed countries. *Covenant Journal of Business and Social Sciences* 5(1), 88-105.
- Awoke, F., Iwuoha, J., & Chukwuemeka A. (2019). Impact of Non-Oil Export on Economic Growth in Nigeria. *Journal of Social Sciences*, 4(2),201-216. Enugu State University of Science & Technology.
- Adewale, O.A (2016), Impact of Oil and Non-Oil Export on Nigeria's Economy. *Journal for Studies in Management and planning*. 2(8), 38-52.
- Central Bank of Nigeria (2013). Annual Statistical Bulletin.
- Dimsdale, T, & Kuner, M. (2004). Becoming an educated consumer of research: a quick look at the basics of research methodologies and design. Retrieved November 3rd, 2021 from [www.air.org](http://www.air.org).



- Ekhosuehi, O. R., & Ibietan, J. C. (2013). Trends in development planning in Nigeria; 1962 to 2012. *Journal of Sustainable Development in Africa*, 15(4), 297-311.
- Export-Led Growth (ELG) In *Central Bank of Nigeria Economic and Financial Review*, 43(3): 31-37.
- Igwe, H., Edeh, C., & Ukpere, K. (2015). Impact of Non-Oil Sector on Economic Growth: A Managerial Economic Perspective. *Problems and Perspective in Management*, 13(2), 142.
- Kromtit, M. J. & Gukat, T. B. (2016). Non-oil Sector and Sustainable development in Nigeria. *Jos Journal of Economics* 6(1), 129 – 157.
- Krugman, P.R. (1997). *The Age of Diminished Expectation*, Cambridge: MIT Press.
- Kromtit, M.J., Kanadi, D.P. Nangra & Lado, S. (2017). "The contribution of Non-Oil Exports to Economic Growth in Nigeria(1985-2015)", *International Journal of Economics and Finance*, 9(4),253-261.
- McEwan, E. K., & McEwan, P. J. (2003). *Making sense of research: what's good, what's not, and how to tell the difference*. Thousand Oaks, CA: Sage Publications.
- Nwodo, O. S. & Asogwa, F. (2017). "Global Integration, Non-Oil Export and Economic growth in Nigeria", *Academic Journal of Economic Studies*, 3(1),59-67.
- Olayiwola, K. & Okodua, H. (2015). In their research on Foreign Direct Investment, Non-Oil Exports, and Economic Growth in Nigeria: A Causality Analysis. *Journal of Research in Economics and International Finance (JREIF)*, 3(1), 1-11.
- Omojolaibi, J. A., Mesagan, E. P. & Adeyemi, O. S. (2015). The Impact of Non-oil Export on Domestic Investment in Nigeria. Online at <https://mpira.ub.uni-muenchen.de/70201/> MPRA Paper No. 70201.
- Onuarah, A. C. (2018). The Role of Non-Oil Export in the Economic growth of Nigeria. *Journal of Emerging Trends in Economics and Management Science (JETEMS)*, 9(3),132-140.
- Olorunshola, F. (1996). Export-Led Growth in economics Development: Lessons of experience in a *Central Bank of Nigeria Bullion*, 20(40), 51-57.
- Pesaran, M. H., Y. Shin & R. Smith (2001). Bounds testing approaches to the analysis of level relationships. In: *Journal of Applied Econometrics* 16(3), 289-326.
- Phillips, P. C. B, & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, 75(2), 338-346.
- Raheem. I.A, (2016). Analysis of the effects of oil and non-oil export on economic growth in Nigeria. Department of Economics, University of Ibadan, Oyo State Nigeria. <https://hal.archives-ouvertes.fr/hal-01401103v2>.
- Sakanko, M.A. & David, J. (2018). Assessment of the Millennium Development Goals (MDGs) on the Eradication of Poverty and Hunger in Nigeria. *International Journal of Research in Arts and Social Sciences*, 11(2), 257-268.
- Shadish, W. R., Cook, T. D., & Earls, E. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Wadsworth, OH: Cengage Learning.
- Timnan, B. N., Madaki, A. I., Ikande, E. U. & Puepet, N. N. (2023). "Contributions of Teledensity on the Nigerian Economic Growth: Evidence from ARDL Bound Testing Model." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 28(1), 62-70.
- Thirlwall, A.P. & Dixon, R. J. (1979). A Model of Export-Led Growth with a Balance Of Payments Constraint. In: Bowers, J.K. (Ed). *Inflation, Development, and Integration*. Leeds: Leeds University Press.
- Usman, O. A. & Salami, A. O. (2008). The Contribution of Nigerian Export-Import (NEXIM)bank towards Export (non-oil) Growth in Nigeria (1990-2005). *International Business Management*. 2(3): 85-90.
- Vincent, K. (2017). An analysis of the impact of non-oil export and economic growth in Nigeria. *International journal of innovative research in social sciences and strategic management techniques*. 4(1), 79-100.
- World Bank (2017). World Development Indicators. Retrieved 20<sup>th</sup> January 2018 from data. [Worldbank.org/data-catalog/world-development-indicators](http://Worldbank.org/data-catalog/world-development-indicators).