Non-oil Export and Economic Growth in Nigeria: An Error Correction Modeling

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Abstract

This study looked at the trend, short-term relationships, and long-term relationships between non-oil export and growth factors in Nigeria in order to determine the effect of non-oil export on economic growth. The National Bureau of Statistics and the CBN statistics bulletin were utilized to provide aggregate time series data for the years 1986 to 2021. Using the Johansen co-integration and error correction mechanism method, the data was examined. The theory of export-led development served as the paper's foundation. According to the results of Johansen co-integration, there is a long-term link between non-oil export variables such agricultural export, manufacturing export, exchange rate, and economic growth proxy measured by gross domestic product, while there is a short-term association. Results from the error correction model revealed that non-oil exports had a large negative influence on economic growth. The analysis came to the conclusion that if the non-resource sector, in particular its export capability, was effectively developed, it might outperform the windfall of natural resource profits. The non-oil export will benefit Nigeria's economic expansion. In accordance with the findings, the research advised that the government develop plans and strategies to strengthen non-oil export sectors including agriculture and industry in order to construct robust and strong non-oil export sectors that can achieve sustained economic growth. Furthermore, Nigerians should be reoriented in some way so that they may modify the way they think about buying products made locally.

Keywords: Non-oil Sector; Agricultural Export; Manufacturing Export; Error Correction Mechanism.

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1. Introduction
Economists had been troubled by the importance of export to global commerce and economic progress long before Adam Smith. Export, according to [1] "is a stimulant important for the general development of an economy." When the export industry grows, there are more job opportunities for the populace, lower unemployment rates, and lower living expenses. The burden on balance of payment imbalance is reduced by increasing export profits. "Export aids in boosting the level of aggregate economic activity through its multipliers effects on the level of national revenue," claim [2] A program aimed at enhancing the performance of the real sector of the economy is the push for higher export by nations.

In Nigeria, export consists mostly of two elements. Both oil and non-oil exports are made. The study's focus is on non-oil exports, which are goods that are sold on the global market for financial gain but do not include crude oil (petroleum products). Manufacturing exports, solid mineral exports, service exports, and agricultural exports are the four main non-oil export sectors of Nigeria [3]. The Nigeria Export Promotion Council (NEPC), which was established in 1976 to increase non-oil export as a way of diversifying Nigeria's source of foreign exchange earnings, outlined the significance of non-oil export as a source of income for the economy that can be used to finance other economic sectors of the country; it creates employment opportunities for the populace and improves the well-being of the people. The development of the export industry in Nigeria began on the eve of independence, and by the 1960s and 1970s, agricultural exports of goods like cocoa, palm oil, groundnuts, rubber, and cotton became the backbone of the country's economy [4]. Due to the export sector's significance to the economy, it is necessary for this study to examine how non-oil exports affect Nigeria's balance of payment imbalance.

Prior to independence, the economy was defined by the predominance of non-oil exports, the backbone of which was agriculture, which made up the majority of those exports. It significantly boosted the country's GDP growth. It gave the country both jobs and foreign exchange. In terms of their contribution of GDP, mining operations remained to be relatively unimportant while agriculture had a leading position until 1970. Mining and quarrying became the main contribution to GDP starting in the early 1970s. This was mostly due to an increase in the production of petroleum and related goods [5].

In the economic growth of the nation, the industrial and manufacturing sector has had a modest beginning. Because industrialisation was not a component of the colonial economic agenda, manufacturing industries in Nigeria failed miserably to make a significant contribution to the nation's economy prior to independence. The contribution of industries to GDP between 1970 and 1974 was a pitiful average of 4%, a stark improvement from the complete disregard our colonial overlords gave to this sector. The struggle for limited resources with other trade and commercial sub sectors makes it difficult for this industry to grow in the 1970s. Traditional small-scale manufacturing and processing has dominated Nigerian industry up until this point [6] Since then, Nigeria's non-oil export growth has seen a slow and depressing decline. A review of the trends and patterns in Nigeria's non-oil industry has shown that, despite the country's numerous reform initiatives, laws, and strategies, the sector's subsectors have contributed in a meager, demoralizing, and below-par manner. Around 1980, the oil boom came to an end, which significantly moderated the economy and industrial policies.

The import substitution policy's objectives were the balance of payments crisis, faltering foreign exchange
revenues, and trade payments issues rather than industrial expansion. Since many of the businesses relying on imported inputs were forced to run significantly below capacity as a result of the numerous foreign exchange conservation restrictions put in place between 1982 and 1985, there was less growth and the unemployment rate grew worse. Another policy regime was adopted in 1986 with the passage of the Structural Adjustment Programme (SAP). The program marked a significant change in the fundamental tenets of economic management at the national level. The Economic Consolidation and Expansion Programme, which lasted three years, continued the SAP (ECEP). Since 1999, export promotion has been a key priority, followed by other programs [7]. This study's non-oil export variables were used to examine the link between economic growth and non-oil export factors in Nigeria. The goal of this article is to analyze this relationship and look at both the short- and long-term trends in this relationship.

Several studies have been conducted on the relationship between non-oil export and economic growth, including those by [8] and [9], but research works on the study between non-oil export and economic growth that really study the trends are very uncommon in the literature. This paper has advanced knowledge in insightful ways. The Ordinary Least Square (OLS) approach was used in the majority of studies conducted on the association between non-oil export and economic development.

The beauty of this study is that it examined how non-oil exports affect economic development using modern econometric methods like co-integration and error correction models. The essay is divided into five pieces. Section three discusses research methodologies, whereas Section 2 is devoted to the examination of pertinent literature. The fourth portion contains the findings and debates, while the last section contains the conclusions and suggestions.

2. Empirical Review

In their research, [10] look at the importance of non-oil exports to Nigeria, specifically the export of cocoa. It highlights the numerous benefits and possibilities that are there in the non-oil exports sector by utilizing the content analysis approach. The GDP of Nigeria is threatened by its reliance on oil exports, which account for a sizable portion of the country's GDP (gross domestic product).

The research looks at the trend of exporting cocoa beans throughout different regimes and concludes that inconsistent policies and inadequate attention to the agricultural sector are not in the best interests of the nation. It notes that investing in cocoa production is likely to increase GDP and give the populace job possibilities. It comes to the conclusion that Nigeria's participation in non-oil exports is essential to the country's realistic growth and sustained development.

For a few particular emerging Asian nations, Reference [11] study looked at the viability of the export-growth nexus. In order to investigate the long-term, causal link between exports and growth, the research's study period of 1975–2008 was used. The study's hypotheses were put to the test using the econometric methods of panel cointegration panel causality. In the sample nations, a specific co-integration relationship between exports and economic development is confirmed using panel cointegration rank test analysis. In the long run, stronger
growth is needed for export growth, according to the findings. Additionally, the panel homogeneous causality test demonstrates the strong impact of export increase in the chosen panel. Economic growth and exports are causally related in both directions, according to the panel non-homogenous causality hypothesis conclusion. The panel heterogeneous causality finding demonstrates that in the cases of Sri Lanka, Indonesia, and Pakistan, the causation is found to run from economic growth to exports, whereas in Thailand and Malaysia, it is shown to run from exports to economic growth. While a neutral theory is found in the case of Bangladesh, there is also bi-directional causality in the cases of India, Sri Lanka, and Indonesia.

In their 2017 study, Reference [12] look at the impact of oil and non-oil exports on economic development from 1973 to 2007. In order to forecast how the independent factors will affect the dependent variables, the study used the VAR (vector auto regressive) analytic approach. Real GDP serves as a stand-in for the dependent variable, while real non-oil and oil exports serve as the explanatory variables. The research findings indicate that both real oil exports and real non-oil exports have a favorable effect on Iran's economic growth. Reference [13] investigated Nigeria's non-oil export factors and economic growth factors. The long- and short-term consequences of the non-oil export and its resulting determinants were investigated using the bound test technique. The outcome shows that non-oil exports have both long-term and short-term substantial influence on economic growth. Reference [14] examined how policies and the balance of payments are positioned in relation to the Nigerian economy. As measures to influence the balance of payments, the tariff, non-tariff, and exchange rate policies were utilized. In order to prevent erroneous regression findings, the study used the Ordinary Least Square (OLS) techniques of estimation and the heteroscedacity and autocorrelation covariance (HAC) technique. The outcome shown that the exchange rate, export, and indirect tax all meet the presumption.

Reference [15] used panel data analysis to look at how the non-oil industry affected the balance of payments equilibrium between the United States and its Asian partner. Openness and corruption index were the factors included in the study's evaluation. Openness was not important in the equilibrium of the balance of payments, according to random effects estimates.

The long-term reaction of the balance of payments of Middle Eastern countries to the growth of the non-oil economy was studied by [16]. He investigated the connection between non-oil export and balance of payments using Johansen Cointegration analysis, an econometric approach. The findings indicated that non-oil sectors have a positive long-term impact on balances of payments in each of the seven participating nations. Reference [17] examined the effects of non-oil exports on the Nigerian economy using yearly data from 1980 to 2016 using cointegration analysis. A high correlation between non-oil exports and economic development in Nigeria was found, according to the study.

The impact of imports and exports on Nigeria's balance of international trade between 2007 and 2016 was examined by [18] using multiple regressions and correlation analysis. Gross Domestic Product (GDP) was employed as the dependent variable in the study, while openness, imports, and exports were used as the independent variables. The study's conclusions showed that imports have a favorable and considerable influence on Nigeria's international trade balance (GDP), but exports and openness have just a little positive impact (GDP).
By using the multivariate co-integration and Granger causality methods on yearly data from 1970 to 2008, Reference [19] sought to reexamine the contribution of oil and non-oil exports to economic growth in Iran. The Granger causality test shows evidence of a one-way causal relationship between oil and non-oil exports and economic development, and the study's findings indicate that the variables are co-integrated. The direction of the variables was examined by using the ARDL bound test for cointegration.

The non-oil sector's contribution to Nigeria's economic growth between 1981 and 2019 was evaluated by [20]. In the long run for manufacturing (MANX) and solid minerals (SOLX), with the exception of agricultural exports, their analysis found a negative and statistically significant association between non-oil exports (NOE) and economic growth (RGDP) in Nigeria over the time under examination (AGRX). Non-oil exports and economic development in Nigeria during the same time period also have a bidirectional causal link.

As a small, open oil and gas importer, Turkey was the focus of [21] analysis of the economic impacts of oil price shocks. The authors of this study created TurGEM-D, a dynamic multisectoral general equilibrium model for the Turkish economy, after analyzing the potential long-term effects of oil price shocks on macroeconomic variables of interest, such as GDP, consumer price inflation, indirect tax revenues, trade balance, and carbon emissions. They discovered that the rising cost of oil significantly affects macroeconomic indices and carbon emissions in the Turkish economy. Reference [22] claims that Kuwait, an oil-based economy, employs an export promotion policy as a critical component of its economic growth plan. For the past forty years, the nation has seen impressive economic expansion and high GDP per capita. To investigate how exports affect economic growth, the export-led growth (ELG) theory has frequently been applied. This theory is supported by a large body of research that shows exports to be significantly positively correlated with economic growth. The ELG theory's applicability in a little oil-producing nation like Kuwait, however, is not yet understood. Whether Kuwait falls outside the purview of the ELG theory is the main issue discussed. In addition to measuring the effects of the oil industry on the Oman economy during the past three decades, Reference [23] also gave some projections for the key macroeconomic indicators pertaining to the Oman economy. Model simulations show that the oil industry has a significant and beneficial impact on Oman's gross domestic product and that this benefit also spreads to all other Oman economic sectors that are not in the oil industry. According to the study, the agriculture sector was the one that was most negatively impacted by oil, while the gas industry had the most positive impact. According to the study's findings, Oman's economy is not at all diversified, and the recommended model aids Oman's policymakers in determining and foreseeing the effects of oil on other aspects of the country's economy.

3. Methodology

3.1 Theoretical Framework

The notion of export-driven growth.

Exports may influence the health of the economy in a variety of ways, according to international trade theory. International commerce increases productivity by expanding the market and benefiting from economies of scale,
according to [24] theory. In addition, David Ricardo (quoted in) [25]'recorded that international commerce has a significant impact in economic growth. Trade in which a nation has a comparative advantage can help it achieve specialization in the production of a good. Because of this acquired specialization, capital creation may increase, boosting total factor productivity (TFP) and enhancing resource exploitation efficiency. In order to investigate the connection between a wealth of natural resources and economic growth, Reference [26] conducted research. The results of the growth regression study, which used time series data for 18 nations from 1970 to 1990, indicate that economies with large export ratios of natural resources expanded more slowly during that time. The study found that there is still a negative link between the export of natural resources and economic development even after accounting for other control factors (starting GDP, openness, investment rates, human capital, trade terms, and the effectiveness of governmental institutions). From the Mercantilist era, the rise of the emphasis on exports has been documented in the history of economic philosophy. Exports are "an engine of growth," according to [27]. Further asserting that "Exports are frequently seen as a key driver of economic growth, Reference [28] Extensive research has been done in both rich and developing nations on the relationship between exports and economic growth. In accordance with [27], “The growth hypothesis (ELGH) postulates that export increase is one of the key factors determining growth.” It contends that growing the quantity of labor and capital in the economy as well as exporting more goods and services may both contribute to a country's overall growth. Exports may act as an engine of growth, according to its proponents. In his explanation of the export-led growth theory, Reference [29] acknowledges that an increase in a nation's exports may result in an increase in that nation's GDP. According to him, "the total growth of economies does not due to rise in the labor and capital stock alone, but also expansion in exports."

3.2 Model Specification

The model is provided, which builds on the theoretical foundation of this study.

Where GDP= f (AGRE, MANE, EXR)

GDP= Gross Domestic Product

AGRE= Agricultural Export

MANE= Manufacturing Export

EXR= Exchange Rate

Behaviorally, the model is given as;

$\text{GDP} = \beta_0 + \beta_1\text{AGRE} + \beta_2\text{MANE} + \beta_3\text{EXR} + U$

$\beta_1, \beta_2, \text{and } \beta_3$ are the parameter estimates for the study.

3.3 Estimation Techniques
The link between the gross domestic product, agricultural exports, manufacturing exports, and the exchange rate was examined in this study using the Error Correction Mechanism technique. To prevent false regression, Augmented Dickey-Fuller (ADF) tests were performed on all variables to determine whether unit root issues were present or absent.

3.4 Augmented Dickey-Fuller (ADF) Test

The ADF is a modified version of the stationarity test developed by Dickey and Fuller in 1981 [29]. When the disruption in the series, t, does not follow a white noise process, it is utilized to test for the unit root in certain circumstances. In certain circumstances, the series error may be serially associated. Below is a description of the ADF equation for testing unit root:

\[
\Delta y = \beta_1 + \beta_2 t + \delta \gamma_{t-i} + \sum_{i=1}^{p} \alpha_i \Delta y_{t-i} + \epsilon_t
\]

Where:

\[
\alpha_i = \sum_{k=1}^{p} \delta k \quad \text{and} \quad \delta = \left( \sum_{i=1}^{p} \delta_i \right) - 1
\]

Where "t" signifies the trend parameter, "t" is the series to be regressed on time, and I defines the intercept. Gaussian white noise is assumed to have a zero mean but serial correlation is conceivable. Using Akaike Information Criteria, P represents the maximum number of delays that can exist (AIC). Ho: _1=0 and _2=0, which denotes that there is a unit root, is the null hypothesis. H1: _1 0 and _2 0, which denotes that there is no unit root, is the alternative.

Higher order auto-regressive methods can be used because of this desire (Greene 2003). A null hypothesis test for trend, trend and intercept, no trend and no intercept, and no trend at all is essentially possible using the unit root equation mentioned above.

4 Results and Discussion of Findings

4.1a The Trend Analysis of the Gross Domestic Product

The Nigerian gross domestic product (GDP) graph, which spans 1986 to 2020, The variation in Nigeria's gross domestic product throughout the studied time is seen in Figure 4.1. According to the trend study, the GDP is growing steadily and gradually. In conclusion, the findings showed that Nigeria's gross domestic product has grown through time, rising from 17,007.77 billion naira in 1986 to 70,014.37 billion naira in 2020. For the economy to grow, this is a positive indicator.

The gross domestic product trend analysis is shown in Figure 4.1, as shown below.
4.1b The Trend Analysis in the Exchange Rate

The exchange rate graph for Nigeria, which spans the years 1986 through 2020, the currency rate fluctuates over the time period under study, as seen in figure 4.1.

When it first started, it was steady, but it then started to rise over time. The data showed that, in summary, the exchange rate in Nigeria increased throughout time, rising from 2.02 in 1986 to a peak of 358.8 in 2020. For the expansion of the economy, this official exchange rate is not favorable.

Figure 4.2, which is displayed below, shows the exchange rate's trend.
4.1c The trend analysis in Agricultural Export

The Nigerian agricultural export graph, which spans 1986 to 2020 The agricultural export, as shown in figure 4.3, first climbed about 2007 until approximately 2010, then decreased again and again until it dramatically decreased in the year 2020. Initially, it was quite low. As a result, the trend might be described as varying. Finally, the findings showed that, for the time period under consideration, Nigeria's agricultural export pattern is not very encouraging. This does not appear to help the expansion of the economy.
4.2 Unit Roots Outputs

Since the research employed time series data, the first step was to determine whether or not the variables were stationary. To achieve this, a unit root test was performed using the ADF approach.

Table 4.2: Summary of ADF Unit Root Test with trend and intercept.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF test statistics</th>
<th>Mackinon critical value @ 5%</th>
<th>No of time difference</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>LN GDP</td>
<td>-3.021506</td>
<td>-2.874853</td>
<td>I (1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LN AGRE</td>
<td>-6.538720</td>
<td>-2.854021</td>
<td>I (1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LN MANE</td>
<td>-5.113110</td>
<td>-2.854021</td>
<td>I (1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LN EXR</td>
<td>-5.248043</td>
<td>-2.860411</td>
<td>I (1)</td>
<td>Stationary</td>
</tr>
</tbody>
</table>

Source: Computed by the Authors

The unit root test results above show that the variables used in the study, which are Gross Domestic Product, Agricultural Exports, Manufacturing Exports, and Exchange Rate, are integrated of the same order of I (1) respectively. This means that the variables are stationary at their respective first difference.

4.3 Co-integration Test Results

Having established the stationarity of the variables, we determine the existence of a long run equilibrium relationship among the variables in the model. To undertake, this study employs the Johansen Co-integration techniques. The results are presented below:

Table 4.3a: Johansen Co-Integration Test. (Trace Statistics).

<table>
<thead>
<tr>
<th>Hypothesized number of (ECS)</th>
<th>Eigen value</th>
<th>Trace statistics or likelihood ratio</th>
<th>5% critical value</th>
<th>Prob**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>0.505641</td>
<td>51.03374</td>
<td>36.74502</td>
<td>0.0024</td>
</tr>
<tr>
<td>At most 1*</td>
<td>0.350858</td>
<td>30.13437</td>
<td>28.68606</td>
<td>0.0304</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.110286</td>
<td>10.74104</td>
<td>14.38360</td>
<td>0.0206</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.064475</td>
<td>2.482544</td>
<td>3.730356</td>
<td>0.1062</td>
</tr>
</tbody>
</table>

Source: Computed by the Authors

A long-term equilibrium connection may be shown in the model from Table 4.3a above.

The likelihood ratio (51.03374) is greater than the 5% critical value (36.74502) at the None hypothesised No of Ecs (None*) and the likelihood ratio (30.13437) is greater than the 5% critical value (28.68606), according to the trace statistics, which also reveals the existence of two co-integration equations among the series.
Table 4.3b: Johansen Co-Integration Test (Maximum Eigen Statistics).

<table>
<thead>
<tr>
<th>Hypothesized No of Ecs</th>
<th>Eigen Value</th>
<th>Max Eigen Statistics</th>
<th>5% Critical Value</th>
<th>Prob**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>0.505641</td>
<td>20.68826</td>
<td>16.47323</td>
<td>0.0024</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.350858</td>
<td>10.28231</td>
<td>10.02051</td>
<td>0.0304</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.110286</td>
<td>7.147288</td>
<td>13.15350</td>
<td>0.0206</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.064475</td>
<td>2.482544</td>
<td>3.730355</td>
<td>0.1062</td>
</tr>
</tbody>
</table>

Source: Computed by the Authors

According to Table 4.3b above, the model has a long-term equilibrium connection when the Maximum Eigen statistics (20.68826) are used, which are larger than the 5 percent critical value (16.47323) at the None postulated No of ECS (None*). As a result, each variable is significant. Once the model's variables' long-term relationships have been established, we move on to the short-term Error Correction Model.

Table 4.4: Long Run Results.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-3.036705</td>
<td>1.810762</td>
<td>-2.048228</td>
<td>0.0276</td>
</tr>
<tr>
<td>LNAGRE</td>
<td>-0.078253</td>
<td>0.026044</td>
<td>-0.540443</td>
<td>0.1840</td>
</tr>
<tr>
<td>LNMANE</td>
<td>1.043006</td>
<td>0.276201</td>
<td>2.868441</td>
<td>0.0045</td>
</tr>
<tr>
<td>LNEXR</td>
<td>-1.034144</td>
<td>0.218608</td>
<td>3.060120</td>
<td>0.0023</td>
</tr>
</tbody>
</table>

Source: Computed by the Authors

Agricultural Export (AGRE), contrary to the a priori hypothesis, is negatively connected to Gross Domestic Product, as can be seen from table 4.4 above. Manufacturing Export (MANE) and Exchange Rate both show a direct link that is consistent with the a priori expectation. Additionally, at the 5% level, the values of all the variables are statistically significant.

4.5 Error Correction Model (ECM)

The speed at which equilibrium is reached is measured using the error correction model. If the coefficient's value is negatively signed and the p-value is determined to be less than 0.05, the Error Correction Model's (ECM) result is considered to be consistent with the rule. The findings show that the dependent variable's current value will return to long-term equilibrium in the independent variable at a pace of about 34%.

A larger percentage of ECM denotes feedback of that value or an adjustment of that value from the previous period disharmony of the present level of the dependent variable and the present and past level of the independent variables. Each variable's lagged value determines the over-parameterized ECM, whereas the sparing ECM takes into account the variables that quickly reach equilibrium among the lagged variables. Tables 4.5 and 4.6 below display the outcomes of both overparameterized and sparse ECM on the given parameters.
### Table 4.5: Over-parameterized ECM.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.103807</td>
<td>0.164001</td>
<td>0.671173</td>
<td>0.0454</td>
</tr>
<tr>
<td>D(LNAGRE)</td>
<td>-0.273718</td>
<td>0.208142</td>
<td>-1.610021</td>
<td>0.0727</td>
</tr>
<tr>
<td>D(LNMANE)</td>
<td>0.200165</td>
<td>0.154447</td>
<td>1.20637</td>
<td>0.0739</td>
</tr>
<tr>
<td>D(LNEXR)</td>
<td>0.060070</td>
<td>0.110120</td>
<td>0.663564</td>
<td>0.0497</td>
</tr>
<tr>
<td>D(LAGRE(-1))</td>
<td>0.104676</td>
<td>0.075601</td>
<td>1.143248</td>
<td>0.0640</td>
</tr>
<tr>
<td>D(LNMANE(-1))</td>
<td>0.043322</td>
<td>0.154188</td>
<td>0.207644</td>
<td>0.0370</td>
</tr>
<tr>
<td>D(LNEXR(-1))</td>
<td>-0.087170</td>
<td>0.158730</td>
<td>-0.264217</td>
<td>0.0202</td>
</tr>
<tr>
<td>D(LNAGRE(-2))</td>
<td>-0.010051</td>
<td>0.073544</td>
<td>-0.113347</td>
<td>0.0410</td>
</tr>
<tr>
<td>D(LNMANE(-2))</td>
<td>-0.067167</td>
<td>0.127226</td>
<td>-0.487009</td>
<td>0.4437</td>
</tr>
<tr>
<td>D(LNEXR(-2))</td>
<td>0.066833</td>
<td>0.160012</td>
<td>0.321150</td>
<td>0.0207</td>
</tr>
<tr>
<td>D(LNAGRE(-3))</td>
<td>-0.621412</td>
<td>0.184237</td>
<td>-0.3780154</td>
<td>0.0099</td>
</tr>
<tr>
<td>D(LNMANE(-3))</td>
<td>0.107044</td>
<td>0.238640</td>
<td>1.117523</td>
<td>0.2009</td>
</tr>
<tr>
<td>D(LNEXE(-3))</td>
<td>-0.051457</td>
<td>0.108388</td>
<td>-0.665390</td>
<td>0.0478</td>
</tr>
<tr>
<td>(ECM(-1))</td>
<td>-0.050771</td>
<td>0.136237</td>
<td>-0.305027</td>
<td>0.0315</td>
</tr>
</tbody>
</table>

**Source:** Computed by the Authors

### Table 4.6: Parsimonious ECM.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std Error</th>
<th>T. Statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.235116</td>
<td>0.269742</td>
<td>0.763908</td>
<td>0.0891</td>
</tr>
<tr>
<td>D(LNGSA)</td>
<td>0.412811</td>
<td>0.218568</td>
<td>2.323520</td>
<td>0.0243</td>
</tr>
<tr>
<td>D(LNGSE(-1))</td>
<td>0.183627</td>
<td>0.192274</td>
<td>1.006447</td>
<td>0.0268</td>
</tr>
<tr>
<td>D(LNGSM(-1))</td>
<td>-0.211154</td>
<td>0.186788</td>
<td>-1.132181</td>
<td>0.0268</td>
</tr>
<tr>
<td>ECM (-1)</td>
<td>-0.225052</td>
<td>0.126044</td>
<td>-2.554688</td>
<td>0.0115</td>
</tr>
</tbody>
</table>

**Source:** Computed by the Authors

The over-parameterized and frugal findings are shown in tables 4.5 and 4.6 above. Tables 4.5 and 4.6's negative ECM values show that the ECM is suitably signed and statistically significant at the 0.05 percent level. In an effort to establish a connection between the current level of GDP and the prior levels of AGRE, MANE, and EXR, it follows that the present value of 0.225052 has feedback of around 22.60% from the previous era of disequilibrium to the current level of GDP.

### 5. Conclusion and Policy Recommendations

In this study, non-oil export and growth factors in Nigeria were analyzed for trends, short- and long-term
relationships, and effects on economic growth. The National Bureau of Statistics and the CBN statistics bulletin were utilized to provide aggregate time series data for the years 1986 to 2021. Using the Johansen co-integration and error correction mechanism method, the data was examined. Johansen co-integration analysis showed that there is a long-term relationship between non-oil export variables like agricultural export, manufacturing export, exchange rate, and economic growth proxies by gross domestic product, while short-term results from the Error Correction Model showed that non-oil export has a significant negative impact on economic growth. The analysis came to the conclusion that if the non-resource sector, in particular its export capability, was effectively developed, it might outperform the windfall of natural resource profits.

The non-oil export will benefit Nigeria's economic expansion. In accordance with the findings, the research advised that the government develop plans and strategies to strengthen non-oil export sectors including agriculture and industry in order to construct robust and powerful non-oil export sectors that can achieve sustained economic growth. In order to support the expansion of the non-oil sector for beneficial growth and development in the country, the Nigerian government should adopt policies that are favorable for diversifying the nation's export base and closely monitor its execution. Furthermore, Nigerians should be reoriented in some way so that they may modify the way they think about buying products made locally.

References


(2015). Impact of non-oil sector on economic growth of Nigeria. Ilorin Journal of

