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Impact of Non-Oil Exports on Economic Growth in Nigeria

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Abstract

The study examined the impact of non-oil exports on economic growth in Nigeria covering the period 1986-2016. The ex-post facto research design was employed. The study estimated a logarithmic multiple regression model using the ordinary least squares (OLS) method. Before model estimation was carried out, the augmented Dickey-Fuller (ADF) unit root test and the Johansen-Juselius cointegration test were first conducted. Findings from the unit root test revealed that time series variables are integrated of order one; indicating that the time series variables are non-stationary at level but became stationary after first differencing. The results of the cointegration test showed that a long-run equilibrium relationship exists between the time series variables. Findings from the estimated regression model showed that the components of non-oil exports considered (i.e., agricultural exports, solid minerals exports and tourism exports) had positive and significant impact on economic growth. Based on these findings, it was recommended that Nigeria's export development strategy should be re-focused and strengthened to address the supply capacity constraints in the various non-oil export components; and that Nigeria's overall competitiveness and sustainable development requires diversification away from a narrow range of products and markets, and should intensify its commitment to trade-enhancing reforms that stimulate trade in value added exports in the various non-oil export components.

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INTRODUCTION

The importance of exports particularly the non-oil exports to a nation's diversification and economic growth cannot be over-emphasized. Non-oil exports are catalyst necessary for the overall development of an economy. A well develop non-oil export sector will provide employment opportunity for the people with the attendant reduction in social costs of unemployment. Earnings from non-oil exports can help reduce the strains on the balance of payment position and even improve it. A rewarding non-oil exports drive can turn a hitherto undeveloped economy into a prosperous economy. Furthermore, non-oil exports help in increasing the level of aggregate economic activities through its multipliers effects on the level of national income. Income earned through exporting of non-oil produce can help in increasing the level of aggregate demand within the economy (Usman & Salami, 2008; Abou-Stait, 2005).

The non-oil sector comprises those groups of economic activities which are outside the petroleum and gas industry or those not directly linked to them. It consists of sectors such as manufacturing, agriculture, telecommunication, solid minerals, finance, tourism, real estate, construction and health sectors. Non-oil produce like the agricultural produce (e.g., groundnuts, palm kernel, palm oil, cocoa, rubber, cotton, coffee, beans, hides, skin and cattle) dominated Nigeria's export trade in the1960s (Uniamikogbo, 2012).

The discovery of crude oil in commercial quantity in Nigeria since the 1970s shifted the attention from non-oil exports to a "petroleum mono-cultural economy". While petroleum exports kept growing, non-oil exports have been declining. This has resulted to the dominance of oil exports over non-oil exports. Thus, since the 1970s has been a mono-cultural economy relying heavily on oil as its major income earner. The implication is that the dynamics of the economy is at the whims and caprices of the price of oil, which for the most part, has been volatile (Enoma & Mustafa, 2011).

The major fallout of this fragile structure of the Nigerian economy is a situation where the economy has been growing without creating jobs and reducing poverty. The on-hand explanation to this economic paradox is that the oil sector that produces about 90% of exports earnings is in the hands of less than one percent of the Nigerian population dominated by expatriates and members of the political class who control production and the proceeds respectively. Worse still, the sector is disconnected from other tiers and sectors of the economy and thus offers little or no linkage and multiplier effect to the economy as a whole (Onodugo, 2013).

The adverse consequences of over dependency on oil trade heightened the need and call to diversify Nigerian economy away from oil towards the direction of non-oil export trade. Proponents of this increased proportion of non-oil exports argue that the non-oil trade has great potentials to propel Nigerian economy to the desired growth path and economic development. For instance, Onwualu (2012) maintains that the value chain approach to agriculture has the potentials to open up the economy and generate various activities which are capable of creating jobs and enhancing industrialization and thus makes the non-oil sub-sector to hold the aces for future sustainable economic growth of Nigeria.

Successive Nigerian governments on its part have shown efforts over the years to grow the non-oil export trade by establishing supportive policies. Some of these policies with varying degrees of successes include but not restricted to: protectionism policy in the mode of import substitution policy of industrialization in the 1960s; trade liberalization policy (this took the form of Structural Adjustment Programme of the mid 1980s); and export promotion policy of 1990s which was executed through intensified policy support to Small and Medium Enterprises (SMEs) to enhance productivity and subsequently, export of local products (Uniamikogbo, 2012; Enoma and Mustafa, 2011).

Despite government's efforts to diversify the Nigerian economy away from over reliance on oil, the economy still sneeze at the slightest fluctuation in international oil price. The questions that emanate from the foregoing are: (i) What is the contribution of the agricultural exports to economic growth in Nigeria? (ii) What is the relationship between the solid minerals exports and economic growth in Nigeria? What is the impact of tourism exports on economic growth in Nigeria? The main objective of this study is to examine the impact of non-oil exports on economic growth in Nigeria.

The rest of this paper is structured as follows. Section 2 is the literature review while Section 3 presents the methodology. Section 4 consists of results and discussion, and Section 5 comprises of conclusion and recommendations.

LITERATURE REVIEW

This section consists of the following subsections: conceptual review, empirical review, and theoretical framework.

Conceptual Review

Exports are the goods and services produced in one country and sold to earn foreign exchange, which can be used to purchase goods and services from another country. The exchange of locally produced goods and services to other nation is taken to mean export trade (Olaitan, 2005). Non-oil exports entail exports of goods and services outside oil and gas products. The non-oil sector comprises those groups of economic activities which are outside the petroleum and gas industry or those not directly linked to them. It consists of sectors such as manufacturing, agriculture, telecommunication, service, finance, tourism, real estate, construction and health sectors (Daisi, 2001).

In Nigeria, products such as groundnuts, palm kernel, palm oil, cocoa, rubber, cotton, coffee, beans, hides, skin and cattle dominate agricultural export trade. In other words, the export of primary products, particularly agricultural produce, accounts for a large proportion of Nigeria's non-oil export earnings. The range of traded non-oil merchandise is not only narrow but is made up of goods that are highly uncompetitive in the world market. Hence, Nigeria's share of the non-oil merchandise in the world market particularly manufactures, is relatively small (Uniamikogbo, 2012).

Economic growth refers to a sustained increase in a country's GDP. It is generally a phenomenon associated with an increase in the income of a nation. It is conventionally measured as the percentage rate of increase in nominal gross domestic product (GDP). Economic growth is sometimes calculated in real term, i.e., adjusted for inflation in order to net out the effect of change in prices of goods and services produced.

Empirical Review

Several of empirical studies have been conducted on the impact of non-oil exports on economic growth. Few of these studies are reviewed in this section. Erfani (2015) examined the causal relationship between macroeconomic performance and non-oil exports over the period of 1965 to 1995 for several developing countries in Asia and Latin America. The results showed the significant positive relationship between non-oil export and economic growth. The study also provides the evidence about the hypothesis that exports lead to higher output.

Vohra (2014) examined the relationship between non-oil exports and growth in India, Pakistan, the Philippines, Malaysia and Thailand from 1973 to 1993. The empirical results indicated that when a country has achieved some level of economic development, then non-oil exports have a positive and significant impact on economic growth. The study also showed the importance of liberal market policies by pursuing non-oil exports expansion strategies and by attracting foreign investments.

Subsat (2012) investigated the empirical linkages between non-oil exports and economic growth. The analysis suggested the more export oriented countries like the middle income countries grow faster than the relatively less export oriented countries. The study also showed that non-oil exports promotion does not have any significant impact on economic growth for low and high income countries.

Balaguer (2010) examined the hypothesis of export led growth from the Spanish trade liberalization process initiated for 1961 to 2000. Both the export expansion and the progressive from 'traditional' exports (manufactured and semi-manufactured exports) is considered for this purpose. It proved that the structural transformation in export composition has become a key factor for Spain's economic development along with the relationship between export and real output.

Shirazi (2009) studied the short run and long run relationship among real non-oil export, non-oil real import and economic growth on the basis of co-integration and multivariate granger causality developed by Toda and Yamamoto (1995) for the period 1960-2003. This study showed a long run relationship among non-oil imports, non-oil exports and economic growth and found unidirectional causality from export to output and did not find any significant causality between import and export.

Tang (2006) examined the relationship among non-oil exports, real gross domestic product and imports in China. Findings showed that there is no long-run relationship among non-oil exports, real gross domestic product and imports. Findings further showed that no long-run and short-term causality exists between non-oil exports and economic growth on the basis of Granger causality test.

Jordan (2007) analyzed the causality between non-oil exports and GDP of Namibia for the period 1970-2005. The study utilized the Granger causality and co-integration techniques to find out whether there is unidirectional or bi-directional causality between exports. Results revealed that non-oil exports Granger cause GDP and also suggested that the export-led growth strategy through various incentives has a positive influence on growth.

THEORETICAL FRAMEWORK

There exist several theories that explain the links between exports trade and economic growth. However three important theories are reviewed in this section. They include: vent-for-surplus theory, Heckscher and Ohlin trade theory, and the export-led growth hypothesis. The theory of vent-for-surplus was developed by Adam Smith in 1851. This theory assumed positive correlation between foreign trade and economic growth. According to this theory, there are opportunities to put to adequate use formally underdeveloped land and labour resources to produced greater output for export to foreign market rather than reallocating fully used resources as it is in the traditional theory. Besides, the idle resources would be adequately utilized with liberalization of trade and it will increase the production possibility frontiers. According to Irwin (1996) this theory was made known due to the success of the Asian newly industrialized countries in the 1980s and 1990s. this theory tend to show that a country producing within or inside its production possibility frontier (PPF) is underutilizing its resources, which will urge the country to rent or mobilize these resources for the Export purposes and thereby moving towards and along the PPF.

The Heckscher and Ohlin trade theory was developed by Heckscher and Ohlin in 1933. The theory revolves round two basic features of countries and goods. That, countries differ from each other based on the factors of production they possess and that goods produced differ from each other based on the factors required in production. Heckscher and Ohlin posited that a country would be able to produce at a lower cost (with comparative advantage) the goods whose production requires relatively large amount of the factors of production (also known as factor endowment e.g., labour, land, capital, natural resource etc.) with which the country is relatively endowed. The Heckscher and Ohlin theory of trade is also known as modern theory of external trade or neo classical theory of external trade.

Export-led growth hypothesis is a trade theory that became popular in the 1990s. It postulates that exports are essential ingredient for the enhancement and acceleration of long-run economic growth. There are two perspectives to this hypothesis; the demand and the supply side: The demand side perspective argued that demand growth sustainability cannot be maintained in a domestic market that is small, given the fact that economic impulse based on the expansion of domestic demand is bound to be exhausted quickly. On the contrary, export market cannot be exhausted and do not involve growth restriction on the demand side. From the supply side export-led growth hypothesis, the expansion of exports could promote and enhance economic growth through a rise in the total factor productivity (TFP). This begins with the fact that an expansion in export might enhance and encourage specialization in sectors that have comparative advantage in the country and it will lead to reallocation of resources from a relatively inefficient non-trade sector to the more productive export sector (Silverstors & Herzer, 2005).This study therefore adoptsExport-led growth hypothesisas its theoretical framework.

METHODOLOGY

This study utilizes *ex-post facto* research design which uses secondary data to establish the relationship between the dependent variable and independent variables. The population of the study consist of all the measures of non-oil exports. Using the judgemental (purposive) sampling technique, agricultural exports (AGX), solid minerals exports (SMX) and tourism exports (TRX) were selected as variables that represent non-oil exports. The gross domestic product (GDP) was used as proxy for economic growth. The study covered the period 1986 to 2016, which is a total of 31 years.

The data for this study were collected from the Central Bank of Nigeria (CBN) statistical bulletin and National Bureau of Statistics (NBS) publication. Since the data are time series in nature, they were tested for stationarity using the Augmented Dickey-Fuller (ADF) test method to check whether the time series variables have unit root or not. A time series with a unit root is said to be non-stationary. The reason for the stationarity test is to avoid the problem of spurious regression that occurs when non-stationary time series variables are used for regression analysis (Dickey & Fuller, 1981). The Johansen (1989) cointegration test method was used to ascertain if a long-run (meaningful) relationship exists between the dependent variable and sets of independent variables in the specified regression model of study. The ordinary least squares (OLS) technique is used to estimate the specified regression model for the study.

To examine the impact of non-oil exports on economic growth in Nigeria, study adopted a multiple logarithmic regression model. The multiple logarithmic regression model permits us to examine the rate (in percentage) at which each of the components of non-oil exports under consideration impact on GDP growth:

$$LogGDP_t = \beta_0 + \beta_1 LogAGX_t + \beta_2 LogSMX_t + \beta_2 LogTRX_t + \varepsilon_t \qquad (1)$$

Where GDP is gross domestic product, AGX is agricultural exports, SMX is solid minerals exports, TRX is tourism exports, Log is natural logarithm,β_0 is constant term, β_1,β_2,$\beta_3$are the slope parameters, ε is the error term, and t is time. In line with Export-led growth hypothesis, AGX, SMX and TRX are expected to have positive relationship with GDP. These a priori expectations are mathematically expressed as follows:

$$\beta_1, \beta_2, \beta_3 > 0$$

RESULTS AND DISCUSSION

This section presents the empirical results of the study, ranging from stationarity test results, cointegration test results to regression results.

Table 1: Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variables	ADF Statistics		Remark
	Level	First Difference	
GDP	-1.520219	-4.371324**	I(1)
AGX	-1.563317	-4.705557**	I(1)
SMX	-0.006488	-8.245387**	I(1)
TRX	-3.851239**	-	I(0)

Note: *Reject the hypothesis of existence of unit root at 5% significance level. Lags are selected based on Schwarz Information Criteria (SIC).

Source: Computed using EViews 9 Software Package.

The ADF unit root test results as shown in table 1 indicate that GDP, AGX and SMX were non-stationary at level while TRX was stationary at level. However after first differencing, GDP, AGX and SMX became stationary. This implies that the order of integration of GDP, AGX and SMX is one while that of TRX is zero.

Table 2: Cointegration Rank Test (Trace) for all the Variables

Hypothesized No. of Cointegrated Equation(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	Probability Value**
None *	0.714371	55.97299	47.85613	0.0072
At most 1	0.416773	24.64646	29.79707	0.1745
At most 2	0.303496	11.16700	15.49471	0.2015
At most 3	0.081486	2.124942	3.841466	0.1449

Notes: Superscript *denotes rejection of the null hypothesis of no cointegration at the 5% level of significance, while ** indicates MacKinnon-Haug-Michelis (1999) p-values.
Trace test indicates 1 cointegrating equation(s) at 5% level of significance.
Source: Computed using EViews 9 Software Package.

Table 3: Cointegration Rank Test (Maximum Eigenvalue) for all the Variables

Hypothesized No. of Cointegrated Equation(s)	Eigenvalue	Maximum Eigen Statistic	5 Percent Critical Value	Probability Value**
None *	0.714371	31.32653	27.58434	0.0157
At most 1	0.416773	13.47947	21.13162	0.4091
At most 2	0.303496	9.042054	14.26460	0.2827
At most 3	0.081486	2.124942	3.841466	0.1449

Notes: Superscript *denotes rejection of the null hypothesis of no cointegration at the 5% level of significance, while ** indicates MacKinnon-Haug-Michelis (1999) p-values.
Maximum Eigenvalue test indicates 1 cointegrating equation(s) at 5% level of significance.
Source: Computed using EViews 9 Software Package.

From tables 2 and 3, it is observed that both the trace test and maximum Eigenvalue statistics indicate 1 cointegrating equation(s) at the 5% level of significance. Based on the these evidence, we can safely reject the null hypothesis of no cointegrating vectors and conveniently accept the alternative hypothesis of the presence of cointegrating vectors among all the variables that entered into the specified model of study. This implies that a long-run equilibrium relationship exists among the variables that have entered into the specified model of study.

Table 4: Regression Results
Dependent Variable:$LogGDP$

Regressors	Coefficient	Standard Error	t-Statistic	Probability
Intercept	-28.82084	2.106120	-13.68433	0.0000
$LogAGX$	0.035129	0.017462	2.011723	0.0095
$LogSMX$	0.630872	0.118297	5.332950	0.0000
$LogTRX$	0.273883	0.098337	2.785147	0.0038
R^2= 0.95				D.W=2.09
$\bar{R}^2$= 0.94				F-stat=160.7799 Prob. =0.000000

Source: Computed using EViews 9 Software Package.

From the regression results, it can be observed that the stated *a prior* expectations were fully satisfied. The result showed that all the components non-oil exports (agricultural exports, solid minerals exports and tourism exports) have positive relationship with the GDP. Thus, a

percentage change in agricultural exports (AGX), solid minerals exports (SMX) and tourism exports (TRX), on average, increased the value of GDP by 3.5129%, 63.0872% and 27.3883% respectively. This shows that the non-oil exports contribute positively to the Nigerian economy. The calculated value of the t-test statistic values corresponding to AGX, SMX and TRX are high (i.e., t-calculated greater than 2) with a low probability values respectively less than 0.05 (i.e., 5% level of significance). The implication is that the impact of agricultural exports (AGX), solid minerals exports (SMX) and tourism exports (TRX) on GDP is statistically significant at 5% level of significance.

The coefficient of determination (R^2) shows that about 95% of the variation in GDP was explained by the estimated model. This implies that the estimated model has a good fit. The adjusted coefficient of determination (R^2) also shows that the estimated model has a good fit (adjusted R^2 =94%).

The high value of the F-statistic of 160.7799 with probability value of 0.000000 indicates that the parameters of the estimated model are jointly or simultaneously statistically significant. This implies that the estimated model is still good for policy purposes, prediction and forecasting. The value of the Durbin-Watson (d) statistic (i.e., d=2.09) suggests the absence of positive first-order autocorrelation. This implies that the estimated model is more reliable and valid.

CONCLUSION AND RECOMMENDATIONS

The study has attempted to examine the impact of non-oil exports on economic growth in Nigeria. Findings from empirical analysis showed that the components non-oil exports under consideration (i.e., agricultural exports, solid minerals exports and tourism exports) had positive and significant impact on economic growth (represented by GDP). These findings conformed to the Export-led growth theoretical expectations. Based on these findings, the following recommendations are made:

(i) Nigeria's export development strategy should be re-focused and strengthened to address the supply capacity constraints in the various non-oil export components.

(ii) Nigeria's overall competitiveness and sustainable development requires diversification away from a narrow range of products and markets, and should intensify its commitment to trade-enhancing reforms that stimulate trade in value added exports in the various non-oil export components.

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