

A Disaggregated Analysis On The Impact Of Non-Oil Export On Economic Growth In Nigeria: 1981-2016

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Abstract

The main focus of the study is to examine the extent at which non-oil has significantly impacted the growth of the Nigerian economy. In order to achieve this, annual time-series data over a period of 36 years (1981-2016) for all variables were obtained from the Central Bank of Nigeria Statistical Bulletin. The non-oil export products were disaggregated into agricultural, manufacturing and solid minerals exports in order to examine their exact impact on the Nigerian economy. The regression analysis was estimated using a simultaneous equation technique, specifically, the 2-stage least square, having found that the equation was over-identified. The results obtained affirmed that non-oil exports: agricultural products, manufacturing goods, and solid minerals have a positive and significant impact on the Nigerian economy. The study, therefore, advocates for Government relentless effort in stimulating the growth of the non-oil export products, especially the agricultural and manufacturing export components through a robust capital investment in these sectors, as the non-oil sector has the potentials to unlock and stimulate the country's economic performance and facilitate sustainable development

Keywords: Non-oil Export, Nigerian Economy, Dutch Diseases, Economic Growth, Simultaneous Equation

1.1 Introduction

Exportation is needed in every country in order to augment revenue and facilitate economic growth. Thus, exportation is imperative for economic growth. Abou-Strait (2005), emphasized that exportation is necessary to ensure the overall growth of an economy. It was likewise noted that export trade creates an avenue for the inflow of foreign capital into a country (Ricardo, 1817). This is undoubtedly a catalyst for economic growth as more earnings are being generated for the economy through a rise in the country's national income. Furthermore, it will also alleviate the problem of unemployment as increased production resulting from an increase in demand for export goods will lead to employment generation. Moreover, an export-oriented economy tends to achieve a favourable balance of trade and payments position in as much as its exports surpass its imports.

The Nigerian economy is characterized by a reasonable degree of openness; hence its performance can be enhanced through the development of the external sector of the economy. According to the Economic Complexity Index, Nigeria is the 49th World largest export economy and the 140th most complex economy, Nigeria total export attained \$47.8Billion and the total import amount to \$39.5Billion, resulting in a positive trade balance of \$8.26Billion (ECI, 2015). In the period between the 1960s and 1970s, The Nigerian economy was largely dominated by the non-oil sector, this continues till the mid 70 were when the non-oil sector which has been the major export product of the Nigeria economy contributing 80% of the export earnings and 75% of the Gross Domestic Product suffered a drastic decline as a result of crude oil discovery in Nigeria.

The non-oil export products can be broadly classified into three major groups. These include the agriculture, solid mineral and the manufacturing export products. The agricultural products include cocoa, groundnut, palm produce, rubber (natural), cotton, fish and shrimps, while the manufactured products and solid minerals include processed agricultural products, textiles, tin metal, beer, cocoa butter, plastic products, processed timber, tires, natural spring water, soap, detergent and fabricated iron rods (CBN, 2001). Thus, contrary to the expectation of an increase in non-oil exports, there was an overall decline in the export of these commodities. For instance, manufactured exports decreased from 13.10% in 1960 (CBN, 2000) to 0.66% in 1995 and remained the same in 2002 (WTO, 2003).

1.2 Statement of Research Problem

Inasmuch as the foreign exchange has been identified as a growth enhancing factor, However, before its potentials can be adequately realized, the direction and structure of export products must be carefully tailored to ensure that the economy does not depend exclusively on a particular sector for foreign exchange earnings.

Nigeria, with her diverse mineral resources, good vegetation and favourable climatic condition stand a better chance to maximize the potential of the non-oil sector in other to enhance sustainable growth and development, but the major drawback to the growth of the economy has been the country's over-reliance on the proceeds from the oil market over the years as the major source of income, unconstrained import dependence on the foreign-made product, coupled with economic challenges facing the stakeholders and other policymakers in the country.

However, the monocultural economy habit of Nigeria which could be traceable to the period of the oil boom era in the 1970s has left the country in an unpalatable state in which Nigeria became a victim of the Dutch Diseases Syndrome. Dutch diseases syndrome in a situation where the growth and development of other sectors in the economy are being traded for a particular sector, especially the oil sector. Moreover, one of the major drawbacks connected to the study of Dutch Disease is precisely the problem of determining the robustness of the tradable sector in the absence of natural resources. Akeem (2011)

Prior to when crude oil was discovered in Nigeria, the country's exports market was initially dominated by the non-oil commodities, this continues till the early 70s when there was a sharp increase in the price of crude oil in the global market which led to drastic fall in the share of non-oil export products because attention was focused on more on crude oil export. In light of this, the government adopted various strategies in order to boost the performance of the non-oil, for example, Nigerian Export Promotion Council (NEPC), Structural Adjustment Programme (SAP) in 1986, Empowerment and Development Strategy (NEEDS) of Obasanjo administration in 2004, Seven-Point Agenda of Yar'Adua administration in 2007 and Transformation Agenda of Jonathan administration in 2011 etc. Meanwhile, from every clear indication, all these policies are yet to fully actualize their objectives, because the country still depends solely on oil sector for survival. Adebile (2011).

Previous empirical studies on the nexus between non-oil export and economic growth has generated conflicting results, for example, Adesoji and Sotunbo (2013), Raheem and Busari (2013), Abogan, Akinola, and Baruwa (2014), and Mehrara (2014) in their studies found non-oil export has a negative impact on economic growth. They further asserted that the encouragement of exportation should be treated with caution especially in developing economies. In contrast to this view, Dwane (2014), Christopher, Omoniyi, and Olufunke (2014), Chukwudi and Wilfred (2015) found that non-oil export has a positive and significant effect on economic growth. This group of researchers is of the view that it is neither empirical credible or analytical defensible to assert that the encouragement of non-oil export is a potential menace to the economy. This Divergences among scholars has called for the need to investigate further the true nature of the kind relationship that exists between non-oil export and economic growth in Nigeria.

This study which is aimed at investigating the impact of non-oil export on economic growth in Nigeria is divided into five sections. Following the introduction, as discussed in section 1 is the review of the literature in section 2. The methodology employed is contained in section 3. Section 4, entails the result analysis and interpretation, while the conclusion and recommendations are presented in section 5.

2.1 Literature Reviews

There has been quite a number of studies carried out by different researchers to examine the relationship between non-oil export and economic growth. However, the outcome of the result of these studies varies

from one to the other; owing to the disparity in methodologies, time frames and as well as the variables captured in their respective models.

For instance, in a study carried out by Onyinye et al. (2015), he employed a simultaneous equation model to estimate the exact relationship between non-oil export and economic growth in Nigeria. His finding reveals that an increase in the level of per capita income resulting from efficient labour force rate implies an increase in productivity, leading to an increase and improvement of industrial output. Also, Mohammed (2014), in his study, estimated the critical parameters of the non-oil export impact on non-oil economic growth in Saudi Arabia for the period 1988-2014 by using ordinary least squares and error correction model approach. The results obtained reveal that there is a positive and significant relationship between non-oil exports and economic growth in both the short-run and long-run respectively.

Alla et al. (2015), in their empirical studies, conducted an investigation of some economics determinants of non-oil exports in Sudan over the period of 23 years, i.e., 1990 to 2012. The result obtained from the Ordinary Least Square reveals that Real Gross Domestic Product (RGDP), Exchange rate (EX) and Trade Openness (OP) were found to have a positive effect on non-oil exports in Sudan, among these determinants, Real Gross Domestic product was found to be the most important determinants of non-oil exports, these suggest that all variables are more potency on non-oil export performance in Sudan during the period of study. Moreover, choosing a sample period form 1981-2015, and adopting an Error Correction Model (ECM) techniques, Olusola, Esther and Toluwalope (2015), analyzed the relationship between non-oil export and economic in Nigeria. Findings from the regression analysis reveal that non-oil export variables have a negative and significant impact on Nigeria economy. Their result indicates that the non-oil export performance is below expectation.

In a study carried out by Nwanne (2014), which is focused on establishing the relationship between the diversification of non-oil export and economic growth in Nigeria between 1981 to 2014 using an Ordinary Least Square (OLS) approach reveals that the diversification of non-oil export has a positive impact on the growth of the Nigerian economy during the sampled period. Findings from the result further show that the policies put in in place to encourage the development of non-oil export in Nigeria during the period have not been performing well enough. This is because, from the study, it was found that only agricultural and manufacturing components of non-oil export have a positive impact on economic growth while solid minerals components of non-oil export have a negative impact on economic growth

Raheem and Busari (2013) employed the simultaneous Equation Model (SEM) and a single equation model to empirically examined the relationship between non-oil export on economic growth in Nigeria for the period from 1970 to 2010. Precisely, result from the growth equation in the SEM revealed that both non-oil export and agricultural performance has a negative relationship with economic growth, although, findings from the single equation model shows a contrary view. The result further revealed that population growth and industrial performance are good drivers for economic growth. It was also revealed from the result that the adoption of the Structural Adjustment Program (SAP) was a bad omen for the agricultural sector.

Also, Kromtit et al. (2017) carried out a time-series data from 1885 to 2016 to examined the contribution of non-oil export on economic growth in Nigeria. The Auto-Regressive Distributed Lag Bound testing approach was adopted for the regression analysis. Findings from the Bound Test conducted revealed the presence of cointegration variables, which simply indicates that a long-run relationship exists among the variables used for the study. Furthermore, a positive and significant relationship between non-oil export and economic growth was revealed from the ARDL regression result, while exchange rate had a negative impact on economic growth.

Monir and Ebrahim (2010) empirical investigation of the relationship between export and economical in the industrial sector in Iran using a panel model with fixed and random effect analysis. Findings from the result revealed that. Findings reveal that export has a positive and significant impact on the economic growth of the Iranian economy for the sampled period. Another study related to the Iranian economy was conducted by Hosseinia and Tang (2014). In a quest to re-examine the contribution of non-oil export on economic growth from the period between 1970 to 2008, They employed the multivariate cointegration and

Granger Causality approach. Findings from the result revealed that the variables are cointegrated, which simply shows the existence of a long-run relationship among variables. Also, result from the Granger Causality revealed an evidence of uni-directional causality between non-oil export and economic growth. Their study, therefore, affirms the validation of the export-led growth hypothesis for the Iranian economy.

In a quest to determine the causal relationship between non-oil trade and economic growth among 11 exporting countries, Mehrara (2014), employed a panel model technique which covered from 1970 to 2011. Findings from his result reveals that non-oil trade does not have any significant impact on economic in short-run. Also, the co-integration analysis further revealed that there is no long-run relationship between the variables. This finding agrees with earlier studies conducted by Onodugo, Ikpe, and Anowor (2013), and Abogan, Akinola, and Baruwa (2014), who also found a negative relationship between oil trade and economic growth

Saheed (2010), conducted research on the effect of exchange rate and export prices on the Nigerian non-oil/gas exports, including cocoa, rubber, solid minerals and metal, with 20-years period of observation. The ordinary least square (OLS) regression analysis was estimated to examine the impact of these variables on non-oil exports of Nigeria. Findings from the empirical results reveals that the exchange rate is the independent variable has a positive impact on the dependent variable, while the export prices on cocoa and rubber have a positive and significant impact on non-oil export and the export prices on solid mineral have a weak and insignificant impact on the dependent variable.

3.1 Research Methodologies

3.2 Model Specification

The model adopted in this study takes its root to a large extent from the model earlier developed by Salvatore, (1983). However, in order to achieve the objectives of the study, the model was modified by including the agricultural sector as part of the independent variable which was omitted in the earlier model developed by Salvatore. Salvatore model is specified as thus

$$PCG = F(FCR, NOXG, IDR, POPG) \text{-----} 3.1$$

Where:

PCG = growth of real per capital income, FCR = fixed capital formation as a percentage to GDP, NOXG = growth of the percentage of non-oil exports to GDP, IDR = industrial production as a percentage to GDP and POPG = population growth.

The model of this study adapting Salvatore (1983) though with some modification and using a simultaneous approach is specified in the following functional form:

$$RGDP = f(AX, MX, SX, EX, GFCE, EXR, GE, OPN) \text{-----} 3.2$$

$$AX = f(RGDP, GFCE, EXR, GE, TPN, AX_{-1}) \text{-----} 3.3$$

$$MX = f(RGDP, GFCE, EXR, GE, TPN, RGDP, MX_{-1}) \text{-----} 3.4$$

$$SX = f(RGDP, GFCE, EXR, GE, TPN, RGDP, SX_{-1}) \text{-----} 3.5$$

Where, RGDP= Real Gross Domestic Product, AX= Agricultural exports, MX=Manufacturing exports, SX=Solid Minerals exports, EXR=Exchange Rate, TPN=Trade Openness GFCE= Gross Fixed Capital Formation, GE= Government Expenditure.

Equation one which is a growth equation captured the impact of non-oil export on economic growth; the Gross Domestic Product is the endogenous variable which was used as a proxy for economic growth is assumed to be a function of the disaggregated non-oil export products (i.e., agricultural export, manufactured export, and solid minerals exports). Government expenditure, exchange rate, gross fixed capital formation, and trade openness were also introducing into the model.

The second, third and fourth equation of the system captures the performance of the non-oil export in Nigeria, and it is sub-divided into three: agricultural export, manufacturing export, and solid minerals exports. It is opined that the performance would be determined by gross fixed capital formation, Government expenditure, exchange rate, trade openness and the lagged value of the dependent variable —

the inclusion of the lagged variables to account for partial adjustment process within the economy. It is anticipated that there should be a positive association between the endogenous and exogenous variables. Each of the equation (i.e. 3.2,3.3,3.4, and 3.5) can be specifically expressed in an explicit econometric (linear equation) form as:

$$RGDP_t = \beta_{10} + \beta_{11}AX_t + \beta_{12}MX_t + \beta_{13}SX_t + \gamma_{11}GFCF_t + \gamma_{12}EXR_t + \gamma_{13}TPN + \gamma_{14}GE_t + U_{1t} \text{-----}$$

---3.6

$$AX_t = \beta_{20} + \beta_{21}GDP_t + \gamma_{21}GFCF_t + \gamma_{22}EXR_t + \gamma_{23}TPN + \gamma_{24}GE_t + \gamma_{25}AX_{t-1} + U_{2t} \text{-----}$$

3.7

$$MX_t = \beta_{30} + \beta_{31}GDP_t + \gamma_{31}GFCF_t + \gamma_{32}EXR_t + \gamma_{33}TPN + \gamma_{34}GE_t + \gamma_{35}MX_{t-1} + U_{3t} \text{-----}$$

3.8

$$SX_t = \beta_{40} + \beta_{41}GDP_t + \gamma_{41}GFCF_t + \gamma_{42}EXR_t + \gamma_{43}TPN + \gamma_{44}GE_t + \gamma_{45}SX_{t-1} + U_{4t} \text{-----}$$

3.9

β_1, β_2 and $\beta_3 > 0$

$\beta_{10}, \beta_{20}, \beta_{30}, \beta_{40}$ = Intercept, β_{11}, β_{12} and β_{13} = Coefficient of the endogenous variables, $\gamma_{11}, \gamma_{12}, \gamma_{13}, \gamma_{14}$

=Coefficient of the exogenous variables, and μ = Stochastic term or random error term (with usual properties of zero mean and)

Adopting a log-linear specification for each of the models, taking the natural logarithm of both sides of the equation and assuming linearity among the variables gives:

$$LRGDP_t = \beta_{10} + \beta_{11}LAX_t + \beta_{12}LMX_t + \beta_{13}LSX_t + \gamma_{11}LGFCF_t + \gamma_{12}LEXR_t + \gamma_{13}TPN + \gamma_{14}LGE_t + U_{1t} \text{-----}$$

3.10

$$LAX_t = \beta_{20} + \beta_{21}LGDP_t + \gamma_{21}LGFCF_t + \gamma_{22}LEXR_t + \gamma_{23}TPN + \gamma_{24}LGE_t + \gamma_{25}LAX_{t-1} + U_{2t} \text{-----}$$

3.11

$$LMX_t = \beta_{30} + \beta_{31}LGDP_t + \gamma_{31}LGFCF_t + \gamma_{32}LEXR_t + \gamma_{33}TPN + \gamma_{34}LGE_t + \gamma_{35}LMX_{t-1} + U_{3t} \text{-----}$$

3.12

$$LSX_t = \beta_{40} + \beta_{41}LGDP_t + \gamma_{41}LGFCF_t + \gamma_{42}LEXR_t + \gamma_{43}TPN + \gamma_{44}LGE_t + \gamma_{45}LSX_{t-1} + U_{4t} \text{-----}$$

3.13

Note that L= Natural Log

The use of logarithms in this model rather than the raw data in the levels can be justified on the ground of both statistical and economic theories. Given that this dispersion of time series increases with the level of the series, it follows that the standard deviation of the series is proportional to its level, also data expressed in terms of logarithms are pruned and definite.

In other to check whether a simultaneous equation is under, over or exactly identified. It is important to check for the order and rank condition respectively. According to Koutsoyiannis (2008), the order condition is necessary but not sufficient condition for identification. Therefore, they suggested both a necessary and sufficient condition for identification. The order of condition may be stated as follows:

For an equation to be identified, the total number of variables (endogenous and exogenous) excluded from it must be equal to or greater than the number of endogenous variables in the model less one. In other words, a model M simultaneous equation, in order for an equation to be identified, the number of predetermined variables excluded from the equation must not be less than the number of endogenous variables included in that equation less than 1.i.e $(K-M) \geq (G-1)$

Where:

G= total number of equations (endogenous variables)

K=number of total variables in the model (endogenous and predetermined variables) M=number of variables, endogenous and exogenous, included in a particular equation Therefore for the first equation, we have:

G= 4, K=11, M=7

Order condition: $(K-M) \geq (G-1)$

$(11-7) > (4-1)$

For the second, third and fourth equation (since they have the same number of M) we have,

$$G=4, K=11, M=6 \quad (11-6) >$$

(4-1)

The result shows that the order condition is satisfied.

The order condition of identification is necessary for a relationship to be identified, but it is not sufficient, that is it may be fulfilled in any particular equation, and yet the relation may not be identified. Therefore a need for a Rank condition arises.

Rank Condition for Identification

The Rank condition states that “in a system of M equations any particular equation is identified if and only if it is possible to construct at least one non-zero determinant of order (G-1) from the coefficients of the variables excluded from that particular equation but contained in the other equations of the model. The table is derived based on the equations given by our model above.

Thus equation 13, 14, 15 and 16 can be obtained as thus.

$$LRGDP_t - \beta_{10} - \beta_{11}LAX_t - \beta_{12}LMX_t - \beta_{13}LSX_t - \gamma_{11}LGFCF_t - \gamma_{12}LEXR_t - \gamma_{13}TPN - \gamma_{14}LGE_t = U_{1t} \text{-----}$$

-----3.14

$$LAX_t - \beta_{20} - \beta_{21}LRGDP_t - \gamma_{21}LGFCF_t - \gamma_{22}LEXR_t - \gamma_{23}TPN - \gamma_{24}LGE_t - \gamma_{25}AX_{t-1} = U_{2t} \text{-----}$$

----- 3.15

$$LMX_t - \beta_{30} - \beta_{31}LRGDP_t - \gamma_{31}LGFCF_t - \gamma_{32}LEXR_t - \gamma_{33}TPN - \gamma_{34}LGE_t - \gamma_{35}MX_{t-1} = U_{3t} \text{-----}$$

----- 3.16

$$LSX_t - \beta_{40} - \beta_{41}LRGDP_t - \gamma_{41}LGFCF_t - \gamma_{42}LEXR_t - \gamma_{43}TPN - \gamma_{44}LGE_t - \gamma_{45}SX_{t-1} = U_{4t} \text{-----}$$

----- 3.17

Table 1

Order Condition

Equation no	Coefficient of Variables											
	1	RGDP	AX	MX	SX	GFCF	EXR	TPN	LGE	AX-1	MX-1	SX-1
13	-β ₁₀	1	-β ₁₁	-β ₁₂	-β ₁₃	γ ₁₁	γ ₁₂	-γ ₁₃	-γ ₁₄	0	0	0
14	-β ₂₀	-β ₂₁	1	0	0	-γ ₂₁	-γ ₂₂	-γ ₂₃	-γ ₂₄	-γ ₂₅	0	0
15	-β ₃₀	-β ₃₁	0	1	0	-γ ₃₁	-γ ₃₂	-γ ₃₃	-γ ₃₄	0	-γ ₃₅	0
16	-β ₄₀	-β ₄₁	0	0	1	-γ ₄₁	-γ ₄₂	-γ ₄₃	γ ₄₄	0	0	-γ ₄₅

Table 2

Rank Condition

Equation no	Excluded Variables (K-M)	Total number of equations -1 (G-1)	Identification
13	4	3	Over identified
14	5	3	Over identified
15	5	3	Over identified
16	5	3	Over identified

The Rank condition tells us whether the equation under consideration is identified, or not, whereas the order condition tells us if it is exactly identified or over-identified. Results are given by the order and rank test on the table above; it can be observed that our model is an over-identified model and therefore justifies the use of the 2 stage least squares method (Koutsoyiannis, 2008)

3.3 Data Sources

The research will rely on secondary sources for data collection. Secondary time series data from 1981-2016 on Gross Domestic Product, agricultural export, manufactured goods export, and solid mineral export were collected from the Central Bank of Nigeria Statistical Bulletin database.

3.4 Analytical Technique

To stem the problem of spurious regression, it is important that the time-series properties of the data set employed in the estimation of the equation are ascertained. Thus, the estimation procedure adopted in this study is in the following sequences.

The time series econometric procedures will be used in order to examine the impacts of non-oil exports on economic growth. The first step is to test the stationarity of the series or their order of integration, as the series needs to be integrated in the same order. If the data indicate different integration level for different variables in the model, then we proceed to employ the 2 stages least squares (2SLS) which was developed by Theil and independently by Basman. The 2 stage least square is suitable for estimating equations that are over-identified (Koutsoyiannis 2008). One main advantage of the 2 stage least square is that it yields consistent estimates under conditions in which the classical least squares method fails (i.e., in over identified relations). Thus the 2 stage least square (2 SLS) is an extension of the indirect least square (ILS) and instrumental variable (IV) method. Lastly, several diagnostic tests – which are tests of normality, autocorrelation, heteroscedasticity in the error term and the stability of the model would be conducted to examine the validity and reliability of these models

4.1 Analysis of Result

4.2 Test for Stationarity

The stationary properties of all variables were examined to ascertain their respective orders of integration before applying the co-integration test. The rationale behind the unit roots test is to avoid spurious results due to the presence of an I(2) series. The Augmented Dickey-Fuller (ADF) test was applied to each variable with the results presented in Table 3

Decision rule:

If $t^* > \text{ADF critical value}$, \implies do not reject null hypothesis, i.e., unit root exists.

If $t^* < \text{ADF critical value}$, \implies reject null hypothesis, i.e., unit root does not exist.

Table 3

The result of Unit Root Test for Stationarity (Augmented Dickey-Fuller)

S/N	Variable	ADF Statistic	Critical value (5%)	Order of Integration	Remarks
1	RGDP	-3.229356	-2.951125	1(1)	Stationary
2	AX	-5.721808	-2.951125	1(1)	Stationary
3	MX	-5.091070	-2.951125	1(1)	Stationary
4	SX	-3.612192	-2.951125	1(1)	Stationary
5	EXR	-4.969628	-2.951125	1(1)	Stationary
6	GFCF	-5.866898	-2.951125	1(1)	Stationary
7	GE	-7.099131	-2.951125	1(1)	Stationary
8	TRO	-6.398445	-2.951125	1(1)	Stationary

Source: Author's computation, using Eviews 9

The result in table 4.1 above shows that the variables were all stationary at 5% level of significance

(i.e., the value t_α is lesser than the critical values). In other words, the tests were unable to reject the null hypothesis for all the variables at 5% level of significance. Thus, the study can infer that all the variables are stationary after taking their first difference.

Table 4

Summary of Two-Stage Least Square Regression Result

Dependent Variable: RGDP Method: Two-Stage Least Square
 Sample:1981-2016
 Instrument specification: LGFCF LEXR LGEX LTRO LAX-1 LMX-1 LSX-1

Variable	Coefficient	Std Error	t-stat	prob
LAX	0.418589	0.043776	9.562029	0.0000
LMX	0.181983	0.043425	4.190747	0.0003
LSX	0.101804	0.028168	3.614161	0.0012
LGFCF	0.0011118	0.005781	0.193350	0.8481
LEXR	-0.023022	0.013072	-1.761127	0.0891
LGEX	0.075777	0.024704	3.067392	0.0048
LTRO	0.012635	0.016883	0.748384	0.4605
C	4.242826	0.268367	15.81354	0.0000

R-squared=0.858031, Adjusted=R-squared=0.847539, F-statistic =2027.796 Prob(F-statistic) =0.0000, Durbin-Watson-stat=1.950495 Instrumental rank=8 J-statistic=5.34

Source: Researcher's computation, Using Eviews 9 output

4.3 Interpretation of Regression Result

The two-stage regression result shows that coefficient of agricultural export (LAX) to be 0.418589 which indicates that agricultural exports have a positive effect on GDP. This is consistent with apriori expectation. It implies that a 1% increase in agricultural export will lead to about 0.42 increase in GDP. The t value and p-value which stand at 5.955466 and 0.0000 shows that agricultural exports are significant in affecting GDP at 5% level of significance. Moreover, manufacturing exports have a positive effect on Gross Domestic Product, the coefficient 0.181983 means that, a percentage increase in manufacturing exports will increase Gross Domestic Product by about 0.18. The t value and p-value which stand at 4.190747 and 0.0003 shows that manufacturing export significantly affects Gross Domestic Product at 5% level of significance. The coefficient of solid mineral exports also has a positive and significant effect on Gross Domestic Product, this result also complies to the a-priori expectation, thus, signifies that the Gross Domestic Product will increase with approximately

0.10 if there is a percentage increase in solid mineral export. The t value and p-value which stands at 3.614161 and 0.0012 shows that solid mineral exports significantly affect GDP at 5% level of significance. Based on this result we, therefore, reject the null hypothesis (H03) of this study which says solid minerals exports do not contribute significantly to economic growth in Nigeria and accept the alternative hypothesis (H03) which says solid minerals exports contribute significantly to economic growth in Nigeria.

The value of the coefficient of exchange rate stands at -0.023022. It indicates a negative but not significant effect on Gross Domestic Product, which simply means that a percentage increase in the exchange rate will lead to a -0.023 decrease in Gross Domestic Product. Gross fixed capital formation, and

Government expenditure also has a positive effect on Gross Domestic Product, this is shown by the coefficient 0.001118 and 0.075777, indicating an increase of about 0.001 and 0.076 in GDP if there is a percentage increase in the gross fixed capital formation and Government expenditure respective. At a significant level, Gross fixed capital formation does not have a significant effect on GDP because the p-value 0.8481 is greater than 0.05 while Government expenditure has a significant effect on Gross Domestic Product. Trade openness, which is the ratio of a country's to total trade (i.e., to GDP is also seen to have a positive effect on Gross Domestic Product. The result implies that a percentage increase in trade openness will lead to an increase in Gross Domestic Product with about 0.0126. The result also shows the intercept (C) to be 4. 243836. This means GDP will have a value of approximately 4.24 when it is not affected by any of the variables.

The coefficient of determination, denoted by R^2 is an overall measure of goodness of fit of the estimated regression line, that is, it gives the proportion or percentage of the total variations in the dependent variable that is explained by the independent variable. Since the R^2 stands 0.858031, it simply means that about 85% variation in GDP is largely influenced by agricultural exports, manufacturing exports, solid minerals export, exchange rate, gross fixed capital formation, Government expenditure, and trade openness. While the remaining 15% is caused by variables not captured in the model, thus, the variables explain the model properly. Durbin Watson (DW) is used to measure the presence of auto-correlation. If the result is ≈ 2 , it implies the absence of auto-correlation. However, the result revealed that the model is free from autocorrelation since the DW Statistic observed in the model is 1.950495 which is approximately 2. This means that the model is reliable in making inferences and explaining the economic growth in Nigeria. The F-statistic which measures the joint statistical influence of the explanatory variable in explaining the dependent variable stood at 202.796 with a p-value of 0.0000000. This implies that the explanatory variables are important determinants of GDP. It also indicates the influence of the explanatory variables to be statistically significant at 5% level of significance. J statistic which was 5.34, having a probability value at infinity (0.0000) was also significant. The instrument rank showed the number of variables including the intercept used in the model. Therefore, on a general note, it can be accepted that our result is statistically significant.

5.1 Conclusion and Recommendations

This study examines the impact of non-oil export on the economic growth of Nigeria with the view of diversifying the economy for an all-inclusive growth and also stimulating the performance of the non-oil export. This was done by using data extending over a period between 1981 to 2016 and also employing a 2 stage least square method. The estimation of the model takes into consideration the issue of spurious correlation (arising from the unit root in macro variables) as well as the problem of simultaneity bias. This is expected to give a better representation of the variations in the economy over time, and therefore give a true picture of the relationship that exists between non-oil export determinant and economic growth in Nigeria.

The result reveals that there exists a positive relationship between the disaggregated non-oil export (agricultural, manufacturing and solid minerals exports) and economic growth. It was noted that non-oil revenue offers a greater viable alternative to oil revenue in relation to economic growth in Nigeria.

This study revealed the need for viable agricultural and manufacturing revenue alternative to oil revenue, which is a dominant export product in Nigeria. It was noted that non-oil revenue offers a greater viable alternative to oil revenue in relation to economic growth and development in Nigeria. Therefore, for Nigeria to prosper in economic growth, and to manifest the desired economic transformation, the non-oil sector should be given adequate attention that will stimulate its performance. The study, therefore, recommends that the Nigeria Government should adequately invest in the non-oil sector so as to be able to strike a balance, between the oil and non-oil sector and other sectors of the economy.

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