Oil Revenue and Real Sector Performance in the Nigerian Economy

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Abstract

The real sector of the economy especially agriculture and manufacturing, have suffered serious neglect due to growing influence of oil sector performance. This paper analyzed the relationship between oil revenue and real sector performance in Nigeria between 1980 and 2021. Agricultural and manufacturing sectors' outputs were used as proxy of real sector performance, while oil revenue is the independent variable with, exchange rate and inflation as control variables. Data were collected from CBN publications. The ADF unit roots results showed that the data in agriculture and manufacturing sectors model were integrated at different order (i.e., I(0) and I(1)), but none was I(2) and the variables were co-integrated using the Bound Testing Co-integration techniques. Autoregressive Distributed Lag (ARDL) was used to estimate the agricultural and manufacturing sector models. The outcome revealed that the relationship between oil revenue and agriculture sector output is positive and statistically not significant in the long-run. There is also a positive connection between oil revenue and manufacturing sector performance in terms of output. The coefficients of the current and lag periods of the dependent variables were seen in the dynamic model to be insignificant, suggesting that oil revenue have not affected manufacturing sector in the immediate period. The study recommends among others, that, the government should pay serious notice to the agricultural and manufacturing sectors as they constitute the real sectors of the Nigerian economy, by increasing the level of investments and opening them up to both domestic and foreign investors in addressing the macroeconomic objectives of the nation.

Keywords: agricultural sector, manufacturing sector, real sector performance, oil revenue.

I .0 Introduction

Oil revenue is the income that is gotten from the sale of crude oil. Crude oil revenue has served as a major source of income to the Nigerian government from the time when crude oil was discovered and explored in large quantity. Before the discovery of crude oil in Nigeria, the economy depended on the agricultural sector for its major income. Nigeria exported crops like cocoa, palm products, cotton, groundnut, timber and rubber and these exports were the major source of foreign exchange. When the agricultural sector was booming, the oil sector was weak in generating funds (Odularu, 2008).

When crude oil was discovered in large quantity in 1959 at Oloibiri in the present Bayelsa State, the petroleum industry started booming and it becomes the engine

that moves the Nigerian economy till date (Nweze & Edame, 2016). There was oil boom in the 1970's and as a result of the boom Nigeria abandoned the agricultural sector and manufacturing sector and focused its attention on the oil sector (Odularu, 2008). Nigeria is one of the OPEC member countries and ranked second in Africa as the largest oil producing economy. The country's oil reserve is estimated to be 35 billion barrels, it's crude oil production averages 2.2 million barrels per day, Nigeria provides about 10% of U.S. overall oil import as and is ranked 5th as U.S. largest source of imported oil (Odularu, 2008). Nigeria has experienced a decrease in oil production from the year 2006. This decrease has affected the country's income and other sectors of the economy (Nweze & Edame, 2016). It has also been observed that oil prices has been volatile in recent years and this volatility has affected the amount of revenue gotten from crude oil and this in turn affects the economy, because of its over dependence on crude oil (Akinlo, 2012).

On the other hand, the real sector of the Nigerian economy has been undergoing transformation in order for it to emerge as an industrial workhorse. The real sector is made up of the agricultural sector, the manufacturing sector, building and construction, wholesale and retail and the service sectors. It is argued that for a developing economy to be developed, it has to invest in its real sector and make it the engine of the economy (CBN, 2013).

The negative consequences of over dependence on oil revenue in Nigeria have crumbled the economy instead of revitalizing the economy (Emmanuel, Joseph & Noko, 2016). However, heavy dependence on the export of natural resources has been shown to negatively affect a country's economic, social and political development. The major consequences of over dependence on oil revenue for the country's survival includes among others; neglecting of the agricultural and industrial sectors of the economy, leading to an impoverishment of the rural population (Emmanuel, Joseph & Noko, 2016).

Overlooking by the government to the agricultural sector which was the mainstay of the economy before the discovery of oil was the major problem hindering the country's economic progress. Although, government has made some effort at combating the syndrome of over dependence on oil revenue in Nigeria, but the effort was not significant enough, giving their inconsistency in policy and lack of implementation of agricultural and industrial policy in the country (Emmanuel, Joseph & Noko, 2016).

It is surprising that a nation that has all of the above proceeds and stock of oil is facing hardship, poverty and poor development in other sectors (Maduki & Beya, 2009). It is in the light of this that this research investigated the effect of oil revenue on real sector performance in Nigeria. The rest of the paper is structured as literature review, methodology, results and discussions, conclusion and recommendations.

2 Literature Review

This section considers some literatures, stemming from empirical literatures to theoretical and evaluation of literature review.

2.1 Empirical Literature Review

Appah (2022) investigated the relationship between oil revenue and economic growth in Nigeria. It spanned through the period 1990 to 2019. The specific objectives are to investigate the relationship between crude oil/gas export, petroleum profit tax/royalty, domestic crude oil sales, oil licensing fees on real gross domestic product and real gross national product in Nigeria. And also, ascertain whether the exchange rate moderates the relationship between oil revenue and economic growth in Nigeria. The study employed an ex post facto research design and the secondary data used for the investigation were sourced from the Central Bank of Nigeria (CBN) statistical bulletin, Federal Inland Revenue Service Fact Book and the World Bank Development Website. Descriptive Statistics, Pearson Moment Correlation Coefficient and Ordinary Least Square Multiple Regression Statistical tools were used in the study. The results revealed that Crude oil/gas export has a significant and negative relationship with the real gross domestic product in Nigeria; Petroleum profit tax/royalty has a significant and positive relationship with real gross domestic in Nigeria; Domestic crude oil sales have an insignificant and negative relationship with real gross domestic product in Nigeria; Oil licensing fees have an insignificant and negative relationship with real gross domestic product in Nigeria.

Isiaka and Aminu (2021) examine the effect of oil revenue on unemployment in Nigeria over the period of 1970 to 2018. The study examines the direct, indirect, and distributional effects of oil revenue on unemployment using Autoregressive Distributed Lag (ARDL) and Quantile Regression (QR). The direct effect results from ARDL estimation show that oil revenue reduces unemployment only in the long run. The indirect effect results reveal that oil revenue appears to worsen unemployment. Therefore, whether oil revenue would reduce unemployment or not depends on oil price. The results are robust when using oil rents as a proxy for oil

revenue. The QR results depict that the effect of oil revenue on unemployment varies over different quantiles, exhibiting a worsening effect at the lower quantiles and reducing the effect at the upper quantiles. Given our results, it is critical for the Nigerian government to design a proper plan to manage oil revenue for growth and employment creation.

Akpokerere and Anuya (2019) studied oil revenue and behavior of selected macroeconomic indicators in Nigeria. The study adopted ex-post factor research method, while Ordinary Least Square was used to process the data gathered using E-views. The finding on this study indicates that apart from interest rate, no significant relationship exists between the two other variables in the study with oil revenue. The study recommended diversification and encouragement of more participations of non-governmental sector in economy development.

Charles, *et al* (2019) examined oil price fluctuation, oil revenue and well-being of Nigerians. The study adopted time series techniques. The findings suggested that oil price fluctuation has no significant impact on well-being, while oil revenue is observed to have a significant and positive impact on well-being. The study recommended for youth empowerment policies that could help reduce the rate of pipeline vandalization to boost crude oil production in the country.

Nwanne and Eze (2019) analyzed the effect of government oil revenue on Agricultural sector growth. The study adopted ex-post factor research design and regression analysis. The result from the study found that there is a significant relationship between government oil revenue and growth of agricultural sector in Nigeria, while budget deficit is seen to have an insignificant effect on the performance of real sector in Nigeria with a bias to agricultural sector in Nigeria. The implication of the study is that government financing budget deficit through domestic means crowd out private investment, especially the agricultural sector and thereby reducing its contributions to the growth of the economy. Temitope and Moses (2018) examined oil revenue and output growth in Nigeria. The study employed Fully Modified Ordinary Least Square (FMOLS). The study discovered that oil revenue does not have short run impact on the economic activities of Nigeria. Therefore, recommended that the government should effectively and efficiently utilize the oil fund into strategic developmental projects, so as to reduce the rate of poverty and facilitate output growth.

Nweze *et al* (2016) carried out an empirical investigation of oil revenue and economic growth in Nigeria using Error Correction Mechanism. The result showed that oil Revenue has a positive relationship with economic growth in the long run, but has a negative relationship with economic growth in the short-run. The study recommends that government should use the revenue generated from petroleum to invest in other domestic sector such as agriculture and manufacturing sector in order to expand the revenue source of the economy and also to increase revenue.

Ijirshar (2015) empirically analyzed oil revenue and industrial growth in Nigeria, using Johansen co-integration techniques. The study revealed a long-run positive influence of oil revenue growth on the industrial growth in Nigeria; also the Vector Error Correction shows that the coefficient of error correction term is insignificant though with the expected sign and low magnitude of 3.5%. The study further revealed that oil Revenue has a positive significant influence on industrial growth in the Nigerian economy in the long run.

Olumu (2015) investigated the effect of oil and agriculture on economic growth in Nigeria. This study used Vector Auto regression (VAR) method. From the study, it was observed that output responses to agriculture output exhibited positive effect on economic development through investing in the agricultural sector, even from the gains from the oil sector in as oil shock showed positive response in the agricultural sector in Nigeria.

Harold *et. al* (2014) examined oil revenue and manufacturing sector growth in Africa's oil exporting countries. They made used of both static and dynamic panel data techniques to explore the effects of oil on manufacturing sector of the countries between 1970 and 2018. The study reveals that there is a dearth of capital formation in the six countries' manufacturing sectors. It was recommended that these countries should restructure their oil sector in such a way that proceeds from oil are Longley utilized for more investment in the manufacturing sector.

Odeniyi *et. al* (2013) investigated the effect of crude oil price on Agricultural productivity in Nigeria between 1981 and 2010. They adopted Error Correction Mechanism (ECM). The result showed that the petroleum industry in Nigeria has brought unprecedented changes to the Nigeria economy. The study recommended that Agricultural production in Nigeria can be increased by diversifying the economy and shifting focus away from the export of crude oil and concentrating more on local production of agricultural produce and export of its surplus.

Ogbonna (2012) investigated the effect of petroleum income on the Nigeria economy for the period of 2000 to 2009, using the Gross Domestic Product (GDP), per capita income (PCI) and inflation (INF) as the explained variables, and oil revenue, petroleum profit and licensing fees as the explanatory variables. They relied on secondary data from CBN statistical bulletin. The result showed that oil revenue has a positive and significant relationship with GDP and PCI, but a negative and insignificant relationship with inflation. The study recommends that the effect of petroleum income on the Nigeria economy was positive for the period reviewed.

2.2 Theoretical Literature

2.2.1 Ragnar Nurkse's Balance growth Theory

The theory was propounded by Ragnar Nurkse (1961). He postulates that the governments of any under developed country need to make a huge investment to enlarge the market size of that nation, increase productivity and create an incentive to enable the private venture to invest.

Nurkse was in favor of attaining balanced growth both in Agricultural sector and industrial sector. Ragner supports inter-sectorial balance between manufacturing and Agricultural sector. It is crucial that each sector provides a market for the products of the other and in turn, supply the necessary raw materials for the growth and development of others. Ragnar was of the opinion that if the productivity level in less developed countries rises, its market size will expand and this will lead to development in the country as well. The brain box behind this theory was Adam smith, who stated that division of labour is limited by the extent of the market.

2.2.2 Rostow's Stages of Growth

This theory was propounded by Rostow in the year 1960. Rostow believed that for a country to transit from underdeveloped to developed, there must be some stages that the said country must pass through. Rostow posits that "for any country to take off, it must mobilize domestic and foreign savings in order to generate sufficient investment for economic growth''. Harrod and Domar supported this theory. In their growth model, they held that every economy saves a certain proportion of its national income, if only to replace worn out or impaired capital goods. But this theory had been criticized on the bases that not all the mechanism embodied in the theory always work out. The reason is that more saving and investment could be a necessary condition but not a sufficient condition.

In Rostow's model, he stated that an economy may need to depend on exportation of raw materials to finance the development of industrial sectors which have not yet achieved superior level of competitiveness in the early stages of take-off. The theory believed that what worked in American can as well work in the less developed countries (LDCs).

2.3 Evaluation of Literatures Reviewed

The review conducted so far considered some development theories and also exposes us to the historical survey of oil mineral and impact of oil revenue on the performance of the real sector in Nigeria. Theoretically, this study is anchored on Ragnar Nurkse balance theory, who stated that government should enhance productivity. He opined that there should be a balanced growth between Agricultural sector and Manufacturing sector. The view of other scholars on the topic under consideration was also observed. This study will fill this gap by examining Oil Revenue as a variable on the performance of the real sector (agricultural and manufacturing sector). The literatures reviewed have a scope which is less than 2020 but this study fills this gap by extending the scope to 2021.This study also employed the ARDL technique for analysis which is an advanced OLS method.

3.0 Methodology

3.1 Research Design

This research adopted quasi-experimental research design. The choice of this design is because the researcher is making use of variables that cannot be controlled in the lab.

3.2 Data justification

The data used in this study covers agricultural output and manufacturing output as dependent variables while oil revenue, inflation and exchange rate are used as explanatory variables. They were sourced from the CBN statistical bulletin various issues. The period covers from 1980-2022.

Manufacturing Sub-sector Output (MANOTP); this is the total monetary values of all goods and services produced within the manufacturing sector of the economy within a year.

Agricultural Output; this is the total monetary values of all goods and services produced in the agricultural sector of the economy within a year.

Oil Revenue (OILR): This is the total revenue derived from the exploration of oil (petroleum products). It includes the revenue derived from the export and internal usage of crude oil and crude oil by products in the country annually. It is expected to have a positive relationship with the dependent variables.

Exchange rate: This is the price of one country's currency in terms of another. For instance exchange rate of Nigerian Naira to US dollar is the rate or price at which the naira is given up for a dollar. In this research, we restricted ourselves to the exchange rate of the Naira to the US dollar. It was Krugman (1983) and Golub (1983) that developed the theoretical relationship between exchange rate and oil price (oil revenue, since revenue is price multiply by quantities) and argued that appreciation of the exchange rate of oil-exporting countries may be achieved with a rise in the price of oil and may experience exchange rate depreciation with a fall in the price of oil. Since Nigeria is an oil exporting country, exchange rate appreciation is expected to improve oil revenue and thus manufacturing and agricultural sub-sector output (real sector performance).

Inflation: Parkin and Bade defines inflation as an upward movement in the average level of prices. In this study inflation rate is expected to be negatively related to real sector performance. Domestic price rises may encourage importation of foreign consumable goods thereby bring pressure on the domestic currency.

3.3 Technique of Data Analyses

This study adopted the Error Correction Mechanism model using Autoregressive Distributive Lag (ARDL) approach. The autoregressive distributive lag technique was developed by Pesaran, Shin and Smith (2001) and it allows the inclusion of lag values of the dependent and independent variables of a model, while carrying out regression analysis. This method was used because the theorem states that when the series in a model are of different order of integration (1(0) and 1(1), but not 1(2), then the ARDL technique is the best technique for analysis. Bound test method of co integration was used to test for long run relationship among the series in the model. When long run relationship was found, it would lead to the estimation of an error correction mechanism model to examine the speed of adjustment of short-run dynamics to long-run equilibrium.

3.3.1 Model Specification.

To examine the relationship between oil revenue and real sector performance in Nigeria, this study developed two models which are the modification of Harold et.

al (2014). Their study was a cross country analysis examining the effect of oil revenue on the manufacturing sector. Their model is stated below;

MGR= GCF + PCI + OIR + EGR + EXR + Ut

Where MGR is manufacturing sector growth rate, GCF is gross capital formation. PCI is per capita income, OIR is oil revenue, EGR is electricity growth rate, EXR is exchange rate and U_t is the error term. This study modifies their model by examining the effect of oil revenue on the real sector using agricultural sector output and manufacturing sector output as dependent variables and also including inflation in the models. GCF, PCI and EGR were removed. The linear and log linear specifications of the model were tried and the specification that best explained the data in terms of R^2, t-values and minimal level of multicollinearity was analyzed.

The functional form of the models is expressed as;

$$AGOTP_t = f(OILR_t INF_t EXR_t) \quad (1)$$

$$MANOTP_t = f(OILR_t INF_t EXR_t) \quad (2)$$

The ARDL specifications of the model are stated below;

$$AGOTPt = a_0 + \sum_{t=1}^{k} \gamma\, AGOTPt - 1 + \sum_{t=1}^{k} a_1\, OILR_{t-1} + \sum_{t=1}^{k} a_2\, INF_{t-1} + \sum_{t=1}^{k} a_3\, EXR_{t-1} + ut$$

$$MNOTPt = b_0 + \sum_{t=1}^{k} \gamma\, MNOTPt - 1 + \sum_{t=1}^{k} b_1\, OILR_{t-1} + \sum_{t=1}^{k} b_2\, INF_{t-1} + \sum_{t=1}^{k} b_3\, EXR_{t-1} + ut$$

Where;

a_0 and b_0 = Constant

$a_1 - a_3$ = coefficients of the independent variables.

$b_1 - b_3$ = coefficient of the independent variables

AGOTP =Agricultural Output

OILR = Oil revenue

INF = Inflation Rate

EXR = Exchange Rate

MANOTP = Manufacturing Output

u_t= Error Term

On *a priori* ground, the researcher expects $a_1 > 0$, $a_2 < 0$, $a_3 > 0$ and $b_1 > 0$, $b_2 < 0$, $b_3 > o$, implying that an increase in oil revenue and exchange rate will bring a positive

effect on Agricultural and manufacturing output, while increase in inflationary pressure will bring a negative effect or cause a decrease in manufacturing and Agriculture output.

3.3.2 Pre-Estimation Tests

Unit Root Test

The unit root tests that were considered include the conventional unit root tests namely: Augmented Dickey-Fuller (ADF) (1979) and Phillips-Perron (PP) (1988) to test for stationarity of the variables in the model. The null hypothesis for ADF and PP is that time series variables are not stationary (i.e. has a unit root). Both of these tests are well established in literature.

ARDL Bound Test

We employed the Bound Testing co-integration techniques developed by Paseran et. al (2001) to test for the presence of long-run relationship between the variables, because the variables in our model are of different order of integration (i.e., I(0) and I(1)), but none were found to be I(2).

4. Results and Discussion

The analysis of the data in this study was done in six (6) stages. Stage 1 gives a breakdown of the ADF Unit Root Test. Thereafter, stages 2, 3 and 4 dwell on Bound (Co-integration) Test, Regression Result Analysis and diagnostic tests and stage 5 discussed the findings from the results.

4.1 Unit root Test

Table 4.1 ADF Unit Root Test Results

Variable	Calculated Values		Critical Values	Order of
	Levels	1st-Diff.	5%	Integration
LOG(AGOTP)	-0.8650	-4.8045	-2.9484	I(1)
LOG(MANOTP)	-0.7602	-4.0275	-2.9484	I(1)
LOG(OILR)	-1.2599	-6.4603	-2.9458	I(1)
INF	-2.9585	-	-2.9458	I(0)
(EXR)	-1.9985	-5.0622	-2.9458	I(1)

Source: Author's computation from E-views

Included observation n = 39
All tests were carried out at 5% level of significance.
Results from table 4.1 shows that inflation rate is stationary at level at the 5% level of significance, while output of agricultural sector, output of manufacturing sector and exchange rates were only stationary after 1st difference. In other words, the series employed in our model are mixture of I(0) and I(1) series. This necessitated the used of bound testing co-integration techniques to test for the possibility of long-run relationship among the series in both model 1 and model 2. The result of the co-integration test for model one is presented on table 4.2a, while the results for co-integration test for model two is presented on table 4.2b.

4.2 ARDL Bound Test Results

Table 4.2a ARDL Bound Test Result for Agricultural Model

Null Hypothesis: No long-run relationship exists			
	Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound	
5%	3.23	4.35	K = 3
			F-statistic= 12.03532

Source: Author's computation using E-views

Table 4.2b: ARDL Bound Test Result for Manufacturing Model

Null Hypothesis: No long-run relationships exist			
	Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound	
5%	2.45	3.63	K = 3
			F-statistic = 8.836780

Source: Author's computation using E-views

The argument of the bound testing co-integration techniques is that the null hypothesis is rejected if the F-statistics is greater than the upper bound limit I(1), otherwise we fail to reject. Results from table 4.2a and table 4.2b shows that the values for the F-statistics are greater than the upper bound limit at 5% level of significance. Thus, we fail to accept the null hypothesis and conclude that there is a co-integrating relationship among the variables in model one and model two.

4.3 Regression Result Analysis

Table4.3a Model One: Oil Revenue and Agricultural Sector Output

Panel I: Short-Run Model for AGOTP and OILR

Variable	Coefficient	t-Statistic	Prob.
DLOG(AGOTP(-1))	0.760200	8.948394	0.0000
DLOG(OILR)	-0.073339	-0.935186	0.3586
DLOG(OILR(-1))	-0.085055	-1.243002	0.2254
DLOG(OILR(-2))	0.145872	2.169668	0.0397
D(INF)	0.003127	1.908038	0.0679
D(EXR)	0.139416	2.049459	0.0510
ECM(-1)	-0.239800	-2.822704	0.0092

Panel II: Long-Run-Model for AGOTP and OILR

Variable	Coefficient	t-Statistic	Prob.
C	2.658192	3.169614	0.0040
LOG(OILR)	0.472250	1.495170	0.1474
INF	0.022372	2.069499	0.0490
(EXR)	0.581387	1.439193	0.1625

R^2 = 0.9982; Adjusted R^2 = 0.9976 F-Stats =1717.1***; DW-Stats = 2.1694

Source: Author's computation using E-views

Table4.3b Model Two: Oil Revenue and Manufacturing Sector Output

Panel I: Short-Run Model for AGOTP and OILR

Variable	Coefficient	Std. Error	Prob.
DLOG(MANOTP(-1))	0.864730	0.059303	0.0000
DLOG(OILR)	0.044854	0.063170	0.4845
DLOG(OILR(-1))	-0.141739	0.073315	0.0651
D(INF)	0.001490	0.001545	0.3444
D(EXR)	0.055991	0.082405	0.5033
D(EXR(-1))	0.014635	0.101881	0.8870
D(EXR(-2))	0.126239	0.067702	0.0745
ECM(-1)	-0.135270	0.059303	0.0317

Panel II: Long-Run-Model for AGOTP and OILR

Variable	Coefficient	Std. Error	Prob.
C	0.731935	0.186297	0.0005
LOG(OILR)	1.448662	0.175121	0.0000

INF	0.028359	0.013666	0.0489
(EXR)	-0.736071	0.285791	0.0166

R^2 = 0.9975; Adjusted R^2 = 0.9965 F-Stats =33.41***; DW-Stats = 2.0963

Source: Author's computation using E-views

Tables 4.3a and 4.3b show the relationship between output of agricultural sector and the output of the manufacturing sector in Nigeria from 1980 to 2021. The models were analyzed using the ARDL, since the variables in both models exhibit different levels of integration, I(0) and I(1) as shown in table 4.1. We provided the maximum lag length, while the optimum lags were automatically selected with the aid of Akaike Information Criteria (AIC).

4.4 Diagnostic Tests Results

Table 4.4 Diagnostic Tests for both Models

Hypothesis	**Test statistic**	**F-stats**	**Prob.**	**Remark**
Output of Agricultural Sector Model				
Residual normally distributed	Jacque Bera (JB)	2.7089	0.2581	Accepted
No Serial correlation	Breusch Godfrey (BG)	0.9551	0.3994	Accepted
Homoscedasticity	Breusch-Pagan-Godfrey	1.3459	0.2675	Accepted
No specification error	Ramsey RESET	0.1415	0.0949	Accepted
Manufacturing Sector Model				
Residual normally distributed	Jacque Bera (JB)	0.2270	0.8927	Accepted
No Serial correlation	Breusch Godfrey (BG)	0.2195	0.8046	Accepted
Homoscedasticity	Breusch-Pagan-Godfrey	1.4519	0.2203	Accepted
No specification error	Ramsey RESET	0.0198	0.8893	Accepted

Source: Researcher's Computation using E-views 9

Results for model two are in parenthesis. All tests were carried out at 5% level of significance.

We reported the values and the probability of the f-statistics in the four tests carried out to check for diagnostic results for the estimated models. We failed to rejects the

null hypothesis in the four tests carried out, which implies that the results can be relied upon.

4.5 Discussion of Findings

4.5.1 Oil Revenue and Agriculture Sector Performance

Results in table4.3a, shows that the one period lags of AGOTP are positive and statistically significant at 5%; this implies that investment in agricultural sector depends not only on external variables but on its own previous year output. That is the sector has the capacity of stimulating itself internally. However, the relationship between oil revenue and the agricultural sector output is not statistically significant in the long-term model, but the coefficient was correctly signed, part one of the table shows that the relationship of OILR and AGOTP was negative and insignificant in its current period and 1st lag period of investment, the study discovered that it takes at least two years for OILR to impact on the AGOPT since the 2nd lag was seen to be positive and significant at the 5% level. This implies that the revenue generated from oil, only have a positive and significant impact on agricultural sector output after a period of two years. An increase in oil revenue leads to increase in the performance of agricultural sector in Nigeria.

The coefficient of ECM in the model is value of -0.2398 and is statistically significant. This implies that the speed of adjustment to any disequilibrium is corrected with about 23.98%, which is a very slow speed.

Result of the model diagnostic tests is presented in table 4.4. The Jacque-Bera statistic revealed that the residuals are normally distributed. The Breusch-Godfrey (BG) statistic also prove that the error terms are not serially correlated, that is they are independently distributed.

The test of homoscedasticity proves that the distribution of the error terms have constant variance. The Ramsey RESET test statistic signifies that the model employed in the analysis was correctly specified and therefore adequately captured the true relationship between oil revenue and agricultural sector performance in Nigeria. The diagnostic analysis has revealed that the model residual terms are normally distributed, independent; and identically distributed with mean zero and constant variance. Hence, the Gauss-Markov (GM) theorem applies here and the estimates could be considered as the Best Linear unbiased and efficient (BLUE) estimators.

4.5.2 Oil Revenue and Manufacturing Sector Performance

The dynamic model in Table 4.3b shows that the results of the lag of manufacturing sector output are positive indicating that previous year's activities of the manufacturing sector have the capacity to improve the performance of the sector. It also implies that the manufacturing sector has the ability to stimulate itself to future growth path from previous years output. The results show that it will take at least one period lag before the manufacturing sector in Nigeria can stimulate its future output from previous year, since 1st lag was statistically significant at the 5% in the Short-run dynamics model.

The results shows that the coefficient of the current and lag periods of the independent variables in the dynamic model are insignificant implying that oil revenue have not affected manufacturing sector in the immediate period. The ECM is very low (-0.1353), this implies that it's only about 13.52% of the disequilibrium or external shocks from oil price fluctuation in the short term that can be corrected in the long term. The long term coefficients tend to behave differently since the sign of parameters were correctly singed and highly statistically significant. This means that OILR is a long term determinant of MANTOP in Nigeria. The findings are in line with the apriori expectations for this variable and in conformity with the finding of Adamu Saidu (2004) who studied the impact of oil revenue on manufacturing sector performance in Nigeria from 1980 to 2001. And also, the finding of Parkhish (2007) who found positive and significant relationship between oil revenue and manufacturing sector performance in the Gulf countries.

5.0 Conclusion and Recommendations

From the findings of the study, the relationship between oil revenue and agricultural sector output is not statistically significant. This justifies the fact that the huge revenue accruing from the oil sector has not been felt by other sectors especially the agricultural sector in terms of investments. There is no backward linkage existing between the oil sector and the agricultural sector, which necessitated the insignificant relationship between the two sectors. The positive and insignificant relationship between oil revenue and the manufacturing sector performance can equally be attributed to the poor linkage between the two industries such that expansion in the Nigeria oil and gas sector is not accentuated with commensurate expansion in the manufacturing sector in Nigeria.

It is therefore evident that, in achieving a sustainable growth and development of the Nigerian economy, emphasis on diversification away from oil must be

sustained. This is because for the past three years, oil price in the international market has been fluctuating and this has affected foreign exchange in the domestic economy. This shows a great need for investment and attention to other sectors of the Nigerian economy in ensuring overall inclusive growth and development.

Based on the findings of the study, the following recommendations were made:

i) Government should diversify the domestic economy as a strategy to increase the supply of foreign currency through stimulating export earnings and reduce the demand for imported goods.
ii) The government should pay serious attention to the agricultural and manufacturing sector as they constitute the real sectors of the Nigerian economy, by increasing the level of investments into the two sectors of the economy.

The study suggests that further studies in this regard should compare the effects of agricultural sector output, manufacturing sector output, oil revenue, electricity output, telecommunication and transport (as a single equation) on the economic growth of Nigeria. This is to really ascertain the areas of interest and priority for investment by the government in driving inclusive, sustainable growth and development.

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