



ABSTRACT

Data available indicates that Nigeria has received sizable revenue and resources from oil rent with no significant economic development. Hence, this paper empirically examined the impact of oil rent on economic development in Nigeria. The study utilized data from 1990 – 2018 and anchored on the Resource Curse theory. It employed both

OIL RENT AND SOCIO-ECONOMIC OUTCOMES IN NIGERIA

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Introduction

The economy of Nigeria has been dominated by the petroleum industry since the oil boom of the 1970s. Therefore, its economic growth and development is dependent on the production and consumption of petroleum products and hence there is a close connection between the state of the economy and oil in Nigeria (Opaleye, Okowa & Ohale).

A significant proportion of government revenue in Nigeria comes from the oil sector which has served as a major contributor to economic growth and foreign exchange reserve. For instance, as at March 2017, the oil sector contributed 95% to foreign exchange earnings as well as US\$24bn foreign reserves (Ewubare & Obayori, 2019).

Despite these enormous revenues and resources, the country has failed to achieve the expected economic development via increase in real growth, reduction in poverty level, employment generation, better Human Capital Index (HDI) and prosperity for her citizens. In fact, between the third quarter of 2016 and first quarter of 2018 the country recorded negative growth. Meaning that the economy witnessed recession within the said



periods (Obayori & Chioma, 2018). Also, United Nations Human Development Index (HDI) (2019) classified Nigeria as a country with low human development with pervasive poverty resulting in low GDP and low quality of life.

Empirical evidence provides that oil rent enhances the level of employment, reduces inflation and poverty in both developed and developing countries. Nevertheless, the effect of oil rent in reducing unemployment, poverty and inflation in Nigeria is not without conflicting result. For instance, the study of Obayori, Udeorah & Aborh (2018) shows more than 68% of Nigeria's population lives below the poverty line. The scourge of poverty has been identified to have had multiple dimensions, it includes inadequate infrastructure, insecurity, illiteracy, poor health, amongst others (Edoumiekumo, Karimo & Tombofa, 2014; World Bank, 2016).

In the same vein, CBN (2018) reported that unemployment rate rose from less than 10% in the early 1980s to 23.9% in 2013 and 22.6% in 2018. Also, inflation rate has been on the increase over the years and over 18% in 2019. This means that

the Autoregressive Distributed Lag Model (ARDL) and the parsimonious error correction model (PECM). The error correction mechanism (ECM) of the ARDL models were employed to estimate the short run dynamic coefficients of the explanatory variables. The study revealed that oil rent has a positive and long-run relationship with GDP but negative and insignificant relationship with misery index in the short-run. In other words, despite the rent from oil revenue, misery index has continued to rise in Nigeria, though it increases GDP in Nigeria. The study concluded that the rents from oil increases economic growth and decreases the misery index in Nigeria. It is, therefore, recommended among others, that government should sustain export expansion of oil exploration and proceeds from oil be properly utilized for effective improvement of the misery index and economic growth in Nigeria.

Keywords: Economic Growth, Misery Index, Resource Curse, Socioeconomic, Oil Rent.



increase in oil rent has not translated into decrease in unemployment and inflation. Also, the misery index which sum up inflation and unemployment for Nigeria stood at 29.7% in 2017 (Opaleye, Okowa & Ohale, 2018).

According to Agnihotri (2015), it is interesting to note that oil producing countries like Nigeria still receive one form of financial aid or the other from developed countries despite the enormous revenues earned from oil. In 2008 when the price of crude oil hovered over US\$100 per barrel accruing immense revenues to exporters, Nigeria as an oil producing country received the sum of US\$1.29bn in aids and assistance from multilateral institutions in the developed Countries, which is an addition to revenue earned from oil exports. Yet the Nigerian economy is still having difficulty in improving the quality and standards of life for its citizens.

Given the above, the study is aimed at examining the impact of oil rent on economic growth and misery index in Nigeria.

Literature Review

Theoretical Literature

The Resource Curse Model by Richard Auty in 1993

One of the many frustrations witnessed by oil rich Nations in the world is the resource curse. These particular group of nations are characterized by stunted growth, poverty, inequality, deprivation, etc. Rather than contributing to development, inclusive growth, and social peace, rich deposits of oil and other minerals have often brought tyranny, misery, and insecurity to these nations (Collier, 2008).

Everyone expects to see better development outcomes like improvements in general welfare and inequality after countries discovered natural resources, however, this was not the case. Resource-rich nations are relatively more prone to conflict escalation, political leadership tyranny, lower economic growth and macroeconomic instability (Collier & Hoeffler, 2005).

This literature has been extremely influential. The idea that natural resources are bad for development is now widely accepted by researchers and officials at major international financial institutions, the



World-Bank and the International Monetary Fund (Bannon & Collier, 2003). So influential has this literature been that the conventional wisdom now is arguable, the exact opposite of what was, prior to the 1980s. In the same vein, Mehler (2010) adds that as has frequently been underlined by pivotal studies of the so-called resource-curse thesis, Nigeria seems to be a prime example of the curse that natural resource can bring (Collier and Hoeffler, 2005; Sachs & Warner, 2001). The literature is replete with studies and outcomes on the different channels through which common assets, particularly oil hurts development.

This theory is relevant to this study as it advocates that revenue from natural resources such as oil has not translated into real growth in Nigeria. This is because huge revenue from resource is often accompanied by armed and violent conflicts, corruption and unquenchable quest for power to control resources, thus undermining democracy and stability. Therefore, the study anchored on the resource curse model in that it points out the impact of oil and oil revenue to the economy. In other words, the theoretical foundation upon which our study is hinged on is the resource curse model.

The Staple Thesis by Harold Innis and W.A Mackintosh in 1923

This is an economic theory of the origin of development in Canada based on export led growth. The origins of the theory can be found in researches into Canadian social, political and economic history carried out by Canadian universities. Harold A. Innis, a Canadian professor of political economy from the University of Toronto is the promoter of the theory in the year 1923.

Innis argued that Canada developed as it did because of the nature of its trade – export of staple commodities such as raw materials, fish, fur, lumber, agricultural products and minerals to countries such as Britain and the West Indies. This trading link cemented Canada's cultural links to Britain. The search for and exploitation of these staples led to the creation of institutions that defined the political culture of the nation and its regions.

Innis depicted the relationship between regions of Canada as one of "heartland" to "hinterland": The periphery or hinterland is dominated by



the core or heartland. Because the heartland was dependent upon the search for as well as accumulation of staples which were located in the hinterland to perpetuate and prop up the economy, it sought to gain economic and political power by exploiting the hinterland.

This theory has since been used to study the economies of a number of countries dependent on the exportation of raw materials and can thus be used to describe the structure of the Nigerian economy and trade. Three important points can be extracted from this theory: Exportation of raw materials and minerals can lead to the growth and development of the exporting country. The social, economic and political structure of the importers of these raw materials and minerals over time are reflected in the regions where they are exported from. Point 2 above, in the long run brings about a dependent relationship between the exporters and the importers thus leaving the exporters exposed to the vagaries and dictates of the importers.

From the thesis and points enumerated above, natural occurring minerals in oil producing country like Nigeria will, no doubt, lead to the growth and development of the economy. However, the point of departure seem to be that the social, economic and political structure of the oil producing countries are yet to be fully reflected in these oil producing countries. For instance, Canada is a country operating a federal system of government which from the theory must have been a reflection of the society of the importers of her products.

The system of government in almost all oil producing countries in Africa are federal in name only, but unitary in practice, where raw materials and minerals are mined, owned and controlled not by the regions where these minerals are found, nor by private enterprises, but simply by the government at the center. The states have no power over minerals found in their domain. Land ownership also is mostly primitive in these countries. This to a large extent explains the pace of underdevelopment in oil producing countries irrespective of the enormous amount of foreign exchange they may have earned over the years through the export of these raw materials and minerals.

The Neoclassical Development Theory by Robert Solow and Trevor Swan in 1956

The neoclassical school is an important school of thought in which it represented a fundamental shift from old theories such as the structural-



change theory which focused on remodeling the economies of developing countries from subsistence production to industrially diverse manufacturing economy but fail to address the inequality amongst regions in a country. Others include international dependency school of thought which opined that underdevelopment nature of developing countries is caused by the developed countries but proffer little or no solution to the problem of underdevelopment.

Meanwhile, the neoclassical school argue in favour of free market efficient distribution of resources in order to bring about rapid economic growth and development. Thus, government interference in the economy should be null and void. In view of this, the neoclassical theory of development supported privatization of public owned companies which were deemed ineffective and inefficient. Though they recognized in conjunction with scholars at the World Bank that a number of imperfections exist in the economies of developing countries, they therefore allowed for some government intervention to fix such imperfections. This deviation, therefore, points to their failure to account for socio-political and institutional obstacles that impede growth and development, especially in the developing countries.

Seers (1969) in quest for development put forward these questions: what has been happening to poverty, unemployment and inequality? Thus, if these three indicators of development have been properly addressed or there is a decline, then the country concerned has experienced development. However, if at least one of these problems has worsen, especially if all three have, then development has not taken place, though per capita income may have doubled. This marked a paradigm shift in the way growth and development is viewed in economics supported by findings of researches which showed that even when countries posted remarkable growth rates, they cannot be said to be developed when poverty and inequality are rising at the same time.

The important points that can be extracted from this theory are: Government privatization of the oil sector will help to encourage local production of petroleum products which will in turn make the products available abundantly at the cheapest cost. The rents from the natural



resources, if well utilized, will invariably bring about growth and development.

Solow Neoclassical Growth Theory by Robert Solow and Trevor Swan in 1956

One well known theory of growth is the Solow model. It is named after its main defender, Robert Solow. The Solow growth theory depicts more of developed economies, though, it is an essential theory in the literature of development and advancement.

The Solow growth theory suggests restrictive convergence of economies at same level of growth, given that they have similar rates of funds, deterioration, work constraints development and efficiency development. All the while, it expects that there are consistent losses to the utilization of the sources of input. The total production function which is the GDP is portrayed by steady returns to scale. In the light of this steady return to scale, all data sources are expanded by a similar sum, then yield might be expanded by a similar sum. The volume of natural resource delivered depends on the level of capital per worker. The more capital available to each worker, the more yield the specialist delivers. The total stock which includes human capital as well as physical capital grows when savings are greater than depreciation, but capital per worker grows when savings are also greater than what is needed to equip new workers with the same amount of capital the existing workers have. The Solow growth model gives the growth of capital-labour ratio and shows that growth of the production function depends on savings after allowing for the capital required to service depreciation.

Summarily, the theoretical foundation underpinning this study could be the resource curse model which states that efficient natural resources such as crude oil will bring about growth and development. However, the failure to efficiently utilize the revenue from the resources leads to a curse, in that the economy will be plagued by poverty and unemployment, amongst others. We used the resource curse theory in this study because Nigeria is a country that is blessed with abundant natural resources, and huge sums of revenues have been generated and have accrued to the country.



Despite these revenues to the country, Nigeria still grapples with a rising unemployment, widening poverty level, pathetic misery index and poor economic growth. Hence, the resource curse model is considered more appropriate in this study.

Empirical Literature

Giacomo (2017) examined oil rent and regional economic development in Middle East and North Africa (MENA). The study concentrated on regional integration in terms of merchandise trade, labour and capital mobility. Giacomo concluded that a significant improvement in the level of development of individual Arab countries would largely depend on successes at regional integration. The study reiterated that the patrimonial monarchical leadership style of countries in the region with the most economic assets forms a cog in the wheel at a new regional economic order.

Olomola (2007) studied the effect of oil rents on economic growth in oil exporting African countries. It adopted a panel data regression analysis for the period 1970 to 2000 for 47 oil exporting countries including Africa, and 13 non-oil exporting countries. The major findings are that there was evidence of resource curse in oil exporting countries. The conclusion from this study is that for oil exporting African countries, oil rents have failed to promote growth. This study focused on economic growth, without considering the poverty level in Nigeria.

Similarly, Fuinhas, Marques and Couto (2015) employed two dimensions to oil and economic growth relationship which significantly explain the impact of oil on growth and development of oil exporting countries in a panel research for a period of 40years controlling for oil rents, international crude oil prices, oil production as a share of primary energy consumption using dynamic Driscoll-Kraay estimator with fixed effects. They found that in the short run oil production supports economic growth. Surprisingly, they asserted that primary energy consumption positively impacts economic growth both in the short- and long-run, while oil price was positive only in the short-run. However, oil rent was growth retarding both in the short- and long-run. Therefore, oil production is said to be more of a curse rather than a blessing. This



therefore implies that for countries like Nigeria and others, low primary energy consumption per capita contributes significantly to low GDP growth.

Matallah and Matallah (2015) tested the impact of oil rents on economic growth as well as examined symptom of resource curse in oil abundant Middle East and North African (MENA) countries for a period of 19 years using a combination of pooled effects, fixed effects and the generalized method of moments (GMM). They found a positive relationship between oil rent and economic growth in MENA countries but added that oil rents have the potential to discourage economic diversification by encouraging rent-seeking activities in the economy due to the huge inflow from export of the product.

Findings from empirical literature show that oil rent supported the resource curse theory however, most of the studies limited themselves to economic growth thereby giving no answer to the issue of misery index.

Data and Methodology

Data

The data used in the study are Gross Domestic Products (GDP), Misery Index (MSI), which is a combination of inflation and unemployment rate and Oil Rent (ORT). The data were sourced from Central Bank of Nigeria (CBN) statistical bulletin (Various Issues). This study used annual data for the period 1990 to 2018 and obtained from Central Bank of Nigeria various issues and include Nigeria's Gross Domestic Product (constant prices), Misery Index (MSI), and Oil Rent (ORT).

The misery index was computed using inflation and unemployment rates. Misery index is an economic indicator that helps to ascertain the economic well-being of an average citizen of a Country. The misery index is computed by adding the seasonally adjusted unemployment rate and the annual rate of inflation.

Hence, to compute the misery index, it must be equal to the seasonally adjusted unemployment plus the annual inflation rate. The seasonally adjusted unemployment rate is the percentage of capable labour force



that is actively seeking employment but could not find a job at the prevailing wage rate.

Theoretical Framework

The study adopted the resource curse theory because it advocated that revenue from natural resources such as oil has not translated into real growth in Nigeria. It points out the impact of oil revenue on the economy. Revenue from oil resource is often accompanied by armed and violent conflict, corruption and unquenchable quest for power to control resources, rather than contributing to development, inclusive growth, and social peace, (Collier, 2008) thus undermining democracy and stability.

Model Specification

This study adopted the Autoregressive Distributed Lag (ARDL) model. The focus on the ARDL stems from its application on datasets with mixed order of integration [combination of I(0) and I(1)]. The ARDL is described by Belloumi (2014) as very robust for estimating small and relatively large observations. The model was specified in line with the neoclassical theory of development, which explain that effective utilization of natural resources such as oil will bring about economic development. Thus, Economic Growth (GDP) = f (oil rent). But this model is disaggregated into two. The functional model was formalized in two multiple regression models as follows:

$$GDP = f(ORT,) \quad (1)$$

$$MSI = f(ORT,) \quad (2)$$

Consequently, the econometric forms of the models was stated as:

$$GDP_t = a_0 + a_1ORT_t + \mu_{1t} \quad (3)$$

$$MSI_t = e_0 + e_1ORT_t + \mu_{5t} \quad (4)$$

Where: ORT is Oil Rent, MSI is misery index, and RGDP is economic growth rate in order to put the variables on the same scale, the log-linear formulations of the ARDL models will be as follows:



$$\Delta \ln GDP_t = a_0 + a_1 \ln GDP_t + a_2 \ln ORT_t + \sum_{i=1}^n \Delta a_1 \ln GDP_{t-1} + \sum_{i=1}^n \Delta a_2 \ln ORT_{t-1} + \sum_{i=1}^n \Delta + \mu_{1t} \quad (5)$$

$$\Delta MSIt = e_0 + e_1 MSIt + e_2 \ln ORT_t + e_3 \ln OEPT + e_4 \ln DOPt + \sum_{i=1}^n \Delta e_1 MSIt - 1 + \sum_{i=1}^n \Delta e_2 \ln ORT_{t-1} + \mu_{5t} \quad (6)$$

More importantly, the general-to-specific error correction models (ECM) formulated from the ARDL models in equations are as follow:

$$\Delta \ln GDP_t = a_0 + a_1 \ln GDP_t + a_2 \ln ORT_t + \sum_{i=1}^n \Delta a_1 \ln GDP_{t-1} + \sum_{i=1}^n \Delta a_2 \ln ORT_{t-1} + \Pi ECM + \mu_{1t} \quad (7)$$

$$\Delta MSIt = e_0 + a_1 MSIt + e_2 \ln ORT_t + e_3 \ln OEPT + e_4 \ln DOPt + \sum_{i=1}^n \Delta e_1 MSIt - 1 + \sum_{i=1}^n \Delta e_2 \ln ORT_{t-1} + \Pi ECM + \mu_{5t} \quad (8)$$

Where;

a_0, b_0, c_0, d_0 and e_0 = constant terms

$a_1 - a_4, b_1-b_4, c_1-c_4, d_1-d_4$ and e_1-e_4 = short dynamic coefficients of the regressors

Δ = first difference operator

n = maximum lag lengths

μ_{1t}, μ_{5t} = white noise

ECM = error correction term lagged for one period

Π = error correction coefficients which measures the speed of adjustment.

\ln = natural logarithm

Variables in the Model

Gross Domestic Product (RGDP): This measure the monetary value of total output of goods and service within the geographical boundary of a country in a given year in nominal term after adjusted for inflation. In other word, real GDP is an inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year, expressed in base-year prices and is often referred to as constant-price,



inflation corrected GDP or GDP at constant price. Real GDP helps to account for changes in price level and provide a more accurate figure of economic growth.

Misery Index (MSI): it is measured as the sum of inflation and unemployment rates. The MSI provides a useful approximation of the economic well-being and prosperity for an average citizen in a country. When the MSI increases, it indicates worsened economic conditions for citizens, and a reduction suggests better welfare/happiness. We are thus going to extrapolate unemployment and inflation rates to form a misery index for this study.

Oil rents: represent the difference between the value of crude oil production at world prices and total costs of production from the World Development Indicators database. It serves as the main independent variable in the model and expected to have a direct relationship with economic development.

Results and Discussion

Analysis and Discussion of Results

The descriptive statistics reported in Table 4.2 as found in the appendix indicated that Gross Domestic Product (GDP) has an approximate mean of ₦32739billion with the corresponding standard deviation of ₦33404billion.

Similarly, Misery Index (MSI) has an approximate mean of 31.7628 with the corresponding standard deviation of 15.5519. Oil Rent (ORT) has an approximate mean of ₦15.6565billion with the corresponding standard deviation of ₦11.1128billion. Thus, it can be inferred from the analysis that the standard deviation of all the variables, except GDP converged around their respective mean. Thus, the standard deviation was not higher than normal.

The skewness test showed that MSI and GDP are positively slope and ORT has a negative slope. The Jarque-Bera statistics showed that null hypothesis of the variables were all accepted. Thus, the variables were not normally distributed. More so, the kurtosis test showed that all the series have large tail. This implies that their distributions were higher than normal. This may have resulted from the problem of trended data.



The stationarity of each of the series via the Augmented Dickey Fuller (ADF) test as presented in Table 4.3 depicted that one of the variables namely, Misery Index (MSI) was integrated of order zero (stationary at level). This was because their respective Augmented Dickey Fuller (ADF) critical values were greater than the critical values at 5% level of significance. Meanwhile, variables were made stationary after first difference to attain stationarity and to avoid spurious regressions. Therefore, variables such as Gross Domestic Product (GDP) and Oil Rent (ORT) were stationary at first difference. This clearly shows the best results were obtained in the model.

Optimum Lag Selection Criterion for the Estimated Models

The essence of the lag selection criterion is to ascertain the possible lag length that will provide the best results. According to the rule of thumb, the model with the least value of Akaike Information Criterion (AIC) or Schwarz Information Criterion SIC criterion usually yield the optimum results. The estimated lag selection results showed that in the poverty index and misery index models, out of the maximum 4 lags, the best lag selection is lag 1. This is because the values presented above were the least values amongst the five possible criteria. Meanwhile, in the GDP model, the best lag selection is lag 2. Having ascertained the optimum lag for each of the model, each of the cointegration and the ECM models were conducted in line with the chosen lags in order to arrive at the best result.

Co-integration Test

Results from the Johansen's co-integration rank test via the Trace statistics revealed one co-integrating equation since the calculated Trace test statistics were larger compared to the 5% critical value. Hence, the null hypothesis (H_0) was rejected. Based on this result, the study concludes that there is a long run equilibrium relationship amongst the variables in the model. Given the existence of long run equilibrium relationship amongst the variables, the requirement for the estimation of vector error correction model was fulfilled. The results of the Johansen test of co-integration showed the existence of one co-



integrating equation in the model at 5% level. This means that the four variables have long run relationship. Based on this result, the study concludes that there is a long run equilibrium association-ship amongst the variables in the model. Given the existence of long run equilibrium relationship amongst the variables, the requirement for the estimation of vector error correction model was fulfilled.

The Error Correction Test

The Granger representative theorem states that if two or more variables are co-integrated, then an error correction (EC) model can be expressed such that the EC term is incorporated into the model to analyze the short run dynamics and long run equilibrium in the same model. The error correction term (factor) represents the speed of adjustment from the short run to the long run; and it is theoretically expected to be negative, significant and have a value between zero (0) and one (1).

The speed of adjustment indicates that about 38% of current fluctuation was corrected in the following year. Also, the R-square (0.73) showed that 73 percent variation in GDP (economic growth) was explained by the systematic changes in the three independent variables. The Durbin Watson statistics value of 2.0624 which is not too far from 2.0 DW bench mark suggested that the model is free from positive first order correlation. Thus, the explanatory variables in the model are not serially dependent (correlated). Therefore, the model is valid for policy formulation and implementation.

Meanwhile, the results of the vector error correction model showed that the coefficient of lag values of oil rent (ORT) were positively signed with GDP but statistically not significant on individual lag 1 or 2 basis. But the Wald test which combined the test of significant of both lag 1 and 2 of the coefficient of ORT showed that there is a long run relationship between oil rent (ORT) and GDP during the period of study. This is because the X^2 p-value of 0.6361 is more than the p-value of 0.05. Therefore, the null hypothesis of no significant relationship was rejected. The positive sign between ORT and GDP showed that for every percentage increase in oil rent (ORT) in Nigeria, there will be a corresponding increase in economic growth (GDP) and hence economic



development. The finding negate the finding of Olomola (2007) who affirms that for oil exporting African countries, oil rents have failed to promote growth.

But the finding is in line with the empirical work of Matallah and Matallah (2015) who tested the impacts of oil rents on economic growth in the Middle East and North African (MENA) countries and found a positive relationship between oil rent and economic growth in MENA countries. This is because the X^2 p-value of 0.6513 is more than the p-value of 0.05. Therefore, the null hypothesis of no significant relationship was rejected.

Results from the ARDL Model

The ARDL was described by Belloumi (2014) as very robust for estimating small and relatively large observations. Thus, in this analysis, the Autoregressive Distributed Lag (ARDL) model was based on the assumption that the series are integrated of order zero $I(0)$ or order one $I(1)$. Also, the ARDL result was used to verify both the stated objectives and hypotheses in the study. From the ARDL bound test result, it indicates the existence of a long-run relationship amongst the variables (MSI and ORT). Therefore, the study rejects the null hypothesis of no co-integration at 5% significance level for the poverty index model. Following the establishment of long-run co-integration relationship among the variables, the long-run and short-run dynamic parameters for the variables were obtained. The estimated ARDL long run coefficient of oil rent (ORT) has a positive and significant relationship with misery index.

Table 1: Bound Test ARDL of Co-integration for MSI Model

| Model | F-Statistic = 24.52863 | |
|-----------------|------------------------|-------------|
| (MSI,ORT) | K = 3 | |
| Critical Values | Lower Bound | Upper Bound |
| 10% | 2.72 | 3.77 |
| 5% | 3.23 | 4.35 |
| 1% | 4.29 | 5.61 |

Source: computed by authors using eviews 9



The ARDL test above shows the existence of long run relationship between (MSI and ORT). It is because the computed F-statistic of 24.52863 is greater than the upper critical bounds of 1%, 5% and 10% critical values. Therefore, the study rejects the null hypothesis of no co-integration at 5% significance level for the misery index model.

Table 2: Estimated ARDL for Long Run Coefficients for MSI Model

| Regressors | Coefficient | t-Statistic | P-Value |
|------------|-------------|-------------|---------|
| ORT | -1.021780 | -3.073678 | 0.0054 |
| C | 53.201817 | 6.816126 | 0.0000 |

Source: computed by authors using eviews 9

The estimated ARDL long run coefficient of oil rent (ORT) has a positive and significant relationship with misery index.

Table 3: ARDL Error Correction Representation for MSI Model

| Regressors | Coefficients | t-Statistic | P-Value |
|-------------------------|----------------|-----------------------|----------------|
| D(ORT) | -0.631507 | -2.752245 | 0.0113 |
| ECM(-1) | -0.618046 | -3.858299 | 0.0008 |
| R ² = 0.5491 | f-stat=7.00035 | Prob (f-stat)=0.00076 | DW Stat=1.9590 |

Source: computed by authors using eviews 9

The Table 4.3, shows the speed of adjustment to long-run equilibrium. Specifically, when there are short-run deviations from equilibrium the misery index adjusts quickly to long run equilibrium at a speed of 61.8% per annum. The Durbin Watson statistics (1.959) showed no evidence of autocorrelation.

Besides, the short run coefficient on oil rent (ORT) has a negative sign as expected and was statistically significant. This means that in the short run, a percentage increase in oil rent led to 63.15% decrease in misery index during the period under review. Similarly, oil rent impacted on misery index during the period of study as the probability value of 0.0113 is less the 5% p-value. The result is in line with the scholarships like Fuinhas, Marques and Couto (2015) whose works averred that oil rent is growth retarding both in the short- and long-run, implying that oil production has been more of a curse than a blessing to the Nigerian economy.



Also, Clark and Oswald (1994) in their descriptive analysis of the nexus between oil rent and unemployment showed that there is a negative relationship between oil rent and unemployment.

Besides, the coefficient of oil rent (ORT) in the short- run has a hypothesized negative sign and significant relationship with misery index. This means that in the short-run a percentage increase in oil rent led to 63.15% decrease in misery index during the period under review. Similarly, oil rent impacted on misery index during the period of study as the probability value of 0.0113 is less the 5% p-value. The result is in line with the scholarships like Fuinhas, Marques and Couto (2015) whose works showed that oil rent reduces growth and development both in the short- and long-run, implying that oil production has been more of a curse than a blessing to the Nigerian economy.

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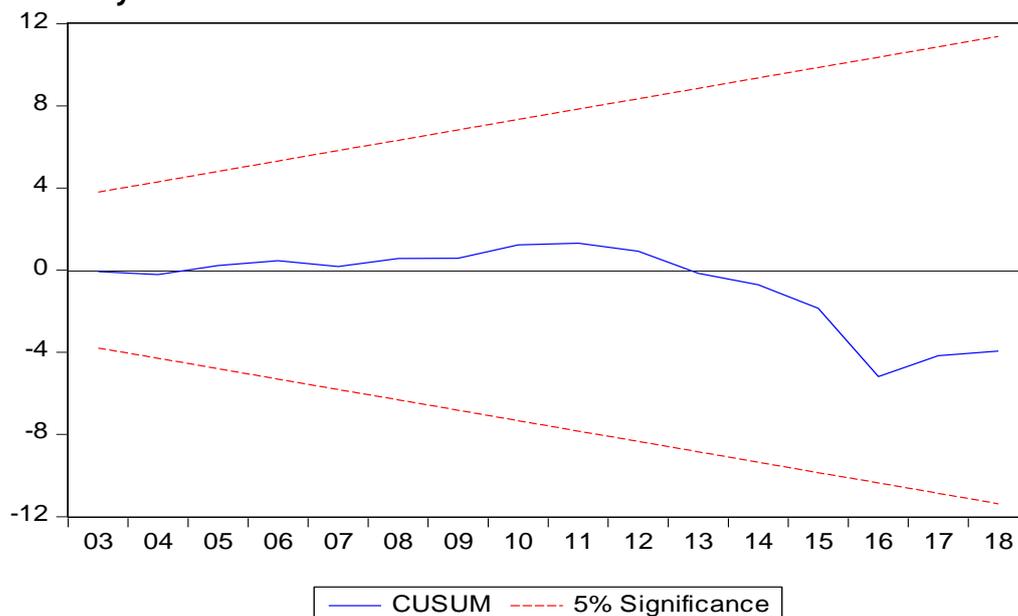
Post Estimation Test

Table 4: Post Estimation Test for GDP Model

| Test Type | Test Stat. | p-value | Critical Value |
|---------------------------|----------------------|----------|----------------|
| Serial Correlation | Chi Square (X^2) | 0.4132 | 0.05 |
| Heteroscedasticity | Chi Square (X^2) | 0.0676 | 0.05 |
| Normality | Jarque-Bera | 0.731492 | 0.05 |

Source: computed by authors using eviews 9

Stability Test





Source: computed by authors using eviews 9

Figure 1: Stability Test Result for the GDP Model

Table 4.1 showed the post estimation test for the GDP model. The serial correlation test result showed no evidence of serial autocorrelation since the chi-square (X^2) probability values (0.4132) exceed the 0.05 critical value. Similarly, the Autoregressive Conditional Heteroskedasticity (ARCH) result showed that the GDP model had no problem of heteroskedasticity since the Chi-square p-value (0.0676) is greater than the 5% conventional p-value. This means that the variance of the residual is homoscedastic or constant over the sampled period. The normality test in the GDP model showed that the error terms are normally distributed. Thus, it can be concluded that the sample data fit a standard normal distribution.

In the figure above, the blue line represents CUSUM, while the red line is the 5% significance level. Suffice it to say that, assuming that the blue line is below or above the red lines, it means that the variables are not stable. But if it lies within the red lines, it shows that the variables are stable. The stability test presented in the figure above which was represented by CUSUM showed that the variables used for the estimation were stable. This means that the GDP model was rightly specified.

From the analyses above, the results of the post estimation tests are commendable as they meet the statistical criteria and authenticate that the model is reliable for policy formulation and recommendation.

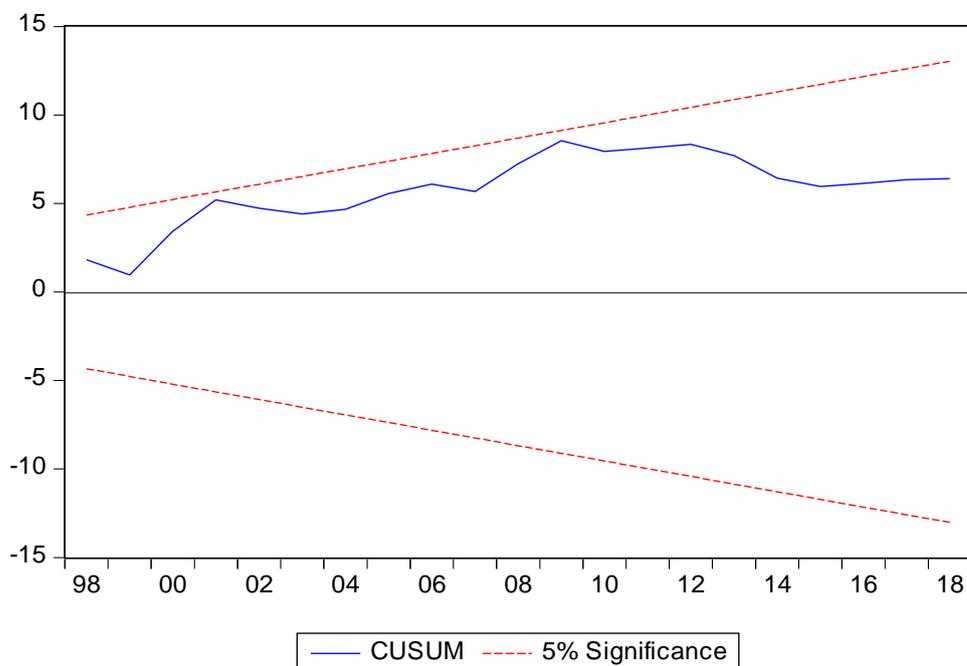
Table 5: Post Estimation Test for MSI Model

| Test type | Test Stat. | p-value | Critical Value |
|--------------------|----------------------|---------|----------------|
| Serial Correlation | Chi Square (X^2) | 0.6605 | 0.05 |
| Heteroscedasticity | Chi Square (X^2) | 0.1183 | 0.05 |
| Normality | Jarque-Bera | 0.51585 | 0.05 |

Source: computed by the author using eviews 9



Stability Test



Source: computed by authors using eviews 9

Figure 2: Stability Test for the MSI Model

Table 4.2 above showed the post estimation test for the MSI model. The chi-square (X^2) probability values of 0.6605 exceed the 0.05 conventional p-value, therefore, the null hypothesis of no serial autocorrelation is upheld. Similarly, the Heteroskedasticity result showed that Chi-square p-value of 0.1183 is greater than the 0.05 conventional p-value. This means that the variance of the residual is homoscedastic over the sampled period. Thus, heteroskedasticity is not a problem in the model. The normality test in the MSI model showed that the error terms are normally distributed. The stability test presented in the figure above which was represented by CUSUM showed that the variables used for the estimation were stable. This means that the MSI model was rightly specified.

From the analysis above, the result of the post estimation tests are welcoming as they meet the statistical criteria and authenticate the reliability of the estimated model for policy formulation and recommendation.

Discussion of Findings



The effect of Oil Rent on Socio-Economic Outcomes (proxied by GDP and misery index)

(i) The estimated model showed that oil rent has a positive and long run relationship with GDP. This means that for every percentage increase in oil rent, there will corresponding increase in economic growth (GDP) and hence economic development in Nigeria. Thus, in line with objective of the study, oil rent is positively related to Economic Growth in Nigeria.

Similarly, the hypothesis showed that there is a long run relationship between oil rent (ORT) and GDP during the period of study. This is because the X^2 p-value of 0.6361 is more than the p-value of 0.05. Therefore, the null hypothesis of no significant relationship was rejected. The finding supports the empirical work of Matallah and Matallah (2015) who tested the impact of oil rents on economic growth in the Middle East and North African (MENA) countries and found a positive relationship between oil rent and economic growth in MENA countries.

(ii) Oil rent in the short-run has negative and significant relationship with misery index. This means that in the short-run a percentage increase in oil rent led to decrease in misery index during the period under review. Similarly, oil rent implemented on misery index during the period of study as the alternative hypothesis that states, there is a significant positive relationship between oil rent and misery index was upheld. The result is in line with the scholarships like Fuinhas, Marques and Couto (2015) who averted that oil rents depress growth and development in both the short and long run, implying that oil production has been more of a curse than a blessing to the Nigerian economy.

Also, Clark and Oswald (1994) on the nexus between oil rent and unemployment showed that there is a negative relationship between oil rent and unemployment. Similarly, oil rent has significant impact on socioeconomic outcomes measured by GDP and Misery Index in Nigeria during the period under review.

Conclusion and Policy Recommendations

Conclusion

The study shows that oil rents display a measurably noteworthy positive effect on economic growth and misery index in Nigeria. It is therefore concluded that rents from oil has the capability of expanding economic growth and improving the misery index in Nigeria. It also concluded that the resource curse theory does not apply to Nigeria because it was



clearly evident from the findings that resource curse has no effect on Nigeria under the period of study.

Recommendations

Based on the findings, the study recommends that:

1. The proceeds from oil should be properly utilized to improve the misery index in Nigeria. This recommendation is made because the findings showed that oil rent has a positive and long run relationship with GDP and negative relationship with misery index in Nigeria.
2. The government in order to improve on the misery index, should channel the oil revenue into creating employment such as engaging the youths on intensive skill development such as technical, agricultural businesses and computer skills, fashion design, soap making and tailoring. This recommendation when implemented could create employment for the youths thereby reducing the soaring unemployment rate in Nigeria.
3. The federal government should utilize the Local Content policy to engage such youths with relevant skills and emphasize consumption of made in Nigeria products. This recommendation if implemented could serve as incentive to youths to take up skill acquisition training and thereby improving the misery index in Nigeria.

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