IJAAR PUBLISHING®
DOI: 10.46654

African Journal of Business and Economic Development | ISSN: **2782-7658**
Vol. 1, Issue 9 (September, 2021) | www.ijaar.org

NATURAL RESOURCE RENTS AND ECONOMIC WELLBEING IN NIGERIA

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ABSTRACT

This study examined the effects of natural resource rents on economic wellbeing in Nigeria from 1995 to 2019. Time series data on per capita gdp, oil rent and mineral rent were sourced from World Bank data archive. The study adopted the econometric techniques of co-integration, error correction mechanism (ECM) technique and granger causality test to analyze the time series data. The Augmented Dickey Fuller stationarity test showed that the variables were stationary at first difference. The Johansen co-integration test results revealed the existence of a longrun relationship among the variables.The error correction model showed that oil rent and mineral rent did not impact significantly on gdp per capita giving credence to the existence of resource curse in Nigeria. The granger causality test revealed that mineral rent granger caused gdp per capita. Based on these findings, the study recommends that the proceeds from oil rent should be reinvested in the productive sectors of the economy to improve the wellbeing of the citizens through the diversification of the economy particularly because crude oil is an exhaustible resource that is capable of depleting. Secondly, government should shift attention to mineral resources by investing in the mining sector to prevent the over dependence on oil proceeds.

Keywords: Oil rent, Mineral Rent, Per capita GDP.

1. INTRODUCTION

Nigeria, having about the largest economy in the continent, is blessed with abundant natural resources which include crude oil, natural gas, coal, bitumen, tin, columbite, amongst others. The extraction of natural resources has the potentials of charting sustainable economic development thereby improving the wellbeing of the citizenry if managed properly because it serves as a means of capital accumulation for investment (Ewubare & Uzoma, 2019). Crude oil for example, is an important natural resource and a major source of revenue in Nigeria and in the world at large. The exploration of crude oil is critical to the development of economies around the world. Apart from its reputation as the major revenue earner for Nigeria, oil is a basic raw material for a wide range of commodities including petrol and diesel for cars and engineering equipment, asphalt road surfaces, tars, tyres, solvents, deodorants, crayons, glue amongst a wide range of other products (Ojapinwa and Ejumedia, 2012). Oil is used as an important benchmark in the politics and diplomacy of nations as it serves as a gateway for foreign exchange earning to oil exporting countries. Also, it determines to a large extent, the value of the dollar in international market (Opaleye *et al*, 2018).

Nigeria was not particularly a rich country until the 1973-1974 oil price hike making crude oil account for about 80 percent of all government revenue and more than 90 percent of the country's export. The nation became a monolithic economy ever since the oil boom era of the 1970s and has continued to enjoy "crude cash" without an adequate policy to put the nation on a firm foundation for steady growth (Ewubare & Uzoma, 2019).

Asides crude oil, other natural resources also have potentials of driving growth in the economy. Coal for example, serves as fuel for power generation thereby reducing the power infrastructural deficit in the country. Bitumen also, which is an essential component of asphalts is useful in road construction. According to the National Bureau of Statistics (NBS) in Nigeria, the mining sector was responsible for about 9.12 percent growth in the real GDP of the country in the fourth quarter of 2014 with coal mining & quarrying and other minerals topping the growth.

Natural resources are usually valued in terms of their returns or economic rent commonly referred to as resource rent. Natural resource rent therefore is the difference between the total revenue from the extraction of the natural resource and the cost of extracting the resource. It is the income accruing to a country from the extraction of natural resources after making provision for the cost of extraction of the resource. The income is called rent since it is not man-made or manufactured but extracted. Natural resources command high returns because they have limited supply (Ewubare & Obayori, 2019) but they can eventually get depleted since they are exhaustible and non-renewable resources. It is therefore imperative for the rents gotten from the natural resources to be channeled to productive uses in order to improve the general wellbeing of the citizens. This has led to the quest to carry out a study on the impact of natural resource rents on economic wellbeing in Nigeria. The rest of this study is structured into literature review, methodology, result presentation and conclusion.

2. LITERATURE REVIEW

Over the years, there has been the debate on the effect of natural resources abundance on economic growth as regards to it being beneficial or detrimental. The belief that natural resource abundance is beneficial to resource-rich economies is reflected in the benign perspective. This view was shared by many development theorists and neoliberal economists with the argument that natural endowments would assist the developing countries to transit from the state of underdevelopment to that of industrial "take-off", as obtained in such

countries as Britain, United States of America, Russia, and Australia (Baghebo, 2012and Rosser, 2006). There are various channels through which the abundance of natural resources can contribute to the development of the economies. The huge revenue from crude oil for instance enables the government of the resource-rich nations to make investments without resorting much to taxation. The revenue from oil, if properly utilized can serve as a "big push" for development. Also, the foreign exchange earnings from oil exports could boost foreign reserves in the economy. Dooley et al (2004) argued that the accumulation of foreign reserves can be seen as collateral which the oil producing economies can use in attracting foreign investments. Moreover, such holdings can be seen as a self-insurance strategy to smoothen vulnerability impacts of domestic and foreign shocks and to intervene in the foreign exchange market.

Conversely, the view that resource abundance can be detrimental to growth is reflected in the malign perspective and captured in the resource curse hypothesis. The theory explains that countries that are endowed with substantial natural resources not only failed to use their abundant resources to promote economic and social development but tend to perform poorly compared to countries that are less endowed. The resource curse hypothesis was originally introduced by Gelb (1988), who accessed the impact of oil windfalls on economic development in six developing countries and concluded that some of them have ended up actually worse off. According to the resource curse hypothesis, natural resources endowment can have detrimental effects on an economy through a number of channels. First, is the 'Dutch disease' argument that the discovery of natural resources can adversely affect other sectors of the economy, particularly the manufacturing sectors as a result of an increase in the real exchange rate which leads to an increase in resource inflows thereby raising the cost of production in the less productive non-resource sectors while increasing the relative price of non-tradables (Gylfasson *et al*., 1999). This was the experience of the Netherlands in the 1960s when natural gas was discovered in the North Sea.

Another channel of resource curse is expressed in the volatility argument which is anchored on the fact that revenues from natural resources are volatile since they are driven by sharp and significant fluctuations in prices over relatively short periods of time. Consequently, in the face of fluctuation revenues, governments in the resource rich countries often find it extremely difficult to pursue a prudent fiscal policy. Auty (2000) and Sachs & Warner (2001) stated that the emergence of a "predatory state", which pays more attention to the appropriation of natural resource gains rather than to development, leads to government inefficiency and public policies distortions.

Institutional quality is another channel through which natural resources endowment can have detrimental effects on an economy. The argument here is that the large windfalls from the resource tends to generate and promote unproductive rent-seeking activities that involves corruption, voracity and civil conflict (Baland and Francois, 2000; Torvik, 2002).

Other reasons why resource-rich countries can suffer resource curse are reduced returns to human investments precipitated by natural resource exploitation (Gylfason, 2001) and poor economic management that leads to inequality and inefficient resource allocation (Rosser, 2006). This is because the resource sector tends to be relatively capital-intensive which leads to a drop in the demand for labor and in the redistribution of income.

Empirically, quite a number of studies have been done on natural resource - economic growth nexus in Nigeria. For instance, Akanni (2007) examined the impact of oil rent on economic

growth in oil exporting countries using a panel regression model and concluded that oil rent did not promote growth in those economies.

Ogbonna and Ebimobowei (2011) examined the impact of petroleum revenue on the Nigerian economy using time series data spanning from 1970 to 2009. Findings from their study showed that petroleum revenue positively affects the GDP and per capita income in Nigeria.

A study by Bjorvatn and Farzanean (2013) usingthe GMM estimators showed that natural resource rents as the capacity of crowding out resources and credit to other sectors of the economy which in thelong run lowers per capita GDP.

Saraswati (2013) examined the relationship between oil rent and economic growth in Indonesia and found thatthe quality of institutional quality indirectly retarded growth in their economy.

In their work, Akpan and Chuku (2014) traced the linkages between natural resource abundance, human capital development and economic growth in Nigeria. Their results showed that natural resource intensity had a negative impact on growth and human capital accumulation. They therefore concluded that the high-rent staple trap model is applicable to Nigeria.

Onyejiuwa (2016) assessed the evidence of resource curse in sub-Saharan African countries using multiple regression panel data models. The result from the study showed that merchandized exports at current values and natural resource rents at current values are positively significant with real GDP. The study Further refuted the evidence of Dutch disease and rent seeking at current values and concluded that resource-rich SSA countries are better off in short-run than in long-run. Based on the findings, the study recommended that resource endowed SSA countries should utilize all available natural resources and propel to growth through diversification of their economy where agriculture, agro-allied industries and the entire manufacturing sector would continue to contribute to their economy.

Ben-Salha et al (2018) examined the causal links between total natural resource rents and economic growth in a sample of top resource-abundant countries for the period 1970 to 2013 using the Pooled Mean Group (PMG) estimator. Findings from their study supported natural resource being a blessing in the long-run but not in the short-run. Also they discovered that economic growth exerted a positive impact on resource rents while the causality analysis indicated that a feedback causal relationship exists between the two variables. They therefore recommended that governments of resource-rich countries should make further efforts in capitalizing on their resource rents by investing them more productively and diversifying their economies by building strong linkages between the rents-based sectors and other economic sectors.

A study by Abdulahi *et al* (2019) using SGMM estimation technique and a panel data from 1998-2016 of 13 resource rich countries in SSA highlights that resource rent impacted positively on growth till a certain threshold before resource curse set in to affect growth negatively.

Ewubare & Uzoma (2019) examined the effects of oil revenue on economic growth in Nigeria between 1980 and 2017 using the bounds testing approach. Their result showed that in the long run, oil revenue and oil rent impacted on GDP positively although not

significantly. In the short run however, both variables retarded economic growth in Nigeria. They therefore recommended a realistic diversification plan to alternative sectors of the economy to enhance the productive base of the nation seeing that crude oil is an exhaustible asset.

Fosu and Gafa (2019) focused on two countries, Botswana and Nigeria, to illustrate two contrasting cases of economic performance of resource economies with data spanning from 1966 to 2002 for Nigeria and 1976 to 2002 for Botswana. The results from distributed-lag analysis rejected resource curse for Botswana but upheld it for Nigeria.

Ofori and Grecyna (2021) examined Remittances, Natural Resource Rent and Economic Growth in 43 Sub-Saharan African countries spanning from 1990 to 2017 using pooled ordinary least squares, fixed-effects and random-effects, and generalized method of moments. Findings from their study showed that there is a positive impact of forest rent on economic growth whilst oil rent and natural gas rent have a negative impact on economic growth. Furthermore, there exists a positive marginal and net effect on economic growth from the interaction between remittances and oil rent.

From the review of literature, it can be observed that previous studies focused on the contribution of oil revenue, natural resource abundance and human capital development to various economies. The study fills the gap in literature by disaggregating natural resource rents into oil and mineral rents and examining their causal relationship with economic wellbeing in Nigeria.

3. METHODOLOGY

This study adopted quantitative techniques of analysis using time series data sourced from Central Bank of Nigeria (CBN) statistical bulletin from 1981 to 2020. The Unit root test, Co-integration test and Error Correction technique were employed as the main analytical tools in the study. In addition, to determine the direction of causality between the variables, the granger causality test was conducted.
The model for this study is presented as;
GDPPC = f(RESOURCERENT) ……..……(1)

To determine the relationship between natural resource rent and economic wellbeing (proxied by gdp per capita), the former would be disaggregated into oil rent and mineral rent. Simplifying equation 1, we have:
GDPPC = f(ORT,MRT) ……...……...…….……(2)

The log –linear form of equation 3 is therefore stated as follows:

$LnGDPPC_t = \beta_0 + \beta_1 lnCRPD_t + \beta_2 LlnLVST_t + \mu_t$.....……..(3)

Where: GDPPC = per capita gdp, ORT = oil rent, MRT = mineral rent, β_0 = Autonomous components of external reserve, β_1 - β_2 = the slopes of oil and mineral rents, Ln = natural logarithm, μ = error term, t = time frame.

It is expected theoretically that β_1 and $\beta_2 > 0$.

4 RESULT AND DISCUSSION

Unit Root Test

This involves testing for the stationarity properties of the individual variables using the Augmented Dickey Fuller
(ADF) test to check for the existence of unit root in each of the time series. The results are presented in Table 1 below.

Table 1: Unit Root Result

VARIABLE	ADF Test	1% Critical Value	5% Critical Value	10% Critical Value	Order of Integration
GDPPC	-3.626320	-4.416345	-3.622033	-3.248592	I(1)
ORT	-6.186751	-4.440739	-3.632896	-3.254671	I(1)
MRT	-4.216426	-4.440739	-3.632896	-3.254671	I(1)

Source: **Author's Computation**

The unit root test reported in Table 1 above shows that the variables attained stationarity after first difference. In absolute terms, the ADF value of each of the variable was greater than the critical value at 5%. Having confirmed the stationarity of the variables, it is therefore imperative to conduct the co-integration test using the Johansen procedure.

Co-Integration Test

The results of the co-integration test using the Johansen procedure are presented in the table below.

Table 2: Johansen Co-integration Test Results

Hypothesized No. of CE(s)	Trace Statistics	5% critical value		Max-eigen Statistics	5% critical value
None *	77.31116	29.79707		62.10692	21.13162
At most 1	15.20424	15.49471		13.63517	14.26460
At most 2	1.569069	3.841466		1.569069	3.841466

Source: **Author's Computation**

The result of the co-integration in Table 2 was based on both the Trace Statistics and Maximum Eigenvalue. The results indicated one co- integrating equation at 5 percent significance level. This suggests that there is a long run equilibrium relationship amongst the variables, gdp per capita, oil rent and mineral rent. Given the existence of a co-integrating equation, the requirement for fitting in an error correction model is satisfied.

Parsimonious Error Correction Mechanism

To confirm the existence of a co-integration among the variables, the ECM is employed. This is based on the general-to-specific rule and the results are presented on Table 3 below.

Table 3: Parsimonious ECM Result

Dependent Variable: D(GDPPC)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.533567	0.078752	6.775267	0.0211
D(GDPPC (-1))	-0.038956	0.017100	-2.278134	0.0333
D(ORT)	-0.085810	0.091883	-0.933899	0.4489
D(MRT)	0.076740	0.032167	2.385667	0.1398
ECM(-1)	-0.031903	0.018594	-1.715746	0.2283
R-squared	0.598955	**Mean dependent var**		0.123882
Adjusted R-squared	0.577792	**S.D. dependent var**		0.814987
S.E. of regression	0.284176	**Akaike info criterion**		1.050692
Sum squared resid	2.604234	**Schwarz criterion**		1.199471
Log likelihood	-8.357617	**Hannan-Quinn criter.**		1.085740
F-statistic	37.55309	**Durbin-Watson stat**		2.195191
Prob(F-statistic)	0.000000			

Source: **Author's Computation**

The result in table 3 above shows that the R^2 value of 0.59showsthat the model is a good fit. Thus, about 59 percent of the variations in per capita gdp can be explained by the changes in oil rent and mineral rent. Also, the overall regression result of the dynamic model was significant at 5 percent level as showed by the F-statistic of about 37.5. The Durbin Watson value of 2.19 shows that the model is free from autocorrelation. The ECM was rightly signed but not significant at conventional levels. This implies that the speed of adjustment of natural resource rents to economic wellbeing in Nigeria is slow. The inefficient use of the proceeds from natural resources in the country may have explained this scenario. The coefficient of oil rent in the current period was negative contrary totheoretical expectation but not statistically significant.Thisfinding goes a long way to confirm thatthehuge proceeds from crude oil have not been channeled to projects that improve the wellbeing of the citizens. This is in line with the submissions of Gylfason (2001), Akanni (2007) and Saraswati (2013) who found the resource curse argument to be valid for most developing countries. The coefficient of mineral rent was however positive as expected *apriori* but still not statistically significant. Bjorvatn and Farzanean (2013) rightly stated that natural resource rents as the capacity of crowding out resources and credit to other sectors of the economy which in the long run lowers per capita GDP.

Causality Test

The pairwise granger causality test was used to analyze the causal relationship between two variables in the model. The null hypothesis is rejected if the probability value is greater than 5 percent. On the flip side, if the probability value is less than 5 percent, we accept the null hypothesis of no causality. A unidirectional causality exists between two variables when either of the null hypothesis is rejected. Similarly, bi-directional causality occurs if both null hypotheses are rejected and no causality exists if neither of the null hypothesis is rejected. In

this study, Granger causality test was conducted to find out the direction of causality between natural resource rent and per capita gdp in Nigeria.

Table 4. Pairwise Granger Causality Tests

Sample: 1995 2019
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
ORT does not Granger Cause GDPPC	23	0.77936	0.4736
GDPPC does not Granger Cause ORT		2.04505	0.1584
MRT does not Granger Cause GDPPC	23	2.25719	0.1334
GDPPC does not Granger Cause MRT		7.84381	0.0035

Source: Author's Computation

The result of the Pairwise Granger causality test in table 4 shows that no causality exists between oil rent and per capita gdp. A uni-directional causality however exists between mineral rent and per capita gdp at conventional levels of significance. This is to say that mineral rent granger caused per capita gdp. This result is in line with the error correction result where mineral rent impacted positively on per capita gdp while oil rent did not.

CONCLUSION AND POLICY RECOMMENDATIONS

The study examined the relationship between natural resource rents on economic wellbeing in Nigeria between 1995 and 2019. Related studies on the subject matter were thoroughly reviewed. The Specific effects of natural resource rents on per capita gdp from oil rent and mineral rent was examined. The data was sourced from the World Bank data archive on the variables. The Augmented Dickey-Fuller test showed that all the variables were integrated of order I(1). The Johansen cointegration test showed a stable long run relationship between the variables. The regression estimates from the error correction model showed that both oil and mineral rents had insignificant effects on per capita gdp in Nigeria although the coefficient of mineral rent was positive while that of oil rent was negative.Furthermore, the granger causality test revealed that mineral rent granger caused per capita gdp while no causality existed between oil rent and per capita gdp. Going by the findings from the study, the following recommendations were made. The first is that the proceeds from oil rent should be reinvested in the productive sectors of the economy to improve the wellbeing of the citizens through the diversification of the economy particularly because crude oil is an exhaustible resource that is capable of depleting. Secondly, government should shift attention to mineral resources by investing in the mining sector to prevent the over dependence on oil proceeds.

REFERENCES

Abdulahi, M. E., Shu, Y., & Khan, M. A. (2019). Resource rents, economic growth, and the role of institutional quality: A panel threshold analysis. *Resources Policy, 61*, 293-303.

Akanni, O. P. (2007). Oil Wealth and Economic Growth in Oil Exporting African Countries. *AERC Research paper* 170, Nairobi.

Akpan, G. E. &Chuku, C.(2014). Natural Resources, Human Capital and Economic Development in Nigeria: Tracing the Linkages. *Journal of Economics and Sustainable Development*.5(21), 44-50.

Auty, R.M. (1997) Natural Resource Endowment, the State and Development Strategy. *Journal of International Development*,**9**, 651-663.

Auty, R. M. (2000). How Natural Resources Affect Economic Development.*Development Policy Review*, 18(4): 347–364.

Auty, R.M. (2001) Resource Abundance and Economic Development. Oxford University Press, Oxford.

Baghebo, M (2012) Natural Resource Economics. Kadmon Printing Press and Publishing House, Bayelsa.

Baland, J.-M. and Francois, P. (2000). Rent-seeking and Resource Booms.*Journal of Development Economics*, 61(2): 527–542.

Ben-Salha, O., Dachraouid, H. Maamar Sebri. Resources Policy (2018), https://doi.org/10.1016/j.resourpol.2018.07.005.

Bjorvatn, K, & Farzanegan, M.R. (2013). Demograpic Transition in Resources Rich Countries: A Blessing or a Curse? World Development, 40(7), 1308-1316.

Ewubare, D. B. & Obayori, E. L. (2019). Comparative Study of the Impact of Oil Rent on Healthcare in Nigeria and Cameroon: A Three Stage Methodical Approach. *International Journal of Science and Management Studies*, 2(1), 58-63.

Gelb, A. and Associates (1988) Oil windfalls: blessing or curse: Oxford University Press, London.

Gylfason, T., Herbertsson, T. T., and Zoega, G. (1999). A Mixed Blessing.*Macroeconomic Dynamics*, 3(2):204–225.

Gylfason, T. (2001). Natural Resources, Education, and Economic Development.*European Economic Review*, 45(4): 847–859.

Jensen, N. and Wantchekon, L. (2004) Resource Wealth and Political Regimes in Africa. *Comparative Political Studies*,37, 816-841.

Ofori, P. E. & Grechyna, D. (2021). Remittances, Natural Resource Rent and Economic Growth in Sub- Saharan Africa. *A G D I Working Paper*, WP/21/056.

Ogbonna, G. N., & Ebimobowei, A. (2012). Petroleum Income and Nigerian Economy: Empirical evidence. *Oman Chapter of Arabian Journal of Business and Management Review, 34*(965), 1-27.

Ojapinwa, T. V. &Ejumedia, P. E. (2012). The industrial impact of oil price shocks in Nigeria (1970-2010). European Scientific Journal , 8(12), 93-106.

Onyejiuwa, D.C. (2016). Resource Rents and Dependence in Sub-Saharan African Countries Economies. *Open Access Library Journal*, 3: e2378, 1-11.

Opaleye, S.S., Okowa, W. & Ohale, L. (2018). Oil Rent and Socioeconomic Outcomes in Selected oil Producing Countries in Africa. *International Journal of Research in Business, Economic and Management,* 2(2), 27-43.

Rosser, A. (1999). The Political Economy of the Resource Curse: A Literature Survey. IDS Working Paper 268.

Sachs, J. D. and Warner, A. M. (2001). The Curse of Natural Resources.*European Economic Review*, 45(4): 827–838.

Saraswati, R. (2013). Oil Rent and economic growth in Indonesia. Journal of Economics and Sustainable Development, 4(4), 62-73.

Torvik, R. (2002). Natural Resources, Rent Seeking and Welfare. *Journal ofDevelopment Economics*, 67(2): 455–470.