Continental J. Social Sciences
Ebo (2019) 11 (1): 17 – 28 DOI: 10.5281/zenodo.3590044

Research Article

A critical Evaluation of Implications of Oil Revenue for Nigeria Economic Growth 1989 to 2018

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Abstract

The implication of oil revenue on Nigeria's economic growth between 1989 and 2018 was examined in this study. Secondary data from statistical bulletin of Central Bank of Nigeria (CBN) was used in this study. Multiple regression technique of the IBM Statistical Package for Social Sciences (SPSS) version 23 was used in analyzing the data for this study. Findings from the analysis revealed that revenue from oil positively and significantly impacted on Nigeria's economic growth. It is imperative given the importance of the oil sector of the economy for the government to invest more in the sector and encourage local participation. However, because of reducing revenue from this sector, the government should revitalise the agricultural sector, the country's cash cow before discovery of petroleum.

Keywords: Oil, Corruption, Agricultural sector, GDP

Received: 21/07/19 Accepted: 11/11/19

Introduction

Adequate revenue generation by the government is expected to engender enabling environment for economic growth. Oil revenue provides the hope that availability of required revenue will enable a faster and robust economic development in Nigeria. The discovery of oil in 1956 at Oloibiri, Ogba Local Government of Bayelsa state was the beginning of the hope for a faster economic growth because the oil reserve discovered then was about 3.1% of global oil reserve (Madugba *et al*., 2016). However, conclusion

from past literature revealed that rate of development was disproportionately lower than the huge revenue from oil. According to Oxfam International (2017), the oil sector provides 80% of the Nigerian government's revenue, but its performance is not efficient, and its contribution to the economy is not equitable. Odularu (2015) also stated that despite large proceeds from domestic sales and export of petroleum products, its effect on the growth of the Nigerian economy as regards returns and productivity was disproportionately low.

This abysmally low economic growth was reflected in poor economic diversifications, dismal social welfare indicators, increased poverty levels, higher level of corruption, regional conflict and poor governance style, (Madugba *et al.* (2016).

According to Asekunowo *et al.* (2012) in Ogunmakin *et al.* (2014), the thriving GDP and economy of Nigeria and other oil exporting countries has not been used to the benefit of its citizens. They stated further that "Dutch disease is the most prevalent channels of transmission that has been attributed to the poor rates of economic growth in many oil rich countries"

The dwindling oil revenue resulted from both local and international shocks negatively affected the Nigeria oil industry. The local shocks with negative effects include oil pipeline vandalism, illicit export of crude oil and militia onslaught against oil companies. This volatility has come from international shocks caused by financial crises, strikes, wars and global reduction in the demand for oil. The reduced demand forces its price to fall and in turn reducing total oil revenue accruable to the government. Further to these external shocks is the continued discovery of oil deposit by some oil importing countries. The invention of equipment/machines and other vehicular machines that can function on alternative fuel energy is an additional shock from the oil importing countries.

Inability to redirect attention to other sources of revenue emanate from the long term over dependence oil which is thought to be available for an unforeseeable long period of time. This over dependence brought with it over dependence on imported goods thereby leaving undeveloped locally produced goods and discouraging local industries. This resulted in increased consumption expenditure which has the tendencies of inducing inflation.

Lack of continuous infrastructural development which can engender economic growth from the enormous proceeds being derived from downstream and upstream oil disposal

resulted into an indirect temporary effect on the economy because other sector of the economy was neglected. The huge oil revenue is expected to influence government expenditure which in turn is expected to have multiplier effects on other sector of the economy. However, both the oil sector and other sectors of the economy were retarded growth. This study is aimed at investigating factors contributing to the low economic growth despite the huge revenue being derived from oil. The study also aimed at ascertaining the implications of the huge oil revenue on government expenditure and economic development in light of the Economic Recovery Growth Plan (ERGP) from 2017 to 2020.

Statement of the problem

Nigeria is acclaimed to be the most populous country in Africa according to PWC (2016) has the largest economy in Africa and ranked 22nd globally. Earnings from oil and its byproducts still constitute a greater percentage of Nigeria total revenue and the highest foreign exchange earner. High inelasticity of oil demand and the volatility of its price increases by the day and thereby affecting the predictability of revenue derivable from the oil sector of the economy. Until recently, Nigerian economy depends heavily on the revenue derived from the petroleum products without any thought of developing other sectors of the economy. Moves are being made to direct attention to harnessing the potentialities of taxation. However, most companies have relocated outside Nigeria and efforts being made to woo them and others back into the country.

Literature Review

Theoretical Literature

The classical theory of economic growth is one of the traditional classical and neoclassical models credited to both Solow (1956) and Mincer (1958) was developed in 1956 (Nweze and Edame 2016). The model showed that the rate of response of economic growth will be determined by the amount of inputs of capital and labour. The theory emphasized that technology plays a big role in economic growth because it increases productivity and efficiency of workers which will in turn expand production of goods and services. The functions in the model did not include non-economic variables, i.e. capital and human health variables. The role of technological progress is exogenous to the system as a whole. This model by Solow (1956) indicated that accumulation of physical capital will enable expanded labour force that will make it more productive and in turn result in growth of the economy.

Theories on growth such as the endowment theory of growth as advocated by Adam Smith, the absolute cost advantage by David Ricardo and comparative cost advantage believes that countries should specialise to produce and export according to their comparative advantage. The theorists suggest that greatest gain of economic benefit will accrue to a country relative to other countries by producing at lower overall cost, commodities which a country has in abundance or can be easily produced.
The doctrine of comparative advantage according to the Heckscher-Ohlin (HO) theory states that countries produce and export the commodities which require the use of its abundant productive factors intensely Feenstra, (2004) in Ogba *et al.* (2018). Igberaese (2013) stated that other countries will benefit from trade only if they accept the cost advantage of the trading country and focus on producing a commodity in which they have an advantage. According to Ogba, *et al* (2018), it is this theory that guides resource endowment economist's belief in free trade, specialization and the international division of labour. They stated further by quoting (O'Toole, 2007 and Igberaese, 2013) that this was the reasoning behind why some countries produce agricultural and mineral commodities while others produce industrial goods.

Empirical Literature
Discussions on theoretical assertion on economic growth are many and still continuing in the academia, perhaps, because of the volatility of the economic environment in countries of the world. Nigeria is a mono product exporting country since the discovery of crude oil at Oloibiri, Bayelsa state in 1958. Since then, may be because of the quality of its oil, Nigeria has been a major supplier to the world market. Nigeria is one of the world's largest producers of crude oil, the 10th largest producer and the 6th largest exporter among Organisation of Petroleum Exporting Countries (OPEC) members, Adewumi and Adenugba (2010) in Nwoba, and Abah (2017).

The causal relationship of oil revenue and economic growth has been the focal point of economists and researcher till the present times.

The implication of crude oil on the performance of Nigerian economy was investigated by Odularu (2015) written in 2008 and uploaded in 2015. The OLS regression method was used in analysing the time series data used in the study. Result from the study indicated that activities in both the upstream and downstream sector of the oil industry impacted positively on the economy. From the result of the study, Odularu (2015) advised that the

government should invest more in the oil sector of the economy and make policies that will encourage private sector participation in the country's economic development.

Nweze and Edame (2016) also empirically examined the impact of oil revenue on the economic growth of Nigeria. The regression result was estimated with Error Correlation Mechanism. Cointegration and unit root test was conducted to determine the stationarity and long run relationship between the variables. The outcome of the study revealed that revenue from oil in the long-run, positively impacted on the economy but retard the economy in the short run. This result is an indication that proceeds of oil sales utilised is ineffective and inefficient in Nigeria. They stated further that reasons for these inadequacies were not unconnected with corruption and reckless spending of oil revenue. He therefore advised efforts should be made by the government need to improve the country's trade with the rest of the world and put in place policies that will enable judicious spending by the government. He believed that if this is put in place other sectors of the economy such as, agriculture and the manufacturing sector, will be developed.

Ibeh (2013) conducted a study on the "impact of oil industry on economic growth performance in Nigeria within the period of 1980-2010" conducted using simple regression techniques to analyse the influence of oil revenue on the country's gross domestic product (GDP). The outcome of the study revealed that positive relationship exists between the variables but the t-tests showed an insignificant effect of the explanatory variables on the country's economic growth. In the same vein, the f-tests revealed an insignificant joint influence by the explanatory variables because the R^2 test shows the poor explanatory power of the variables in the model. The researcher advised policymakers to develop other sectors of the economy such as agriculture in order to compliment contributions of the oil sector of the economy. She stated further that efforts be made to reduce gas flaring and water pollution by conducting environmental impact assessment (EIA) and in addition impose gas flaring and effluent discharge taxes so as to discourage air pollution from gas flaring and water pollution. Corruption is also seen as one of the reasons for low impact of oil revenue on economic growth. Corruption is a pressing issue in Nigeria (PwC 2016). They stated further that little has been done to explore the dynamic effects of corruption that affect the long run capacity of the country to achieve its potential. According to Ribadu (2004) in Alege *et al.* (2014) corruption and mismanagement swallow about 40 percent of Nigeria's $20 billion annual oil income.

Ehiemua (2015) researched into "crude oil as the sources of corruption and economic disparity in Nigeria". The researcher believed that crude oil is the primary engines of Nigeria's economic growth and as well the cause of the extensive level of corruption. The researcher investigated reasons why corruption persists in Nigeria nation and the disparate level of economic development despite the enormous revenue from crude oil. Applying the constructivist approach of research method found that combination of factors engenders the level corruption. These factors, Ehiemua (2015) stated, includes cultural factors such as community-based traditions, as well as greed and dependence on oil as a primary source of the nation's prosperity. Another factor, he continued was the inequality in wealth distribution from underpaid workers making them to act against the principles of justice. Finally, he observed that welfare of corrupt politicians is prioritised over that of the nation. This issue of corruption, according to Odularu (2015), stymies development and taints Nigeria's business environment because, according to World Bank in Odularu (2015), 80% of energy revenue benefits only 1% of the nation's population. Uwakonye *et al.* (2006) also stated that despite the importance of oil to Nigerian economy the people of Nigeria still suffer from a corrupt government.

Madugba *et al.* (2016) evaluated the contribution of oil revenue to economic development in Nigeria. They tested the impact of growth rate in oil revenue and growth rate in GDP and growth rate in total federally collected revenue in Nigeria between 1991 and 2012. The regression analysis SPSS version 20 was used in analysing the data. Results showed that a unit change in growth rate of oil revenue will lead to an equal unit change in growth rate of GDP. Two of the estimated coefficients of the models used are positively correlated and therefore they concluded that growth rate in oil revenue significantly impacted on both growth rates in GDP and in growth rate in total federally collected revenue. In effect they advised that the government should ensure that multinational oil companies are involved in corporate social responsibility in their host communities in order the unhealthy atmosphere. They advised further that the government should put policy in place to reduce the social unrest pervading the host communities; to stop the unwholesome activities of smugglers; to diversify the economy and establish anticorruption agency that can curb looting of public funds.

Ogunmakin *et al.* (2014) examined economic development and oil revenue in Nigeria carrying out the research using the statistical analysis of the SPSS. From the analysis they observed that the country is over dependent on oil for its economic development. In addition, the outcome from the models revealed a positive relationship between oil revenue and economic development and thereby deduced from the study that proper

economic development expected would have been achieved had other sectors of the economy which would have complimented the oil sector was neglected. They therefore recommended that a proper and adequate revenue generation medium be put in place to improve revenue generation from other sector of the economy. Diversification of economy into other sectors should be explored and that appropriate policies and functional institutions are put in place to checkmate level of corruption that is robbing the people of the potential benefits of economic development.

Akinlo (2012) examined the question of the importance of oil to Nigeria's economic growth between 1960 and 2009. The granger causality test conducted between the five sectors of the economy revealed that it is only the agriculture and trade that did not granger cause oil and no granger causality was found between trade and services; building and construction. Akinlo (2012) therefore recommended that the government should institute appropriate regulatory and pricing policies that will make possible the integration of various economic sectors in order to reverse the negative impact of oil on the manufacturing sector.

Abdullahi *et al.* (2015) investigated the impact of petroleum on Nigerian economy from 2000-2009. They measured crude oil revenue and GDP using the simple regression technique of SPSS. The outcome of the study revealed that positive significant relationship exists between the independent variable and the dependent variable. They stated further that this impact cut across the key indicators of economic development including GDP, energy supply, foreign reserves, employment generation, etc. They therefore recommended that policymakers to ensure that oil exploration is carried out by Nigerians instead of leaving it in the hand of foreign exploration companies to enable the country and its citizen benefit more. In their opinion over dependence on oil is dangerous. They concluded that other sectors of the economy should as well be developed.

Trend of Studies on Nigerian Oil Revenue from 1960 to 2016

The academia has conducted studies on the lingering low economic growth despite the humongous revenue from crude oil sales in Nigeria. The country's GDP has been the proxy for economic growth and related to oil revenue and/or non-oil revenue. None of the above authors include expenditure the explanatory variables except Nweze and Edame (2016) whose study covered the period between 1981 and 2014. This study covers this gap and extends the period a little further to considered changes that might have occurred between previous studies.

Materials/Methods

Materials for this study are those that concerns the economy of Nigeria and includes the crude oil revenue, government total expenditure and GDP. Secondary data was sourced from statistical bulletins covering 1988 to 2018 of CBN and National Bureau of Statistics was employed in order to examine the implications of oil revenue and government expenditure on the country's economic growth. The analysis was carried with Ordinary Least Square technique of SPSS version 23. The following are the hypothesis formulated for this study:

H_1: Crude oil revenue has significant impact on Nigeria's Economic Growth
H_0: Total Expenditure has significant impact on Nigeria's Economic Growth

Model Specification and Operational Definition of Variables

The model for this study was formulated following the research work of Abdullahi *et al.* (2015), in their assessment of the implications of oil revenue from petroleum resources on Nigerian economic development (2000-2009. In analyzing the secondary data of the variables of crude oil revenue and GDP used simple linear regression model with the aid of SPSS. The model adopted was GDP = βo + βoil REV + ε. For this study the model was modified to include government expenditure necessitating the using of multiple regression analysis technique of SPSS thus:

RGDP = f(OilRev, FGEx)

$$\text{RGDP} = \beta_0 + \beta_1 \text{OilRev}_t + \text{TotEx}_t + \mu_1$$

Where:

RGDP = Real gross domestic product

OilRev = Oil Revenue

TotEx = Total Expenditure

β_0 = Intercept term (parameter) of the equation. With this the average effect of variables not included will be excluded from the model. In essence, if OilRev and TotEx is set at zero RGDP is of average value.

β_1= partial regression coefficient or partial slope coefficient (Gujarati and Porter 2009; Gujarati 2006; Osuala 2010 and Osuala and Jones, 2014) in Jones, *et al* (2015). It

measures the change in the mean value of RGDP per unit of change in VAT and CED.

μ_1 = the unexplained variables or error term or random or stochastic disturbance term.

Results and Discussion of Results

In this study the ability of two predictor variables: oil revenue and total government expenditure was assessed with the multiple regression technique of the SPSS version 23 to predict the dependent variable: economic growth.

The analysis revealed that the model as a whole is significant [$F(2,27) = 559.309$ $P < .0005$]. This outcome is an indication of statistical significance of the variables at .0005 which is 5% significant level and 99.5% confidence level.

This outcome indicated that the explanatory variables are important predictor of GDP (economic growth). The coefficient of determination i.e. R^2 indicated that about 98% of the systematic variation in the GDP was explained by the regressor in the model. The remaining 2% relate to the error term, though unexplained by the model. R^2 measure the proportion of variation that is explained by the independent variables in the regression model Berenson and Levine (1996) in Abdullahi *et al.* (2015). The predictor variables can be used to estimate variation in the dependent variable. Oil revenue and total government expenditure are highly related especially in Nigeria whose major source of revenue is from oil. measures the proportion of variation.

The regression result in Table 1 shows the statistical significance contribution of oil revenue is greater than that of the total expenditure and shows how important oil is to the country's economic growth: OilRev (beta = -.182) and TotEx (1.126). This outcome shows that Nigeria economy is highly dependent on revenue from oil for its sustenance. The outcome of this study is consistent with the conclusion reached by: Ogunmakin (2014), Odularu (2015), Nweze and Edame (2016) and Madugba *et al.* (2016). However, it is inconsistent with result obtained by Ibeh (2013) in his study "impact of oil industry on economic growth performance in Nigeria within the period of 1980-2010".

Table 1: Regression results: Economic Growth (GDP) on Oil Revenue and Total Expenditure

	B	β	t-test
Constant	-3111.163		t-(1.790), p = .085
Oil Revenue	-2.630	-.182	t-(-3.767), p = .001
Total Expenditure	20.024	1.126	t-(23.275), p = .000

$\boldsymbol{R}$ = .988, $\boldsymbol{R}^2$ = .976, Adjusted $\boldsymbol{R}^2$ = .975, $\boldsymbol{R}^2$ change = .976, $\boldsymbol{F}$(2,27) = 559.31

Conclusion and Recommendation

The major source of foreign reserve and mainstay of the country's economic survival has been the oil sector since the discovery oil. However, the humongous revenue from oil has not being of benefit to its citizens. Though the oil discovery looks promising from onset until lately when discovery of oil by some of the buyers coupled with alternative energy discovery the government did not project any continuous and sustainable economic development plan.

In this study the predictor variables, oil revenue and total expenditure, was established with the dependent variable, GDP. The result shows that oil revenue has a significant positive relationship with Nigeria economy.

Revenue from oil is dwindling because reducing volume of sales and drastic and continuous fall in price it will be imperative for the government to revert back to the non-oil sectors of the economy earlier abandoned. The agricultural sector comprising of cocoa, groundnut, coffee and others should be developed. Tax has been established to be negatively correlated with economic development therefore increases in taxation may not help the economy. The government should encourage local investors to invest in the oil sector. Investors in the agricultural sector should as well be encouraged with tax holidays, soft loan. The insecurity from herdsmen and kidnappers should be ameliorated

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