EMPIRICAL ANALYSIS OF THE IMPACT OF NON-OIL REVENUE ON ECONOMIC GROWTH: NIGERIAN EXPERIENCE

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Abstract
This study evaluated the impact of non-oil revenue on government revenue and examine the effect of non-oil revenue on economic growth. The study used secondary data. Data collected were analysed using inferential statistics – the simple regression analysis of the ordinary least square method. The non-oil revenue was the independent variable while economic growth measure by the real gross domestic product was the dependent variable in model 1 and total government revenue was the dependent variable in model 2. The study found that there was significant relationship non-oil revenue and economic growth at 1 percent level of significance (t = 26.58, p = 0.00). Also there was significant relationship and impact of non-oil revenue on total government revenue at 1 percent level of significance (t = 25.25, p = 0.00). The study concluded that Government should use the revenue generated from petroleum to invest in other domestic sectors such as Agriculture and manufacturing sector in order to expand the revenue source of the economy and further increase the revenue base of the economy.

Keywords: Non-oil revenue, Economic growth, Nigeria, Gross domestic product, Government revenue
INTRODUCTION

Nigeria, like many other countries, relies on revenue generation in meeting the basic and infrastructural needs of the populace. For development and growth of any society, the provision of basic infrastructure is quite necessary. Prior to the discovery of oil in Oloibiri in Bayelsa State, Nigeria, agricultural sector was the mainstay of the Nigeria economy. The World Bank (2013) asserted that before oil in Nigeria, agricultural sector contributed about 95% to her foreign exchange earnings, generated over 60% of her employment capacity and approximately 56% to her gross domestic earnings.

After the discovery of oil in commercial quantity, petroleum industry in Nigeria became the largest industry. Oil provided approximately 90% of foreign exchange earnings and about 80 percent of Federal revenue and contributes to the growth rate of Gross domestic product (GDP) of the Nigerian economy. The oil boom of 1970s led to Nigeria’s neglect of its strong agricultural and light manufacturing bases in favour of an unhealthy dependence on crude oil. No doubt that oil revenue has contributed substantially to revenue generation and growth of Nigeria’s economy; however Nigeria’s overdependence on the oil sector and the urgent need for economic diversification has become of paramount concern (Sanusi, 2003). One major problem with the over reliance on oil revenue is the fact that its price often fluctuates, its therefore volatile. This implies that the dynamics of the Nigerian economy is at the whims and caprices of the price of oil (Enoma & Isedu, 2011). This means that any structural distortion in the foreign economies capable of causing change in oil price directly affects Nigerian economy.

The continued unimpressive performance of the non-oil sectors in the economy and the vulnerability of the external sector thus dictate the urgent need to diversify the economy back to the abandoned non oil sectors in order to boost our foreign earnings through non oil exports. Non oil sectors like the agriculture and the mining sectors were known to have dominated Nigeria’s exports in the past. Non oil exports accounted for more than 66% of Nigeria’s total export and contributed immensely to the growth of Nigeria’s economy in the 1960s (Ogunkola, Bankole and Adewuyi, 2008).

A lot of empirical studies had focused only on the effect of oil revenue on Nigerian economic growth and development while there have been dearth on impact of non-oil on economic growth as a result of the neglect of the sector by the government. This study however seeks to further advance on the evaluation of the non-oil revenue impact on government revenue and the resultant effect on economic growth using the current data in order to determine the current impact of the sector on the economy.

This study therefore tends to evaluate the impact of non-oil revenue on government revenue and examine the effect of non-oil revenue on economic growth
LITERATURE REVIEW
Conceptual and Theoretical Framework

Revenue is defined as all amounts of money received by a government from external sources for example those originating from “outside the government” net of refunds and other correcting transactions, proceeds from issuance of debt, the sale of investments, agency or private trust transactions, and intra-governmental transfers (Ahmed, 2010).

The working definition of this study is in line with Asher (2001), Soyode and Kajola (2006) assertions that options are available to governments for raising fund for bidding resources away from the other sectors of the economy and from other claimants to undertake their activities. Thus, revenue sources are not only limited to oil and non-oil sources but other means available to government in raising fund to financing their activities. Hence, the study also captured public debt.

Public revenue consists of taxes, revenue from administrative activities like fines, fees, gifts and grants. Public revenue can be classified into two types including: tax and non-tax revenue (Illyas and Siddiqi, 2010).

Economic growth has been described as sustained increase in per capita national output or net national product over a long period of time. It also implies that the rate of increase in total output must be greater than the rate of population growth (Dwivedi 2006). Economic growth occurs when a nation’s production possibility frontier (PPF) shifts outward. Economic growth, being the growth in output per capita, is an important objective of government since it is associated with rising average real incomes and living standard.

The Robert Solow neo-classical growth model posits that growth depends on capital accumulation – increasing the stock of capital goods to expand productive capacity, and the need for sufficient saving to finance increased allocation of resources towards investment.

Bencivenga and Smith (1991) asserted that economic growth will increase if more savings are channelled into the activity with high productivity while reducing the risk associated with liquidity needs. This will show that banks provide the benefits of eliminating unnecessary liquidations. Studies have shown that countries with well-developed financial institutions tend to grow faster, particularly the size of the banking system and the liquidity of the stock market tend to have strong positive impact on economic growth. The financial services provided by these institutions are essential drivers for innovation and economic growth.

Nnanna (2004) stated that the rate of output growth is determined by the accumulation of capital, the efficiency of resource utilization and the ability to acquire and adopt modern technology. He concluded that the degree of financial system development is crucial for attracting and sustaining capital flows, savings mobilization and utilization.
Empirical Review

Nweze Paul Nweze and Greg Ekpung Edame (2016) examined oil revenue and economic growth in Nigeria between 1981 and 2014. Secondary data on gross domestic product (GDP), used as a proxy for economic growth; oil revenue (OREV), and government expenditure (GEXP) which represented the explanatory variables were sourced mainly from CBN publications. In the course of empirical investigation, various advanced econometric techniques like Augmented Dickey Fuller Unit Root Test, Johansen Cointegration Test and Error Correction Mechanism (ECM) were employed and the result reveals among others: That all the variables were all stationary at first difference, meaning that the variables were not integrated of the same order justifying cointegration and error correction mechanism test. The cointegration result indicated that there is long run relationship among the variables with three cointegrating equation(s). The result of the error correction mechanism (ECM) test indicates that all the variables except lag of government expenditure exerted significant impact on economic growth in Nigeria. However, all the variables exhibited their expected sign in the short run but exhibited negative relationship with economic growth in the long run except for government expenditure, which has positive relationship with economic growth both in the long run and short run. The study concluded that Government should use the revenue generated from petroleum to invest in other domestic sectors such as Agriculture and manufacturing sector in order to expand the revenue source of the economy and further increase the revenue base of the economy.

Okezie and Azubike (2016) evaluated the contribution of non-oil revenue to government revenue and economic growth in Nigeria from 1980 to 2014. To achieve the research objective, relevant secondary data was sourced from the statistical bulletin of the Central bank of Nigeria and statement of accounts. The data was analyzed using the Ordinary Least Squares Regression. The result revealed a positive and significant contribution of non-oil revenue to economic growth and positive but slightly insignificant contribution to government revenue. The study recommended that efforts should be intensified by the government mostly at the Federal level in bringing to fruition the diversification of the nation’s productive sector judging from the great potentials and capacity of the non-oil sector in enhancing revenue and economic growth. Also, machinery need to be set in place to drive the policy and strategies aimed at opening up the non-oil productive sector and setting it on track for revenue generation and sustainable growth. All efforts to sabotage this course must be nibed in the bud as the development of the non-oil sector remains a veritable channel for tapping into Nigeria’s hidden wealth.

Okwara and Amori (2017) examined the impact of tax revenue on the economic growth in Nigeria for the period of 1994-2015. Secondary data were used and sourced from journals, textbooks and Central Bank of Nigeria (CBN) statistical bulletin. The variables considered are:
Gross Domestic Product (GDP) as a proxy for economic growth, Value Added Tax (VAT), and non-oil income (tax). To avoid spurious results, Ordinary Least Square (OLS) with the aids of Statistical Package for Social Sciences (SPSS) was used to test the significant impact of value added tax and non-oil income on Gross Domestic Product (GDP). The results revealed that non-oil income has significant impact on gross domestic product while value added tax has negative relationship and statistically insignificant for the period under review. The study concludes that tax revenue have significant impact on Nigerian economy growth. The paper therefore recommends that government should diversify the main revenue source from crude oil to other sectors of the economy such as agriculture, extractive industries in order to attract direct and indirect taxes.

Ude and Agodi (2014) investigated the time series role of non-oil revenue variables on economic growth in Nigeria. This study thus extends the literature in this area by employing cointegration methodology alongside error correction mechanism to investigate the impact of non-oil revenue on economic growth in Nigeria. The study employed annual observations from 1980 to 2013. The non-oil revenue variables analyzed are: agricultural revenue and manufacturing revenue. Results show that agricultural revenue, manufacturing revenue and interest rate have significant impact on economic growth in Nigeria. Results also show the existence of long-run equilibrium relationship and short run dynamic adjustment with speed of about 52% to restore equilibrium. The study concludes that non-oil revenue has the potential to unlock Nigeria’s economic morass an policy recommendations are provided.

Kawai Vincent (2017) evaluated the impact of Nigeria’s non-oil exports as to whether they have been effective in diversifying the productive base of the Nigerian Economy from Crude oil as the major source of foreign exchange. Expectedly, attention of scholars had shifted towards non-oil exports as a remedial for this quagmire. This study investigates the specific impact of the non-oil exports to the growth of Nigerian economy using annual data between 1980-to-2016. The study adopted the Phillip Perron (PP), the Engel- Granger Model (EGM) for co-integration were employed in its analysis. Findings revealed a strong evidence of co-integration relationship of non-oil exports in influencing rate of change in the level of economic growth in Nigeria. The study, apart from empirically providing information that has failed to give backing to recent claims of non-oil exports led growth in Nigeria, has also make some recommendations which include government should re-emphasized and strengthen industrial revolution plan with a clear strategy to develop sectoral plan so that the planned should be working sector by sector for better outcome of these sectors. Also, government should invest in non-oil sector in other to diversify the economy from monoculture economy to a multicultural
economy and creating economic environment which will help boost the activity of non-oil export sector.

Anthony Igwe, Chukwudi Emmanuel Edeh and Wilfred Ukpere (2015) examined the impact of non-oil export to economic growth in Nigeria for the period 1981-2012. The study adopted the export-led growth hypothesis as the framework of study. A production function which specified economic growth as a function of capital stock, labor and non-oil export is formulated to express the relationship between the dependent and the independent variables. The econometric techniques of Johansen cointegration and the vector error correction model are chosen to ascertain the impact and the long run relationship between the dependent and the explanatory variables. Also, the Granger causality technique is used to investigate a causality relationship between economic growth and the independent variables. Findings from the VEC analysis reveal that in both the short and long runs, non-oil export determines economic growth. Also, the cointegration analysis indicates a long run relationship between non-oil export and economic growth over the period under study. These two findings agree with the theory of export-led growth hypothesis. However, the Granger causality analysis indicates no causality relationship between non-oil export and economic growth. A uni-directional causality relationship runs from capital stock to economic growth. Also, a uni-directional causality relationship runs from economic growth to labor force.

Igwedinma Anofienem and Evans Osabuohien (2016) investigated the influence of foreign direct investment (FDI) and infrastructural development on non-oil exports in Nigeria (1981-2014). FDI connotes investment made in the acquisition of longterm management interest in an enterprise and operating in a country other than that of the investors. It augments domestic investment (DI), which is crucial to the attainment of economic growth and development. There are divergent views on the nature of effects of FDI in the body of literature. Thus, this study sheds recent light on the issue using the Nigerian case.

Idris and Ahmad (2017) aimed at evaluating the influence of tax revenue on the macroeconomic management of the Nigerian economy using a conceptual approach. By so doing, a comprehensive review of the literature as well as in-depth analysis of tax structure are critically conducted. Undeniably, an insight that shows a precise influence or relationship between tax revenue and the nation’s growth can be regarded as a working tool for policymakers particularly in developing countries. In view of that, this paper explores the revenue trend in Nigeria for over three decades in relation to its effects on GDP growth. As shown by the literature, the existence of causal relationship between tax revenue and economic growth suggests the positive influence of taxation as a fiscal policy tool in enhancing macroeconomic growth. This is certainly the policy implication of Keynesian propositions. On
the other hand, non-existence of causal relationship between tax revenue and economic growth implies that taxation as a fiscal variable shall be insignificant especially in the long run, as propounded by the Classical doctrine. In spite of the aforementioned policy importance, the percentage of tax revenue as a share of GDP in Nigeria remains positive but relatively low. This is attributed to the increased dependency of the economy on oil revenue while neglecting other potential sources especially in the areas of non-oil growth such as agriculture, solid minerals, and small-and-medium enterprises.

However, this paper has established that tax revenue is an essential instrument for resource mobilisation and plays a positive and significant role towards sustainable growth and development of the Nigerian economy. Further evidence shows that tax revenue increases the size of public sector savings and produces higher returns which can be used to encourage the provision of infrastructural facilities that stimulates output growth in the economy. In view of that, there is a growing need for proactive measures within the Nigerian tax system to ensure full enforcement and compliance of tax regulations, proper monitoring and evaluation of tax procedures in order to fight corruption and strengthen accountability in the public sector management. There is also need to examine the link between the burden of these sources of revenue on taxpayers and the productivity of revenue to the government. The regulatory institutions responsible for handling tax related matters should be steered towards the need to re-design efficient and equitable tax policies capable of complementing public sector expenditure and hence, correct for the problems of ever-increasing deficit and debt which engendered enormous macroeconomic disequilibrium in the country.

**METHODOLOGY**

**Model Specification**

In analyzing the effect of non-oil revenue on Nigeria economy growth, the variables employed are non-oil revenue, will be the independent variable while the gross domestic product and total government revenue will be the dependent variables.

The models for this study are as follows.

RGDP\(= \beta_0 + \beta_1 \text{NOR} + \mu \ldots \ldots 1\)

TRV\(= \beta_0 + \beta_1 \text{NOR} + \mu \ldots \ldots 2\)

Where,

RGDP = Real Gross domestic product

NOR = Non-oil revenue

TRV = Total government revenue

\(\beta_0\) = intercept or constant term
\( \beta_1 \) = parameters to be estimated
\( \mu \) = stochastic variable or error term incorporating other factors that are not considered in the model.

Data
The data for the study were sourced from secondary sources. The sample period covers from 1981-2016. The data were sourced from the statistical bulletin of Central Bank of Nigeria (see appendix 1).

Measurement of variables
- Gross domestic product is computed as addition of consumption, government spending, investment, net exports
- Non-oil revenue is the total income government generate from non-oil revenue
- Total revenue is the total income generated by the government

Method of Analysis
This study employed the use of multiple regression of the ordinary least square analysis. Test of statistical adequacy, such as the adjusted R-squared, t-statistic and standard error of coefficient were carried out to assess the relative significance of the variable, the desirability and reliability of model-estimation parameters. The tests were carried out using econometric package, E-views.

FINDINGS

Table 1: Result of Regression Analysis of Model 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>18598.51</td>
<td>823.8939</td>
<td>22.57391</td>
<td>0.0000</td>
</tr>
<tr>
<td>NOR</td>
<td>5.448650</td>
<td>0.205166</td>
<td>26.55725</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-squared 0.954010
Adjusted R-squared 0.952657
F-statistic 705.2876
Prob(F-statistic) 0.000000
Durbin-Watson stat 0.750604
The result above shows that there is positive relationship between non-oil revenue and economic growth. This shows that increase in non-oil revenue will lead to increase in economic growth while a decrease in non-oil revenue will also lead to decrease in economic growth. The result also show that there is significant relationship non-oil revenue and economic growth at 1 percent level of significance (t = 26.58, p = 0.00). This implies that the change in non-oil revenue has significant influence on the change in economic growth. The R squared of 0.95 indicates that 95 percent of the total variations in economic growth are explained by non-oil revenue while the remaining 5 percent is explained by variables not mentioned in the model. The F statistic (F = 705.29, p = 0.00) shows that the model is statistically significant at 1 percent level of significance and shows a goodness of fit.

From the interpretation above, the hypothesis 1 is therefore rejected and the alternative hypothesis is accepted, which mean that there is a significant impact of non-oil revenue on Nigeria economic growth.

This empirical result also confirms the fact that the non-oil sector remains a viable option for the government not only to shore up the dwindling income generated from the now unpredictable oil sector but to enhance sustainable growth of the economy. The government needs to provide the enabling environment that will help open up the nations untapped nonoil resources for more growth and development. They must ensure that strategies and policies are put in place and properly implemented to guarantee returns from the sector which in turn would boost growth.

### Table 2: Result of Regression Analysis of Model 2

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The result above shows that there is positive relationship between non-oil revenue and total government revenue. This shows that increase in non-oil revenue will lead to increase in total government revenue while a decrease in non-oil revenue will also lead to decrease in total government revenue.
government revenue. The result also show that there is significant relationship and impact of non-oil revenue on total government revenue at 1 percent level of significance (t = 25.25, p = 0.00). This implies that the change in non-oil revenue has significant influence on the change in total government revenue. The R squared of 0.95 indicates that 95 percent of the total variations in total government revenue are explained by non-oil revenue while the remaining 5 percent is explained by variables not mentioned in the model. The F statistic (F = 637.66, p = 0.00) shows that the overall model is statistically significant at 1 percent level of significance and shows a goodness of fit.

From the interpretation above, the null hypothesis is rejected and the alternative hypothesis is accepted. This implies that there is significant impact of non-oil revenue on government total revenue.

The low coefficient of non-oil revenue underscores the potentiality of Nigeria’s non-oil sector as the catalyst towards the drive for increased revenue which will impact positively the lives of the citizenry. Since the non-oil sector covers a vast area of the nation’s productive sector it will be advised that more products are made available for export rather than rely on import.

**CONCLUSION AND RECOMMENDATIONS**

From the literatures, it has been deduced that dependency on oil and wealth associated with it, has been the major cause of many economic distortions. It can therefore conclude that non-oil revenue is an essential variable which highly pushed up government spending and economic growth in Nigeria. Having evaluated the contribution of non-oil revenue to government income and economic growth, this paper concludes that non-oil revenue indeed has contributed positively to the income of the government and invariably to economic growth. It therefore holds that diversification of the nation revenue-base should not only be seen as an option but the part to sustained transformation of the nation’s economic fortune in the long run. The study showed that the non-oil sector offers a greater potential to increase Nigeria’s resilience against the vagaries it is currently experiencing with the world oil price and would contribute to achieving and sustaining long term economic growth and increased government revenue.

Setting Nigeria’s economy on a more balanced, broad base and diversified growth part is not an easy task, however the responsible management of all natural resources, good governance and of course a conducive business climate are indispensable tools in harnessing the vast potentials of Nigeria’s rich non-oil resources.

This study therefore recommends for the formulation of pragmatic policies aimed at reinventing in the non-oil sector, especially the agro-allied sector for better economic growth.
Hence, there is need to reinforce the existing policies on non-oil sector for more diversification of the economy which will yield better outcomes.

The study in line with Nweze and Greg (2016) concluded that Government should use the revenue generated from petroleum to invest in other domestic sectors such as Agriculture and manufacturing sector in order to expand the revenue source of the economy and further increase the revenue base of the economy. Government should also boost spending on capital or developmental projects, which will lead to reduction in unemployment and poverty. The manufacturing sub-sector should be provided with resources like electricity, road infrastructure, long- and medium-term credit facilities, and enabling business environment in order to boost production for export, and possibly help in the manufacture of some goods that are presently imported.

REFERENCES


Igwedinma Anofienem and Evans Osabuohien (2016) Non-oil Export, Foreign Direct Investment and Infrastructural Development in Nigeria. 3rd International of African Development Issues (CU-ICADI)


APPENDICES

Appendix 1

Real Gross Domestic Product, Non-Oil Revenue and Total Revenue of the Nigerian Government

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Real GDP (N'b)</th>
<th>NON-OIL REVENUE (N'b)</th>
<th>TOTAL REVENUE (N'b)</th>
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Appendix 2
Regression Results
Model 1
Dependent Variable: RGDP
Method: Least Squares
Date: 04/13/18   Time: 11:58
Sample: 1981 2016
Included observations: 36

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<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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</table>

R-squared 0.954010 Mean dependent var 31757.15
Adjusted R-squared 0.952657 S.D. dependent var 18151.71
S.E. of regression 3949.526 Akaike info criterion 19.45453
Sum squared resid 5.30E+08 Schwarz criterion 19.54250
Log likelihood -348.1816 Hannan-Quinn criter. 19.48524
F-statistic 705.2876 Durbin-Watson stat 0.750604
Prob(F-statistic) 0.000000

SOURCE: E-VIEW 7
Model 2
Dependent Variable: TRV
Method: Least Squares
Date: 04/13/18   Time: 11:59
Sample: 1981 2016
Included observations: 36

<table>
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<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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R-squared 0.949380    Mean dependent var 7021.314
Adjusted R-squared 0.947891   S.D. dependent var 8890.100
S.E. of regression 2029.385     Akaike info criterion 18.12281
Sum squared resid 1.40E+08    Schwarz criterion 18.21078
Log likelihood -324.2105   Hannan-Quinn criter. 18.15351
F-statistic 637.6648     Durbin-Watson stat 0.668842
Prob(F-statistic) 0.000000

SOURCE: E-VIEW 7