

# Econometric Analysis of the Effectiveness of Public Revenue in Economic Growth in Developing Countries: An Examination of Nigerian Economy

Charles Ayodele Jegede<sup>1</sup>

<sup>1</sup> Department of Accounting and finance, Lagos State University, Ojo, Nigeria

Correspondence: Charles Ayodele Jegede, Department of Accounting and finance, Lagos State University, Ojo, Nigeria. E-mail: jegede\_charles@yahoo.com

Received: April 8, 2014

Accepted: May 22, 2014

Online Published: July 25, 2014

doi:10.5539/ijef.v6n8p187

URL: <http://dx.doi.org/10.5539/ijef.v6n8p187>

## Abstract

This paper focused on the econometric analysis of the effectiveness of public revenue in economic growth in developing countries: an examination of Nigeria between 1980–2008. The study set one hypothesis which includes public revenues does not impact on economic growth in Nigeria. The study utilized secondary data obtained from the central bank of Nigeria and Federal Ministry of Finance. The study specified a workable model in which Real Gross Domestic product is the dependent variable while aggregate oil revenue, non oil revenue and federal independent revenue were independent variables. Ordinary least square (OLS) method, T-test, and F-test were used as analytical techniques. The study revealed that public revenues were effective in promoting economic growth in Nigeria because the coefficient of determination ( $R^2 = 0.63$  or 63%) was significant. The finding shows that oil revenues dominate public revenues in Nigeria and has caused volatility in other revenues such as non-oil and federal government independent revenue. The study therefore recommended that the federal government should revise its macroeconomic policies to improve efficiency and productivity of resources allocation in the economy. Also, government should reexamine its non oil revenue by way of increasing tax rate and introducing new taxes in such a way that it does not distort the working of the economy.

**Keywords:** public revenue, economic growth, oil revenue, output, Nigeria

## 1. Introduction

Public revenues implies the inflow of financial resources or monies into the government sector from other economic units/sectors (Otubala, 2011). In other words, public revenues consists of revenue receipts and capital receipts. Revenue receipts include routine and earned. While capital receipts cover those items which are basically of non repetitive and non routine variety and changes government financial assets and liabilities (Bathia, 2006). Public revenues also entails all non repayable receipts and grants and is divided into current and capital receipts. While current receipts comprise tax and non tax receipts within a given period, capital receipts are receipts from non financial assets used in production process for more than one year. Grants on the other hand, are non compulsory, non-repayable unrequited receipts from other government and international institutions. In Nigeria, public revenues consist of oil revenue, non oil revenue and federal government independent revenue in their aggregates. These revenues have been used by the federal government and their functional equivalents throughout history to carry out many functions of government. Such functions include economic infrastructures, social services, debt services, providing the Army, the police, the court system, and for the operation of government itself—all these play a crucial role in the process of economic activities. The effect of Public revenues on economic growth covers all economic activities resulting from imposition of tax system to oil extraction and exportation. Economic growth refers to long term rise in capacity to supply increasingly diverse economic goods and services to its population (Jhingan, 2003).

Public revenue is capable of encouraging economic growth performance. This can be achieved in two ways: first through the effect of tax system (tax policy, tax revenue and tax rate) and second through the effect of natural resources revenue. For instance, tax policy can affect productivity growth through its discouraging effect on research and development expenditures. Musgrave and Musgrave (2004) stated that the economic effects of tax include micro effects on the distribution of income and efficiency of resource use as well as macro effect on the

level of capacity output, employment, prices, and growth. However, tax policy must be carefully implemented so as not to defeat its purpose. Lee and Gordon (2005) observed that tax policy, tax revenue distorts economic growth. The distortion will reduce the growth potential. On the other hands, Thomas et al. (2000) noted that in the long run growth strategies that pay attention to environmental quality and the efficiency of natural resources usage, contribute to investment, economic growth and human welfare.

In Nigeria, public revenues have continued to show mixed trends from slight decrease from 1980 to 1986 (the period of pre SAP era) to sharp increases from 1986 to date without a corresponding increase in economic growth performance. In spite of the huge foreign exchange earnings from petroleum and non-oil revenue, Nigeria economic growth and overall economic performance has been disappointing. Otubala (2011), stated that although there have increase in public revenues due to the surge in natural resources wealth and the contribution of non oil revenue, the country has rarely improved the much needed public goods to improve the people welfare and reduced poverty. Generally, Nigeria economic growth performance has become worrisome as the country registered low per capital income, deteriorating economic infrastructure, high debt profile, epileptic power supply, high unemployment rate, among other things after receiving enormous revenue from oil and non oil related revenue as well. Therefore, it becomes necessary to worry on why a rich country like Nigeria can not foster economic growth given its high government revenues due to natural resources wealth and other sources of revenues. This calls for an investigation on the effects of public revenues on economic growth in Nigeria. The following questions became relevant for investigation; What is the trend and structure of public revenue in Nigeria? Does public revenue leads to economic growth? What is the effect of public revenues on economic growth in Nigeria?

### *1.1 Hypothesis of the Study*

The hypothesis in this study were stated in both null and alternative perspectives.

Ho: Public Revenues does not impact on economic growth in Nigeria.

H1: Public Revenues impact on economic growth in Nigeria.

### *1.2 Scope and Justification of the Study*

The scope of this study is limited to an empirical analysis of the effects of public revenues on economic growth in Nigeria between 1980 and 2008. This period was informed by the fact that 1980s demonstrated period of high increases in federal government revenues due to oil boom. The period also covers the pre-SAP era, SAP era and Post SAP era. It is in this vein that the study intends to analyze the various revenue sources of federal government and how it has impacted on economic growth. The finding from the study will guide the government to focus on how appropriate public revenues would be used in creating sound macro economic performance so as to achieve desirable economic growth.

## **2. Literature Review and Theoretical Framework**

There are fairly large literature (theoretical and empirical) on the effects of public revenues on economic growth in Nigeria and the world over. Ihimodu (1995) defines government revenue as public receipts which government collects from all sources except loans and borrowing. Public revenues is meant the income raised by government through taxes from the public, and natural resources revenue (oil revenue). Other sources of public revenues are: fee, fines, prices gift, profits from government enterprises, deficit financing (borrowing and money creations) foreign aid (grants, loans) and others. Otubala (2011), stated that Public revenues can be explained both in Broad and Narrow sense. The Broad sense of it includes all income and receipts irrespective of their sources and nature which the government obtains during any given period of time, while in the Narrow sense it includes all those sources of income which is described as revenue resources. In the broad sense of it, it will also include loans which the government raises under the term public revenue or more properly public income. The distinction however is that in the narrow sense in which the term "public revenues" is used in public finance includes only those income which are not subject to repay back while in the broad sense of the term includes all the receipts of the government irrespective of the facts whether they are subject to future payback.

Economic growth on the other hand refers to growth of potential output. That is production at full employment which is caused by growth in aggregate demand or observed output. It is theoretically defined as the increased in the value of good and service produced by an economy. It is conventionally measured as the percent rate of increases in real GDP. Traditional analyses of structure of government revenue have generally proceeded along the line of tax and non-tax revenue classifications which are consistent with budgetary and microeconomic conventions. However, the peculiarities of the Nigerian economy has underscored an alternative classification, namely oil and non-oil revenue. This later categorization derives from the dominance of oil revenue in

government receipts has consistently accounted for over 80 percent of total government revenue and over 90 percent of foreign exchange earnings over the past two decades. Nonetheless, the observation that oil revenue is an integral part of tax revenue makes the traditional classification relevant to the present purpose

### *2.1 Classification of Public Revenues in Nigeria*

According to Otubala (2011), the main Public revenues in Nigeria are categorized into oil revenue, non oil revenue and federal government independent revenue. Oil revenue is the most important source of revenue to the federation account. It is made up of Crude oil and Gas sale and Oil Taxes. The Oil Taxes include, Royalties, Petroleum profit taxes, Rent and others. The Non Oil Revenue is the second category of revenue to the federation account. This category refers to revenue that are not derived from or associated with oil. They include; companies income tax, (CIT), Custom and Excise Duties, (CED) Valued Added tax (VAT), Levies and Others. The third category is federal government independent revenue. This is revenue which belongs exclusively to the federal government and which is not derived from sharing from federation account revenue or vat pool. This include; operating surpluses or revenues of federal agencies and corporations such as the Nigeria port authority. Dividends from investment in company other sundry revenue, such as internally generated revenue of ministries departments and agencies of federal government.

### *2.2 Overview of Public Revenues in Nigeria*

There are three main sources of government revenue in Nigeria (Otubala, 2011). Two sources that accrue to federation account are oil and non-oil revenue sources. The third source of revenue to federal government is the independent sources which accrue to federal government directly without passing through the federation account. The federal government also maintained an account called the VAT POOL outside the federation account. Government also sources for fund when expenditure outstrips its current revenue. These involve deficit financing which include money creation, domestic and external borrowing. These sources of revenue together with government domestic revenue are collectively called public revenue.

#### *2.2.1 Oil Sector Revenue*

The first and the most important sources to federation account is “oil revenue” revenue from oil sector consist of crude oil sales, petroleum profit tax, rent, royalties, and earning from sales of NNPC. The oil sector revenue started in 1970’s when oil boom was first recorded. Total oil revenue in 1970 was N166.4 million, including other petroleum related revenue. Between 1973 and 1980, total oil revenue has increased to N12, 352.8 million and then started to decline up till 1984 to N8, 267.20 million. This decline was due to abolition of fixed exchange rates regime, from 1986 to date oil revenue increased from N8, 107.3 million in 1980 to N19, 0270.0 million in 1987 and stood at N82, 666.40 million in 1991; however, during these period 1987 to 1991 oil revenue has shown consistent increased indicating the presence of huge oil revenue. By 1991 to 2000, oil revenue again rose from N82, 666.00 to N1, 591.675.80 million. Between 2001 to 2008 oil led revenue has further increased from N1, 707,562.80 to N6, 530,630.80 in 2008. Between 2008-2009, oil revenue has dropped; the reason of this was attributed to fall in the price of crude oil in the international oil market occasioned by the global economic crisis, youth restiveness in the Niger Delta region, drastic reduction in OPEC quota (See Appendix 1).

These increases and fluctuation in oil revenue recorded over the sample periods are due to boom bust revenue cycles arising from crude oil prices in the world oil market either favourable or unfavourable shocks.

Again, the oil sector receipt actually constitutes a net residual as a result of high level of subsidies that is involved in the sales and distribution of crude petroleum products. The subsidies have three elements. There is a primary subsidy which is the difference between the price at which the federal government sell crude oil for domestic consumption and the price that would have been obtained if the oil was sold in the international oil market. The 2nd level subsidy is the excess of the total cost of crude oil, refining, excise duty, distribution and marketing. The third level subsidy is the extract cost borne by the NNPC in ensuring that petroleum product are evenly distributed between zonal areas of the economy arising from short falls between supply and demand for oil product in many part of the country.

The federal government had in the past tried to gradually phase out subsidy element which has attracted much controversies within the country. The issues of subsidy have remained an unsolved issue up till now between labour, organized trade union and the civil society.

Most recently, the federal government has taken a step in the marketing of petroleum product directly alongside the independent marketers. Thereby bring the firm control of the distribution marketing and making availability of the product to meet the demand and supply of petroleum products.

### 2.2.2 Non Oil Revenue

Non oil revenue is the second category of revenue to federation account. This refers to revenue that is not derived from or associated with oil. These include, company's income tax, custom and excise duties, valued added tax, levies and others. In 1980 nonoil revenue sum up to N2, 880.20 million. Between 1980- 1985, revenue from non oil sources increase from N2, 880.20 million to N4, 126.70 million. This period was characterized by upward and downward trend in non oil revenue. In 1991 it was N18, 325.2 million although; the level did not improve sufficiently to upset the oil sector revenue as a major source of government revenue. These upward increases in nonoil revenue have shown appreciable increased from N18, 325.2 million in 1991 to N903, 462.30 after one decade. Further, between 2002 to date nonoil revenue has shown tremendous increase from 903,462.30 to N1, 335,960.00 in 2001. This shows that if government devote much interest to revenue generation from the nonoil sector government revenue will appreciate through the nonoil revenue sector, record has also shown that from the period of introduction of the value added tax VAT (1984) nonoil revenue has continued to show increases (See Appendix 1).

### 2.2.3 Federal Government Independent Revenue

This is the third category of federal government revenue. This is revenue which belongs exclusively to the federal government and which is not derived from sharing from federation account revenue or vat pool. This include; operating surpluses or revenues of federal agencies and corporations such as the Nigeria port authority. Dividends from investment in company other sundry revenue, such as internally generated revenue of ministries departments and agencies of federal government.

### 2.3 Theoretical Framework

There are several theories developed by economist in the study of public revenues and economic growth of nations. These include theory of public revenue; theories of taxation such as socio-political theory, the expediency theory and optimal theory of taxation; theory of benefit received among others. This study however relied on heory of benefit received. This theory has its background in the contract theory of the state. Its main theme was that the subject of a country have a contract with the state for the protection of their lives and property and so its part. The state provides various goods and services. This theory also proceeds on the assumption that there is basically an exchange of contractual relationship between tax payer and the state. The state provides certain goods and services to the members of the society and they contribute to the cost of these supplies in proportion to the benefits received. In this situation, there is no place for issues like equitable distribution of income and wealth. Instead, the benefits are taken to represent the basis for distributing the tax burden in a specific manner. The theory overlooked the possible use of tax policy for bringing about economic growth or economic stabilization.

### 2.4 Review of Empirical Studies

The empirical studies of the effects of public revenue on economic growth focused on the effect of taxation, natural resources revenue and general revenue on on economic growth. Gbayesola and Uga (1999) studied the average responsiveness and inter temporal stability of government revenue in Nigeria from 1970–1995 using regression analysis and other test statistic (parameter) like chow test (t-test) for structural change, to determine the inter temporal stability. They found out that total federally collected revenue was more responsive to change in income in early years. It was also found that the magnitude of parameter estimate measuring responsiveness to change in tax revenue to change in tax rate and tax reform diminished significantly as the economy move a way from 1980.

Ajakaiye (1999) analyze the impact of Vat revenue in Nigeria using the CGE methodology simulation model and found that if VAT able organization treat VAT in the expected non cascading manner and VAT revenue are re injected into the economy via increase in sectoral government consumption, the general price level will increase by 5%, Total Revenue consumption exposition will fall by over 12%. Total consumption expenditure inclusive of government component will fall by 6.7%, Gross output/GDP will fall by 3% and 5% but the basic of wages of total income will increase lightly. Private saving will increase by over 14% in order to secure the saving investment balance, Government foreign saving will fall by about 4% and 11% respectively. He found that this scenario where VAT will have the most adverse effect in price consumption, output, employment and income best approximate the Nigeria system.

Ariyo (1997) study the productivity of tax system in Nigeria between 1970–1990 and found that the existing tax rate relief are usually influenced by group pressure and therefore many tax reform are not anchor on any identifiable macro-economic or widely base public policy objective. He posits that the policy proposal in the

annual budget is based on the performance of each revenue sources in the proceeding period. Administrative lag is another major factor in revenue sourcing. This applies particularly to custom and excise duties. Ariyo opine adopting a logarithmic auto regressive model, he observed that across the board, the F value is significant at 95% confidence level and R2 shows that the explanatory variables adequately explained the pattern of each revenue sources to total government revenue. The result also indicate low elasticity index for many of the tax sources relative to respective tax bases.

Purfield and Shift (2005) examined managing revenue volatility in a small inland economy: The case of Kiribati found that volatility in revenue in Kiribati reflects a narrow tax base an unidentified economy. Purfield and Schiff (2005) found that by International standard Kiribati's tax base is highly dependent on non tax and grant revenue. Fishing license, Fees and donor grant comprises the buck of receipts. They account for 2/3 of the total volatility in revenue, with shocks to GDP growth and accounting for the remainder.

Barrett and Greene (2008) studied the State Tax System: Staying stable in Ohio and found that volatile revenue strain and unpredictable taxes bring misery to everyone from state budget to businesses. It makes it hard to maintain programme and invest for future growth and that is concern for tax payer and the business community as well. Instability in the revenue base obviously lead to difficult budgeting at certain time.

Mehrara et al (2007) Examines empirically the relationship between oil revenue and economic growth and estimate the existence of threshold effect on output growth in 13 oil exporting countries including Nigeria from 1965-2005 applying panel regression the empirical result strongly suggest the existence of a threshold beyond which oil revenue growth exerts a negative effects on output. The result indicate that threshold affect the growth rate of oil revenue above which oil revenue significantly slow growth is around 18- 19 percent for oil exporting countries. In contrast a linear estimation with out any allowance for threshold effects would misleadingly have us believe that an increase in the oil revenue increases the growth rate.

Rewane (2007) studied the impact of oil revenue on Nigeria's credit worthiness, Debt profile and sustainability from 1973–2004. He found that the biggest challenges facing oil producing country is how to use its oil wealth strategically to promote sustainable development. Almost fifty years after oil was discovered at Oloibiri in South Eastern Nigeria, lead the country to bitter romance with creditor organization. He observed that in 1978 following the collapse of oil price, which exerted considerable pressure on government finances, Nigeria was unable to shift gears in the face of changing economic fortunes and adopted a policy of deficit financing. It became necessary to borrow for balance of payment support and project financing leading to “Jumbo Loan” contracted from the international capital market (ICM) in 1978 increasing the total external debt stock to US \$2.2 billion.

Lutfunnahar (2007) identified the determinants of tax share and revenue performance for Bangladesh along with 10 other developing countries for the 15 years through a panel data analysis. The results obtained suggest international trade, broad money, external debt and population growth to be significant determinants of tax efforts. The study concluded that Bangladesh and other countries have low tax effort (less than unity index) and are not utilizing their full capacity of tax revenue and therefore have the potential for financing budgetary imbalance through raising tax revenue.

Mahdavi (2008) used the advanced estimation techniques with an unbalanced panel data for 43 DCs over the period 1973–2002 including Pakistan. His results showed that aid had a negative effect, non-tax revenue had also negative effect while agriculture sector share had positive coefficient. Trade sector share had a positive effect and economically active female variable had a net adverse but insignificant effect while the old-age portion of population showed negative association for both income and sales tax. Extent of urbanization and literacy rate both showed positive effect. Population density, monetization and inflation rate remained negatively correlated. Inverse of GDP per capita was strongly and negatively correlated with the level of taxation. Net effect of political rights and civil liberties were significant.

What could be deduced from the review of the various studies above is that the effect of public revenues on economic growth is a subject of controversy. For example, natural resources abundant countries tend to grow slower than resources scares countries. The reason is that the economy that derives its income majorly from natural resources cannot sustain growth by substituting physical capital accumulation for deteriorating natural capital. Severe environmental degradation can affect a country's long term macroeconomic performance as noted by Gupta et al. (2002), Gelb (1988). Similarly, Herbst (2000), Sala-i-martin and Subramania (2003) also states that it is exactly the high level of government revenues due to natural resources wealth that systematically induces bad economic policies and low level of productive public spending with adverse consequences for economic growth.

### 3. Data and Methodology

The method of analysis used in this study is the Ordinary Least Square (OLS) technique. The OLS is a statistical technique used for fitting a regression line (that is choosing or estimating the structural parameters) to sample of some observations in such a way as to minimize the sum of squares of the deviations of the actual observation from the line. It has been chosen for our analysis because according to Koutsoyiannis (1997) its estimations are best, linear, unbiased (BLUE). In addition, it is one of the most commonly employed methods in estimating relationships in econometric models and its use, in a wide range of economic relationships, has provided fairly satisfactory results.

One of the OLS methods is the multiple regression analysis. Regression analysis is multiple when the value of the dependent variable is estimated on the basis of two or more independent variables. It offers explanation between an explained variable (regressor) and two or more explanatory variables (regressand). In any multiple regression equation, some important statistics embodied are the multiple correlation co-efficient (R), co-efficient of multiple determination ( $R^2$ ), standard deviation (error) of the estimate (SE), adjusted  $R^2$  ( $R^2$ ), Durbin–Waston statistics, t-statistics and F-statistics. Durbin Watson statistics was use to be able to examine the extent of serial correlation among variables These statistics were used for the analysis of the data.

The data for this study were mainly secondary data collected from various sources such as Central Bank of Nigeria statistical bulletin, 2008; Annual Report and Statement of Account (various issues), and the Federal Ministry of Finance. The data series used in the study for analysis includes; Real Gross Domestic product. (RGDP) that is GDP at factor prices deflated by the consumer prices index (at constant factor cost) Aggregate Oil revenue (OIR), Non oil revenue (NOR) and Federal Government Independent Revenue (FGIR). The data for public revenue covers all the categories of public revenue in Nigeria as previously indicated.

#### 3.1 Model Specification

In order to analyze the effects of public revenues on economic growth in Nigeria, an econometric model was specified. The model specified is represented as follows:

$$\text{Log RGDPGR}_t = \alpha_0 + \alpha_1 \text{Log OIR}_t + \alpha_2 \text{Log NOR}_t + \alpha_3 \text{Log FGIR}_t + u_t \quad (1)$$

Where, RGDP is the real gross domestic product, OIR is aggregate oil revenue, NOR is non-oil revenue, and FGIR is federal government independent revenue, Log stands for logarithm transformation.

Intuitively, all the three explanatory variables are expected to have positive effects on the growth Level, i.e.,  $\alpha_1, \alpha_2, \alpha_3 > 0$ .

### 4. Results and Discussion

The result of the equation estimated to verify the impact of public revenues on economic growth is presented in the table 1 below:

Table 1. OLS regression results

Dependent Variable: LOG(RGDP)				
Method: Least Squares				
Date: 06/10/13 Time: 4:53				
Sample: 1980 2008				
Included observations: 29				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.922082	0.558561	17.76366	0.0000
LOG(OIR)	0.182934	0.095177	1.922036	0.0661
LOG(NOR)	0.052777	0.119143	0.442971	0.6616
LOG(FGIR)	-0.012939	0.024493	-0.528280	0.6020
R-squared	0.630119	Mean dependent var		12.56243
Adjusted R-squared	0.585733	S.D. dependent var		0.589420
S.E. of regression	0.379371	Akaike info criterion		1.026839
Sum squared resid	3.598064	Schwarz criterion		1.215432
Log likelihood	-10.88917	Hannan-Quinn criter.		1.085904
F-statistic	14.19644	Durbin-Watson stat		1.201091
Prob(F-statistic)	0.000013			

Source: Eviews 7.0 Output.

#### 4.1 The Theoretical Significance of the Parameter Estimate

Table 1 reported the Ordinary Least Square multiple regression results for the study. According to the results, oil revenue has positive coefficients and it is significant at the 6% level. This result suggests a direct relationship between oil revenue and real gross domestic output in Nigeria. It indicates that a unit increase in the oil revenue will increase the RGDP by about 18 percent. This result is consistent with our a priori proposition. The non-oil revenue has a positive sign but not significant at 5% level and above. Though the result suggests a direct relationship between non-oil revenue and gross domestic output in Nigeria but non-oil revenue has not contributed meaningfully to the growth of output in Nigeria. The result shows that 1 percent increase in the non-oil revenue contributed only 5 percent increase to the real gross domestic product (RGDP). The federal government needs to boost her non oil revenue for even development in Nigeria. The Federal government revenue has a negative impact on the economic growth as shown in this analysis by the 0.0129 reduction in the GDP due to a unit rise in FGIR. This shows that FGIR does not contribute to the growth of output in Nigeria. This is, however, supported by the negative value of its coefficient. This result contradicts the A priori expectation, notwithstanding. Thus, other things being equal, the oil revenue has dominated public revenue in Nigeria during the periods investigated. This can be confirmed by the data set in Appendix 1 on the trend in public revenue.

#### 4.2 The Statistical Significance of the Parameter Estimate

The statistical significance of the parameter estimate is verified by the adjusted R squared, the standard error test; the F-statistic and the Durbin-Watson statistics.

(i) The value of the adjusted R-squared ( $R^2$ ) for the model is moderately high, pegged at 63.0%. It implies that oil revenue, non-oil revenue and the federal government independent revenue explained about 63% systematic variations in real Gross Domestic Product (GDP) over the observed years in the Nigeria economy while the remaining 37% variation is explained by other determining variables outside the model. The model also shows a good fit with the adjusted  $R^2$  of 0.585733. This is good enough for a well behaved model.

ii) For the model, when compared half of each coefficient with its standard error, it was found that the standard errors are greater than half of the values of the coefficients of all the variables except the federal government independent revenue variable. Hence the variables are not statistically significant. However, the overall standard error of the model which 0.379371 is very low. This means that the results of the model can still be withheld and useful for decision making. Also, the comparison of the standard error of the dependent variable (RGDP) with the mean of the dependent variable shows that the explanatory variables have impact on the RGDP as the value of the mean of the dependent variable is greater than the standard error by 12.56243. As a result, the standard error, being small relative to the mean of dependent variable shows that the model is preferred.

iii) The F statistic of 14.19644 is significant at 5% level and this shows that the explanatory variables are important determinants of economic growth.

iv) The value of Durbin Watson is 1.201091 for the model. This falls within the determinate region and implies that there is a negative first order serial autocorrelation among the explanatory variables in the model.

In summary, since all the econometric test applied in this study show a statistically significant relationship between the dependent and independent variables from the model, thus, we accept the alternative hypothesis which states that: There is a significant relationship between Public revenues and economic growth in Nigeria.

Although it is the A priori expectation that NOR and FGIR should significantly affect the RGDP, it is not so according to the analysis. This could be as a result of the rise and fall or volatility in oil revenue, this implies that Oil revenue influences the rise and fall in the other sources of revenue in Nigeria within this period. It may also be traced to the instability due largely to socio, political and economic events and other factors that may hinder the free flow of revenues. The government revise its macroeconomic policies to improve efficiency and productivity of resources allocation in the economy. The finding is in contrast with the work of Gbayerola and Uga (1999) who found out that total federally collected revenue was more responsive to change in income in early years in Nigeria. However, it is observed that OIR has strong significance on the RGDP and this is shown by the value of its T statistic. The consequences of increase oil revenues will increase gross domestic growth. This is clearly in contrast with the study of Mehrara et al (2007) who found the existence of a threshold beyond which oil revenue growth exerts a negative effects on output. The result indicate that threshold affect the growth rate of oil revenue above which oil revenue significantly slow growth is around 18- 19 percent for oil exporting countries including Nigeria.

In other words, the result of the present study shows that the multiple regression that collectively evaluates the

impacts of the independent variables on the real gross domestic product shows that they have significant impact on economic performance of the Nigerian economy with regards to the period 1980–2008.

## 5. Conclusion and Recommendations

The conclusion emerging from this study is that public revenue was effective in promoting economic growth in Nigeria. The empirical results shows that oil revenue and non-oil revenue had significant impact on the growth of output in Nigeria, while the federal government independent variable was not significant. The conclusion from the study is that public revenue has significant effect on economic growth in Nigeria between 1980 and 2008 with the exception of federal independent revenue. Base on the outcome of this study, there is the need for the government to revise its macroeconomic policies to improve efficiency and productivity of resources allocation in the economy. That Government should reexamine its non oil revenue by way of increasing tax rate and introducing new taxes in such a way that it does not distort the working of the economy. Finally, effort should be made by the government to encourage the non oil sector by way of investing in the real sector and the private

## References

- Ajakaiye, D. O. (1999). The Non-oil sector of the Nigeria economy; an overview Central Bank of Nigeria Economy (CBN). *Econs. Financial Rev*, 35(4), 28–41.
- Ariyo, A. (1997). *Tax policy and Economic Development: a Nigerian perspective*. CBN/World Bank Collaboration Study, Proceedings of the Workshop on Nigeria: Prospect of Development.
- Bhatia, H. L. (2006). Public Finance Vikex Pub House PVT LTD DEHL.
- Chipeta, C. (1988). *Tax Reform and Tax Yield in Malawi*. Research paper .83 AERC. Nairobi Kenya.
- Dalton, H. (1949). *Principle of public finance London*. Rout Ledge Kegan Paul Ltd.
- Egwaikhide, F. O. (1994). Budget Deficits and Macroeconomic Management. In A. Ariyo (Ed.), *Economic Reform and macroeconomic management in Nigeria*. Ibadan: Ibadan university press.
- Ekpo, A. H. (2001). *Managing the Nigeria economy in the twenty first century IPPA distinguished lecture*. Publication no 2 university of calabar.
- Gbayesola, T. O., & Uga, E. O. (1999). Sources of government Revenue in fiscal policy planning and management DPPC (uk) and NCEMA Nigeria (pp. 59–114).
- Gelb, A. H. (1988). *Windfall Gains: Blessing or Curse?* New York Oxford University press.
- Gupta, S. D., Clement, E. B., & Mulas-Ranados, C. (2002). *Expenditure Composition, Fiscal Assessment and growth in low income countries*. IMF workings paper no. 02/77.
- Herbst, J. (2000). State and power in Africa: Comparative Lesson in Authority and control.
- Jhingan, M. L. (1997). *The Economics of Development and Planning*. Delhi: Vrinda Publications (P) Ltd.
- Koutsoyiannis, A. (1997). *Theory of Econometrics: Introductory to Exposition of Econometric Methods* (2nd ed.). London: Macmillan Publishers L.t.d.
- Lee, Y., Roger, H., & Gordon, I. (2005). Tax structure and Economic growth. *Journal of Public Economics*, 89(5–6), 1027–1043. <http://dx.doi.org/10.1016/j.jpubeco.2004.07.002>
- Lutfunnahar, B. (2007). *A Panel Study on Tax Effort and Tax Buoyancy with Special Reference to Bangladesh*. Working Paper 715: Policy Analysis Unit (PAU) Research Department Bangladesh Ban.
- Mahdavi, S. (2008). The level and Composition of Tax Revenue in Developing Countries: Evidence from Unbalanced Panel Data. *International Review of Economics and Finance*, 17, 607–617. <http://dx.doi.org/10.1016/j.iref.2008.01.001>
- Mandoza, E. G., Muesi, G. M., & Asea, F. P. (1979). On the effectiveness of tax policy in altering long run growth. Herberger's superneutrality conjecture. *Journal of Public Economics*, 66(1), 99–128. [http://dx.doi.org/10.1016/S0047-2727\(97\)00011-X](http://dx.doi.org/10.1016/S0047-2727(97)00011-X)
- Otubala, O. A. (2011). *Effect of Public Revenues on Economic Growth in Nigeria (1980–2008)*. An Unpublished thesis of Ahmadu Bello University, Zaria in Partial Fulfillment of the Requirements for the Award of Masters of Science Degree In Economics.
- Purfield, C., & Shift. (2005). *Managing Revenue volatility in a small island Economy*. The case of Kiribati. IMF working paper 05/152.



Rewane, M. (2007). The impacts of oil Revenue in Nigeria creditworthiness, debt profile and sustainability.

Sala-iMartin, Z., & Subramania, A. (2003). *Addressing the natural Resources curse: An illustration from Nigeria*. NBER working paper No 9804.

### Appendix A. Time Series Data FOR, OIR, NOR and FGIR

Obs	FGIR	NOR	OIR	RGDP	YEAR
1980	487.5000	2880.200	12353.30	31546.80	1980.000
1981	1997.300	4726.100	8564.400	205222.1	1981.000
1982	732.8000	3618.800	7814.900	199685.3	1982.000
1983	710.1000	32557.70	7253.000	185598.1	1983.000
1984	580.9000	2984.100	8269.200	182563.0	1984.000
1985	938.9000	4126.700	10923.70	201036.2	1985.000
1986	433.7000	4488.500	8107.300	205871.4	1986.000
1987	407.6000	6353.600	19027.00	204806.5	1987.000
1988	510.5000	7765.000	19831.70	219875.6	1988.000
1989	938.0000	14739.90	39130.50	236729.6	1989.000
1990	1724.000	26215.30	71887.10	267550.0	1990.000
1991	3040.400	18325.20	82666.40	265379.1	1991.000
1992	4903.100	26375.10	164078.1	271365.5	1992.000
1993	5626.500	30667.00	162102.4	274833.3	1993.000
1994	3888.200	41718.40	160192.4	275450.6	1994.000
1995	20436.40	135439.7	324547.6	281407.4	1995.000
1996	3407.000	114814.0	408783.0	293945.4	1996.000
1997	8339.900	166000.0	416811.1	302022.5	1997.000
1998	1.39E+08	139297.6	324311.2	310890.1	1998.000
1999	2.25E+08	224765.4	724422.5	312183.5	1999.000
2000	3.14E+08	314483.9	1591676.	329178.7	2000.000
2001	9.03E+08	903462.2	1707563.	356884.3	2001.000
2002	5.01E+08	500986.3	1230851.	433203.5	2002.000
2003	5.01E+08	500815.3	2074280.	477533.0	2003.000
2004	5.66E+08	565700.0	3543800.	527576.0	2004.000
2005	7.85E+08	785100.0	4762400.	561931.4	2005.000
2006	6.78E+08	677535.0	5287567.	595821.6	2006.000
2007	1200800.	120080.0	4462910.	834251.1	2007.000
2008	1335960.	1335960.	6530630.	674889.0	2008.000

Sources: (i) CBN, Statistical Bulletin 2008; (ii) Federal Ministry of Finance.

### Appendix B. Regression Results

Dependent Variable: LOG(RGDP)

Method: Least Squares

Date: 06/10/13 Time: 14:53

Sample: 1980 2008

Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.922082	0.558561	17.76366	0.0000
LOG(OIR)	0.182934	0.095177	1.922036	0.0661
LOG(NOR)	0.052777	0.119143	0.442971	0.6616
LOG(FGIR)	-0.012939	0.024493	-0.528280	0.6020
R-squared	0.630119	Mean dependent var		12.56243
Adjusted R-squared	0.585733	S.D. dependent var		0.589420
S.E. of regression	0.379371	Akaike info criterion		1.026839
Sum squared resid	3.598064	Schwarz criterion		1.215432
Log likelihood	-10.88917	Hannan-Quinn criter.		1.085904
F-statistic	14.19644	Durbin-Watson stat		1.201091
Prob(F-statistic)	0.000013			

### **Copyrights**

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).