

## ASSESSMENT OF NON-OIL REVENUE ON ECONOMIC GROWTH AND DEVELOPMENT IN NIGERIA

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### Abstract

In the development of the Sub Sahara Africa's economies, the revenue productivity of the non-oil revenues and efficient utilisation of such taxes to payee cannot be over-emphasized. Tax revenues are not only important agent of economic development but they should also be a positive agent of infrastructural development. The basic objective of the paper is to measure the extent to which proxy of Non-oil Revenue contributes to national development and the efficient use of taxation for infrastructural development to the benefit of payees of taxes in Nigeria. We intend to also overwhelmingly x-ray and compare the contributions of non oil and oil taxes to the proxy of national development. We collected primary data through direct interviews of staff of some selected companies in Agbara Area of Ogun State, Nigeria and time series data from 1972 to 2012 from the Central Bank of Nigeria Annual Reports and Statistical Bulletin. The methodology adopted is Multiple Regression with Error correct factor. From our findings, the coefficient of non-oil revenue is not only smaller in relation to the quantum of oil tax revenues on real domestic product; however they are both significant at 5% confidence and this is tandem to the a prior expectation. This is in support of the popular argument that Nigeria heavily relies on oil revenues for her national development. We recommend that government should endeavour to diversify the revenue base of the economy by employing strategies that will increase industrialization in the real sector, mechanized agriculture and agro-allied industries.

**Keywords:** *Revenue- Productivity, Non-oil Revenues, Oil Revenue, Diversify, Industrialization, Mechanized Agriculture, Agro- allied Industries*

### Background to the Study

The prime objective of taxation is to finance public goods and services. Other key objectives of taxation are to promote fair distribution of income and wealth, efficient resource allocation, economic growth and economic stabilization (Musgrave, 2006: 5-7). Taxes affect the optimal decisions formed by personae dramatis such as individuals, firms and government. It may also have either positive or negative shocks on saving and investment decisions; it may therefore influence the growth rate of the economy. (Arisoy and Unlukaplan, 2010)

The growth and development of the Nigerian economy has, over the years, remained stunted and stagnant as a result of many factors, one of which is the challenge faced by corruption and in-effective use of Tax revenues to the benefits of payee of such taxes, over reliance on oil revenue, poor tax administration, low revenue productivity of non-oil taxes such as Company Income Tax, Custom and Excise Duties, Tariff

among other form of indirect Taxes. In particular, in Nigeria and most citizens of other countries in Sub Sahara Africa (SSA) do not believe in payment of taxes since they seemingly believe that there is no benefit attach to such civic duty. Given the negative impact of persistent unsustainable fiscal deficits on the Nigerian economy, there is now a consensus among policy makers and other experts on the need to address the problem of payee disbelief in payment of taxes, eliminate corruption, laxity and inefficient management of tax revenues and enhance revenue productivity of the non-oil taxes. (Ariyo, 1997)

Currently, most entities in Nigeria consider the tax environment as inimical and a disincentive to growth of business. It engenders loss of man-hour to both the government at all tiers and various types of businesses. It increases the cost of running businesses in Nigeria. In tax administration in the country and most Sub Sahara Africa, government lost vital tax revenue through sharp practices of tax officials, abuse of power by government officials who most times connive with revenue officers to swindle tax revenues. (Adegbe and Fakile, 2011)

The first central problem being investigated is to find out whether non-tax revenue is positively or inversely linked to the proxy economic growth in Nigeria. Second, we also want to investigate whether tax revenues are efficiently expended on public goods to the benefit of payee of such taxes. Third, to find out which of the parameters (oil and non tax revenues) are more significant to real gross domestic products. To achieve our aim, time series data are collected from the Central Bank of Nigeria's Annual Reports and Statistical bulletin. We also collate primary data through direct interview of staff of some selected companies in Agbara Industrial Estate to evaluate the use of Tax Revenue to the benefit of payees in the area. The methodology adopted is Multiple Regression using Error Correction Models (ECM). The result from the empirical study reveals that the coefficient of non oil revenue has the expected a priori positive signs and it is significant at 5% confidence interval. However, the coefficient of oil revenue is also positive and significant at the same confidence interval but the oil tax parameter is outlier; it shows that oil tax coefficient quintuple that of non oil revenue.

### **Literature Review and Theoretical Framework**

Taxes usually are a prime source of public revenue. A tax is a compulsory levy by government on individuals, firms, legal and corporate entities **without quid pro quo**. (Bhatia, 1982, Adebayo, 2013). From the theoretical exposition, a tax payer need not receive a definite and direct corresponding service in return for the amount of tax paid to government. There is expectation gap in this definitional and theoretical postulation. Tax payers expect a corresponding service delivery such as good road networks, good supply of electricity, hygienic water supply, education and health.

This is practicable in the developed nations. Hence the tendencies of tax payers paying taxes without forces are high. In such countries, revenue productivity is high, tax evasion and avoidance is almost non existence. (Gupta, 2007, Benos, 2009, Olofin, 2001, Musgrave, 1982). Economic growth, premised on the high wealth, may be achieved through accumulation of physical as well as human capital. It may also be achieved through technological breakthrough. This has capacity to ameliorate technological progress. Consequently, it will increase input productivity and potential output level. The rates of growth of an economy can also be transformed through fiscal policy that exhaustively relies on the multiplier or ripple effect of taxation on economic decisions. An increase in tax rate or tax base causes tax elasticity or tax buoyancy.

Until the early 1990's when new growth theories emerge, the literature on economic growth theorized and consummated the economy with a long-run equilibrium model. In essence, the output per capita is constant and technological progress is exogenous. By modeling the technological progress as exogenous variables, it indicates that the economic growth is determined by factors outside the system. In other words, it is not affected by the government policy. (OECD,2009a. 2009b,2006,2008). In the Traditional Neoclassical growth theories, also referred to as exogenous growth models; we can infer that taxation can only distort the output level, but not the rate of growth of the economy. As theorized by Solow (1970), the fundamental issue behind this philosophy is that the Neo-classical specified economic growth in relation to increase in physical capital and human capital in case there is *law of diminishing returns to scale*. The instruments of fiscal policy and non-physical variables inputs, for example human capital have no constant shock on the rate of growth of the economy in the models. On the contrary, endogenous growth philosophy theorizes the endogenous resolution of economic growth other than exogenous technological variation. The theory views fiscal instrument through tax instrument in the endogenous growth models has having dual properties. It perturbs the Non-Pareto optimality states. Also, it employs vigorous strategies to sustain long run economic growth. In the theories of endogenous growth, the nature of taxes and also the tax composition are germane. They catalog taxation instruments as having capacity to distort an economy. Thus, it dissuades investment in physical and human capital. (Benos, 2009).Theories and empirical evidences reveal that any tax policy which, interferes with the capital accumulation will perpetually condense the rate of growth, for example, direct taxes such as PAYEE and Company Income Tax. (Esterly and Rebelo 1993, Olofin, 2001 and OECD, 2006 1nd 2008)

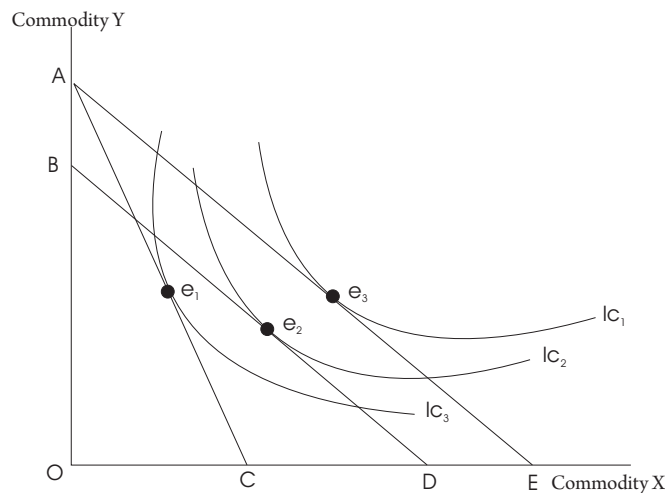
In line with this doctrine, augmentation in per capita output evolves from exogenous technological progress. (Lee and Gordon, 2005). The enormosity of the classification of tax revenue does not generate a stable effect on growth of output. Within this limit, tax policy of tiers of government has no linkage with growth. Similarly the studies of Barro (1990), King and Rebelo (1990) and Lucas (1990) on endogenous Growth theories analyze the distortion of Taxation on growth. (OECD, 2009b). The use of taxation in the long-run growth ideology has been a key in public finance most importantly since the development of the endogenous growth models. In these models, economic growth has myriad of reactions to tax components. (see also Harberger, 1964). Hall (1968) models a saving-consumption hypothesis. Mendoza *et al* (1995), employed a panel data of 18 OECD countries for the period of 1966-1990 to reveal that the changes in income taxation have more positive effects on growth than changes in capital income and consumption taxation. Arisoy and Unlukaplan (2010) submitted that direct taxation, for example Company Income Tax is injurious to growth in mostly all endogenous growth models.

In another vein, indirect taxes are also major perturbations on consumption choice since it can easily be shifted to the ultimate consumers while leaving capital accumulation and rate of growth constant. This theory suggests that tax composition is critical for growth. The indirect taxes play a predominant role in Nigeria's Tax System; the indirect taxes accounted for more than 65% to 72% of non oil taxes from 1990 2012 on the average. This is evident as Nigeria's ratio of imports to export is in the neighborhood of 72.5% to 81.3% on the average from 1996 to 2012. It is comparable to evidences in Turkey where indirect taxes are also dominant to proxies of growth and development. (Arisoy and Unlukaplan, 2010)

### Consequences of Taxation

It depicts all changes, positive or negative in an economy arising from imposition of taxes. Tax is a weapon of fiscal policy. The presence of taxation will distort level of production, employment, investment, and interest rate among other variables in a market economy (Bhatia, 1982 and Musgrave, 2006). In a market economy where there is allocation effect, resources allocations are controlled and determined by demand pattern. This is specified as:

Figure I



The indifference hyper-plane apparatus as invented by Edge worth can be deployed to obtain optimal allocation of resources in an economy. In this situation, point  $e_3$  is optimal where the budget line is tangent to the indifference curve at the highest possible satisfaction level. An increase in indirect tax on commodity X will raise the price of the commodity and the quantity demanded in the market will condense. This makes the budget line swivel backward to AC and the new equilibrium becomes  $e_1$ . This apparently, is a lower indifference curve. However, if a direct tax, for example Company Income Tax ( i.e. proportional tax), the post budget line now is BD. It moves the consumer to a higher indifference curve 2 and remains at point  $e_2$  equilibrium, which is better than  $e_1$

### Materials and Method of Analyses

The paper collects categorical data (i. e. primary data) from staff of some selected firms in Agbara Area of Ogun State, Nigeria. We also collected time series data from 1972 to 2012 from the Central Bank of Nigeria's Annual Report and Statistical Bulletin. The study is not immune to problem of paucity of data, which is a major limitation to research in Nigeria and most countries in the Sub Sahara Africa. Our analysis is extremely limited by non-availability of data, especially to fully segregate the oil and non oil taxes into various compositions. This has restricted choice of options for the explained and the explanatory variables. The methodology adopted is multiple regressions. We further employed Error Correction Mechanisms (ECM) through Augmented Dickey Fuller (ADF) tests, Philip Peron (PP) tests, and Johansen Co-integration tests to test the stationary nature of the data, decompose and disaggregate the impact of the explanatory variables on the explained variable into long and short run effect. Besides, we also used Granger Causality test to examine the opposite and causal reaction of the explained and the explanatory variables. In fact, in our model, we alternated explained variable between Total Federally Collected Revenue (TFCR) and Real Gross Domestic Product (RGDP). The explanatory variables employed in the study are:



## Presentation of Results

**Table 1: Unit Root Test Results (1972-2012)**

Series	Level		First Difference		Order of Integration
	ADF	PP	ADF	PP	
Real GDP (logRgdp <sub>t</sub> )	-5.4122	-6.3521	-6.2431**	-7.2474**	I(0)
Total Fed. Collected Rev. (log Tfct)	-4.5412	-2.6427	-3.8658**	-3.2261**	I(0)
NonOilTax Revenue (logNott)	-4.0891	-2.7422**	-6.9276***	-12.897***	I(0)
Oil Tax Revenue (log Otr)	-1.8272	-1.5242	-6.5112***	-7.9851***	I(1)
<b>Mac-Kinnon Critical Values for rejection of hypothesis of unit root</b>					
1% critical value	-3.9451	-3.8212	-3.7787	-3.8694	
5% critical value	-3.0210	-3.0154	-3.0533	-3.0010	

\*\*\* significant at 1% \*\* significant at 5%

Source: Estimates from E-View Econometric Package

**Table 2: Alternating Explained Variable Unit Root Test Results (1972-2012)**

Series	Level		First Difference		Order of Integration
	ADF	PP	ADF	PP	
Total Fed. Collected Rev. (log Tfct)	-6.4998	-5.3366	-7.1092**	-8.4485**	I(0)
Real GDP (logRgdp <sub>t</sub> )	-4.9028	-5.5718	-6.9087**	-7.2660**	I(0)
Non Oil Tax Revenue (logNott)	-5.8872	-4.9183**	-8.9190***	-14.9056***	I(0)
Oil Tax Revenue (log Otr)	-2.4153	-2.9189	-7.3477***	-9.8766***	I(1)
<b>Mac-Kinnon Critical Values for rejection of hypothesis of unit root</b>					
1% critical value	-3.3572	-3.8114	-3.7055	-3.6612	
5% critical value	-3.0500	-3.0004	-3.0011	-3.0003	

\*\*\* significant at 1% \*\* significant at 5%

Source: Estimates from E-View Econometric Package

**Table 3: Pair-wise Granger Causality Test**

Pairwise Granger Causality Tests

Date: 07/21/13 Time: 20:32

Sample: 1972 2012

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
logTfct does not Granger Cause log Rgdp <sub>t</sub>	41	4.21578	0.03448
Log Rgdp <sub>t</sub> does not Granger Cause log Tfct		5.82830	0.01764
log Nott does not Granger Cause log Rgdp <sub>t</sub>	40	5.94532	0.01124
log Rgdp <sub>t</sub> does not Granger Cause log Notrt		5.00424	0.02221
log Otr does not Granger Cause log Rgdp <sub>t</sub>	40	3.09333	0.01722
log Rgdp <sub>t</sub> does not Granger Cause log Otr		4.76432	0.03923

**Table 4: Modeling Real GDP, and Oil and Non Oil Taxes**

Dependent Variable:  $D(\log Rgdpt_t)$   
 Method: Least Squares  
 Sample(adjusted): 1974 – 2012  
 Included observations: 39 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$a_0$	0.031042	0.120011	3.019089	0.0160
$D(\log Rgdpt_{t-1})$	0.086556	0.152212	2.214234	0.0300
$D(\log Fct)$	0.789557	0.200011	2.100891	0.0025
$D(\log Tfct_{t-1})$	0.619885	0.148232	2.112233	0.0101
$D(\log Notrt)$	0.214632	0.182011	3.023755	0.0012
$D(\log Notrt_{t-1})$	0.111262	0.093315	1.987799	0.0035
$D(\log Otr)$	0.878231	0.107325	3.035442	0.0010
$D(\log Otr_{t-1})$	0.797278	0.114321	2.372212	0.0143
ECM(1)	-0.957118	0.256038	-2.618516	0.0104
R-squared	0.890004	Mean dependent var		0.133321
Adjusted R-squared	0.610022	S.D. dependent var		0.357756
S.E. of regression	0.233131	Akaike info criterion		0.315533
Sum squared resid	1.218835	Schwarz criterion		1.210642
Log likelihood	10.47163	F-statistic		2.958210
Durbin-Watson stat	2.004651	Prob(F-statistic)		0.012211

Alternating Explained variables:

**Table 5: Modeling Total Federal collected Revenue and Oil and Non Oil Taxes**

Dependent Variable:  $D(\log Fct)$   
 Method: Least Squares  
 Sample(adjusted): 1974 – 2012  
 Included observations: 39 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$a_0$	0.030043	0.115500	4.000140	0.0060
$D(\log Tfct_{t-1})$	0.10144	0.184400	3.213211	0.0200
$D(\log Rgdpt_t)$	0.822332	0.160023	2.402270	0.0135
$D(\log Rgdpt_{t-1})$	0.696644	0.132221	2.112221	0.0011
$D(\log Notrt)$	0.193212	0.083232	2.021114	0.0212
$D(\log Notrt_{t-1})$	0.115071	0.128822	1.977668	0.0025
$D(\log Otr)$	0.825554	0.118251	2.700112	0.0022
$D(\log Otr_{t-1})$	0.556216	0.213322	2.010021	0.0041
ECM(-1)	-0.8985016	0.323005	-2.618516	0.0102
R-squared	0.795401	Mean dependent var		0.200221
Adjusted R-squared	0.564229	S.D. dependent var		0.123846
S.E. of regression	0.220221	Akaike info criterion		0.302311
Sum squared resid	1.193321	Schwarz criterion		1.213210
Log likelihood	13.01061	F-statistic		2.798771
Durbin-Watson stat	2.011992	Prob(F-statistic)		0.010002

Source: Estimates from E-View Econometric Package

### Research Hypotheses

**H<sub>0</sub>.** There is **no** significant impact of Non-Oil Tax Revenue (NOTR) on Real Gross Domestic Product (RGDP)

**H<sub>1</sub>.** There is significant impact of Non-Oil Tax Revenue (NOTR) on Real Gross Domestic Product (RGDP)

**H<sub>0</sub>.** The coefficient of Oil Tax Revenue (OTR) is **not** more elastic than the coefficient of Non-Oil Tax Revenue (NOTR).

**H<sub>1</sub>.** The coefficient of Oil Tax Revenue (OTR) is more elastic than the coefficient of Non-Oil Tax Revenue (NOTR).

### Discussion of Empirical Findings

Evidences from the categorical primary data obtained at Agbara Industrial Estate in Ogun State Nigeria corroborated the inefficient use of tax revenues to the benefits of tax payers as core infrastructural facilities in the areas are almost non-existing. Reports in Nestle Agbara have it that the head office of Nestle is now in Ghana, just like other companies, for example Dunlop Plc and Michelin which had already relocated from Nigeria as results of un-availability of electricity, road networks and unfriendly tax environments.

By alternating and modeling the explained and the explanatory variables obtained from the secondary data, the two alternative hypotheses (H<sub>1</sub>) stated in the preceding paragraph are corroborated and validated in tables 1-5, they are therefore accepted. For instance,  $\log Rgdp_t$  and  $\log Fcrt_t$  in table 4 and 5 reveal that there is strong positive and elastic relationship between the explained variables and the proxies of explanatory variables. With these models, we can determine the elasticity of oil and non oil taxes on either Real Gdp or Total Collected Federal Revenue at time t in Nigeria. The relationships are statistically significant at 1% and 5% confidence intervals as reported in table 4 and 5. The results is similar to the model of Adegbe and Fakile (2011), the signs of the Non-oil revenues (Company Income Tax, Tariff, Value Added Tax e. t. c) are both positive except that the stationery level and long run properties of the explanatory variables were not examined in their models.

As portends in table 1 and 2, except for log of Oil tax revenue ( $\log Otr_t$ ) all the series reported ( that is,  $\log Tfcrt_t$ ,  $\log Rgdp_t$ , and  $\log Notrt_t$ ) are stationary; they are undeniably and certainly I(0) series at 1 per cent and 5 per cent level of significance using both the ADF and Phillips-Peron unit root tests. However, log of Oil tax revenue ( $\log Otr_t$ ) need to be differenced once before they attain full stationarity. The unit root test results were then applied in testing for causality, stability and stationarity of the time series data to estimate and predict the Real Gross Domestic Product at time t in equation 1 to 3.

The Granger causality results reported in Table 3 further gives credence to the robustness of the study; it portends that causality runs from both directions. It discloses that there is a bi-directional causal and opposite relationship between the explained and the explanatory variables. However, further multi-co linearity tests can be carried on the model to enhance the robustness of the study. The model in the study is also further fortified and authenticated in the alternate model reported in table 5; all series in the table are significant since the probability values are less than 5% confidence interval. It implies that causation runs from the three measures of oil and non oil taxes and they are firmly integrated to Real Domestic Product at time t and vice versa. We can therefore infer that  $\log Tfcrt_t$ ,  $\log Otr_t$ , and  $\log Notrt_t$ , Granger caused log of Real Gross Domestic Product at time t ( $\log Rgdp_t$ ) with contrary causality running from log of Real Gross



Domestic Product at time  $t$  to these series at 5 per cent level of significant.

The result of the projected Real Gross Domestic Product at time  $t$  is reported in Table 4 and 5. The explained variable is alternated to measure the actual causal effects. The results reveal a well-defined error correction term. The feedback effect is 0.96 and 0.899 of the previous year's disequilibrium in table 4 and 5 respectively. This denotes the long run elasticity of identified explanatory variables ( $\log Tfcrt_t, \log Notrt$  and  $\log Otr_t$ ) in the estimated Real Gross Domestic Product model. The consequence of the error correction term is enormous and it has significant a-priori negative sign. The result gives credibility to the finding that the identified explanatory variables are indeed co-integrated with Real Gross Domestic Product series at time  $t$ . It can therefore be used for estimation in the future.

The results in table 4 and 5 also indicate the elasticity of the coefficients to the Real Gross Domestic Product at time  $t$  in levels and lagged values. Both the values at levels and catch-up term (i. e. lagged Values) depicted with (-1) in table 4 and 5 are significantly positive because the p-value is less than 5% confidence intervals. Thus, a small percentage change in the explanatory variable is elastic to a significant change in the explained variable. We must point out that the coefficient of non oil tax revenue in table 4 and 5 at levels and lagged values (0.21 and 0.11; 0.19 and 0.115) is distant from (0.878 and 0.797; 0.826 and 0.556) at levels and lagged values. It is further evidences on why  $H_1$  is accepted in the second hypothesis stated earlier. It is also an affirmation that the Nigerian revenue structure is indeed mono cultural; we fundamentally rely on oil revenues. The  $R^2$  defines the term of variation about the mean from  $y$  so that if a model is re-parameterised or reorganise, dependent variable will not change. (Brooks, 2008). The adjusted  $R^2$  takes into consideration loss of degrees of freedom associated with including extra variable. In table 4 and 5, the  $R^2$  and adjusted  $R^2$  are high enough to accommodate any variation from adding extra variables. The F-statistics in the tables portend goodness fit and over all linear relationship of the model. The Durbin Watson Statistics of approximately 2 in the tables are further confirmation of absence of auto or serial correlation.

### **Conclusion and Policy Recommendations:**

As reveal earlier, both  $H_1$  are accepted in the two hypotheses stated, thus Non-oil tax revenues (Notr) are not only elastic on the proxy of the explained variable, that is real gross domestic product; they are also significant and the coefficients are distant from the coefficient of the Oil- tax revenues (Otr). This confirms revenue productivity of both taxes and over reliance of the country on Oil-tax revenues. Company Income tax is a major source of revenue in the developed nation. This is contrary in Nigeria as revealed in our empirical investigation; perhaps because of the availability of oil. We can infer that government at all levels in Nigeria need to diversify the revenue base of the country from oil. The revenues from the oil sector have been dominance on the proxy of economic development in the country.

Besides, there seems to be a general apathy in the payment of direct taxes to government. Government can therefore continue to employ strategies that will eliminate inefficiencies in the use of tax revenues so that tax payers can receive a corresponding service from payments of taxes.

Also, there should be a general overhaul of the tax system to ensure economy, efficiency and eradicate corruption by tax officials and highly placed government officials. And there should be a serious awareness campaign to educate tax payers on the need to pay taxes regularly and at the same time get feedback from them. The Economic and Financial Crime Commission (EFCC) should be more alive in prosecuting tax evaders with a view to discouraging such habits.

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