Assessment of the Long-Run Equilibrium Relationship between Tax Revenue and Economic Growth in Nigeria: 1986 to 2012

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***Abstract*—**Taxation is a major source of revenue to many governments, an instrument for regulating economic and social policies, and a tool for enhancing economic growth. In Nigeria, total revenue structure portrays the dominance of revenue from the petroleum sector over tax revenue with adverse economic consequences. This study therefore examines the dynamic causal relationship between tax revenue components and economic growth in Nigeria. The objective is to provide justification for policy adjustments necessary for broadening the narrow revenue base of the government and enhancing economic growth using time series data on different types of Taxes and RGDP from 1986 to 2012. Bounds testing technique was used in analyzing the data. The results indicate that total tax revenue has a significant effect on economic growth; explaining about73.4% of the total variation in RGDP. CIT, EDT and OTR were each found to have significant influence on economic growth; sustaining long-run equilibrium relationships with RGDP. No significant causal relationships were shown to exist between PPT, VAT, and economic growth. We therefore conclude that there exist a long-run equilibrium relationship between aggregate tax revenue and economic growth, and recommend that government should encourage and sustain strong fiscal responsibility and transparency in governance to promote voluntary compliance to tax payment, fight corruption, and minimize waste in the use of tax revenue through appropriate legislative adjustments and financial discipline in governance.

***Keywords*—**Bounds Testing Technique; Economic Growth; Fiscal Responsibility; Tax Revenue Components; Transparency.

***Abbreviations*—**Central Bank of Nigeria (CBN); Companies Income Tax (CIT); Education Tax (EDT); Federal Government Independent Revenue (FGIR); Federal Inland Revenue Services (FIRS); National Bureau of Statistics (NBS); Other Tax Revenue (OTR); Petroleum Profits Tax (PPT); Real Gross Domestic Product (RGDP); Total Federally Collectible Tax Revenue (TFCTR); Value Added Tax (VAT).

I. INTRODUCTION

TAXATION is a major fiscal instrument for reducing private consumption and transferring resources to the government for economic development. It is a compulsory levy imposed by government to raise revenue for defraying the cost of governance and community services, and for regulating economic and social policies and enhancing economic development [Ezejelue & Ihendinihu, 2006].

The need to investigate the importance of taxation in maintaining economic stability and controlling macroeconomic shocks in Nigeria cannot be over emphasized. The nation's goal to become one of the top 20 economies in the world by the year 2020 can hardly be achieved without taxation playing the expected role in resource mobilization for the desired economic growth. This becomes more compelling when weighed against the backdrop of the mono nature of the Nigerian economy with the oil and gas sector accounting for an average of 79.67% of her total collectible revenue from 2005 to 2010 [CBN, 2010].

OECD reports on the relative importance of petroleum as at 2005 indicate that oil alone accounted for 40% of Nigeria's GDP, 70% of budgeted revenues and 95% of foreign exchange earnings. These figures sharply contrast against the position with other major oil producing nations of the world as shown in table 1 below:

Table 1: Relative Importance of Petroleum as at 2005

Country	Oil as a % of GDP	Oil as a % of Government Revenue	Oil as a % of Export
Nigeria	40	70	95
Norway	10	25	15
Algeria	30	65	80
Venezuela	28	65	70
Mexico	2	30	6
Indonesia	10	25	15

Source: Adapted from IFS, OECD Reports

The share of oil sector in total revenue has substantially maintained increasing trends from mid1970's to date, and this dominance of the oil sector has not translated into any significant improvement in economic growth – a syndrome of Dutch disease where net beneficiaries of explorative resources do not benefit much from the net transfer of wealth. This partly explains why Ekpo (2001) describes Nigeria's growth performance as slow, below expectation, 'tragic' and of crisis proportion. Despite huge earnings from the oil sector, Yakub (2008) claims that about 70% of Nigeria's population lives in poverty, as a result of high unemployment rate and collapse of basic economic infrastructures. One therefore, wonders what would become of the Nigerian economy should there be persistent/prolonged lull in the oil sector.

An urgent need has therefore arisen for a reversal of this trend if Nigeria desires to actualize her vision 2020. It is argued that one major instrument with strong potency for increasing collectible revenue and enhancing economic growth in Nigeria is taxation. This paper therefore investigates the short and long-run equilibrium relationship between the various components of taxation and economic growth in Nigeria. Specifically, the work tries to:

i) Evaluate the effect of aggregate tax revenue on economic growth of Nigeria.
ii) Determine the short and long-run effects of each type/component of tax on economic growth of Nigeria

Consequently, we hypothesis that:

Ho1: Total tax revenue does not have any significant effect on economic growth in Nigeria.

Ho2: Tax revenue components have no significant influence on economic growth in the long-run.

II. LITERATURE SURVEY

2.1. Theoretical Framework

Two tax theories formed the framework for this study. First is Benefit Received Theory derived from the presumed relationship between the State and taxpayers, and in which the State is obligated to provide certain goods and services to the members of the society in compensation for taxes paid for such supplies [Bhartia, 2009]. This theory addresses the need for government to effectively utilize tax revenue in providing economic and social facilities to the populace, and by extension contribute to economic development. Although some scholars argue that taxes should be allocated on the basis of benefits received from government expenditure, it should be noted that it is impossible to establish a direct qua pro qua relationship between tax paid and benefit received from government expenditure.

The second is the theory of tax structure development advanced by Hinrichs (1966). Reporting on this theory, Oriakhi & Osemwengie (2013:35-36) posit that –

> *. . . at the early stages of economic development, the basic features of taxation are the narrowness of personal income tax base, the operation of poll tax, the scarcity of trained tax administrators, and the commanding height of indirect taxation on foreign trade in the tax structure. In addition, the tax revenue to GDP ratio is low . . . These basic features move in opposite directions as positive measures by government propel the economy sooner or later beyond the stagnation level . . .*

This theory therefore presupposes that improvements in tax structure have the propensity to increase government revenue and economic growth.

2.2. Conceptual Framework

2.2.1. Taxation and Government Revenue

Taxation is a veritable fiscal policy tool. It offers to be a major source of revenue to government and a mechanism for regulating economic and social policies. Jhingan (2011) recognizes that tax is a main source of government revenue and should be accorded strict and close monitoring to achieve maximum compliance. For taxation to be a main source of revenue and equally impact on economic growth and achieve the desired results, the tax system ought to be designed on the basis of appropriate set of principles to be seen as fair, equitable, effective and efficient. Musgrave & Musgrave (2004) and Nzotta (2007) all claim that taxes have beneficial roles to play in allocation, distribution, regulatory and stabilizing functions to correct market imperfection/failure. It can be used as a catalyst to influence economic activities by influencing private sector investment decisions, attracting capital inflows, encouraging and/or prohibiting the production of certain goods and services, as well as contributing to government revenue and enhancing economic growth. However, Nwezeaku (2005) argues that the scope of these functions depend inter alia on the political and economic orientation of the people, their needs and aspirations as well as their willingness to pay tax.

Tax revenue is a component of federal government revenue. Two main sources of federal government revenue exist - the oil revenue and the non-oil revenue. Oil revenue are revenue from crude oil and gas exports, receipts from petroleum profits tax and royalties and, revenue from domestic crude oil sales, while non-oil revenue comprises of

revenue from companies income tax, value added tax, customs and excise duties, federal independent revenue, education tax, customs levies and others.

Petroleum profit tax is a tax imposed upon the profits from the winning of petroleum in Nigeria and to provide for the assessment and collection thereof and for the purposes connected therewith (Petroleum Profit Tax Act 1959, as amended). The rates of Petroleum Profits Tax based on level of petroleum operations are 85% for exports, 65.75% for domestic sales, and 50% for deep offshore PSC. According to Odusola (2006), petroleum profits tax is complemented with two different contractual relationships under the Joint Operating Agreement and the Production Sharing Contract not formally covered by tax legislation. These relationships have the propensity to create room for lots of manipulations in the sector.

Companies income tax is a tax imposed for each year of assessment currently payable at the rate of thirty kobo for every naira (30%) upon the profits of any company accruing in, derived from, brought into, or received in Nigeria. In spite of all the incentives granted companies by the Act, it would appear that revenue from income taxes is modest (as 5.07% mean ratio to revenue generated). Ola (2001) and Oluba (2008), separately stated that in Nigeria, revenue from income taxes has been grossly understated due to improper tax administration, assessment and collection.

Value Added Tax Act is an act to impose and charge tax on value added on certain goods and services and to provide for the administration of the tax and matters related thereto [Value Added Tax Act, 2004]. The tax is computed at the rate of 5% on the value of all taxable goods and services. Odusola (2006) posits that the Nigerian tax system is skewed towards the petroleum and trade taxes whereas direct and broad-based taxes like Value added tax are neglected. He alludes that VAT has potential for expansion, and that its impact is limited because of the dominance of the informal sector in the country.

This tax is charged at 2% on the assessable profit of a company registered in Nigeria. The assessable profit of a company under this tax is based on the provisions specified in the Companies Income Tax Act or the Petroleum Profits Tax Act as amended to date. The Act stipulates that tax collected shall be paid to a fund known as Education Fund which is managed (including investing the funds) and disbursed by a Board of Trustee created by the decree.

2.2.2. Economic Growth

The International Monetary Fund (2009) and CBN (2010) agree that economic growth is the increase in the amount of goods and services produced in an economy over time. It is conventionally measured as the percent rate of increase in Real Gross Domestic Product (RGDP). Growth is usually calculated in real terms, that is, inflation- adjusted terms, in order to net out the effect of inflation on the price of the goods and services produced. The growth of the real Gross Domestic Product, RGDP, between 2004 and 2008 was driven mainly by the non-oil sector as reflected in the non-oil GDP and that the Industrial output however fell by 2.2 percent due mainly to the poor performance of the oil sector CBN (2008).

The major theories on economic growth are hinged on the growth being a function of the productivity of factors of production as their basic theme. Smith (1776) states that economic growth depends on the amount of factors of production viz; land, labour and capital. He argued that economic growth (output) depends on the amount of these factors of production which are the inputs that are determined by the population growth, increase in investment and land, and total growth in labour productivity. While Harrod-Domar model stated that rate of growth of GDP is equal to Savings ratio/Capital-Output ratio, Kaldor model of distribution noted that the process of growth is a function of savings-income ratio. Other models like the Pasinetti model of profit and growth, the Meade's Neo-classical model, the Solow model of long run growth all used the factors of production as their basic theme.

2.2.3. Empirical Review

There are empirical studies relating to the contribution of taxation to the economic growth with different claims and arguments. Hinrisch (1966) and Musgrave (1969) examined the relationship between the ratios of tax revenue to Gross Domestic Product (TAX/GDP) and found that it was relatively low in developing countries.

Appah (2010) studied the relationship between Fiscal Policy and Economic Growth in Nigeria (1991–2005) utilizing multiple regression method of analysis and claimed that tax revenue has not on its own significantly contributed to the economic growth in Nigeria. But in a similar study, Babalola & Aminu (2011) utilized Cointegration test and Engle Granger approach, Augmented Dickey-Fuller technique, and Error correction model (ECM) to investigate the relationship between Fiscal policy and Economic growth (1977-2009) and found positive and significant causal relationship between income tax and economic growth. Medee & Nenbee (2011) carried an econometric analysis of the impact of fiscal policy variables on Nigeria's economic growth (1970-2009) using Vector Autoregression and Error correction mechanism techniques and claimed that tax revenue have effects on the gross domestic product both at the short and long run, meaning that tax revenue positively impact on the economic growth in Nigeria.

Ogbonna & Appah (2012) investigated the impact of tax reforms on economic growth of Nigeria (1994- 2009) using Augmented Dickey-Fuller test, Johansen's Cointegration test and Error correction technique and found significant positive relationship between tax revenue and economic growth of Nigeria. In a similar study, Okafor (2012) used multiple correlation and regression methods to evaluate the relationship between tax revenue generation and economic development of Nigeria (1981-2007) and concluded that there exists a strong significant relationship between tax revenue and Gross Domestic Product (GDP).

Success et al., (2012) studied the impact of petroleum profits tax on economic development (2000-2010) using the ordinary least square method of analysis and posited that petroleum profit tax impact positively on the gross domestic product (used as proxy for economic growth) of Nigeria. Abdul-Rahamoh et al., (2013) empirically examined the effect of petroleum profits tax on Nigeria economy using multiple regression and correlation to analyze the time series data collected for the period 1970-2010 and found that petroleum profit tax has significant effect on economic growth of Nigeria with an adjusted R^2 of 86.3%. In another study of Nigerian economy for the period 2000 – 2009 using simple regression model, Ogbonna & Appah (2012) claimed that petroleum profit tax has a significant positive relationship with GDP-economic growth.

In a similar investigation on value added tax and economic growth of Nigeria (1994-2008) using a simple regression method, Adereti et al., (2011) associated 95% variation in the gross domestic product to changes in value added tax revenue and concluded that VAT revenue is making a unique significant contribution to the economic growth of Nigeria. Ekeoha et al., (2012) investigated revenue implications of Nigeria's tax system from 1970 to 2008, using cointegration test and posited that company income tax and personal income tax are the most economically sensitive, responding positively to changes in the current state of the economy, moving in close step with the economy and falling when the economy declines. They argued that VAT is insensitive and relatively unaffected by short run economic shifts.

III. RESEARCH METHODS

3.1. Method of Data Collection

Time series data of real Gross Domestic Product (RGDP), Total federally collectible tax revenue (TFCTR) and tax revenue components were collected from various issues of the Central Bank of Nigeria statistical bulletin, annual reports, and financial statements as well as reports from Federal Inland Revenue Service and the National bureau of statistics.

3.2. Data Estimation Techniques and Model Specification

The bounds testing technique to cointegration was used to establish the existence of long-run equilibrium relationship between tax revenue components and real gross domestic product for the period 1986 to 2012. The functional forms of the model used are specified thus:

$$RGDP = f(PPT, CIT, VAT, CED, EDT, FGIR, OTR) \quad (1)$$

Where,
RGDP=Real Gross Domestic Product (proxy for economic growth),
PPT = Petroleum Profits Tax,
CIT = Companies Income Tax,
VAT = Value Added Tax,
CED = Customs and Excise Duties,
EDT = Education Tax,
FGIR=Tax Component of Federal Government Independent Revenue,
OTR = Other Tax Revenue.

Accordingly, we specify:

$$RGDP_t=\beta_0+\beta_1 PPT_t+\beta_2 CIT_t+\beta_3 VAT_t+\beta_4 CED_t+\beta_5 EDT_t+\beta_6 FGIR_t+\beta_7 OTR_t+U_t \quad (2)$$

Where,
β_0 = Intercept Term (Parameter),
β_1 to β_7 =Parameters known as Partial Regression Coefficient,
U_t = Error Term or Unexplained Variables,
t = Denotes the Value of the Variable at Time t.

Because the data collected were of different magnitude and range, they were transformed to the same magnitude or close to par level consistent with Gujarati (2006) to obtain the following model:

$$InRGDP_t=\beta_0+\beta_1 InPPT_t+\beta_2 InCIT_t+\beta_3 lnVAT_t+\beta_4 lnCED_t+\beta_5 lnEDT_t+\beta_6 lnFGIR_t+\beta_7 lnOTR_t+U_t \quad (3)$$

Where,
ln=The Natural Logarithm (i.e., log to base *e*, where *e*=2.718)

The Augmented Dickey-Fuller (ADF) unit root test was conducted to check for stationarity of the variables in their log linear form so as to ascertain the order of integration. The following generic equation was used to check for stationarity.

$$\Delta Y_t = \beta_0 + \beta_1 t + \partial Y_{t-1} + \sum \alpha_i \Delta Y_{t-i} + \mathcal{E}_t \quad (4)$$

Where,
$\mathcal{E}_t$ = A Pure White Noise Error Term,
$\Delta Y_{t-1} = (Y_{t-1}-Y_{t-2})$,
$\Delta Y_{t-2\,b} = Y_{t-2}-Y_{t-3}$,
∂ = The Coefficient of the Lagged Length Y_{t-1}, and
t = t-value of the lagged Y_{t-1}.

As ADF test follows the same asymptotic distribution as the DF statistic, the same critical value was used.

According to Park (1992), a relationship between 1(1) variables is said to be "statistically cointegrated" if it is trend stationary while "deterministic cointegration refers to the case where the cointegrating relationship is level stationary.

In testing the two null hypotheses set out for investigation in this study, we adopt the Autoregressive Distributed Lag Model (ARDL)/Bounds Testing. The basic form of an ARDL regression model is given as:

$$y_t = \beta_0+\beta_1 y_{t-1}+ \ldots + \beta_k y_{t-p}+a_0 x_t+a_1 x_{t-2}+aq x_{t-q}+\mathcal{E}_t \quad (5)$$

Where $\mathcal{E}_t$ is a random "disturbance" term which is assumed to be well behaved in the usual sense and serially independent.

IV. RESULTS AND DISCUSSIONS

From the ADF unit root test results in table 2, all the variables have negative t statistic value more than that of the critical DF statistic value of -3.00 and are stationary at 1 (1) order of integration and therefore cointegrated. Also, the p values of all the variables are less than 5%. This implies that the mean, variance and auto covariance of the time series data do not vary systematically over time and thus indicate4 that all the variables are stationary at 1(1) order of integration and are assumed to be cointegrated.

Table 2: Augmented Dickey-Fuller Unit Root Test

T-stat	P-Value	Variable	Order of integration
-3.234459	0.0302	LOGRGDP	I(1)
-4.84687	0.0008	LOGPPT	I(1)
-5.4	0.0002	LOGCIT	I(1)
-4.50547	0.0017	LOGVAT	I(1)
-5.77473	0.0001	LOGCED	I(1)
-4.41659	0.0021	LOGEDT	I(1)
-6.05761	0	LOGFGIR	I(1)
-5.47391	0.0002	LOGOTR	I(1)
-4.38312	0.0024	LOGTTR	I(1)

Note: The variables have been log-linearized

Table 3: VAR Lag Order Selection Criteria

Endogenous variables: D(LOGRGDP)
Exogenous variables: C LOGPPT(-1) LOGCIT(-1) LOGVAT(-1) LOGCED(-1) LOGEDT(-1) LOGFGIR(-1) D(LOGPPT(-1) D(LOGCIT(-1) D(LOGVAT(-1) D(LOGCED (-1) D(LOGEDT(-1) D(LOGFGIR(-1) C @TREND
Date: 09/05/13 Time: 10:46
Sample: 1 26
Included observations: 21

Lag	LogL	LR	FPE	AIC	SC	HQ
0	85.53282	NA	8.49e-05	-6.812650	-6.116301	-6.661524
1	96.75199	6.410951*	3.50e-05*	-7.785903*	-7.039816*	-7.623983*
2	96.82669	0.035571	4.28e-05	-7.697780	-6.901953	-7.525065
3	97.03877	0.080793	5.39e-05	-7.622740	-6.777174	-7.439230
4	99.46403	0.692933	5.85e-05	-7.758479	-6.863174	-7.564175

The acceptable lag length is 1.

Table 4: Autoregressive Distributed Lag (ARDL) Model

Dependent Variable: D(LOGRGDP)
Method: Least Squares
Date: 09/04/13 Time: 16:41
Sample (adjusted): 3 26
Included observations: 24 after adjustments
*Estimated unrestricted ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGRGDP(-1)	-0.195661	0.222399	-0.879778	0.4046
LOGPPT(-1)	0.013499	0.041969	0.321650	0.7560
LOGCIT(-1)	-0.259593	0.116551	-2.227291	0.0565
LOGVAT(-1)	0.013204	0.009001	1.466947	0.1806
LOGCED(-1)	-0.033560	0.080211	-0.418401	0.6867
LOGEDT(-1)	0.007312	0.003715	1.968217	0.0846
LOGFGIR(-1)	0.027346	0.047624	0.574210	0.5816
D(LOGRGDP(-1)	-0.087909	0.351611	-0.250016	0.8089
D(LOGPPT(-1)	-0.014398	0.023772	-0.605662	0.5615
D(LOGCIT(-1)	0.112631	0.103953	1.083483	0.3102
D(LOGVAT(-1)	-0.004995	0.007388	-0.676066	0.5181
D(LOGCED(-1)	0.038170	0.047729	0.799725	0.4470
D(LOGEDT(-1)	-0.006183	0.003262	-1.895656	0.0946
D(LOGFGIR(-1)	-0.020701	0.028428	-0.728198	0.4873
C	1.799591	1.375206	1.308598	0.2270
@TREND	0.029725	0.016859	1.763142	0.1159
R-squared	0.747565	Mean dependent var		0.025413
Adjusted R-squared	0.274250	S.D. dependent var		0.019098
S.E. of regression	0.016270	Akaike info criterion		-5.164297
Sum squared resid	0.002118	Schwarz criterion		-4.378928
Log likelihood	77.97157	Hannan-Quinn criter.		-4.955939
F-statistic	1.579423	Durbin-Watson stat		2.464552
Prob(F-statistic)	0.261272			

Table 5: Wald Test

Equation: Untiltled

Test Statistic	Value	df	Probability
F-statistic	5.406253	(7, 6)	0.0283
Chi-square	37.84377	7	0.0000

Null Hypothesis: C(1)=C(2)=C(3)=C(4)=C(5)=C(6)=C(7)=0

Null Hypothesis Summary:

PESARAN'S CRITICAL F- VALUE FOR K=7 @ 5% LEVEL is: I(0) I(1) 2.69 3.83

At this point, we proceed to run the General-to-specific bound testing. The result is shown below:

Table 6: General-to-Specific ORDL/Bounds Test

Dependent Variable: D(LOGRGDP)
Method: Least Squares
Date: 09/05/13 Time: 11:34
Sample (adjusted): 3 26
Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGRGDP(-1)	-0.388652	0.071189	-5.459443	0.0001
LOGCIT(-1)	-0.214032	0.037676	-5.680879	0.0001
LOGEDT(-1)	0.009532	0.001982	4.810518	0.0003
LOGOTR(-1)	-0.004644	0.001662	-2.793827	0.0144
D(LOGCED(-1)	0.051595	0.022409	2.302413	0.0372
D(LOGEDT(-1)	-0.010710	0.002120	-5.052230	0.0002
D(LOGFGIR(-1)	-0.015268	0.006088	-2.507821	0.0251
D(LOGOTR(-1)	0.007271	0.001614	4.504340	0.0005
C	2.693512	0.456223	5.903943	0.0000
@TREND	0.034305	0.005725	5.992450	0.0000
R-squared	0.837817	Mean dependent var		0.025413
Adjusted R-squared	0.733557	S.D. dependent var		0.019098
S.E. of regression	0.009858	Akaike info criterion		-6.106727
Sum squared resid	0.001361	Schwarz criterion		-5.615871
Log likelihood	83.28072	Hannan-Quinn criter.		-5.976503
F-statistic	8.035819	Durbin-Watson stat		2.640754
Prob(F-statistic)	0.000351			

From table 3, the acceptable lag length based on the Akaike Information Criteria (AIC), Schwarz Information Criteria (SIC) and other information criteria is 1. The values of the AIC and SIC have negative signs at lag length 1, and therefore regarded as good.

Results in table 4 of the Auto Regressive Distributed Lag (ARDL) model indicate that the variables are not significant and that the model is not well fitted based on the significant level of the F-statistic. The variables were subjected to Wald's Test to diagnose/determine the variables to be dropped to achieve a better fitted model. The Wald test results in table 5 show that the value of the F-statistic of 5.406 exceeds the upper bound of 3.83 at 5% α level of significance of the Pesaran's critical F-value for K=7 while its p-value of 2.83% is sufficiently low. Also the p-value of the chi-square is at zero, and thus provides evidence of long-run equilibrium relationship between the variables; hence, none of the variables were dropped.

The results of the General-to-Specific Autoregressive Distributed Lag/Bounds model approach to cointegration in table 6 show the significant predictors of economic growth. Four (4) independent variables (CED, EDT, TFGIR and OTR) were significant in the short-run, while three (3) independent variables (CIT, EDT and OTR) had long-run equilibrium relationships with economic growth. PPT and VAT were automatically eliminated as insignificant. The F-statistic is shown to be significant at 1% level, indicating the appropriateness of the model specification. The adjusted R^2 implies that 73.4% of the total variation in the real gross domestic product (economic growth) is explained by aggregate changes in all the tax revenue components in the model. We therefore reject the null hypothesis and conclude that total tax revenue has significant effect on economic growth. Although Oriakhi & Osemwengie (2013) identified a low tax revenue to GDP ratio, our result accords perfectly with findings in Medee & Nenbee (2011), Okafor (2012) and Ogbonna & Appah (2012) who found significant and positive causal link between tax revenue and economic growth in Nigeria.

Again, the results obtained show a p-value of zero at trend. This implies that when the tax revenue increases, the real GDP will also increase. Thus, an aggregate increase in tax revenue results to increase in real gross domestic product and vice versa, and by extension economic growth. This is in consonance with the trend as shown in the graph below.

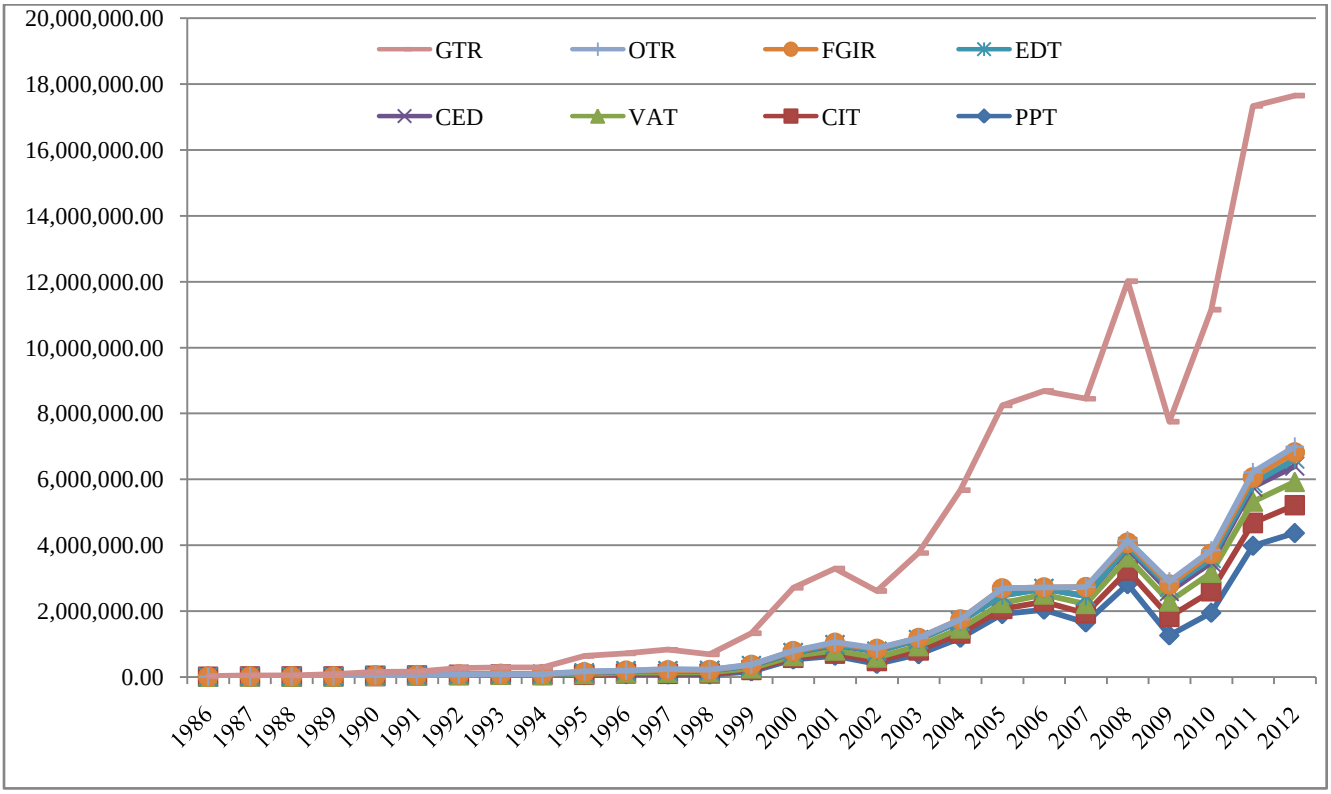

Figure 1: Trend of Nigerian Tax Revenue Components: 1986 to 2012

Other findings based on the t-values of most of the coefficients in tables 4 and 6 are summarized below:

- Petroleum Profit Tax (PPT) has no significant effect on economic growth of Nigeria both in the short-run and in the long run. Although this result is contrary to findings by Ogbonna & Appah (2012), Success et al., (2012) and Abdul-Rahamoh et al., (2013), CBN (2008) reported that the industrial output fell by 2.2 percent due mainly to the poor performance of the oil sector. Also, the mean value of the percentage point growth of petroleum profits tax has a value of -9.36% during the period covered by this study. The bane of the poor performance could be attributable to allusion of fiscal indiscipline, corruption and financial mismanagement in the oil sector.
- Companies Income Tax (CIT) revenue has a significant influence on economic growth of Nigeria in the long run only consistent with findings in Ekeoha et al., (2012). The long run multiplier between companies income tax revenue and economic growth is 1.82 (that is, -0.388652/-0.214032). This implies that in the long run, an increase of 1 unit in companies income tax revenue will result in an increase of 1.82 units of economic growth.
- Value Added Tax does not have any significant influence on the economic growth of Nigeria. This result is however, contrary to claim of Adereti et al., (2011) but agrees with Ekeoha et al., (2012) who posited that value added tax is insensitive and relatively unaffected by short run economic shifts. From the computation of the percentage point growth of the tax variables, VAT had a mean value of -10.66% which means that VAT revenue is not growing in terms of percentages over the years.
- Customs and Excise Duties (CED) has significant effect on GDP in the short run, with no long-run equilibrium relationship.
- Education tax has a significant positive impact on the economic growth of Nigeria both in the short-run and in the long-run.
- Other Tax Revenue (OTR) has significant effect on economic growth both in the short-run and in the long-run. The p value of the t-statistic of other revenue is 0.0144 or 1.44% which is sufficiently low and implies that OTR has significant effect on the economic growth in Nigeria.
- Tax revenues included in Federal Government Independent Revenue (FGIR) has significant influence on economic growth in the short-run.

V. CONCLUDING REMARKS

The study evaluated the relationship between tax revenue and economic growth in Nigeria; applying multi stage ordinary lest square technique on time series data of tax revenue components and real gross domestic product. The results highlighted the existence of long-run equilibrium relationship between Companies Income Tax (CIT), Education Tax (EDT) and Other Tax Revenue (OTR) with economic growth, while Customs and Excise Duties (CED), Tax revenue included in Federal Government Independent Revenue (FGIR) and OTR were found to be significant in influencing

economic growth in the short-run. Surprisingly, Petroleum Profit Tax (PPT) and Value Added Tax (VAT) were shown to have insignificant effect on economic growth in Nigeria.

All levels of government in Nigeria are invited to embrace tax as the most important and most sustainable source of finance for development, rather than the present over-dependence on oil revenue which fluctuates with changes in global oil market. Enhancing tax revenue will therefore require strengthening existing tax laws to achieve administrative, assessment and collection efficiency, particularly in the area of PPT and VAT, as well as check-mating tax offenders to reduce tax evasion and avoidance. Probity and accountability in the utilization of tax revenue (and in deed, all government revenue) by government functionaries will cub corruption in the system while simultaneously increasing the stock of physical and social infrastructure needed for economic growth. The resulting 'tax loyalty' or voluntary compliance by citizens will guarantee steady inflow of tax revenue to further empower government to finance more growth oriented projects and programmes in the long-run.

It should however be noted that improvements in tax revenue generation may not be productive and buoyant enough to influence economic growth as desired if the fiscal institutions are not built on the principles of good corporate governance. To be effective and efficient, the Nigerian tax system should provide tax legislation, guidelines, rules and procedures on enforcement and compliance that are well defined in addition to a well-trained and motivated administrative workforce. It is accordingly recommended that government should encourage and sustain strong fiscal responsibility and transparency in governance to promote voluntary compliance to tax payment, fight corruption, and minimize waste in the use of tax revenue through appropriate legislative adjustments and financial discipline in governance.

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