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Tax Structure and Revenue Generation in Nigeria

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Abstract
This study examines the relationship between tax structure and revenue generation in Nigeria from 1981 – 2016, time series data were collected from Central Bank of Nigeria (CBN) statistical Bulletin and publications of federal Inland Revenue service. Total federal collected revenue was modeled as the function of petroleum profit tax, company income tax, custom and exercise duty tax and value added tax. Multiple regressions with econometrics view statistical package were used as data analysis method. Co integration test, Augmented Dickey Fuller Test (ADF), granger Causality Test and vector error correction model we reused to estimation techniques were used to determine the dynamic relationship between the dependent and independent variables. R^2, Durbin Watson statistics, T-statistics, F-Statistics and β coefficient were used to determine and explain the extent to which the independent variables affect the dependent variable. The study found an R^2 of 95.1%, adjusted R^2 of 86.1% and F-statistics of 143.3082 with the probability of 0.000000.The β coefficient shows that petroleum profit tax have negative relationship while company income tax, custom and exercise duty tax and value added tax have positive relationship with total federal generated revenue. The negative relationship is attributed to fall in oil production and complexity in computing PPT which might lead to tax evasion. From the above, the study concludes that an equitable tax structure and a robust tax regime could enhance substantial revenue generation in Nigeria. It therefore recommends that policies that will enhance tax generation through effective tax structure should be formulated.

Keywords: Total federal generated revenue, Petroleum profit tax, Company income tax, Custom and exercise duty tax, Value added tax.

1.Introduction

Nigeria is buffeted by economic headwinds, triggered by steep drop in crude oil prices in the global market since mid-2014; federal, state and local governments in Nigeria have been finding it difficult to meet their financial obligations. Federal revenues spiked in June 2016 to the elation of the three tiers of government, as they shared N559 billion at the federation accounts allocation committee. (Punch, Jun 12, 2016). It is believed that more could have been generated if a robust tax regime had been in place. Therefore, an aggressive revenue generation strategy has become imperative. Public revenues can be shored up with the appropriate tax structure.

The Nigeria Tax structure has gone through various changes in recent years with the objective of mobilizing revenue for development projects. It is structured to contribute for the generation of revenue and structured for the growth of the economy. Tax structure base on incidence include Personal Income tax(PIT), Petroleum Profit Tax(PPT). The petroleum profit last Act 1959 as amended empowered the federal government of Nigeria the imposition of tax in the chargeable profits of companies that involves in the petroleum operations, company Income Tax(CIT), Education Tax(ET) which are the direct Tax whileindirect Tax includesValue Added tax(VAT) and custom and Exercise Duty tax(CED).

The existing budget deficits in many developing countries suggest that the tax systems are not revenue productive. Some may overlook this and attribute the cause of deficits to excessive spending, or temporary adverse economic conditions (Osoro, 1993). The importance of taxation as a veritable tool of economic growth and development depends on a proper tax structure which has the capacity to generate revenue through tax. This implies that the tax system must be efficient and effective. Tax remains one of the most volatilesubjects in government both in the developing & developed nations. Again, tax compliance is fundamental to government, policy makers and the regulatory authorities in Nigeria, this is because poor tax compliance limit the ability of government to generate revenue for development objective. This means that higher tax increase government revenue and gives the government opportunity to embark on developmentprojects. Theoretically, increase in tax as a result of tax structure is expected to increase total federal collected revenue.This theoretical conception is doubtful in Nigeria due to tax evasion, poor tax structure and poor accountability. As the federal and state governments prepare their annual budgets for fiscal 2017,the sad reality of a weak national taxrevenue base is again apparent. Despite the potential of taxation as a dynamic tool for sustainable national development, the Nigerian economy over the years, has not derived the maximum benefits of its tax system in terms of revenue generation. This is because the tax system has been plagued by numerous challenges such as lack of robust framework for the taxation, thus, limiting the revenue base and creating inequality and weak structure resulting in revenue leakages.The problem is the political will and discipline to right the self-destructive national fiscal revenue template are lacking. We have; therefore, a federation run on an unsustainable formula of relying on revenues from oil and gas extracted from only a handful of states and shared on an inequitable basis among all tiers of government. Long accustomed to this rent-taking system, the federal and state governments have failed to affect the radical reforms required to make the country a truly self-sufficient economy. But viable states are run with taxes, not vanishing commodity revenues(Punch Dec 26, 2016).

The burden of taxation in Nigeria has been distributed in increasingly unfair ways. According to the chairman FIRS, only 16 percent of Nigerians regularly pay income tax. Thus, it is necessary the FIRS and SIRS fix the wobbly tax system from the base.This paper is poised to find out the influence of tax structure on revenue generation in Nigeria

2. Theoretical Framework

The evolutionary pattern of taxes, otherwise known as tax structure development is cardinal to theassessment of the growth and performance of the various strands of taxation in virtually all economies ofthe world. The bulk of income tax revenue comes from large business firms andfrom government employees. The extension of the tax to small traders, artisans or professional personsmeets with serious administrative difficulties as there is no way of ascertaining income where no properbooks are kept, and no regular accounts are prepared or audited (Kaldor, 1970).

The theory of taxstructure development is a representation of an historical legacy, exhibited in the policy and practices ofseveral nations of the world overtime. The theory of tax structure development as advanced by Hinrichs (1966); Thorn (1967); Braun (1975);Webber and Wildavsky (1986) and several others posits 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, thescarcity of train tax administrators and the commanding height of indirect taxation on foreign trade in thetax structure. However, these basic features move inopposite directions as the positive measures by government propel the economy sooner or later beyondthe stagnation level. Over-time, therefore, some taxes are likely to grow in importance while others arealmost certain to decline. Personal Income Tax (PIT) provides a good example of the former since PITrevenue is expected to increase as per capita income rises but are collected by the state government. Consequently, the progressive tax systemrevenue has a high degree of elasticity in terms of income.

Hinrichs (1966) and Odle (1977) noted that indirect taxation was not the most important source ofrevenue because monetization, trade,transport, commercialism and urbanization were in an infant stage. Later, when the monetary, trading andtransportation systems are developed, internal and external forms of indirect taxation attain increasingimportance. In those economies, which are open, indirect taxation becomes the dominant source ofrevenue. With further progress in the organization of economic activities, production and salesestablishments become larger and more permanent and the scope of indirect taxation may be broadened(Musgrave and Musgrave, 1982). The administration of income tax as a global personal tax on incomebecomes possible. Thus, there is good reason to expect that economic development will bring with it anincrease in the share of direct taxes. Tanzi (1987) on tax structure development contented that tax bases grow more than proportionately to thegrowth of income as countries develop. In other words, he is of the opinion that the capacity to tax growswith the growth of income. Reason is that direct tax revenues are potentially more elastic than indirect taxrevenues. Wilford and Wilford (1978) concluded that direct revenues have the inbuilt significant long-termflexibility. Seemingly so, because, import taxes according to theory is expected to become inelasticas the economy progresses. Diejomaoh (1976) indicated that as developmentproceeds, import taxes will become an income inelastic revenue source. This is because changes in theeconomic structure, especially with increased industrialization, lead to a shift in import structure; so thatimport of less developed countries become increasingly composed of raw materials and capital goods.

2.1 Tax revenue in Nigeria

Many suggestions have been offered towards generating improved income for the country. This include, the call on the government to look into the tax being paid. The government must also need to tinker with the way taxes are levied .The tax authorities, nevertheless, face the challenge of not only raising their capabilities but discipline and commitment required for tax collection.

Records from the office of the Accountant General of the federation indicated that tax revenue generated within the period 2015 indicated a shortfall of N170.54 billion when compared to the N756.71 billion earned in the first quarter of 2015. According to the fiscal documents, the first quarter tax receipts of N586.17bn was earned from petroleum profit tax (PPT) where the sum of N213.35bn was collected in three months; the company income tax, stamp duties and capital gain tax where N176.25bn was earned and value added tax recorded a total receipt of N196.57bn.

A summary of collections at the disposal Vanguard newspaper indicated that only N299,802,506,588.50 was collected as Company Income Tax (CIT), which was a far cry from the expected N867 billion contained in the 2016 budget. However, Value Added Tax (VAT) yielded N473,464,201,273.68 as against the budgeted N198 billion; while Education Tax generated N46,868,726,865.07; NITDEF N 7,592,280,052.74; Pay As You Earn (PAYE),N47,236,020,074.34; Personal Income Tax, N 632,690,077.20; Stamp Duties, N5,878,279,893.53; and Withholding Tax, N 320,849,522,390.45. The recession has forced the Federal Government to reduce its CIT budget for 2017 to N808 billion, representing a 7 per cent cut. However, the VAT budget has been increased from N198 billion in 2016 to N242 in the 2017 budget, that increase was N44 billion of 22 per cent. FIRS generate N778bn in first quarter 2017 (Vanguard, Jun 29, 2017).

Wahab Gbadamosi, FIRS's spokesperson, said the inability of the FIRS to meet its projected target reflects the general state of the Nigerian economy. Mr. Gbadamosi noted that the crash in oil prices also affected the revenue drive of the agency, adding that oil drives the nation's economy.He explained that between 2012 and 2014, oil sold on the average of 100.19 and 108.7 USD per barrel but the crash, which affected companies' income generation source especially in 2016, had its toll on the revenue drive of the agency too. "Oil drives the economy…from banking, to insurance, to energy, to transport…name it. It is what drives the economy," (Premium Times, Thu, Jun 29,2017)

The low tax collections by FIRS may threaten revenue target and the entire revenue to be generated.

2.3 Tax structure

Tax structures are measured by the share of major taxes in total tax revenue. There are three general ways that a government can apply tax rates. Taxes can be levied on regressive basis, a progressive basis or proportional basis. A regressive tax structure shifts the burden of taxation to low income taxpayers because they pay a disproportionately higher rate of taxes. A progressive tax structure shifts the burden of taxation to high income taxpayers because they pay a disproportionately higher rate of taxes. A proportional tax structure theoretically does not shift the tax burden onto any one group because the same tax rate applies to all taxpayers. Some argue that certain proportional taxes have regressive effects.. The primary economic goals of developing countries are to increase the rate of economic growth and hence per capita income, which leads to a higher standard of living.Progressive tax rate can be employed to achieve equitable distribution of resources.Government can also increase or decrease the rates of tax, increase or decrease the rate of capital allowances to encourage or discourage certain industries or may give tax holidays to pioneer companies. Income tax therefore can be used as an agent of social change if employed as a creative force in economic planning and develop.According to the president, Chartered institute of Taxation of Nigeria, that a review of Nigeria's tax laws was necessary if the country hoped to generate substantial revenue from taxation.

2.3.1Corporate Income Tax(CIT).

Is payable only to the federal government. Tax is levied on a resident company's worldwide income being its profits accruing in, derived from, brought into or received in Nigeria. For a nonresident company, it is levied on only that income derived from its Nigerian operation. Assessment is on Preceding Year (PY) basis. Remittance is 2months after due date of filling of Returns. CIT is 30% and 20% for small companies engaged in manufacturing or wholly in export including oil & gas within the first five years of its operation.
Alternative tax on deemed profit .According to Taiwo (2016), the law allows the FIRS to assess and charge companies to tax on a fair and reasonable percentage of turnover under the following circumstances:When the trade or business produces no assessable profits, When the trade or business produces assessable profits that, in the opinion of the Board of the FIRS, are less than might be expected to arise from that trade or business, When the true amount of the assessable profits of the company cannot be ascertained.

2.3.2 Petroleum Profit Tax

Since the introduction of petroleum profit tax in Nigeria from1959, it has remained the most important revenue item not onlyunder the direct taxes, but among all revenue items. This single taxitem has been accounting for over 70% of government revenue formany years now only the oil producing companies are paying thistype of tax. The government is paid a royalty for all oil and gas produced and sold. PPT is levied on the income of companies engaged in upstream petroleum operation. The rate is 85% for Joint Ventures and 50% for Production Sharing Contracts (PSC)..
While the fiscal regime (taxes, royalty payable by holders of exploration and production
Licenses) is dictated by government, there are many other factors which affect the economics of the upstream oil industry's investment. Such factors fall outside the control of government, e. g. geological prospectivity, reservoir system, crude oil and natural gas prices, field development costs. However, it is known that in the UK continental shelf is ahigh cost area by international standards and this affects the way government formulates its fiscal policy.A review of the current oil exports in Nigeria, reveal a southward trend due to oil theft and lower global demands. The country's oil production has also continued on a free fall over the last few months which invariably affect taxes.

2.3.3 Indirect Tax

i. Custom Duties: Are levied on costs, insurance and freight with varying rates for different items.The effect of these duties is to increase the price of theseimported goods into the economy.

ii. Exercise Duties: These are taxes levied on how or locallyproduced goods. Not much goods are produced locally.

iii. Value Added Tax: This is an ad-velour (i.e. based on the valueof commodity generally collected at the whole sale stayed).Value Added (VAT) comes into reckoning in Nigeria throughthe Decree No. 102 of December 31st 1993 although actualimplementation did not start until 1st January 1994. The VATDecree of 1993 defined VAT as a tax which is imposed ongoods and services. The rate of Tax is 5%.There are two types of value added tax; which are input valueadded tax and output value added tax.

(a) Input Value Added Tax: This refers to as the charges on salesof good and service paid to the federal Inland Revenue ServiceDepartment after deduction.

(b) Output Value Added Tax: This means the value added taxpaid on goods and services by another person.However, there are some goods and services that are zerorated, that is, they are taxed at zero percent. Zero rating is similarin VAT treatment like exempted goods and services. The majordifference between the two is that whole input VAT is refused inrespect of zero-rated goods, they are not under exempted goods,they are not under exempted goods and services.

2.4Empirical Review

Oriakhi and Ahurn (2014) examined the impact of Tax reforms on federal revenue generation in Nigeria using time series data from 1981-2011. By adopting ADF unit root test, Johanson cointigration test and Granger causality test. The study found that the variables were not stationary at level but stationary at difference; the Johnson result proved the presence of long-run relationship between Tax reforms and federal collected revenue, the granger causuality test showed both uni and bi- directional relationship between the variables. The ECMresults show that 66.2940% of the deviation of federally collected revenue from long-run equilibrium value can be reconciled yearly. Itconcludes that Tax reforms by improving tax system and reducing tax reforms tax burden enhance ability togenerate more revenue. Abiola and Asiweh (2012) examined the impact of tax administration in Government revenue in a developing Economy; A case study of Nigeria using 121 online survey questionnaire contingency 25 relevant questions. The study found increasing tax revenue is the function of affective enforcement strategy which is the prime responsibility of tax administrators.

Umoru and Anyiwe (2013) examined the relationship between Nigeria Tax structure and Economic growth using disaggregated time series data by employing cointigration and Error correction method. Empirical result that while the tax of indirect taxation is significantly and positively correlated with economic growth indirect taxation proved insignificant with negative impact on economic. Adegbie and Fakile (2011) investigated the impact of petroleum profit tax on Nigerians Economic development using survey research design. Findings reveal that there is a very strong relationship between petroleum profit tax and economic development of Nigeria.Oriakhe and Obemwengie (2013) studied the impact Tax incentives and revenue productively of the Nigerian Tax system using time series data from 1981-2009. The study found unsatisfactory level of tax revenue productivity in Nigeria. Afuberoh and Okoye (2014) investigated the, impact of taxation on revenue generation in Nigeria which focused on federal capital territory and selected states using secondary data. The study discover that among other, taxation have significant effect on revenue generation and Gross Domestic product.Mathew and Abata (2014) examines the impact of tax revenue on Nigeria economic with board of inland revenue using survey of 100 copies of questionnaire administered to staff of federal inland revenue service. The study found that tax significantly influences federal government

budget implementation in Nigeria and tax evasion significantly affects tax revenue in Nigeria.Okafor (2012) used the use of ordinary least square, where economic growth wasproxy by the Gross Domestic Product (GDP) and tax reform proxy by the various incometax-petroleum profit tax (PPT), value-added tax (VAT), custom and excise duties (CED) andcompany income tax (CIT). The regression result showed goodness of fit and all the incometaxes have positive coefficients showing that tax reform can stimulate economic growth.In an empirical work titled value-added tax and economic growth of Nigeria.

Sanni and Adesina (2011) using the ordinary least square techniques regressed the GDP, whichwas a proxy for Economic Growth on Value-Added Tax (VAT). The model estimated has a highexplanatory power as the coefficient of determination was put at 0.950544, showing thatsubstantial proportion of the variation in economic growth proxy by the Gross Domestic Product is accounted forby the variation of VAT revenue earnings.

3. Research Design

This study examinedtheimpact of tax structure on revenue generation in Nigeria from 1981 – 2016. The relevant data were sourced from Central Bank of Nigerian Statistical Bulletin and federal Inland Revenue service. Time series data were used and econometric method of data analyses which involves Ordinary Least Square (OLS) were employed. The multiple regressions formulated in this study are based on the various schools of thought on the effect of monetary policy on investment. As reported by CBN and FIRS the data is in billions of naira as shown in appendix i.

TFGR= f(PPT,CIT,CED,VAT) …… (1)

Transforming equation 1 above to econometric method, we have:

$TFGR= \beta_0 + \beta_1 PPT + \beta_2 CIT + \beta_3 CED + \beta_4 VAT + \mu$ …… (2)

Where:

TFGR= Total federal generated revenue
PPT = Petroleum Profit Tax
CIT = Company Income Tax
CED = Custom and Excise duty tax
VAT = Value added tax
μ = Error Term
$\beta_1 - \beta_4$ = Coefficient of Independent Variables to the Dependent Variable
β_0 = Regression Intercept.

Estimation Techniques

Stationarity Test:

Time series data are assumed to be non-stationary and this implies that the result obtained from Ordinary Least Square (OLS) may be misleading. It is therefore necessary to test the stationarity of the variables using the Augmented Dickey Fuller 1979 test to both level and first difference. The ADF test constructs a parameter correction for higher order correlation by assuming the times series follows an auto regressive process. Mathematically expressed as

$$\Delta y_t = c + \beta_t + \alpha y_{t-1} + \sum_{t-i}^{k} \gamma_j \Delta y_{t-j} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$$

$$\Delta y_t = c + \alpha y_{t-1} + \sum_{t-i}^{k} \gamma_j \Delta y_{t-j} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

Equation 1 is used to test for the null hypotheses of non stationarity of unit root against trend stationaerity alternative in Y_t where y refers to the examined time series. Equation 3 tests the null hypotheses of a unit root against a mean stationarity alternative.

Johansen Cointegration Test

The cointegration test established whether a long run equilibrium relationship exist among the variables. It is generally accepted that to establish a cointegration, the likelihood ratio must be greater than the Mackinnon critical values. The model can be stated as

$$\Delta X_t = \mu + \Psi_1 \Delta X_{t-1} + \Psi_2 \Delta X_{t2} + \ldots + \Psi_{p-1} \Delta X_t - p + 1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

Where μ is a constant term.

ΔX_t Represents the first cointegrating difference

Granger Causality

To determine the direction of causality between the variables, the study employed the standard Granger causality test (Granger, 1969). The test is based on Vector Error Correction Model (VECM) which suggests that while the past can cause or predict the future, the future cannot predict or cause the past. Thus, according to Granger (1969) X Granger cause Y if past value of X can be used to the past value of Y, the test is based on the following regression model.

Vector Error Correction Model

Co-integration is a prerequisite for the error correction mechanism. Since co-integration has been established, it is pertinent to proceed to the error correction model. The VECM is of this form:

$$\Delta y_t = \alpha \beta y_{t-1} + \sum_{i=1}^{j=1} \Gamma_j \Delta y_{t-1} + \pi + \varsigma_t, t = 1, \ldots\ldots, T \ldots\ldots\ldots\ldots\ldots\ldots\ldots 6$$

Where Y_t is a vector of indigenous variables in the model. α is the parameter which measures the speed of adjustment through which the variables adjust to the long run values and the β is the vectors which estimates the long run cointegrating relationship among the variables in the model. π is the draft parameter and is the matrix of the parameters associated with the exogenous variables and the stochastic error term.

4. Results And Discussion Of Findings

The following tables show the dynamic relationship between the dependent and independent variables as formulated in the regression models.

Presentation of Results

Dependent Variable: TFGR
Method: Least Squares
Date: 03/24/17 Time: 14:27
Sample: 1981 2016
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PPT	-18.98342	41.49092	-0.457532	0.6507

CIT	0.861251	16.55560	0.052022	0.9589
CED	2.970351	32.84717	0.090429	0.9286
VAT	7.997273	1.100566	7.266509	0.0000
C	1877.063	4081.686	0.459874	0.6490

R-squared	0.951846	Mean dependent var	15582.51
Adjusted R-squared	0.945204	S.D. dependent var	25127.82
S.E. of regression	5882.061	Akaike info criterion	20.33225
Sum squared resid	1.00E+09	Schwarz criterion	20.55672
Log likelihood	-340.6483	Hannan-Quinn criter.	20.40880
F-statistic	143.3082	Durbin-Watson stat	1.391886
Prob(F-statistic)	0.000000		

Estimation Command:
==========
LS TFGR PPT CIT CED VAT C

Estimation Equation:
==========
TFGR = C(1)*PPT+ C(2)*CIT + C(3)*CED + C(4)*VAT + C(5)

Substituted Coefficients:
==========
TFGR = -18.9834150957*PPT + 0.861251096285*CIT+ 2.97035119781*CED + 7.99727284794*VAT + 1877.06274904

4.1 Interpretation Of Results

From the result, the constant term is positive, even though it does not have any econometric meaning, it meets our a priori expectation. That is if other variable that contribute to federal government revenue generated is zero, there are other variables that can contribute in a positive or negative way to increase in revenue. The value of petroleum profit tax has a negative and insignificant relationship with total federal generated revenue. The result shows that a 10% increase in the value of petroleum profit tax leads to 18.9% decrease in total federal generated revenue. The t-value of -0.457532 which is less than absolute 2 using a 2-t Rule of Thumb is statistically insignificant suggest that the increase in the value is not a major determinant total federal generated revenue, however, company income tax, custom and exercise duty tax and value added tax has a direct relationship with total federal generated revenue. A 10% increase in the current and previous years in the variables leads to 0.8%, 2.9% and 7.9% increase in total federal generated revenue.

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Coefficient of determination R2

In the error correction model, we expect a lower R^2, given that the dependent variable is differenced. Given the parsimonious specification, the size of the R^2 is impressive. The R^2 is 0.951846 shows that the explanatory variables which are petroleum profit tax, company income tax, custom and exercise duty tax and value added tax can explain 95.1% variation on the dependent variable which is total federal generated revenue.

Test of Autocorrelation

The underlying assumption of autocorrelation is that the successive values of the random are temporally independent. The convectional Durbin Watson d statistics is employed. Since DW which is 1.391886 is close 2 rather than zero, we conclude that there is autocorrelation.

F- Test

We also conducted the f-test to check for model adequacy. Hypothesis formulation

H0: the model is well specify

H1: there is misspecification of model

Decision Rule: If F-tabulated > F-calculated, we accept H0,

F (11, 21) =143.3080 (Probability = 0.000000) and F- Table =4.65

Since the F-calculated of 143.3080 is greater than the F-tabulated of 4.65 at 5% level of significance, we accept H0 and reject H1. Thus we concluded that the model is good and well specified.

Test of Multicollinearity

We used the correlation matrix table in test for multicollinearity among the variables. Gujarati, (2004) states that two explanatory variables is said to be multicollinear if the pair wise or zero – order correlation coefficient of the variables is in excess of 0.8.

VARIABLE	TFGR	PPT	CIT	CED	VAT
TFGR	1.000				
PPT	0.004456	1.000			
CIT	0.002056	0.005915	1.000		
CED	0.051694	0.008906	0.025330	1.000	
VAT	0.001020	0.000176	0.002812	0.002294	1.000

Source: Computed by Research from E-View Windows 9.0

As the result in the table shows, that there is no multicollinearity among thevariables since none of the pair - wise correlation coefficient between any twoexplanatory variables is above 0.8.

UNIT ROOT TEST

The time series properties of our data were examined by conducting the unit root test of stationarity using the Augmented Dickey-Fuller (ADF) test and co-integration test using Engle Grange co-integration procedure. The results for the stationarity test using Augmented Dickey-Fuller (ADF) test are presented in table 4.3 below:

TEST AT LEVEL

VARIABLE	T-ADF	LAG LENGTH	1%	5%	10%	PROB.	ORDER OF INTEGRATION	DECISION
TFGR	4.971203	4	-3.679322	-2.967767	-2.622189	1.0000	1(0)	Accept H_0
PPT	-0.76628	4	-3.64634	-2.95402	-2.61581	0.8155	1(0)	Accept H_0

	9		2	1	7			
CIT	0.535209	4	-3.653730	-2.957110	-2.617434	0.9854	1(0)	Accept H_0
CED	1.387131	4	-3.737853	-2.991878	-2.635542	0.9983	1(0)	Accept H_0
VAT	11.89897	4	-3.699871	-2.976263	-2.627420	1.0000	1(0)	Accept H_0

Source: Computed by Research from E-View Windows 9.0

NB ** indicates significance at 1% and 5% critical value. For the variables to be stationary, it is expected that the T-ADF is greater than thechosen critical values. As it is shown in the table 4.1, all the variables arenot stationary at level of differencing.

TEST AT FIRST DIFFERENCE

VARIABLE	T-ADF	LAG LENGTH	1%	5%	10%	PROB.	ORDER OF INTEGRATION	DECISION
TFGR	-6.668193	4	-3.752946	-2.998064	-2.638752	0.9885	1(0)	Accept H_0
PPT	-4.028887	4	-3.653730	-2.957110	-2.617434	0.0039	1(1)	Reject H_0
CIT	-9.573918	4	-3.653730	-2.957110	-2.617434	0.0000	1(1)	Reject H_0
CED	-6.340082	4	-3.679322	-2.967767	-2.622989	0.0000	1(1)	Reject H_0
VAT	4.625378	4	-3.737853	-2.991878	-2.635542	1.0000	1(1)	Reject H_0

Source: Computed by Research from E-View Windows 9.0

NB ** indicates significance at 1% and 5% critical value.
However at levels of the differencing shows that all the variables are stationary which led to the rejection of null hypotheses and the acceptance of alternate hypotheses.

Co integration test

From the unit root test in tables above, we noticed that total federal generated revenue which is the dependent variable in the specified equations have the same order of integration with other independent variables, we then estimated their linear combination without the constant term and obtain their residual which was tested for unit root test of stationary using Augmented Dickey Fuller. The outcome of the test is given below:

PRESENTATION OF JOHANSEN'S UNRESTRICTED CO-INTEGRATION RANK (TRACE STATISTICS)

Obs	*Series*	*Hypothesized*	*Eigen*	*Maxi-Eigen*	*P0. 05 Critical*	*Prob.***

		No. of C E (s)	*value*	*Statistics*	*value*	
36	*D(TFGR)*	None *	0.972833	197.9890	69.81889	0.0000
	D(PPT)	At most 1 *	0.725968	82.60512	47.85613	0.0000
	D (CIT)	At most 2 *	0.492412	41.18075	29.79707	0.0016
	D (CED)	At most 3 *	0.284610	19.48202	15.49471	0.0119
	D (VAT)	At most 4 *	0.239581	8.764343	3.841466	0.0031

Source: Author's Computations using E-VIEWS 7.0

PRESENTATION OF JOHANSEN'S UNRESTRICTED CO-INTEGRATION RANK (MAXIMUM EIGEN)

Obs	***Series***	***Hypothesized No. of C E (s)***	***Eigen value***	***Maxi-Eigen Statistics***	***P0. 05 Critical value***	***Prob. *****
36	*D(TFGR)*	None *	0.972833	115.3839	33.87687	0.0000
	D(PPT)	At most 1 *	0.725968	41.42437	27.58434	0.0005
	D (CIT)	At most 2 *	0.492412	21.69873	21.13162	0.0416
	D (CED)	At most 3	0.284610	10.71768	14.26460	0.1689
	D (VAT)	At most 4 *	0.239581	8.764343	3.841466	0.0031

Source: Author's Computations using E-VIEWS 7.0

From the tables above, the result shows the existence of co-integration among the variables because the residual obtained from the linear combination of none stationary series is stationary at both 5% and 1% critical values. Hence there is necessity to estimate an Error Correction Model (ECM) that is the model in equation number.

4.2 PRESENTATION OF DYNAMIC ECM MODELING OF TFGR

Vector Error Correction Estimates
Date: 03/24/17 Time: 14:43

Sample (adjusted): 1984 2016
Included observations: 33 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1	CointEq2	CointEq3		
C	-11544.81	-312.0632	-529.7825		
Error Correction:	D(TFGR)	D(PPT)	D(CIT)	D(CED)	D(VAT)
D(TFGR(-1))	-0.305449	0.000862	0.017900	-0.003233	-0.101684
	(0.47771)	(0.00385)	(0.00674)	(0.00216)	(0.02745)
	[-0.63940]	[0.22395]	[2.65737]	[-1.49493]	[-3.70474]
R-squared	0.855666	0.536828	0.799965	0.803292	0.970174
Adj. R-squared	0.745292	0.182637	0.646998	0.652868	0.947366
Sum sq. resids	1.43E+08	9287.606	28421.55	2929.348	471893.6
S.E. equation	2899.813	23.37370	40.88833	13.12686	166.6087
F-statistic	7.752466	1.515647	5.229640	5.340181	42.53625
Log likelihood	-281.8195	-132.3751	-149.7113	-114.4896	-193.2602
Akaike AIC	19.08513	9.443552	10.56202	8.289651	13.37162
Schwarz SC	19.73274	10.09116	11.20963	8.937258	14.01923
Mean dependent	2868.825	4.263871	12.24452	9.309677	387.0571
S.D. dependent	5745.779	25.85354	68.81937	22.27991	726.2120

Determinant resid covariance (dof adj.)	1.12E+18
Determinant resid covariance	5.57E+16
Log likelihood	-817.6048
Akaike information criterion	58.23257
Schwarz criterion	62.16447

From the table above, the variable proved a dynamic movement from the static equilibrium point as the variables are denoted with negative signs (-). It shows that total federal generated revenue can adjust by 47.7% speed, 33.77% PPT, 22.2% CIT, 105.8% CED and 10.24% VAT. Therefore, it could be deduced that CIT has the highest speed of adjustment among the variables. **CAUSALITY TEST**

Pairwise Granger Causality Tests
Date: 03/24/17 Time: 14:39
Sample: 1981 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
PPT does not Granger Cause TFGR	34	1.61079	0.2183
TFGR does not Granger Cause PPT		7.25079	0.0030

CIT does not Granger Cause TFGR	34	4.61730	0.0188
TFGR does not Granger Cause CIT		0.83857	0.4433
CED does not Granger Cause TFGR	34	10.6294	0.0004
TFGR does not Granger Cause CED		0.04423	0.9568
VAT does not Granger Cause TFGR	34	24.7953	8.E-07
TFGR does not Granger Cause VAT		2.90357	0.0721

From the results of the granger causality test, the probability value of 0.2183 is greater than the critical value of 0.05 therefore; the research concludes that there is no causal relationship running through PPT to TFGR. However the probability value of 0.0030 is less than the critical value of 0.05, therefore, the research concludes that there is casual relationship running through TFGR to PPT.

From the results of the granger causality test, the probability value of 0.0186 is less than the critical value of 0.05 therefore; the research concludes that there is causal relationship running through CIT to TFGR. However the probability value of 0.4433 is greater than the critical value of 0.05, therefore, the research concludes that there is no casual relationship running through TFGR to CIT.

From the results of the granger causality test, the probability value of 0.0004 is less than the critical value of 0.05 therefore; the research concludes that there is causal relationship running through CED to TFGR. However the probability value of 0.9565 is greater than the critical value of 0.05, therefore, the research concludes that there is no casual relationship running through TFGR to CED.

From the results of the granger causality test, the probability value of 8.E-07 is less than the critical value of 0.05 therefore; the research concludes that there is causal relationship running through VAT to TFGR. However the probability value of 0.0721 is greater than the critical value of 0.05, therefore, the research concludes that there is no casual relationship running through TFGR to VAT.

Test Of Hypotheses

H_{0s}	HYPOTHESES	T-TEST	PROB.	REMARK	DECISION
H_{01}	PPT and TFGR.	-0.4547532	0.6507	Not significant	Accept H_0
H_{02}	CIT and TFGR	0.052022	0.9589	Not significant	Accept H_0
H_{03}	CEDN and TFGR	0.090429	0.9286	Not significant	Accept H_0
H_{04}	VAT and TFGR	7.266509	0.0000	Significant	Reject H_0

Source: Computed by the researcher from E-view Windows 9.0

4.3Discussion of findings

Tax is an instrument of revenue generation to meet government expenditure needs. The objectives of tax structure are to enhance revenue generation. The findings of this study proved that in the short run tax

structure has positive effect on total revenuecollected in Nigeria except petroleum profit tax. However, the effect of the tax structure variables on revenue generation in the long run is positive as justified by the cointegration test results while the unit root test found that the variables are stationary at firstdifference. The positive effect of the independent variable on the dependent variable confirms the a-priori expectation of the results and the objectives of Nigeria tax structure.The positive effect of the variables confirms to the a-priori expectation of the study and validates the findings of Oriahi and Ahuru (2014). We could deduce that with the sharp fall in oil revenue, the FIRS seem to have introduced a robust tax regime and aggressive revenue generation strategy in line with the policy objectives of the present administration of President Mohammadu Buhari. This has helped in generating substantial revenue for the nation. Whereas, the negative effect of the PPT is contrary to the expectation of the study and can be traced to the fraudulent activities of the oil industry and the tax administrators and also, the lower global demands for Nigerian crude oil.The negative effect of PPT on revenue generation couldalso be attributed to the fact that the system of computing petroleum profit tax is very complex and may give room for tax evasion if not handled by professionals. The politics in Nigeria's oil industry in recent past can lay credence to this fact.

5. CONCLUSION AND RECOMMENDATIONS

Well-structured tax policy is aninstrument used to achieve macroeconomic goals both in the developing and the developed economies apart from revenue generation. Various tax policies formulated to enhance revenue mobilization and regulate economic activities. From the finding, we draw the following conclusions:

Firstly, petroleum profit tax has negative and insignificant relationship with total federal generated revenue. This finding is contrary to a-priori expectation of the result.

Secondly, that company income tax positive and insignificant relationship with total federal generated revenue. This finding confirms the a-priori expectation and the objective of policy reforms to enhance revenue mobilization.

Thirdly, that custom and exercise duty tax has positive but insignificant effect on total federal generated revenue. The finding is in line with theories and empirical evidence.

Fourthly, that value added tax has positive and significant relationship with total federal generated revenuethis finding confirms the expectation of the study and validates the important of tax structure.

From the findings of the study, we draw the following recommendations:

1. There need to formulate enforceable laws to deal with tax evasions and fraudulent activities among tax administrators especially the oil and gas industry.
2. Tax revenues should well be accounted and harmonized with the revenue generating objective of tax to enhance revenue mobilization and economic development.
3. Tax structure in Nigeria need well managed, existing policies need to be strengthened and reforms to enhance revenue mobilization.
4. Policies to strengthen corporate income tax should be formulated by the authorities to enhance revenue mobilization from corporate organizations.
5. All leakages in custom and exercise duty tax should be blocked by the custom authorities.
6. There is also need formulate policies that encourage inflow of foreign investors in the real sector of the economy, existing policies should be reformed to enhance productivity of the economy and value added tax.

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APPENDIX I: TIME SERIES DATA OF THE VARIABLES

YEARS	**TFGCR (₦,B)**	**PPT (₦,B)**	**CIT (₦,B)**	**CED (₦,B)**	**VAT (₦,B)**
1981	13,290.50	6,326	403	2,326	na
1982	11,433.70	4,847	550	2,336	na
1983	10,508.70	3,747	562	1,984	na
1984	11,253.30	4,762	787	1,616	na
1985	15,050.40	6,711	1,004	2,184	na
1986	12,595.50	4,811	1,101	1,728	na
1987	25,380.60	12,504	1,235	3,541	na
1988	27,596.70	6,815	1,551	5,672	na
1989	53,870.40	10,598	1,914	5,816	na
1990	98,102.40	26,909	2,997	8,641	na
1991	100,991.60	38,616	3,828	11,457	na
1992	190,453.20	51,477	5,417	16,055	na
1993	192,769.40	59,208	9,554	15,485	na
1994	201,910.80	42,803	12,275	18,095	7,261
1995	459,987.30	42,858	21,878	37,364	20,761
1996	523,597.0	76,667	22,000	55,000	31,000
1997	582,811.10	68,574	26,000	63,000	34,000
1998	463,608.80	68,000	33,300	57,700	36,000

1999	949,187.00	164,300	46,200	87,900	47,100
2000	1,906,159.70	525,100	51,100	101,500	58,500
2001	2,231,600.00	639,200	68,700	170,600	91,800
2002	1,731,837.50	392,200	89,100	181,400	108,600
2003	2,575,095.90	683,500	114,800	195,500	136,400
2004	2,575,095.90	1,183,600	113,000	217,200	159,500
2005	5,547,500.00	1,904,900	140,300	232,800	178,100
2006	5,965,101.90	2,038,300	244,900	177,700	221,600
2007	5,715,600.00	1,600,600	275,300	241,400	289,600
2008	7,866,590.10	2,060,900	420,600	205,250	401,700,000
2009	4,844,592.34	939,400	600,600	223,325	481,400,000
2010	7,303,671.55	1,480,360	666,060	214,287	564,890,000
2011	9,987,629.0	3,070590	715,440	Na	659,150,000
2012	10,654.75	8,137,443	1,564,812	443,811	1,406,441
2013	9,759.79	5,817,913	1,768,439	4,566,645	1,555,772
2014	10,068.85	551,8105	167,814,9	4,8778	1,740,302
2015	6,912.50	2,669,164	2.653,192	470,153	1,363,968
2016	7,054.32	6,400,000	3,816,350	384,379	5,000,000

Source. CBN STATISTICAL BULLETIN

TFGCR=Total-federal-government-collected-revenue

PPT=Petroleum-profit-tax

CIT=Company-income-tax

VAT=Value-added-tax

CED=Custom-and-excise-duty