DOI: 10.32602/jafas.2020.034

JOURNAL OF ACCOUNTING, FINANCE AND AUDITING STUDIES

http://www.jafas.org

Petroleum Profits Tax, Company Income Tax and Economic Growth in Nigeria 1980–2018

Etim Osim Etim[a] **Austine U. Nweze**[b] **Nsima J. Umoffong**[c]

[a] Corresponding Author, Department Of Accounting, Faculty Of Business Administration, University Of Uyo, Nigeria, osimacc@gmail.com

[b] Department of Accounting, Faculty of Management Science, Enugu State University of Science and Technology, Enugu, Nigeria

[c] Department Of Accounting, Faculty Of Business Administration, University Of Uyo, Nigeria

Keywords

Petroleum Profit Tax, Company Income Tax, Economic Growth Investment, Entrepreneurship.

Jel Classification

O10, O40.

Received

30.06.2020

Revised

26.07.2020

Accepted

10.08.2020

Abstract

Purpose: The purpose of the study was to investigate the long run relationship existing between petroleum profit and companies' income taxes and economic growth in Nigeria in the period of 1980 to 2018. This is premised on realizing the role of taxation as a critical aspect of an economy's fiscal policy framework.

Design/Methodology/Approach: The secondary data for 39 years period. The analytical tools were Augmented Dickey-Fuller (ADF) unit root-test, Engle Granger Procedure Co-integration test, Parsimonious Error Correction Mechanism (ECM), Durbin-Watson statistic and over parameterized model.

Findings: The results of the analysis reveal a positively significant association of studied variables with (0.9844) and (0.9471) co-efficients for petroleum profit tax and companies income tax respectively in relation independent variables integrate with the dependent variable at first order. This indicates long run relationship. Also, the parsimonious results shows a positive co-efficients of (3.6344) and (2.7644) and (2.7629) for t-values of CIT and PPT on economic growth.

Originality/Value: In view of the results, government's tactful handling of issues that are tax related was recommended so as to stimulate additional investments, entrepreneurial activities and innovations. The study contributes to the taxation and fiscal policy research by increasing our knowledge and understanding on the relationship subsisting between taxation revenue and economic growth.

1.0. Introduction

The world over, it is a known fact that tax contributes to national economic planning and development significantly. Taxes constitute the primary source of government revenue; thus national economic policies are anchored on projected revenue from taxes. Consequently, the relationship between taxation and growth in an economy has attracted increased research interest in advanced countries and there appears to be an assumption in developing economies on what is applicable to these developed countries also applies to them.

Relevant theories enable chronicling the divergent means of growing output with taxes. Firstly, an economy with higher taxation rate would lower rate of investment or capital stock net growth via increased rates on taxes in respect of individual as well as corporate incomes. Higher rates on capital gains tax and low allowances in respect of deprecation. Secondly, a country's policies on taxation has the capacity to support growth in productivity through a reduction in research and development. In this case, development having a form of subsidy (implying a negative tax) would encourage researches with the potential of promoting productivity in current capital and labour from its spillover effect.

Being an element of a country's fiscal policy framework known in economic theory, taxation influences rate of economic growth alongside variables in the economy both micro and macro.

In literature, it has been recognized that a country's tax revenue and its economic growth are related. In recent times, for example, the United Nations (UN) 2005 posited that for economic growth and development to be rapidly actualized by developing countries, such economies would be expected to upcale their revenue domestically by using taxes that are align with Millennium Development Goals (MDGs). A number of researches made attempts at linking economic growth in a country with its revenue from tax (UN, 2005; Popoola, 2009; Adegbie & Fakile, 2011; Onefeiwu, 2012; Etim & Nweze, 2015). In literature, applicable models on economic growth employs variables including level of education and labour, capital and level of technology in determining the level of output in a given country as well as its

growth in the long run. Linking taxes and growth in an economy should accordingly be explained in the light of sundry means by which taxes impact the input factors (Konrad, 2014).

A country's economic growth is assessed using per capital income (PCI) obtained by dividing its Gross Domestic Product (GDP) by population of the country at any point in time. Several related investigations whole interest was on issues accounting for taxation level suggested per capital income as a common variable (Chen, 2007; Fullerton & Heute, 2007; Keshab, 2010,). Tanzi (1987) hints that growth in economy influences a rise in the demand for public sector spending while Tanzi & Lee (2008) and Musgrave (2004) are of the view that it is as a result of increased taxation that capacity is directed at meeting demand. Above reasoning supported empirically infer that levels of tax and growth in economy are correlated. This became critical to note because it is commonly held belief that higher tax levels trigger large economic distortions and would be harmful to economic growth, established correlation between the level of tax in an economy and its growth may prove otherwise (Ariyo, 1997; Aruwa, 2010; ITC, 2010).

The recognition of taxation as a critical mainstream priority for growing developing counties has been stressed (International Monetary Fund (IMF), 2010). This position highlights interest in mobilizing fund locally through taxation to serve as a basis for financing critical public services continuously. Furthermore, it shows that increasingly having in place an efficient, effective as well as equitable system of taxation in an economy is the most important ingredient in governing and building of countries (Organization for Economic Co-operation and Development (OECD), 2013).

Tax policies are employed in some developing economies as the primary tool in correcting deficits (Rao, 2005; Ahmed & Stern, 2011;). This implies that the system of taxation used in a certain country greatly determines other macroeconomic variables. In particular, tax structure and extent of national economic growth and development are linked with each other in both developed and developing countries. Regrettably, however, compared to a number of developed economies whose key taxation efforts are subsequently subjected to an in-depth analysis of its effect, to the

best of the researchers' knowledge, similar researches are lacking in the context of Nigeria; this makes a strong case for current research effort.

1.1. Statement of the Research Problem

In Nigeria, efforts at increasing governmental revenue using tax as a medium as experimented by various administrations over the years are yet to realize projections when revenue and the country's GDP are subjected to a ratio analysis compared to other developing and developed economies.

Abiola & Asiweh (2012) reason that this may account for why majority of Nigerians have expressed their disappointment in not feeling effect of taxation in the areas of economic growth and development. Indeed how national economic growth is linked to tax revenue has been intensely argued by formulators of policies, researchers and tax Practitioners. This argument is premised on whether formulators of tax policies can utilize taxation in stimulating economic growth in the country or if the reverse can be the case (Gravelle & Marples, 2014; Keho, 2013).

As strategic as the debate might be particularly as it concerns facilitation of relevant effective policies, linking tax revenue to Nigeria's economic growth is yet to receive in-depth investigation. It becomes expedient to know where Nigeria stands.

1.2. Objectives of Study

Investigating Nigeria's tax revenue and its economic growth from 1980-2018 is the general goal objective of current study. Specifically, this study was conducted to:

i. Find out link between Nigeria's Petroleum Profit Tax and its economic growth within the specified period of study.
ii. Ascertain how Nigeria's Company Income Tax and its economic growth are related within the specified period of study.
iii. Ascertain causality direction between tax revenue and national economic growth in the context of Nigeria within the specified period of study.

1.3. Research Questions

To achieve the stated objectives, the following research questions are raised.

i. Is there any link between Nigeria's Petroleum Profit Tax Income and its economic growth within the specified period of study?

ii. How do Nigeria's companies Income Tax and the country's economic growth relate within the specified period of study?

iii. In what direction is the causality between Nigeria's tax revenue and its economic growth within the specified period of study?

1.4. Research Hypotheses

In this study, these hypotheses have been formulated:

$H0_1$: Petroleum Profit Tax and Economic growth are not significantly linked in the context of Nigeria

$H0_2$: Companies Income Tax does not significantly relate with Nigeria's economic growth

$H0_3$: Nigeria's Tax Revenue (PPT, CIT) and its economic growth (GDP) have no causality direction.

Two tax revenue components (PPT and CIT) selected for thus study are assured theoretically to be the highest sources of government tax income in Nigeria. Upon completing this study, it is envisaged that its outcome will guide on policy direction when considering tax reforms in the country.

2.0. Review of Related Literature

In reviewing literature related to this study, three sub-headings will be considered. They will respectively take care of conceptual issues, theoretical foundation and review of empirical studies. According to Nigeria's National Tax Policy (NTP) (2020), a tax may be seen as a levy or charge that has been imposed on individuals or legal entities by a given state or authorized body in a state. It explains a monetary burden that has been placed on property and individuals so as to support government spending. Continued NTP (2000) does not consider tax as being a donation or payment made voluntarily but a contribution to be compulsorily made with legal backing. It is considered as contributions that have been imposed by government. It comes in variants of custom, excise, levy and the like. Taxation is applied in the assessment, imposition as well as collection of different taxes (Aguolu, 2010; Adegbie & Fakile, 2011; Okafor, 2012; Etim & Nweze, 2015).

In a general sense, it is the expectation that taxes would generate adequate finance to fund governmental spending and simultaneously attain macroeconomic goals such as promotion of robust private and public sectors in an economy, full employment and speeding up national economic growth and development. However, the level of public sector deficit over some decades now queries dependence on taxes as a fiscal tool in achieving aforementioned goals. Ariyo (1997) in his observation reasons that compared to the past, there is currently a compelling need to optimize revenue from different areas of taxation in the case of Nigeria. Also, the world over, taxation rather than national resources has been employed as a primary tool of national economic policy and the core of economic reforms. Thus, strengthening and reforming the tax system of the country to enhance its productivity becomes a cardinal agenda for any democratic government such as Nigeria.

The historical analysis of the nation's economic revenue profile demonstrates two lessons. First, that the nation depends mostly on oil revenues which account for over 85% of her annual income, and are highly volatile. Secondly, that the fluctuation in oil revenue is usually as a result of factors completely external to the economy. From this positioning, since crude oil prices have significant influence on the macroeconomic indices and are highly volatile, almost unpredictable exogenous variables, it becomes increasingly important diversifying the nation's economy away oil, hence the call for tax restructuring and reforms.

2.1. Economic Growth

For a very long time, a country's economic growth has been taken to be a central goal of its economic policy and reforms agenda with a considerable amount of studies focusing on offering explanations to how the goal can be realized (Fadare, 2010).

Similarly, the concept has enjoyed significant interest from scholars. In classical researches, a country's economic growth has been linked largely to public sector spending, which is dependent on amount of resources the government has (Khorravi & Karimi, 2010). The emergence in the literature of the theory of endogenous growth has strengthened the query on role played by factors of production as it relates to its explanation of economic growth as a concept (Lucas, 1990).

A country's economic growth portrays its expansion potential GDP or national productivity. Using an illustration, given that social rate of return on investments is in excess of private return, it is an indication that applicable policies on taxation capable of stimulating investment can induce an increase in growth rate as well as utility levels (Nenbee & Madume, 2011). Relevant models of growth which integrate public sector services assert that an economy's ideal policy on taxation lingers on attributes of provided services. This has led Olapade & Olapade (2010) into reasoning that if government spent substantially on infrastructures, this will trigger growth. Thus, fiscal policy for which taxation is a potent variable has been assumed generally to be related to economic growth; capturing precisely, when appropriate fiscal measures are deployed, used to stimulate economic growth (Khorravi & Karimi, 2010).

2.2. Theoretical Review

A suggestion made by key economic growth theories is that a country's tax revenue and its economic growth are significantly related. Put differently, as an economy witnesses' funds' investments, this will lead to its growth. The examples of Domar (1946) and as well as Harrod (1939) models in Ogbonna & Ebimobowei (2012) posit savings (income that is not spent) was in a direct relationship with growth in an economy. Towing this line, Yakubu (2008) gives an indication to the effect that income sourced from national resources (example being petroleum) would influence a country's economic growth and development positively. "A positive theory of tax reform" propounded by IIzetzki (2014) explains that hindrances that are political in nature which impede reforms and political variables which make for it success are quite relevant in situations of differentiated statutory rate and tax base serving as tax policy tools. This implies that, when tax reforms are meant to meet the large revenue needs of government, less resistance is expected from both political class and tax payers groups, resulting in huge tax revenue yield, but will none the less face stiff resistance when political accountability is lacking. Thus, Bhartia (2009) socio-political theory of taxation is relevant to the study. Also, divergent long run predictions bothering on influence of fiscal policies on growth have been made by

models of Neo-classical and Endogenous growth. In respect of this, Swan (1956) and Solow (1957) using model of Neoclassical growth showed an exogenous long run growth rate brought about by both technological and demographic progress though not impacted by fiscal policy. Contrasting this, the theory of endogenous growth resulted in models of growth which suggest that governments investments respectively on physical capital and human beings should be expected to engender long term (or permanent) growth effect (Keho, 2013).

2.3. Empirical Review

Several researches linking an economy's growth to the revenue it makes from tax abound, but mostly the focus has always been a fiscal policy framework, which has two principal components-taxation and expenditure of the public sector.

Madume & Nenbee (2011) conducted a study on government fiscal policy management strategies and concluded that fiscal policy execution is basically done through government budget. They recommended that taxation, being a principal component of government budgetary system, should be reformed to generate more revenue, in view of persistent government budget deficits. They argue that the reform of the taxation system is imperative because it drives growth and development.

In literature, researches on implications of direct taxation on economic growth in economy are polarized. On one extreme are studies which established that economic growth was positively related to direct taxation while in the opposite direction are researchers who established a negative or an insignificant relationship. In their study in India and Pakistan, Aamir, Qauyam, Hussin & Nasir (2011) employed panel data in respect of direct and indirect taxes covering 2000 to 2009. They revealed direct taxes significantly impacted sum total of revenue in the Indian economy but not in the case of Pakistan. They recorded R^2 value of (0.923) which was an indication that 92.3% of the variation in total revenue of India was expanded by the explanatory variables, while Pakistan has only R-square value of (0.231) about 23.1% in the results I the model.

Mashkor, Yahaya & Ali (2010) using data from Pakistan from 1973 to 2008, investigated the Pakistani tax revenue effect of economic growth. The result reveals that coefficients of the variables were significant while that of error term slowed to a low convergence rate in respect of long run. The research reveals an analysis of ratio of a country's direct taxation to its GDP as well as direct taxation to the total ratio would influence real GDP to grow. In the same vein, a study by Mihaiioan, Octivia & Dan-constant (2006) utilized pooled data which were sourced from European Union (EU23) and which took into consideration the period of 1995 to 2005, discovers that the policy encourages economic growth when using direct taxation.

Ilahoya & Mgbame (2013) were interested in association between direct tax component and Nigeria's economic growth when considered from global transition from direct to indirect taxation. The investigation was for 32 years (1980 to 2011) with data obtained from CBN, Federal Inland Revenue Service and African Statistical Bulletin. Using the "Augmented Dickey Fuller" test, "Co-integration test and Engle-Granger two step" procedure, it was discovered that components of direct tax and growth in the economy were positively and significantly related with a co-efficient of (4.1007) and t-value of (2.480169).

Another study in Nigeria, Ogbonna & Ebimobowei (2012) examined relationship between the country's petroleum profit tax (PPT) and its economic growth using data from 2010 to 2009 fiscal years. The study employed simple regression analysis and found positively significant relationship between the variables. Also, a related study by Iyoha & Oriakhi (2000) suggested that PPT and Nigeria's Growth economically had a relationship that was positively significant.

Companies Income Tax (CIT) is a tax charged on corporate entities. Existing researches on growth effect of CIT seem to be unidirectional, pointing primarily to a negative relationship except for the few cases. McBride (2012) reported CIT had high and significant negative impact on long term growth. An estimate of (0.234) for R^2 implied about 24.3% long term variation in respect of growth by CIT. The slope of the fitted line was 11.1% increase in cumulative real GDP growth rate. Adegbie & Fakile

(2011) using data from Nigeria for the period of 1981 to 2017 revealed that CIT positively and significantly contributed to the country's economic growth.

Vartia (2008) as well as Arnold & Schwellnus (2008) explored effect of companies' income tax on investment and productivity. Both studies established that corporate income tax and investment and productivity were negatively linked. Djankov, Ganser, McLeish, Ramalho & Schifer (2006), using the 2004 effective tax rate of manufacturing firm in 85 countries, investigated the relationship between higher corporate taxes, investment and entrepreneurial activities. They reported that 10% increase in companies income tax would reduce;

(a) The economy's Gross Fixed Capital Formation by 2.2% of its GDP

(b) Foreign Direct Investment (FDI) by 2.3% of its GDP and

(c) Penetration rate of new firms by 1.4 percentage point.

In Sub-Sahara Africa, instability in tax revenue was explored by Bleaney, Gemmel & Greenaway (1995). In the research, revenue instability sources and their results were analysed with outcome indicating that poor, more open as well as inflationary economies would experience more instability in their revenue. The study also suggested that economies witnessing high instability in tax revenue equally tended to record high total spending instability.

Ebeke & Ehrhart (2010) whose research examined the sources and outcome of tax revenue instability as it concerned countries in Sub-Saharan Africa, utilized 39 nations within the group and considered time period of 1980-2008. Result giving credence to the findings of Bleaney Gremel & Greenaway (1995); Thorthon (2008), Diallo (2009) & Furceri (2007) who in their earlier researches inferred that instability in sub-saharan Africa's revenue was a major cause of ratios in public investment and is therefore harmful to long term growth in the economy.

In the case of Adegie & Fakile (2011), their study centred on how company income tax (CIT) was related to economic development in the context of Nigeria. Data in the study came from primary and secondary sources. In analysing data, two methods, Chi-square and multiple regression were used. It was established and concluded that a significant relationship was in place between the country's economic development

and its CIT. Furthermore, in a cross country study which was for the period 1970 to 1997, Lee & Gordon (2014) studied economic growth effect of tax structure exploring influence of policies on tax in economies on its rate of growth. Results from analysis suggested statutory corporation tax rates and differences observed in different countries studied had significant and negative correlation in terms of average economic growth rates.

From the above empirical reviews, majority of these researches employed data treatment techniques which failed to consider properties of time series data as well as contradictory outcomes in respect of the association that may exist between growth and tax revenue in both developed and developing economies. This present study is an attempt to improve on earlier studies with a more robust econometric tool of the error correction model (ECM) which has a more predictive power than the method of Ordinary Least Square (OLS) using two most important tax revenue components in Nigeria – PPT and CIT as regressors against economic growth for the period 1980-2018.

3.0. Methodology

The methodological procedures followed in this study are discussed in this segment of the study. It covers the research design, model specification and description of variables and data analytical procedure.

3.1. Research Design

The study uses descriptive as well as inferential methods. The former uses tables ad percentage in explaining the trend of the variables studied. The inferential statistics used in combination regression and correlation analyses. In order to guarantee that regressions were not spurious, relevant tests were carried out. In this regard tests such as ADF was employed on time series data; in order to identify possible presence of long run link concerning the variables of study co-integration was conducted; similarly, error correction mechanism was applied in correcting imbalance among variables by attaching their short run behaviour to their respective long run values as advised by Gujarati & Sangeetha (2007). The last test, Granger causality came in

handy in determining causality direction between the study's dependent and the independent variable.

3.2. Model Specification and Descriptive of variables

The general econometric form of the model is stated as:

$Y = f(\alpha + X_1 + X_2 + X_3 + \ldots\ldots\ldots + X_n + e)$ ……model 3.1

In the model,

Y = The dependent variable

α = The constant

$X_1 - X_n$ = The independent variables

e = error term

Specifically, the study model in it log-form is stated as follows:

Log GDP = $Loga_0$ +, LogPPT + a_2 LogCIT + U,

Where;

Log = Logarithm of the variables

a_0 - a_2 = Parameters to be applied in various estimations so as to measure independent variables' impact.

U_1 = error term.

The *a prior* expectation is to have a positive sign for the model parameter (in this case $a_0 + a_2 > 0$)

Log PPT = Logarithm values for petroleum profit tax

Log CIT = Logarithm values for companies tax

Log GDP = Logarithm values for Gross Domestic Product

In testing causality direction that may exist between dependent and independent variables, the Granger – Causality test is used as shown in models 3.3 and 3.4, involving a bivariate causality.

$Y_t = б_0 + \Sigma a_3\ Yt\text{-}_4 + \Sigma бj\ X_{t-1} + Ut$ ……Model 3.3

ί =1 j =1

$X_t = б_0 + \Sigma \beta_1\ Xt\text{-}_4 + \Sigma wj\ Y_{t-1} + Ut$ ……Model 3.4

ί =1 j =1

In above, Yt and Xt are variables used in investigating for Granger Causality.

If any бj = 0, then Xt granger cause Yt

In the same vein, if any Wj = 0, then Yt granger cause Yt. Thus, there is causality that is bidirectional. But, if any $б_j$ = 0 and Wj = 0, then Yt grager cause Xt. Thus, there is causality which is unidirectional and running from Yt to Xt and vice versa.

3.3. Analytical Procedure

The analytical procedures covers various tests in respect of unit root, the Augmented Duckey – Fuller (ADF), co-integration analysis, error correction mechanism and Granger Causality .

4.0. Results and Discussion

In this section, the study's data and results of analysis are discussed.

Table 4.1 Analysis of Descriptive Statistic for the Log variable.

	GDP	PPT	CIT
Mean	8.0998	60.5070	17.1912
Median	27.0558	67.6300	30.5500
Maximum	47.1897	32.0130	99.8400
Minimum	30.354675	10.6000	3.000
Std. Dev.	10.8170	92.0261	27.3545
Skewness	1.1061	1.6792	1.7614
Kurtosis	2.6245	4.7080	4.8596
Jarque-B	7.1327	20.1109	22.4780
Probability	0.0283	0.0000	0.0000
Observations	39	39	39

Source: Authors' calculation using Eviews 4.0

Table 4:1 indicates some basic descriptive statistics in respect of the research data. As can be seen in the table, average GDP was 8.0%, PPT (60.51%) and CIT (17.19%). Similarly, it could be observed that maximum and minimum values GDP (47.62% and 30.35%); PPT (32.01% and 10.82%) and CIT (99.84% and 3.0%). The standard deviations are GDP (10.82%), PPT (92.02%) and CIT (27.35%). Showing that the period under study, experience very big changes in respect to all variables

investigated. These changes observed in the variables are further evidenced by positive skewness of values respectively for GDP variables (1.106), PPT (1.68) and CIT (1.76). The effect of skewness is that the mode, mean and median in the set of data studied all have different values. Also, the kurtosis value indicates a moderate or not very peak or very flat topped (Mesokurtic) values, indicating normality of the distribution of variables over period of study. The Jarque-B values, which is also a test of normality of the data set, shows normal distribution in respect of all variables. The probability values were all statistically significant.

Table 4.2: Correlation Matrix for the Log. Variables

	GDP	**PPT**	**CIT**
GDP	1.0000	0.9844	0.9461
PPT	0.9344	1.0000	0.9207
CIT	0.9461	0.9207	1.0000

Source: Authors' Calculation using Eviews 4.0

As shown in Table 4.2, relationships of variables in current study have been established. Generally, the correlation matrix has many important attributes such as which are either rectangular or triangular and have 1.000 along the main diagonal.

In specific terms, more insights on existing relationships have been highlighted. Coefficient of correlation in respect of GDP is PPT (0.93) and CIT (0.9461) which showed pair-wise correlations considered very high and having strong perfect positive relationships. The relationship between PPT and CIT (0.9207) and between CIT and PPT (0.9461) suggested a positively strong relationship. An explanation to this is that majority of firms chargeable to PPT also engage in activities chargeable to CIT. In spite of the fact that independent and dependent variables in the study are positively correlated, it contrasts with the prior negative sign shown by other studies and our *a prior* expectations. Since there may exist severe collinearity further analysis involving regressions is carried out to establish the cause effect relationship.

4.1. Analysis of Integration Properties

In estimating a linear relationship, the first step is having in place a detailed pre-testing procedure to be used in examining attributes of time series variables. The procedure in question and results of regression would be presented next.

Table 4.3: Augmented Dickey – Fuller – Unit Root Test

Variables	**ADF Statistics Computed**		**5% Critical Value**		**Remarks**
	Level	1st Difference	Level	1st Difference	
In (GDP)	0.979297	-3.371442	-2.9558	-2.9591	1(1)
In (PPT)	0.074219	-6.234477	-2.9558	-2.9591	1(1)
In (CIT)	1.026320	-4.226309	-2.9558	-2.9591	1(1)

Source: Authors' Calculation using E-views 4.0.

** In = Log

The Table 4.3 is the unit root presentation of outcome of ADF test on variables. The test result indicates non-stationary nature of studied variables but the variables integrate at order one 1 (1). Accordingly, existence of long run relationship among the variables was examined with Johansen Co-integration Test. In making references, Trace Test Statistics and maximum Eigen value criteria were applied. The decision criterion was that with trace statistics being greater than 5% critical value, the hypothesis of no co-integration in the relationship among study's variables should be rejected while the alternative hypothesis should be upheld.

Results of co-integration test shown on Table 4.4 followed a systematic pattern such that tests were carried out for variables that constitute regression equation before the equation is estimated.

Table 4.4: Unrestricted Co-integration Rank Test (Trace and Eigen) on GDP, PPT, CIT.

Eigen Value	**Likelihood Ratio (Trace Statistics)**	**5 Percent 5 Percent Critical Value**	**1 Percent 1 Percent Critical Values**	**Hypothesis Hypothesized No. of CE(s)**
0.979049	333.1496	114.90	124.75	At most 1**
0.816439	108.2165	62.99	70.05	At most 2**
0.319582	23.74242	25.32	30.45	At most 3**
*(**) DENOTES REJECTION OF HYPOTHESIS AT 5% (1%) significance leve L.R. Test indicates 3 co-integrating equation at 5% significant level				

Source: Authors' calculation using E-view 4.0.

The trace statistic (also referred to as likelihood ratio) hints that at 5% significance level, 3-co-integrating variables are present. Thus, it could be inferred that among the variables there is in existence long run relationship.

In line with unrestricted co-integration test which used maximum Eigen value in confirmation of existence of 3 co-integrating equations, the inference made here is sturdy. As presence of one co-integrating equation suffices for confirmation of long rung relationship, in current research presence of three establishes this. The identified co-integrating equation can serve as error correction term in its model. The series would form an error correction factor (which is the same as residuals created with Engle Granger two stage approach).

With the establishment of the form as well as level of co-integrating relationship among variables of the model, Table 4.5 makes an estimation of over parameterized error correction model.

Table 4.5: Result of the Over-parameterized model for Cross Domestic Product (GDP) Dependent Variable: Log (GDP).

Variables	Coefficient	Std. Error	T-Statistics	Probability
D (LOG(GDP(-1))	1.009462	1.0813419	0.556938	0.6765
D (LOG(PPT))	0.067763	0.239151	2.283850	0.002
D (LOG(PPT(-1))	0.067763	0.410863	-0.371508	0.7736
D (LOG(CIT)	8.192647	3.932727	2.083197	0.0049
D (LOG(CIT(-1))	7.979482	2.076267	-3.843036	0.0021
ECM (-1)	-0.15047	0.032222	-3.570408	0.0001
C	10.17107	1.832162	5.551402	0.0005
Adjusted R-square 0.821812				
R-Squared 0.988121				
Prob. (F-statistic) 0.0001				
Durbin – Watson Stat. 2.272150				
F-statistic 5.941490				

Source: Authors' calculation using Eviews 4.0 software

4.2. Estimation of Regression Equation and Hypotheses Testing

This study centred on parsimonious model as interpreted in detail on Table 4.6 as against the result of Table 4.5, the over-parameterized error correction model which has less meaningful application.

Table 4.6: Parsimonious model for Gross Domestic Product (GDP).

Variables	Coefficient	Std. Error	T-Statistics	Probability
D (LOG(PPT))	0.360590	0.472622	2.762956**	0.0004
D(LOG (CIT))	2.940964	4.635609	3.634429**	0.0542
D(LOG(CIT C-1))	2.286043	3.554049	0.643222*	0.3209
ECM (-1)	-0.033045	0.022750	-2.452452**	0.0066
C	17.38039	1.421629	12.22569	0.000
R-squared	0.732006			
Adjusted R^2	0.727985			
F-statistic	42.82064			
Durbin-Watson Stat.	1.947024			
Prob. (F. Statistic)	0.00003			
* Not significant at 5 percent level ** Significant at 5 percent level Dependent variable: Log (GDP)				

Source: Authors' calculation using Eviews 4.0

The logarithm form of the model used for the study is stated as:

Log GDP = $Loga_0$ + a, LogPPT + a_2 Log CIT + U_1

From table 4.6, the lagged values in respect of PPT is positive in support of expectation in theoretical economics. It has a significant coefficient at 5% level. This result implies that 1% increase in growth rate of economy is influenced by 0.360590 percent PPT increase given that all things are equal. Accordingly, the null hypothesis which states that Petroleum Profit Tax and Economic growth are not significantly linked in the context of Nigeria is rejected. This implies that PPT and economic growth are significantly linked in the context of Nigeria. This result is further collaborated by Ilaboya & Mabame (2012); Worlu & Nkoro (2012); and Infurueze & Ekezie (2014).

In the same vein, from Table 4.6, CIT value as well as its lagged value for one year are both significant at five percent (5%) significance level in the current year but insignificant at one percent significance level in the preceding year.

A prior economic theory expectation is confirmed by the positive sign. However, it negates Gale & Samwick (2014) whose research on effect of changes in CIT on the growth of an economy resulted in a negative relationship. Following the result in this study, the null hypothesis which states that Companies Income Tax does not

significantly relate with Nigeria's economic growth is rejected. This implies that CIT and Nigeria's economic growth are significantly related. Thus, one percent rise in growth in economy is made possible by 2.94 percent increase in the preceding year's company income tax.

In view of the fact that our analysis is based on parsimonious result, it becomes imperative to carry out a holistic review of the regression results. In this regard, strong significance of ECM, strengthens earlier argument made to the effect that variables in the study were co-integrated. Specifically, ECM indicates a relative how speed adjustment (about 3%) existing between short run and long run balance behaviour of economic growth and independent variables.

Furthermore, adjusted R^2 suggested about 73 percent of sum total in GDP is induced by variation in independent variable, hence has a good fit. Also, F- statistic (42.82) gives an indication that when combined all the variables are significant at five percent level. Similarly, Durbin-Watson statistic (1.9) means that it is effective for the purpose of analyzing policy since it is within the acceptance band. With probability (F-statistic by 0.0000), there is an indication that result of this study is significant with a robust conclusion.

4.3. Test on Granger Causality

The result of this test is used to test hypothesis three which focus on causality direction among the variables of study.

Table 4.7: Pairwise Test on Granger Causality

Null Hypothesis	Obs.	F-statistics	Probability
PPT does not Granger-cause GDP	39	9.38386	0.000159
GDP does not Granger-cause PPT		0.29221	1.82305
CIT does not Granger-cause GDP	39	13.6786	0.00087
GDP does not Granger-cause CIT		1.6673	0.20186

Source: Authors' calculation using Eviews 4.0

As can be observed on Table 4.7, test results on Granger causality indicate that formulated hypothesis that Nigeria's Tax Revenue(PPT, CIT) and its economic growth (GDP) have no causality direction cannot be rejected. The result show existence of unidirectional causality between, GDP which was used as proxy for economic growth

and PPT and CIT proxies for independent variables and that causality direction runs from the independent variable to economic growth and conversely from GDP to PPT. This is because the estimated coefficient of the lagged PPT and CIT components are statistical different from zero. This result is at variance with the result of McBride (2012), Arnold & Schwellnus (2008) and Vertia (2008) which found CIT and PPT as negatively influencing economic growth in the study of OECD Countries.

5. Conclusion

The study result indicates that PPT, CIT and GDP were positively related in Nigeria. Taxation is important to ensuring sustainable fiscal policy and economic growth. The pressure from inability of government at all tiers to meet its mounting fiscal responsibilities and the concern on preventing volatility in revenue combine to make taxation revenue base expansion vital. Thus, the government should undertake further investigation in respect of the causes of deteriorating tax revenue to the total government revenue with a view to ensuring fiscal stability and a robust taxation system in the country.

References

Aamir, M., Qayyum, A. Nasir, A. & Hussain, S. (2011). Determinants of Tax Revenue, comparative study of direct and indirect taxes of Pakistan and India. International Journal of Business and Social Science, 2(19):173-178.

Abiola, J. & Asiweh, M. (2012). Impact of Tax Administration on government revenue in developing economic – case study of Nigeria. International Journal of Business and Social Science 3(8): 311-328.

Adegbie, F. F. & Fakile, A. S. (2011). Company Income Tax and Nigeria Economic Development. European Journal of Social Science, 22(2): 309-322.

Aguolu, O. (2012). Tax reform in Nigeria: unrealized expectations. Bulletin for International Taxation, 64(1):61-67.

Ahmed, E. & Stern, N. (2011). Theory and practice of tax reform in developing countries, Cambridge: Cambridge University Press.

Ariyo, A. (1997). Productivity of the Nigerian Tax System 1970-1990. AERC Resources paper 67, Nairobi: African Economic Research Consortium.

Arnold, J. M. & Schwellnus, C. (2008). Tax policy for economic recovery and growth. The Economic Journal, 12:59-80.

Aruwa, S. A. (2010). Public finances and economic growth in Nigeria. Fiscal Policy Implication is Crises Era. Journal of Public Finance,19(1):9-22.

Bhartia, H. L. (2009). Public Finance, 14th Edition. Vikas Publishing House PVT Lyes. New Delhi, India.

Bleaney, Y. M., Gemmel, N. & Greenaway, D. (1995). Tax revenue instability, with particular reference to Sub-Saharan Africa: The Journal of Development Studies, 31:883-902.

Chen, S. (2007). Rethinking the informal economy. Journal of Development Economics, 82:1-42.

Diallo, O. (2009). Tortuous Road toward counter cyclical fiscal policy: Lessons from Democratized Sub-Saharan Africa: Journal of Policy Modeling, 31:36-50.

Djankov, S. Ganser, T., Mclish, C., Ramalho, R. & Schifer, A. (2009). The effect of corporate taxes on investment and entrepreneurship. American Economics Journal, 2 (4): 23-32.

Ebeke, C. & Ehrhart, H. (2010). Tax Revenue instability in sub-saharan Africa: consequences and remedies. Mimeo, CERO, Avvergne University.

Etim, E. O. & Nweze, A. U. (2015). Tax Revenue and economic growth in Nigeria. 1st ICAN Academic Conference of Accounting and Finance, 1135-1151.

Fadare, S. O. (2010). Recent Banking and Economic Growth in Nigeria. Middle East Finance and Economics, 8:1450-1468.

Furceri, D. (2007). Is government expenditure volatility harmful for growth? A Cross-country Analysis. Fiscal studies, 28(1):103-120.

Gravelle, J. G. & Marples, D. J. (2014). Tax rates and economic growth. Congressional Research Service, 7(5):700-723.

Gale, W. G. & Samwick, A.A. (2014). Effects of Income Tax Changes on Economic Growth. International Journal of Public Finance, 7(2):148-162.

Harrod, R. F. (1939). Theories of Dynamic Economics: some application to policy, London Macmillan.

Ifurueze, M. S. & Ekezie, C. A. (2014). The Nigerian Tax System and Economic Growth: A Time Series Analysis. International Journal of Economic and Empirical Research, 2(4):163-169.

IIahoya, J. & Mghame, C. (2013). Direct Tax and Economic Growth in Nigeria. ICAN Journal of Accounting and Finance, 2(1):65-81.

IIzetzki, E. (2014). A positive theory of tax reforms, CEPR, FER. CODES, D72, D78, H20:1-41.

International Monetary Fund (2010). Tax Policy for emerging markets – Developing countries, working paper series, WP/00/65.

International Tax Compact (ITC) (2010). Addressing tax evasion and tax avoidance in developing countries. Economic Development issues: 14-42.

Lyoha, M. A. & Oriakhi, D. E. (2010). Revenue generation enhancement strategies with emphasis on institutional development: The case of Nigeria. West Africa Financial and Economic Review, 2(2):22-47.

Keho, Y. (2013). The structure of taxes and economic growth in Cote d'Ivoire: An econometric investigation. Journal of Research in Economics and International Finance, 2(3):39-48.

Keshab, B. (2010). Taxes, public spending and economic growth in OECD Countries. Problems and perspectives in management, 8(1):14-30.

Khorravi, A. & Karimi, M. S. (2010). To investigate the relationship between monetary policy, fiscal policy and economic growth in India: Autoregressive Distributed Lag Approach to co-integration. American Journal of Applied Science, 7(3):420-424.

Konrad, K. A. (2014). Taxes on rising returns. Canadian Journal of taxation, 14(3):718-741.

Lucas, R. E. (1990). Supply-side economics: An Analytical Review. Oxford Economics Paper, 42(2):293-336.

Mashkor, M. Yahaya, S. & Ali, S. A. (2010). Tax reviewed and economic growth: An Empirical Analysis. Pakistan Journal of Economic, 10(1):1283-1289.

McBridge, W. (2012). Global evidence on taxes and economic growth: payroll taxes has no effect. Tax foundation fiscal fact No. 290. http://taxfoundation.org/tax-topics

Mihaiioan, M. Octovia, C. & Dan-Constant, D. (2016), Tax impact. http://mpra.un.uni-muechen-de/6143/I.

Musgrawe, R. A. & Musgrave, P. B. (2004). Public finance in theory and practice. Tafa, McGraw Hill, New Delhi, India.

National Tax Policy (NTP) (2010) – finance policies, FIRS, Abuja, Nigeria.

Nenbee, S. G. & Madume, J. V. (2011). The impact of monetary Policy on Nigeria's Macroeconomics stability (1970-2009). International Journal of Economic Development and Investment, 2(2):174-183.

Organization for economic cooperation and development (OECD) (2013). Taxing profits in a global economy. Domestic and International issues, Paris, WPS 73.

Ogbonna, G. N. & Ebimobowei, A. (2012). Petroleum and Nigerian economy: Empirical Evidence. Arabian Journal of Business and management review, (OMAN Chapter), 1(9):33-59.

Okafor, R. G. (2012). Tax Revenue Generation and Nigeria Economic Development. European Journal of Business and Management, 4(19):49-57.

Olapade, B. C. & Olapade, D. O. (2010). The impact of government spending on economic growth and development in Nigeria. Journal of Economics and Sustainable Development, 3(7):62-70.

Popoola, N. (2009), A good tax system enhance economic development. Available from http://www.pionching.com/antideaspx? Accessed 22/2/2020.

Solow, R. M. (1957). Growth theory an Aflier. Prize lecture noble prize http://noble prize.org/nobelprize/economic/larrestic/1987/solow. Accessed 22/2/2020.

Swan, T. W. (1956). Economic growth and capital accumulation. Economic Second, 32(2):234-361.

Tanzi, V. (1987). Quantitative characteristics of the tax system of the tax system of development countries. Journal of public economics, 60(1):21-44.

Tanzi, V. & Lee, H. H. (2008). National Tax Journal. IMF, Washington, DC 20431.

Thorton, J. L. (2008). Taxes and output in African Economics. American Economic Review, 98(2): 2418-2441.

Rao, C. H. (2005). Long-run policy analysis and long-run growth. Journal of political economy, 99:500-521.

Vartia, L. (2008). Taxation and economic growth. Econ papers, https://econpapers.repec.org> RePEC:oec.

Worlu, C. N. & Nkoro, E. (2012) Tax revenue and economic development in Nigeria: A macroeconomic Approach. Academic Journal of Interdisciplinary Studies, 1(2):211-223.

Yakubu, A. (2008). Petroleum Income and Nigeria Economic Growth. Arabian Group Journals of Business and Management, arabianjbmr.com>pdf>4.pdf.