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TAXATION AND ECONOMIC GROWTH IN NIGERIA

ONAKOYA, Adegbemi Babatunde[1†] --- AFINTINNI, Oluwatobi Ibukun[2]
[1,2]*Department of Economics, Banking and Finance, Babcock University, Ilishan - Remo, Nigeria*

ABSTRACT

Over several decades, taxation has been taken as a veritable medium of engineering the growth or performance of an economy. However, empirical literature is not conclusive, as several studies have indicated mixed effects of tax on economic growth. Arising from this, the study investigated the cointegration relationship between tax revenue and Economic growth in Nigeria from 1980 to 2013. Various preliminary tests including descriptive statistics, trend analysis, and stationary tests using Augmented Dickey Fuller (ADF) test were conducted. The Engle-Granger Cointegration test was employed to determine whether a long run relationship existed between the variables. The Vector Error correction model was employed to confirm the long run relationship and determine the short run dynamics between the variables. Two post estimation diagnostics tests (autocorrelation, and Heteroscedasticity) were also conducted in order to confirm the robustness of the model. Findings indicated that a long run (but no short run) relationship existed between taxation and economic growth in Nigeria. The result also, revealed a significant positive relationship at 5% level of significance between Petroleum profit tax, Company Income tax and economic growth, but a negative relationship between economic growth and customs and Excise Duties. However, the tax components are jointly insignificant in impacting the Nigerian economic growth. This study recommends strong institutional reforms in the Department of Customs in order to plug the manifest leakages. The tax collection mechanism used by tax officials must be free from corruption and embezzlement. If this is not done, the revenue collected many not reach the desired point. The Federal Government, state governments and local governments should urgently modernize and automate all its tax system.

Keywords: Taxation, Optimal revenue, Tax system, Economic growth.

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Contribution/ Originality

This study contributes in the existing literature on the nexus between taxation and economic growth which is contradictory. It deploys robust econometric methodologies in validating the findings. These include descriptive statistics, Augmented Dickey-fuller (ADF) unit root, Johansen cointegration, Vector Error Correction Model (VECM), Impulse Response, Autocorrelation, and Heteroscedasticity tests.

† Corresponding author
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1. INTRODUCTION

It has been observed over the years that income tax revenue has been grossly understated due to improper tax administration arising from under assessment and inefficient machinery for collection (Adegbie and Fakile, 2011). According to Naiyeju (1996) the success or failure of any tax system depends on the extent to which it is properly managed; the extent to which the tax law is properly interpreted and implemented.

The role of taxation in promoting economic growth in Nigeria is not fully felt, and optimal tax is not been realized that can engine economic growth primarily because of its poor administration. Even after some tax policies the tax authority has put in place over the few years such as the E- Payment scheme, Tax Identification Number (TIN), Anti-Tax Avoidance legislation, major tax challenges still exists which include frontiers of professionalism, poor accountability, lack of awareness of the general public on the imperatives and benefits of taxation, corruption of tax officials, tax avoidance and evasion by taxing units, connivance of taxing officials with taxing population, high rate of tax, poor method of tax collection.

However, empirical literature is replete different and disaggregated findings. Anyanwu (1997); Ogbonna and Appah (2012); Yaya (2013); Akwe (2014) indicated positive relationship between taxation and economic growth, others, Saibu (2015); Gareth (2000); Bonu and Pedro (2009); Saima *et al.* (2014) showed negative relationship. Most of the studies testing empirically the relationship between taxation and economic growth have found a negative impact of the aggregate tax on economic growth, but there are some articles that do not find such results. Some others like Essoh (2011) suggested a no significant relationship between these two major variables. While some studies applied the single ordinary least square estimating technique, others utilised co-integration tests, unit root tests, and descriptive techniques.

In view of these disparate findings, this study seeks to further investigate both the short run dynamics and evaluate the long run relationship between tax revenue and economic growth in Nigeria. The study focuses on the impact of petroleum profit tax, company income tax, personal income tax, value added tax revenue on Nigeria's Economic growth between 1980 and 2013. The study period spans economic cycles for about 66 percent of the life of the country, since attaining political independence in 1960. The choice of the study period provides an opportunity for a comprehensive assessment of the effect of taxation on the Nigerian economy.

2. LITERATURE REVIEW

This section is in two parts: the theoretical underpinning of the study and the review of relevant prior works.

2.1. Theoretical Underpinning

There are quite a number of theories underlining the concept of taxation. The benefit theory of taxation wherein the taxes are to be imposed on individuals according to the benefit conferred on them. The more benefits a person derives from the activities of the state, the more he should pay to the government (Cooper, 1994) However, it is impossible to implement precisely due to the difficulty of determining the amount of government benefits, including diffuse benefits such as military protection received by each resident and non-resident tax payer .

The Ability to pay theory of taxation (Pigou, 1920) is synonymous with the principle of equity or justice in taxation. People with higher incomes should pay more taxes than people with lower incomes. It appears more reasonable and just that taxes should be levied on the basis of the taxable capacity of an individual. The major drawback inherent in this theory is the definition of one's ability to pay.

The Ibn Khaldun's (1332-1406) theory on taxation as espoused by Islahi (2006) identifies two different effects: the arithmetic and the economic effect which the tax rates have on revenues. The two effects have opposite results on revenue in case the rates are increased or decreased. According to the arithmetic effect, if tax rates are lowered, tax revenues will be lowered by the amount of the decrease in the rate. The reverse is true for an increase in tax rates. The economic effect however recognized the positive impact that lower tax rate have on work, output and employment

and thereby the tax rate base used in providing incentives to increase these activities whereas raising tax rates here the opposite economic effect is used by penalizing participation in the taxed activities. At a very high tax rate, negative economic effect dominates positive arithmetic effect, thereby, the tax revenue declines (Islahi, 2006).

The Socio-Political theory of taxation presented by Wagner (1883) states that social and political objectives should be the major factors in selecting taxes. The theory advocated that a tax system should not be designed only to serve individuals, but should be used to cure the ills of society as a whole. Wagner, in other words, was advocating a modern welfare approach in evolving and adopting a tax policy.

2.2. Empirical Review

The relationship between taxation and economic growth has been examined severally by different researchers with mixed results. This study examines previous empirical works from cross-national studies, developed economies, developing economies and Nigeria.

2.2.1. Evidence from Cross-National Studies

A research study carried out by Taufik and Imbarine (2012) applied the square root transformation of ordinary least squared (OLS) and reports positive effect of tax revenue on growth in an open trade environment. Similar result was obtained in another study by N'Yilimon (2014) using unit root test on panel data. It suggests also the absence of a non-linear relationship between taxation and economic growth of WAEMU countries. Tanzi (1989) also finds that total tax revenue has high positive significance to the change in GDP, in which four of the components of tax revenue (GST, IPCT, ITT, and TTR). However, the impacts of tax revenue were not consistent for all countries in the four level of income.

However, the study of Margareta and Åsa (2012) which deployed the fixed effects regression on a panel data of 25 OECD countries from 1970 to 2010 reports that both taxation of corporate and personal income negatively influence economic growth. The correlation between corporate income taxation and economic growth is more robust. This is contrary to the findings of Ugwunta and Ugwuanyi (2015) which adopted an ex-post facto research design, with a panel data estimation technique. An insignificant but positive relationship was found to exist between non-distortionary taxes and economic growth of sub – Saharan countries.

2.2.2. Evidence from Developed Countries

Ergete and Bev (2012) in their study found out that a higher provincial statutory corporate income tax rate is associated with lower private investment and slower economic growth. However, the Personal Income Tax rate did not affect the growth rate and investment once one controls for provincial fixed effects. Similar finding indicative of a flat decrease of rate of dynamic taxation's level in the medium and long term was reported by. Same result was reported by Essoh (2011) that corporate income tax rates have no significant effect on Swedish economic growth.

A significant negative impact of higher marginal tax rates on economic growth was the result of the research by Barry and Jules (2008) which underscores the importance of controlling for regressivity, convergence, and regional influences in isolating the effect of taxes on economic growth in the United States. Another study conducted by Kanghua *et al.* (2013) utilised descriptive statistics, multi-segment linear regression model and principal component analysis to analyse how economic growth and tax reform affect the total tax revenue and structure. Their findings indicate that economic growth not only has a significant impact on the total tax revenue and structure changes, but also has a long-term stability relationship with total tax revenue. The same methodology by Merrill (2010) concluded a large and growing gap between U.S. policy and international norms.

2.2.3. Evidence from Developing Countries

Saima *et al.* (2014) in a study utilised the use of Johansen's co-integration tests for estimation of data and time series data from 1973 to 2010 for empirical analysis. They found out that high taxes in Pakistan have negative effects on consumption, negative effects on investment and finally negative effects on GDP. Another study carried out by Bonu and Pedro (2009) on Botswana also reports negative relationship between income tax rates boosted the economic growth of Botswana. Saibu (2015) adopted the model developed by Scully (2003) for Cote D'Ivoire; found out that there is a negative relationship between tax burden and rate of economic growth in Nigeria and South Africa.

However and in contrast to the above, Sekou (2015) in his study utilised ordinary least square method to estimate the parameters, found out that a positive and significant coefficient was registered on log population on log volume of trade. He reports a positive correlation between the collection of taxes and growth in Mali. The Data Envelopment Analysis (DEA) was applied by Yaya (2013) and found out that higher taxes are associated with reduced economic growth. Thus switching the tax burden from direct to indirect taxes is likely to have a positive effect on growth. The existence of strong and positive impact of VAT revenue on the economic growth (GDP) of Pakistan was the findings by Bilal (2015) in his investigation using the Ordinary Least Square (OLS) Regression technique. Ravindra *et al.* (2011) in their own study adopted the use of descriptive technique in estimating and analysing the data and found out that Value added tax has been identified as the real goal maker by the Indian government in the coming years to foster growth and prosperity in the country.

In contrast, Roshaiza *et al.* (2011) in their study found out that change in taxation does not have any impact on economic growth.

2.2.4. Evidence from Nigeria

A research study conducted by Success *et al.* (2012) adopted the ordinary least square (OLS) technique and found out that the relationship that exist between petroleum profit tax and gross domestic product for the period covered is significantly positive in Nigeria. Osundina and Olanrewaju (2013) corroborated this position using the same technique. In another study, Ogbona and Appah (2012) adopted descriptive statistics and econometric models such as White test, Ramsey RESET test, Breusch Godfrey test, Jacque Berra test, Augmented Dickey Fuller test, Johansen test, and Granger Causality test in estimation, and found out that tax reforms is positively and significantly related to economic growth and that tax reforms granger cause economic growth. Akwe (2014) came to similar positive conclusion using the same OLS technique that non-oil tax revenue is statistically significant and affected economic growth positively.

However, Otu and Theophilus (2013) came to the conclusions that tax revenue, although positive, did not affect economic growth significantly in Nigeria. Dickson and Presley (2013) in their study also using the Ordinary Least Squares (OLS) technique in estimating the equations, and the use of secondary data was also adopted in data analysis. Their study revealed that a well-articulated tax incentive will not only promote increase economic activity in the country but also stimulate foreign investors into the economy thereby improving revenue productivity and tax base of Nigeria's tax system. Also, Confidence and Ebipanipre (2014) with similar technique suggests that the hypothesized link among corporate income tax, value added tax and economic growth indeed exist in the Nigerian context. Matthew (2014) in adopting a survey approach adds that reveals tax has a significant impact on the federal government budget implementation in Nigeria

Edame and Okoi (2014) in a contradicting approach; in their study adopted Ordinary least square estimating technique, with the use of a time series analysis data, and found out that there is a negative relationship between taxation and Investment, and also a negative relationship between taxation and GDP.

The rationale for this study is further accentuated by the disparity in the findings. The methodology is discussed in the next section.

3. METHODOLOGY

This section deals with the method employed to obtain relevant information on implication of taxation on Nigeria economic growth.

3.1. Data Source and Descriptions

Secondary data for a period of thirty years covering 1980 to 2013 were obtained from Central Bank of Nigeria (2014) and National Bureau of Statistics (2014).

3.2. Model Specification

This research model was underpinned by the Ibn Khaldun's theory of taxation which seeks to achieve the optimal tax rate. The research adapts the 2014 empirical model of Okoli, Njoku and Kaka. The study focused mainly on federally collected taxes. The Value Added and Personal Income taxes of the security forces have not been included given that the former which was only introduced in 1994 constitutes only about 11 percent of revenue is not expected to significantly affect the results.

The functional relationship is expressed as:

$$RGDP = f(PPT, CIT, CED) \quad (1)$$

Based on the property of the linearity of variables, the log of both sides is taken to yield equation (2):

$$\Delta\, ln\text{RGDP}_{=} a_0 + \Delta ln \sum_{t=1}^{p} b_t\ \Delta\, ln\text{PPT}_{t\text{-}1} \sum_{t=1}^{p} c_t + \Delta\, ln\text{CIT}_{t\text{-}1} + \sum_{t=1}^{p} d_t\ \Delta\, ln\text{CED}_{t\text{-}1} + \epsilon_t \quad (2)$$

Where: *RGDP* is the Real Gross Domestic Product using 1990 constant prices; *PPT* is the Petroleum Profit Tax; *CIT* is the Company Income Tax; *CED* is the Customs &Excise Duties; ϵ_t Error term which denotes other variables that are not specified in the model; t is the time; P is the optimal lagged time. The parameter estimates $b_t > 0$, $c_t > 0$, $d_t > 0$.

3.3. Model Estimation Procedure

The study employs three-prong procedural steps. The first step, descriptive statistics and trend analysis of the data in order to understand, describe and summarize the data in a meaningful way. It also helps to know if the data are normally distributed through their averages and *Jarque-Bera* values.

The next step is the determination of the stability of the variables. For the purpose of this research, the Augmented Dickey-fuller (ADF) unit root test is applied. This test of the time series data is required because a non-stationary regressor invalidates many standard empirical results. The presence of a stochastic trend is determined by testing the presence of unit roots in time series data.

Thereafter, the Johansen co-integration test is applied to establish whether there is a long-run relationship between the variables will be performed. The primary step in the Johansen cointegration test is to obtain the optimal lag length because the Johansen cointegration test is sensitive to lag length. If the lag length is too much, the test will give a misleading result. The optimal lag length was determined by the Akaike Information Criterion (AIC) and Schwarz Information Criterion (SC). However, in a situation where any of the criteria (AIC or SC) picks an optimal lag length different from the other, the Schwarz Information Criterion is a better criterion to be used to determine the optimal lag length (Koehler and Murphree, 1988).

The Vector Error Correction Model (VECM), a test for short run and long run relationships or dynamics between variables is also conducted. The Vector error correction model is specified as in equation (3):

$$\Delta RGDP_{t\,=} u_t + a_t \Delta RGDP_{t-1} + \sum_{i=0}^{m-1} b_t\, \Delta PPT_{t-1}\ + \sum_{i=0}^{m-1} b_t\ \Delta CIT_{t-1}\ + \Delta \sum_{i=0}^{m-1} b_t\, \Delta CED_{t-1} + \Theta_{t-1} + \ \epsilon_t \quad (3)$$

Where Δ is the first difference operator, α_t and b_t, c_t, d_t and e_t are the coefficients estimated from equation (1). The Vector error correction mechanism will indeed tell how much of deviation from the long run is being corrected.

In order to confirm the robustness and validity of regression model, some post estimation tests were conducted. These are the Impulse Response, the autocorrelation, and Heteroscedasticity tests. E-views version 8.0 software is used to

compute these tests. Having described the estimation procedure, the next discussion is on the model evaluation criteria. In the next section, the findings of the evaluation is presented and discussed after preliminary analysis of the data.

4. EMPIRICAL FINDINGS AND DISCUSSIONS

4.1. Preliminary Analyses

The preliminary analyses are in two parts: Descriptive Statistics and Stationarity test

4.1.1. Descriptive Statistics

The characteristics of the data and the summary of the descriptive statistics of the variables are presented in Table 1.

Table-1. Descriptive Statistics

	Real GDP	Petroleum Profit Tax	Company Income Tax	Custom & Excise Duties
Mean	444.72	813.25	26.98	34.80
Median	372.52	68.28	14.61	20.62
Maximum	950.11	4,365.40	98.55	181.40
Minimum	227.25	3.74	0.40	1.61
Std. Dev.	202.48	1258.63	29.66	43.58
Skewness	1.04	1.61	0.98	2.13
Kurtosis	3.03	4.47	2.74	7.28
Jarque-Bera	6.23	17.79	5.55	51.93
Probability	0.04	0.00	0.06	0.00
Observations	34	34	34	34

Source: Author's computation using E-views 8.0

There is evidence of significant variation in the trends of the variable over the period of consideration. This is shown the large difference between the minimum and maximum values of the series. As regards the statistical distribution of series, the results show that the series are all positively skewed. Company Income tax is platykurtic in nature since its value for kurtosis, 2.74, is less than 3. This indicates a higher than normal distribution. Custom & Excise Duties, Petroleum Profit tax, and Real GDP however are leptokurtic in nature since their values for kurtosis 7.28, 4.47, and 3.00 respectively are more than 3. This indicates a flatter than normal distribution. The Jarque-Berra statistics is a goodness of fit of whether sample data have skewness and kurtosis matching a normal distribution. It is a test of normality that combines skewness and kurtosis. There is non-normality of all variables, considering the fact that all the values are greater than the threshold of 2.

The next step was the evaluation of variables. However, the stationarity test had to be conducted in order to ascertain the consistency of the variables. This is discussed next.

4.1.2. Stationarity Test Result

Unit Root Test was carried out to determine the stationary of the variables. The Augmented Dickey Fuller (ADF) test was employed in carrying out this test. The null hypothesis is rejected if the test statistics in absolute terms is greater than the test critical values in absolute terms at the conventional levels of significance (1%, 5%, and 10%). For the purpose of this research analysis, 5% level of significance would be applied. The variables were lagged in order to reduce the values, and due to the 2nd diff series of stationary level reached during the initial ADF Unit Root Test regression ran. The results of the Unit Root test conducted are presented in Table 2. However, the detailed results are presented in Appendix 4-7.

Table-2. Result of Unit Root Test

Variables	Augmented Dickey Fuller Test			
	5% Critical Value	Level	1st difference	Order of Integration
LNRGDP	-2.95	- 2.18	-6.98	I(1)[a]
LNPPT	-2.96	-0.15	-5.15	I(1)[a]
LNCIT	-2.95	-0.96	-5.64	I(1)[a]
LNCED	-2.95	-1.52	-5.34	I(1)[a]

Source: Author's computation using E-Views 8.0

Note: a= Test run with intercept, 1= After First difference

The test was based on two statements of hypothesis, the Null; of which states that there is Unit root, implying that variables are not stationary. The alternative hypothesis states that there is no Unit root, implying that variables are stationary. However, the review of Table 2 showed stationarity at first differencing with constant but without deterministic trend, under the Augmented Dickey Fuller Test with focus on 5% level of significance.

Hence, we reject the null hypothesis and accept alternative hypothesis, thus conclude that the variables are stationary and integrated of order one. The results of the variables being stationary at first difference makes it inappropriate for the application of the Ordinary Least Square (OLS) method, therefore the tests to determine the long run relationship can be achieved with the aid of the Co-integration test which is presented in Table 3. However, the optimal lag length has to be determined before this is done.

4.2. Estimation Results

4.2.1. Optimal Lag Length Selection

It is imperative to determine the optimal lag length. The Optimal lag length is determined by the Akaike Information Criterion (AIC) and the Schwarz Information Criterion (SC). This is presented in Table 3.

Table-3. Tabular Representation of the Lag length Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-90.41	NA	0.004	5.90	6.08	5.96
1	36.03	213.38*	4.36e*	-1.00*	-0.08*	-0.69*
2	46.71	15.35	6.40	-0.66	0.97	-0.12

Source: Author's Computation Using E-Views8.0

* indicates lag order selected by the criterion
LR = Sequential modified LR test statistic (each test at 5% level)
FPE: Final Prediction error
AIC= Akaike information criterion
SC = Schwarz information criterion
HQ= Hannan-Quinn information criterion

The result above portrays different lag length criterions and the respective lag length chosen. From the results, LR test statistics, the Final Prediction error Akaike Information Criterion Schwarz information criterion, and Hannan-Quinn information criterion obtained lag length structure(1) for RGDP, PPT, CIT, and CED. The implication of the lag length selected explains the effect of the outcome of previous year on the current year. However, based on the appropriate lag length structure, the researcher accepted the lag order (1) for the model. After establishing the lag order length, the Co-integration, and long-run equation results was estimated and explained in the next section.

4.2.2. Cointegration Test Result

After establishing the stationarity of the variables at first difference and lag length structure, the study proceeded to test for co-integration among the variables. The Engle-Granger Co-integration test was employed for this purpose. This test is sensitive to lag length, thus in order to avoid misleading or spurious results, the optimal lag length which has been determine influenced our order selection criteria

The two statement of hypothesis applied in this test are the Null and alternative hypothesis. The Null hypothesis states that there is no Co-integration between the variables, while the alternative hypothesis states that there is Co-integration between the variables. The summary of the result of the Co-integration test is presented in Table 4.

Table-4. Result of Co-integration Test Based on Residuals

ADF Test-statistics	Test critical value	At level (Prob)	Null hypothesis	Decision
2.75	2.95	0.07	There is no Co-integration	Reject Null Hypothesis

Source: Author's Computation from E-Views 8.0

Following the decision rule, Cointegration tests rejects the null hypothesis that states that there is no Co-integration since the absolute value of the ADF test (2.752481) is greater than the critical value at 10% (2.615). We can therefore conclude that Petroleum Profit Tax, Company Income tax, Custom & Excise Duties are all co-integrated with RGDP. This simply implies that there is a long-run relationship between the tax variables and economic growth in Nigeria. To present this long run relationship mathematically, a long-run equation was estimated. This is obtained by the Unit root/ residual-made co-integration test which needs to be normalized by multiplying the equation with the minus (-) sign. This is reported in Table 5. In view of this, detailed result is presented in Appendix 10.

Table-5. Tabular Representation of the Vector Error Correction Model

Variable	Co-efficient(After Normalization)	Std. Error	t-statistics
LNCED	-0.38	0.05	7.05
LNCIT	+0.40	0.06	6.35
LNPPT	+0.07	0.02	3.49

Source: Author's Computation using E-Views 8.0

The estimated long run model is:

$$LNRGDP = 0.07LNPPT + 0.40LNCIT - 0.38LNCED \quad (5)$$

R-Squared: 0.35 F-Statistics: 1.25

Adjusted R-Squared: 0.07

The above equation indicates that a positive relationship exists Petroleum Profit tax and Real GDP, therefore a unit increase in petroleum profit tax will result in an increase in Real GDP by 7.57%. The equation shows a positive relationship existing between Company Income tax and Real GDP therefore a unit increase in Company income tax increases Real GDP by 40.2%. An inverse relationship exists between Custom & Excise duties, and Real GDP, as a unit increase in Custom & Excise Duties will lead to a decrease in Real Gross Domestic Product by 38.7%.

However, the Petroleum Profit Tax and Company Income Tax result is in line with a-prior expectation, while the Custom and Excise Duty variable does not meet a-prior expectation of a positive relationship. From the evaluated model, it is evident that there is a long run relationship between Petroleum profit tax, Company Income tax, Custom & Excise Duties and economic growth. It also reveals that Petroleum profit tax, Company Income tax, Custom & Excise Duties greases the wheels of economic growth in the short run and stands the wheels of economic growth in the long run. The R-Squared is 0.35, meaning that approximately 34.8% of the variations in Real GDP is explained

by petroleum profit tax, company income tax, and custom & excise duties, while other variables not included in the model account for the remaining. Having established the long run relationship and estimates, the next phase is to determine the short-run dynamics. This is achieved through the Vector Error Correction Model presented in the next section.

4.2.3. Vector Error Correction Model

The Vector Error Correction Model (VECM) is required to be employed in order to know the existence or otherwise of a short run relationship and the dynamics which helps maintain the long- run equilibrium. The result is presented in Table 6.

Table-6. Result of the Vector Error Correction Model (VECM)

Error Correction:	D(LNRGDP)	D(LNPPT)	D(LNCIT)	D(LNCED)
CointEq1	-0.11	1.33	0.11	-1.71
	(0.08)	(1.23)	(1.17)	(1.29)
T-stat (Cal)	[-1.34]	[1.08]	[0.09]	[-1.31]

Source: Author's Computation using E-Views 8.0.

Given that the tabulated T value (2.04) is greater than the calculated values PPT (1.08). CIT (0.09) and CED (1.32), the Null hypothesis is accepted. The means that no short run relationship exist between the Real GDP and the components of taxation. Another indicative test is the assessment of the overall significance of the model (F-statistics). For this research, the tabulated F (1.24) is less than the calculated F-value (2.89). The implication is that the joint impact of the tax component is insignificant in determining the economic growth of Nigeria.

4.3. Post-Estimation Tests

Notwithstanding the insignificance of the assessed tax components in determining the country's growth, it is still necessary to confirm the validity and robustness of the model. To achieve this, the study conducted the autocorrelation, and Heteroscedasticity tests. The results are presented in the next three sections.

4.3.1. Durbin Watson Statistics Tests

The Durbin Watson statistics test was conducted to measure the power of the residual, in order to ascertain the presence or otherwise of autocorrelation. The result presented in Table 7 is that the computed Durbin Watson statistics (1.49) is lower than the critical upper value (1.84) but greater than the lower critical value (1.05). The result of the test is considered inconclusive.

Table-7. Durbin Watson's Autocorrelation Test Result

D Calculated Value	D-upper Critical value	D-lower Critical value	Decision criteria
1.49	1.84	1.05	Test is inconclusive

Source: Author's Computation using E-views 8.0

In this case the study neither rejects nor accepts the null hypothesis that the variables are not autocorrelation.

4.3.2. White Heteroscedasticity Tests

The result of the test for the presence of Heteroscedasticity is presented in Table 8. From the above analysis, given the observed R-squared and the corresponding probability which is 99 percent there is no presence of Heteroscedasticity in the residual at 5% level of significance.

Table-8. Result of White Heteroscedasticity Tests

F-Statistics	0.26	Prob F (18,12)	0.99
Obs*R-Squared	0.289	ProbChi-Squared(18)	0.97
		ProbCh-Squared(18)	0.82

Source: Authors' Computation Using E-Views 8.0

4.4. Discussion of Findings

The results presented above indicate that Petroleum profit tax, and Company Income tax are positively related to Real GDP. This corroborates the findings of Success *et al.* (2012). The finding of Anyanwu (1997) and Salami *et al.* (2015) who found that companies' income tax positively and significantly affects GDP was also upheld by this study.

The result for the Petroleum profit tax is not surprising given that the oil and gas sector is responsible for about 90 percent of the country's total export earnings (Organization of the Petroleum Exporting Countries, 2015). The companies that pay these taxes and royalties render a huge amount of the taxes to the federal government.

Company Income tax revenue generated over the years has fuelled the growth of the economy. The thirty percent corporate tax rate may be consistent with the Ibn Khaldun's theory of taxation. This theory posits a significance of a positive impact from a sustained optimum tax rate has on the general revenue generation and output of the economy or economic growth.

The Custom & Excise duties on the other hand, have a negative relationship with Real GDP. This may be the result of improper management of revenue generated by customs and tax officials, corruption and faulty tax administration.

The residual cointegration result shows that there is a long run relationship between Petroleum profit tax, Company Income tax, Custom & Excise duties and economic growth in Nigeria. However, no immediate short run relationship between the taxation components and GDP. All the individual explanatory variables are statistically significant. However, they are jointly insignificant in impacting the Nigerian economic growth. The result confirms prior works of Roshaiza *et al.* (2011) in the newly industrialized countries and Ugwunta and Ugwuanyi (2015) who reported that change in taxation does not have any impact on economic growth in Nigeria and Sub- Sahara African countries.

5. CONCLUSIONS

This study set out to carry out an empirical analysis on the relationship between taxation and economic growth in Nigeria and reports that Petroleum profit tax, and Company Income tax had a positive relationship with Real Gross Domestic. The relationship with Custom &Excise duties on the other hand was negative. However, taken together, the tax components do not significantly affect the Nigerian economic growth. Little wonder that no short run relationship was found to exists between Petroleum profit tax, Company income tax, Custom & Excise Duties and economic growth.

This study recommends strong institutional reforms in the Department of Customs in order to plug the manifest leakages. The tax collection mechanism used by tax officials must be free from corruption and embezzlement. If this is not done, the revenue collected may not reach the desired point. The Federal Government, state governments and local governments should urgently modernize and automate all its tax system, improve tax payer convenience in the assessment and payment process whilst at the same time entrenching effective and modern human resource management practices in the tax authorities.

Furthermore, tax execution agencies should forge good relationship with the professional associations involved in tax matters so as to elicit their support in reducing tax malpractices perpetrated by tax payers with the connivance and often active support of external auditors and tax consultants.

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