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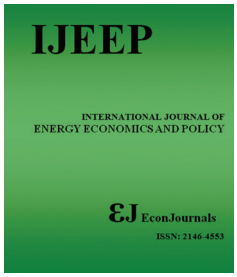

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Investigating the Dynamic Nexus between Non-Oil Taxes and Economic Growth in Nigeria: An ARDL Approach

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ABSTRACT

This paper examines the dynamic nexus between non-oil taxes and economic growth in Nigeria. The volatile nature of oil prices has threatened the balance and stability of public expenditure and the budgetary system as a tool for stimulating growth in Nigeria, hence the motivation to look into the prospects of the non-oil sector as a driver of growth. Secondary data covering the period 1994-2019 was used for this study. This period is selected to ensure that there are no missing data especially for VAT which began in 1994, therefore, using earlier periods will introduce missing data into the estimation. Standard time series econometric techniques were utilized in the study such as descriptive analysis, unit root testing, co-integration test and granger causality testing. The Autoregressive distributive lag model (ARDL) was then employed in the model estimation. The long-run results show the effect of non-oil taxes on economic growth in Nigeria and observed that the effect of log (VAT) on economic growth is negative. Specifically, the result indicates that an increase in VAT revenue by 1% results in decline in GDP by about 0.21% and the result is significant at 5%. In the case of CED, the result shows that the economic growth is impacted positively. Specifically, a 1% rise in CED revenue stimulates growth by 0.113%, and the result is significant at 10%. Also, the effect of PIT revenue on growth is negative and significant at 5% and specifically, a 1% increase in PIT revenue results in decline in economic growth by 0.599%. The result shows that CIT has a positive impact on economic growth, and it is significant at 5%. This implies that a 1% increase in CIT revenue increases economic growth by 0.5757%. The findings of the above have the following implications. First, the negative effect of PIT and VAT on growth suggests that there is a need for fiscal authorities to re-examine these taxes and hence high VAT and PIT rates may be counter-productive for growth. Secondly, CIT and CED show positive growth effects and hence there is a need for effective and accountable expenditure framework that will ensure optimization of public expenditure in this regards.

Keywords: ARDL, Economic Growth, Non-Oil Revenue and Taxation
JEL Classifications: H24, H25, O47

1. INTRODUCTION

The importance of tax revenue in driving growth is well acknowledged for both developing and developed countries. Taxes provide basic framework for the fiscal policy which covers both revenue and expenditure activities of the government. Developed economies have to a great extent structured their economic system such that is it very difficult to evade taxes, but for most developing economies, there is clear evidence of low tax-revenue/GDP ratio, and this is an indicator that that fiscal resource will be inadequate to drive development. Off course, it is also important to identify that resource accountability is also another challenge faced by several developing countries though this is not under consideration in this research. Taxation as a driver of growth has its root in the endogenous growth theory. According to the theory, government policy (inclusive of taxation) can have a very strong positive impact on per capita output given a current innovation level. The fiscal policy implication of the endogenous growth

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model is that taxes and government expenditure have a long run and persistent effect on output growth (Lucas, 1990; Jones et al., 1993; Balsalobre-Lorente et al., 2018). The endogenous growth model propounded that the correlation between taxation and economic growth should maintain a consistent growth (Badeeb et al., 2017, Balsalobre-Lorente et al., 2018; Sachs and Warner, 2001; Shahbaz et al., 2018).

The emphasis on non-oil taxes is necessitated by the enormous fiscal challenge that resource-dependent countries face. For example, in the case of Nigeria that has over time depended largely on oil revenue not until recently where non-oil revenue has begun showing huge prospects, oil price volatility has been a recurrent challenge to budget estimations (Edame and Efefiom, 2013; Nwude et al., 2021). The non-oil sector refers to trade and industry that are not within the oil and gas sector, and they constitute an essential economic activity to the Nigerian economy (Ude and Agodi, 2014). The prospect of the non-oil sector to expand the fiscal space and provide resources to stimulate growth in Nigeria is huge. The input of non-oil revenue to economic growth increased by 2.25% from 40.02% to 42.27% between 1980 and 1985. Though the contribution reduced to 35.27% in 1995 but later increased to 45.09% by 2005. As of 2014, non-oil revenue contribution to economic growth was 48.01%, a remarkable increase from the 2005 figure (National Bureau of Statistics, 2014). This growth trend implies that the non-oil sector as the potential to create enormous and sustainable revenue overtime if government devotes much effort and place a greater emphasis on this sector. The aim of this paper in the light of the above is to empirically establish the nexus between non-oil tax revenue and economic growth in Nigeria.

The remainder of the study is structured as follows; section two consists of literature review non-oil tax and economic growth; section three presents the methodology, research design and data analysis techniques; section four includes the presentation of results and discussion of findings; lastly, conclusion, recommendation, limitations of the study and suggestions of further study is presented in section five.

2. LITERATURE REVIEW

2.1. Conceptual Review on Non-Oil Tax Revenue

Tax revenue has always been and remains a topical issue globally since the quantum of goods and services provided by the government to its citizenry is largely influenced by it. The World Bank (2000) defined taxes as transfers of resources in a compulsory manner from the economy to government coffers. In the view of Appah (2010), tax revenue refers to a liability that is paid based on the income generated by the taxpayer and can be traced to a particular source. This definition can be seen as quite parochial in the sense that it does not fit in for taxes like VAT which are not income-based or custom and excise duties which are not chargeable on income. Anyanwu (1997) provided a very broad definition of the concept as he pointed out that taxation can be defined as the withdrawing from the private sector resources which are monetary to the public sector in fulfilment of citizenship obligation. Nwezeaku (2005) followed the same line of reasoning by defining taxation as remittance or payment made by individuals, groups and corporations to the government to enable the latter to provide the needed infrastructure. Non-oil Tax Revenue examined in this study covers the Company Income Tax (CIT), Value Added Tax (VAT), Custom and Excise Duties (CED) and Personal Income Tax (PIT).

2.2. Economic Growth

Different economic scholars have approached the concept of economic growth differently. In this regard, Myles (2000) defined economic growth as emanating from capital accumulation and also from innovation which ultimately results in technical progress. In the view of Iyoha (2004), economic growth is an increase in income per capital overtime. Similar to the views of Iyoha (2004), Ochejele, (2007) opined that economic growth refers to a situation of sustained increase in the per capita income of a nation. He also added that this must be achieved alongside growth in the labour force, capital, trade volume and consumption. In the perspective of Anyanwu and Oaikhenan (1995) economic growth can be conceptualized as the rise in a nation's ability to produce goods and services that adds value to the lives of its citizens over time. In the literature, Real Gross Domestic Product (RGDP) is conventionally used as a measure of economic growth.

2.3. Empirical Review and Hypothesis

Some studies have examined the relationship between non-oil taxes and economic growth in Nigeria. For example, Adeusi et al. (2020) examined the effect of non-oil revenue on economic growth in Nigeria. Secondary data was used in the study covering the period 1994-2019, and Ordinary Least Square (OLS) regression was used for the estimation. The result showed that custom and excise duties and value-added tax has a positive impact on economic growth, but this is not the case with personal income and company income taxes. However, the study did not test for long run co-integration properties for the variables and did not also examine the stationarity conditions of the data and this can result in the possibility of bias estimates. In the same vein, Adegbie et al. (2020) examined the impact of non-oil taxes on economic growth in Nigeria using quarterly data covering the period from 1994Q1-2017Q4. The regression results showed that non-oil taxes specifically, company income tax, tertiary education tax, custom and excise duties, capital gain tax, and value-added tax have significant and positive effects on economic growth. Just as in the study of Adeusi et al. (2020), the study also failed to conduct basic diagnostics test to ascertain the co-integration and stationarity conditions of the data series and this could also result in bias estimates.

In their study, Ogunbiyi and Abina (2019) ascertained the role of non-oil revenue in improving development indicators in Nigeria. Using annual, data from 1981 to 2018, the authors utilized basic time-series estimation techniques such as Unit Root test, Johansen Co-integration and Error Correction Estimation. The results found no significant impact of non-oil revenue on the human development index. However, the study failed to address the potential endogeneity issues with tax and growth estimation and

this holds because even though tax revenue can drive growth, the reverse can also hold.

Focusing on non-oil sector revenue contribution, Ogba et al. (2018) examined the effects of non-oil revenue on economic growth in Nigeria. The data period covered from 1985-2017 and the regression results show that there exists a long-run relationship among the variables Services Revenue Contribution (SRC), Agricultural Revenue Contribution (ARC), Manufacturing Revenue Contribution (MRC) and economic growth in Nigerian. However, the effect of Solid minerals revenue contribution (SMRC) was found to be negative. The Error Correction coefficient indicated a quick recovery to equilibrium when there is a displacement with a speed of adjustment of 80% yearly. Similar to the study of Ogba et al. (2018), Akwe (2014) had also earlier investigated the association between non-oil tax revenue and economic growth in Nigeria and found the presence of a significant positive effect of non-oil sector revenue contribution on economic growth in Nigeria.

The review of empirical literature on the relationship between tax and economic growth in the Nigerian environment suggest that the methodologies used have either being the ordinary least squares technique or the vector error correction methodology. However, for this paper, we employ a different methodological approach using the Autoregressive Distributed Lag (ARDL) statistical technique by Pesaran et al. (2001). The ARDL provides a more dependable t-statistics even if some of the independent variables are endogenous and also on the long run unbiased estimates of the model (Pesaran et al., 2001). Other additional advantages offered by this technique, unlike the OLS and VECM are, it may assist in fixing possible endogeneity bias, (Pesaran, 1997). Also, without regards to the integration order, that is, I(0) or I(1), ARDL can generate unbiased long-run parameter estimates that are normally asymptotic (Siddiki and Ghatak, 2001).

Based on the above, the study specifies the hypothesis to be tested;

H_0: There is no significant relationship between Non-Oil Taxes and Economic Growth in Nigeria.

2.4. Theoretical Review

2.4.1. The benefit theory of taxation

The benefit theory has its origin in the works of Thomas Hobbes (1588-1679), John Locke (1632-1704) as cited in Bukie et al. (2013). The basic tenet of the theory according to Thomas (2010), is that the theory established a link between the state and taxpayers and that this is key because government depends on tax-paying individuals and tax revenue to fulfil its fiscal responsibility which includes ensuring economic growth. The theory spells out the functional roles between taxpayers and the state which has the responsibility of managing the resource coming from taxpayers to the government. Also, taxpayers are expected to be positively impacted by tax revenue, and this is a result of public expenditure targeted at driving growth. The direct implication and usefulness of the theory to the study is that tax revenue can drive growth and development which in turn will impact the living conditions of the tax payers.

2.4.2. Political economy theory of fiscal policy

The theory assumes that governments use tax revenues to finance infrastructural investment spending for public goods and services which is expected to drive and stimulate growth. The idea of the theory is that the motivation for tax revenues is to enhance the fiscal capacity of the state to undertake infrastructural development that can then enhance growth and economic performance (Palley, 2006; Schade, 2005). The extent to which revenue generated can impact on public investment expenditure nay differ based on several factors such as macroeconomic conditions, structure of the economy and level of development (Sturm, 2001). This theory has been used by the World Bank (2010) to explain the reason why some countries are able to maximize tax revenues in stimulating economic growth why others are not able to achieve similar results. Therefore, within the framework of the political theory of fiscal policy, the issue now especially for developing economies like Nigeria to ensure that tax revenue maximally deployed so as to push the economy towards the path of sustainable growth. The study adopts this theory as the baseline theoretical framework.

3. METHODOLOGY

The study adopts a longitudinal research design. The study examines the Dynamic Nexus between Non-Oil Taxes and Economic Growth in Nigeria. The data used for the study were retrieved from the annual statistical bulletin published by the Central Bank of Nigeria (CBN), and the data covered the period 1994-2019. This period is selected to ensure that there are no missing data especially for VAT which began in 1994 and hence using earlier periods will introduce missing data into the estimation. The period frame is also sufficiently adequate for the ARDL estimation. To test for the stationary of the variables, both individual and group unit root test procedures were carried out using the Augmented Dickey-Fuller (ADF) unit root test, Phillip-Perron test and the Hadri-Z test. The study also employed the ARDL bounds test to examine the presence of co-integration between the variables which need first to be established before the long run, and short-run relationships are determined. In its general form, the ARDL model is specified by presenting an unrestricted error-correction model (UECM) regression from where all the tests and estimations are carried out. Given a dependent variable, y and a vector of independent variables, x, the ARDL model to be estimated is shown as:

$$\Delta y_t = a_0 + \phi y_{t-1} + \delta_1 x_{1,t-1} + \ldots + \delta_k x_{k,t-1} + \sum_{i=1}^{p-1} \psi_i \Delta y_{t-i} + \sum_{i-1}^{q_{1-1}} \varphi_1 \Delta x_{1,t-i} + \ldots + \sum_{i=1}^{q_{k-1}} \varphi_i \Delta x_{k,t-i} + \xi_t \quad (1)$$

In the model, ϕ and the δ's represent the long-run multipliers which show the long-run effects of the independent variables on y; ψ and the σ's represent the short-run dynamic coefficients (which help to estimate the error correction mechanism); p, q represent the order of the underlying ARDL-model (p refers to y, q refers to x); t is a

deterministic time trend; k is the number of explanatory variables, and ξ is the disturbance term that is uncorrelated with the *x*'s.

According to Peseran (2000), one of the very crucial properties of variables that are co-integrated is that there is a tendency for the variables to respond to any shock that could necessitate a shift from long-run stability. Therefore, the error correction model which the ARDL technique incorporates shows the extent to which the variables are susceptible to short-run shocks on one hand and also the amount of such deviations occasioned by the shocks that are corrected within 1 year. This it is then the case that the model in equation 1 can be re-specified into an error correction model equation;

$$\Delta y_{it} = \phi_i (y_{i,t-1} - \theta'_i X_{it}) + \sum_{i=1}^{p-1} \lambda^*_{ij} \Delta y_{i,t-1} + \sum_{i-0}^{q-1} \delta'^*_{ij} \Delta X_{i,t-j} + \mu_i + \varepsilon_{it}$$

$$where \phi_i = -(1 - \sum_{i=1}^{p} \lambda_{ij}), \theta_i = \sum_{j=0}^{q} \delta_{ij} / (1 - \sum_{k} \lambda_{ik}), \lambda^*_{ik} =$$

$$-\sum_{m=j+1}^{p} \lambda_{im} \quad j = 1,2,..., p-1, and \delta * ij =$$

$$-\sum_{m=j+1}^{q} \delta_{im} j = 1,2,..., q-1. \qquad (2)$$

Where; Θ_i = the error correction adjustment speed. If $\Theta_i = 0$, then it implies that there is the absence of a long-run relationship between the variables. It is important to note that this parameter is expected to have a negative sign in line with "A priori" assumption that any deviation from long-run stability or equilibrium will be addressed dynamically. Again, of utmost concern also is the vector which depicts the relationship in the long run between the variables (Ghatak, 2001). In relation to the current study, the expanded ARDL models explain the long-run relationship between economic growth and non-oil tax revenue variables is specified as:

$$\Delta GDP = a_0 + \phi GDP_{t-1} + \delta_1 CIT_{t-1} + \delta_2 VAT_{t-1} + \delta_3 PIT_{t-1} +$$
$$\delta_3 CED_{t-1} + \sum_{i=1}^{p-1} \psi_i \Delta GDP_{t-1} + \sum_{i=1}^{q_1-1} \varphi_1 \Delta GDP_{t-i} + \sum_{i=1}^{q_1-1} \varphi_2 \Delta VAT_{t-i} +$$
$$\sum_{i=1}^{q_1-1} \varphi_3 \Delta PIT_{t-i} + \sum_{i=1}^{q_1-1} \varphi_3 \Delta CED_{t-i} + \xi_t$$

Where GDP = Gross domestic product,
PIT = Personal income tax,
CED = Custom and excise duties tax,
VAT = Value added tax and
CIT = Company income tax.

In an equation when the first-differenced variables jointly equal zero, the conditional long-run model can then be generated from the reduced form. The ARDL approach is used to estimate the long-run coefficient and error correction model (ECM). Thereafter, the optimal lag structure for the ARDL specification of the short-run dynamics is selected using the Schwarz-Bayesian criteria.

4. PRESENTATION OF RESULTS

The descriptive statistics reveal that D(GDP) which capture change or growth in the gross domestic product produced a mean of 2109.211 with a maximum value of 64756.165 and a minimum value −1092.69 (Table 1). For the VAT, the mean value is 5961447 mn with a maximum score of 656355 mn and a minimum value of 7261.0 mn. The CIT has a mean value of 708644.9 mn and 5516900 mn and 21878.0mn as the maximum and minimum values, respectively. For, PIT revenue, the mean stood at 55.8710 bn with maximum and minimum values of 115.3900 bn and 20.600 bn, respectively. The mean for CED is 857145.8 mn with a maximum value of 10125900 mn and a minimum value of 37364.00 mn.

The unit root test is conducted, and for robustness, the study employs both the Dicky-fuller, Augmented dickey fuller and the Philip-perron Tests. Table 2 presents the unit root test for the individual series while Table 3 presents the unit root test for the variables examined as a group. Also, for the group test, the Hadri-Z-test is presented alongside the ADF and Philip-Perron tests. The results are all unanimous and show the occurrence of individual unit root at 1st difference for all the variables, and this indicates that the variables attain stationarity at 1st difference and not at levels.

The group unit root results also confirm and support the results for the individual unit root test. As observed, the Hadri-Z test, the ADF and PP test all show that taken as a group, the variables have a common unit root.

Table 4 showed the result of the Bounds test of long-run co-integration between non-oil revenue and economic growth in Nigeria. The evaluation of the results was based on the critical F-statistic values for the lower and upper bounds, as also reported in the results. From the empirical output of the F-values, it could be seen that the null hypothesis of no long-run relationship is rejected at the 5% level of significance as the f-value of 51.079 exceeds critical values for 1(0) and I(1) respectively.

The granger causality and block exogeneity test Results are presented in Table 5, and as can be observed, we find evidence of causality from CIT to GDP which is significant at 5% (P = 0.0029) and also from CIT to GDP which is still significant at 5% (P = 0.0414). There is an indication of the presence of significant causality from GDP to VAT but at 10% (P = 0.0561). Furthermore, the results do not point to the presence of significant causality from PIT to GDP (P = 0.3233) or the other way round from GDP to PIT (P = 0.6313). Also, the results do not point to the presence of significant causality from CED to GDP (P = 0.224) at 5% or the other way round from GDP to CED (P = 0.3244) at 5%.

The long-run results show the impact of non-oil taxes on economic growth in Nigeria, and as observed, log (VAT) has a negative impact on economic growth (Table 6). Specifically, the result indicates that a 1% increase in VAT revenue results in decline in GDP by about 0.21% and the result is significant at 5%. In the case of CED, the result shows a positive impact on economic growth and specifically, a 1% rise in CED revenue stimulates

Table 1: Descriptive statistics

	D (GDP)	VAT	PIT	CIT	CED
Mean	2109.211	59614.47	55.87130	708644.9	857145.8
Median	2454.400	178100.0	46.18000	244900.0	214287.0
Maximum	4756.165	65635.352	115.3900	5516900	10125900
Minimum	−1092.694	7261.000	20.60000	21878.00	37364.00
Std. Dev.	1489.438	18831531	27.48325	1243108	2073212
Skewness	−0.285039	2.930706	0.853126	2.910085	4.124224
Kurtosis	2.236338	9.591528	2.500810	11.22654	18.99513
Observations	23	23	23	23	23

Source: Researchers Compilation (2020)

Table 2: Individual Unit root test Results

Unit root test at levels: Intercept and trend			
	Augmented Dickey-Fuller (ADF)	Philp-Perron-Test (PP)	Remark
D (GDP)	2.0291 (0.3712)	1.8911 (0.6820)	Non-stationary
VAT	3.6612 (0.291)	1.7806 (0.5662)	Non-stationary
CED	2.9573 (0.092)	0.3154 (0.9872)	Non-stationary
PIT	1.9403 (0.628)	1.3006 (0.390)	Non-stationary
CIT	2.3891 (0.929)	1.4771 (0.8991)	Non-stationary
Unit root test at 1st difference: Intercept and Trend			
D (GDP)	8.2611 (0.000)*	11.762 (0.000)*	Stationary
VAT	9.3561 (0.000)*	13.052 (0.000)*	Stationary
CED	14.019 (0.000)*	9.897 (0.000)*	Stationary
PIT	11.6376 (0.000)*	7.8392 (0.000)*	Stationary
CIT	12.5551 (0.000)*	9.3130 (0.000)*	Stationary

Source: Researchers compilation (2020)

Table 3: Group unit root test results

Unit root test at levels: Intercept and trend				
	Hadri Z-test	Augmented Dickey-Fuller (ADF)	Philp-Perron-Test (PP)	Remark
	4.9307			Stationary
χ^2_{fisher}		2.249	2.17028	Non-stationary
Prob	0.000	0.9940	0.9949	Non-stationary
Unit root test at 1st difference: Intercept and Trend				
	2.62232			Stationary
χ^2_{fisher}		22.4009	165.885	Stationary
Prob	0.0000	0.0132	0.000	Stationary

Source: Researchers compilation (2020)

Table 4: Bounds test for co-integration

Test Statistic	Value	Significance	1 (0)	1 (1)
F-statistic	51.079		Asymptotic	7
K			n=1000	
	4		I0 Bound	I1 Bound
		5%	2.56	3.49
		1%	3.29	4.37

Source: Researchers Compilation from E-views 10 (2020)

growth by 0.113%, and the result is significant at 10%. Also, the effect of PIT revenue on growth is negative and significant at 5% and specifically, a 1% increase in PIT revenue results in decline in economic growth by 0.599%. The impact of CIT on growth is positive and also significant at 5%. The result shows that a 1% increase in CIT revenue increases economic growth by 0.5757%.

Exploring short-run results and starting with VAT, the short-run effect [dlog(VAT($_{-1}$))] is positive and significant at 5% (Table 7). A significant short-run effect is also observed for dlog(CED($_{-1}$)), which is significant at 5%. Also, the results show that both dlog(PIT), dlog(PIT($_{-1}$)) and log(PIT($_{-2}$)) are all significant at 5% with dlog(PIT($_{-1}$)) and log(PIT($_{-2}$)) showing positive short-run coefficients. Also, the results show that both dlog(CIT) and dlog(CIT($_{-1}$)) are all significant at 5% with both showing negative short-run coefficients, respectively. The ECM has the expected negative sign (−0.24) and significant at 5% (P = 0.000), which suggest that 24% of short-run dynamics are corrected within 1 year. On the overall, the study provides evidence that non-oil taxes have a significant relationship with economic growth in Nigeria. Hence the null hypothesis that non-oil taxes have no significant effect on economic growth is rejected. However, the effect is not the same for all categories of non-oil taxes. The finding is in tandem with Adeusi et al. (2020), Adegbie et al. (2020), Ogba et al. (2018) and Akwe (2014) though at variance with Ogunbiyi and Abina (2019).

The model summary and diagnostics reveal that R^2 and Adj R^2 stood at 97% and 95% respectively which indicates a good fit for

the model and hence implies that non-oil revenue accounts for a huge proportion of systematic variations in economic growth in Nigeria (Table 8). The diagnostics indicate that the χ^2_{Hetero} P-value (0.4524) implies the homoscedastic behaviour of the errors and the $\chi^2_{Serial/Corr}$ P-value (0.9907) also reveals the absence of serial correlation. Also, χ^2_{Norm} P-value (0.2432) reveals that the series follows a normal distribution.

Table 5: Granger causality tests

Dependent variable: D (GDP)			
Excluded	**Chi-sq**	**df**	**Prob.**
VAT	3.017662	2	0.2212
CIT	11.67661	2	0.0029*
PIT	2.258478	2	0.3233
CED	3.015506	2	0.2214
Dependent variable: VAT			
D (GDP)	5.762422	2	0.0561**
CIT	19.18051	2	0.0001*
PIT	2.114363	2	0.3474
CED	8.752704	2	0.0126*
Dependent variable: CIT			
D (GDP)	6.367099	2	0.0414*
VAT	8.00574	2	0.0183*
PIT	1.77818	2	0.411
CED	7.132509	2	0.0283*
Dependent variable: PIT			
D (GDP)	0.919946	2	0.6313
VAT	2.612588	2	0.2708
CIT	5.98286	2	0.0502**
CED	0.634564	2	0.7281
Dependent variable: CED			
D (GDP)	2.251272	2	0.3244
VAT	70.54914	2	0.000*
CIT	2.016674	2	0.3648
PIT	0.580551	2	0.7481

Source: Researcher's Compilation from E-views 10 (2020)

Table 6: Long run ARDL result: ARDL (1, 2, 2, 3, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.2643	0.1954	37.177	0.000*
log (VAT)	−0.2094	0.0521	−4.019	0.005*
log (CED)	0.1128	0.0478	2.3585	0.0505***
log (PIT)	−0.5991	0.1668	−3.591	0.0088*
log (CIT)	0.5757	0.06345	9.072	0.000*

Source: Researcher's Compilation from E-views 10 (2020). * @ 1% ** sig @ 5% *** sig @10%

Table 7: Short-run ARDL result ARDL (1, 2, 2, 3, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
dlog (VAT)	−0.00542	0.003123	−1.73552	0.1262
dlog (VAT($_{-1}$))	0.035006	0.00476	7.354102	0.0002*
dlog (CED)	−0.00604	0.00479	−1.26055	0.2479
dlog (CED($_{-1}$))	−0.01476	0.003276	−4.5059	0.0028*
dlog (PIT)	−0.09601	0.009177	−10.4627	0.000*
dlog (PIT($_{-1}$))	0.055861	0.007787	7.17346	0.0002*
dlog (PIT($_{-2}$))	0.025548	0.006887	3.709832	0.0076*
dlog (CIT)	−0.03251	0.013253	−2.45303	0.0439**
dlog (CIT($_{-1}$))	−0.05413	0.011966	−4.52337	0.0027*
ecm(-1)*	−0.23947	0.010447	−22.9212	0.000*

Source: Researcher's Compilation from E-views 10 (2020). * @ 1% ** sig @ 5% *** sig @10%

Table 8: Model properties and diagnostics test

R^2	0.9710
Adjusted R^2	0.9494
χ^2_{Hetero}	1.1169 (0.4524)
$\chi^2_{Serial/Corr}$	0.00014 (0.9907)
χ^2_{Norm}	2.8274 (0.2432)

Source: Researcher's Compilation from E-views 10 (2020)

5. CONCLUSION

This paper examined dynamic nexus between non-oil taxes and economic growth in Nigeria using the Autoregressive distributive lag model (ARDL) approach. The study employed secondary data covering the period 1994-2019. Standard time series econometric techniques were utilized in the study such as descriptive analysis, unit root testing, co-integration test and granger causality testing. The ARDL was then employed in the estimation of the model. The long-run results show the impact of non-oil taxes on economic growth in Nigeria, and as observed, log (VAT) has a non-positive impact on economic growth. Specifically, the result indicates that a 1% increase in VAT revenue results in decline in GDP by about 0.21% and the result is significant at 5%. In the case of CED, the result shows a positive impact on economic growth and specifically, a 1% rise in CED revenue stimulates growth by 0.113%, and the result is significant at 10%. Also, the effect of PIT revenue on growth is negative and significant at 5% and specifically, a 1% increase in PIT revenue results in decline in economic growth by 0.599%. The impact of CIT on growth is positive and also significant at 5%. The result shows that a 1% increase in CIT revenue increases economic growth by 0.5757%.

These findings have the following implications. First, the negative effect of PIT and VAT on growth suggests that there is a need for fiscal authorities to re-examine these taxes and hence high VAT and PIT rates may be counter-productive for growth. Secondly, CIT and CED show positive growth effects and hence there is a need for effective and accountable expenditure framework that will ensure optimization of public expenditure in this regard.

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