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Does Government Tax Revenue Impact on Economic Growth? A New Evidence from Nigerian Data

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Abstract
The study looksat effect of government tax revenue on economic growth in Nigeria using annual time series data spanning he period of 1994 to 2021. In order to achieve the objective of this study, the Autoregressive Distributed Lag (ARDL) approach was used to analyze the effect of government tax revenue on economic growth. The results revealed that company income tax (LCIT) has a coefficient of 0.11, petroleum profit tax (LPPT) has a coefficient of 0.068 and value added tax (LVAT)has a coefficient of 0.11 and all have positive effect at 5% significant level on economic growth (LRGDP) in Nigeria in the long-run. However, the short run results revealed that all the tax revenue variables such as company income tax (LCIT) at its current year and its previous one year, two years, three years' values, petroleum profit tax (PPT) at its current year and its previous one year, two years, three years' values and value added tax (LVAT) all have negative relationship with economic growth (RGDP). Therefore, based on this result the study recommend that the tax authority should adopt more digitalization method to prevent revenue leakages, exploring the opportunities of taxation of the digital economy. Also, the government should ensure that tax income is used judiciously for the betterment of the citizenry.
Keywords: Tax Revenue, Economic Growth**,** Company Income Tax (CIT), Petroleum Profits Tax (PPT), Value Added Tax (VAT), ARDL.
JEL Classification: H20, E62, O47

1. Introduction

Taxes are mandatory levies or fees that are levied to the goods, services, and income of people and businesses. Most people consider taxes based on income to be direct taxes, whereas taxes collected on goods and services are known as indirect taxes (Aigbomian, 2019). The main purpose of introducing and enforcing taxes is to generate revenue for the government for the financing of certain initiatives or projects that will guarantee steady and functional economic growth and development. By imposing taxes, the government will redistribute income and provide citizens with necessary services, thereby raising their standard of living (David, 2020). Rather than serving only as a source of revenue for a nation's operations, taxes should enable the public and governments to actively engage in the achievement of economic, social, and environmental

policy goals. A good road system, an efficient public transportation system, modern health care and hospital services, a proper education system, environmental protection programs, employment opportunities, and vocational training programs, among other things, all require sizeable infusions of public funds, which may also be funded by taxes (Hutsebaut, 2014).

Nigeria relies on a variety of taxes that can be broadly divided into direct and indirect taxes. Direct taxes include taxes such as the Companies Income Tax (CIT), Petroleum Profit Tax (PPT), and Personal Income Tax (PIT), whereas indirect taxes include taxes such as custom and excise duties, such as import duties and Value Added Tax (VAT), that are collected from the delivery and consumption of goods and services. The Petroleum Profits Tax Act, Cap. P13 LFN 2004 (as modified), governs the imposition of the petroleum profit tax on the income of businesses engaged in upstream petroleum operations. The Petroleum Profit Tax became effective and operational when Nigeria started exporting crude oil in 1958, thou it was initially adopted in 1957 during the colonial administration. (Abomaye-Nimenibo, 2017). Any resident corporation or person in charge of a non-resident company that is exploring for petroleum or producing it in Nigeria is subject to the payment of petroleum profit tax. Any liquidator, receiver, or agent of a liquidator or receiver of any corporation operating a petroleum business in Nigeria is also included in this. Rents, royalties, margins, and profit-sharing provisions included in leases for oil mining, prospecting, and exploration are related to petroleum profit tax. PPT is the most significant tax in Nigeria in terms of its contribution to total income, accounting for around 50% of government revenue and 95% of foreign exchange earnings, respectively (Ashike, 2021).

On the other hand, a tax called companies income tax (CIT) is levied against a company's earnings from any source. In Nigeria, CIT is one of the major taxes administered and collected by the Federal Inland Revenue Service (FIRS).It is a tax paid on the income of incorporated companies. The Companies Income Tax Act (CITA), Cap. C21, LFN 2004 (as modified), governs the taxes that businesses must pay. Any company or corporation (other than corporate sole) established by or under any law in force in Nigeria or elsewhereis referred to as a "company" in Section 105 of the Companies Income Tax Act (CITA) 2007 as amended. Any company's profit is subject to tax at a rate of 30% on each year of assessment, these include profit accruing in, derived from or brought into or received from a trade, business or investment (Ovie & Igwe, 2016).

Value Added Tax is a consumption tax that has been adopted by a large number of nations worldwide. Because it is a consumption tax, it is relatively simple to administer and difficult to evade. It is a tax imposed and levied on products and services that are not expressly exempt from the VAT under Nigerian law. The current rate of VAT levied in Nigeria, which raised from 5% on February 1, 2020, is 7.5% of the value of the products and services sold or delivered, excluding those that are exempt from VAT. With the exception of small businesses with less than 25 employees, everyone conducting business or engaging in trade and whose goods or services are not excluded is required to register with the Federal Inland Revenue Service (FIRS). These unexcused persons or companies must include VAT at the rate of 7.5% on invoices issued for the supply of goods and services that are taxable. As clearly specified by the Finance Act 2020, a business shall be deemed to have commenced in Nigeria on the day that the entity carries out its first transaction. Put differently, VAT shall be charged and payable on all supplies of goods and services in Nigeria other than those exempted by the Act.

In January 1994, the Federal Government of Nigeria enacted VAT. It was allegedly developed as a source of income and to minimize reliance on or borrowing money from various international organizations like the IMF, World Bank, and Paris Clubs (CITN, 2010). The VAT earned N2.07 trillion for the nation in 2021, and it was designed to be a super tax to totally remove other taxes on products and services like sale tax. Therefore, it is important to recognize the importance of tax revenue, particularly PPT, PIT, and VAT, in fostering economic growth in Nigeria. Along with being a source of income, it aids the government in attaining the

nation's macroeconomic goals in terms of both the fiscal and monetary systems (Onakoya, A., & Afintinni, 2016). Tax revenue is an essential tool for economic reform and a major factor in the economic growth and development of any nation on earth. It is dynamic and takes current economic events into account. The tax system gives the government a chance to raise additional funds in addition to other sources of income that are essential for meeting its urgent obligations. According to Ogbonna (2018), one of the best ways to mobilize a country's internal resources and foster an atmosphere that is supportive of the growth and development of the economy is through a sound tax structure.

Retail taxes are impossible given how primitive the economy is. Due to a lack of resources and expertise in tax administration, taxes are still challenging to collect at this point (Kayode, 2019). Due to this, an efficient tax system is not possible, and the amount of tax revenue generated will be based on the compliance of the taxpayers and the effectiveness of the tax collectors. In order to establish the link between tax income and economic growth in Nigeria and recognizing the importance of taxes in funding development and improving living conditions, it is necessary to investigate the impact of government tax revenue on the country's economy as well as its taxing practices and theories. The broad objective of this study is to assess the effect of tax revenue on economic growth in Nigeria.

2. Literature Review

2.1. Theoretical Literature

(A) Theories of Taxation

The existence and utilization of tax system for revenue generation and economic policy tool of government has been justified by several theories. Some of the theories are discussed as follows:

- **The Socio-Political Theory**

The theory states that taxes should be selected and imposed based on social and political reasons and not for individuals. Hence, this theory advocates that tax system should be used to cure the ills of the society as a whole and thus, it addresses the need for government to effectively utilize revenue from tax in making provisions of social and economic facilities. This theory was advocated by Adolph Wagner.

- **The Benefit Theory**

This theory advocates the equality or proportionality between tax payment by citizens and the goods and services provided for the citizens for such payment. Thus, taxes are considered here as payments for services rendered by the state to the taxpayers which is to be proportional. This theory was initially developed by Knut Wicksell (1896) and Erik Lindahl (1919).

(B) Theories of Economic Growth

- **Endogenous Growth Theory**

This theory argues that economic growth emanates from within a system as a direct result of internal processes like enhancement of a nation's human capital and faster innovation. The central tenets to this theory include ability of government policy to raise the country's growth rate, increasing return to scale from capital investment, private sector investment in research and development among others. This theory was developed by Paul Romer and Robert Lucas.

2.2. Empirical Review

Gatawaet al (2016) empirically examined the impact of Value Added Tax (VAT) on economic growth in Nigeria from its inception to 2014. The study used secondary data which was analyzed by applying the method of Johansen (1988) co- integration test with a quarterly data ranging from 1994Q1 to 2024Q4. The study revealed that Value Added Tax (VAT) is positively and significantly related to economic growth in

Nigeria. In the same year,Nweze andGreg (2016) empirically investigated theimpact of oil revenue on economic growth in Nigeria between 1981 to 2014 using secondary data and applying Johansen co integration test and Error Correction Mechanism (ECM). The result shows that, there is a long run relationship among the variables of Gross Domestic Product (GDP) and oil revenue as well as government expenditure.

Furthermore, Ibanichuka et al (2016) employing the method of multiple regression analysis, investigated the effect of tax revenue on the economic development of Nigeria for the period of 1995-2014 with the purpose of finding out if tax revenue represented by the value added tax (VAT), company income tax (CIT), and customs and excise duties (CED) could affect economic development proxied by human development index (HDI) for the period of the study. The findings reveal that revenue generated by the federal government through value added tax (VAT), custom and excise duties (CED), company income tax (CIT) have a positive relationship with human development index. On the other hand, Ofoegbu et al (2016) analysed the impact of tax revenues on gross domestic product for the period 2005-2014 using the ARDL model and found a positive and significant effect of taxes on economic growth in Nigeria. However, using a different method of the Ordinary Least Square of multiple regression models, Ojong et al (2016) examined the impact of tax revenue on Nigerian economy using secondary data. The findings also revealed that there is a positive relationship between dependent (GDP) and independent variables of Petroleum Profit Tax, Company Income Tax, and Oil revenue.

However, Oshoke and Uke (2017) examined the impact of indirect tax revenue on economic growth in Nigeria using the variables of Value Added Tax, Custom and Excise Duty as independent variables and RGDP as proxy for economic growth as the dependent variables. The study employed the use of secondary data for the period of 1993 to 2013 and applying convenient sampling technique as well as co-integration and Error Correction Model. The results revealed that Value Added Tax have a negative and significant impact on Real Gross Domestic Product. Which is contrary to the findings of Ibanichuka et al (2016), Gatawa (2016) and other researchers. In the same vain, past custom and excise duty have a negative and weakly significant impact on RGDP. Subsequently, Babatunde et al (2017) investigated the impact of taxation on economic growth in Africa from 2004 to 2013 applying fixed and random effect to determine the fitness of the model using Hausman Test. The findings indicated that tax revenue is positively related to GDP and promotes economic growth in Nigeria.

In Kenya however, Ali et al (2018) examined the effect of tax revenue on economic growth of Kenya from 1980 to 2017 using time series data and applying the method of the ordinary least square. Contrary to the findings of many studies carried out in Nigeria, the results showed that tax revenue has a negative and significant effect on economic growth. Also, using time series data between 1990 to 2011, Adudu and Simon (2018) attempted to ascertain the impact of tax policy on economic growth in Nigeria by applying the Granger causality co-integration technique. The study finds statistical evidence that efficient tax reforms are necessary conditions for enhanced sustainable economic growth. Just like previous studies, the study of Manukaji (2018), looking at the similarities of the variables, investigated the effect of tax structure on economic growth in Nigeria using time series data sets from 1994 to 2016, and applying co-integration test and Ordinary Least Square (OLS) as shown from his work. The study found that, all the tax components of Value Added Tax (VAT), Personal Income Tax (PIT) and Company Income Tax (CIT) revenue have significant effect on economic growth in Nigeria.In the same year, Williams (2018) empirically examined the impact of tax revenue on economic growth in Nigeria from 1980 to 2015 using two different econometric model; the multiple regression analysis and the method of the Ordinary Least Square. The study found that while no significant relationship exist between Petroleum Profit Tax, Company Income Tax and economic growth, Custom Excise Duties was found to have a significant relationship with economic growth in Nigeria. However, the study revealed that there exist a long-run relationship among the variables and all the variables are positively related to economic growth.

In 2020, Joseph and Omoderoexamined the relationship between government revenue and economic growth in Nigeria using secondary data spanning from 1981 to 2018 applying the method of the ordinary least square (OLS) regression technique. The result shows that federally received revenue and Value Added Tax (VAT) have a positive relationship with economic growth in Nigeria. The findings of this study is supported by the findings of study of Bilkisu and Mustapha (2020) that examined effect of tax revenue on economic growth in Nigeria from 1981 to 2017. The result reveals that petroleum profit, value added tax and government domestic debt are significant and positively related to GDP.In addition, company income tax and customs and excise duties came out significant but have negative impact on economic growth.In another study, Okeke et al (2020) investigated the effect of tax revenue on economic development in Nigeria from 1994 to 2016, applying Johansen co-integration test and error correction model. The result shows that, tax revenue has a positive relationship with primary school enrollment, life expectancy, and per capita income in Nigeria.

3. Methodology

This study investigates the relationship between government tax revenue and economic growth, using the method of the Autoregressive Distributed LagARDL and utilizing data spanning from 1994 to 2021. From the literatures reviewed, the empirical model that was relevant in this study is based on the model used by Alexander, Keyi and Alfa (2019).

The model therefore, is specified as follows:

$GDP_t = \alpha + \beta_1 GDP_{t-i} + \beta_2 PPT_{t-i} + \beta_3 VAT_{t-i} + \beta_4 PIT_{t-i} + \mu$ ………………… (1)

Where;

μ = error term;

α = vector of the intercepts;

i = 1, 2 …N;

GDP = Gross Domestic Product;

PPT = Petroleum Profit Tax;

VAT = Value Added Tax;

PIT = Personal Income Tax

This study adapted the model used by Alexander, Keyi and Alfa (2019) by replacing the variable of Personal Income Tax (PIT) with Companies Income Tax (CIT). The decision to replace PIT with CIT is due to the fact that the focus of this study is on federally collected revenue, i.e. taxes collected by the Federal Inland Revenue Service. Whereas PIT are taxes collected by the State Board of Internal Revenue Service of the various states, the Federal Capital Territory collects PIT from residents of the FCT which is collected by FIRS

3.1. Model Specification

- ***Functional Specification***

A functional relationship betweenPetroleum Profit Tax (PPT), Companies Income Tax (CIT) and Value Added Tax (VAT) as independent variable with Real Gross Domestic Product (RGDP) as dependent variable is specified as follows:

$RGDP_t = f(PPT_t, CIT_t, VAT_t)$**……………………………………………………** ***(2)***

Where:

RGDP = Real Gross Domestic Product,

PPT = Petroleum Profits Tax,

CIT = Companies Income Tax,

VAT = Value Added tax

- ***The Mathematical Specification***

$RGDP_t = \alpha + \beta_t LPPT_t + \beta_2 LCIT_t + \beta_3 LVAT_t$ ..... ***(3)***

Where, α, β_1, β_2, and $\beta_3$are the parameters

L= Natural logarithms

- ***Econometric Specification***

The econometric form of equation (2) is as follows:

$RGDP_t = \alpha + \beta_1 LPPT_t + \beta_2 LCIT_t + \beta_3 LVAT_t + \mu_t$ ..... ***(4)***

Where: α = Constant term,

β_1, β_2, β_3 = Coefficients of the explanatory variables,

PPT = Petroleum Profits Tax

CIT = Companies Income Tax

VAT = Value Added tax

L= Natural logarithms

U_t = Error term

- **The Generalized ARDL (p, q) model is represented as:**

$Y_t = \alpha_{0j} + \sum_{i=1}^{p} \pi_{2i} Y_{t-i} + \sum_{i=1}^{p} \pi_{2i} X_{t-i} + w_t$..... (5)

Where: provided that p and q do not necessarily suggest symmetry of lag-lengths,

p = optimum lag length for the predicted parameter,

q = optimum lag length for the predictors.

- **ARDL Model Specification**

$\Delta LRGDP_t = \alpha_0 + \sum_{i=1}^{p} \Phi_i \Delta LRGDP_{t-i} + \sum_{i=0}^{p} \theta_i \Delta LPPT_{t-i} + \sum_{i=0}^{p} \mu_i \Delta LCIT_{t-i} + \sum_{i=0}^{p} \Psi_i \Delta LVAT_{t-i} + \delta_1 LPPT_{t-1} + \delta_2 LCIT_{t-1} + \delta_3 LVAT_{t-1} + \varpi_t$..... (6)

Where;

Δ = first difference operator.

The parameters $\alpha_1 - \alpha_3$ = short-run relationship parameters.

The parameters $\beta_1 - \beta_3$ = long-run relationship parameters.

(t – i) = Lagged term on respective variables.

Σ *and* ϖ_i = Summation operator and error term of the equation.

All other variables are as defined above.

3.2. Definition and Justification of Variables

3.2.1 Real Gross Domestic Product (RGDP)

Real Gross Domestic Product refers to a macroeconomic measure of the value of economic output, that is, all goods and services produced in an economy adjusted for inflation. RGDP is usually expressed in base-yea prices and is often regarded as constant-price, inflation-corrected or constant-dollar GDP. RGDP is the nominal GDP adjusted for inflation and as such it provides the accurate picture of the economy. This variable was used in this study as the dependent variable and as a proxy for economic growth.

3.2.2 Petroleum Profit Tax (PPT)

Petroleum profit tax involves the charging of tax on the incomes accruing from petroleum operations (Abdullahi, Madu & Abdullahi, 2015). Petroleum profit tax is a tax levied on the income of companies that are engaged in the upstream petroleum operations in the oil industry like the mining industry. PPT is levied and paid upon the profits of each period of any petroleum-related industry during any such accounting period, usually a year. In Nigeria, PPT is the most important tax system with regards to its share of total revenue,

contributing 70%and 95% of government revenue and foreign exchange earnings respectively (Afuberoh & Okoye, 2014). Hence, this variable is considered in this study as one of the independent variables capturing one of the taxing system through which government generate revenue. Aliyu et al (2020) employed PPT as an independent variable while investigating the impact of tax revenue on economic growth in Nigeria. The study found that PPT has significant and positive relationship on economic growth in Nigeria. This studyfollowing economic theory expects a positive relationship between PPT and economic growth in Nigeria.

3.2.3 Companies Income Tax (CIT)

Companies Income Tax refers to tax that is levied directly on the profit of companies operating in a country from all sources. Its amount is based on the net income that companies earn through their business activity, usually during a period of one year and its being paid by all limited liability company including public limited liability company with the exception of the petroleum sector of the economy (they pay PPT).CIT is governed by Companies Income Tax Act (CITA). CIT is a taxing system through which government generate revenue, hence, it is considered in this study as an independent variable capturing pat of government tax revenue. So many researchers has investigated the relationship between CIT and economic growth in Nigeria. Manukaji (2018) employing CIT as a dependent variable while investigating the effect of tax structure on economic growth in Nigeria found that CIT affects economic growth positively and significantly. Contrary, Aliyu et al (2020) found a negative significant relationship between CIT and economic growth in Nigeria. However, this study expects a positive relationship between CIT and economic growth in Nigeria.

3.2.4 Value Added tax (VAT)

Value Added Tax is a tax that paid at every stage of a products production and sale at which value has been added, from the sale of raw materials to its final purchase by a consumer. Consumers of goods and services tends to bear the ultimate burden in the VAT system since they are the final users of goods and services. The producers on the other hand can easily pass on the burden of the tax to consumers, hence, this tax system does not discourage producer. So many researching has employed VAT in their research including Aliyu et al (2020). The study employed VAT as an independent variable while investigating the impact of tax revenue on economic growth in Nigeria. The study found that VAT has a positive and significant relationship with economic growth. VAT is considered in this study as an independent variable since it is one of the taxing method through which government generate revenue and this study expects VAT to positively affect economic growth in Nigeria.

3.3. Estimation Technique

This study made use of the Autoregressive distributed lag model (ARDL) method of estimation. This method is attributed to Pesaran and Shin (1999), while its further development is due to Pesaran et al. This model provides unbiased estimates and valid t-statistics, irrespective of the endogeneity of some regressors and it also allows the correction of outliers with the impulse dummies.The model was considered following the fact that the variables used in this study are integrated of different order.

3.4. Diagnostic Test

3.4.1 Unit Roor Test

Knowing the order of integration of the variables used in this study guides in model selection for analyzing the data set.Unit root will be conducted in this study using the Augmented Dickey-Fuller Test so as to ascertain the order of integration of variables used in this study. This test will help to ascertain whether our variables is

stationary or not. The ARDL model bounds test approach is applicable when the variables are either integrated of either I (0), I (1), or a mixture of both.

3.4.2 Bounds Test for Cointegration

Cointegration test helps to ascertain the existence of long-run relationship between the set of variables considered in the study which is necessary to avoid running a spurious regression. The bounds test approach will be utilized in this study because it effectively corrects for any possibility of endogeneity of explanatory variables, and it can be applied whether the series are integrated of different order, i.e. I (0) or I(1), thereby disregarding the uncertainty created by the sationarity test.

3.5. Data Transformation

In order to linearize the non-linear variables and to also minimize spurious results, all the data used in this study were transformed into their natural log form.

4. Data Analysis and Discussion Of Results

4.1 Unit Root Test of Stationarity

Table 1: Results of Unit Root Test of Statistics

Variables	Levels		First Difference		Order of Integration I(d)
	Constant	Constant & Trend	Constant	Constant & Trend	
LRGDP	-1.2311	-2.2532	-1.7328	-8.5897**	I(1)
LCIT	-2.4650	-1.0437	-5.9066**	-6.6083**	I(1)
LPPT	-1.9580	-0.9847	-5.0945**	-5.5353**	I(1)
LVAT	-3.5580**	-3.4021	-7.1574**	-6.2857**	I(0)

****Stationary at 5% level**

Source: Author's computation using E-views 10

The unit root test of stationarity was carried out using Augmented Dickey Fuller (ADF) unit root test at both constant and constant with trend. The result in table 4 revealed that LRGDP, LCIT and LPPT are stationary at first difference I(1) while LVAT is stationary at level I(0). Hence, LRGDP, LCIT and LPPT are integrated of order one while LVAT is integrated of order zero. The mixed order of integration satisfied the condition for the choice of ARDL model.

4.2 Lag Length for F- Bound Cointegration Test

Table 2: Result of lag length for F-Bound Test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	44.2961	NA	0.00204	-3.358	-3.1617	-3.306
1	59.2685	23.7062*	0.0006	-4.5224	-4.277	-4.4573
2	61.7678	3.7490	0.0006	-4.6473	-4.3528	-4.5692
3	63.8113	2.8950	0.0005*	-4.7343*	-4.3907*	-4.6431*
4	64.2354	0.5655	0.0006	-4.6863	-4.2936	-4.5821

Source: Authors' computation using E-views 10

Table 2 presents the lag order selection by five different criteria. All the lag selection criteria except LR, suggest that a lag length of three (3) is optimal for the F-bound cointegration test. Therefore, this study used a lag length of three (3) for the cointegration test.

4.3: ARDL F-Bound Test for Cointegration

Since the variables have different order of integration, a co-integration test was conducted to determine whether the variables have a stable long-term relationship. This study uses Wald's bound test for co-integration.

H_0**:** No cointegration(There is no stable long run relationship)

H_1 = Co-integration (There is stable long-run relationship)

Decision Rule: Reject H_0if f-statistics > upper critical boundary at 5% level of significance. Otherwise, do not reject and conclude that there is no stable long run relationship.

Table 3: Result of ARDL Bound Test for Cointegration

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	14.98014	10%	2.72	3.77
K	3	5%	3.23	4.35
		2.5%	3.69	4.89
		1%	4.29	5.61

Source: Authors' computation using E-views 10

The result of ARDL Bounds of Cointegration revealed in table 3 shows that the F-statistics value 14.98014 is greater than the upper boundary at 10%, 5% and 1% level of significance. Hence, the variables of the study are said to have long-run relationship, implying that the response variables have long a long-run relationship with the dependent variable.

4.4 ARDL Model of Long-Run Effect

Table 4: Result of ARDL model estimation for Long-run effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LCIT	0.1104	0.0337	3.281	0.0083
LPPT	0.0682	0.0104	6.5932	0.0001
LVAT	0.1075	0.0343	3.1346	0.0106

Source: Authors' computation using E-views 10

The long run coefficient of ARDL model are reported in table 4. Among the variables, company income tax (LCIT) in the long run was significant and positively related to economic growth (LRGDP). The coefficient of the company income tax (LCIT) is 0.11 implying that, a per cent increase in LCIT will increase LRGDP by 0.11% in the long-run. This is consistent with our apriori expectation that company income tax is positively related to economic growth. The result agrees with the findings of Khadija and Taophic (2018), Manukaji (2018), Arowashegbe (2017), Ojong (2016), Ibanichuka (2016) and Salami (2015).

Petroleum profit Tax (LPPT) was also found to be significant and positively related to economic growth (LRGDP) with an estimated coefficient of 0.068 at 5 percent level in the long run. This implies that a per cent increase in petroleum profit tax (LPPT) would increase economic growth (LRGDP) by 0.068 percent. This is

also consistent with economic theory. It thus supports the findings of Bilkisu and Mustapha (2020), Alexander et al (2019), Gabriel and Ezekiel (2019), Arowashegbe (2017), Salami (2015), Ibadin and Oladipupo (2015).

Furthermore, the long-run estimation result in table 4 shows that value added tax (LVAT) has a significant positive relationship with economic growth (LRGDP) with an estimated coefficient of 0.11 at 5 percent levels. This is also consistent with apriori economic expectation. This implies that 1 per cent increase in value added tax (LVAT) will increase economic growth by 0.108 per cent in the long–run. This result supports the findings of Joseph and Omodero (2020), Bilkisu and Mustapha (2020), Manukaji (2018), Ibanichuka (2016), Salami (2015), and negate the findings of Oshoke and Uke (2017), Ahmed and Sail (2016).

4.5. ARDL Model of Shortrun Effect

Table 5: Result of ARDL model estimation for Short-run effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.2761	1.7295	8.8324	0
D(LCIT)	-0.027	0.018	-1.5095	0.1621
D(LCIT(-1))	-0.1183	0.023	-5.14	0.0004
D(LCIT(-2))	-0.1109	0.0241	-4.5984	0.001
D(LCIT(-3))	-0.0902	0.0212	-4.2578	0.0017
D(LPPT)	-0.0051	0.0052	-0.9782	0.3511
D(LPPT(-1))	-0.0481	0.0088	-5.4364	0.0003
D(LPPT(-2))	-0.0321	0.0079	-4.0687	0.0023
D(LPPT(-3))	-0.0129	0.0061	-2.1001	0.0621
D(LVAT)	-0.115	0.0255	-4.5139	0.0011
ECM (-1)*	-0.9505	0.1077	-8.826	0
R-squared	0.956224	Mean dependent var		0.0475
Adjusted R-squared	0.922549	S.D. dependent var		0.035399
S.E. of regression	0.009852	Akaike info criterion		-6.098804
Sum squared resid	0.001262	Schwarz criterion		-5.558863
Log likelihood	84.18565	Hannan-Quinn criter.		-5.955558
F-statistic	28.39637	Durbin-Watson stat		2.204186
Prob(F-statistic)	0			

Source: Authors' computation using E-views 10

Table 5 shows the results of ARDL Error Correction Model which was estimated to assess the effect of tax revenue on economic growth of Nigeria. Results from table 8 reveals that the coefficients of company income tax (LCIT) has a significant negative relationship with economic growth in the first, second and third lags period which is not in line with the Apriori expectation. The results indicate that a percent increase in LCIT will decrease LRGDP by 0.118% in the first lag, 0.111% in the second lag and 0.090% in the third lag period respectively. The first, second and third lags period of petroleum profit tax (PPT) also have a significant negative relationship with economic growth (LRGDP) which is not in line with our Apriori expectation. The results indicate that a percent increase in LPPT will decrease LRGDP by 0.05% in the first lag, 0.032% in the second lag and 0.013% in the third lags period respectively. Furthermore, the table also revealed a negative relationship between value added tax (LVAT) and economic growth (LRGDP) with is not in line with our Apriori expectation. This implies that a percent increase in LVAT will decrease LRGDP by 0.115% in the short-run. This result is consistent with the findings of Ibadin and Oladipupo (2015), Oshoke and Uke (2017), Ahmed and Sial (2016).

Finally, the Error Correction Term (ECT (-1)) is negative and statistically significant with a coefficient of -0.9505 and a probability level of 0.0000 at 5% levels which simply means that about 0.951% of the disequilibrium which occurs in the shortrun is corrected over the longrun. In other words, the annual speed of adjustment from shortrun shocks or divergence to longrun equilibrium is as high as 0.951%.
The result also shows that 96% of variations in the economic growth (LRGDP) are accounted for by the changes in the explanatory variables (company income tax, petroleum profit tax and value added tax.). The Durbin-Watson value of 2.204186 indicating that there is no serial correlation

4.6. Discussion of Findings and Hypotheses Testing

Analyzing the effect of petroleum profit tax (PPT) on economic growth (RGDP) in Nigeria is the first objective of this work, findings showed that there is a positive relationship between PPT and RGDP based on the coefficient of petroleum profit tax (LPPT = 0.110409) and probability value of (P= 0.0083 < 0.05) in the long-run have a significant positive relationship with economic growth (LRGDP). This has fulfilled the first objective and also on the basis of long run analysis which the study hypothesis was tested, the result showed that (P= 0.0083 < 0.05). The study therefore rejects the null hypothesis and accept the alternative hypothesis since P< 0.05 and conclude that petroleum profit tax has a significant effect on economic growth in Nigeria.
In order to achieve the second objective which is to examine the effect of company income tax (CIT) on economic growth (RGDP) in Nigeria. Findings revealed a positive relationship between CIT and RGDP as the coefficient of company income tax (LCIT= 0.068234) and probability value of (P= 0.0001 < 0.05) in the long-run have a significant positive relationship with economic growth (LRGDP). This has also fulfilled the second objective and also on the basis of long run analysis which the study hypothesis was equally tested, the result showed that (P= 0.0001 < 0.05). The study therefore rejects the null hypothesis and accepts the alternative hypothesis since P< 0.05 and conclude that company income tax has a significant effect on economic growth in Nigeria.
Evaluating the effect of Value Added Tax (VAT) in Nigeria is the third objective of this study. Findings from our long-run estimation also revealed a positive relationship between VAT and RGDP as the coefficient of value added tax (VAT = 0.107482) and probability value of (P= 0.0106 < 0.05) have a significant positive relationship with economic growth (LRGDP). This has therefore fulfilled the third objective and also on the basis of long run analysis which the study hypothesis was tested, the result showed that (P= 0.0106 < 0.05). The study therefore rejects the null hypothesis and accepts the alternative hypothesis since P< 0.05 and conclude that value added tax has a significant effect on economic growth in Nigeria. Result from F- bound test also reveal that there is long run relationship between tax revenue and economic growth (RGDP) in Nigeria. The F-statistics value is 14.98014 which is greater than the upper boundary at 10%, 5% and 1% level of significance, thus fulfilled the fourth objective and hypothesis.

5. Summary, Conclusion And Recommendations

5.1 Summary

The study assesses the effect of tax revenue on economic growth of Nigeria over the period of 1994-2021. The study reviewed several empirical literatures which produced divergent views by scholars, to achieve the set objectives and statement of hypotheses, the autoregressive distributed lag (ARDL) model was used to analyze the effect of tax revenue (i.e. petroleum profit tax, company income tax and value added tax) on economic growth. The findings thus revealed a positive significant relationship in all the tax revenue analyzed and tested with economic growth, such that petroleum profit tax, company income tax and value added tax exhibited a positive and significant relationship with economic growth in the long- run. Although the short-run result for all the variables mentioned, both at current and there lags period showed a negative effect.

5.2. Conclusion

The positive significant relationship between petroleum profit tax, company income tax, value added tax on economic growth is as a result of improved compliance by tax payers due to digitalization of the tax administration process and increased audit and enforcement activities. Furthermore, the amendment of VAT from 5% to 7.5% and the concerted efforts being made to shift to non-oil revenue especially VAT has played a significant role. Therefore, based on the findings from the analyses, it can be affirmed that tax revenue such as petroleum profit tax, company income tax and value added tax has significant effects on economic growth in Nigeria within the period under review.

5.3. Recommendations

In light of the findings of the study, the research has the following recommendations:

The findings of the study will be helpful to policymakers in designing strategies on how to improve revenue from taxes without impeding the rate of growth in the economy in Nigeria. The following are some recommendations extracted from the findings of the study based on the research questions and objectives of the study.

i. The trend of PPT over time in Nigeria appear highly volatile due to both internal and international factors. Internal factors such as high level corruption and oil theft in the Nigerian oil and Gas industry leading to unaccounted crude sales and loss of proceeds which is the tax base for PPT. These proceeds that are lost go untaxed. In line with the findings of this study which reveals a positive effect between PPT and GDP, in order for the government to improve the GDP of the country, policy makers need to further push for a total deregulation of the oil and gas industry beyond its commercialization in the Petroleum Industry Act to reposition it for International competitiveness and profitability. The more profit for the industry players, the more petroleum profits tax revenue to the government and the greater the country's GDP.

ii. The policymakers should be cautious in imposing high taxes on firms in the short-run in order to avoid an economic slowdown because taxes in the short term reduces economic growth. In addition, expansion of the progressive tax system so as to avoid over-taxing the small and medium scale industries in order not to force them out of business is imperative. This approach will enable small businesses to thrive and grow into viable taxpayers that will add to companies' income tax revenue which will invariable spur economic growth of Nigeria.

iii. The Federal Inland Revenue Service whose mandate it is to assess, impose, collect and account for these taxes should strive to be transparent and accountable so as to boost the confidence of the tax payers to keep up with compliance and reduce the high incidence of tax evasion. In addition to this, they should also continue to adopt more technological and digitalization of it processes which has proven to significantly cut revenue loss through sharp practices and block holes for leakages.

iv. Lastly, The Federal Inland Revenue Service should vigorously explore the revenue opportunities in the digital economy and taxation of incorporeal and intangible assets such as crypto-currency and ecommerce in order to expand the tax base of the economy. This will lead to more tax revenue and eventually greater economic growth.

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APPENDIX A
Data for the Study

Year	GDP	CIT	PPT	VAT
1994	21,897,471.54	12,274.80	42,802.70	7,260.80
1995	21,881,559.79	21,878.30	42,857.90	20,761.00
1996	22,799,693.42	23,100.00	47,500.00	32,500.00
1997	23,469,343.08	27,800.00	64,300.00	35,300.00
1998	24,075,146.46	33,300.00	24,600.00	37,600.00
1999	24,215,775.87	46,200.00	71,100.00	47,800.00
2000	25,430,423.39	53,300.00	334,500.00	58,000.00
2001	26,935,315.65	69,400.00	407,100.00	91,700.00
2002	31,064,272.13	89,100.00	224,400.00	108,600.00
2003	33,346,624.77	114,800.00	438,000.00	136,400.00
2004	36,431,373.71	130,800.00	878,600.00	163,300.00
2005	38,777,013.73	170,200.00	1,352,200.00	192,700.00
2006	41,126,678.97	246,700.00	1,349,500.00	232,700.00
2007	43,837,391.99	332,400.00	1,132,000.00	312,600.00
2008	46,802,760.44	420,600.00	2,060,900.00	401,700.00
2009	50,564,263.25	595,182.20	939,412.20	481,407.30
2010	54,612,264.18	658,502.60	1,480,363.90	564,891.60
2011	57,511,041.77	654,448.20	3,070,591.30	659,153.60
2012	59,943,794.01	820,565.50	3,201,319.50	710,555.10
2013	63,942,845.56	963,450.80	2,666,366.90	802,683.50
2014	67,977,459.22	1,173,490.70	2,453,947.40	802,964.70
2015	69,780,692.72	1,268,977.20	1,289,960.70	767,333.50
2016	68,652,430.36	933,537.30	1,157,808.10	828,199.10
2017	69,205,691.11	1,215,056.80	1,520,481.70	972,348.40
2018	70,536,348.62	1,340,329.40	2,467,580.70	1,108,040.00
2019	72,094,094.00	1,604,698.50	2,114,268.40	1,189,981.10
2020	70,800,543.49	1,275,450.20	1,516,979.20	1,531,090.10
2021	73,382,771.39	1,747,991.50	2,008,453.60	2,072,851.80

Source: National Bureau of Statistics (2021), FIRS (2021)