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Research Article

EFFECT OF TAX STRUCTURE ON ECONOMIC GROWTH IN NIGERIA: AN EMPIRICAL INVESTIGATION (1999–2023)

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ABSTRACT

This study looked at how Nigeria's tax structure affected the country's economic growth. Revenue is unquestionably essential for the state to fulfill the social contract by providing for the citizens' basic needs. This study specifically assessed the effect of the petroleum profit tax (PPT), company income tax, value-added tax (VAT), capital gain tax, and stamp duty on Nigeria's economic growth. Time series data from 1999 to 2023 were used in the study. The pertinent data were taken from the Federal Inland Revenue Service, Bureau of National Statistics, and Central Bank of Nigeria publications. The Autoregressive Distributed Lag regression analysis approach was utilized. According to the study, PPT and company income tax had a significant effect on Nigeria's economic growth throughout the study period; however, stamp duty had an insignificant positive effect on economic growth in Nigeria. In the meantime, VAT and capital gains tax significantly hampered Nigeria's economic growth during the study period. The study suggested, among other things, that the government should start a strategic effort to diversify the economy to boost economic growth and development, especially because petroleum-related sources of income are declining.

Keywords: Tax structure, Economic growth, Nigeria.

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INTRODUCTION

Revenue is unquestionably essential for the state to fulfil the social contract by providing for the citizens' basic needs. While this goal is in the forefront, attention must also be paid to the foundations or essential principles that will help comprehend the barriers to economic growth, job creation, and industrial development. This is due to the fact that unidirectional special achievement that solely generates cash for the state might contribute to de-industrialization and unemployment. Furthermore, it may cause disillusionment among both domestic and foreign investors, causing them to swiftly rebalance their overseas investments and migrate to nations with tax structures that support industrial development and strong investment returns. As admirable as this is, it has overshadowed the necessity of a tax structure that can be a true instrument for the establishment and growth of Nigerian industries. Therefore, it cannot be disputed that the Nigerian tax system must prioritize the goals of industrial development, economic expansion, and job creation. Therefore, as has been widely established in the literature, the goal of a tax system is to collect money from the groups of people and entities that can most effectively bear the tax burden, rather than just raising a specific quantity of money (Mankiw *et al*., 2009; Salanie, 2011). Essentially, the goal is to ensure a fair allocation of the tax burden, which is evidently impossible unless an attempt is made to track the occurrence of each tax.

It is well recognized that all levels of government need money to expand their economies, and the tax system is one way they do it. The term "tax" has been defined in numerous ways over the years, depending on various viewpoints. For example, taxes are forced contributions imposed on people or businesses by a local, regional, or federal government (Kagan, 2021). According to Khadijat and Kabi (2019), tax income is an influx of funds to a country's or state's government. According to Akanbi (2015), taxes should not be mistaken for other mandatory contributions that resemble them. Similar to this, Adigwe and Oyadonghan (2020) defined taxation as a type of levy that is applied to all citizens residing in a tax jurisdiction as well as non-residents conducting business there. Citizens have a civic and patriotic obligation to pay taxes, which also serve as a source of cash for the government, which it uses to fund the construction of infrastructure and socioeconomic facilities as well as to increase industrial productivity. When a tax is distinguished from a government service charge (such paying a bridge toll), which is given directly to the individual, the requirement for the mandatory nature of taxes becomes more evident. On the other hand, although the majority of the definition of tax in earlier research has concentrated on mandatory payments to the government for the provision of common goods and services, little emphasis has been placed on the requirement that an individual must earn money or turn a profit from a business transaction to be obliged to pay taxes. Therefore, according to the author of this study, taxes are best described as a way for the government to raise money to fund its operations for the benefit of all citizens by requiring that a specific percentage of an individual's or business's income or profit be given to the government. The Nigerian government uses five distinct tax structures to conduct tax-related services, and these are the only tax structures included in this study. Petroleum profit tax (PPT), company income tax, capital gains tax, stamp duty, and value-added tax are some of the tax structures.

Obaje (2012) noted that capital gains may arise in two instances. First, where the asset appreciates while still in the owner's hands or maybe he realizes gains on the asset when it is sold or disposed of. Capital gains tax accrues on an actual year basis. It pertains to all gains accruing to a taxpayer, either individual or corporate, from the sale, lease, or other transfer of proprietary rights in a chargeable interest that is subject to capital gains tax (Ngu, 2020). Capital gains tax has the potential for optimum revenue yield in Nigeria, which can also lead to economic growth and development. Therefore, the main thrust of this research work is to determine the effect of capital gains tax on economic growth in Nigeria. One form of tax that has received recognition recently in Nigeria is stamp duty. Stamp duty is considered a viable source of revenue by the federal government in Nigeria (Solomon, 2014). The accumulated stamp duty revenue is used to meet recurrent expenditure. Tax occupies a unique position, because it is an important part of government policies. The ability of the government to generate revenue from this sector affects the services offered by

such a government (Ngu, 2020). The Stamp Duties Act requires that all written instruments, including instances where by property or interest in property is or are transferred or leased to any person, must be stamped. Generally, stamp duties are charged at the rate of 7.5% in Nigeria. Any written document that is not stamped is not allowed to be received in any judicial proceeding in Nigeria until the stamp duty and the resulting penalty for the non-payment of the stamp duty are paid (Adesanya, 2014). To this end, this study is set out to assess the effect value added tax (VAT), capital gains tax, company income tax, stamp duty tax, and PPT on Nigeria's economic growth.

LITERATURE REVIEW

Taxes are mandatory levies levied by the government on both private citizens and corporate entities, according to Adebao (2009). It is a payment in exchange for which the government does not provide a clear and definite "quid pro quo," and it is impossible to identify the indirect benefits that each individual taxpayer receives. According to Okwo (2011), taxes are mandatory payments made by individuals and business entities to the government to fund government spending that enhances the welfare of taxpayers and benefits the general public as a whole. To accomplish some of the country's economic and social objectives, Okpe (2017) states that taxes are the transfer of funds and resources from the private sector to the public sector. These economic objectives may take the shape of more government basic services in the areas of capital development, transportation, public health, education, and facility provision. Taiwo *et al.*, (2019) emphasized the following tax principles: Section 24 of the Federal Republic of Nigeria's 1999 constitution, which imposes the duty on all Nigerian residents to honestly report their income to the proper and legal authorities and to pay their taxes on time, makes the levy mandatory. People, earnings, properties, and transactions must all be subject to taxes. The basis for the taxation is whatever it is levied on. The constitution, state laws, tax-related laws, levies, rates, and other enabling legislation should serve as the foundation for and support for taxes. Taxes must also be equal and fair to all taxpayers, among other fundamental requirements. Put another way, you pay more the more you make, and vice versa. It must be straightforward for taxpayers, easy to pay, economical, and certain. Furthermore, it must be cost-effective because the administrative expenses must not exceed the money generated. The tax that is assessed to the taxpayer must be neutral and determinable by the taxpayer.

Roser (2021) defines economic growth as an increase in the quantity and quality of economic goods and services that a society produces. According to some academics like Amadeo (2021), economic growth is the rise in the value of an economy's goods and services, which boosts corporate profits and suggests a trend of rising per capita and national income. Stock prices increase as a result, providing businesses with the money they need to expand and recruit more staff. An increase in a nation's gross domestic product (GDP), which is the total monetary worth of the goods and services generated by the nation over a given time period, is typically a sign of economic growth (Ogbodo and Arinze, 2023). Therefore, economic growth can be defined as the process by which a country's actual national and per capita income (PCI) increases over a long period of time. According to Amadeo (2021), the increase in PCI is the best measure of economic growth since it demonstrates the improvement in the standard of life for the general population, which should also be reflected in the increase in the production of goods and services.

The work's theoretical foundation is centered on the endogenous growth theory. In contrast to the neoclassical growth theory, the Endogenous Growth Theory first appeared in the 1980s. According to the endogenous growth theory, internal factors rather than external ones are largely responsible for economic growth. According to the endogenous growth theory, economic progress is significantly influenced by investments in knowledge, innovation, and human capital. The idea also emphasizes how a knowledge-based economy will spur economic growth through positive externalities and spill-over effects. The endogenous growth theory essentially maintains that policy actions determine an economy's long-term growth rate. Because it aims to explain the process of long-term economic development through endogenous forces including information technology, knowledge spillover, and human capital, endogenous growth theory is pertinent to this subject. Policies that support openness, competition, change, and innovation will spur growth, according to the endogenous growth theory. On the other hand, policies that restrict or slow change by favoring or defending specific established industries or businesses are likely to eventually slow growth to the detriment of the community. Sustained economic growth is a constant process of ongoing change that occurs everywhere. This idea served as the foundation for this study since it focused more on how the wealthiest countries' economic advancements during the Industrial Revolution would not have been possible without the drastic changes brought about by various tax laws and reforms. Economies will eventually veer off the road of economic progress if they stop changing. The wealthiest nations in the world are the ones that most merit the moniker "developing," not the poorest. If they want to continue to prosper, they must participate in the never-ending process of economic expansion.

Empirically, Nigeria's economy and taxes were studied by Ezekwere *et al.*, (2022). The Federal Inland Revenue report and the CBN statistical bulletin served as the sources of secondary data for this ex-post-facto study design. The impact of taxes on Nigeria was examined using multiple linear regressions, and the hypotheses were tested using analysis of variance. According to the analysis's findings, taxes significantly boost Nigeria's economy's expansion. Based on these findings, the study suggests that the government should implement more appropriate tax system policy to enable a high percentage of tax revenue collection, which will open up more opportunities for the government to participate in the nation's infrastructure development and growth.

Ihenyen and Ogbise (2022) looked at the connection between Nigeria's tax income and economic expansion. The Microsoft Excel program was utilized to analyze the data using multiple linear regression analysis. Therefore, whereas customs excise and charges have a negative effect on Nigeria's economic growth, PPT, corporate income tax (CIT), and VAT have a favorable effect. Overall, there is a considerable correlation between tax revenue and Nigeria's economic growth. Ineffective tax administration is a sufficient loophole for tax evasion, taxpayer infractions are hurdles, and the utilization of generated tax money is a severe matter that demands special attention from policymakers. Income is lowered as a result. Specifically, the Tax Administration is only in charge of trustworthy individuals and qualified specialists; thus, it is best to fully inform everyone about the significance of taxes.

Nwachukwu *et al.,* (2022) investigated how taxes affected Nigeria's economic expansion. The study specifically looks at how Nigeria's economic growth is impacted by VAT. Examine the impact of the PPT on Nigeria's economic expansion. Determine the impact of CIT on Nigeria's economic expansion and assess the impact of personal income tax. An *ex post facto* research design was used in the study. The Ordinary Least Square (OLS), Augmented Dickey-Fuller Tests for Unit Roots, and descriptive statistics were among the econometric tools used to examine the data. Nigeria's GDP is positively and significantly impacted by VAT, PPT, personal income tax, and corporation income tax (CIT), according to the study's findings. Therefore, the analysis comes to the conclusion that taxes have a positive impact on Nigeria's GDP. It follows that a robust tax system is necessary for economic expansion and development, which will boost job creation, reduce poverty, improve manpower and skill development capability, foster growth, and support Nigeria's industrial development.

Iriabiji *et al.*, (2022) investigated the PPT's evaluation and its effect on Nigeria's economic expansion. The study's goal is to ascertain how the PPT affects national income, GDP, and PCI. The investigation was

conducted using an *ex post facto* design. The study uses a correlation matrix, descriptive analysis, and linear regression. The study's population consisted of the pertinent national economic statistics. According to the study's conclusions, PPT has little and detrimental effects on GDP, NI, and PCI.

Ezekwesili and Ezejiofor (2022) determined how tax revenue affected Nigeria's economic growth. Particular goals include figuring out how tax revenue affects Nigeria's inflation rate and how tax revenue affects the country's interest rate. A study design known as *ex post facto* was used. The Central Bank of Nigeria (CBN), the Statistical Bulletin, and the National Bureau of Statistics' (NBS) Annual Abstract of Statistics were the sources of the data. With the help of E-view 9.0, regression analysis forecasts a variable's value depending on the value of another variable and shows how changes in one variable's value affect the values of the other variables. The results show that, at the 5% level of significance, tax revenue has no discernible impact on Nigeria's interest rate or inflation rate.

Egolum and Celestine (2021) looked into how Nigeria's economic development was affected by value-added tax between 1994 and 2018. Using a time series research approach, they developed two hypotheses and gathered data for their study from the Joint Tax Board bulletin, the Federal Inland Revenue bulletin, and the CBN statistical bulletin for the relevant time period. With the use of the statistical program E-Views 9.0, they tested their assumptions using the Pearson coefficient of correlation and basic regression analysis. Their findings showed that, at the 5% significant level, VAT and economic development (as measured by GDP and total government revenue) have a positive and statistically significant association.

Nweze *et al*., (2021) determine how tax revenue affects Nigeria's PCI between 2000 and 2019. Time series data and an *ex post facto* research design were used in this study. The CBN, Federal Inland Revenue Service (FIRS), World Bank Statistical Bulletin, Statistical Bulletin, and NBS Annual Abstract of Statistics were the sources of secondary data. The study variables were analyzed using descriptive statistics, and the hypothesis was tested using OLS regression analysis. According to the report, tax revenue significantly raises Nigeria's PCI.

Joseph and Omodero (2020) investigated the connection between Nigeria's economic growth and government income. They employed secondary data from 1981 to 2018 that was gathered from the FIRS, NBS, and CBN statistical bulletins, as well as exploratory and *ex post facto* research designs. They used the OLS regression approach to assess the link. Their findings demonstrated a moderately positive correlation between economic growth and federally received revenue as well as VAT. Their analysis also demonstrated that to have a more positive impact on the economy, the government must develop pertinent revenue policies that will increase government revenue.

Onoja and Ibrahim (2020) looked into the connection between tax revenue and economic growth in Nigeria. PPT, VAT, and Companies Income Tax were utilized as stand-ins for tax revenue, while GDP was used as a stand-in for economic growth in their secondary data collection. They used the Stata computer program to analyze their data. Their research showed that whereas VAT and CIT (non-oil tax revenue) have a substantial association with Nigeria's economic growth, PPT (oil tax revenue) has a favorable but non-significant relationship with it.

Olaoye *et al*., (2019) examined how taxes affected Nigeria's economic growth between 2003 and 2017. They employed the Jarque-Bera Normality Test, the Eigenvalue Stability Condition Test, the Augmented Dickey-Fuller (ADF) unit root test, the Autoregressive Distributed Lag (ARDL) bounds test, and the Vector Error Correction Model (VECM). According to their findings, the long-term effects of companies' income tax, petroleum profit, and VAT on Nigeria's economic development are −0.225 (p=0.000), −0.0005 (p=0.699), and 0.211 (p=0.000), respectively.

Ideh (2019) used an *ex post facto* research approach using secondary time series data from 2003 to 2017 that were obtained from pertinent records of the relevant authorities to investigate the relationship between tax revenue components and the economic development of the Nigerian economy. VAT, PPT, Personal Income Tax, Company Income Tax, and Custom and Excise Duties were the tax revenue components that were studied. Real GDP and the Human Development Index (HDI) were used to gauge economic development. Along with other essential statistical tools, the (ARDL) approach was employed in the study to evaluate the data. The study's findings demonstrated that there are significant policy ramifications. The study specifically found that, although being a significant source of tax income, the PPT had a negative correlation with indicators of economic development, such as real GDP and HDI.

Ironkwe and Gbarakoro (2019) used annual time series data from the CBN Statistical Bulletin from 1990 to 2015 to examine the relationship between taxation and economic growth in Nigeria. They estimated the linear versions of CIT, VAT, and GDP using the OLS technique. Their findings demonstrated that, in the Nigerian context, the proposed relationship between company profit tax, VAT, and financial growth is unquestionably there.

Asaolu *et al*., (2018) investigated the connection between Nigeria's economic growth and tax revenue. A descriptive and historical research design was employed in the study. They made use of secondary data from 1994 to 2015, which was gathered from a variety of CBN annual reports and statistical bulletin releases. As to their findings, there was a substantial correlation between economic growth and VAT and CED ($p<0.05$), while there was a negative correlation between CIT and economic growth ($p<0.05$). In addition, their findings demonstrated that PPT and economic growth were not significantly correlated. They concluded by saying that taxes continue to be a powerful sociopolitical and economic instrument for achieving economic prosperity and that their contribution to the development of the nation cannot be replaced.

Okeke *et al*., (2018) used data from the CBN, Office of the FIRS, and Annual Abstract of Statistics of the NBS to investigate the connection between tax revenue and economic progress in Nigeria between 1994 and 2016. Their research was based on time series data. In their data analysis, they employed the following tests: Granger Causality, Multiple Linear Regression, Multicollinearity, Johansen Cointegration, ADF, and Error Correction Model. Their study's conclusions showed that, at the 5% level of significance, tax revenue in Nigeria is statistically significantly correlated with labor force participation, infant mortality, and gross fixed capital formation, respectively.

The determinants influencing tax income in Ethiopia were identified by Neway *et al*., (2018) using secondary data and a multiple variable regression model with the OLS technique. The time series data set for the years 1999/00 through 2015/16 was subjected to the quantitative research approach. The information gathered from relevant bodies was analyzed and presented using both descriptive statistics and econometric methods. The results showed that while the share of tax revenue to GDP from the agriculture sector and the annual rate of inflation had a significant negative impact on tax revenue, the share of tax revenue to GDP from the industry sector, PCI, and trade openness as indicated by the share of export and import to GDP had a significant positive impact.

Yahaya and Bakare (2018) assessed the impact of CIT and PPT on the expansion of the Nigerian economy. The model was estimated using the Fully Modified Least Squares Regression Technique over a 34-year period (1981–2014), and the Single Equation Co-integration Test and ADF Unit Root Test were performed. With an Adjusted R2 of 87.6%, it was discovered that the PPT and CIT significantly improve Nigeria's GDP, which in turn spurs growth in the country. The study indicated that PPT and CIT are key sources of revenue for the Nigerian economy and contribute to its growth. Based on these results, the study suggested

that the government should invest in the provision of infrastructure facilities to transparently and prudently account for the money it receives from the PPT. In addition, FIRS should appropriately monitor business operations to maximize the collection of taxes that must be paid to the government as CIT. The government should wisely employ the money it receives from PPT and CIT to boost the economy.

Given that Nigeria's economy is typically characterized by low tax compliance and enforcement, Adeyemi and Disu (2018) examined current difficulties with CIT policies in Nigeria. Given the clever ways corporate taxpayers sabotage the revenue-generating process by failing to pay what is owed to the government, it is undeniable that tax enforcement has emerged as a crucial component of tax administration. To increase the GDP, the study examined current tax relief and incentive provisions that apply to corporate entities to encourage voluntary compliance. It also offered suggestions for improving the CIT culture and the successful implementation of the voluntary assets and income declaration scheme.

Afolabi (2017) used secondary data from the CBN to investigate the effects of taxes, VAT, PPT, and company income tax on the expansion of the Nigerian economy. The study's goals were accomplished through the use of canonical co-integrating regression. The study's regression analysis showed that taxes and economic growth in Nigeria were positively correlated. According to the study's findings, taxes have a major impact on Nigeria's economic growth.

Onakoya and Afintinni's (2016) study looked at the connection between tax income and economic expansion in Nigeria from 1980 to 2013. They used the ADF approach to perform a number of preliminary tests, such as trend analysis, descriptive statistics, and stationary testing. To ascertain whether there was a long-term link between the variables, they also employed the Engle-Granger Co-integration test. The long-term association and short-term dynamics between the variables were confirmed using the VECM, and the robustness of their model was confirmed using two post-estimation diagnostic tests (autocorrelation and heteroscedasticity). Their research demonstrated that taxes and economic growth in Nigeria have a long-term (but not a short-term) link. Furthermore, at the 5% level of significance, their results indicated a strong positive link between PPT, CIT, and economic growth but a negative correlation between customs excise taxes and economic growth. Nevertheless, the total impact of the tax elements on Nigeria's economic expansion is minimal.

METHODS

The effect of tax structure on economic growth in Nigeria was investigated using a time series *ex post facto* study design spanning 1999–2023. The pertinent information was gathered from the Bureau of National Statistics, FIRS, and CBN. PPT, CIT, VAT, capital gain tax, and stamp duty tax (SDT) are the independent variables (tax structure) in the data, while the GDP growth rate is the dependent variable (economic growth). To accomplish its goal, this study used the ARDL regression analysis technique.

The econometric model of the study was adopted and modified from the study of Amughoro (2021). The original model is stated as thus:

$$GDP_{it} = \alpha_0 + \beta_1 PIT_{it} + \beta_2 CIT_{it} + \beta_3 VAT_{it} + \varepsilon_{it} \quad 3.1$$

Where:
GDP=Gross domestic product
PIT=Personal income tax
CIT=Company income tax
VAT=Value added tax.

The modified model for this study is stated as follows:

$$RGDP_{it} = \alpha_0 + \beta_1 PPT_{it} + \beta_2 CIT_{it} + \beta_3 VAT_{it} + \beta_4 CGT_{it} + \beta_5 SDT_{it} + \varepsilon_{it} \quad 3.2$$

Where:
RGDP=Real gross domestic product growth
PPT=Petroleum profit tax
CIT=Company income tax
VAT=Value added tax
CGT=Capital gain tax
SDT=Stamp duty tax
μ_t=Error term
t=Time.
i=lag(s) being considered:
β_1-β_5=Coefficient of the independent variables
βo=Coefficient of the constant
A priori expectation; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$

ANALYSIS AND DISCUSSION OF FINDINGS

The data set's mean, median, maximum, standard deviation, skewness, kurtosis, Jarque-Bera, p-value, and number of observations were all captured by the descriptive properties of the data. According to Table 1's descriptive features of the data common sample, the mean values for RGDP, PPT, CIT, VAT, CGT, and SDT were 51081.48, 3329.804, 16051.64, 22.09913, 624.3365, and 15.98435, respectively. The sample data's medians for RGDP, PPT, CIT, VAT, CGT, and SDT are 54612.26, 3383.650, 933.5400, 16.80000, 580.6000, and 5.900000, respectively. 72393.67 and 22449.41 for RGDP, 5404.770 and 1157.810 for PPT, 347810.1 and 114.1900 for CIT, 99.40000 and 2.270000 for VAT, 2071.000 and 6.480000 for CGT, and 121.0000 and 1.310000 for SDT are the highest and lowest figures, respectively. For RGDP, PPT, CIT, VAT, CGT, and SDT, the standard deviations are 17561.39, 1344.341, 72324.97, 22.46607, 516.8847, and 33.28514, respectively. The positive values of the skewness statistic demonstrated that the standard deviation variables were positively skewed toward normality with the exception of RGDP and PPT. Because the p-values of the Jarque-Bera statistics have a 5% level of significance, the Jarque-Bera indicates that all of the variables are normally distributecd.

The study applied the ADF test for the check of stationarity. The test for stationarity was performed at the level and first difference and in one set: intercept. The result at the level form in Table 2 shows that it is only valued added tax that achieved stationarity, while other variables have no unit root. We are not amazed on this output, because the majority of time series data are not always stationary at the level form. However, in Table 3, all of the variables are stationary at first difference.

We found that the variables have mixed order of integration, thus the application of the long run relationship using the ARDL. Table 4 provides specifics of the ARDL long-term relationship's outcome. According to the ARDL results, there is no long-run relationship between tax structure and economic growth in Nigeria. This claim is supported by the fact that, at a 5% significance level, the f-statistic value of 2.363376 is smaller than the upper and lower bound tests of 3.79 and 2.62, respectively.

The short-run relationship in Table 5 unveils that there is a positive relationship between PPT (significant), company income tax (significant), stamp duty (insignificant), and economic growth in Nigeria, while a statistical negative relationship exists between VAT, capital gain tax, and economic growth. When tax structure: PPT, company income tax, VAT, capital gain tax, and stamp duty are held at the same magnitude, the real GDP in Nigeria would depreciate by N9,567.197 billion, though insignificant in direction. A percentage increase in PPT (significant), company income tax (significant), and stamp duty (insignificant) leads to 156.62%, 2.28%, and 351.67% appreciation in real GDP. On the contrary, a unit rise in VAT and capital gain tax significantly depreciates real GDP by 3,871.61% and 756.90%, respectively. An analysis of the adjusted R-square shows that variations in tax structure: PPT, company income tax, VAT, capital gain tax, and stamp duty accounted for about 99.76% of changes in economic growth. This is statistically significant according to the F-statistic

Table 1: Data descriptive features

Variables	RGDP	PPT	CIT	VAT	CGT	SDT
Mean	51081.48	3329.804	16051.64	22.09913	624.3365	15.98435
Median	54612.26	3383.650	933.5400	16.80000	580.6000	5.900000
Maximum	72393.67	5404.770	347810.1	99.40000	2071.000	121.0000
Minimum	22449.41	1157.810	114.1900	2.270000	6.480000	1.310000
Std. Dev.	17561.39	1344.341	72324.97	22.46607	516.8847	33.28514
Skewness	−0.290094	−0.108459	4.476370	1.901028	1.021298	2.845920
Kurtosis	1.589682	1.746350	21.04063	7.043109	3.872406	9.283546
Jarque-Bera	10.22871	14.55124	388.7152	29.51892	7.727739	68.88500
Probability	0.000126	0.000417	0.000000	0.000000	0.044056	0.000000
Sum	1174874.	76585.50	369187.8	508.2800	14359.74	367.6400
Sum Sq. Dev.	6.78E+09	39759541	1.15E+11	11103.94	5877736.	24373.81
Observations	23	23	23	23	23	23

Source: E-views 12.0 version data output. RGDP: Real gross domestic product growth, PPT: Petroleum profit tax, CIT: Company income tax, VAT: Value added tax, CGT: Capital gain tax, SDT: Stamp duty tax

Table 2: Result of ADF test at level form

Variables	ADF statistic	p-value	Critical value @ 1%	Critical value @ 5%	Order of integration
RGDP	−1.901642	0.3255	−3.769597	−3.004861	Not integrated
PPT	−0.809043	0.7967	−3.769597	−3.004861	Not integrated
CIT	0.326736	0.9743	−3.769597	−3.004861	Not integrated
VAT	−3.759669	0.0102	−3.769597	−3.004861	Integrated @ 1 (0)
CGT	1.607649	0.9990	−3.769597	−3.004861	Not Integrated
SDT	1.844420	0.9995	−3.769597	−3.004861	Not Integrated

Source: E-views 12.0 version data output
Note: The optimal lag for ADF test is selected based on the Akaike Info Criteria, p values are in parentheses where (*) and (**) denote significance at 1% and 5%, respectively. RGDP: Real gross domestic product growth, PPT: Petroleum profit tax, CIT: Company income tax, VAT: Value added tax, CGT: Capital gain tax, SDT: Stamp duty tax, ADF: Augmented Dickey-Fuller

Table 3: Result of ADF test at first difference

Variables	ADF statistic	p-value	Critical value @ 1%	Critical value @ 5%	Order of integration
RGDP	−4.312236	0.0040	−3.857386	−3.040391	Integrated @ 1 (2)
PPT	−4.404631	0.0026	−3.788030	−3.012363	Integrated @ 1 (1)
CIT	−4.385481	0.0039	−3.788030	−3.012363	Integrated @ 1 (1)
VAT	−7.235417	0.0000	−3.788030	−3.012363	Integrated @ 1 (1)
CGT	−2.956239	0.0500	−3.808546	−3.020686	Integrated @ 1 (2)
SDT	−3.316413	0.0304	−3.788030	−3.012363	Integrated @ 1 (1)

Source: E-views 12.0 version data output
Note: The optimal lag for ADF test is selected based on the Akaike Info Criteria (AIC), *P* values are in parentheses where (*) and (**) denote significance at 1% and 5%, respectively. RGDP: Real gross domestic product growth, PPT: Petroleum profit tax, CIT: Company income tax, VAT: Value added tax, CGT: Capital gain tax, SDT: Stamp duty tax, ADF: Augmented Dickey-Fuller

Table 4: ARDL bound test

T-Test	5% critical value bound		Remark
F-statistic	Lower bound	Upper bound	
2.363376	2.62	3.79	Null hypothesis accepted

Source: E-views 12.0 version data output. ARDL: Autoregressive distributed lag

(1472) and p-value (0.00). The estimated model does not contain any autocorrelation, as indicated by the Durbin-Watson coefficient of 2.0.

Reminiscence to the diagnostic test in time-series investigations in Table 6, serial correlation happens when the mistakes related to a particular time period persist throughout subsequent time periods. Serial correlation has an impact on the ARDL estimator's efficiency but has no effect on its objectivity or consistency. The ARDL estimations of the standard errors will be less than the actual standard errors when there is positive serial correlation. Consequently, it will be concluded that the estimates of the parameters are more accurate than they actually are. The LM Test results for serial correlation show a p=0.7234, which is not statistically significant at the 5% level; as a result, the model does not contain serial correlation. Second, because heteroscedasticity increases the variances of the coefficient estimates, which the least squares estimators are unable to detect, the presence of heteroscedasticity tends to result in p-values that are suboptimal. According to the regression's outcome, the White's test yielded a probability value of 0.3971. Due to high p-values that are statistically insignificant at the 5% level, this result shows that the assumption of homoscedasticity has not been broken. Finally, the Ramsey Reset Specification test which essence is detecting misspecification in a regression model was conducted. It was revealed that the functional form of the model was correctly specified and no variable was deliberately omitted in the regression model as the p=0.3689 is insignificant at a 5% significance level.

The relative contributions of PPT, company income tax, VAT, capital gain tax, and stamp duty to real GDP were evaluated using the variance decomposition. VAT has a bigger effect on changes in real GDP, as Table 7 shows. Company income tax comes in second, followed by capital gain tax and PPT, with SDT coming in last. However, the

volatility in the actual GDP was better explained by variations in the real GDP itself.

Table 5: ARDL short-run regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP(−1)	1.239430	0.113742	10.89685	0.0000
PPT	1.566171	0.853070	1.835923	0.0463
CIT	0.022836	0.005529	4.130057	0.0009
VAT	−38.71610	9.706628	−3.988625	0.0012
CGT	−7.569001	3.066459	−2.468320	0.0261
SDT	3.516754	17.36787	0.202486	0.8423
C	−9567.197	7114.598	−1.344728	0.1987
R-squared	0.998305	Mean dependent var		52382.94
Adjusted R-squared	0.997627	S.D. dependent var		16801.07
S.E. of regression	818.4959	Akaike info criterion		16.50619
Sum squared resid	10049034	Schwarz criterion		16.85334
Log likelihood	-174.5680	Hannan-Quinn criterion		16.58796
F-statistic	1472.217	Durbin-Watson stat		2.078130
Prob (F-statistic)	0.000000			

Source: E-views 12.0 version data output. RGDP: Real gross domestic product growth, PPT: Petroleum profit tax, CIT: Company income tax, VAT: Value added tax, CGT: Capital gain tax, SDT: Stamp duty tax

Table 6: Diagnostic tests

Model estimated serial correlation LM test	F-statistic	Prob.
RGDP←PPT+CIT+VAT+CGT+SDT	0.437760	0.6547
Heteroskedasticity test		
RGDP←PPT+CIT+VAT+CGT+SDT	0.541651	0.7688
Ramsey reset specification		
RGDP←PPT+CIT+VAT+CGT+SDT	1.047463	0.3235

Source: E-views 12.0 version data output. RGDP: Real gross domestic product growth, PPT: Petroleum profit tax, CIT: Company income tax, VAT: Value added tax, CGT: Capital gain tax, SDT: Stamp duty tax

The real GDP variance resulting from a unit change in PPT, CIT, VAT, capital gain tax, and stamp duty was determined using the impulse response function technique. Table 8 displays the findings. Real GDP was found to be negatively impacted in the medium and long term by any shock to the PPT, company income tax, and value-added tax (see periods 6 and 10). On the other hand, real GDP benefits from any shock to capital gains tax and stamp duty over the medium and long terms (see periods 6 and 10).

Discussion of findings

Taxation as a tool for economic development has been the subject of numerous studies using a variety of methodologies in various nations. The FIRS is leading Nigeria's tax reform efforts, which aim to increase revenue collection, encourage voluntary and willing compliance, and end the long-standing, vexing fear that exists between people and tax collectors. For the time period under investigation, this study provides evidence that the PPT significantly boosts Nigeria's economic growth. Our results are consistent with those of Ezekwere *et al*., (2022) and Ihenyen and Ogbise (2022), who examined the connection between Nigeria's PPT and economic growth and came to the conclusion that there was a substantial positive correlation. In addition, Nwachukwu *et al*., (2022), Iriabiji *et al*., (2022), and Ezekwesili and Ezejiofor (2022) reported that the PPT had a considerable positive impact on Nigeria's economic growth. However, we disagree with research by Joseph and Omodero (2020) and Nweze *et al*., (2021), which showed no correlation between economic growth and the tax on petroleum profits. From a realistic perspective, this study specifically demonstrates how heavily the Nigerian economy depends on oil for growth. In addition, the results indicate that during the study period, CIT had a significant positive effect on Nigeria's economic growth. This result is thought to be in line with Alexander *et al*., (2019) who found a strong positive correlation between company income tax and growth of the Nigerian economy. The results, however, are in conflict with Onoja and Ibrahim's (2020) related study. In addition, we discover that during the study period, Nigeria's economic growth was significantly hampered by capital gains tax. This result contrasts with that of Olaoye *et al*., (2019), who point

Table 7: Variance decomposition of RGDP

Period	S.E.	RGDP	PPT	CIT	VAT	CGT	SDT
1	895.6146	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	1791.787	80.83426	0.020635	1.751575	13.37166	3.882694	0.139174
3	9024.046	3.561386	2.359160	13.75940	70.90932	6.116442	3.294287
4	15905.12	1.159972	20.90565	14.33423	59.42736	1.969609	2.203183
5	148922.8	3.825907	0.357071	10.47887	74.71715	7.639308	2.981695
6	269806.9	1.531773	19.60694	11.53453	62.40875	2.328817	2.589195
7	2214913.	3.844698	0.427138	10.61181	74.83305	7.315406	2.967904
8	4369822.	1.070673	15.98981	11.91782	66.21060	2.056530	2.754570
9	32815181	3.582675	0.542913	10.77608	75.14656	6.963067	2.988706
10	70684571	0.772171	13.12035	12.17051	69.03205	2.043138	2.861781

Source: E-views 12.0 version data output. RGDP: Real gross domestic product growth, PPT: Petroleum profit tax, CIT: Company income tax, VAT: Value added tax, CGT: Capital gain tax, SDT: Stamp duty tax

Table 8: Impulse response function of RGDP

Period	RGDP	PPT	CIT	VAT	CGT	SDT
1	895.6146	0.000000	0.000000	0.000000	0.000000	0.000000
2	1339.051	25.73879	−237.1378	−655.2077	353.0636	66.84434
3	−552.2444	1385.815	3338.939	7570.639	−2203.673	−1636.515
4	−185.0890	−7138.941	−5005.692	−9622.433	−41.82179	1700.236
5	−29078.77	5128.901	47830.32	128142.2	−41100.64	−25606.77
6	−16326.56	−119137.8	−77927.16	−169882.8	1017.351	34979.19
7	−433012.4	81741.61	715682.6	1904143	−597651.2	−379098.7
8	−125832.8	−1741366	−1324821	−2995322	183900.3	616760.9
9	−6194763	1671220	10666067	28223432	−8636441	−5626498
10	22322.44	−25488955	−22181872	−51379461	5205828	10526155

Source: E-views 12.0 version data output. RGDP: Real gross domestic product growth, PPT: Petroleum profit tax, CIT: Company income tax, VAT: Value added tax, CGT: Capital gain tax, SDT: Stamp duty tax

out that developing nations like Nigeria have a greater probability of profiting from capital gains tax because of unavoidable price increases, business earnings, and share value, all of which are intended to advance the economy.

In line with our research, VAT was found to have significantly hampered Nigeria's economic growth over the studied time. This finding is consistent with the ideas of Ideh (2019) who emphasize that meddling with economic policies for political aims can cause economic performance which will be different from predicted. This result, however, contradicts earlier research by Ironkwe and Gbarakoro (2019) and Asaolu *et al*., (2018), which found that VAT is not a substantial source of revenue. This result runs counter to earlier similar findings by Okeke *et al*., (2018), who noted that the implementation of VAT seems to be a crucial instrument for tax collection and revenue ratio growth. In addition, the stamp duty variable's results indicate a substantial positive effect on Nigeria's economic growth. This result is not consistent with the assertion made by Ezekwere *et al*., (2022) that stamp duty continues to be a potent socio-political and economic instrument for economic growth and national well-being. Despite being a global concern, tax leakage issues appear to be widespread when compared to the incidence of corrupt practices. Since taxes are a significant source of funding for the government, their theoretical equity is largely lost if people are able to evade them in legal or illegal ways. As a result, tax evasion and avoidance significantly reduce the government's ability to promote economic growth. The findings contradict those of Joseph and Omodero (2020) and Nweze *et al*., (2021), but they are consistent with those of Nwachukwu *et al*., (2022), Iriabiji *et al*., (2022), and Ezekwesili and Ezejiofor (2022).

CONCLUSION AND POLICY IMPLICATIONS

Nigeria receives two forms of tax revenue: non-oil tax revenue and oil tax revenue. Oil tax revenues are the money collected from taxes on the profits and income of Nigerian companies that produce oil. These consist of PPT and royalties from economic rent related to oil exploitation. In contrast, non-oil tax income originates from sources other than activities related to oil. Among these are stamp duty, value-added tax, company income tax, personal income tax, capital gain tax, and excise and customs taxes. Over the years, the Nigerian government's primary source of funding has been oil revenue. The government has contributed more than half of its annual revenue, up to 85%, to ignore non-oil. The amount of government programs has fluctuated due to the unpredictable nature of oil revenue, notwithstanding its size. Therefore, this research finds that although increased PPT revenue promotes economic growth, during the study period, Nigeria's economic growth was surprisingly hampered by increased capital gain tax revenue, VAT revenue, SDT revenue, and business income tax revenue.

To close the gaps in tax evasion and avoidance, the FIRS, which is in charge of collecting taxes owed to the Nigerian federal government, should completely restructure its tax administration apparatus. This action will significantly enhance Nigeria's CIT administration performance. Because of the VAT variable's results, the authors suggest not only reducing tax rates but also implementing a shift to creative development strategies that will support more robust and steady economic growth. Innovations are now crucial to preserving economic affordability, improving living standards, and promoting societal well-being. Therefore, an efficient national legislation and framework for supporting commercial activity should be given top priority by the Nigerian government to guarantee successful creative development. The application of tax rate reductions – a strategy to attract investors or economic activity will raise disposable income, which will raise the capital gains tax. The government should fortify public institutions and make large investments that can be utilized as a source of domestic income from a variety of commercial endeavors to increase stamp duty revenue.

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