Tax Revenue Influences and Capital Expenditure in Nigeria

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ABSTRACT

The study examined the effects of Tax Revenue Influences on Capital Expenditure in Nigeria. The study adopted the ex-post facto research design as data collected were sourced from relevant publications of the Central Bank of Nigeria statistical bulletins, FIRS and National Bureau of Statistics. The independent variable for the study is Oil Tax Revenue and Non-oil Tax Revenue, while the dependent variable is Capital Expenditure. The data were analyzed using descriptive statistics and fully modified ordinary least square method in form of multiple regression technique. However, the results of the descriptive analysis showed significant variations of value of performance indices. The result of the regression analysis showed the positive effect of Direct Oil Tax Revenue (OTR) and Non-Oil Taxes (NTR) on Capital Expenditure (CE) in Nigeria. At 1% level of significance, independent variable has significant and positive impact on dependent variable. The significant of these discoveries is essential for policy makers in adopting a smart tax policy that priorities the development of the economy. However, the study recommended that government shoul cutdown its expenditure and channel its revenue towards growth of the economy and also should be encouraged to identify and address challenges in tax revenue utilizations.

INTRODUCTION

Background to the Study

Corruption, indiscipline, and lack of accountability are prevalent in our society, especially in developing countries, leading to a decline in growth and development. Taxation, a primary government revenue source globally, is utilized to fulfill traditional functions such as providing goods, maintaining law and order, defending against external aggression, and regulating trade for social and economic stability (Edame & Okoi, 2014). A well-designed tax system serves as a crucial tool for mobilizing a nation's internal resources, fostering an environment conducive to economic growth (Ayuba, 2014). Therefore, taxes play a significant role in helping a country meet its needs and promoting self-reliance. The obligation for tax payments is a globally significant phenomenon affecting every economy, regardless of national differences (Osho, Omotayo & Ayorinde, 2018). Government decisions regarding the level of taxation, items to be taxed, and the timing of payments are based on the intended projects or programs, serving as the primary determinants of the budget size. This, in turn, influences government expenditure, business productivity, individual consumption patterns, propensity to save and invest, and the overall economic growth trajectory (Al-Yousif, 2017).

Nigerian Tax System has recently undergone significant changes, with a focus on reviewing and simplifying tax laws by eliminating obsolete provisions. In the current legal framework, tax revenue enforcement is distributed among the three tiers of government: Federal, State, and Local Governments, each with defined roles in the Taxes and Levies Act of 1998. The primary purpose of tax revenue is to generate funds for the welfare of the nation's people, emphasizing economic growth and development through the provision of essential amenities and improved public services. Tax revenue plays a vital role in fostering economic activities and development, ensuring resources are directed towards crucial societal projects and providing support to vulnerable populations. Vincent (2001) further explores the link between tax structure and economic development, distinguishing between the early period of underdevelopment and the later stage of a developed economy.

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During the early period, direct taxes had limited use due to the predominantly rural population engaged in subsistence agriculture, making income estimation challenging and tax assessment prone to wide margins of error. In contemporary Nigeria, a crucial challenge for tax administration is to enhance professionalism, accountability, and public awareness regarding the imperatives and benefits of tax revenue in promoting economic activity, facilitating savings and investment, and generating a strategic competitive advantage. Failure to address these challenges may necessitate a reform in the tax regime and administration. Mobilizing tax revenue for financing development in Nigeria encounters difficulties due to resistance, evasion, avoidance, and corrupt practices, which are considered detrimental to the economy and cited as reasons for the country's underdevelopment (Adegbie, F. F., Nwaobia, A. N., & Osinowo, O. O. (2020).

Statement of the Problem

Scholars hold diverse views on the contribution of tax revenue to the economic growth of nations, creating a lack of consensus. Despite the emergence of oil as a major tax revenue source, including personal income tax and company income tax, intended to address economic issues and enhance government expenditure for social infrastructure provision, Nigeria's physical state remains backward. The oil boom era led to laxity in overseeing non-oil revenue sources like company income tax, personal income tax, value-added tax, capital gains tax, customs, and excise duties (Olatunji, O. C., & Oluwatoyin, A. E. (2019). This research aims to examine the unresolved problems of low tax revenue in Nigeria and its impact on capital expenditure, contributing to addressing inadequacies in tax revenue administration that have hindered significant economic growth and development.

Gwa, D. P., & Kase, J. (2018) examined the contribution of tax revenue on the economic growth of Nigeria. Craig, Adetola, & Maminu, (2020). Tax Revenue and Capital Expenditure in Nigeria. have been carried out on this subject to examine different aspects on how the tax revenue generated by the government in an economy can be used to run the affairs of the economy. Most of the research work done by most of these researchers have not been able to address all the problems relating to tax revenue generated by government such as multiplicity of taxes, non-availability of database, and non-payment of tax refunds. It is in the light of the above that this study attempts to evaluate the extent to which tax revenue generated by government in an economy.

Objectives of the Study

The main focus of this study is to assess how tax revenue influences capital expenditure in Nigeria. The specific objectives is as follow:

1. Assessing the impact of Oil Tax Revenue on Capital Expenditure in Nigeria.
2. Exploring the influence of Non-oil Tax Revenue on Capital Expenditure in Nigeria.

Research Questions

The inquiries align with the study's objectives:

1. Assessing the influence of Oil Tax Revenue on Capital Expenditure in Nigeria.
2. Examining the extent to which Non-oil Tax Revenue affects Capital Expenditure in Nigeria.

Statement Of Hypotheses

In the course of the study, the following hypotheses were tested:

Hypothesis 1

H0: Oil Tax Revenue has no significant impact on capital expenditure in Nigeria.

H1: Oil Tax Revenue has a significant impact on capital expenditure in Nigeria.

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Hypothesis 2

H0: Non-oil Tax Revenue has no significant effect on capital expenditure in Nigeria.

H1: Non-oil Tax Revenue) has a significant effect on capital expenditure in Nigeria.

Scope of the Study

This study investigates the relationship between tax revenue and capital expenditure in Nigeria from 2000 to 2022, focusing on Capital Expenditure (CE), Oil Tax Revenue (OTR), and Non-oil Tax Revenue (NTR).

Conceptual Review

Tax Revenue

Samuel, S. E., & Tyokoso, G. (2014) succinctly define taxation as a crucial source of income for the government, utilized to finance public utilities and fulfill various social responsibilities. Coutinho, M. C. (2001) emphasizes that taxation stands as the primary revenue source for modern governments, typically constituting ninety percent or more of their income. Taxation is identified as the nexus between the state and its citizens, with tax revenues serving as the lifeblood of the social contract. The act of taxation is noted to have profound and beneficial effects, fostering better and more accountable government, as highlighted by the Tax Justice Network (TJNS) in 2012.

Types of Taxes

Direct Tax

1. A tax is considered direct when the individual assessed, i.e., the one who pays the tax, is also the one who bears the burden of the tax. It is a levy directly imposed on the person expected to fulfill the tax obligation. The taxpayer receives not only advice through notification but also an official receipt, as noted by Ojo, L. O. (2020). These formalities aim to make the taxpayer aware of the incidence of such tax. Direct tax is particularly associated with profit or income tax, where the burden falls on the person making the tax payment.
2. **Petroleum Profit Tax (PPT):** The petroleum profit tax is applicable to any resident company or an individual in charge of a non-resident company engaged in petroleum exploration or production. This also encompasses any liquidator, receiver, or agent of a liquidator or receiver of any company conducting petroleum operations in Nigeria, with the tax rate set at 85%.
3. **Personal Income Tax (PIT):** Individuals receiving income through employment fulfill their personal income tax obligations through the Pay As You Earn (PAYE) system. Under PAYE, employers deduct personal income tax from their employees' salaries and directly remit it to the Federal Inland Revenue Service (FIRS) through a designated bank on behalf of the employee. This process occurs on a monthly basis, with the tax rate set at 10%.
4. **Educational Tax (EDT):** Educational tax is included in the annual self-assessment of companies' income tax, and it is submitted to a designated bank at a rate of 2%.
5. **National Information Technology Development Fund (Nitdf) Levy:** All the companies in Nigeria, who are operating as GSM provider or Telecommunication Company, Cyber Company or internet service provider, bank, insurance etc. and hasannual turnover of N100, 000,000.00 and above are liable to NITDF levy. The levy is paid through the designated bank at which the chargeable companies pay their companies income tax. How to pay the NITDF Levy as part of its company’s income Tax returns, a company shall compute 1% of the profit before tax of each year of assessment. The tax due shall then be paid to FIRS through the designated bank.

Indirect Tax

1. Ojo, L. O. (2020) explains that indirect tax is borne by someone other than the person from whom the tax is collected. It is imposed on the manufacturer but covered by the consumer. The ability to transfer

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the tax burden depends on the elasticity of demand for the goods or services subjected to the tax. If the demand is elastic, the burden of the tax can be shifted, but if the demand is entirely inelastic, then the burden remains 100%. The taxpayer is not notified and may not have knowledge of such a levy. Valued Added Tax (Vat): Any person or individual, corporate sole, an organization that consumes or buys any taxable product or services will have to pay valued added tax or VAT at the rate of 5%.

2. Custom Duties (CD): A tax levied on imports (and, sometimes on exports) by the custom authorities of a country to raise revenue or to protect domestic industries from being more efficient.
3. Agricultural Income Tax (AIT): There are two broad types of agricultural taxation in developing countries, namely explicit and implicit taxes.

Tax Revenue and Development of the Nigerian Economy

(Obi, 2018) looked at how tax revenue affected the development of the nation's infrastructure between 1980 and 2007 to analyze how much the economy of Nigeria grew during that time. According to their findings, the gross domestic product and infrastructure development have direct and indirect links to tax income (GDP). According to the authors, GDP, foreign direct investment, and infrastructure development are the three main ways tax revenue influences Nigeria's economic growth. The availability of infrastructure, they emphasized, encourages investment, which results in economic growth. In their 2013 study, Bukie and Adejumo regressed economic growth variables (domestic investment, labour force, and foreign direct investment) on tax revenue to look at the impact of tax revenue on economic growth in Nigeria from 1970 to 2011. The outcome reveals a strong positive correlation between the measures and Nigeria's economic expansion.

Value Added Tax (VAT) was the only factor that (Amah & Nwaiwu, 2018) looked at when analyzing the development of the Lagos State Economy between 2001 and 2005. Each development indicator (infrastructure, environmental management, education sector, youth and social welfare, agricultural, healthcare, and transportation) in the study was regressed on the VAT income profits Lagos State produced. They concluded that during the study period, the VAT money collected had a beneficial impact on the growth of the corresponding sectors of the economy in Lagos State.

Using time series data on the GDP, VAT Revenue, Total Tax Revenue, and the Total Revenue of the Federal Government (Odu, 2022) expanded the study by examining the impact of VAT revenue on the economic growth of Nigeria from 1994 to 2008. The study's findings were consistent with those of (Adegbite, 2019), who found a strong and positive association between Nigeria's GDP and VAT revenue. (Oluyombo & Olayinka, 2018) Looked into the effects of the Petroleum Profit Tax on Nigeria's economic growth from 2000 to 2010. Their research demonstrates that the tax on petroleum profits tax has a statistically significant positive influence on Nigeria's GDP. On the economic development that was under discussion, they neglected to report.

However, the writers were concerned that the vast sums of money obtained from oil revenue and petroleum profit tax did not contribute to Nigeria's economic growth. They contend that the acceleration of economic growth has not reflected Nigeria's overall economic development. Gross Domestic Product (GDP) data for the years 1981 to 2007 were used by (Ekeocha et al., 2012) to evaluate the connection between federally generated income and economic development in Nigeria. The study's findings indicated a strong positive correlation between income tax revenue and Nigeria's economic growth. (Ogechukwu & Uche, 2016) Focused on the connection between Company Income Tax and the Development of the Nigerian Economy. Their conclusion based on the finding was that there is a significant association between company income tax and the economic development of Nigeria.

For the sake of making government policy decisions, we think it is essential that timely information be available. Additionally, to study the connection between tax revenue and Nigeria's economic progress, authors employed the Gross Domestic Product (GDP), which is not a reliable indicator of people's overall well-being. Our study extended the study period to 2014. It used the Human Development Index (HDI) rather than the GDP to determine the impact of tax income on Nigeria's economic development (Arowoshegbe, Emmanuel, & Osasere, 2017).

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Capital Expenditure

Adegbie, Nwaobia, & Osinowo (2020) explained that Government expenditure majorly comprise capital, and recurrent forms of expenditure. This very essential instrument of fiscal strategy is the totality of funds expended by a government to provide or meet collective needs or public goods. These public needs involve major government spending on social, economic, environmental, administrative, defense, national debts services etc. Funds for these services are met through government revenue and/or public debts, grants, aids, among others. Furthermore, public expenditure is anticipated to depict principle or canon of maximum social benefit, economy, elasticity, sanction, surplus etc. Thus, principally, government expenditure should drive economy, although confounding submissions exist.

Oil Tax Revenue

Oil and non-oil tax revenue are the two main types of tax revenue that a country like Nigeria collects. Petroleum profit tax (PPT), royalty, and gas tax are all included in the oil tax revenue.

As a country with abundant natural resources like oil, Nigeria imposes taxes on companies that extract and sell it for profit. The revenue generated from this tax is then utilized by the government to fund various projects and programs such as infrastructure improvements, healthcare, education, and other essential initiatives.

Nigeria's economy heavily relies on its oil industry for income, making the revenue generated from oil taxation an integral part of their economic stability. However, it's crucial to note that fluctuations in global oil prices can significantly impact how much money Nigeria earns from this source of revenue.

Non-oil Tax Revenue

Non-oil tax revenue in Nigeria refers to the money that the Nigerian government collects from sources other than the country's oil industry. This includes taxes on goods and services, such as Value Added Tax (VAT), corporate income tax, personal income tax, customs duties, and excise duties. These revenues are important for funding government programs and services like healthcare, education, infrastructure development, and security (Adegbite, 2019).

By implementing effective measures to increase this type of revenue while balancing the impact on citizens, Nigeria can achieve sustainable economic growth and development goals (Edame & Okoi, 2014).

Theoretical Review

Theories have been formulated with regards to tax revenue on capital expenditure. These theories are discussed below.

Socio Political Theory of Taxation

Chigbu, E. E. (2016). affirmed this reasoning justifies the imposition of taxes for financing state activities and for the provision of a basis for apportioning the tax burden between members of society. They advocated that, advocates for a tax system which is not designed to serve individuals but one that cures the ills of the society. The society is made up of individuals but is more than the sum of its individual members; consequently, the tax system should be directed towards the health of the society, since individuals are integral part of the broader society (Chigbu, E. E. (2016).

Benefits-received Theory

According to Chigbu, E. E. (2016), this theory assumes an exchange or contractual relationship between the state and the taxpayers, certain goods and services are provided by the state and the cost of such goods and services are contributed in the proportion of the received benefits, thus, the benefits received present the basis

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for distributing the tax burden in specific manner. This theory overlooks the possible use of the tax policy for bringing about economic growth or stabilization. They also see the cost-of-service theory as very similar to the benefits-received theory. The theory emphasizes semi-commercial relationships between the state and the citizens to a greater extent. The implication according to them was that the citizens are not entitled to any benefits from the state and if they do, they must pay the cost thereof. In this theory, the costs of services are scrupulously recovered unlike the benefits-received theory where a balanced budget is implied.

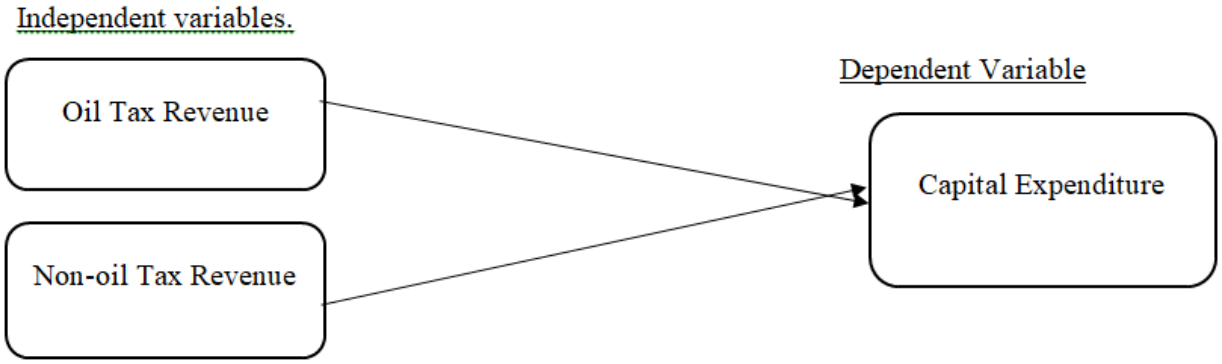
Empirical Review

Olaniyi, Mustapha and Oyedokun (2019) examined the impact of taxation on government capital expenditure in Nigeria. Secondary data were used and were obtained from Central Bank of Nigeria (CBN) Statistical Bulletin and Federal Inland Revenue Service Website for Period 1994 to 2016. Descriptive statistics was used to describe the variables under investigation, Augmented Dickey Fuller (ADF) Unit Root Test and Johansen Cointegration tests were used to establish the stationarity and long run association among the variables while Error Correction Model (ECM) was used to establish the exact impact of taxation on capital expenditure in Nigeria. The study showed that Company Income Tax (CIT), Petroleum Profit Tax (PPT), Personal Income Tax (PIT) and Education Tax (EDT) have significant financing power on government capital expenditure. Contrarily, Value Added Tax (VAT) and Capital Gains Tax (CGT) are not significant variables affecting government Capital expenditure in Nigeria. However, co-integration result indicated that there was a long-run relationship between tax revenue and government capital expenditure. It was concluded that taxation revenue has significant effect on government capital expenditure in Nigeria and the Nigerian government should improve its' efforts in ensuring that all taxes are collected to prevent revenue leakage, in order to ensure provision of adequate infrastructural facilities which translate to economic growth with a view to sustaining the welfare of it citizens.

Osho, Olemija and Falade (2019) examined the influence of tax revenue on government capital expenditure and economic growth in Nigeria. It specifically evaluated the significant effect of companies' income tax on government capital expenditure in Nigeria; the level of significance of petroleum profit tax on government capital expenditure in Nigeria; the significant impact of value added tax on government capital expenditure in Nigeria; and the long run relationship between tax revenue and government capital expenditure in Nigeria. The study used relevant secondary data that span from 2009 to 2018 extracted from series of published central bank statistical bulletins. Public finance analysis model (CAPEX= f (CIT, PPT, VAT)) was formulated and was tested with the use of descriptive analysis in the form of minimum and maximum values, mean and coefficient of variation, while inferential statistics in the form of multiple regression, T-Test, Johansen's co-integration test, coefficient of multiple determinations, F-test, DW-test. Findings revealed that Companies' Income Tax had a positive relationship with capital expenditure; Petroleum profit tax (PPT) had a negative effect on the financing of government development project; value added tax (VAT) had insignificant positive relationship with total government capital expenditure (CAPEX). It is concluded that tax revenue does not impact the spending on capital expenditure. The study recommended that utilization of tax revenue on public goods will encourage the payment of tax by tax payers.

Akhor, Atu and Ekundayo (2016) examined the impact of indirect tax revenue on economic growth in Nigeria. The study uses value added tax revenue and custom and excise duty revenue as independent variables and economic growth was proxy with real gross domestic product as the dependent variable. The study employ secondary data collected from Central Bank of Nigeria statistical bulletin for the period covering 1993 to 2013 for the empirical analysis using the convenient sampling techniques. The research design is time series and the data were analyzed using descriptive statistics, correlation, unit root test, cointegration test and error correction model regression. The result revealed that value added tax had a negative and significant impact on real gross domestic product. In the same vein, past custom and excise duty had a negative and weakly significant impact on real gross domestic product. The Error Correction Model (ECM (-1)) coefficient had a correct negative and statistically significant sign. This shows that short-run deviation can be quickly corrected. The Durbin-Watson value indicates the absence of autocorrelation in the model. The study therefore recommended that tax administrative loopholes should be plugged for tax revenue to contribute immensely to the development of the economy since past value added tax and custom and excise duty had a significant impact on economic growth.

Research Model



Source: Researcher's Conceptual Model, (2025).

Research Design

This study employs an ex-post facto and correlational design, analyzing historical data from 2000 to 2022. Data were sourced from the Central Bank of Nigeria and other relevant institutions.

Methods of data collection

This study employed Secondary source of data, using financial and statistical formulas as methods to arrive at figures for further statistical computation and analysis. Secondary data from 2000 – 2022 was sourced from central bank of Nigeria and quarterly statistic bulletin. The period of 23 (twenty-three) years provide sufficient data to reach a valid data analysis and interpretation on the nature of the relationship that exists between tax revenue and capital expenditure in Nigeria. The variables for which data were sourced include: Oil Tax Revenue, Non-oil Tax Revenue and capital expenditure in Nigeria.

Model Specification

The model for this study was adapted from the research work conducted by Osho, Olemija & Falade (2019) and was developed using multiple regression analysis. Multiple regression analysis shows the variation in the value of the dependent variable based on the variation in the independent and control variables.

Public finance analysis model (CAPEX= f (CIT, PPT, VAT))

$CAPEX = \beta + a1CIT + a2PPT + a3VAT + \mu$

CIT= Companies' Income Tax PPT= Petroleum Profit Tax VAT= Value Added Tax

CAPEX= Government Capital Expenditure

Therefore, the regression model of this study is:

Capital Expenditure =f (Tax Revenue) …… equation 1

CAPEX =f (OTR, NOTR) …… equation 2

$CAPEX\ it = \beta 0 + \beta_1\ OTR_{it} + \beta_2\ NOTR_{it} + \varepsilon i$…… equation 3

Where,

CAPEX = Capital Expenditure

OTR = Oil Tax Revenue

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NOTR = Non-oil Tax Revenue

$\beta 0$ = Intercept of the coefficient in equation

$\beta_1 - \beta_2$ = Coefficient of independent variable

εi = Error term (it represents other factors affecting capital expenditure, which are not considered in this study).

Method of Data Analysis

In this study, Descriptive and Inferential statistics were used, including Pearson correlation and panel regression analysis, to examine the relationship between tax revenue and capital expenditure.

Apriori Expectation

This describes the generally expected relationship between the independent variable and dependent variable of this research work. In this study, it is expected that capital expenditure in Nigeria will have a direct influence on Oil Tax Revenue and Non-oil Tax Revenue, that is, as capital expenditure in Nigeria increase, Oil Tax Revenue and Non-oil Tax Revenue will also increase.

Descriptive Analyses

The preliminary analyses were examined by presenting the descriptive statistics and the Pearson Product Moment Correlation results. Thereafter, the panel regression results were presented. The results of the descriptive statistics are presented in the table below:

Table 4.1

	CE	***NTR***	***OTR***
Mean	1059.073	2634.686	2296.744
Median	874.7000	2379.000	2286.213
Maximum	3430.047	5970.330	4209.020
Minimum	239.4509	1557.888	1157.808
Std. Dev.	792.5206	918.7667	700.1090
Skewness	1.514509	2.447689	0.640143
Kurtosis	4.880252	9.063133	3.648263
Jarque-Bera	12.18070	58.19603	1.973569
Probability	0.002265	0.000000	0.372774
Sum	24358.67	60597.78	52825.12
Sum Sq. Dev.	13817956	18570909	10783357
Observations	23	23	23

Source: Author's Computation (2025)

(CE means Capital Expenditure; NTR means Non-Oil Tax Revenue and OTR means Oil Tax Revenue).

Table 4.1 presents the summary statistics of the variables being investigated in the study. All the time series variables (Capital Expenditure, Non-Oil Tax Revenue and Oil Tax Revenue) have their standard deviations less than their respective mean values. This suggests that the values of the series seem to have a moderate and consistent amount of variability around their mean values, thus, are likely to high predictive power. This suggests that the values of the series seem to have a high amount of variability in its distribution, thus, likely to low predictive power across the selected deposit money banks in Nigeria. Skewness measures the asymmetry or symmetry of the distribution of the series around its mean. A Skewness of zero (0) depicts a symmetrical

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distribution. On the other hand, a positive skew portrays an asymmetrical distribution with higher values; it has a long tail to the right. However, a negative skew illustrates an asymmetrical distribution with lower values, which has a long tail to the left. However, all the variables (Capital Expenditure, Non-Oil Tax Revenue and Oil Tax Revenue) are positively skewed (that is, having long-right-tailed distribution). The kurtosis of a normal distribution is 3. If it exceeds 3, it means that the distribution is peaked or leptokurtic relative to the normal. Conversely, if it is less than 3, it shows that the distribution is flat or platykurtic relative to the normal. Furthermore, all the variables (Capital Expenditure, Non-Oil Tax Revenue and Oil Tax Revenue) appear to be peaked (leptokurtic) relative to a normal distribution having a coefficient of kurtosis above the threshold of 3. In JB statistics, the null hypothesis, which states that the distribution is normal, is rejected at a 5% significance level. The Jarque-Bera statistics reveal that the series Oil Tax Revenue appear to be normally distributed having their respective p-values above a 5% level of significance. On the contrary, Capital Expenditure and Non-Oil Tax Revenue do not follow a normal distribution having their p-value less than the 5% level of significance.

Test of Stationarity

Table 4.2 presents the unit root test result of the study

UNIT ROOT TEST				
Variable	Test Order	Critical Value	P-value	Order of integration
CE	Level	-3.014055	0.0041	*I(0)*
NTR	Level	4.038483	0.0006	*I(0)*
OTR	Level	-3.268159	0.0067	*I(0)*

Source: Author's Computation (2025).

(CE means Capital Expenditure; NTR means Non-Oil Tax Revenue and OTR means Oil Tax Revenue).

Prior to the panel model estimation, it is essential to carry out panel unit root tests so as to examine the stationarity condition of the variables under study. Following the normality property, the study employed Augmented Dickey-Fuller (ADF) test was employed to examine the stationarity of the series. Table 4.2 shows the result of the significant level of the variables, which reveals that the variables are significant at levels of (0.0000) which is less than (p= 0.05). This is evidenced that at 0.0000 is less than the (p<.05), with this there is a significant relationship between tax revenue and capital expenditure in Nigeria. The table shows that the series, capital expenditure is integrated at order *0*, non-oil tax revenue is integrated at order *0* and oil tax revenue is integrated at order *0* which they are all at level. Because the level of significance is 5%, it is at level *I(0)* series. This thus implies that they are all stationary in their level forms, this means there's no long run relationship that exist, and a short run relationship exists and no need for cointegration estimation.

Correlation

The table below shows the correlation result of the study

Table 4.3: Shows the correlation factor of the variables

	CE	***NTR***	***OTR***
CE	1.000000	0.865995	0.416497
NTR	0.865995	1.000000	0.309964
OTR	0.416497	0.309964	1.000000

Source: Author's Computation (2025).

(CE means Capital Expenditure; NTR means Non-Oil Tax Revenue and OTR means Oil Tax Revenue).

Table 4.3 shows the correlation factor of variables for detection of possible strong relationship between independent variables the presence of which violates the assumption estimation techniques. Correlation shows

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the statistical relationship between the dependent variable and independent variables and the degree to which a pair of variables is linear. In relation to the result capital expenditure has a positive and a strong relationship with non-oil tax revenue at degree 86.6%, result capital expenditure has a positive and a moderate relationship with oil tax revenue at degree 41.6 in Nigeria. The results of the Pearson Correlation is limited in its ability to generate an outcome that can be generalised, as it does not show a clear relationship, between the variables. Thus, the panel regression estimates and variance inflation factor test are more suitable for this study.

To start with, variance inflation/n factor identifies the correlation between independent variables and the strength of that correlation. According to Hair, Anderson, Tatham and Black (1995), if variance inflation factor test is > or = to 10, it means there is a problem of multicollinearity among the independent variables. The presence of multicollinearity, will lead to large standard errors of the estimated coefficients. Thus, the variance inflation factor test is constructed to test for multicollinearity in the study, as it explains how much variance in the coefficient estimate of a regressor has been inflated, as a result of collinearity with the other regressors. The result of the variance inflation factor test (VIFT) is presented in the table 4.4 below:

Table 4.4: Variance Inflation Factor Test

Variables	VIF
NTR	1.106289
OTR	1.106289

Source: Author's Computation (2025)

(CE means Capital Expenditure; NTR means Non-Oil Tax Revenue and OTR means Oil Tax Revenue).

Basically, VIFs above 10 are seen as a cause of concern, however, none of the independent variables observed here has a VIF value that are < 10 therefore, none of the independent variables gave serious indication of multicollinearity.

Furthermore, the panel regression analysis procedure is employed, and the results are presented in the table 4.4 below;

Test of Hypotheses

The hypotheses of this study were tested using regression models and were estimated using the Ordinary Least Square regression model (OLS). The model estimation shows the result presented in **Table 4.5**

Dependent Variable: CE				
Method: Least Squares				
Sample: 2000 2022				
Included observations: 23				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
NTR	0.703202	0.096402	7.294496	0.0000
OTR	0.185430	0.126510	1.465734	0.1583
C	-1219.530	331.6149	-3.677548	0.0015
R-squared	0.774202	Mean dependent var		1059.073
Adjusted R-squared	0.751622	S.D. dependent var		792.5206
S.E. of regression	394.9728	Akaike info criterion		14.91662
Sum squared resid	3120070.	Schwarz criterion		15.06473
Log likelihood	-168.5411	Hannan-Quinn criter.		14.95387
F-statistic	34.28733	Durbin-Watson stat		0.684753
Prob(F-statistic)	0.000000			

Source: Author's Computation (2025)

(CE means Capital Expenditure; NTR means Non-Oil Tax Revenue and OTR means Oil Tax Revenue).

Hypothesis 1

H0: Oil Tax Revenue has no significant impact on capital expenditure in Nigeria.

H1: Oil Tax Revenue has a significant impact on capital expenditure in Nigeria.

As shown in table 4.5, changes in Oil Tax Revenue (OTR) exert positive but an insignificant effects (β = 0.185430, p = 0.1583 > 0.05) on Capital Expenditure (CE) in Nigeria. Given the magnitudes of the partial slope coefficients, CE responds positively, on average, to every 1-percent change in OTR by about 0.158 percent. Thus, CE appears to be OTR inelastic judging by the partial elasticity coefficient that is, having elasticity coefficient lesser than one. Nevertheless, Capital Expenditure responds insignificantly to Oil Tax Revenue. Thus, the null hypothesis that "Oil Tax Revenue has no significant impact on capital expenditure in Nigeria" cannot be rejected adjudging by the test statistic.

Hypothesis 2

H0: Non-oil Tax Revenue has no significant impact on capital expenditure in Nigeria.

H1: Non-oil Tax Revenue has a significant impact on capital expenditure in Nigeria.

As shown in table 4.5, changes in Non-oil Tax Revenue (NTR) exert positive and a significant effects (β = 0.703202, p = 0.0000 < 0.05) on Capital Expenditure (CE) in Nigeria. Given the magnitudes of the partial slope coefficients, CE responds positively, on average, to every 1-percent change in NTR by about 0.703 percent. Thus, CE appears to be NTR inelastic judging by the partial elasticity coefficient that is, having elasticity coefficient lesser than one. Nevertheless, Capital Expenditure responds significantly to Non-oil Tax Revenue. Thus, the null hypothesis that "Non-oil Tax Revenue has no significant impact on capital expenditure in Nigeria" can be rejected adjudging by the test statistic.

Measure of Goodness of Fit

As shown in Table 4.5, the adjusted R-squared statistic of 0.751622 suggests that the included explanatory variables (Non-oil Tax Revenue and Oil Tax Revenue) in the model account for about 75.2% of the variation in the response variable (Capital Expenditure). The explanatory power of the capital expenditure model appears to be considerably high judging by the adjusted R-square statistic. Thus, the capital expenditure model may have a strong predictive power.

Overall Test of Significance of the Estimated GRN-Model

As shown in table 4.5, the F-statistics (34.287) indicates all the included variables (Non-oil Tax Revenue and Oil Tax Revenue) appear to have combined or jointly significant effect on capital expenditure in Nigeria having a p-value (0.000) less than 0.05 level of significance.

DISCUSSION OF FINDINGS

The main objective of this study is to examine the impact of tax revenue on capital expenditure in Nigeria. For this study, we adopted the Ordinary Least square (OLS) analysis of panel regression analysis to analyze data for the variables obtained from the Federal Inland Revenue Service (FIRS) charge report, CBN Statistical Release, and National Bureau Statistics. Capital expenditure in Nigeria served as the dependent variable. Two variants for measuring tax revenue were utilized for the independent variables: the e Non-oil Tax Revenue and Oil Tax Revenue.

The analysis indicates that while Oil Tax Revenue has an insignificant impact on capital expenditure, Non-oil Tax Revenue significantly influences it. This aligns with previous studies, emphasizing the need for improved tax administration to enhance capital spending.

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CONCLUSION

Based on the findings, this paper concludes that taxation significantly affects capital expenditure in Nigeria. However, reliance on oil revenue alone is insufficient for financing government projects. A diversified approach to revenue collection is essential for sustainable economic growth.

RECOMMENDATIONS

The recommendations of the research were premised on the study findings as follows:

1. The Government should enhance tax collection mechanisms to reduce evasion.
2. Government should promote awareness of tax benefits to encourage compliance.
3. Diversify revenue sources beyond oil to stabilize funding for capital projects.

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