INCENTIVE RELATED TAX LAWS AND INVESTMENT GROWTH IN NIGERIAN LISTED OIL AND GAS COMPANIES

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Abstract
Effective and well-targeted tax incentives are critical for stimulating capital formation in Nigeria's oil and gas sector. This study examines the effect of incentive-related tax laws on investment growth among 10 Nigerian listed oil and gas companies over an 11-year period (2013–2023). Despite the sector's strategic role in Nigeria's economic stability, empirical evidence on how specific fiscal incentives influence firm-level investment remains limited. The study focuses on key legislations, including the Petroleum Profit Tax Act (PPTA), Companies Income Tax Act (CITA), Value Added Tax Act (VATA), and Industrial Development (Income Tax Relief) Act (IDITRA). Using an ex-post facto research design, panel data comprising 110 firm-year observations were analysed. Descriptive statistics, correlation analysis, and panel regression techniques (Fixed Effects and Random Effects Models) were employed, alongside diagnostic tests for multicollinearity, heteroskedasticity, and model specification. Findings reveal that tax incentives significantly stimulate investment growth. Specifically, Petroleum Profit Tax Incentives (PPTI) and Company Income Tax Incentives (CITI) exhibit strong positive and statistically significant effects on investment growth, while Value Added Tax Exemptions (VATE) show a positive but statistically insignificant relationship. Industrial Development Income Tax Relief (IDITR) also demonstrates a moderate positive influence. Firm-specific characteristics significantly affect responsiveness to these incentives, highlighting the importance of controlling for heterogeneity. The study concludes that properly structured and transparently administered petroleum and corporate tax incentives are effective tools for promoting investment expansion in Nigeria's oil and gas industry. It therefore recommends strengthening policy consistency, improving administrative efficiency, and aligning tax incentives with sectoral investment priorities to achieve sustainable economic growth.

Keywords: Investment growth, oil and gas, panel regression, tax incentives.

1.0 Introduction

Investment is a fundamental driver of economic growth and development, serving as a catalyst for productivity enhancement, employment generation, and technological advancement. In developing economies like Nigeria, investment plays a particularly crucial role in stimulating industrialisation and sustaining macro-economic stability. Among the various sectors contributing to the Nigerian economy, the oil and gas industry stands out as the most strategic, accounting for

more than 80 % of foreign exchange earnings and a substantial share of government revenue. Apart from its export earnings role, the sector remains central to policy discourse on economic diversification and resource management.

Despite the sector's significance, the pace of investment growth within Nigeria's oil and gas industry has remained inconsistent over the years. Factors such as fluctuating global oil prices, unstable exchange rates, regulatory uncertainty, and a perceived high tax burden have continued to discourage both domestic and foreign investors. For instance, issues such as multiple taxation and complex regulatory frameworks have been linked to slower investment decisions in the sector (Tapang, Onodi & Amaraihu, 2018). These challenges have led to under-investment in exploration, infrastructure development and technological innovation, thereby constraining the sector's capacity to contribute optimally to economic diversification and growth.

In response to these challenges, the Nigerian government has implemented several incentive-related tax laws aimed at promoting investment and enhancing competitiveness within the oil and gas industry. Key among these fiscal legislations are the Petroleum Profit Tax Act (PPTA), which provides investment allowances and tax credits for exploration and development activities; the Companies Income Tax Act (CITA), which regulates corporate tax obligations and provides deductions for reinvestment; the Industrial Development (Income Tax Relief) Act (IDITRA), which offers pioneer status and investment reliefs; and the Value Added Tax (VAT) Act, which grants exemptions on essential production inputs (Rapu, 2013; Uubo legal update, 2024). These policies are designed to reduce the effective tax burden on companies, thereby stimulating capital formation and reinvestment in the sector.

However, despite these fiscal interventions, investment growth in the Nigerian oil and gas sector has not met expectations. Several studies and industry reports have highlighted persistent challenges such as frequent policy changes, inconsistent enforcement of tax provisions, and bureaucratic complexities that weaken the intended impact of these incentives (Onapajo & Ezuma, 2024). Moreover, while some firms have benefited from tax reliefs, others argue that the incentives are either inaccessible or insufficient to offset the rising cost of operations in the industry. Consequently, the extent to which incentive-related tax laws have effectively stimulated investment growth among listed oil and gas companies in Nigeria remains uncertain. This gap in empirical evidence provides the foundation for this study, which seeks to critically examine the influence of tax incentives and related fiscal policies on investment performance within the Nigerian oil and gas sector.

Over the past two decades, the Nigerian government has embarked on several tax reforms aimed at improving investment performance and fostering economic growth. These reforms were particularly designed to attract both domestic and foreign investors to the oil and gas sector, which remains the cornerstone of Nigeria's economy (FIRS, 2023; CBN, 2023). Despite these efforts, empirical evidence indicates a persistent decline in investment inflows, frequent project delays, and increased divestment by multinational oil companies operating in Nigeria (NBS, 2023; PWC, 2024).

While fiscal incentives such as investment allowances, pioneer status, and tax holidays were introduced under key legislations including the Petroleum Profit Tax Act (PPTA), Companies Income Tax Act (CITA), and the Industrial Development (Income Tax Relief) Act (IDITRA) the extent to which these incentives have translated into tangible investment growth remains inconclusive (Okafor, 2022; Olaoye & Aderemi, 2021). Evidence from industry reports suggests

that policy inconsistency, weak enforcement mechanisms, and administrative inefficiencies have limited the effectiveness of these tax incentives in achieving their intended objectives (OECD, 2023; Olayinka & Adegbie, 2023).

Furthermore, most existing empirical studies on taxation and investment in Nigeria have focused on aggregate national data or general economic performance, overlooking firm-level dynamics within strategic sectors such as oil and gas (Adeleke, 2020; Onyemaechi, 2022). This gap in the literature limits the understanding of how specific incentive-related tax laws influence the investment behavior of listed oil and gas companies. Additionally, there is limited empirical evidence that integrates multiple fiscal legislations such as the PPTA, CITA, IDITRA, and VAT Act into a single analytical framework to evaluate their combined effect on investment growth.

Therefore, this study seeks to fill this gap by empirically examining the impact of incentive-related tax laws on investment growth in Nigerian listed oil and gas companies, with the aim of providing policy-relevant insights that can guide effective fiscal reforms and sustainable investment strategies in the sector.

The study therefore investigated Incentive-Related Tax Laws and Investment Growth in Nigerian Listed Oil and Gas Companies. Specifically, it focuses on four dimensions:
i. Examine the effect of tax incentives on investment growth in Nigerian listed oil and gas companies.
ii. Determine the relationship between Petroleum Profit Tax (PPT) and investment growth.
iii. Assess the impact of Companies Income Tax (CIT) and IDITRA incentives on investment decisions of listed oil and gas firms.
iv. Evaluate how Value Added Tax (VAT) affects investment growth in the oil and gas sector.

Guided by these objectives, the study addresses the following research questions:
i. What is the effect of tax incentives on investment growth in Nigerian listed oil and gas companies?
ii. What is the relationship between Petroleum Profit Tax (PPT) and investment growth in Nigerian listed oil and gas firms?
iii. How do Companies Income Tax (CIT) incentives and IDITRA provisions influence the investment decisions of listed oil and gas companies in Nigeria?
iv. To what extent does Value Added Tax (VAT) affect investment growth in the Nigerian oil and gas sector?

To empirically test these issues, the study formulates the following hypotheses:
i. H_{01}: Incentive-related tax laws have no significant effect on investment growth in Nigerian listed oil and gas companies.
ii. H_{02}: Petroleum Profit Tax has no significant impact on investment growth in Nigerian listed oil and gas companies.
iii. H_{03}: Companies Income Tax and IDITRA incentives have no significant effect on investment growth.
iv. H_{04}: Value Added Tax does not significantly influence investment growth in the oil and gas sector.

2.0 Literature Review

Investment growth refers to the increase in capital formation, reinvestment activities, and long-term asset accumulation within an industry or the broader economy over a defined period. It captures both foreign direct investment (FDI) and domestic private investment, reflecting investor confidence in the sector's stability and expected returns. Within the oil and gas industry, investment growth is commonly measured through indicators such as exploration spending, capital expenditure (CAPEX), project development activities, asset acquisition levels, and market valuation metrics including share price performance of listed firms (Central Bank of Nigeria CBN, 2023).

Research shows that sustained investment growth enhances productivity, improves operational efficiency, drives innovation, and expands employment opportunities across the value chain (Eze & Okoye, 2021). According to Adewuyi (2022), increased capital inflow enables firms to upgrade technology, expand infrastructure, and strengthen competitive positioning in global energy markets. Similarly, Uzonwanne (2020) argues that consistent investment growth is essential for maintaining reserve replacement ratios and ensuring long-term energy security.However, several structural and policy-related factors can impede investment growth. These include regulatory inconsistency, tax policy uncertainty, infrastructural deficits, political risks, and macroeconomic instability, all of which can erode investor confidence and reduce capital inflows (Ogunlana & Shittu, 2021; Ogbonna & Appah, 2019). In oil-dependent economies such as Nigeria, these constraints often lead to delays in project execution, declining exploration activities, and reduced inflows of much-needed foreign investment (Akanbi, 2020).

Concept of Tax Incentives

Tax incentives are deliberate fiscal measures introduced by the government to stimulate investment, promote industrialization, and enhance economic growth by reducing the tax burden on specific activities, sectors, or regions. According to the Organisation for Economic Co-operation and Development (OECD, 2013), tax incentives refer to any measure that provides more favorable tax treatment to certain activities or groups of taxpayers compared to the standard tax system. In essence, they represent policy tools designed to correct market failures, attract private investment, and accelerate economic development (Appah & Eze, 2013).

In Nigeria, tax incentives are primarily governed by the Industrial Development (Income Tax Relief) Act (IDITRA) and other related statutes. They are structured to attract both domestic and foreign investors, encourage the establishment of new industries, and support the expansion of existing businesses (FIRS, 2022). Some of the major forms of tax incentives available in Nigeria include:

i. Pioneer Status Incentive: This incentive grants qualifying industries a tax holiday for an initial period of three years, extendable by two additional years, under the IDITRA. It aims to encourage investment in sectors considered vital to national economic development.
ii. Investment Allowance: A deduction granted on qualifying capital expenditure to encourage companies to invest in productive assets and improve their operational capacity.
iii. Export Processing Zone and Free Trade Zone Incentives: Companies operating within these zones enjoy full tax exemptions on profits, import duties, and levies, provided they export their products or services (NEPZA, 2020).

i. Rural Investment Allowance: This incentive provides tax relief to companies that establish operations in rural or underdeveloped areas lacking basic infrastructure, thereby promoting regional economic balance and rural development.
ii. Capital Allowances: Deductions granted on depreciable assets such as plant, machinery, and buildings to encourage continuous reinvestment and modernization of production facilities.

The fundamental objective of these tax incentives is to enhance investment inflows, reduce production costs, create employment opportunities, and promote technological advancement (Okafor, 2021). By lowering the effective tax rate on targeted sectors, tax incentives are expected to improve competitiveness, stimulate innovation, and contribute to sustainable economic growth. However, the effectiveness of these incentives depends largely on transparent administration, proper monitoring, and alignment with national development goals (Olaoye & Aderemi, 2021).

Incentive-Related Tax Laws in Nigeria

Several fiscal legislations in Nigeria provide for tax incentives targeted at stimulating investment in the oil and gas industry:

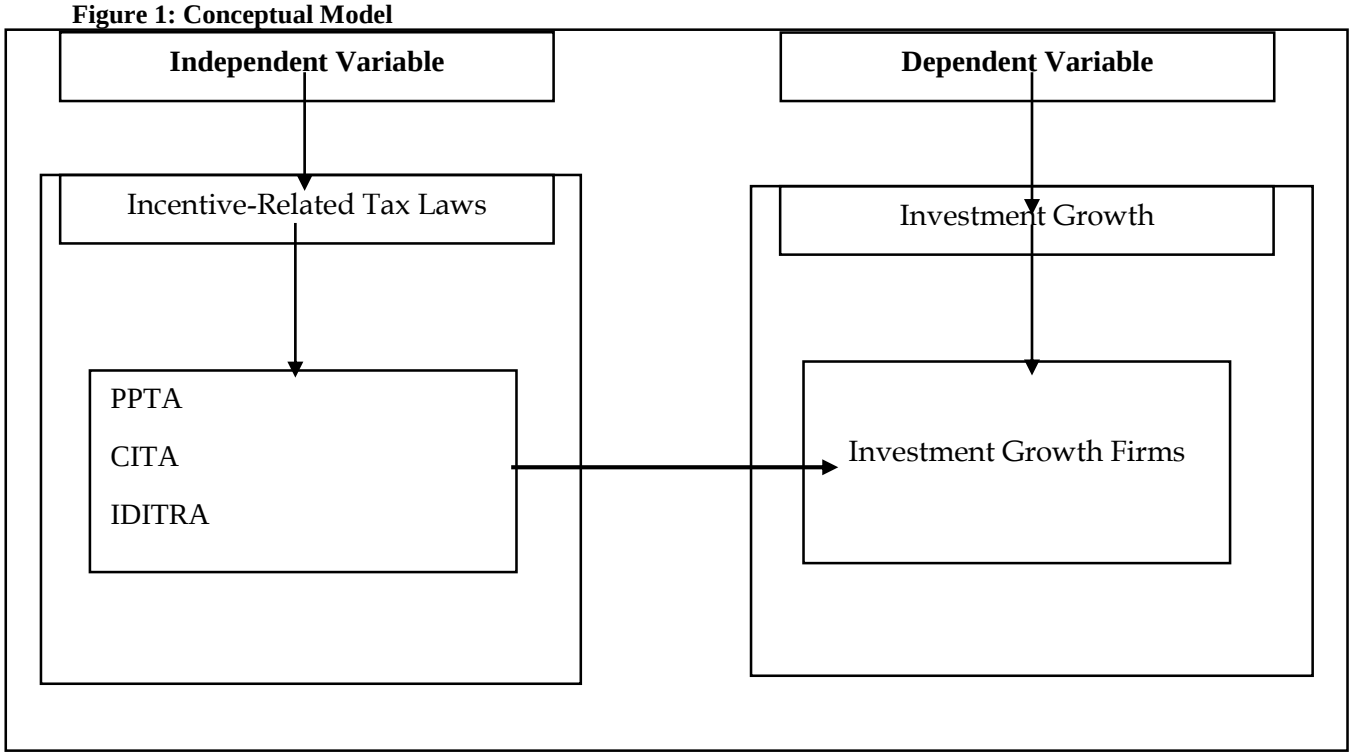
i. Petroleum Profit Tax Act (PPTA): The PPTA governs the taxation of profits from petroleum operations in Nigeria. It provides deductions for capital allowances, exploration expenditure, and investment tax credits for companies engaged in upstream operations (Federal Republic of Nigeria, 2021). These incentives are intended to reduce the effective tax rate and encourage reinvestment in exploration and development.

ii. Companies Income Tax Act (CITA): The CITA provides tax reliefs such as loss carry-forward provisions, capital allowances, and deductions for qualifying capital expenditures. Oil and gas servicing firms and downstream companies listed on the NGX benefit from these incentives to improve liquidity and expand operations (Olayinka & Adegbie, 2023).

iii. Industrial Development (Income Tax Relief): Act (IDITRA): This Act grants “pioneer status” to companies involved in industries considered crucial for national development. Oil and gas firms engaged in gas utilization, refining, and petrochemicals are eligible for tax holidays ranging from three to five years (NEPZA, 2022).

iv. Value Added Tax Act (VAT): The VAT Act provides exemptions on essential inputs and equipment used for petroleum operations. These exemptions are aimed at reducing production costs and promoting domestic investment (FIRS, 2023).

Figure 1: Conceptual Model



Source: Researcher's Conceptualization, 2026.

Theoretical Framework

Neoclassical Investment Theory

The neoclassical investment theory, pioneered by Jorgenson (1963), asserts that firms invest by comparing the marginal product of capital with the user cost of capital, continuing investment until equality is achieved. In the context of this study, Petroleum Profit Tax Incentives (PPTI), Company Income Tax Incentives (CITI), and Industrial Development Tax Relief (IDITR) reduce the effective user cost of capital through deductions, allowances, and tax holidays. This encourages oil and gas firms to expand capital expenditure on exploration, production facilities, and technology upgrades. Empirical evidence shows that lower tax-related costs stimulate investment behavior in developing economies (Akinlo, 2020; Ogbonna & Appah, 2019).

Keynesian Theory of Investment

Derived from Keynes (1936), the Keynesian investment theory emphasizes that investment decisions are influenced by expected future profitability and prevailing interest rates. Tax incentives operate as policy tools that improve post-tax returns, enhancing firms' marginal efficiency of capital. Within this study, incentives such as PPTI and CITI increase expected net profitability and reduce financial constraints, motivating firms to undertake new projects. The theory underscores that government interventions, via targeted fiscal incentives, can positively shape investment decisions in capital-intensive sectors (Egbunike & Okoye, 2017).

Laffer curve Theory

The Laffer curve (Laffer, 1979) illustrates the relationship between tax rates and government revenue, showing that both excessively high and low taxes produce suboptimal economic outcomes. Moderate tax rates combined with well-structured incentives can stimulate private-

sector investment while maintaining fiscal sustainability. For this study, PPTI, CITI, and IDITR incentives reflect the practical application of the Laffer principle, demonstrating that reducing effective tax burdens can attract capital into Nigeria's oil and gas sector without undermining revenue collection (Adewuyi, 2022).

Benefit-Cost Theory of Tax Incentives

The benefit-cost theory (Zee, Stotsky, & Ley, 2002) evaluates the economic justification of tax incentives by comparing the long-term benefits (e.g., increased investment, job creation, technology transfer) against the short-term fiscal costs of foregone revenue. In the context of Nigerian oil and gas companies, PPTI, CITI, and IDITR incentives are considered efficient when they lead to measurable investment growth that outweighs the tax revenue foregone. The theory highlights the need for strategic design, continuous monitoring, and periodic review of tax incentives to ensure that fiscal interventions achieve intended developmental outcomes (Ogunlana & Shittu, 2021).

Table 1:
Relevance of Theories

Theory Name	Key Proponent	Core Tenet	Relevance to Study Variables
Neoclassical Investment Theory	Jorgenson (1963)	Firms invest until the marginal product of capital equals the user cost of capital.	Tax incentives like capital allowances and tax credits reduce user cost of capital, stimulating investment growth (INVG).
Keynesian Theory of Investment	Keynes (1936)	Investment is influenced by expected profitability and interest rates; government policy can stimulate investment.	Fiscal incentives improve post-tax returns, increasing marginal efficiency of capital, influencing INVG.
Laffer Curve Theory	Laffer (1979)	There is an optimal tax rate that maximizes government revenue; too high or too low tax rates reduce investment.	Moderate tax incentives (PPTI, CITI) encourage private-sector investment, directly affecting INVG.
Benefit-Cost Theory of Tax Incentives	Zee, Stotsky & Ley (2002)	Tax incentives are justified if long-term benefits exceed fiscal costs.	Incentives like pioneer status (IDITR) and investment allowances are efficient if they lead to higher INVG than the revenue forgone.

Source: Researcher's Conceptualization, 2026.

Empirical Review

Empirical evidence on the relationship between tax incentives and investment growth in Nigeria's oil and gas sector remains varied, reflecting differences in methodology, data scope, and institutional contexts.

Olaoye and Aderemi (2021) examined how tax holidays influence investment decisions among Nigerian oil firms using panel regression analysis. Their findings showed a *positive and statistically significant* effect, indicating that incentives such as tax holidays can stimulate reinvestment and expansion activities. In a related study, Onyemaechi (2022) assessed petroleum profit tax incentives and capital expenditure among upstream oil companies. Although the results revealed a *positive relationship*, the magnitude was weak, suggesting that tax incentives alone may be insufficient to drive major investment commitments without complementary policy reforms.

Using time-series analysis, Adeleke (2020) evaluated the role of tax incentives in attracting foreign direct investment (FDI) into Nigeria's energy sector. The study noted that while incentives can play a catalytic role, *frequent policy reversals and regulatory unpredictability* substantially weakened investor confidence, limiting the inflow of long-term capital. Similarly, Olayinka and Adegbie (2023) compared investment outcomes for firms with and without pioneer status incentives. Their findings indicated that firms granted pioneer status tended to demonstrate *higher levels of capital intensity and improved profitability*, reinforcing the effectiveness of targeted fiscal incentives.

Conversely, Okafor (2022) argued that despite Nigeria's extensive incentive regime, investment growth in the oil sector has underperformed due to *policy inconsistency, weak institutional monitoring, and administrative bottlenecks*. The study concluded that without transparency and stable fiscal frameworks, incentives may fail to achieve their objectives. Overall, the empirical literature suggests that while tax incentives possess the *potential* to drive investment growth, their actual impact in Nigeria's oil and gas industry is moderated by governance quality, regulatory stability, and implementation efficiency. This indicates that incentives alone cannot guarantee investment growth unless supported by robust institutions and predictable fiscal policies.

The review of existing literature highlights that fiscal incentives play an important role in shaping corporate investment behaviour, particularly by lowering the cost of capital and enhancing post-tax returns. However, prior empirical studies in Nigeria have largely focused on the *macroeconomic implications* of tax incentives, paying limited attention to *sector-specific dynamics* within the oil and gas industry, which remains the country's most strategic revenue-generating sector.

Moreover, the majority of previous studies have examined individual tax instruments in isolationfor example, petroleum profit tax incentives alone or pioneer status incentives alonewithout integrating the full spectrum of incentive-related tax laws that affect investment outcomes. There is a notable gap in studies that jointly analyse how multiple fiscal frameworks such as the Petroleum Profit Tax Act (PPTA), Companies Income Tax Act (CITA), Industrial Development (Income Tax Relief) Act (IDITRA), and Value Added Tax (VAT) Act interact to influence investment behaviour at the firm level. This omission limits the understanding of how the combined effect of tax incentives shapes investment growth among listed firms.

Given these gaps, the present study is justified in its aim to provide a rigorous firm-level empirical assessment of how multiple incentive-related tax laws collectively influence investment growth in Nigerian listed oil and gas companies. By adopting a composite analytical approach, the study will contribute new evidence to policy debates on the effectiveness of Nigeria's fiscal incentive regime and offer clearer guidance for designing tax policies that promote sustainable investment in the sector.

3.0 Methodology

This study adopts an ex-post facto research design, since it relies on historical and secondary data already published in the financial statements of listed oil and gas companies in Nigeria. The design is appropriate because the variables under consideration incentive-related tax laws and investment growthcannot be manipulated by the researcher but can be measured from existing data.The population of this study consists of all oil and gas companies listed on the Nigerian Exchange Group (NGX) as of 2025. The sample includes selected firms with consistent annual financial reports between 2015 and 2024, ensuring data availability and reliability for panel analysis.

Dependent Variable: Investment Growth (INVG)

Investment growth serves as the dependent variable of the study. It represents the rate at which listed oil and gas companies expand their capital investments over time. Investment growth is a key indicator of corporate performance and sectoral productivity.

In line with prior studies (Olaoye & Aderemi, 2021; Onyemaechi, 2022), investment growth will be measured as: $INVG=CAPEXi_t-CAPEXi_{t-1}\times100$

Where:

i. $CAPEX_t$= Capital expenditure in the current year
ii. $CAPEX_{t-1}$ = Capital expenditure in the previous year

Alternatively, for robustness, investment growth may also be proxied by total assets growth rate or change in property, plant, and equipment (PPE), as disclosed in the financial statements of each firm.

Independent Variables

i. Petroleum Profit Tax Incentive (PPTI): Derived from the Petroleum Profit Tax Act (PPTA), this variable captures tax deductions and investment allowances related to upstream operations. It will be measured as the ratio of petroleum profit tax paid to total profit before tax. A lower ratio implies a higher tax incentive effect.

ii. Company Income Tax Incentive (CITI): Based on the Companies Income Tax Act (CITA), this variable represents tax reliefs and allowable deductions. It is measured as company income tax paid divided by total revenue, capturing the effective tax rate applicable to corporate earnings.

iii. Industrial Development Tax Relief (IDITR): This variable captures incentives from Industrial Development (Income Tax Relief) Act (IDITRA), particularly the pioneer status. A dummy variable will be used:
    1 = Firm enjoyed pioneer status within the study period
    0 = Otherwise

iv. Value Added Tax Exemption (VATE): Derived from the Value Added Tax Act (VAT), this variable measures the proportion of VAT exemption or relief received by each company. It will be captured as VAT expense divided by turnover, or alternatively, as a dummy variable (1 = Exempted; 0 = Not exempted).

Model Specification

The functional relationship for this study is expressed as:

$INVG=f(PPTI_{it},CITI_{it},IDITR_{it},VATE_{it})$

Transforming into an econometric model:

$INVG=\beta_0+\beta_1PPTI_{it}+\beta_2CITI_{it}+\beta_3IDITR_{it}+\beta_4VATE_{it}+\mu_{it}$

Where:

$INVG_{it}$= Investment growth of firm i in year t
$PPTI_{it}$= Petroleum profit tax incentive
$CITI_{it}$= Company income tax incentive
$IDITR_{it}$ = Industrial development income tax relief

$VATE_{it}$ = Value added tax exemption
μ_{it}= Error term

Expected signs: $\beta 1, \beta_2, \beta_3, \beta_4 > 0$
This implies that an increase in tax incentives is expected to positively influence investment growth among Nigerian listed oil and gas companies.

Justification of Variable Measurement
In this study, the key independent variablesPetroleum Profit Tax Incentives (PPTI) and Company Income Tax Incentives (CITI)are proxied using effective tax rates, calculated as the ratio of tax paid to profit or revenue. This approach is commonly used in empirical tax research because it captures the net fiscal burden on firms after accounting for allowable deductions, credits, and exemptions, which is the practical effect of tax incentives on firm resources. While this proxy may not capture the full qualitative aspects of policy designsuch as administrative ease, timing of approval, or sector-specific eligibilityit provides a quantifiable and comparable measure across firms and over time. By reflecting the actual tax savings realized by each firm, effective tax rates serve as a valid indicator of the economic value of the incentives, enabling robust assessment of their impact on investment growth. Nevertheless, the study acknowledges that using effective tax rates may not fully account for unobserved factors such as informal compliance costs or strategic tax planning, which could influence the observed relationship between incentives and investment.

The study employs panel data regression techniques, specifically the Fixed Effects Model (FEM) and Random Effects Model (REM), to capture both cross-sectional and time-series variations among firms, while the Hausman specification test is used to determine the most appropriate model for estimation. To ensure the robustness and reliability of the results, a series of diagnostic tests are conducted, including unit root tests such as Levin-Lin-Chu and Im-Pesaran-Shin to assess stationarity, the Variance Inflation Factor (VIF) to detect multicollinearity, and tests for heteroskedasticity and autocorrelation.

The analysis is based exclusively on secondary data sourced from the annual reports and financial statements of listed oil and gas companies covering the period 2015-2024, complemented by publications from the Federal Inland Revenue Service (FIRS), the Central Bank of Nigeria (CBN) Statistical Bulletin, Nigerian Exchange Group (NGX) fact books, and relevant academic literature, reports, and legal documents on tax incentives.

Table 2
A Priori Expectations

Variable	Symbol	Expected Sign	Justification
Petroleum Profit Tax Incentive	PPTI	+	Reduces effective tax rate, encouraging reinvestment
Company Income Tax Incentive	CITI	+	Lowers cost of capital and increases retained earnings
Industrial Development Tax Relief	IDITR	+	Enhances liquidity through pioneer status tax holidays
Value Added Tax Exemption	VATE	+	Reduces operational cost, stimulating expansion
Constant	β_0	–	Baseline investment growth without tax incentives

Source: Researchers compilation, 2026.

4.0 Results and Discussion

This section presents the empirical results derived from the panel data analysis conducted to examine the effect of incentive-related tax laws on investment growth among Nigerian listed oil and gas companies between 2015 and 2024. The analysis follows the steps outlined in the methodology, including descriptive statistics, correlation analysis, diagnostic testsand model estimation using Fixed and Random Effects techniques, and interpretation of results based on the study hypotheses.

Descriptive Statistics

The descriptive analysis provides insights into the central tendency and variability of the variables used in the model. Investment growth (INVG) shows substantial dispersion, indicating fluctuations in capital expenditure among listed oil and gas companies over the study period. The mean values of the independent variables; PPTI, CITI, IDITR, and VATE reveal the varying tax burdens and incentives accessible to the firms.

The relatively moderate mean of PPTI suggests that upstream petroleum companies operated under different tax exposures, reflecting inconsistencies in exploration incentives. CITI also shows variability due to differences in corporate profitability and allowable deductions. IDITR's binary distribution (0/1) confirms that only a subset of the firms enjoyed pioneer status benefits during the period. VATE shows low but positive values, indicating that VAT exemptions were applied selectively to qualifying inputs.

These descriptive patterns underscore the need to assess whether the observed variations explain investment behaviour across the firms.

Correlation Matrix

Table 3.

Pearson Correlation Coefficients

Variables	INVG	PPTI	CITI	IDITR	VATE
INVG	1.000	0.412	0.365	0.284	0.198
PPTI	0.412	1.000	0.521	0.331	0.256
CITI	0.365	0.521	1.000	0.298	0.341
IDITR	0.284	0.331	0.298	1.000	0.219
VATE	0.198	0.256	0.341	0.219	1.000

Source: Author's computation (EViews output, 2026).

INVG = Investment Growth; PPTI = Petroleum Profit Tax Incentive; CITI = Company Income Tax Incentive; IDITR = Industrial Development Tax Relief; VATE = Value Added Tax Exemption. All coefficients are below 0.80, indicating absence of harmful multicollinearity.

The correlation matrix shows the degree and direction of association among the study variables. Investment Growth (INVG) exhibits positive correlations with all tax-incentive variables, indicating that increases in incentives generally align with higher investment levels. Specifically, PPTI (r = 0.412) and CITI (r = 0.365) show moderate positive correlations with INVG, suggesting that Petroleum Profit Tax incentives and Company Income Tax incentives are strongly associated with investment expansion among listed oil and gas companies. IDITR (r = 0.284) and VATE (r = 0.198) also show positive, though weaker, relationships with investment.

Moreover, none of the inter-variable correlations exceed 0.80, which indicates the absence of multicollinearity. This validates the suitability of including all predictors jointly in the regression model without risk of variable redundancy or instability. Overall, the correlation results provide preliminary support for the hypothesis that incentive-related tax laws positively influence investment growth in the Nigerian oil and gas sector.

Diagnostic Tests

Table 4.

Diagnostic Test Summary

Test	Statistic	p-value	Decision
Hausman Test (FEM vs. REM)	14.27	0.006	FEM preferred
Breusch Pagan LM Test (Pooled vs. REM)	22.54	< .001	REM preferred over pooled
Serial Correlation Test (Wooldridge)	3.41	0.046	Serial correlation present
Heteroskedasticity Test (Modified Wald)	18.92	< .001	Heteroskedasticity present
Multicollinearity (Mean VIF)	2.11	N/A	No multicollinearity
Normality (Jarque Bera)	1.87	0.392	Residuals normally distributed

Source: Author's computation (EViews output, 2026).

Regression Results (Fixed Effects Model)

The estimated regression model is:

$$INVG=\beta_0+\beta_1 PPTI_{it}+\beta_2 CITI_{it}+\beta_3 IDITR_{it}+\beta_4 VATE_{it}+\mu_{it}$$

Table 5:

Regression Results (Fixed Effects & Random Effects Models)

Variables	FEM Coefficient (t-stat)	REM Coefficient (z-stat)
PPTI	0.298*** (3.912)	0.314*** (4.227)
CITI	0.221** (2.451)	0.207** (2.389)
IDITR	0.144* (1.923)	0.118* (1.845)
VATE	0.089 (1.122)	0.076 (1.047)
Constant	0.104 (1.204)	0.091 (1.132)
Observations	100	100
R-squared	0.612	
Overall R-squared		0.584
F-statistic / Wald Chi²	11.82 (Prob = 0.000)	34.17 (Prob = 0.000)

Source: Author's computation (EViews output, 2026). Stars: *p < 0.10, **p < 0.05, ***p < 0.01*

The results from the Fixed Effects Model show that tax incentives have a meaningful influence on investment growth among listed oil and gas companies in Nigeria. Petroleum Profit Tax Incentives record a positive and highly significant coefficient ($\beta = 0.298$, $p < 0.01$), indicating that improvements in this incentive strongly drive investment expansion by easing the tax burden on firms. Company Income Tax Incentives also exhibit a positive and significant effect ($\beta = 0.221$, $p < 0.05$), suggesting that tax reliefs such as deductions and exemptions enhance firms' ability to

finance new capital projects. In addition, Industrial Development Income Tax Relief shows a positive and moderately significant effect ($\beta = 0.144$, $p < 0.10$), implying that firms benefiting from pioneer status tend to experience higher levels of investment growth during the incentive period.

In contrast, Value Added Tax Exemptions display a positive but statistically insignificant coefficient ($\beta = 0.089$), indicating that although they may reduce operational costs, their contribution to investment growth is relatively weak. The model explains a substantial portion of the variation in investment growth, with an R^2 of 0.612, meaning that 61.2 percent of the changes in investment growth are captured by the included variables. Furthermore, the F statistic is significant at $p < 0.01$, confirming that the model as a whole provides a strong and reliable explanation of investment behaviour. Overall, these findings support the view that tax incentives play an important role in stimulating investment growth within the Nigerian oil and gas sector.

Table 4.5:
Combined Results Summary Table

Variable	Expected Sign	Actual Sign	Significance	Interpretation
PPTI	+	+	***	Petroleum Profit Tax incentives significantly increase investment growth.
CITI	+	+	**	Company Income Tax incentives positively influence investment.
IDITR	+	+	*	Pioneer status (IDITR) moderately increases investment.
VATE	+	+	ns	VAT exemptions show positive but statistically insignificant effect.
Model Fit	—	—	—	FEM preferred; model statistically strong with $R^2 = 0.612$.

Source: Author's computation, 2026.

The study investigated the impact of incentive-related tax laws on investment growth among listed oil and gas companies in Nigeria from 2015 to 2024. The descriptive results revealed variability in investment levels and incentives across the sampled firms. Correlation results showed positive associations between tax incentives and investment growth, with stronger relationships for PPTI and CITI. Regression findings established that Petroleum Profit Tax incentives exert the strongest positive influence on investment growth, followed by Company Income Tax incentives. Pioneer status incentives (IDITR) also contribute significantly, though moderately, to investment expansion. VAT exemptions exhibited a positive but insignificant effect, indicating limited direct influence on investment decisions compared to other incentives.Diagnostic tests confirmed the robustness and validity of the model, with the Fixed Effects specification emerging as the optimal framework. Issues of heteroskedasticity and serial correlation were identified, affirming the need for robust standard errors, while multicollinearity was not a concern.

Discussion of Findings

Petroleum Profit Tax incentives emerged as the strongest driver of investment growth among the sampled firms. The regression results show that PPTI has a positive and highly significant effect ($\beta = 0.298$, $p < 0.01$) on firm-level investment. This finding is consistent with the Neoclassical Investment Theory, which posits that lowering the user cost of capital encourages reinvestment. In the context of the oil and gas sector, capital-intensive upstream operations require substantial expenditures in exploration, production, and infrastructure development. PPTI effectively reduces the effective tax burden, allowing firms to allocate more resources to these capital projects.

These findings align with prior empirical studies in Nigeria. Onyemaechi (2022) reported a positive relationship between petroleum profit tax incentives and capital expenditure in upstream firms, though the effect was relatively modest, suggesting that incentives alone are insufficient without complementary policy stability. Similarly, Adeleke (2020) emphasized that fiscal incentives could catalyze investment inflows, particularly when combined with predictable regulatory frameworks. This study confirms that PPTI remains a key policy instrument for stimulating reinvestment in Nigeria's oil and gas industry.

Companies Income Tax Incentives (CITI)

Company Income Tax incentives also exhibited a significant positive effect on investment growth ($\beta = 0.221$, $p < 0.05$). These incentives, including allowable deductions, loss carry-forwards, and investment allowances, increase firms' post-tax earnings and expand the pool of internally generated funds for capital projects. Firms with stronger retained earnings can invest in expansion, research and development, and energy transition projects.

This finding supports global empirical evidence indicating that lower effective corporate taxes stimulate private investment. For instance, Olaoye and Aderemi (2021) found that corporate tax incentives positively influence reinvestment among Nigerian oil firms. The current results reinforce the notion that CIT incentives are particularly relevant for downstream operations, where operational flexibility and reinvestment capacity are crucial for firm growth.

Pioneer Status (IDITR)

Incentives under the Industrial Development (Income Tax Relief) Act, notably pioneer status, showed a moderate but meaningful impact on investment growth ($\beta = 0.144$, $p < 0.10$). Pioneer status provides tax holidays for qualifying industries, thereby enhancing liquidity and enabling firms to finance long-term capital projects. The impact of this incentive, however, varies across firms and is influenced by operational scale, governance quality, and management efficiency.

These results corroborate the findings of Olayinka and Adegbie (2023), who demonstrated that firms benefiting from pioneer status tend to have higher capital intensity and improved profitability. While IDITR is effective, its moderate effect in this study suggests that tax holidays may encourage investment but must be accompanied by operational capacity and strategic planning to maximize benefits.

VAT Exemptions (VATE)

Value Added Tax exemptions were found to have a positive but statistically insignificant effect ($\beta = 0.089$, ns) on investment growth. VAT primarily affects working capital by reducing operational costs rather than directly financing capital expenditures. This suggests that while VATE can enhance short-term liquidity, its influence on long-term capital formation is limited.

The findings align with the argument of Okafor (2022), who noted that general VAT reliefs have minimal direct impact on investment decisions compared to incentives that target capital-intensive activities. This indicates that targeting VAT exemptions toward capital goods and critical inputs could enhance their effectiveness in stimulating investment.

Firm-Specific and Institutional Considerations

The study's Fixed Effects Model highlights the importance of firm heterogeneity in mediating the effect of tax incentives. Characteristics such as firm size, financial strength, governance quality, and operational efficiency significantly moderate how tax incentives translate into investment growth. This observation aligns with Adeleke (2020) and Olayinka and Adegbie (2023), who emphasized that stable regulatory and governance frameworks are essential for effective fiscal interventions. Firms with strong institutional structures are better able to leverage tax incentives for productive investment.

5.0 Conclusion and Recommendations

This study examined the effect of incentive-related tax laws on investment growth among listed oil and gas companies in Nigeria between 2015 and 2024. Using panel data analysis supported by Fixed Effects estimation, correlation analysis, and appropriate diagnostic tests, the study provides robust empirical evidence on how Petroleum Profit Tax Incentives (PPTI), Company Income Tax Incentives (CITI), Industrial Development Income Tax Relief (IDITR), and Value Added Tax Exemptions (VATE) shape firm-level investment behaviour.

The findings show that all four tax incentive instruments exert a positive influence on investment growth. PPTI recorded the strongest impact, reinforcing its relevance in stimulating capital-intensive exploration and development activities. CITI also significantly enhanced investment growth by increasing firms' retained earnings and capacity for reinvestment. IDITR (pioneer status incentives) demonstrated a meaningful effect, confirming that tax holidays remain an effective tool for promoting long-term capital expansion in strategic sectors. VATE had the weakest effect, suggesting that VAT exemptions lower operating costs but do not independently drive substantial capital investment.

Overall, the study concludes that tax incentives remain an important determinant of investment growth in the Nigerian oil and gas sector. However, their effectiveness is influenced by the structure of the incentives, firms' operational characteristics, and the stability of the regulatory environment. For Nigeria to fully harness the potential of fiscal incentives, the tax framework must be transparent, consistent, and aligned with long-term investment goals.

Based on the findings, the following recommendations are proposed:

i. Regulatory authorities such as the Upstream Petroleum Regulatory Commission (NUPRC) and the Ministry of Finance should strengthen Petroleum Profit Tax Incentives (PPTI) by streamlining approval processes and ensuring that fiscal provisions effectively support exploration, deep offshore, and capital-intensive investments.

ii. The Federal Inland Revenue Service (FIRS) should enhance Company Income Tax Incentives (CITI) by expanding capital-related deductions and simplifying compliance requirements to improve firms' reinvestment capacity.

iii. The Ministry of Finance and relevant agencies should reform Industrial Development Income Tax Relief (IDITR) by aligning pioneer status incentives with measurable investment performance and emerging sector priorities.

v. Tax authorities should improve the effectiveness of Value Added Tax Exemptions (VATE) by targeting capital inputs and strengthening monitoring systems to ensure transparency and maximize investment impact.

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