
CORPORATE TAX AND INVESTMENT AMONG LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

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Abstract

The study examined the effect of corporate taxes on investment among listed industrial goods firms in Nigeria. The specific objectives were to assess the effect of capital gains tax and value added tax on net investing cash flow. The study adopted an ex-post facto research design to analyze historical data from 2015 to 2024. The population comprised all twelve industrial goods firms listed on the Nigerian Exchange Group, from which nine firms were purposively selected based on the availability of complete financial data. Secondary data were collected from audited annual financial statements of the selected firms. Hypotheses were tested using Panel Estimated Generalized Least Squares (EGLS) at 5% significance level, complemented by diagnostic tests including cross-sectional dependence. Findings revealed that: capital gains tax has a positive and significant effect on the net investing cash flow of listed industrial goods firms in Nigeria ($\beta = 23.24331$, $p = 0.0000$), significant at 5%; value added tax has a negative and significant effect on the net investing cash flow of listed industrial goods firms in Nigeria ($\beta = -36.77528$, $p = 0.0000$), significant at 5%. The study concluded that the investment environment is highly sensitive to the structure and composition of the tax system, as certain levies may indirectly promote capital accumulation while others act as a deterrent. Therefore, Nigeria Revenue Service (NRS) should maintain or fine-tune the capital gains tax framework to continue supporting reinvestment by listed industrial goods firms, as the positive effect on net investing cash flow demonstrates that firms are encouraged to allocate resources toward productive investments when CGT policies are favorable.

Keywords: Corporate taxes, Capital gains tax, Value added tax and net investing cash flow

Introduction

Economic development in any nation is closely tied to the strength and performance of its private sector. Businesses drive production, create employment, generate income, and contribute to government revenue through taxation. In developing economies such as Nigeria, firms operate within a challenging environment characterized by infrastructural deficits, policy uncertainties, exchange rate volatility, and limited access to finance. Despite these constraints, investment by firms remains essential for industrial growth, technological progress, and competitiveness. Investment decisions determine whether businesses expand production capacity, adopt new technologies, or enter new markets (Bande et al., 2025). At the same time, governments depend heavily on tax revenue to finance public expenditure, provide social services, and maintain economic stability. This creates a delicate balance between the need to generate revenue and the need to sustain private sector growth. In Nigeria, multiple forms of taxation imposed on corporate entities have generated debate among policymakers, business leaders, and scholars regarding their impact on business performance. Concerns have been raised that a heavy tax burden may discourage expansion and weaken the ability of firms to reinvest profits, thereby slowing economic progress (Olaniyi et al., 2018; Goodwill et al., 2020; Amahalu, 2020).

Firm investment and corporate taxation have become especially important in today's business environment due to globalization, rapid technological change, and increased competition. Companies must continuously invest in machinery, research, human capital, and innovation to remain viable. Without sustained investment, firms risk losing market share to both domestic and foreign competitors (Bande et al., 2025). Investment also plays a crucial role in job creation and productivity growth, which are necessary for improving living standards. At the same time, governments require stable revenue sources to fund infrastructure, education, healthcare, and security. Corporate taxes such as company income tax, value added tax, capital gains tax, and sector specific levies form a significant portion of public revenue in many countries (Ndah et al., 2024). In Nigeria, the reliance on tax revenue has increased as fluctuations in oil income have exposed the vulnerability of depending on a single resource. However, the business environment is also shaped by the ease of tax compliance, transparency of tax administration, and predictability of fiscal policy.

When tax systems are complex or burdensome, firms may divert resources toward compliance activities instead of productive investment. Evidence from several empirical studies suggests that high tax burdens and complex administrative procedures can discourage corporate investment and reduce capital spending by firms (Eyide et al., 2021; Oshiole et al., 2024; Ndah et al., 2024). In addition, investors often consider the overall tax climate when deciding where to allocate capital. Countries perceived as having excessive or unpredictable taxation may struggle to attract both domestic and foreign investment. Conversely, well-designed tax incentives and stable fiscal policies can encourage investment inflows and improve economic performance (Ugwu et al., 2020; Omotoso et al., 2026). Consequently, the interaction between firm investment and corporate taxation remains a central issue in economic policy discussions.

Although many studies have explored taxation and corporate investment in Nigeria, notable gaps remain that this study addresses. Most prior research focused on sectors like consumer goods, healthcare, communication, and manufacturing, leaving industrial goods firms, which are capital-intensive and vital to economic growth, underexplored (Bande et al., 2025; Opuene & Akenbor, 2025; Ndah et al., 2024; Omodero, 2024; Oshiole et al., 2024; Odusina, 2023; and others. Few studies have used net investing cash flow as a measure of investment, with Eze (2021) focusing on tax avoidance rather than the direct effect of corporate taxes.

Additionally, prior studies often relied on standard panel regressions without addressing econometric issues such as cross-sectional dependence and heteroskedasticity, which Panel Estimated Generalized Least Squares (EGLS) can better handle (Odusina, 2023; Osegbue et al., 2021; Abu et al., 2023). To address the gaps above, these studies targets listed industrial goods firms, examines multiple corporate taxes, and applies panel EGLS to provide more reliable hints on taxation and investment.

The main objective of this study is to examine the effect of corporate tax on investment among listed industrial goods firms in Nigeria. The specific objectives are as follows:

1. To determine the effect of capital gains tax on net investing cash flow of listed industrial goods firms in Nigeria.
2. To examine the effect of value added tax on net investing cash flow of listed industrial goods firms in Nigeria.

Review of Related Literature

Corporate Tax

Corporate tax is a compulsory financial charge imposed by the government on the profits earned by companies and organizations within its jurisdiction (Opuene & Akenbor, 2025). It represents the contribution of businesses to public revenue and is calculated based on a firm's taxable income during a specific period (Odusina, 2023). This tax is distinct from personal income tax because it applies specifically to legal entities rather than individuals, and it is a fundamental source of government revenue that funds public services such as infrastructure, healthcare, and education (Halim & Rahman, 2022). Corporate tax obliges firms to account for their earnings and report financial information to tax authorities, ensuring transparency and compliance with national financial regulations (Bande et al., 2025).

It functions as a regulatory mechanism that requires companies to allocate a portion of their financial resources to public use. Companies engage in careful financial planning to comply with corporate tax obligations while managing their operational costs and profitability (Adetola et al., 2023). The amount of corporate tax paid can vary depending on the size of the company, the industry in which it operates, and any special incentives or exemptions provided by government policies. These variations ensure that taxation considers both the capacity of the company to contribute and the broader economic objectives of the state.

Capital Gains Tax

Capital gains tax is a levy imposed on the financial profit earned from the sale or transfer of an asset (Ndah et al., 2024). It applies when the selling price of an asset exceeds its original purchase cost, with the difference considered a gain subject to taxation. This tax focuses on the financial benefits realized by individuals or companies through the appreciation of assets over time. It ensures that profits obtained from investment activities contribute to public revenue in the same way as ordinary income, linking private wealth creation to societal financial needs (Omodero, 2024).

The tax applies to a wide range of assets, including real estate, stocks, bonds, and other investments, and requires taxpayers to report transactions that generate profits. Its calculation often depends on the length of time the asset was held before the sale, reflecting the intention of encouraging long-term investment while still capturing revenue from shorter-term speculative gains. By imposing a financial obligation on these transactions, capital gains tax directs attention to the net increase in value rather than overall financial activity. Adebayo and Francis (2025) submitted that capital gains tax is charged on the profit from selling chargeable assets such as property or investments (Ndah et al., 2024). For companies in

Nigeria, this tax has historically been set at ten percent of the chargeable gain. Lawmakers have recently considered reforms that would align this rate with the standard company income tax rate (around thirty percent), though the ten percent rate remains widely referenced in current practice.

Capital gains tax also serves as a measure of fairness within the taxation system by ensuring that financial gains resulting from market participation are partially contributed to public funding. Investors who benefit from price appreciation are required to share a portion of their profits, supporting the financing of government programs. This tax is particularly relevant for firms and individuals engaged in active trading or investment of financial instruments, as it directly affects the net financial outcome of their investment decisions (Moon, 2022).

Additionally, capital gains tax influences the timing and strategy of asset sales. Investors may consider the tax implications when deciding whether to hold, sell, or transfer assets, which can shape investment behavior across markets. The tax framework integrates financial growth with public fiscal requirements, creating a link between private investment outcomes and national economic planning. By applying to realize profits, it encourages transparency and accountability in financial reporting. Capital gains tax ensures that the appreciation of wealth through investments is recognized as a source of public revenue (Ndah et al., 2024). It establishes a mechanism through which the benefits of capital accumulation contribute to the financing of government functions, reinforcing the relationship between individual financial gain and societal obligations. It highlights the responsibility of wealth holders to participate in public resource provision through the taxation of asset profits.

Value Added Tax

Value added tax is a consumption-based tax levied on goods and services at each stage of production and distribution where value is added (Egoh et al., (2025). It requires businesses to collect a tax on the difference between the sales price of a product or service and the cost of inputs purchased for its production (Abu et al., 2023). This tax shifts the responsibility of revenue generation to the point of consumption, meaning the final buyer effectively bears the financial burden. Governments rely on value added tax as a stable source of revenue that funds public services, infrastructure, and social programs. The tax is applied uniformly across taxable goods and services, although some products may be exempted or taxed at reduced rates depending on national priorities (Eyide et al., 2021).

Value added tax in Nigeria is charged on most goods and services supplied within the country. The standard rate is seven and a half percent, which businesses must add to the price of taxable supplies and remit to government tax authorities. Certain goods and services may be exempted or zero-rated under Nigerian VAT law, but the standard collection rate remains 7.5 percent for most transactions. Businesses act as intermediaries in collecting value added tax from consumers and remitting it to tax authorities (Umenweke & Nwoke, 2023). This system ensures that taxation occurs incrementally along the supply chain while minimizing opportunities for evasion. It also encourages formal business operations, as participation in the tax system requires documentation and reporting of transactions.

Value added tax impacts the pricing and profitability of goods and services because the tax is added to the final selling price (Egoh et al., (2025). Companies must account for the collection and remittance process in their financial planning, ensuring they maintain compliance while managing cash flow. Although the tax is ultimately paid by consumers, businesses carry administrative responsibilities that affect operational efficiency and resource allocation (Umenweke & Nwoke, 2023). The tax structure of value added tax reinforces

transparency and accountability in commercial transactions. It captures economic activity at multiple stages, providing governments with a reliable revenue stream while linking business operations to public finance. By targeting consumption rather than income, value added tax aligns revenue collection with market activity, ensuring that both producers and consumers participate in the contribution to public services (Akande, 2024). The system encourages formal trade practices and strengthens the connection between business activity and national development priorities.

Investment cash flow

Firm investment refers to the allocation of financial resources by a company toward activities and assets intended to generate future economic benefits (Bande et al., 2025). It involves the commitment of capital to projects that enhance the productive capacity of the firm, such as acquiring machinery, constructing facilities, developing technology, or training personnel. Investment by a company reflects its efforts to grow, expand operations, and remain competitive in its industry (Bhusal, 2025). The level and direction of investment indicate the company's priorities, strategic objectives, and response to market opportunities.

Investment requires careful planning and decision-making, as resources allocated to one area cannot be used elsewhere (Tsegba et al., 2021). Companies consider potential returns, risks, and market conditions before committing funds, ensuring that resources are used in ways that are expected to increase profitability. It is closely tied to the long-term sustainability of the business, as successful investment allows firms to maintain and improve operational efficiency, respond to changes in consumer demand, and enter new markets (Egoh et al., 2025). Investment also contributes to technological advancement and innovation, which can strengthen the company's position in a competitive environment.

Cash flows from investing activities indicate the level of commitment a company places on developing its productive capacity. When cash outflows exceed inflows, it shows that the firm is acquiring assets to expand operations or enhance efficiency. Positive inflows suggest that the firm is selling assets, possibly to raise funds, restructure operations, or divest underperforming units (Sabri et al., 2020). By examining net investing cash flow, stakeholders can assess how financial resources are directed toward sustaining or growing the business, giving an indication of management's approach to investment priorities.

This measure is essential in evaluating the financial health of a company because it demonstrates the firm's ability to balance cash spent on long-term assets with the returns or recoveries obtained from such investments (Itan & Riana, 2021). Net investing cash flow provides information on whether the company is actively investing for future growth, liquidating assets, or managing capital more conservatively (Eze, 2021). Tracking these cash flows over time helps reveal trends in investment behavior and the financial strategies that support the company's long-term objectives.

Empirical Review

Omotoso et al. (2026) investigated how tax incentives influence foreign direct investment (FDI) in Ekiti State, Nigeria. The study adopted a quantitative research design and relied on data obtained from relevant institutional sources. The population consisted of 60 firms that benefited from tax incentives between 2015 and 2023, including 32 foreign-owned companies registered with the Ekiti State Investment Bureau, as well as administrative records from the Federal Inland Revenue Service (FIRS) and the Ekiti State Internal Revenue Service (EKIRS) on incentives and FDI inflows. Using a stratified random sampling method, the researchers selected 60 firms from the FIRS and EKIRS databases, distributed across

manufacturing (40%), agriculture (30%), and services (30%). The sampling frame comprised approved incentive beneficiaries and FDI statistics reported by the Central Bank of Nigeria. Regression analysis revealed that tax incentives significantly and positively affected FDI (0.56), demonstrating their importance in attracting foreign investment. Infrastructure quality also showed a positive relationship with FDI (0.34), whereas security challenges negatively influenced inflows (-0.21).

Adeniran and Osegbue (2025) evaluated the effect of corporate income tax on foreign direct investment across five major Sub-Saharan African economies—Nigeria, South Africa, Kenya, Ghana, and Ethiopia—between 1999 and 2023. The study relied on secondary data from the World Bank Development Indicators, the Central Bank of Nigeria statistical bulletin, and the National Bureau of Statistics. Using both country-specific and pooled ordinary least squares estimations, the analysis revealed substantial differences among the countries. In Ghana, both value-added tax and corporate tax were found to reduce FDI, supporting the view that higher tax burdens discourage investment. Conversely, Kenya and Ethiopia experienced unexpected positive effects from VAT, while tax variables showed no significant influence in Nigeria and South Africa.

Olugbenga and Adepeju (2025) investigated the role of tax incentives in promoting investment growth in Nigeria, with particular emphasis on tax credits as a policy instrument. The study adopted an ex post facto approach using data on private investment and foreign direct investment. Statistical techniques including descriptive analysis, correlation, one-sample testing, and regression were employed to evaluate the impact of tax credits. The findings showed that tax credits exert a positive and statistically significant effect on both domestic and foreign investment. Strong correlations were observed between tax credits and private investment as well as FDI, indicating that such incentives can effectively stimulate capital formation.

Bhusal (2025) examined how effective tax rates, income tax expenses, and deferred tax obligations influence investment decisions within organizations, focusing on the role of fiscal factors in shaping capital allocation strategies. The research utilized primary data collected from individuals involved in financial and investment decision-making processes. Data analysis was conducted using SPSS, applying regression and correlation techniques to determine the nature and strength of relationships among variables. Corporate tax rates, financing policies, and tax knowledge were treated as independent variables, while investment decisions served as the dependent variable. The results revealed a strong positive association between tax rates, financing strategies, and investment decisions, suggesting that supportive tax environments and sound financing policies encourage higher investment levels. Although tax education showed a weaker relationship, it still contributed positively.

Egoh et al. (2025) explored the impact of value-added tax on the net investment of industrial goods firms in Nigeria, drawing on the Accelerated Investment Theory, which links investment decisions to expected changes in demand and output. The study used panel data from 108 firms covering the period 2013–2014 and applied descriptive statistics alongside simple linear regression. Results revealed a significant inverse relationship between VAT and net investment, indicating that higher VAT obligations are associated with lower capital spending by firms. The model accounted for approximately 57.7% of the variation in investment levels, demonstrating the substantial role of VAT in shaping corporate investment behavior. The findings suggest that heavy compliance requirements and delays in tax refunds may reduce firms' liquidity, thereby limiting their ability to invest in productive assets.

Abdullahi et al. (2025) assessed how taxation affects the performance of nine publicly listed oil and gas companies in Nigeria between 2008 and 2022. The study utilized a random-effects regression model, selected based on the Breusch–Pagan Lagrangian Multiplier test. The results showed that company income tax exerts a significant negative effect on corporate performance, whereas value-added tax has a significant positive impact on the financial outcomes of the sampled firms.

Aondover (2025) investigated the effect of company income tax and petroleum profit tax on the profitability of listed oil and gas firms in Nigeria. Recognizing the sector's major contribution to government revenue, the study developed a theoretical framework to explain how these taxes influence corporate profitability. A qualitative research design was adopted, and thematic analysis was applied to hints drawn from existing literature.

Adesoye et al. (2025) explored the link between tax payments, deferred tax liabilities, and tax compliance among multinational corporations listed in Nigeria. Using panel data from 31 firms on the Nigerian Exchange Group covering the period 2010 to 2024, the study applied panel regression analysis with E-Views software. The results indicated that the proportion of tax payments had a positive but insignificant relationship with total taxes paid, while deferred tax liabilities showed a negative and statistically significant association.

Olaoye and Adesodun (2025) analyzed the effect of corporate income taxation on investor returns in Nigeria's evolving banking sector. Despite ongoing fiscal reforms aimed at improving tax compliance and revenue generation, deposit money banks continue to face challenges in balancing tax obligations with profitability, which in turn affects shareholder returns. Using dynamic panel data analysis with the Generalized Method of Moments on data from ten banks covering the period 2014–2023, the study controlled for factors such as financial leverage, bank size, and asset growth. The findings revealed a negative relationship between corporate income tax payments and investor returns measured by earnings per share, although the relationship was not statistically significant.

Ndah et al. (2024) investigated the impact of various taxes on the net investment of industrial goods firms in Nigeria. The study examined the roles of company income tax, tertiary education tax, value-added tax, capital gains tax, and industrial training tax using an ex post facto research design. The population consisted of 13 listed industrial firms observed over an eleven-year period from 2013 to 2023. Panel regression analysis was employed to analyze the data. The results indicated that company income tax and tertiary education tax had no significant effect on net investment, though the former showed a positive relationship while the latter was negative. In contrast, value-added tax and capital gains tax exhibited significant negative effects, whereas industrial training tax showed a significant positive influence. The study concluded that most tax liabilities, except company income tax and tertiary education tax, play a significant role in shaping investment decisions within the sector.

Ajagun et al. (2024) examined how corporate income tax revenue influences public investment in Nigeria's agricultural sector from 1990 to 2022. Adopting an ex post facto design, the study used data obtained from the Central Bank of Nigeria, the Federal Inland Revenue Service, and the National Bureau of Statistics. Company income tax revenue served as the independent variable, while public investment in agriculture was the dependent variable. The analysis combined descriptive statistics with a fully modified ordinary least squares regression approach. Findings revealed that direct taxes, particularly company income tax, have a positive and statistically significant effect on government funding for agriculture at the 1 percent significance level.

Oshiole et al. (2024) explored the relationship between taxation and net investment among listed communication firms in Nigeria over the period 2012 to 2022. The study focused on company income tax, tertiary education tax, value-added tax, and the national information technology development levy. Panel data obtained from the annual reports of eight firms were analyzed using an ex post facto design. Inferential techniques, including Pearson correlation and panel least squares regression, were employed. The results revealed that all the tax variables examined had significant negative relationships with net investment, indicating that higher tax obligations tend to reduce firms' capital spending.

Umezurike et al. (2024) analyzed the impact of taxation on foreign direct investment in Nigeria using data from 1999 to 2023 obtained from the World Development Indicators and Federal Inland Revenue Service publications. The study adopted an ex post facto design and employed the Autoregressive Distributed Lag technique to examine both short-run and long-run relationships. Results indicated that value-added tax and petroleum profit tax did not significantly influence FDI in the long term, while personal income tax and company income tax had significant negative effects. In the short term, however, all tax variables were found to be significant, suggesting that taxation has an immediate influence on foreign investment decisions.

Godwin and Iyoha (2024) investigated the relationship between corporate tax structure, firm characteristics, and the performance of listed non-financial companies in Nigeria. The study adopted a panel research design using secondary data from 36 firms listed on the Nigerian Exchange Group, all of which prepare financial statements to December 31 annually. The analysis covered the period from 2015 to 2022. Both descriptive and inferential statistical techniques were applied, with panel least squares regression under a random-effects framework used to test the hypotheses. The results indicated that company income tax and financial leverage have positive and significant effects on firm performance. Firm size showed a negative relationship with performance, while the effective tax rate exhibited a negative but statistically insignificant impact.

Habila et al. (2024) examined how tax liabilities influence the financial performance of listed deposit money banks in Nigeria. The study considered company income tax, tertiary education tax, value-added tax, and capital gains tax as measures of tax liabilities. An ex post facto research design was employed, focusing on a population of 14 banks, from which 10 were selected using judgmental sampling. Secondary data covering 2013 to 2022 were obtained from audited financial statements. Panel least squares regression techniques—including pooled, fixed, and random effects—were applied, with the Hausman test guiding the selection of the fixed-effects model for interpretation. Findings revealed that company income tax had a positive and significant effect on performance, whereas tertiary education tax and capital gains tax had significant negative effects. Value-added tax showed a positive but insignificant influence. The study concluded that certain tax obligations can constrain bank performance, particularly tertiary education tax and capital gains tax.

Kabiru et al. (2023) explored how taxation affects the financial performance of small and medium enterprises (SMEs) in Ibadan, Oyo State, Nigeria, focusing specifically on company income tax (CIT) and capital gains tax (CGT). The study was motivated by the challenges SMEs face with tax compliance and its potential impact on profitability. Using judgmental sampling, 120 SMEs across five urban local government areas were selected, ensuring inclusion of active taxpayers. Data were collected through carefully administered questionnaires. Results indicated that both CIT and CGT significantly constrain growth and profitability, with respondents identifying these taxes as barriers to investment and expansion.

Abu et al. (2023) investigated the long-term asymmetric effects of value-added tax (VAT) on domestic investment in Nigeria using quarterly data from 1994 to 2021 and applying a non-linear autoregressive distributed lag (NARDL) approach. The study found a long-term relationship between domestic investment and VAT, alongside other variables including lending and inflation rates, credit to the private sector, exchange rates, trade openness, and household consumption. Results showed that increases in VAT significantly reduced domestic investment in the long run, whereas decreases in VAT had a small, insignificant positive effect. Other factors such as credit to the private sector, inflation, lending rates, exchange rate, and household consumption also influenced long-term investment.

Salaudeen et al. (2023) examined the impact of tax incentives on the growth of listed oil and gas companies in Nigeria. Using an ex-post facto design, data were collected from annual reports of ten out of twelve listed firms for a seven-year period. Panel data were analyzed using generalized least squares (GLS). Findings revealed that capital allowances had no significant impact on business growth, while investment allowances, loss relief, and allowable interest positively and significantly affected growth.

Methodology

Research Design

This study adopted an ex-post facto research design, which is appropriate for analyzing causal effects when the independent variables have already occurred and cannot be manipulated by the researcher. In this study, corporate taxes (including capital gains tax, value added tax, company income tax, and tertiary education tax) represent historical fiscal obligations imposed on listed industrial goods firms in Nigeria.

Population of the Study

The population for this study consists of all the twelve industrial goods firms listed on the NGX as of 2024. According to NGX records, twelve (12) firms operate in this sector: Austin Laz & Company Plc, Berger Paints Plc, Beta Glass Plc, BUA Cement Plc, CAP Plc, Cutix Plc, Dangote Cement Plc, Greif Nigeria Plc, Lafarge Africa Plc, Meyer Plc, Premier Paints Plc, and Tripple Gee & Company Plc. These companies form the complete population from which the study draws its sample.

Sample Size and Sampling Technique

A purposive sampling technique was employed to select firms with complete and consistent financial data covering the period 2015 to 2024. Firms listed after 2015 were excluded. This resulted in a final sample of nine (9) firms: Austin Laz & Company Plc, Berger Paints Plc, Beta Glass Plc, CAP Plc, Cutix Plc, Dangote Cement Plc, Lafarge Africa Plc, Meyer Plc, and Tripple Gee & Company Plc. The purposive approach ensures that only firms with uninterrupted data records are analyzed, enabling a reliable longitudinal study.

Method of Data Collection

Secondary data were sourced from the audited annual financial statements of the selected firms, which are publicly accessible through the NGX website and individual corporate investor relations portals. The data cover the ten-year period from 2015 to 2024 and include reported amounts of capital gains tax, value added tax, company income tax, tertiary education tax, and net investing cash flow.

Model Specification

To examine the effect of corporate taxes on net investing cash flow, the study adapted the model by Bande et al. (2025) whose model is represented below:

$$Cl_{it} = \alpha_{it} + \beta_1 ER_{it} + \beta_2 CR_{it} + \beta_3 TS_{it} + \epsilon_{it} \quad \text{eqi}$$

Where;

Cl_{it} = Corporate Investment of firm “i” in year “t”

ETR_{it} = Effective Tax Rate of firm “i” in year “t”

$CETR_{it}$ = Cash Effective Tax Rate of firm “i” in year “t”

TS_{it} = Tax Savings of firm “i” in year “t”

α = Constant α_1 ,

α_2 are the coefficients of the parameter estimate;

ϵ = Error Term

However, the model above was modified as follows:

$$NICF_{it} = \alpha + \beta_1 (CGT)_{it} + \beta_2 (VAT)_{it} + \epsilon_{it} \quad \text{eqii}$$

Where:

$NICF_{it}$ = Net investing cash flow for firm i at time t

CGT_{it} = Capital gains tax for firm i at time t

VAT_{it} = Value added tax for firm i at time t

α = Intercept

β_1, β_2 = Coefficients of the respective independent variables

ϵ_{it} = Error term

Method of Data Analysis

Descriptive statistics were first used to summarize central tendency, dispersion, and distribution patterns of all variables. Hypotheses were tested using Panel Estimated Generalized Least Squares (EGLS), which corrects for cross-sectional dependence. The decision rule was based on a 5% significance level. Coefficients with p-values below 0.05 were considered significant, indicating that the corresponding tax type has a measurable effect on net investing cash flow, while p-values above 0.05 indicated no significant effect.

Analysis of Data

Descriptive Analysis of Data

Descriptive statistics were first used to summarize central tendency, dispersion, and distribution patterns of all variables.

Table 1: Descriptive Analysis

	NICF (₦'000)	CGT (₦'000)	VAT (₦'000)
Mean	-19967953	8786.233	646626.6
Median	-251459.0	0.000000	51893.50
Maximum	118485000	358164.0	13218000
Minimum	-830938000	0.000000	0.000000
Std. Dev.	95162722	43347.10	1871113.
Skewness	-7.100405	6.578747	4.603554
Kurtosis	60.25300	49.97374	26.88140
Jarque-Bera	13048.39	8923.693	2456.596
Probability	0.000000	0.000000	0.000000
Observations	90	90	90

Source: Eviews 10 Output (2026)

In Table 1, the descriptive statistics for net investing cash flow (NICF) reveal that the selected industrial goods firms in Nigeria experienced an average NICF of -₦19,967,953,000 over the period studied. This negative mean suggests that, on average, the firms were

disbursing more on investments than they were generating from investment returns, indicating net cash outflows. The maximum NICF observed was ₦118,485,000,000, reflecting periods when firms made substantial investments or experienced unusually high inflows, while the minimum NICF of -₦830,938,000,000 highlights extreme capital outflows in certain years. The standard deviation of ₦95,162,722,000 points to a high dispersion around the mean, signifying substantial variability in investment behavior across the firms. The skewness of -7.100 indicates a heavily left-skewed distribution, meaning there are extreme negative outliers pulling the mean downward, while the kurtosis of 60.253 reflects a leptokurtic distribution with sharp peaks and heavy tails. The Jarque-Bera probability of 0.000 confirms non-normality, but due to the central limit theorem, the sample size of 90 observations may allow inferential statistics to still approximate normality for hypothesis testing.

For capital gains tax (CGT), Table 1 shows a mean of ₦8,786,233,000, suggesting that the firms, on average, paid significant amounts in CGT during the period. The maximum CGT payment was ₦358,164,000,000, demonstrating that some firms faced very high tax liabilities, whereas the minimum was 0, indicating that certain firms had no CGT obligations in some periods, perhaps due to low capital gains or exemptions. The standard deviation of ₦43,347,100 reflects moderate variability relative to the mean, though the highly positive skewness of 6.579 suggests a concentration of firms paying lower amounts, with a few paying exceptionally high CGT. The kurtosis of 49.974 indicates extreme leptokurtosis, meaning the distribution has a sharper peak and heavier tails than a normal distribution. The Jarque-Bera probability of 0.000 confirms that the CGT data are not normally distributed, which should be considered in subsequent parametric analyses.

Value-added tax (VAT) in Table 1 shows an average of ₦646,626,600,000, indicating substantial contributions to government revenue by the industrial goods firms. The maximum VAT payment of ₦13,218,000,000 and minimum of 0 reveal significant variation in VAT liabilities, potentially reflecting differences in firm size, revenue streams, or compliance levels. The standard deviation of ₦1,871,113,000 suggests considerable dispersion around the mean. Positive skewness of 4.604 indicates a distribution with a longer right tail, meaning most firms pay VAT below the mean, with a few large taxpayers paying much higher amounts. The kurtosis of 26.881 further confirms heavy tails and a sharply peaked distribution. The Jarque-Bera probability of 0.000 indicates non-normality, which again is mitigated to some extent by the sample size according to the central limit theorem.

Analysis of Research Questions

Table 2 Correlational Analysis

Correlational Analysis: Spearman rank-order

Date: 03/12/26 Time: 09:14

Sample: 1 90

Included observations: 90

Correlation	
Probability	NICF
NICF	1.000000
CGT	-0.116750
VAT	-0.169285

Source: EvIEWS 10 Output (2026)

Table 2 presents the Spearman rank-order correlation analysis between net investing cash flow (NICF) and the four taxes examined. The NICF shows a perfect correlation with itself, as expected, with a coefficient of 1.0. Capital gains tax (CGT) exhibits a weak negative correlation of -0.117 with NICF, but the associated probability of 0.2731 indicates that this relationship is not statistically significant, suggesting little to no monotonic association between CGT payments and net investing cash flows in the sample. Value-added tax (VAT) also shows a small negative correlation of -0.169 with NICF, with a probability of 0.1107, indicating a weak and statistically insignificant inverse relationship. This suggests that higher TET obligations are closely associated with lower net investing cash flows, highlighting TET as a potentially critical tax factor that constrains investment among the listed industrial goods firms.

Test of Cross-sectional Independence

Table 3 Test of Cross-sectional Dependence

Residual Cross-Section Dependence Test

Null hypothesis: No cross-section dependence (correlation) in residuals

Equation: Untitled

Periods included: 10

Cross-sections included: 9

Total panel observations: 90

Note: non-zero cross-section means detected in data

Cross-section means were removed during computation of correlations

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	72.82173	36	0.0003
Pesaran scaled LM	4.339483		0.0000

Source: Eviews 10 Output (2026)

Cross-sectional dependence tests check whether residuals across units (firms) are correlated, which violates the assumption of independent errors in panel models. Table 3 presents a Breusch-Pagan LM statistic of 72.82 with a p-value of 0.0003, strongly rejecting the null hypothesis of no cross-sectional dependence. This indicates that shocks affecting one firm are likely to affect others, highlighting the importance of using estimation methods like EGLS that correct for cross-sectional correlation.

Test of Hypotheses

Table 4: Test of Hypotheses

Dependent Variable: NICF
Method: Panel EGLS (Cross-section SUR)
Date: 03/12/26 Time: 09:11
Sample: 2015 2024
Periods included: 10
Cross-sections included: 9
Total panel (balanced) observations: 90
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CGT	23.24331	1.619698	14.35040	0.0000
VAT	-36.77528	2.549122	-14.42665	0.0000
C	-3458284.	253686.6	-13.63211	0.0000
Weighted Statistics				
R-squared	0.971453	Mean dependent var		-1.430936
Adjusted R-squared	0.970110	S.D. dependent var		6.476822
S.E. of regression	0.970453	Sum squared resid		80.05118
F-statistic	723.1462	Durbin-Watson stat		1.993905
Prob(F-statistic)	0.000000			

Source: Eviews 10 Output (2026)

Table 4 presents the results of the Panel Estimated Generalized Least Squares (EGLS) model examining the effect of capital gains tax (CGT) and value-added tax (VAT) on net investing cash flow (NICF) of listed industrial goods firms in Nigeria. The model exhibits a very high adjusted R-squared of 0.9701, indicating that approximately 97% of the variation in NICF is explained by the four tax variables included in the model. This suggests excellent model fit, meaning that the chosen tax variables collectively account for nearly all the systematic variation in firms' investment flows. The Durbin-Watson statistic of 1.994 is very close to 2, implying minimal autocorrelation in the residuals, which enhances the reliability of the coefficient estimates. Additionally, the overall F-statistic is highly significant (Prob(F-statistic) = 0.0000), confirming that the explanatory variables jointly have a statistically significant effect on NICF at the 5% level.

The constant term (C = -N3,458,284,000, p = 0.0000) represents the baseline net investing cash flow when all tax variables are zero. The negative coefficient indicates that in the absence of CGT, and VAT, firms' NICF would still be negative, reflecting an inherent net disinvestment trend among the industrial goods firms studied. Its significance at the 5% level

confirms that this baseline effect is not due to random variation, providing a meaningful reference point for interpreting the marginal effects of the tax variables.

Test of Hypothesis I

H01: Capital gains tax has no significant effect on the net investing cash flow of listed industrial goods firms in Nigeria.

Table 4 shows that the coefficient for CGT is 23.24331 with a p-value of 0.0000. This indicates that for every one-unit increase in capital gains tax, the net investing cash flow of the firms increases by approximately 23.24 units, holding other variables constant. The positive direction suggests that higher capital gains tax is associated with greater NICF, perhaps due to firms adjusting their investment patterns in response to tax liabilities. Since the p-value is far below 0.05, the effect is statistically significant, leading to the rejection of H01. Therefore, the alternate hypothesis was accepted that capital gains tax has a significant positive effect on the net investing cash flow of listed industrial goods firms in Nigeria.

Test of Hypothesis II

H02: Value added tax has no significant effect on the net investing cash flow of listed industrial goods firms in Nigeria.

In Table 4, VAT has a coefficient of -36.77528 and a p-value of 0.0000. This means that a one-unit increase in VAT is associated with a decrease of approximately 36.78 units in net investing cash flow, *ceteris paribus*. The negative direction indicates that higher VAT reduces the funds available for investment, likely reflecting increased operational costs passed on to firms. Since the p-value is well below 0.05, the effect is statistically significant, leading to the rejection of H02. The alternate hypothesis was accepted that value added tax exerts a significant negative effect on the net investing cash flow of the firms.

Discussion of Findings

The finding that capital gains tax has a positive and significant effect on net investing cash flow suggests that listed industrial goods firms in Nigeria respond to CGT in ways that encourage reinvestment of resources. This aligns with Optimal Tax Theory, which posits that taxes structured to maintain firm liquidity or create predictable obligations can incentivize productive investment. The result is consistent with studies by Opuene and Akenbor (2025), Bhusal (2025), Omotoso et al. (2026), and Odusina (2023), all of which demonstrate that certain tax policies or incentives can positively influence firm investment behavior. It also resonates with Alpheaus et al. (2024), who found a significant positive link between CGT and profitability in the food and beverage sector, indicating that firms may treat CGT as a manageable cost that does not disrupt cash allocation for investment. The positive effect may reflect firms' strategic use of capital gains tax planning to maximize liquidity and investment efficiency, while predictable CGT obligations reduce uncertainty and support capital allocation toward net investing cash flows.

The significant negative effect of VAT on net investing cash flow indicates that higher VAT payments reduce the funds available for productive investment. This outcome is consistent with findings from Egoh et al. (2025), Abu et al. (2023), Eyide et al. (2021), and Chindengwike (2022), all of which reported that increases in VAT constrain investment by limiting liquidity or increasing operational costs. The negative effect can be explained by the nature of VAT as a consumption-based tax that directly increases costs and ties up cash flow, forcing firms to divert resources from investment projects toward tax compliance and payment. This is in line with Optimal Tax Theory, which emphasizes that taxes affecting

marginal returns on investment can reduce firms' willingness or ability to commit resources to productive activities. Firms may delay or reduce capital expenditures to maintain operational stability under higher VAT burdens, reflecting the constraining role of this tax on net investing cash flow.

Conclusion

The results of this study highlight the complex role that different corporate taxes play in shaping investment behavior among industrial goods firms in Nigeria, demonstrating that taxation does not uniformly constrain capital formation but can also stimulate it under certain conditions. The significant positive effect of capital gains on net investing cash flow suggests that some tax obligations may encourage firms to strategically allocate resources, potentially by leveraging tax-related incentives, reinvesting retained earnings, or optimizing financial planning to enhance long-term productive capacity. Conversely, the strong negative effects of value-added tax indicate that high transactional and income-based tax burdens can reduce liquidity, increase operational costs, and limit the financial flexibility necessary for firms to undertake new investments or expand existing operations. These findings collectively reveal that the investment environment is highly sensitive to the structure and composition of the tax system, as certain levies may indirectly promote capital accumulation while others act as a deterrent. Therefore, the study emphasizes the subtle interplay between fiscal policy instruments and corporate financial behavior, illustrating that taxation can both inhibit and motivate investment activities depending on the nature of the tax and the mechanisms through which firms manage their resources to sustain growth and competitiveness in the industrial sector.

Recommendations

The study recommended that:

1. The Nigeria Revenue Service (NRS) should maintain or fine-tune the capital gains tax framework to continue supporting reinvestment by listed industrial goods firms, as the positive effect on net investing cash flow demonstrates that firms are encouraged to allocate resources toward productive investments when CGT policies are favorable.
2. Financial managers of listed industrial goods firms should implement cost optimization strategies and efficient VAT management systems to mitigate the negative impact of VAT on net investing cash flow, ensuring sufficient liquidity for investment activities despite the tax burden.

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