Global Journal of Economic and Finance Research

e-ISSN: 3050-5348
p-ISSN: 3050-533X

Vol. 02(12): 1370-1380, December 2025

Home Page: https://gjefr.com/

Tax Savings Strategies and Financial Performance of Listed Consumer Goods Companies in Nigeria

ODUMADE Segun Michael CAN[1], OKOLIE Augustine Oke FCA[2]

[1]Department of Accounting, Delta State University, Abraka, Nigeria.

[2]Professor of Accounting, Delta State University, Abraka, Nigeria.

KEYWORDS: Tax savings, tax aggressiveness, firm performance

Corresponding Author:
ODUMADE Segun Michael CAN

Publication Date: 06 December-2025
DOI: 10.55677/GJEFR/04-2025-Vol02E12

ABSTRACT

This study investigates the impact of corporate tax strategies on the financial performance of listed consumer goods firms in Nigeria, employing an ex post facto research design and panel data from 18 companies covering the period 2012–2023. Return on assets was used as a proxy for financial performance, while corporate tax-saving strategies were measured by capital intensity, generally accepted accounting principles effective tax rate, thin capitalization, non-debt tax saving strategies, debt tax saving strategies, and tax paid to cash flow ratio. Quantile regression served as the primary analytical technique, supported by descriptive statistics, correlation analysis, and diagnostic tests, to capture heterogeneous effects across different performance levels. The findings reveal that capital intensity negatively influenced profitability at the 0.25 quantile, while thin capitalization displayed a performance-sensitive effect: negative at lower quantiles but positive and significant at higher quantiles, aligning with the trade-off theory of capital structure. Other tax strategies, including effective tax rate, non-debt, and debt-related tax incentives, showed no significant effect across quantiles, while liquidity management, measured by tax paid to cash flow, had only a marginal effect at the 0.25 quantile. These results indicate that corporate tax strategies are not uniformly effective but vary according to firm performance levels, with thin capitalization emerging as the most critical determinant. The study concludes that underperforming firms should focus on asset efficiency and liquidity, while highly profitable firms can strategically benefit from debt. It recommends that managers adopt performance-responsive tax strategies, regulators strengthen oversight on debt financing, and policymakers enhance the effectiveness of non-debt tax incentives. This research contributes to the literature by demonstrating the heterogeneous role of tax strategies in shaping firm performance in Nigeria's consumer goods sector.

1. INTRODUCTION

Organisational development and growth are primarily driven by firm performance, which reflects the progress a company achieves over time and serves both as a benchmark for investment decisions and a barometer of success (Ike & Osayemwenre, 2023). Firm performance is a multidimensional construct that has received significant scholarly attention worldwide, largely because financial performance remains the most reliable indicator of managerial effectiveness in profit-driven organisations. According to Ezie and Ofor (2024), sustained competitive advantage depends on managers' ability to strategically and ethically allocate resources, while both financial and non-financial performance metrics provide valid insights into corporate health (Osamor, Omoregbee, & Olugbenga, 2023). Financial statements are central to accountability and profitability-related decision-making, yet profit disclosures often create incentives for manipulation, driven by information asymmetry and efforts to reduce tax burdens while maximising shareholder wealth.

Taxation, with its historical roots in Nigeria's colonial era, remains a crucial determinant of economic activities by shaping consumption, production, savings, investment, and corporate strategies (Rasheed & Lateef, 2023). As taxes constitute a cost to firms, they directly influence performance outcomes, reinforcing the importance of effective tax planning. Despite this importance, Nigeria's tax system faces critical challenges, including multiple taxation, weak regulatory reviews, administrative inefficiencies, and unclear provisions (Osamor et al., 2023). These complexities hinder firms' operations, especially consumer goods companies, which form a vital component of the Nigerian economy. The resulting heavy tax burden limits firms' ability to reinvest, expand, and compete effectively, pushing managers to adopt tax-saving strategies aimed at minimising liabilities and enhancing profitability. Globally, tax-saving strategies such as debt financing, where interest payments are deductible, and non-debt tax shields like depreciation allowances and investment tax credits, have been shown to improve tax efficiency and strengthen firm performance (Udoh, Chegwe, Nyema, & Ndaburoma, 2023). Similarly, effective taxation requires that firms understand and leverage available incentives, including exemptions on loan interest, rollovers on capital gains, pioneer status benefits, and business loss reliefs (Widati, Asiah, Kamela, & Hidayat, 2024). By deferring or eliminating liabilities, such strategies lower effective tax rates, particularly for firms with high reported income (Rasheed & Lateef, 2023). However, while tax planning has been extensively studied in developed economies, limited empirical research has focused on its role within Nigeria's consumer goods sector.

Existing studies often generalise tax strategies without accounting for the heterogeneity of firms, and they rely heavily on conventional regression models that assume uniform effects across all companies. This approach risks overlooking the variation in how tax-saving strategies impact firms depending on their performance levels. This study seeks to address this gap by employing quantile regression to investigate the effects of corporate tax-saving strategies on the financial performance of listed consumer goods firms in Nigeria. Return on total assets (ROA) is adopted as the proxy for financial performance, while the independent variables include capital intensity, effective tax rate, thin capitalisation, non-debt tax-saving strategy, debt tax-saving strategy, and the tax paid to cash flow ratio. By offering nuanced insights into the varying effects of tax-saving strategies across firms at different performance levels, this research enriches the literature on corporate tax management. It also provides practical guidance to managers and policymakers seeking to refine tax strategies, strengthen competitiveness, and foster sustainable growth in Nigeria's consumer goods industry.

2. REVIEW OF RELATED LITERATURE

2.1 Financial Performance

Financial performance represents a comprehensive assessment of a company's ability to achieve its financial, market, and shareholder goals, and it is often measured through financial and nonfinancial indicators such as return on equity (ROE), return on assets (ROA), net after-tax income, market share, and earnings per share (Izevbekhai & Momodu, 2023; Fagbemi et al., 2019). It reflects a firm's efficiency in resource utilization, solvency, profitability, liquidity, leverage, and long-term financial health (Ike & Osayemwenre, 2023).

Strong financial performance enhances shareholder value, reduces conflict between management and owners, and contributes to business survival and competitiveness (Kurawa & Saidu, 2018). Among various measures, ROA is widely used as it evaluates how effectively firms employ their assets to generate profits, thereby indicating managerial efficiency in resource deployment (Sanjaya & Sipahutar, 2019). A higher ROA signals better utilization of assets in profit creation, making it a key profitability indicator for managers and investors (Triyanti & Susila, 2021). As such, ROA provides critical insights into a firm's operational success, financial health, and comparative standing within its industry

2.2 Corporate Tax Saving Strategies

Izevbekhai and Odion (2018), a tax saving strategy is any plan intended to reduce an individual's, business, or corporation's tax liability in order to increase their after-tax profits. According to a different interpretation, tax planning includes more than just methods for lowering tax obligations; it also considers how taxes affect the company's cash flow, particularly determining the best times to pay taxes without facing penalties (Onyeka-Iheme, 2021). In this study, five measures of corporate tax saving strategies were used namely capital intensity, effective tax rate, thin capitalisation, non-debt tax saving strategy, debt tax saving strategy, and tax paid to cash flow ratio.

- Capital Intensity and Financial Performance

Capital intensity represents the extent to which firms allocate financial resources to fixed assets such as plants, machinery, and real estate, distinguishing them from less capital-intensive competitors (Nangih & Onuora, 2020). A higher capital intensity signals greater reliance on noncurrent assets and is measured by the ratio of total assets to fixed assets (Oeta, Kiai, & Muchiri, 2019). While sectoral requirements differ, industries with high capital needs often experience better performance through improved quality and timely output when capital intensity is increased (Izevbekhai & Momodu, 2023).

Firms must carefully evaluate financing options to optimize capital structure and enhance market value (Greeff, 2019). Capital-intensive companies also respond differently to economic cycles compared to labor-intensive firms, reflecting their unique cost and risk structures. Moreover, capital intensity is closely linked to other firm-specific characteristics such as size, leverage, profitability, and tangibility, serving as a reliable indicator of operating leverage (Udoh et al., 2023).

- Effective Tax Rate (ETR) and Financial Performance

The effective tax rate (ETR) is the proportion of taxable income paid as taxes, reflecting the true tax burden of a firm beyond statutory rates (Onyeka-Iheme, 2021). It incorporates allowances, exemptions, deductions, and tax incentives, making it a robust measure of tax performance and a proxy for tax planning (Izevbekhai & Momodu, 2023). Managers often adopt strategies to lower the ETR in order to enhance shareholder value and optimize firm resources. The ETR is typically calculated as the ratio of actual tax expenses to profit before tax, offering insights into a firm's aggressiveness in tax planning (Olurankinse & Mamidu, 2021).

Differences between accounting profit and taxable income often arise from tax avoidance, arrears, or concessions, thereby lowering reported ETRs (Janský, 2022). Policymakers and scholars regard ETR as a key performance measure, since it demonstrates the efficiency of tax management and helps evaluate the effectiveness of corporate tax strategies across sectors (Susilawaty, 2020).

- Thin Capitalisation and Financial Performance

Thin capitalisation occurs when firms finance operations with a disproportionately high level of debt relative to equity, making them "highly geared" or "leveraged" (Taylor & Richardson, 2013). This practice is often used by multinational corporations to exploit interest deductibility as a tax shield, thereby reducing taxable income in high-tax jurisdictions (OECD, 2012; Pratama, 2017). Interest deductions lower corporate tax liabilities, but excessive debt financing raises concerns of tax avoidance, leading some countries, such as Australia, to impose thin capitalisation rules (Taylor et al., 2010).

While debt financing offers benefits such as tax savings, it also distorts earnings declarations for taxation purposes (Onyeka-Iheme, 2021). In Nigeria, there is currently no specific legislation on thin capitalisation, although tax authorities discourage excessive related-party debt arrangements (Akabom & Ejabu, 2018). Consequently, thin capitalisation remains a key tax planning mechanism, shaping multinational firms' financing strategies and affecting their tax obligations.

- Non-Debt Tax Saving Strategy (NDTS) and Financial Performance

Non-debt tax saving strategies (NDTS) refer to tax deductions not associated with debt financing, including depreciation, R&D credits, and investment allowances (De Vito & Jacob, 2021). These mechanisms reduce taxable income without relying on leverage, thereby influencing firms' capital structure choices. Companies with higher NDTS typically rely less on debt financing, as tax benefits from depreciation or investment credits substitute for the tax shield from debt (Izevbekhai & Momodu, 2023).

In some cases, NDTS may even provide more sustainable benefits than debt tax shields (Beneish, 1999; Kasznik, 1999). By reducing effective tax burdens, NDTS plays a crucial role in financial planning and resource allocation while mitigating risks associated with excessive borrowing. Consequently, NDTS forms an important aspect of corporate tax strategy, helping firms optimize profitability while aligning with regulatory frameworks.

- Debt Tax Saving Strategy (DTSS) and Financial Performance

Debt tax saving strategies (DTSS) arise from the deductibility of interest expenses on borrowed funds, creating tax shields that reduce taxable income and improve firm cash flows (Modigliani & Miller, 1963; Izevbekhai & Momodu, 2023). Companies and individuals can also use deductions such as amortization, depreciation, or charitable contributions to defer or minimize taxes. The strategy is particularly beneficial for highly leveraged firms, as greater debt translates into higher deductible interest payments and lower tax obligations (Yusuf & Abubakar, 2017). Tax shields enhance liquidity by preserving internal funds without reducing accounting income (Kliestik & Michalkova, 2018).

Common practices include deducting mortgage interest, medical costs, or accelerated depreciation. By intentionally structuring financial expenses to lower taxable income, DTSS allows firms to manage their effective tax rate and optimize shareholder wealth. Thus, DTSS remains a cornerstone of corporate tax planning, particularly in environments with significant tax burdens.

- Tax Paid to Cash Flow Ratio and Financial Performance

The tax paid to cash flow ratio measures the proportion of tax expenses relative to operating cash flows, providing insights into liquidity and tax management efficiency (Eyamu & Onuorah, 2024). Since cash flow represents the lifeblood of any business, this ratio highlights the extent to which tax obligations constrain firms' ability to fund investments, service debt, and sustain operations (Triyanti & Susila, 2021). It is especially important for evaluating solvency and financial flexibility, as excessive tax payments can hinder reinvestment and growth. By linking tax expenses to actual cash availability, this measure offers a more realistic perspective than accrual-based tax metrics. Additionally, the ratio enhances comparability across firms by eliminating differences arising from varied accounting methods (Liman & Mohammed, 2018). Overall, the tax paid to cash flow ratio serves as a vital indicator of how effectively firms balance their tax responsibilities with liquidity needs, influencing strategic planning and long-term performance.

2.3 Theoretical Underpining

- Trade-Off Theory

The trade-off theory, developed by Myers (1984), explains how firms balance the tax benefits of debt against the risks of financial distress. Debt financing provides advantages such as interest tax shields, but excessive leverage can lead to bankruptcy, agency conflicts, and declining firm value (Jensen & Meckling, 1976; Fernandes, 2021). The theory suggests that an optimal capital structure is achieved when marginal tax benefits equal marginal costs of debt, thereby maximizing profitability and firm value

(Clampit et al., 2021). Empirically, this is reflected in the consumer goods sector, where thin capitalization negatively affects low-performing firms close to distress, but benefits stronger firms that can manage debt efficiently (Shabbir et al., 2017).

- Hoffman Tax Planning Theory

Hoffman (1961) proposed that taxation is closely tied to business and accounting practices, emphasizing that firms can legally minimize liabilities through structured planning. He argued that ambiguities in tax laws create opportunities for savings if firms comply strictly with legal provisions. Effective tax planning requires formal procedures, professional expertise, and alignment with long-term objectives. While many firms underutilize available opportunities, those that strategically employ debt and non-debt tax-saving mechanisms can enhance financial performance. For consumer goods firms in Nigeria, leveraging professional tax planning aligns with efforts to improve profitability, particularly return on assets.

- Agency Theory

Agency theory highlights conflicts of interest between managers (agents) and shareholders (principals) in corporate decision-making (Jensen & Meckling, 1976). Tax strategies may be manipulated by managers for personal benefits, such as boosting short-term profits for bonuses, which can increase monitoring costs, regulatory risks, or financial strain. Conversely, when aligned with shareholder interests, tax planning can reduce corporate liabilities and strengthen profitability. In Nigeria's consumer goods sector, pressure to maintain profitability may push managers toward either effective tax minimization or opportunistic strategies, with outcomes dependent on governance quality and oversight mechanisms.

- Pecking Order Theory

The pecking order theory (Myers & Majluf) argues that firms prefer internal financing, followed by debt, and lastly equity, due to information asymmetry and issuance costs. Debt becomes attractive because of its tax-deductible interest, making tax shields a central financing tool. However, over-reliance on debt without stable earnings may harm long-term performance. In Nigeria's consumer goods sector, high working capital needs often drive reliance on debt-based tax strategies, reflecting pecking order behavior. Nonetheless, the effectiveness of such strategies varies across firms, depending on their financial resilience and capacity to manage leverage.

2.4 Empirical Studie

The empirical literature on corporate tax strategies and financial performance presents diverse findings across different jurisdictions, highlighting both sectoral and firm-level variations. Derashid and Zhang (2003) examined effective tax rates among Malaysian listed firms and reported that hotels and manufacturing companies consistently paid lower effective taxes due to industry-specific policies, while larger and more productive firms also benefited from reduced tax liabilities. Their findings, which contradict the political cost hypothesis, lend support to industrial policy theory by emphasizing the influence of sectoral dynamics on tax burdens. Similarly, Noor et al. (2010) observed that Malaysian firms' effective tax rates were consistently below statutory levels across two tax regimes, with greater savings under the official assessment system. They further found that leverage, profitability, and asset composition shaped tax outcomes, while construction and real estate firms bore heavier tax burdens. Both studies underscore the role of firm characteristics and industry-specific incentives in determining tax savings and performance.

In the Kenyan and broader East African context, Mosota (2014) revealed that tax avoidance significantly enhanced profitability among Nairobi Securities Exchange-listed firms, although leverage negatively influenced performance. The study also highlighted the strategic role of intangible assets in tax minimization, suggesting that while aggressive tax planning boosts financial outcomes, it increases exposure to regulatory risks. Extending this, Kariuki (2017) demonstrated that tax planning and liquidity significantly improved return on assets in Kenyan listed firms, while leverage exerted adverse effects and firm size showed no significant role. Together, these studies emphasize the dual role of tax strategies in enhancing profitability while exposing firms to risks associated with excessive debt, and they underline the importance of balancing tax planning with liquidity management.

Within the Nigerian setting, Timothy et al. (2020) found that tax planning positively influenced firm value, an effect strengthened by board compensation structures. Their findings revealed that governance mechanisms play a crucial role in maximizing tax-related benefits, while firm size reinforced performance outcomes and leverage had a detrimental effect. This aligns with Adetola et al. (2021), who linked tax planning to improved capital budgeting decisions in Nigerian manufacturing firms, with financial leverage moderating the relationship. Their results show that while legal tax planning enhances both short-term profitability and long-term investment outcomes, over-reliance on debt can weaken these benefits. These findings collectively highlight that tax planning outcomes are not merely financial but are also conditioned by governance quality and capital structure decisions.

More recent Nigerian studies present nuanced insights into the consumer goods sector. Omesi and Appah (2021) reported that tax planning proxies such as capital intensity, tax savings, and effective tax rates bore negative and insignificant relationships with firm value, suggesting limited contribution of tax strategies to value creation. Similarly, Aliyu and Muhammad (2021) found a negative but insignificant relationship between effective tax rate and firm value, indicating that tax-reduction strategies did not substantially enhance shareholder wealth in consumer goods firms. By contrast, Appah et al. (2021) highlighted the importance of cash flow accounting, showing that operating and financing cash flows significantly improved profitability, while leverage and investing

activities had adverse effects. These results point to the possibility that, for consumer goods firms, internal financing dynamics may be more critical for performance than external taxsaving strategies.

Extending the discussion, Akinsulire et al. (2022) examined tax optimisation in Nigerian manufacturing firms and found that while effective tax rate negatively affected market value, thin capitalization and capital intensity exerted significant positive effects. This indicates that certain tax-saving strategies can contribute positively to performance, although their influence is strategyspecific. More recently, Appah et al. (2024) found that thin capitalization had a negative and significant impact on return on equity, while effective tax rate, tax savings, and capital intensity showed insignificant effects. Taken together, these Nigerian studies suggest that the relationship between tax strategies and performance is mixed and often contingent on the type of strategy employed, with thin capitalization exhibiting inconsistent effects across different performance measures.

Synthesizing these findings, the international evidence (Malaysia and Kenya) suggests that firm characteristics such as leverage, size, profitability, and asset structure interact with industryspecific policies to shape tax savings and financial performance. Nigerian evidence, however, reflects a more complex and inconsistent picture, particularly within consumer goods firms, where effective tax rate and tax savings strategies often yield weak or adverse effects on firm value and profitability. The mixed outcomes highlight the contextual nature of tax planning, suggesting that while certain strategies like capital intensity may support performance in some settings, others such as effective tax rate reductions may provide little benefit. This underscores the need for Nigerian consumer goods firms to adopt a more strategic and context-specific approach to tax planning that integrates governance structures, liquidity management, and long-term investment considerations to maximize financial performance.

3. METHODOLOGY

This study employed an ex post facto research design, which is appropriate for investigating causal relationships after outcomes have occurred by observing present conditions and tracing likely causal factors (Appah et al., 2024). The population consisted of 18 consumer goods companies quoted on the Nigerian Exchange Group as of 31 December 2023. Panel data spanning the period 2012–2023 were sourced from the published annual reports and accounts of these firms. The study focused on corporate tax-saving strategies as the independent variables, proxied by capital intensity, effective tax rate, thin capitalization, non-debt tax saving strategy, debt tax saving strategy, and tax paid to cash flow ratio, while financial performance was measured by return on assets. Panel data, which integrate cross-sectional and time-series observations, enabled repeated measurements of firm attributes over time, ensuring robustness in capturing performance dynamics.

Dataset was analysed using descriptive statistics, correlation matrix, diagnostic tests, and quantile regression. Descriptive statistics such as variance, skewness, kurtosis, standard deviation, and range (minimum and maximum) were employed to summarize firm-level attributes, while Pearson correlation coefficients examined the linear relationships among variables. To ensure reliability of results, diagnostic tests were conducted, including checks for multicollinearity using the Variance Inflation Factor (VIF), heteroscedasticity tests where necessary, and the Hausman test to determine the appropriateness of fixed versus random effects estimation.

Quantile regression formed the core analytical technique, given its strength in modelling predictor effects across different points of the distribution of the dependent variable. Unlike ordinary least squares, which estimates mean effects, quantile regression captures heterogeneous relationships across conditional quantiles (e.g., 25th, 50th, 75th percentiles). This approach is particularly suited to datasets with non-normal distributions or outliers and provides deeper insights into how corporate tax-saving strategies influence financial performance. Specifically, it allowed the study to establish how proxies such as capital intensity, effective tax rate, thin capitalization, non-debt tax saving strategies, debt tax saving strategies, and tax paid to cash flow affect return on assets differently across low-, median-, and high-performing consumer goods firms. This model is adapted from prior studies (Greeff, 2019; Maxim, 2021; Olurankinse & Mamidu, 2021; Oeta et al., 2019; Osamor et al., 2023):

Return on Asset = F (Capital Intensity, Effective Tax Rate, Thin Capitalisation, Non Debt Tax Saving Strategy,Debt Tax Saving Strategy,Tax Paid to Cash Flow) (1)

$ROA = \beta 0 + \beta 1CIit + \beta 2ETRit + \beta 3TCN\ it + \beta 4NDTSS + \beta 5DTSit + \beta 6TPCF_{\ it+.....}\ \mu it$ (1)

Where β_0, - β_5 represent the regression and μ represent the omen term: ROA = Return on Asset (Financial Performance) CI = Capital Intensity,ETR = Effective Tax Rate,TCN= Thin

Capitalisation, NDTSS = Non Debt Tax Saving Strategy, DTS= Debt Tax Saving Strategy, TPCF= Tax Paid to Cash Flow,μ= Error term, i = Individual consumer, t = Time dimension

Table1: Measurement and Description of Variables

Variables	Types of Variables	Symbol	Measurement
Return on Asset	Dependent	ROA	Net Income/Total Assets
Capital Intensity	Independent	CI	Fixed Assets Scaled by Total Assets or Sales
Effective Tax Rate	Independent	ETR	Total Tax Expense / Profit Before Tax
Thin Capitalization	Independent	TCN	Total Debt/Total Assets
Non Debt Tax Saving Strategy	Independent	NDTSS	Total Debt Payments/Gross Income ×100
Debt Tax Saving Strategy	Independent	DTS	Total Debt/Shareholders' Equity
Tax Paid to Cash Flow	Independent	TPCF	Tax Paid /Operating Cash flow

Source: Researchers' Compilation, 2025

4.0 RESULTS

Table 2: Summary of the descriptive statistics of the study variables

4.1. Descriptive Statistics

The results of the descriptive statistics of the variables are presented in Table 2.

Table 2: Summary of the descriptive statistics of the study variables

stats	roa	capita~u	gaapetr	thinca~o	nondeb~y	debtta~r	cashpa~o
mean	.060508	1.588922	.2659973	1.352244	1.611042	1.991348	.0960792
sd	.5156191	3.433804	.696011	3.15333	77.91983	4.31528	.8426966
sd	.5156191	3.433804	.696011	3.15333	77.91983	4.31528	.8426966
max	6.174312	40.25477	8.041858	19.5571	553.5253	47.92299	5.035027
min	-2.359907	0	-4.715152	.1936196	-542.8074	-10.73813	-8.31401
N	216	216	216	216	216	216	216
skewness	8.051948	8.697693	4.793844	4.300341	-2.377169	6.857273	-4.397012
kurtosis	99.88473	88.89501	85.44828	20.79243	38.34754	68.78775	59.00788

Source: Researchers' Computation, 2025

The descriptive statistics in Table 4.1 reveal substantial variability and non-normality across the study variables. The return on assets (ROA) averages 6.05%, but with a high standard deviation (0.5156) and extreme skewness and kurtosis, reflecting firms with unusually high profitability. Capital intensity shows wide dispersion (mean = 1.589; max = 40.25), indicating large differences in asset deployment. The GAAP effective tax rate averages 26.6% but displays skewness (4.79) and extreme kurtosis (85.45), suggesting the presence of firms with either very low or unusually high tax burdens.

Tangible asset ratio and non-debt tax shields also show heavy-tailed distributions, with the latter exhibiting extreme values (range: –542.81 to 553.53) due to depreciation and amortization effects. Leverage is high on average (1.991), but extreme cases drive skewness (6.86) and a wide range. The cash paid for tax ratio (mean = 0.096) also shows substantial variability, left-skewness, and leptokurtosis, reflecting irregular tax payment patterns. Overall, the results confirm the prevalence of outliers and deviations from normality, underscoring the appropriateness of quantile regression for robust estimation.

Table 2: Correlation Result

	roa	capita~u	gaapetr	thinca~o	nondeb~y	debtta~r	cashpa~o
roa	1.0000						
capitalint~u	-0.0374	1.0000					
gaapetr	-0.0021	-0.0341	1.0000				
thincapita~o	0.0551	-0.0969	-0.0631	1.0000			
nondebtsav~y	0.0248	-0.0229	0.7058	-0.1690	1.0000		
debttaxsav~r	-0.0321	0.1467	0.0310	-0.1518	0.0213	1.0000	
cashpaidto~o	0.0170	-0.0195	0.0223	0.0365	0.0177	-0.1113	1.0000

Source: Researchers' Compilation, 2025

The correlation results in Table 2revealed that ROA has only weak associations with other variables, suggesting profitability is largely independent of the explanatory variables. Capital intensity is slightly negatively correlated with tangible assets and GAAP ETR, but modestly positive with debt tax shields, indicating limited reliance on debt for tax planning. The GAAP effective tax rate is strongly and positively correlated with non-debt tax shields (r = 0.7058), highlighting a key area of potential multicollinearity.

Tangible asset ratio shows weak negative correlations with tax shields, implying firms with higher tangible assets may depend less on such strategies. Debt tax shield exhibits low positive links with capital intensity and non-debt tax shields, but negative links with

tangible assets and cash paid for tax. Overall, most relationships are weak, with the GAAP ETR–non-debt tax shield pair requiring closer scrutiny, while minimal multicollinearity risk strengthens the robustness of subsequent regression analysis.

Table 3: Results of Variance Inflation Factor (VIF) Test.

```
. estat vif
```

Variable	VIF	1/VIF
nondebtsav~y	2.06	0.485775
gaapetr	2.01	0.497590
thincapita~o	1.07	0.936177
debttaxsav~r	1.06	0.947145
capitalint~u	1.03	0.970753
cashpaidto~o	1.01	0.986450
Mean VIF	1.37	

Source: Researchers' Compilation, 2025

The Variance Inflation Factor (VIF) was used to test for multicollinearity among the independent variables in the regression model. Results in Table 3 show that all VIF values are below 5, with Non-Debt Tax Shield (2.06) and GAAP Effective Tax Rate (2.01) recording the highest. These values indicate only minimal collinearity, which is expected due to their related tax-planning roles. The mean VIF of 1.37 further confirms the absence of significant multicollinearity. This implies that the regression results are free from inflated standard errors or unstable coefficients. Therefore, the estimates are reliable, and no corrective measures are required.

Table 4: Breusch-Pagan / Cook-Weisberg test

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of roa

         chi2(1)      =  1158.37
         Prob > chi2  =   0.0000
```

Source: Researchers' Compilation, 2025

The Breusch-Pagan/Cook-Weisberg test was conducted to examine the assumption of homoskedasticity in the regression model. Using ROA as the dependent variable, the test yielded $\chi^2 = 1158.37$ with a p-value of 0.0000, leading to the rejection of the null hypothesis of constant variance. This result provides strong evidence of heteroskedasticity, indicating that the residuals' variance is not constant. While OLS estimates remain unbiased, they are inefficient, and standard errors may be distorted, affecting hypothesis testing. To correct this problem, heteroskedasticityconsistent robust errors were adopted. Specifically, a quantile regression approach was employed to address efficiency and standard error concerns.

Table 5: Quantile Regression Results (Q10th)

```
.1 Quantile regression                          Number of obs =       216
  Raw sum of deviations 17.93801 (about -.08233573)
  Min sum of deviations 10.44616                Pseudo R2     =    0.4177
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
capitalintensityratioassetrevenu	-.0008983	.0047648	-0.19	0.851	-.0102916	.008495
gaapetr	.0195233	.0328342	0.59	0.553	-.0452053	.0842518
thincapitalisationdebtassetratio	-.1220118	.0052836	-23.09	0.000	-.1324278	-.1115959
nondebtsavingstrategy	-.0001627	.0002968	-0.55	0.584	-.0007479	.0004225
debttaxsavingstrategydebtequityr	.000578	.0038385	0.15	0.880	-.0069891	.0081452
cashpaidtocashflowratio	.0318622	.0192606	1.65	0.100	-.0061077	.0698321
_cons	.0119565	.0223253	0.54	0.593	-.0320551	.0559681

```
. estimates store q1o
```

Source: Researchers' Compilation, 2025

Table 6: 0.25 Quantile Regression Results (Q25th)

```
.25 Quantile regression                         Number of obs =       216
  Raw sum of deviations 24.11923 (about -.00313901)
  Min sum of deviations 19.60486                Pseudo R2     =    0.1872
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
capitalintensityratioassetrevenu	-.0081639	.0026769	-3.05	0.003	-.0134411	-.0028866
gaapetr	-.0006891	.0184465	-0.04	0.970	-.0370542	.035676
thincapitalisationdebtassetratio	-.0752166	.0029684	-25.34	0.000	-.0810683	-.0693648
nondebtsavingstrategy	.0000178	.0001668	0.11	0.915	-.000311	.0003465
debttaxsavingstrategydebtequityr	.0004823	.0021565	0.22	0.823	-.0037689	.0047336
cashpaidtocashflowratio	.0208908	.0108208	1.93	0.055	-.000441	.0422227
_cons	.0623632	.0125425	4.97	0.000	.0376371	.0870893

```
. estimates store q25
```

Source: Researchers' Compilation, 2025

Table 7: 0.5 Quantile Regression Results (Q50th)

```
Median regression                               Number of obs =       216
  Raw sum of deviations 28.64785 (about .03546263)
  Min sum of deviations 27.70522                Pseudo R2     =    0.0329
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
capitalintensityratioassetrevenu	-.0039324	.002816	-1.40	0.164	-.0094838	.0016189
gaapetr	.0073094	.0194047	0.38	0.707	-.0309447	.0455635
thincapitalisationdebtassetratio	-.0151057	.0031226	-4.84	0.000	-.0212614	-.0089499
nondebtsavingstrategy	1.59e-06	.0001754	0.01	0.993	-.0003442	.0003474
debttaxsavingstrategydebtequityr	-.0021751	.0022685	-0.96	0.339	-.0066472	.002297
cashpaidtocashflowratio	.016604	.0113828	1.46	0.146	-.0058358	.0390439
_cons	.0520448	.0131941	3.94	0.000	.0260343	.0780553

Source: Researchers' Compilation, 2025

Table 8: 0.75 Quantile Regression Results (Q75th)

```
.75 Quantile regression                         Number of obs =       216
  Raw sum of deviations 28.82948 (about .08646292)
  Min sum of deviations 28.17922                Pseudo R2     =    0.0226
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
capitalintensityratioassetrevenu	-.0049889	.0038939	-1.28	0.202	-.0126653	.0026875
gaapetr	-.0046435	.0268326	-0.17	0.863	-.0575408	.0482538
thincapitalisationdebtassetratio	.0186111	.0043178	4.31	0.000	.010099	.0271232
nondebtsavingstrategy	.0002062	.0002426	0.85	0.396	-.000272	.0006845
debttaxsavingstrategydebtequityr	-.0013156	.0031369	-0.42	0.675	-.0074995	.0048684
cashpaidtocashflowratio	.0085144	.0157401	0.54	0.589	-.0225152	.039544
_cons	.082596	.0182446	4.53	0.000	.046629	.1185631

```
. estimate store q75
```

Source: Researchers' Compilation, 2025

Table 9: 0.9 Quantile Regression Results (Q90th)

```
.9 Quantile regression                          Number of obs =       216
  Raw sum of deviations 24.90173 (about .15927869)
  Min sum of deviations 19.88492                Pseudo R2     =    0.2015
```

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
capitalintensityratioassetrevenu	.0031539	.0192971	0.16	0.870	-.0348879	.041195
gaapetr	-.0645811	.1329746	-0.49	0.628	-.3267246	.197562
thincapitalisationdebtassetratio	.3794025	.021398	17.73	0.000	.337219	.42158
nondebtsavingstrategy	.000498	.0012021	0.41	0.679	-.0018719	.002867
debttaxsavingstrategydebtequityr	-.0085317	.0155455	-0.55	0.584	-.0391777	.022114
cashpaidtocashflowratio	.0167825	.0780031	0.22	0.830	-.1369912	.170556
_cons	-.0277806	.0904149	-0.31	0.759	-.2060226	.150461

```
. estimate store q90
```

Source: Researchers' Compilation, 2025

The findings from the quantile regression analysis reveal diverse effects of corporate tax strategies on the financial performance of consumer goods firms in Nigeria, highlighting the importance of firm-specific characteristics and performance levels. Capital intensity was found to have a negative and significant effect only at the 0.25 quantile, showing that lower-performing firms with higher investments in fixed assets tend to face reduced profitability due to inefficiencies and underutilization of resources, while the effect was insignificant at other quantiles. The GAAP effective tax rate (ETR) was insignificant across all quantiles, suggesting that statutory tax obligations or variations in effective tax burdens do not meaningfully influence profitability in this sector, possibly due to the uniform nature of the tax regime or weak tax planning practices. Thin capitalization showed the most striking results, with a negative and significant relationship at the lower quantiles (0.10, 0.25, and 0.50), reflecting the financial strain debt places on weaker firms, but a positive and highly significant relationship at higher quantiles (0.75 and 0.90), suggesting that stronger firms can strategically utilize leverage to gain tax shields and enhance profitability.

This inverted-U pattern aligns with the trade-off theory of capital structure, underscoring the need for firms to balance debt to suit their performance position. Non-debt tax saving strategies, such as depreciation allowances and tax-exempt investments, remained insignificant across all quantiles, implying that such tools are either underexploited or ineffective in enhancing firm profitability in Nigeria. Similarly, debt tax saving strategies, though theoretically beneficial, failed to produce significant results, suggesting that borrowing costs may offset the expected tax shield benefits in practice. The cash paid to cash flow ratio showed a marginally positive effect at the 0.25 quantile, indicating that better liquidity management slightly boosts profitability for firms at the lower-middle level, though this effect was absent for higher-performing firms. Collectively, these results imply that conventional tax strategies such as minimizing effective tax rates, relying on non-debt incentives, or pursuing debt-related tax savings do not consistently explain firm profitability in this sector.

Instead, performance-sensitive financial decisions, particularly regarding capital structure, play a more decisive role. For managers, this highlights the importance of tailoring strategies: lower performing firms should avoid excessive leverage and focus on capital efficiency and liquidity management, while stronger firms may strategically benefit from debt. For policymakers, the findings suggest that reducing statutory tax rates or offering generic incentives alone may not enhance firm performance unless coupled with reforms that promote effective debt management and productive use of capital assets. Overall, the application of quantile regression provided deeper insights into how tax strategies interact with firm performance levels, uncovering heterogeneous effects that ordinary least squares methods would obscure, and offering practical implications for corporate decision-making and tax policy in Nigeria's consumer goods industry.

5. CONCLUSION AND RECOMMENDATIONS

This study examined the relationship between corporate tax strategies and financial performance of listed consumer goods firms in Nigeria using quantile regression, which allowed for capturing heterogeneous effects across different profitability levels. The results show that capital intensity negatively and significantly affects firms at the lower quantiles, suggesting that excessive investment in fixed assets reduces profitability for underperforming firms. The GAAP effective tax rate was insignificant across all quantiles, indicating that statutory tax burdens alone do not drive firm performance.

Thin capitalization produced the most notable results, showing a negative impact on weaker firms but a positive and significant influence on highly profitable firms, thus supporting the trade-off theory of capital structure. Non-debt and debt tax saving strategies were consistently insignificant, pointing to their limited effectiveness in the Nigerian consumer goods sector. The tax paid to cash flow ratio had only a marginally positive impact at the 0.25 quantile, emphasizing liquidity management as important mainly for lower-performing firms.

Based on these findings, the study concludes that corporate tax strategies do not exert uniform effects on financial performance but are performance-dependent, with thin capitalization emerging as the most critical determinant. It is therefore recommended that firms adopt performance responsive tax strategies, aligning debt usage and capital investment with profitability levels to avoid inefficiencies. Managers of underperforming firms should prioritize asset efficiency and liquidity management, while stronger firms can strategically exploit debt for tax benefits. Regulatory bodies should strengthen oversight on debt financing and provide clearer guidelines to prevent excessive leverage. Additionally, policymakers should promote alternative non-debt tax incentives and enhance the effectiveness of existing tax reliefs. Finally, continuous sector-specific research is necessary to track evolving tax practices and their implications for firm performance in developing economies.

REFERENCES

1. Adoa, A.B., &Rashida, N. (2021). The impact of corporate tax planning on the financial performance of listed companies in Nigeria. *International Journal of Economics, Management and Accounting 29*(2), 273-297**.**
2. Aganyo, C. A. (2014). The effects of corporate tax planning on firm value for companies listed at the Nairobi Securities Exchange (An unpublished MBA thesis). University of Nairobi.
3. Ajibolade, S., &Oyewo, B. (2017). Firm characteristics and performance disclosure in annual reports of Nigerian banks using the balanced scorecard.
4. Akabom, I. A., & Ejabu, F.E. (2018). Effects of thin capitalization and international law on performance of multinational companies in Nigeria. *International Journal of Accounting Research, 3* (5),13-22.
5. Akabom, I. A., &Ejabu, F. E. (2018). Effects of thin capitalization and international law on performance of Multinational Companies in Nigeria. *Journal of Accounting and Financial Management,4*(2), 47-58.
6. Akinsulire, O. O., Adegbie, F. F., &Akintoye, I. R. (2022). Tax optimisation and firm value: a study of selected manufacturing firms listed in Nigeria. *Caleb International Journal of Development Studies, 5*(1), 178-196.
7. Almajali, A. Y., Alamro, A.S., & Y.Z Al-Soub. (2012). Factors Affecting the Financial Performance of Jordanian Insurance Companies Listed at at Amman Stock Exchange. *Journal of Management Research, 4* (2),
8. Ambarita, P., &Nofryanti, I.R. (2023). Capital Intensity Moderates Corporate Risk and Thin Capitalization of Tax Avoidance. *Asian Journal of Social and Humanities, 01*(12), 15521564.
9. Beneish, M. D. (1999). The Detecting of Earnings Manipulation. *Financial Analysts Journal, 55*, 24-26.
10. De Vito, A., & Jacob, M. (2021). The Role of Creditor Protection in Lending and Tax Avoidance. Journal of Financial and Quantitative Analysis.
11. Derashid, C., & Zhang, H. (2003). Effective tax rates and the "industrial policy" hypothesis: Evidence from Malaysia.Journal of International Accounting, Auditing & Taxation 12 (2003) 45–62.
12. Eche, G., Gimba, J.T., & Vincent, H.S. (2023). Corporate tax planning and financial performance of listed deposit money banks in Nigeria. *AFIT Journal of Marketing Research,3*,1-13.
13. Erasmus, E.G., &Uwikor, M.K. (2021). Tax planning strategies and financial performance of quoted banks in Nigeria. *Journal of Accounting and Financial Management,7*(5), 60-79.
14. Ezie, O., &Ofor, T.N. (2024). Corporate tax saving strategy and firm value moderating role of audit committee size. *Journal of Accounting, Business and Social Sciences,8*(2),123-134.
15. Fagbemi, T. O., Olaniyi, T.A., Ogundipe, A.A. (2019). The corporate tax planning and financial performance of systemically important banks in Nigeria. *Ekonomskihorizonti, 21*(1), 15 – 28.
16. Graham, J. R., & Tucker, A. L. (2006). Tax shelters and corporate debt policy. *Journal of Financial Economics, 81* (3), 563-594.
17. Greeff, C. (2019). Corporate effective tax rates: An exploratory study of South African listed firms. *South African Journal of Accounting Research, 33*(2) 99–113.
18. Hoffman Jr., W. H. (1961). *The Theory of Tax Planning*. The Accounting Review, 36(2), 274-281
19. Hart, L. (2018). 'Issues and Challenges with the Nigerian Taxation System: Chemiron Ltd vs LIRS Revisited', https://www.proshareng.com/news/Taxes%20&%20Tariffs/Issues-and-Challenges-With-The-Nigerian-Taxation-System----Chemiron-Ltd--vs-LIRS-Revisited/41161
20. Ike, E.R., &Osayemwenre, G. (2023). Tax planning strategies and financial performance of listed deposit money banks in Nigeria. *International Journal of Trend in Scientific Research and Development (IJTSRD), 5*(7), 343-355.
21. Ike, E.R., &Osayemwenre, O.G. (2023). Tax Planning Strategies and Financial Performance of Listed Deposit Money Banks in Nigeria. *International Journal of Trend in Scientific Research and Development,7*(5),343-355.
22. Iormbagah, J.A., Abiahu, Mary-Fidelis C., &Ibiam, O. (2021). corporate tax mix and financial performance of listed manufacturing firms in Nigeria. *International Journal of Contemporary Accounting Issues,10*(2), 64-84.
23. Izevbekhai, M.O., &Momodu, W.O. (2023). Corporate tax saving strategy and share price performance. *International Journal of Scientific Research and Management,11*(11), 1–11.
24. Janský, P. (2022). Corporate effective tax rates for research and policy. *Public Finance Review 51*(4),1-36.

25. Juwa-Ogboi, C. (2018), 'Ten Problems of Nigerian Tax Systems and Possible Solution', available at: https://infoguidenigeria. com/problems-nigeria-tax-system
26. Kliestik, T &Michalkova, L. (2018) Review of tax shield valuation and its application to emerging markets finance. Financial Management from an Emerging Market Perspective Intech Publishers http://www.intechopen.com/books /financial management.
27. Kurawa, J.M., &Saidu, H. (2018). Corporate tax and financial performance of listed Nigerian consumer goods. *Journal of Accounting and Financial Management,4*(4),30-43.
28. Meyer, M.A. (1984). Relief workers and violations of humanitarian law: Some legal considerations. *Disaster*,8(4),302-306
29. Mosota, J. R. (2014). The effect of tax avoidance on the financial performance of listed companies at the Nairobi securities exchange (An unpublised MBA thesis). University of Nairobi.
30. Nangih, E., &Onuora, J. K. J. (2020). Capital Intensity and Firm Profitability Interconnectedness in Nigeria. *Journal of Accounting, Business and Social Sciences, 3*(2),24-35.
31. Noor, R.M., Fadzillah, N.S.M., &Mastuki, N.A. (2010). Corporate tax planning: A study on corporate effective tax rates of Malaysian listed companies. *International Journal of Trade, Economics and Finance, 1*(2),189-193.
32. Oeta, S.M., Kiai, R., &Muchiri, J.(2019). Influence of tax planning on financial performance of manufacturing companies listed at Nairobi Securities Exchange. *International Journal of Research in Business and Social Scienc, 8*(6), 262-270.
33. Oeta, S.M., Kiai, R., &Muchiri,J.(2019). Capital intensity and financial performance of manufacturing companies listed At Nairobi Securities Exchange. *International Journal of Scientific and Engineering Research, 10*(9), 1647-1658.
34. Olaniun, I., Jimoh, N., Shuaibu,H., & Ibrahim, Y.K. (2022). Tax aggressiveness and financial performance of listed industrial goods firms in Nigeria. *Gusau Journal of Accounting and Finance,3*(2),1-15.
35. Olurankinse,F., &Mamidu,A.I.(2021). Corporate tax planning and financial performance of development banks in Nigeria. *European Journal of Accounting, Auditing and Finance Research,9*(5),53-72.
36. Omesi, I., &Appah, E.Corporate tax planning and firm value of listed consumer goods companies in Nigeria. *IOSR Journal of Business and Management,23*(2), 42-51.
37. Osamor, I., Omoregbee, G., &Olugbenga, A. (2023). Effects of thin capitalization on the financial performance of Multinational Companies in Nigeria. *Iranian Journal of Accounting, Auditing and Finance, 7*(2), 99-110. doi:10.22067/ijaaf.2023.42949.1233.
38. Osamor, I., Omoregbee, G., &Olugbenga, A. (2023). Effects of thin capitalization on the financial performance of multinational companies in Nigeria. *Iranian Journal of Accounting, Auditing and Finance, 7*(2), 99-110.
39. Otuya, S., &Omoye, A.S. (2021). Thin capitalisation, effective tax rate and performance of multinational companies in Nigeria. *Accounting and Taxation Review, 5*(1): 45-59.
40. Prastiwi, D. (2017). The influence of thin capitalization and the executives' characteristics toward tax avoidance by manufactures registered On ISE in 2011-2015. AkrualJurnalAkuntansi. 10 (2): 119-134.
41. Ramachandran, J., Hidajat, J., Izadi, S., &Wei, A.S.T. (2024).Corporate tax policy, Shariah compliance and financial decisions: evidence from Malaysia. *Managerial Finance*, 50(5),991-1016. https://doi.org/10.1108/MF-10-2022-0478.
42. Rasheed, L.O., & Lateef, F.K. (2023). Corporate taxes and financial performance of listed information and communication technology companies in Nigeria. *African Journal of Accounting and Financial Research,6*(4), 160-176.
43. Roger Koenker and kevin f hallock The Journal of Economic Perspectives, 15(4), Fall 2001.
44. Savitri,E. (2019). Can effective tax rates mediate the effect of profitability and debts on income smoothing? *Problems and Perspectives in Management, 17*(3),89-100. doi:10.21511/ppm.17(3).2019.07.
45. Shabbir, S., Waheed, A., & Mahmood, H. (2017). Tax optimization and firm value in context of Pakistan. *American Based Research Journal, 6*(2), 82-88.
46. Sharif, M.J., & Khan, S.A. (2023). Determinants of effective tax rate: empirical evidence from selected manufacturing industries in Bangladesh. *Accounting Analysis Journal,12*(3),177189.
47. Smith, A. (1776). *The wealth of nations*. W. strahan and T. Cadell. Mosteller and Tukey, (1977)
48. Tanko, U.M. (2023). Financial attributes and corporate tax planning of listed manufacturing firms in Nigeria: moderating role of real earnings management. *Journal of Financial Reporting and Accounting*, Vol. ahead-of-print No. ahead-of-print.
49. Timothy, O.U., Izilin, M.O., &Ndifreke, B.A. (2020). Corporate tax planning, board compensation and firm value in Nigeria. *Accounting and Taxation Review,4*(3),11-28.
50. Widati, S., Asiah, N., Kamela, H., &Hidayat, T.A. (2024). Effective Tax Rates: Firm Size, Leverage and Return on Assets. *International Journal of Asian Business and Management (IJABM), 3*(2),131-148.
51. Yusuf, I., &Abubakar, Z. (2017). Tax incentives and charitable donations in deposit money banks in Nigeria. TY Journal, 16.