

PROFIT SQUEEZE FROM TAX BURDENS: EVIDENCE FROM LISTED CONSUMER GOODS FIRMS IN NIGERIA

NWORIE, Gilbert Ogechukwu

Doctoral Research Candidate, Ebonyi State University, Abakaliki, Ebonyi State, Nigeria.

Email: dulcisgil@gmail.com

ELOM, Joseph Ogwu

Lecturer, Department of Accountancy, Ebonyi State University, Abakaliki, Nigeria.

joemaxelom@gmail.com

NWAMBEKE, Godfrey Chinedu

Lecturer, Banking and Finance Department, Ebonyi State University, Abakaliki, Nigeria.

Gogfreynwambek@yahoo.com

NWUZOR, Roseline Ngozi

Bursar, Ebonyi State University, Abakaliki, Nigeria.

Roselinenwuzor@gmail.com

ABSTRACT

Despite the critical role consumer goods firms play in Nigeria's economy, many struggle to maintain profitability under increasing tax burdens. Excessive or poorly structured taxation may erode earnings, discourage reinvestment, and weaken long-term financial performance. Hence, this study investigated the profit squeeze resulting from tax burdens among listed consumer goods firms in Nigeria. Tax burden was measured using effective tax rate while return on investment was used in measuring firm profitability. Employing an *ex post facto* research design, the study examined a purposively selected sample of 12 out of 20 listed consumer goods firms over an 11-year period (2014–2024). Secondary data were sourced from published annual reports. In addition to the descriptive analysis carried out, tests of cross-sectional dependence and panel heteroskedasticity were conducted to assess the validity of the panel regression model. Hypothesis was tested using estimates from panel estimated generalized least squares (EGLS). The findings revealed that an increase in the effective tax rate significantly reduces firm profitability, with a negative effect on return on assets (coefficient = -0.001585, p-value = 0.000). The study concluded that rising tax burdens have a constraining effect on financial performance. The study therefore recommended that tax authorities and policymakers consider more growth-friendly tax regimes to enhance firm profitability and sectoral sustainability.

Keywords: Consumer Goods Firms, Nigeria, Profit, Profit Squeeze, Tax Burdens

1.0 INTRODUCTION

In many developing economies, including Nigeria, taxation is both a necessary source of government revenue and a topic of ongoing debate among policymakers, businesses, and economists (Eilish et al., 2023; Otusanya et al., 2023). Unarguably, governments require tax revenues to finance infrastructure, healthcare, education, and public services, all of which are vital to national development and social stability. However, the way taxes are structured and imposed has significant implications for private enterprises (Omolola & Francis, 2025). Nigeria's economy is heavily reliant on its private sector, which contributes substantially to employment, GDP, and investment (Ndanusa et al., 2024). Among these, consumer goods firms play a particularly important role, supplying daily essentials, stimulating retail trade, and supporting industrial production. Yet these firms operate in a challenging environment characterized by fluctuating exchange rates, high production costs, limited infrastructure, and complex regulatory frameworks (Muojekwu et al., 2025). Within this context, taxation emerges as both a potential enabler and a constraint. While tax contributions are expected to support the functioning of the state, their immediate financial implications for businesses cannot be ignored. As fiscal authorities seek to widen the tax net and increase collections, firms are under growing pressure to comply with rising obligations, often without corresponding improvements in the business environment (Adebimpe & Dahiru, 2024). This tension is particularly significant in the consumer goods sector, where cost structures are tight and profit margins are often modest.

The concept of tax burden refers to the share of a firm's income or revenue that is paid in the form of taxes, after accounting for deductions and exemptions (Suleiman & Abubakar, 2024). In this study, it is operationalised using the effective tax rate, which reflects the actual proportion of pre-tax income that goes to the government (Mubarok et al., 2024). A higher tax burden means a larger portion of a firm's earnings is redirected away from internal use and into public coffers (Aondover, 2025). For businesses, this can impact everything from pricing strategies and cash flow to investment decisions and dividend payments. On the other hand, firm profitability represents the capacity of a business to generate net income after all expenses have been deducted (Dibie & Nworie, 2025). It is a central measure of business performance and long-term sustainability. Profitability can be expressed through financial ratios such as return on assets, return on equity, and return on investment. In capital-intensive sectors or in economies facing high inflation and foreign exchange volatility, profitability becomes even more critical as a cushion against financial uncertainty. The relationship between taxation and profitability is a delicate one. While taxes are necessary for broader economic functioning, excessive or poorly structured taxation can directly affect a firm's financial outcomes (Habila et al., 2024). Particularly in an environment like Nigeria's, where many firms already contend with inconsistent power supply, rising logistics costs, and import-related constraints, the tax burden can compound existing pressures. As a result, the balance between collecting necessary revenue and maintaining a healthy private sector becomes more difficult to achieve.

A growing concern among business owners, economists, and stakeholders is that rising tax obligations may be squeezing profits and reducing the long-term viability of businesses. When

firms are taxed beyond their ability to retain sufficient earnings, they may struggle to cover operational costs, fund expansions, or withstand economic shocks (Ndah et al., 2024). This phenomenon, uniquely termed “profit squeeze” in this study, reflects a scenario where revenues remain stagnant or rise slowly, while tax liabilities and other expenses climb faster. In such conditions, firms face reduced liquidity, limited investment capacity, and weakened competitiveness. For listed consumer goods firms in Nigeria, this issue is particularly critical. These firms are publicly accountable and must maintain profitability not only for operational sustainability but also to meet the expectations of shareholders. The profit squeeze caused by tax burdens may also affect share prices, investor confidence, and broader capital market performance. Moreover, if profitability falls below a certain threshold, firms may resort to cost-cutting measures such as layoffs, reduced production, or underinvestment in quality (Ndah et al., 2024). These actions can have ripple effects across supply chains, employment levels, and economic output. The danger is not simply that firms pay more tax, but that the tax structure may discourage growth and penalize legitimate profitability.

In addition to battling rising input prices and currency volatility (Emmanuel et al, 2025), these firms face mounting tax pressures, including corporate income tax, value-added tax, education tax, and other statutory charges. The cumulative effect of these tax liabilities can weigh heavily on company finances, especially for firms already contending with narrow profit margins. Despite contributing significantly to employment and consumer demand, listed consumer goods firms often find themselves paying a large portion of their earnings in taxes, with limited evidence of improved public infrastructure or support that could ease operational challenges (Jimoh & Adesina, 2024). This mismatch between tax obligations and business-friendly outcomes has raised questions about the sustainability of profitability under the current tax structure.

When tax pressures outweigh a firm’s financial capacity, several damaging consequences follow. Profitability suffers, which in turn affects reinvestment, innovation, and long-term survival. Some firms may respond by cutting operational costs, which could lead to job losses, reduced product quality, or even under-declaration of earnings to avoid further tax (Monday et al., 2025). Others may struggle to attract investors due to declining returns. In extreme cases, consistent profit erosion can lead to delisting from stock exchanges or full closure of operations. For the wider economy, this means lost jobs, lower tax revenues over time, and reduced investor confidence in the business climate. If this pattern continues unchecked, Nigeria risks weakening a key sector of its economy: one that is essential for meeting everyday consumer needs and sustaining economic activity.

In the light of the numerous issues aforementioned, an inquiry into the extent to which tax burdens are eroding profits is therefore not just an academic exercise but a necessary inquiry into the health of the business environment. This study investigated the profit squeeze resulting from tax burdens among listed consumer goods firms in Nigeria. Scholarly interest has been directed towards examining how various forms of taxation impact firm performance in Nigeria. However, important gaps still remain in the literature, especially regarding the profit squeeze resulting from effective tax rate burdens among listed consumer goods firms. While several studies have examined tax

effects across various industries and tax proxies such as company income tax, capital gains tax, and education tax (Omolola & Francis 2025; Habila et al. 2024; Lasisi & Fijabi 2023; Eneisik et al. 2023), there is limited empirical focus on effective tax rate specifically as a direct measure of tax burden. Additionally, although profitability is widely analyzed using indicators like return on equity (Adebimpe & Dahiru 2024; Okolo & Nnubia 2018; Suleiman & Abubakar 2024), fewer studies utilize return on investment (ROI), which captures broader investment efficiency and firm-level financial outcomes. Furthermore, many prior studies adopt relatively short timeframes (Jimoh & Adesina 2024; Omolola & Francis 2025) or smaller sample sizes (Aondover 2025; Adelabu et al. 2024), limiting the generalizability of their findings. The methodological rigor of panel diagnostics such as cross-sectional dependence and heteroskedasticity tests is also frequently overlooked (Ndah et al. 2024), raising concerns about model validity. Thus, the present study addresses these gaps by employing an 11-year panel of 12 purposively selected consumer goods firms, using effective tax rate and ROI as key constructs, and applying robust econometric tests along with estimated generalised least square to ensure the reliability of the results.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Tax Burden

Tax burden refers to the proportion of a firm's earnings or economic output that is paid to the government in the form of taxes (Suleiman & Abubakar, 2024). It represents the actual financial weight of taxation borne by a company after accounting for allowable deductions, exemptions, and reliefs. While statutory tax rates reflect the legal rates imposed by the government, the tax burden is more operationally measured through the effective tax rate (the ratio of tax expenses to pre-tax income). This measure captures the true fiscal impact of taxation on a firm's operations. For companies, the tax burden can vary based on factors such as size, sector, tax planning practices, and compliance behavior. In the context of corporate finance, a heavy tax burden may reduce the amount of earnings retained for reinvestment, expansion, or dividend distribution, thereby influencing managerial decisions (Eneisik et al., 2023). Tax burden also reflects the interplay between government fiscal policy and business sustainability. In developing economies like Nigeria, where tax administration is sometimes inconsistent and compliance costs are high, the burden may be heavier for firms that lack effective tax planning systems. Furthermore, the structure of taxation, whether progressive, regressive, or proportional, affects how different firms experience this burden. For instance, consumer goods firms operating with tight profit margins may feel the strain of a flat-rate tax more than firms in capital-intensive sectors. In all, tax burden is a key determinant of business viability, investment behavior, and overall financial performance, making it a crucial variable for empirical study in corporate taxation research (Aondover, 2025).

2.1.2 Firm Profitability

Firm profitability refers to a company's ability to generate earnings from its operations, relative to its resources or investments (Moedu et al., 2023). It reflects the financial health, operational

efficiency, and sustainability of a business over time. Profitability is commonly assessed using accounting-based ratios such as return on assets (ROA), return on equity (ROE), net profit margin, and return on investment (ROI). Among these, ROI stands out as a comprehensive measure, capturing how effectively a firm converts its total capital investment into profit (Nworie et al., 2023). It encompasses both the income generated and the scale of resources committed, making it particularly useful in evaluating long-term financial performance. Odusanya et al. (2018) argued that profitability is shaped by multiple internal and external factors, including cost structures, pricing strategies, market competition, tax obligations, and macroeconomic conditions. For consumer goods firms, profitability is often tied to volume sales, production efficiency, and pricing power. These firms typically operate in competitive markets where even small fluctuations in costs such as taxes or raw material prices can substantially affect net earnings (Barinua, 2024). In strategic management and financial planning, sustained profitability is critical for attracting investors, maintaining creditworthiness, and funding future growth (Edori & Egileoniso, 2024). It also serves as a buffer against market uncertainties and regulatory shocks. High profitability allows firms to absorb higher taxes, invest in innovation, or expand operations, while low profitability might restrict a firm's strategic options. As such, understanding the determinants of firm profitability is essential for policy formulation, corporate governance, and academic research. In taxation studies, profitability serves not only as an outcome variable but also as a potential moderator of tax-related impacts.

2.1.3 Taxation as a Tool for Public Investment and Profit Enhancement

While taxes impose a financial obligation on firms, they also serve as a vital source of government revenue used to fund infrastructure, security, education, transportation, and other public services (Efenyumi et al., 2025; Ikelegbe et al., 2025). These public goods form the backbone of a functional economy and are essential for facilitating business activities. In countries like Nigeria, where the government plays a dominant role in building and maintaining core infrastructure, tax revenue becomes especially important. When efficiently managed, these investments create a more conducive environment for business operations (Arimoro & Musa, 2025). Roads, power supply, ports, and digital infrastructure are just a few areas where public investment can directly reduce operational costs for firms. In addition, regulatory systems funded by tax revenue, such as quality control agencies and legal institutions, help protect businesses and consumers alike. This indirect benefit of taxation means that, despite reducing immediate cash flows, taxes can enable long-term profitability by lowering the cost of doing business. For instance, a well-maintained transport system reduces logistics costs, while reliable electricity supply reduces reliance on expensive alternatives. Moreover, government spending on healthcare and education helps build a healthier, more skilled workforce (Kousar et al., 2023), which firms can tap into at lower costs. Therefore, taxes, when transparently managed and effectively deployed, can lead to multiplier effects that benefit the very businesses that fund them. In this way, taxation and firm profitability are not necessarily antagonistic; rather, there exists a potential positive feedback loop when public institutions use tax revenue responsibly and efficiently.

2.1.4 Excessive Taxation and the Risk of Eroding Business Profitability

While taxes can support public services and infrastructure, excessive taxation may have adverse consequences for firm sustainability (Aondover, 2025). When the tax burden becomes disproportionately high, it can erode net profits to the point where firms struggle to cover operating costs, meet debt obligations, or reinvest in their businesses. In such scenarios, firms may be unable to maintain competitiveness or scale up production, leading to reduced output and eventual decline (Ndah et al., 2024). This situation is often referred to as "tax-induced business failure" or what the researchers termed "tax squeeze," where profitability is compromised due to excessive fiscal pressure. For firms operating in tight-margin industries like consumer goods, even moderate increases in effective tax rates can have serious implications. High tax rates can disincentivize productivity, distort investment decisions, and increase the appeal of tax avoidance or informal sector operations (Zaneta & Syalendra, 2024). Firms may also pass the burden onto consumers through higher prices, which could reduce demand and further suppress earnings. In extreme cases, businesses may relocate to jurisdictions with more favorable tax environments, leading to job losses and reduced domestic investment. Therefore, while taxation is necessary for national development, policymakers must strike a careful balance between revenue generation and private sector sustainability. If firms are taxed beyond their capacity to pay while still remaining profitable, they may be inadvertently pushed toward insolvency or complete market exit, undermining both private sector growth and public revenue in the long run.

2.2 Theoretical Review

The study is anchored on the Ability to Pay Theory which was formally propounded by Arthur Cecil Pigou and Smith in 1903 (Habila et al., 2024). While earlier economists such as Adam Smith had touched on the principle of equitable taxation based on one's capacity, Pigou (2017) offered a structured theoretical foundation that emphasized the ethical and redistributive role of taxation. His formulation of the theory was aimed at promoting fairness in public finance, by proposing that tax obligations should correspond to an individual's or entity's economic capacity, not necessarily to the benefits received from government services. Pigou's work marked a shift from benefit-based taxation models to those centered on economic justice and social equity (Lauer et al., 2023).

The theory is based on the premise that taxes should be levied according to the taxpayer's ability to bear the burden without undermining their financial well-being (Lasisi & Fijabi, 2023). It supports a progressive tax structure, where those who earn more or generate higher profits contribute proportionally more to public revenue. Two key principles define the theory: horizontal equity, which advocates equal tax treatment for those with similar financial strength, and vertical equity, which holds that those with greater means should bear a larger share of the tax burden. The theory thus views taxation not only as a means of raising revenue, but also as a tool for ensuring fairness and reducing economic disparities in society (Habila et al., 2024).

This theory provides a relevant basis for understanding the relationship between taxation and financial performance in the Nigerian consumer goods sector. By focusing on the effective tax rate as a direct measure of actual tax pressure, and linking it to return on investment as a key indicator

of firm performance, the study examines whether tax burdens are aligned with firms' financial capacities. If tax policies impose disproportionate pressure on firms regardless of their profitability or investment efficiency, it may suggest a departure from the fairness principles outlined in the ability to pay theory. The framework thus guides the evaluation of whether Nigeria's tax structure supports or constrains the financial sustainability of listed consumer goods firms.

Based on the ability to pay theory, it is hypothesized that higher effective tax rates negatively affect profitability of listed consumer goods firms in Nigeria. As a corollary, therefore, firms bearing greater tax burdens are expected to report lower returns on investment.

2.3 Empirical Review

Empirical findings on the relationship between tax burdens and firm performance in Nigeria reveal significant inconsistencies across sectors, methodologies, and tax proxies. For instance, Omolola and Francis (2025) observed that company income tax and withholding tax had a statistically significant positive impact on financial performance among consumer goods firms, while capital gains tax had a negative but insignificant effect. Similarly, Habila et al. (2024) reported a significant positive influence of company income tax on bank performance, but found that capital gains tax and tertiary education tax had negative impacts. Adelabu et al. (2024) also found a positive relationship between company income tax and financial performance in non-financial firms. These findings contrast with the results of Aondover (2025), who, using oil and gas firms, reported that both company income tax and petroleum profit tax significantly reduced profitability. The divergence in outcomes suggests that the nature of tax-performance relationships may vary considerably across industries and tax types, possibly influenced by differences in regulatory regimes, cost structures, or tax compliance practices.

Some studies emphasized tax management and structure rather than tax type alone. Adebimpe and Dahiru (2024) highlighted the importance of tax expenses and deferred tax liabilities as components of tax management, with tax expenses positively affecting return on assets while deferred tax liabilities had a negative impact. Jimoh and Adesina (2024), examining direct taxation in consumer goods firms, reported a significant negative association with both profitability and investment, indicating that tax burdens can restrict financial flexibility and capital allocation. Likewise, Suleiman and Abubakar (2024) showed that marginal tax rate positively influenced bank liquidity, while tax expenses had a negative effect. These findings demonstrate that not all tax-related indicators affect firm outcomes in the same way. Some measures, like marginal tax rate, may even improve liquidity, suggesting tax effects are multifaceted and influenced by internal financial strategies.

Other studies provided mixed or statistically insignificant outcomes, reflecting the complexity of measuring profit squeeze from tax burdens. For example, Ndah et al. (2024) and Eneisik et al. (2023) found that company income tax had a negative but statistically insignificant effect on investment and profit margins, respectively. In contrast, Lasisi and Fijabi (2023) found a significant positive relationship between company income tax and financial performance in ICT firms, although education tax exerted a significant negative influence. Okolo and Nnubia (2018)

offered yet another perspective by showing that effective, marginal, and average tax rates positively impacted profitability in the banking sector. These discrepancies suggest that the choice of tax proxy (e.g., effective tax rate versus statutory taxes), profitability metric (e.g., ROI, ROA, ROE), and sectoral focus play critical roles in shaping empirical outcomes.

3.0 METHODOLOGY

This study adopted an *ex-post facto* research design. The choice of this design was appropriate because the events and data under consideration had already occurred and could not be manipulated. The study examined the relationship between tax burden and firm profitability using data obtained from historical records. This approach allows for the investigation of causal relationships between variables based on existing secondary data without influencing the data generation process. As the aim is to observe the financial effects of tax burdens on profitability over time, the *ex-post facto* method was most suitable.

The population for this study comprised all 20 listed consumer goods firms on the Nigerian Exchange Group as of December 31, 2024. These firms were selected because they maintain annual published financial statements and are required to disclose tax information, profitability, and other corporate financial indicators. The firms include both large multinational subsidiaries and indigenous firms engaged in the production of consumables. The list of these firms is presented in Table 1.

Table 1: Population of Listed Consumer Goods Firms in Nigeria

Consumer Goods Manufacturing Sector Firms
1. Bua Foods Plc
2. Cadbury Nigeria Plc
3. Champion Breweries Plc
4. Dangote Sugar Refinery Plc
5. Dn Tyre & Rubber Plc
6. Golden Guinea Breweries Plc
7. Guinness Nigeria Plc
8. Honeywell Flour Mills Plc
9. International Breweries Plc
10. Mcnichols Plc
11. Multi-Trex Integrated Foods Plc
12. Northern Nigeria Flour Mills Plc
13. Nascon Allied Industries Plc
14. Nestlé Nigeria Plc
15. Nigerian Breweries Plc
16. Nigerian Enamelware Plc

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17. PZ Cussons Nigeria Plc
 18. Unilever Nigeria Plc
 19. Union Dicon Salt Plc
 20. Vitafoam Nigeria Plc
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Source: Nigerian Exchange Group (2024)

From the population of 20 listed consumer goods firms, a sample size of 12 firms was selected using purposive sampling. This technique was employed to ensure that only firms with consistent and accessible annual financial reports from 2014 to 2024 were included. Firms with incomplete data, delisted status, or noncompliance with NGX reporting standards during the study period were excluded. The final sample shown in Table 2 below ensures a sufficient number of observations to conduct valid panel regression analysis.

Table 2: Sample Size

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1. Cadbury Nigeria Plc.
 2. Dangote Sugar Refinery Plc.
 3. Guinness Nig. Plc
 4. Honeywell Flour Mill Plc.
 5. International Breweries Plc.
 6. Nascon Allied Industries Plc.
 7. Nestle Nigeria Plc
 8. Nigerian Breweries Plc
 9. Northern Nig. Flour Mills Plc
 10. PZ Cussons Nigeria Plc.
 11. Unilever Nigeria Plc.
 12. Vitafoam Nigeria Plc.
-

Source: Author's Compilation (2025)

Secondary data were used for this study. These were obtained from the audited annual financial statements of the sampled firms, covering the period from 2014 to 2024. The data extracted included figures related to earnings before tax, tax expense, net income, and total assets. These figures were used to compute the variables required for the analysis. All data were cross-verified from financial reports available on the Nigerian Exchange website and each firm's official investor relations portal. The time frame of 11 years was chosen to allow for the observation of trends and fluctuations in both tax payments and profitability across different economic and policy cycles.

Table 3: Description of Study Variables

<i>Variable Type</i>	<i>Variable Name</i>	<i>Measurement</i>
<i>Dependent Variable</i>	Return on Investment (ROI)	Earnings After Tax / Invested Assets
<i>Independent Variable</i>	Effective Tax Rate (EFTX)	Tax Expense / Profit Before Tax
<i>Control Variable</i>	Log of Total Assets (Log_Asset)	Natural logarithm of total assets

Source: Author's Compilation (2025)

All variables were structured on a firm-year basis, forming a balanced panel for econometric estimation. Descriptive analysis was conducted to summarize the data using mean, minimum, maximum, and standard deviation values. To test for model reliability, diagnostic tests for cross-sectional dependence and panel heteroskedasticity were conducted. The study employed the panel Estimated Generalized Least Squares (EGLS) technique to estimate the effect of tax burden on firm profit. EGLS was chosen because it effectively accounts for heteroskedasticity and serial correlation in panel data structures.

The linear model formulated by Adelabu et al. (2024) was modified to suit the peculiarities of the present study. Their model is restated below:

$$ROA = \beta_0 + \beta_1 CIT_{it} + \beta_2 FSZ_{it} + \varepsilon_{it} \quad \text{eqi}$$

Where:

ROA= return on asset (dependent variable)

β_0 =Constant,

β_1, β_2 = coefficients of the independent variables

CIT = company income tax

FSZ= Firm size ε = error term

The panel regression model used in the study is specified below:

$$ROI_{it} = \beta_0 + \beta_1 EFTX_{it} + \beta_2 \text{Log_Asset}_{it} + \varepsilon_{it} \quad \text{eqii}$$

Where:

ROI_{it} = Return on investment of firm i at time t

$EFTX_{it}$ = Effective tax rate of firm i at time t

Log_Asset_{it} = Log of total assets as control variable for firm i at time t

β_0 = Constant

β_1 – β_2 = Coefficients

ε_{it} = Error term

All estimations were carried out using E-Views 10. Statistical significance was evaluated at a 5% confidence level. The null hypothesis is rejected when the p-value is less than 0.05, indicating a statistically significant effect. Conversely, when the p-value is 0.05 or higher, the null hypothesis is not rejected, suggesting no statistically significant effect.

4.0 RESULTS AND DISCUSSION

4.1 Descriptive Analysis and Model Diagnostics

Table 4 Descriptive Analysis

	ROI	EFTX	Total Asset (₦'000)
Mean	0.030638	0.626621	171275203
Maximum	0.264935	41.08395	1126267553
Minimum	-0.385869	-4.715152	1739760.
Std. Dev.	0.103911	3.659936	211098075
Skewness	-1.032896	10.41269	2.193036
Kurtosis	5.547003	115.0854	8.143727
Jarque-Bera	59.15096	71482.64	251.3256
Probability	0.000000	0.000000	0.000000
Observations	132	132	132

Source: Author's Computation (2025)

The descriptive statistics presented in Table 4 showed the distribution and characteristics of the variables used in the study. The first variable, Return on Investment (ROI), has a mean value of 0.0306, indicating that on average, the sampled consumer goods firms in Nigeria generated a return of about 3.06% on their invested assets over the 11-year study period. The maximum ROI observed was 0.2649, suggesting the most profitable firm recorded a 26.49% return, while the minimum value of -0.3859 reveals that at least one firm incurred a negative return of about 38.59%, reflecting loss-making activities in that period. The standard deviation of 0.1039 shows that there is a considerable spread in profitability levels among the firms. The negative skewness of -1.0329 implies that the ROI distribution leans leftward, with more firms clustered toward higher returns but a few extreme loss-makers dragging the mean down. The kurtosis value of 5.5470 exceeds 3, suggesting the distribution has heavier tails than a normal distribution, indicating the presence of outliers. The Jarque-Bera probability value of 0.0000 confirms that the ROI data significantly deviate from a normal distribution.

Regarding Effective Tax Rate (EFTX) in Table 4, the average value across the sampled firms is 0.6266, or approximately 62.66%. This is considerably high and suggests that, on average, firms are subject to tax expenses amounting to nearly two-thirds of their pre-tax earnings, implying a substantial tax burden. The maximum EFTX of 41.0839 and the minimum of -4.7152 reflect extreme variations in tax reporting, which may result from deferred tax adjustments, tax holidays, or loss carryforwards. The standard deviation of 3.6599 further highlights the high variability in tax rates among the firms over the years. The skewness value of 10.4127 is extremely high and positive, indicating that while most firms have EFTX values closer to the mean, a few firms reported extraordinarily high tax burdens, pulling the distribution sharply to the right. The kurtosis value of 115.0854 points to a highly peaked distribution with extremely fat tails, confirming the presence of significant outliers. The Jarque-Bera p-value of 0.0000 strongly indicates that the EFTX values are not normally distributed.

Finally, Total Asset values, also reported in Table 4, show a mean of approximately ₦171.3 billion, suggesting that the average firm in the sample operated with a sizeable asset base, reflective of the capital-intensive nature of the consumer goods industry. The maximum asset value of over ₦1.126

trillion shows that one of the firms is substantially larger than the rest in terms of asset holdings, while the minimum value of about ₦1.74 billion indicates that smaller firms are also represented in the sample. The standard deviation of over ₦211 billion reflects substantial differences in firm sizes across the industry. The positive skewness of 2.1930 indicates that the distribution is right-skewed, meaning that a small number of firms hold disproportionately large asset bases compared to the rest. A kurtosis of 8.1437 also suggests a distribution with heavy tails and a sharp peak, signaling the presence of firms with exceptionally large assets. The Jarque-Bera test probability of 0.0000 confirms that the distribution of total assets is not normal, reinforcing the variability and presence of outliers in firm sizes.

Table 5 Model Diagnostics

Test Name	Null Hypothesis	Test Statistic	Probability (p-value)
Residual Cross-Section Dependence Test	No cross-section dependence (correlation) in residuals	4.937800	0.0000
Panel Cross-section Heteroskedasticity LR Test	Residuals are homoskedastic	43.54852	0.0000

Source: Author's Computation (2025)

The Residual Cross-Section Dependence Test, as reported in Table 5, is used to examine whether residuals across the panel data units (in this case, the listed consumer goods firms) are correlated with each other. The null hypothesis of this test assumes that there is no cross-sectional dependence in the residuals. However, the test statistic of 4.9378 with a p-value of 0.0000 indicates that this null hypothesis is rejected at the 1% level of significance. This means that there is significant cross-sectional dependence in the model's residuals, implying that the performance of one firm may be systematically related to that of another. Such dependence must be accounted for in model estimation to avoid biased and inefficient regression coefficients. Hence, the justification for the use of Panel EGLS.

The Panel Cross-Section Heteroskedasticity Likelihood Ratio (LR) Test, also shown in Table 5, assesses whether the error variances across the cross-sectional units are constant (homoskedastic) or differ (heteroskedastic). The null hypothesis states that the residuals are homoskedastic. The LR test statistic of 43.5485 and a p-value of 0.0000 lead to a rejection of the null hypothesis, suggesting the presence of heteroskedasticity in the model. This implies that the variance of errors differs across firms, which can distort the standard errors of the estimates if not properly corrected. Recognizing heteroskedasticity is crucial because it justifies the use of robust regression techniques such as the Estimated Generalized Least Squares (EGLS), which was appropriately applied in this study to produce more reliable coefficient estimates.

4.2 Test of Hypothesis

Null Hypothesis: An increase in the effective tax rate does not significantly reduce firm profitability, with a negative effect on return on assets

The hypothesis was tested using Panel estimated generalised least square as shown below. This analytical tool helped to address the issue of panel heteroskedasticity and also cross-sectional dependence as observed *ab initio* in Table 5.

Table 6 Test of Hypothesis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EFTX	-0.001585	0.000254	-6.239378	0.0000
LOG_ASSET	-0.009939	0.003869	-2.568530	0.0114
C	0.215452	0.069078	3.118953	0.0022
Weighted Statistics				
R-squared	0.280369	Mean dependent var		0.207402
Adjusted R-squared	0.269211	S.D. dependent var		1.282897
S.E. of regression	1.010704	Sum squared resid		131.7763
F-statistic	25.12921	Durbin-Watson stat		1.986414
Prob(F-statistic)	0.000000			

Source: Author's Computation (2025)

Table 6 presents the output of the panel Estimated Generalized Least Squares (EGLS) regression for the model examining the effect of tax burden on firm profitability, proxied by Return on Investment (ROI). The model's validity is supported by a probability of the F-statistic of 0.000000, indicating that the independent variables jointly have a statistically significant effect on ROI at the 5% level. The adjusted R-squared of 0.2692 implies that approximately 26.9% of the variation in ROI among the sampled consumer goods firms over the study period is explained by changes in the effective tax rate and firm size (log of total assets). Although this may seem modest, it is not unusual in firm-level panel data studies where other firm-specific factors may also influence profitability. Additionally, the Durbin-Watson statistic of 1.9864 is close to 2, suggesting the absence of serial correlation in the residuals, which affirms the reliability of the regression estimates.

The regression constant ($C = 0.215452$, $p = 0.0022$) represents the baseline return on investment when both effective tax rate and firm size are zero. Though the scenario is hypothetical since firms must have size and tax obligations, the significance of the constant at the 5% level confirms that the intercept is statistically different from zero. It suggests that, other things being equal, consumer goods firms would achieve a 21.5% return on investment in the absence of tax burdens and size considerations.

The logarithm of total assets (LOG_ASSET), which is included as a control variable, has a coefficient of -0.009939 and a p-value of 0.0114, showing a statistically significant negative effect on ROI at the 5% level. This implies that a one-unit increase in the logarithm of a firm's total assets leads to a 0.99 percentage point decrease in ROI, all else being equal. This result suggests that, within the sample, larger firms may not necessarily achieve higher returns relative to their

investment base. This could be due to increasing inefficiencies, higher operating costs, or diminishing marginal returns in asset utilization among the largest consumer goods firms in Nigeria.

The coefficient of the effective tax rate (EFTX) is -0.001585, with a p-value of 0.0000, indicating a statistically significant negative effect on firm profitability at the 1% level. This means that for every one-unit increase in effective tax rate, a firm's return on investment declines by approximately 0.16 percentage points, holding other factors constant. Since this effect is statistically significant and the direction is negative, the hypothesis that an increase in tax burden reduces firm profitability is supported. In practical terms, this finding implies that heavier tax burdens leave firms with less residual income, directly shrinking returns to investors.

4.3 Discussion of Finding

The finding that an increase in the effective tax rate significantly reduces firm profitability ($\beta = -0.001585$; $p = 0.0000$) aligns with economic expectations that higher tax burdens reduce net returns by directly increasing cost obligations. This outcome supports the notion that effective tax rates can erode the resources available for reinvestment, innovation, or expansion, thereby weakening overall financial performance. The result resonates with several empirical studies that have observed a similar negative effect of taxation on profitability. Jimoh and Adesina (2024) found that a 1% increase in direct taxes reduced profitability by 0.8%, while Aondover (2025) documented that company income tax and petroleum profit tax significantly undermined profitability in Nigeria's oil and gas sector. Suleiman and Abubakar (2024) likewise showed that tax expenses had a significantly negative effect on liquidity, a vital indicator of financial soundness, further underlining how heavier tax burdens impair firm efficiency. Similarly, Eneisik et al. (2023) reported a negative though statistically insignificant effect of company income tax on net profit margin among manufacturing firms, echoing the direction but not the strength of the present result. Ndah et al. (2024) also recorded a negative but insignificant impact of corporate income tax on net investment, again suggesting a harmful tax effect, albeit modest in their context. Conversely, some studies found positive or mixed outcomes, such as Omolola and Francis (2025), who noted a significantly positive relationship between company income tax and financial performance, suggesting that in some contexts, tax compliance may reflect or reinforce strong governance or efficient operations. Adebimpe and Dahiru (2024) found that tax expenses positively influenced return on assets, but deferred tax liabilities had the opposite effect, highlighting the dual nature of tax elements. Habila et al. (2024) also observed that while company income tax improved financial performance, other taxes like tertiary education tax had damaging effects. These mixed findings suggest that while the current study shows a statistically robust and negative effect of effective tax rate on profitability, the broader literature reveals that the relationship may vary based on industry type, tax category, and firm-specific management practices.

5.0 CONCLUSION AND RECOMMENDATION

In a well-functioning business environment, taxation plays a balanced role in supporting public revenue without suffocating private enterprise. When taxes are reasonable and predictable, firms can plan their operations effectively, reinvest profits, and contribute meaningfully to national development. Governments, in turn, use tax proceeds to provide infrastructure, maintain public services, and create a stable climate for economic activity. In such a system, firms are not only able to comply with tax obligations but also remain competitive and profitable. This creates a positive cycle where both the state and private sector benefit from each other's success.

However, the finding of the study revealed a statistically significant negative effect of effective tax rate on firm profitability among listed consumer goods firms in Nigeria, suggesting that higher tax burdens consistently erode returns on investment. This outcome highlights the financial pressure taxes impose on firms operating in a heavily taxed environment, where even modest increases in tax obligations translate into measurable declines in profitability. The implications extend to how firms manage operational efficiency, capital structure, and long-term financial planning under rising tax expenses. The evidence also reflects broader structural challenges in balancing government revenue generation with sustaining private sector growth and investor value. Hence, tax authorities and policymakers consider more growth-friendly tax regimes to enhance firm profitability and sectoral sustainability.

5.1 Contributions to Knowledge

This study contributes to the existing literature by focusing specifically on the effect of effective tax rate on profitability, measured using return on investment, among listed consumer goods firms in Nigeria. Unlike previous studies that rely heavily on company income tax, capital gains tax, and education tax as proxies, this research adopts effective tax rate as a more comprehensive measure of tax burden. It also moves beyond commonly used profitability indicators such as net profit margin and return on equity by applying return on investment, which better reflects how efficiently firms generate returns from their investments. The study draws on data spanning eleven years from twelve purposively selected consumer goods firms, offering a broader time frame and stronger basis for generalization than many earlier studies. In addition, it incorporates important diagnostic checks, including tests for cross-sectional dependence and heteroskedasticity, and uses estimated generalized least squares to strengthen the validity and reliability of its panel regression model.

5.3 Suggestion for Further Studies

Future studies should consider including a larger number of firms across different sectors to allow for broader comparisons and better generalization. They should also use both quantitative and qualitative data, such as interviews with tax managers or government officials, to gain a deeper understanding of how tax policies actually affect business performance in practice.

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