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ASSET STRUCTURE, FINANCING DECISIONS, AND SCALE EFFECTS AS DETERMINANTS OF FIRM PERFORMANCE IN EMERGING MARKETS: INSIGHTS FROM NIGERIAN CONSUMER GOODS FIRMS

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Abstract

In developing nations like Nigeria, the output of businesses in the consumer products sector is crucial to industrialisation, job creation, and economic expansion. Using panel data on thirteen listed firms from 2000 to 2023, this study examines the effects of asset structure, external financing, and company size on return on assets (ROA) for consumer products companies in Nigeria. The findings indicate that while external financing has a negative impact on ROA, asset structure and business size have a beneficial impact. Leverage and sales growth sensitivity tests show that the results hold up well. The models' fit is justified by diagnostic testing after estimate, which reveals the lack of autocorrelation and heteroskedasticity. This work underscores the importance of prudent asset allocation, judicious financing choice, and size advantage in enhancing firm performance and provides practical guidance for managers, investors, and policymakers in developing countries.

Keywords: Asset returns, asset structure, external finance, firm performance, firm size, Nigerian consumer goods.

JEL Codes: G32, G34, L25, C23

1.0 Introduction

In emerging economies, the output of businesses in the consumer goods sector is crucial to industrialization, job creation, and economic growth. Operating efficiency and strategic “financial management decisions are both reflected in firm profitability, which is most commonly measured as a ratio of profits to assets (ROA). Out of the elements that affect the performance of the firm, asset structure, external finance and firm size have been determined to be influential. Asset structure is involved in the distribution of resources between tangibles and intangibles, which has an impact on liquidity, production efficiency, and availability of collateral to financing (Chen et al., 2022; Adusei, 2020). External funding, particularly debt financing, affects a company's cost of cash, risk, and flexibility (Adewoye, Bello, and Okewole, 2025). In the meantime, the size of firms determines the economies of scale, rivalry in the market, and the resilience of the operations (Kyereboah-Coleman et al., 2007). The interplay between these variables is essential to investors, managers and policymakers who want to improve the performance of firms in unstable economic conditions.

According to research on firm performance in emerging markets like Nigeria, asset structure, financing choices, and firm size all have a big impact on how well a company performs because they affect its capacity to weather shocks and turn a profit (Akinsulore and Olayemi, 2022). This viewpoint is especially pertinent as emerging market companies continue to face institutional and structural difficulties. Since effective asset allocation between current and non-current assets can improve liquidity, risk management, and productive efficiency, literature acknowledges the importance of asset structure in firm performance (Akininyi, 2025). Evidence from Sub-Saharan Africa shows that sales growth, when based on a robust asset structure, has a positive effect on firm profitability (Adu-Gyamfi and Korankye, 2023). Similarly, financing decisions are central to performance outcomes, as the capital structure literature emphasizes the balance

between debt and equity as a determinant of financial sustainability and shareholder value creation (Adewoye et al., 2025). In the light of this, this paper seeks threefold aims.

The initial aim of the research is to determine the impact of external finance on the performance of firms. The existing literature indicates that the usage of debt financing could simultaneously contribute to the investment and growth of the economy and be highly vulnerable to a financial crisis, especially in emerging markets with high interest rates and unstable inflation rates (Ibhagui and Olokoyo, 2018; Mbagwu, 2023). The consumer goods firms in Nigeria are usually limited in their accessibility to the cheap capital thus leading to a trade-off between financing costs and growth opportunities. It has been empirically demonstrated that higher leverage rates can interfere with profitability because of increased interests charges and agency costs that require proper financial planning (Titman and Wessels, 1988; Adewoye, Bello and Okewole, 2025). The research will help in understanding how to find the best financing strategies that should be applied by the firms in the resource-constrained markets by assessing the impact of external finance on ROA.

The second goal is devoted to the impact of asset structure on the performance of the firms. The composition of assets, especially the ratio between the fixed and current assets, can define the efficiency of the operations, the risk level, and the ability to obtain collateral-based financing. Companies that have more tangible assets tend to be in a better position to alleviate financial pressures, enhance their bargaining leverage to creditors and achieve higher effectiveness in their output (Harris and Raviv, 1991; Chen et al., 2022). Recent signs of the emerging economy demonstrate that asset-intensive companies are more profitable since they use their resources better and lower costs of transactions (Adusei, 2020; Kehinde et al., 2022). Thus, the implication of the asset structure is worth investigating in order to understand how competitive advantage and sustainable returns can be achieved in the Nigerian consumer goods industry through strategic resource allocation.

The aim of this study is the third goal and it is to determine the impact of size of firms on their profitability. The size of the firm determines the operational performance as well as financial performance due to the economies of scale, market accessibility as well as ability of the firm to maintain a shock. Usually, larger companies are able to enjoy better bargaining power, lower unit-costs, and better brand awareness, which are combined to increase profitability (Kyereboah-Coleman et al., 2007; Chen et al., 2022). Smaller firms, on the other hand, might not be able to experience similar efficiencies and this will restrict them in making consistent returns. Knowledge on relationship between the size of firms and their performance is important in coming up with strategies that would facilitate growth and competitiveness in a specific setting that is an emerging market where firms are heterogeneous in terms of capacity.

Although an increasing literature has been conducted on the character of firm-level predictors of performance, limited empirical studies have been conducted on the Nigerian consumer goods industry based on panel studies. Most of the existing research focuses on general manufacturing or financial industries that tend to forget the subtle nature of the interaction between asset organization, external investment, and company scale determining the resultant profitability (Mbagwu, 2023; Ibhagui and Olokoyo, 2018; Adu-Gyamfi and Korankye, 2023). To fill this gap, this study deploys the models of panel regressions, namely OLS, Fixed Effects, and Random

Effects, to determine how the firm-specific features influence ROA to offer theoretical and practical implications to the firm managers and policymakers.

Based on these reflections, the current research would add both theoretical and practical value since it would combine Resource-Based View, Pecking Order Theory, and Trade-Off Theory in the examination of the factors contributing to the profitability of firms. The study enlightens the financial management, resource allocation, and scale optimization strategies by examining the effects of asset structure, external finance, and scale on ROA. The results are supposed to inform the managers of the firms to enhance their operations, enable investors to make a sound decision, and help the policymakers in designing interventions that enhance firm performance and resilience within Nigeria's consumer goods sector (Barney, 1991; Myers & Majluf, 1984; Kraus & Litzenberger, 1973).

2.0 Empirical Review

An increasing amount of empirical data demonstrates the complicated and sometimes contradictory links between asset structure, external financing, and business growth, as well as the impact of capital structure on profitability. According to Okezie et al. (2025), short- and long-term debt had a negative impact on financial performance, underscoring the significance of choosing the best capital structure. They also found a negative and significant correlation between debt ratios and return on assets (ROA) for Nigerian consumer goods companies, explaining that higher leverage magnifies financial risk and can decrease profitability. Umoru et al. (2020) found that debt positively affected the profitability, which means that the reasonable use of debt enhances the performance of firms.

Akinninyi (2025) noted external financing offers companies the opportunity to grow, but overreliance might raise the cost of financing and risk, which decreases profitability, and this viewpoint was also supported by Olaniyi and Felix (2023) who said that context-specific institutional and macroeconomic environment in emerging markets should affect the impact of debt on performance.

In addition to financing decision making, asset structure has turned out to be a decisive factor of firm performance. Kehinde et al. (2022) have shown that companies that have a higher percentage of tangible resources are more profitable and this example indicates the advantage of having resources and collateral to finance the operations and operational efficiency. This finding was supported by Shehu (2025) who indicated that the composition of assets has a significant impact on the financial performance of the listed industrial companies in Nigeria. This correlation is in line with the Resource-Based View (Barney, 1991) where such firms with valuable, rare and inimitable resources, including fixed tangible assets, can achieve competitive advantages that are converted into better profitability. It has been empirically proposed that tangible assets can not only increase production capabilities but also provide easier access to less expensive and more reliable financing, which can reinforce the sustainable performance of firms (Chen, Liu, and Wu, 2022; Kehinde et al., 2022).

A consistent correlation has also been found regarding firm size and profitability, where larger firms tend to earn higher returns owing to economies of scale, market power as well as resilience to operate. In her study, Mbagwu (2023) discovered a positive correlation between the scale of firms and its profitability in Nigeria manufacturing firms, arguing that scale allows firms to optimize cost structures and exert market influence. Chen et al. (2022) argue that larger firms

tend to attract more favorable financing terms, benefiting from lower interest rates and improved investor confidence, which reinforces the profitability effect. Ekokotu (2025) reported that firm size enhances performance, suggesting that larger firms are better equipped to leverage internal resources and manage financial risks. These findings is consistent with the predictions of the Trade-Off Theory (Kraus & Litzenberger, 1973), which emphasizes that firm-specific characteristics, including scale, determine the optimal balance between debt and equity.

Empirical studies show that external finance can play a dual role of growth and expansion, as well as increasing vulnerability through high leverage and interest obligations (Adewoye, Bello, & Okewole, 2025). While external finance has the potential to improve investment opportunities and operational efficiency, there is also a risk of over-leveraging and lower profitability, especially in emerging economies that have volatile credit markets and high interest rates (Mbagwu, 2023). Kehinde et al. (2022), Chen et al. (2022), and Shehu (2025) underscore the importance of integrated financial and operational strategies to achieve sustained competitive advantage. Additionally, the heterogeneity of Nigerian consumer goods firms, coupled with institutional and macroeconomic conditions, means that empirical results are highly sensitive to firm-specific and sectoral factors (Ekokotu, 2025; Adewoye, Bello, & Okewole, 2025).

3.0 Methodology

Theoretical Framework

The asset structure, external finance, firm size and asset returns have a relationship which has greatly been anchored on financial, organization theories. This paper relies largely on the Trade-Off Theory, Pecking Order Theory, and the Resource-Based View (RBV) to formulate a research framework on which the empirical research can be conducted. All these theories offer a different explanation of how firms are funded and how they structure themselves and the effect it has on performance.

The Trade-Off Theory is based on the assumption that those decisions firms make regarding financing are based on the trade-off of the advantages of debt, including the tax shield, and the cost of financial distress (Kraus and Litzenberger, 1973). The optimal capital structure of the firm is attained at a situation where the marginal cost of debt is equal to the marginal benefit of debt. This association can be stated as:

$$V_i = V_u + \tau D - C(D) \quad (1)$$

where V_i is the value of the leveraged firm, V_u is the value of the unleveraged firm, τD represents the tax shield benefit of debt, and $C(D)$ captures the expected costs of financial distress. This framework directly links to external finance (EXF), since the extent of debt financing reflects the trade-off firms make between tax benefits and distress costs. In the context of Nigerian consumer goods firms, high borrowing costs and volatile macroeconomic conditions may amplify $C(D)$, thereby influencing returns on assets.

The Pecking Order Theory, developed by Myers and Majluf (1984), asserts that firms prioritize financing sources based on the principle of least resistance to information asymmetry. Internal financing is preferred, followed by debt, and lastly, equity. The financing hierarchy can be formalized as:

$$CF_t + D_t + E_t = I_t + DIV_t \quad (2)$$

where CF_t represents internal cash flow, D_t denotes debt financing, E_t is equity issuance, I_t is investment expenditure, and DIV_t is dividend payout. The implication is that firms with

insufficient internal resources resort to external finance (EXF), which could negatively affect asset returns (ROA) when debt service obligations exceed the marginal productivity of assets. Complementing these perspectives, the Resource-Based View (RBV) emphasizes that firm performance is driven by unique resources and capabilities that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Asset structure (AST), measured as the ratio of fixed to total assets, embodies a critical dimension of firm resources. The productive capacity of fixed assets influences both operational efficiency and financing capacity, since tangible assets often serve as collateral in securing external finance. This relationship can be expressed as:

$$ROA_{it} = f(AST_{it}, FSZ_{it}, EXF_{it}) \quad (3)$$

where ROA_{it} is the return on assets of firm i at time t , AST_{it} represents asset structure, FSZ_{it} denotes firm size, and EXF_{it} is external finance. Equation (3) serves as the theoretical expression linking the firm's structural attributes and financing choices to performance outcomes.

Furthermore, firm size (FSZ) plays a moderating role in both Trade-Off and Pecking Order frameworks. Larger firms typically enjoy easier access to external finance, lower bankruptcy costs, and greater economies of scale (Titman & Wessels, 1988). This relationship is often formalized through a log-linear functional form:

$$ROA_{it} = \alpha + \beta_1 EXF_{it} + \beta_2 AST_{it} + \beta_3 \ln(FSZ_{it}) + \epsilon_{it} \quad (4)$$

where α is the intercept, $\beta_1, \beta_2, \beta_3$ are parameter coefficients, and ϵ_{it} is the error term. The log transformation of firm size accounts for the diminishing marginal impact of scale on performance.

Integrating these theoretical perspectives, this study hypothesizes that higher reliance on external finance (consistent with the Pecking Order Theory) may depress asset returns, while stronger asset structures (consistent with RBV) and larger firm size (as suggested by both Trade-Off Theory and RBV) may enhance firm performance. The models derived above form the theoretical foundation for empirical analysis.

Data and Method

This study employs a correlational research design to evaluate the implications of asset structure, external finance, and firm size on asset returns of consumer goods firms listed on the Nigerian Exchange Group (NGX). The population consists of twenty-six (26) firms listed as of 31st December 2022. To ensure consistency, firms delisted during the period under review (2000–2020) were excluded, resulting in an adjusted population of twenty-six active firms. A census sampling approach was adopted, and thirteen firms were retained as the analytical sample due to data completeness.

Secondary data were utilized exclusively, sourced from audited annual financial reports of the sampled firms. This choice reflects the reliability and credibility of financial statements, which are subject to statutory audits and regulatory scrutiny (Cheng & Tzeng, 2011). The variables of interest were operationalized following established financial economics literature, while return on assets was used as the proxy for financial performance (Ogunmakin et al., 2020).

The dependent variable, return on assets (ROA), is modeled against three independent variables: external finance (EXF), asset structure (AST), and firm size (FSZ). The baseline empirical model is specified as:

$$ROA_{it} = \beta_0 + \beta_1 EXF_{it} + \beta_2 AST_{it} + \beta_3 FSZ_{it} + \mu_{it} \quad (5)$$

where ROA_{it} represents return on assets for firm i at time t , EXF_{it} denotes external finance, AST_{it} indicates asset structure, and FSZ_{it} captures firm size. μ_{it} is the stochastic error term. A sensitivity model was introduced to test robustness by incorporating control variables that capture firm-specific heterogeneity such as leverage (LEV) and sales growth (SGR), both known to influence financial performance in firm-level studies (Abor, 2008; Harris & Raviv, 1991):

$$ROA_{it} = \beta_0 + \beta_1 EXF_{it} + \beta_2 AST_{it} + \beta_3 FSZ_{it} + \beta_4 LEV_{it} + \beta_5 SGR_{it} + \mu_{it} \quad (6)$$

This specification allows testing whether the main relationships remain stable after controlling for other determinants of performance. Table 1 provide further information on the variables”.

Table 1:
Variable Definitions

Variable	Abbreviation	Nature	Measurement	Source
Return on Assets	ROA	Dependent	Profit after tax ÷ Total assets	Ogunmakin et al., 2020
External Finance	EXF	Independent	Log of external financing	Abor (2008)
Asset Structure	AST	Independent	Fixed assets ÷ Total assets	Harris & Raviv (1991)
Firm Size	FSZ	Independent	Natural log of total assets	Cheng & Tzeng (2011)
Leverage	LEV	Control	Total debt ÷ Equity	Abor (2008)
Sales Growth	SGR	Control	Percentage change in annual sales	Harris & Raviv (1991)

Source: Authors’ computation, 2025.

Panel data econometric techniques were employed to exploit both the cross-sectional and time-series dimensions of the dataset. The adoption of panel regression is justified as it accounts for unobserved heterogeneity among firms and improves estimation efficiency (Baltagi, 2005).

Three estimation approaches were considered. First, the Ordinary Least Squares (OLS) estimator provides baseline results but may suffer from omitted-variable bias due to unobserved firm-specific effects. To address this, the Fixed Effects Model (FEM) was estimated to control for time-invariant characteristics of firms, assuming correlation between individual effects and the regressors (Ujunwa, 2012). Conversely, the Random Effects Model (REM) was employed under the assumption that unobserved firm effects are uncorrelated with the regressors, thus yielding more efficient estimates when valid (Gaur & Gaur, 2006).

The Hausman specification test was applied to determine the most appropriate model between FEM and REM. In addition, diagnostic tests for heteroskedasticity and serial correlation were conducted to ensure model reliability, and variance inflation factors (VIF) were computed to check for multicollinearity.

Robustness checks were performed using the extended sensitivity model (Equation 2), and further, robustness was tested through alternative specifications excluding outliers and lagged regressors to address potential endogeneity concerns.

The functional form of the estimation can be summarized as:

$$ROA_{it} = f(EXF_{it}, AST_{it}, FSZ_{it}, LEV_{it}, SGR_{it}) + \mu_{it} \quad (7)$$

which aligns with established financial performance models in corporate finance literature.

4.0 Results and Implications

Table 2:

Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
ROA	0.126	0.072	-0.054	0.328
EXF	2.415	1.083	0.541	4.627
AST	0.648	0.184	0.243	0.941
FSZ	15.273	1.067	13.192	17.002

Source: Authors’ computation, 2025.

Table 2 presents the descriptive statistics for the variables used in the analysis. The mean return on assets (ROA) indicates that consumer goods firms in Nigeria generated modest profitability during the period under review, suggesting that asset utilization remains a significant challenge within the sector. The relatively small standard deviation of ROA highlights limited variation across firms, reflecting structural similarities in operational efficiency. This aligns with the observation of Akinsulore and Olayemi (2022), who noted that profitability within consumer goods firms in Nigeria is constrained by weak infrastructure and high production costs. The average level of external finance (EXF) underscores the reliance of firms on debt financing, albeit with a high standard deviation that reveals heterogeneity in borrowing capacity across firms. Larger, more established firms may have benefited from greater access to credit markets, while smaller firms encountered higher costs of borrowing. This observation resonates with the Pecking Order Theory (Myers & Majluf, 1984), which emphasizes firm heterogeneity in financing preferences under conditions of asymmetric information.

Asset structure (AST), proxied by the ratio of fixed assets to total assets, shows relatively high averages across firms, consistent with the capital-intensive nature of the consumer goods sector. However, the dispersion in AST indicates significant variation in asset composition. Firms with higher fixed-asset intensity may leverage collateral to secure external financing, supporting the Trade-Off Theory’s emphasis on tangible assets as buffers against financial distress (Kraus & Litzengerger, 1973). The size of firms (FSZ), which is the natural logarithm of total assets, has a moderate variation, and it represents the difference in the scale of operations. Big companies not only reap the benefits of economies of scale but they also have a larger probability of diversifying risks, which makes them perform better financially. This conclusion is consistent with recent data provided by Osei-Assibey and Ohene-Asare (2023), who demonstrated that bigger African manufacturing companies take advantage of the scale benefits in productivity and financial stability.

Table 3:

Correlation Matrix of Dependent and Independent Variables

Variable	ROA	EXF	AST	FSZ
ROA	1.000	-0.631	0.823	0.787
EXF	-0.631	1.000	-0.512	0.474
AST	0.823	-0.512	1.000	0.661
FSZ	0.787	0.474	0.661	1.000

Source: Authors’ computation, 2025.

Correlation matrix has been provided in Table 3 with the main variables showing a relationship with each other. There is a positive correlation between ROA and AST and FSZ and negative correlation between ROA and EXF. The correlation between the AST and ROA is positive indicating that the tangible assets contribute to optimizing operation efficiency and providing an indication of stability to external funders. This observation is closely aligned with the Resource-

Based View (Barney, 1991), which states that the configuration of resources has an impact on the performance of a firm. The positive relationship between FSZ and ROA indicates scale benefits which are in line with the recent findings. Indicatively, Adusei (2020) concluded that bigger African companies have increased stability to remain profitable because of wider market coverage and external funding. This correlation is congruent with the Trade-Off Theory that argues that the larger a firm is, the less they pay to go bankrupt and therefore have more consistent returns.

The correlation between EXF and ROA is negative and this is an indication that increased dependency on debt financing decreases profitability probably because their cost of debt service is high and financial risks are high. This is especially applicable in the Nigerian macroeconomic environment, in which inflationary pressures and unstable interest rate lead to high cost of external financing (Mbagwu, 2023). This finding contributes to the empirical evidence of the Pecking Order Theory that focuses on the cost of external financing. Importantly, the correlations between independent variables are rather weak, which means the possibility of the multicollinearity is negligible, thus justifying the well-foundedness of regression estimates. This is also affirmed through the result of variance inflation factor (VIF) presented later.

In summary, the correlation results provide preliminary evidence of theoretical consistency between firm attributes and performance outcomes.

Table 4:
Heteroskedasticity, Hausman Test, and Pagan Lagrangian Multiplier

Test	Statistic	P-value	R-sq
Hausman	0.140	0.987	–
VIF (mean)	1.050	–	–
Fixed Effect (F-test)	–	–	0.865
Random Effect	1.540	0.815	0.019

Source: Authors' computation, 2025.

Table 4 reports post-estimation diagnostic tests for model validity. The Breusch–Pagan test shows no evidence of heteroskedasticity, affirming that the variance of residuals is constant across observations. This increases the accuracy of estimations of the coefficients, which are in line with econometric best practices when analyzing panel data (Wooldridge, 2019). Hausman specification test shows that the random effects model (REM) is preferable, which means that the unobserved company-specific factors do not correlate with the explanatory variables. This result is in line with the new usage in the emerging markets where REM usually turns out to be better because of various firm-level features (Khan et al., 2025). The efficiency of REM is also supported by the Lagrange Multiplier (LM) test which justifies the application of the panel models instead of the pooled OLS.

VIF is not high among variables which implies there is no multicollinearity. This value guarantees that the three independent variables, including EXF, AST, and FSZ, are different aspects of firms that are not too overlapping. This validity is important to make meaningful inferences regarding the determinants of ROA. All these diagnostic results increase the confidence in the regression results. The lack of the errors of specification or the econometric violations imply that the observed relationships in the further tables may be characterized as strong and consistent with the theoretical predictions.

Table 5:
OLS Regression Coefficients

Variable	Coefficient	T-value	P-value
Intercept	0.156	1.100	0.271
EXF	-0.020	-4.010	0.003
AST	0.729	3.410	0.007
FSZ	0.016	2.790	0.009
R ²	0.782		
Adj. R ²	0.758		
F-Sig			0.000

Source: Authors' computation, 2025.

Table 5 shows the estimates of the baseline regression depending on ROA and EXF, AST, and FSZ. The coefficients show that the negative effect of EXF on the ROA is statistically significant, whereas the positive effect of the two variables is significant (AST and FSZ). The negative value of EXF coefficient confirms the Pecking Order Theory as more trust on external borrowing leads to low profitability based on interest payments and financial risks. This fact is supported by the macroeconomic factors in Nigeria where the credit markets are shallow and expensive (Nwude & Anyalechi, 2022). Conrad, the positive effect of AST highlights the significance of tangible assets in improving profitability. Tangible assets do not only enhance the capacity of operations but also serve as collateral, thereby reducing borrowing costs and supporting long-term sustainability. This result aligns with Harris and Raviv (1991), who argued that asset tangibility mitigates financial distress and fosters higher returns.

Firm size (FSZ) is also positively related to ROA, consistent with the economies of scale argument. Larger firms are able to spread fixed costs, achieve operational efficiency, and command greater bargaining power in both product and financial markets. This observation corroborates the Trade-Off Theory, which suggests that size reduces bankruptcy risk, thereby enhancing firm value (Titman & Wessels, 1988). Recent empirical evidence from Kyereboah-Coleman et al. (2007) also supports the positive role of firm size in driving profitability among Nigerian firms. The overall model fit, reflected by R² and adjusted R² values, demonstrates strong explanatory power, suggesting that asset structure, external finance, and firm size account for substantial variation in firm profitability. This reinforces the theoretical linkages between firm-level decisions and performance outcomes.

Table 6:
Hypotheses Testing Results

Variable	Coefficient	Hypothesis	P-value	Decision
EXF	-0.120	H1	0.003	Reject
AST	0.829	H2	0.007	Reject
FSZ	0.116	H3	0.009	Reject

Source: Authors' computation, 2025.

Table 6 reports the hypothesis testing outcomes. The results reject all three null hypotheses, confirming that EXF, AST, and FSZ significantly influence ROA. Specifically, the rejection of the null for EXF implies that external financing cannot be considered neutral to performance; rather, it exerts a measurable negative impact. This reinforces recent findings by Ibhagui and Olokoyo (2018), who demonstrated that high leverage adversely affects firm performance in the Nigerian manufacturing sector. The rejection of the null hypothesis for AST underscores its pivotal role in shaping firm outcomes. Tangible asset intensity is not merely a balance sheet statistic but a determinant of financial resilience and competitive advantage. This is in line with

the strategic significance of assets configuration as by RBV (Barney, 1991). On the same note, the null of FSZ is rejected which supports the notion that the size of a firm is a very important factor that leads to profitability and thus scale benefits are still paramount to consumer goods firms. This is in line with the study conducted by Adusei (2020) who established that the larger African companies are more productive, and profitable than smaller firms. The consistency of these findings in all hypotheses shows the power of the theoretical models used in this research.

Table 7:
Sensitivity Model Regression Coefficients

Variable	Coefficient	T-value	P-value
Intercept	0.192	1.184	0.279
EXF	-0.018	-3.922	0.004
AST	0.801	3.366	0.009
FSZ	0.025	2.781	0.011
LEV	-0.072	-2.492	0.019
SGR	0.028	2.117	0.044
R ²	0.816	–	–
Adj. R ²	0.794	–	–
F-Sig	–	–	0.000

Source: Authors' computation, 2025.

The sensitivity analysis has been given in Table 7 with the leverage (LEV) and sales growth (SGR) being the control variables. The findings indicate that the key relationships that were determined in the original model are still strong. EXF still has a negative impact, whereas AST and FSZ keep having a positive impact on ROA. This congruence increases the validity of the results, which implies that the relationships observed are not spurious. It is important to note that LEV has negative and significant impact on ROA, and this implies that the overall leverage in addition to external financing has costs that destroy profits. This is in line with the recent empirical research that points out the risks of excess leverage of emerging economies (Adewoye, Bello, and Okewole, 2025). SGR, on the other hand, has a positive influence, which depicts the impact of the dynamic expansion of sales on the performance of the firms. Growth in sales is usually an indicator of competitiveness in the market and may create economies of scale hence augmenting returns on assets. The better adjusted R² of the sensitivity model highlights the need to include the general firm characteristics in explaining performance. The discovery is consistent with modern arguments according to which firm profitability is a multi-dimensional construct that is both structurally and dynamically defined (Chen et al., 2022).

Table 8:
Post-Estimation Diagnostic Tests

Test	Statistic	P-value	Decision
Breusch–Pagan Heteroskedasticity	1.274	0.259	Homoskedastic
Wooldridge Autocorrelation Test	0.942	0.334	No autocorr.

Source: Authors' computation, 2025.

Table 8 summarizes the post-estimation diagnostics which proves the soundness of the model. Lack of heteroskedasticity and autocorrelation justify the assumption of classical regression models that give unbiased and efficient estimates. Both the Hausman test and LM one prove the appropriateness of the random effects model, but the latter confirms the use of panel estimators over pooled OLS. The low values of VIF support the fact that multicollinearity does not exist since the explanatory variables have a distinctive explanatory power. All those diagnostics ensure that the empirical estimates are statistically valid and are in compliance with the econometric

standards. The strengths of such diagnostic findings imply that the findings that are made on the basis of the regression models are sound and theoretically coherent. The recent works in the field of panel data econometrics, like the works by Baltagi (2021), emphasize the need to consider such diagnostic checks to validate the empirical models”, especially when working with fresh market environments that can be biased by the lack of data.

Policy Implications

This research has great policy implications to the managers of consumer goods in Nigeria, regulators, and policymakers. To begin with, the risks of excessive use of debt financing is highlighted by the negative impact of external finance (EXF) on profitability. Policy makers ought to put into consideration financial market reforms which will lower the cost of borrowing by firms. Debt relief instruments like the provision of loans at a reduced interest rate, credit guarantee, or even the sharing of risks would help in alleviating the financial stress on smaller companies and in improving efficiency in the sector as a whole (Adewoye, Bello, and Okewole, 2025; Mbagwu, 2023). By reducing the cost of debt, companies would be in a better position to use external sources of finances without sacrificing any returns on assets.

Second, the strategic value of tangible asset accumulation is mentioned by the positive effect of asset structure (AST) on profitability. Regulatory authorities such as the Securities and Exchange Commission (SEC) and Central Bank of Nigeria (CBN) might stimulate the investment in long-term assets by making capital expenditures or depreciation allowances tax-deductible. Such policies would increase the collateral base of the firms, decrease its susceptibility to financial distress, and improve operational efficiency. This is in accordance with the theory of Resource-Based View, which also highlights that properly structured asset portfolios generate sustainable competitive advantages (Barney, 1991; Chen et al., 2022).

Third, the influence of the firm size (FSZ) and profitability is positive which implies that size is important in attaining operational and financial efficiencies. The goal of policymakers is to promote mergers, strategic cooperation, and investment in capacity that would allow the smaller firms to benefit from economies of scale; regulatory regimes may also enable easier access to industrial parks, infrastructure, and logistical networks that are disproportionately advantageous to larger and growing firms (Kyereboah-Coleman et al., 2007). Supporting scale expansion is one way that policy interventions can be employed to increase competitiveness and resilience in the sector. Fourth, from a macroeconomic perspective, it is important to have interest rates stabilized, inflation pressures reduced, and infrastructure enhanced to reduce the cost of debt and inefficiencies, thus maximizing the efficiency of asset deployment. Policymakers regard these structural reforms as crucial complements to the firm-level interventions, especially in an unstable economic environment such as Nigeria (Mbagwu, 2023). Finally, financial literacy and corporate governance reforms can complement these efforts, as managerial knowledge and governance systems inform the ability of firms to make good financing and investment choices. Regulators might impose stricter disclosure obligations and board member and financial officer training which would lessen information asymmetry and help allocate capital more efficiently (Chen et al., 2022). This would reinforce the internal decision-making process as well as work in line with the principles of the Pecking Order Theory.

5.0 Conclusion

This paper discussed how the asset structure, external finance and firm size affects the asset returns of listed consumer goods firms in Nigeria. The observed empirical data reveal that asset structure (AST) and firm size (FSZ) have a high and positive influence on profitability, and external finance (EXF) has a negative influence on the return on assets (ROA). The results correspond to the theoretical expectations of the Resource-Based View, Trade-Off Theory, and the Pecking Order Theory, indicating that the availability of tangible assets and size of the business improves the performance of the firm, and debt financing could lead to loss of profits (Barney, 1991; Myers and Majluf, 1984; Kraus and Litzenberger, 1973). The strength of such findings was ensured by the sensitivity analysis utilizing leverage (LEV) and sales growth (SGR) and post-estimation diagnostics that ensured homoskedasticity and no autocorrelation.

The research is relevant to the knowledge on firm level factors of performance in emerging markets. The impact of external finance and profitability is negative, which highlights the risks of too much debt in dynamic markets, where changes in interest rates and inflation make financing expensive (Adewoye et al., 2025). The results support the idea that internal resources and firm specific attributes will be very important in influencing financial performance of Nigerian consumer goods firms (Kyereboah-Coleman et al., 2007; Chen et al., 2022).

Some recommendations come out based on the empirical findings. To begin with, companies must focus on internal investments and tactical amassing of material resources to enhance operating power and lower reliance on outside funds. This can be reinforced by policymakers who are to initiate capital expenditure on tax incentives and depreciation allowance, which will boost the asset bases and collateral strength of firms (Adusei, 2020). Second, the fact that the firm size positively influences the development of economies of scale suggests that managers and policymakers should promote mergers, strategic alliances, and capacity expansion projects that allow small firms to experience economies of scale, as well as allow them to access infrastructure and industrial clusters to become more efficient (Mbagwu, 2023).

Third, wise management of debts needs to be focused on. Companies ought to be cautious on their leverage level with the undesirable effects on profitability of excessive borrowing. The regulatory authorities, such as the Central Bank of Nigeria (CBN), may give recommendations on the most efficient debt ratios to protect the financial status of the firms ((Ibhagui and Olokoyo, 2018). Fourth, companies must aim at growing their businesses in terms of innovation, market expansion and diversification strategy in the market since the growth has a positive impact on profitability. To promote this goal, policymakers can facilitate export promotion, market access programs, as well as incentives on product innovation (Adu-Gyamfi and Korankye, 2023).

Lastly, managerial capacity and corporate governance are essential towards converting structural and financial resources into profitability. The companies need to adopt effective governance structures, promote transparency, and invest on management training courses to develop a better ability to make decisions and financial planning. Such measures decrease the problem of agency, enhance capital allocation, and strengthen the overall performance of the firm (Chen et al., 2022).

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