EFFECT OF FREE CASH FLOW ON EARNINGS MANAGEMENT OF LISTED CONSUMER GOODS FIRMS IN NIGERIA: THE MODERATING ROLE OF FINANCIAL LEVERAGE

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Abstract
This paper examines the moderating effect of financial leverage on the connection between free cash flow and earnings management of listed consumer goods firms in Nigeria. The study adopted an ex post facto research design and analyzed a balanced panel of 19 firms (N = 19, T = 10; 190 firm-year observations) utilizing firm annual reports for the years 2015–2024. Tthe dynamic System Generalized Method of Moments (System-GMM) estimator was employed as a technique of data analysis. The validity of instruments and the specification of the model were tested using the Arellano–Bond tests: AR (1) = 0.002, AR(2) = 0.364, Hansen J-test p = 0.243, and Wald $\chi^2 = 118.42$ ($p < 0.01$). The study findings indicate free cash flow has a positive significant effect on earnings management. In addition, the interaction of financial leverage significantly and negatively affect earnings management. The study suggests that consumer goods firms in Nigeria improve their reporting credibility by strengthening debt covenants and governance mechanisms related to leverage.

Keywords: Earnings Management, Financial Leverage, Free cash flow, System GMM

1.0 Introduction

The implication of financial reporting is anchored on promoting transparency, answerability, and the trust of investors within the investment markets. The scope of financial reporting includes the aspect of earnings management which is a particular concern because it may distort the picture of a company's financial condition. Globally, the practice of earnings management is underscored and the consequences are highlighted through sensational occurrences. In the United States, the Enron scandal involved the use of high-handed accounting policies by Enron to enhance their earnings, which resulted in their financial ruin and significant losses to the investors (Benston, 2006; Sultan, 2020). In Europe, Parmalat took the trust of the stakeholders with enhanced financial statements to portray inflated profits which led to loss of trust among the stakeholders (Cambaza, 2024). More recently, in China, Luckin Coffee was found to have inflated their sales by over 300 million dollars in 2020 which resulted in suspension of trading of their shares and fines (Zhang, 2020). This case illustrates the concern of earnings management in contemporary times and its ability to reduce investor trust and inflict great financial damage even in advanced, rapidly growing economies.

In Nigeria, the perspectives of several stakeholders following the recent reporting lapses by the Financial Reporting Council of Nigeria (FRCN) and enforcement by the Securities and Exchange Commission (SEC) and the Nigerian Exchange Group (NGX) created interest within the Nigeria financial and business community. The governance and reporting deficits since the country's adoption of International Financial Reporting Standards (IFRS) in 2012 have become all the more evident following the 2016 suspension of Oando Plc for accounting misstatements, restatements post-IFRS by Cadbury Nigeria Plc, and recurrent regulatory penalties on companies for violation of

disclosure requirements. The misgoverned and poorly regulated consumer goods sector amidst capital and exchange crises in the economy, supply chain structured inflation, and extreme double inflation adds to the pressure for management to perform financial engineering to meet market expectations or stabilize volatile stock prices.

FCF is a cash resource available to management that is discretionary, in the sense that the cash can be reinvested in the firm, paid out as dividend to the owners, or possibly wasted in value-destroying activities. Although offering the firm's FCF may give a company's financial strength, it can also result in agency problems as it allows easier access to exploit this cash for personal gain instead of firm value (Yendrawati & Asy'ari, 2017; Fakhroni et al., 2018).

Earnings management (EM) involves distortions of organizational accounting techniques to influence earnings figures (Healy & Wahlen, 1999).Yahya and Amran (2023) and Simbolon and Riwayati (2025) reported that firms with greater FCF are more likely to change earnings report through operational misreporting like over inflating inventory or pulling sales forward.

The amount of debt a firm carries, also known as financial leverage. High financial leverage tends to impose restrictive debt covenants, increasing monitoring scrutiny and management constraint, which may decrease earnings management (Jiraporn et al., 2008; Fitria et al. 2023; Mamman &Solomon, 2022). On the other hand, lower leverage may provide greater discretionary freedom to operationally manage towards targeted earnings (Suhasto, et al. 2024; Ramadhani & Yanti, 2024).

Numerous studies have examined the influence of free cash flow on earnings management. However, existing studies have a limited focus on the healthcare sector or on Nigeria's non-financial listed companies (Olufemi, 2025; Mamman & Solomon, 2022; Abubakar, et al. 2021). Studies focusing on the consumer goods sector are lacking, especially as this sector functions under different business and market conditions as well as different regulations. While there are some studies pertaining to financial leverage on managerial discretionary flexibility, such studies are limited and largely focus on other sectors or non-financial conglomerates. Such oversight leaves a gap in understanding the impact of free cash flow on earnings management in the Nigerian consumer goods sector, especially with the moderating effect of financial leverage. The inclusion of listed consumer goods companies in this study addresses the gap in this population and allows the examination of the interrelation of the components of free cash flow, earnings manipulation, and financial leverage in a sector with distinct characteristics.

2.0 Literature Review

Free Cash Flow and Earnings Management

Experimental discoveries regarding the relationship between FCF and EM have yielded inconsistent results. International research (Suhasto et al., 2024; Aburisheh et al., 2022; Al Aziz et al., 2024) generally reveal a positive correlation, indicating that enterprises with elevated free cash flows are more prone to earnings manipulation. Other research, including that of Nuriyanti and Trisnawati, demonstrates no significant impact in specific circumstances, especially where governance mechanisms are robust.Some of the inconsistencies in findings could be due to differences in the measurement methods and estimation techniques used. Context differences in institutions could also be a

factor. For example, some studies using the accrual-based frameworks, and particularly the Modified Jones Model, have shown a positive relation between FCF and EM, suggesting the presence of cash flow encourages managers to opportunistically manipulate accruals. Other studies, focussing on the performance-matched version have shown similar results (Dechow et al., 2003). Other studies using total assets to deflate and winsorizing to control for outliers also tended to arrive at similar conclusions (Aburisheh et al. 2022; Suhasto et al., 2024; Fitria et al., 2023).

Comparatively, instances where proxies for real earnings management, abnormal production costs, and discretionary expenses related to cash flow operations adjustments showed weaker or no statistically meaningful connections are not unusual. These findings are particularly pronounced where strong governance, democracy, and external audits are present, and in some studies (Mahmoud, 2022; Ramadhani & Yanti, 2024). Studies conducted in the Nigerian environment have the same discrepancies. Olufemi (2025) claimed that in the manufacturing sector, FCF has a significant effect on accrual-based earnings manipulation, while Akinleye et al. (2018) stated that FCF primarily aids the growth of the firm and not opportunistic reporting. Abubakar, Mansor, and Wan-Mohamad (2021) argued that tax-avoiding firms manage real earnings to FCF, while Kantudu and Umar (2021) claimed that FCF is in favor of the efficiency of the investment. These reversals in sign can, in part, be explained by the differences in sample scope (manufacturing vis-à-vis conglomerates), model specification, and the state of IFRS and disclosure in Nigeria, which is always changing. The firms in the highly regulated consumer-goods industries face more stringent audits and more rigorous disclosure requirements via the Financial Reporting Council of Nigeria (FRCN) which limits the opportunistic behavior associated with free cash flows.

The current study builds on Agency Theory and Positive Accounting Theory and uses both theories to explain managerial behavior when there is asymmetrical information within managerial contexts. Agency Theory indicates that when managers act on their personal ambitions that do not correspond with those of the shareholders, tensions arise. The free cash flow hypothesis (Jensen, 1986) states that excess liquidity neutral to self-serving managers creates inefficient investments and accounting manipulation opportunities. Positive Accounting Theory builds on this by suggesting that managers actively choose accounting policies to gain the most from contracts, whether it be bonuses or debt covenants. With weak monitoring, free cash flow increasingly encourages managers to practice accrual-based earnings manipulation, as they exploit the ability to estimate accruals within bounds to achieve target earnings.

Moderating of financial leverage

There are empirical studies that underscore the influence of leverage in different situations. Fitria et al. (2023) indicated that the capital structure determines the scope of FCF's impact on the quality of earnings, thus implying that high debt levels may diminish managerial opportunism. Faisal, Majid, Sakir, and Agustina (2024) similarly indicated that the dynamics of agency costs and the performance of the firm are impacted by the joint effect of leverage and the FCF. Suleiman (n.d.) and Mamman Suleiman and Solomon Aza (2022) demonstrate the influence of financial leverage along the FCF–EM continuum in the Nigerian context, showing that in the healthcare and consumer goods sectors, higher debt levels lessen the propensity of firms to manipulate earnings through accruals and real transactions.

The discrepancies in findings can largely be attributed to differences in the definitions and constructs used for both earnings management and free cash flow. Most empirical work in this domain that uses accrual models, the Modified Jones and Performance-Matched models, tends to deflate values using total assets and subsequently winsorize to limit the impact of outliers. Such research typically reports a positive FCF–EM relationship indicating that increased FCF tends to drive opportunistic accrual behavior, accrual FCF swelling, upward opportunistically accruals (Fitria et al., 2023; Yendrawati & Asy'ari, 2017; Pangesti & Chusnah, 2023).

Within the framework of Agency Theory and Accounting Theory, unmonitored free cash flow, discredited as agency slack, may result in cash flow being wasted. Agency and Positive Accounting Theories affirm that accruals are manipulated in response to contracts and personal goals. In this light, Financial leverage as external control slack agency and free cash flow. Agency cost, slack and free cash flow will be mitigated. Financial leverage contracts discipline and external control are two of the most effective means to provide oversight. Control and discipline are achieved via covenants and the terms of contracts. Off balance sheet transactions may be restricted by downward limits on accrual estimates, disallowing estimation. Further, the control and discipline provided by covenants ensure that agency costs slack and free cash flow will not be wasted.

Agency costs due to free cash flow, waste, and managerial discretion will be mitigated by aligning managerial interests with debt and equity. The more leveraged the firms become, the higher liquidity pressures and control and coordination autonomy on the managers.

3.0 Methodology

This study employs an ex post facto research design. This design is especially appropriate for research in finance and accounting where archived data is available, such as annual reports, audited financial statements, and other documents. The population of this study includes all the twenty (20) consumer goods firms listed on the Nigerian Exchange Group (NGX) as at 2024. As such, the study uses a purposive sampling technique where 19 consumer goods firms that have been consistently listed and have data available from 2015 to 2024 are selected. This study chose the two-step System-GMM estimator (Arellano & Bover, 1995; Blundell & Bond, 1998) over Fixed Effects with robust or Driscoll–Kraay errors because the System-GMM estimator better mitigates the issues of endogeneity and dynamic bias considerably. While FE estimators account for firm effects, they do so under the assumption of strict exogeneity which means simultaneity and reverse causality are left unresolved. System-GMM is able to avoid these biases and do so more efficiently at the expense of persistence and weak stationarity which is a common characteristic of financial data at the firm level (Roodman, 2009).For the purpose of consistent estimates for this study, the regressors and the instruments are cleanly separated in the following manner:

Table 3.1:
Endogeneity Status

Variable	Theoretical Endogeneity Status
Lagged EM (EM_{t-1})	Predetermined
FCF	Endogenous
FL	Endogenous
Interaction Term (FCF×FL)	Endogenous
FSIZE	Predetermined
ROA	Predetermined

Source: Author's Compilation, 2025.

The general dynamic panel regression model is specified as:

Model 1 (Baseline without moderation)

$$EM_{it}=\alpha 0+\alpha 1EM_{it-1}+\beta 1FCF_{it}+\gamma 1FSIZE_{it}+\gamma 2ROA_{it}+\mu i+\varepsilon_{it} \quad \ldots\ldots 1$$

Model 2 (Moderation by Financial Leverage)

$$EM_{it}=\alpha 0+\alpha 1EM_{it-1}+\beta 1FCF_{it}+\beta 2(FCF_{it}\times FL_{it})+\gamma 1FSIZE_{it}+\gamma 2ROA_{it}+\mu i+\varepsilon_{it} \quad \ldots\ldots 2$$

Where:

EMit = Earnings Management (Model) for firm *i* in year *t*.
EMit−1 = lagged dependent variable to capture persistence of earnings management.
FCFit = Free Cash Flow for firm *i* in year *t*.
FLit = Financial Leverage
FCFit×FLit = Interaction term capturing the moderating effect of financial leverage.
FSIZEit = Firm Size
ROAit = Return on Assets
μi = Unobserved firm-specific effects.
εit = Idiosyncratic error term.

Table 3.2:
Definition and Measurement of Variables

Variable	Symbol	Measurement/Proxy	Source
Earnings Management	EM	Modified Jones Model	Dechow, Sloan & Sweeney (1995)
Lagged Earnings Management	EMt−1_{t-1}	One-period lag of EM	Barth, Landsman & Lang (2008)

Free Cash Flow	FCF	(Operating Cash Flow – Capital Expenditures) ÷ Total Assets	Jensen (1986); Gul & Tsui (2001)
Financial Leverage	FL	Total Debt ÷ Total Assets	Rajan & Zingales (1995); Opler & Titman (1994)
Interaction Term	FCF × FL	Product of FCF and FL	Chen, Chen & Su (2001)
Firm Size	FSIZE	Natural Logarithm of Total Assets	Ahmed, Hossain & Adams (2006)
Profitability (Return on Assets)	ROA	Net Income ÷ Total Assets	Dechow & Dichev (2002)

Source: Author's Compilation, 2025.

4.0 Results and Discussion of findings

Table 4.1:

Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max
EM	−0.0077	0.1049	−0.27	0.385
FCF	0.237	0.153	0.012	0.498
FL	0.504	0.23	0.1	0.9
FSIZE	11.49	2.02	8.08	14.93
ROA	0.109	0.115	−0.10	0.3

Source: STATA 15, 2025.

In Table 4, statistical summaries for variable studies based on 190 firm-year observations (19 firms × 10 years) are compiled. The average earnings management (EM) score was -0.0077, which suggests that the average discretionary accruals for Nigerian consumer-goods firms was low. The free cash flow (FCF) variable, which was scaled by total assets for comparability, averaged 0.237. Its standard deviation was 0.153, which suggests that there was moderate discretionary liquidity across the sample. The average financial leverage (FL) of 0.504 indicates that, on average, half of the firm's assets were financed by debt. Firm size (FSIZE) calculated from total assets, has a natural logarithm average of 11.49. The average return on assets (ROA) of 0.109 also suggests that most firms were profitable during this period.

Table 2:
Correlation Matrix Table

Variables	EM	FCF	FL	FSIZE	ROA
EM	1				
FCF	−0.064	1			
FL	−0.043	0.011	1		
FSIZE	−0.088	−0.024	0.061	1	
ROA	−0.176	−0.036	0.12	0.033	1

Source: STATA 15, 2025.

EM shows negative associations with free cash flow (-0.064), financial leverage (-0.043), size of the firm (-0.088), and return on assets (-0.176). Even if the associations are weak, they show that firms with higher free cash flow, bigger assets, more debt, or better performance are less likely to perform earnings management.

Though the correlation matrix shows that EM has negative associations with free cash flow (FCF), financial leverage, firm size, and profitability, the regression results show positive coefficients for FCF and ROA. The explanation for the reverse signs is due to the distinction between zero-order correlations and partial regression effects. Correlations are unconditional associations, while regression coefficients represent the marginal effect of a variable. In addition, the System-GMM estimator accounts for endogeneity and simultaneity, since earnings-managed firms may adjust cash and leverage policies, therefore, simple correlations may be biased. The dynamic specification along with lagged instruments tends to display the reverse influence. The positive FCF coefficient represents a conditional causal effect, while the negative correlation perfectly captures a simple uncontrolled effect.

Table 3:
System-GMM Post-Estimation Diagnostic Tests

Diagnostic Test	Test Statistic	Probability (p-value)
Arellano-Bond AR(1) test for first-order serial correlation	−2.41	0.016
Arellano-Bond AR(2) test for second-order serial correlation	−0.91	0.364
Hansen J-test of over-identifying restrictions	$\chi^2 = 21.56$	0.243
Wald χ^2 test of overall model significance	$\chi^2 = 118.42$	0.00

Source: STATA 15, 2025.

The data provided in Table 6 demonstrate that the System-GMM specification is both valid and reliable. The AR (1) result is statistically significant ($p < 0.05$) and provides evidence of the expected first-order serial correlation in the differenced residuals. The AR (2) test is insignificant ($p = 0.364$) and provides evidence of second order autocorrelation (a crucial GMM condition). The Hansen J-test ($p = 0.243$) suggests the instrument set is valid, properly identified, and implies that endogeneity is well controlled. The highly significant Wald χ^2 statistic ($p < 0.01$) is further evidence that the explanatory variables, in combination, account for changes in earnings

management. All of these diagnostics taken together suggest the model is robust, and the estimations of the relationships between free cash flow, financial leverage, and earnings management are reliable.

Table 4:
Baseline Model

Variable	Coefficient (β)	Std. Error	z-Statistic	p-Value
(L1.EM)	0.2478	0.0796	3.12	0.002
(L2.EM)	0.0323	0.0086	3.76	0.000
FCF	0.1266	0.0216	5.85	0.000
FSIZE	−0.0043	0.0049	−0.87	0.387
ROA	0.1423	0.0697	2.04	0.041
Constant	0.0548	0.0653	0.84	0.401

Source: STATA 15, 2025.

Financial cash flow (fcf) is highly positively associated with earnings management using a coefficient of 0.126 ($p < 0.01$) such that high cash flows are positively associated with profits manipulation. Return on assets (ROA) has a significant positive coefficient (= 0.142, p 0.05) such that better-performing companies are likely to manage their earnings, perhaps to guarantee investor confidence. On the other hand, firm size (fsize) has a small but negative association that is statistically insignificant ($\beta = -0.004$, $p > 0.05$) such that firm size doesn't play a significant role influencing earnings manipulation using this sample.

Table 5:
Moderation Model

Variable	Coefficient (β)	Std. Error	z-Statistic	p-Value
L1.EM	0.0391	0.0837	0.47	0.641
L2.EM	−0.3037	0.0368	−8.24	0
FCF	0.0257	0.0056	4.62	0
FCF × FL	−0.3651	0.1061	−3.44	0.001
FSIZE	−0.0041	0.0048	−0.84	0.4
ROA	0.6187	0.2067	2.99	0.002
Constant	0.0511	0.0639	0.8	0.42
N = 190 firms = 19 instr= 12				
AR(1) test = −2.27 (p = 0.023)				
AR(2) = −0.91 (p = 0.364)				
Hansen J-test = χ^2 = 19.72 (p = 0.216)				

Source: STATA 15, 2025.

The interaction between financial leverage and free cash flow (FCF*FL) has a negative and statistically significant coefficient ($\beta = -0.365$, $p < 0.01$) that signifies the moderating impact of leverage between free cash flow and earnings management by limiting such opportunism. The control variable for firm size (FSize) has no significant impact while return on assets (ROA) has a positive and statistically significant relationship ($\beta = 0.619$, $p < 0.01$) that indicates companies that show higher profitability

are likely to adopt income-increasing reporting practices.The finding validates the research hypothesis that financial leverage serves a significant moderating role between free cash flow and earnings management. This finding aligns with Agency Theory that debt serves a regulatory purpose by limiting the flexibility of managers and minimizes agency expenses related to free cash flows (Jensen, 1986). The finding also aligns with Positive Accounting Theory that managers select accounting policies predicated upon their contractual obligations and incentives; in this instance, it is evident that debt covenants reduce opportunism-oriented earnings management activities. The moderating role demonstrates that leverage gives direction towards the behavior of the manager by making the financial disclosure more reliable and directly achieving the purpose of this work to explore the relationship between financing structures, free cash flows, and earnings management strategies.

Moderation results depicted in Table 5 show that financial leverage significantly reduces the positive effect of free cash flow (FCF) on earnings management (EM). The adverse interaction term ($\beta = -0.3651$, $p < 0.01$) indicates that debt serves a moderating mechanism that constrains the discretion of the manager regarding surplus liquidity. This aspect applies especially to Nigerian consumer-goods corporations that operate in environments characterized by long working-capital cycles, extensive import dependence, and enduring global-foreign-exchange (FX) deficiencies. Such environments are often accompanied by fluctuating cash positions and the impetus for managing earnings to stabilize performance or secure funding given the liquidity issues. Increased cost-push inflation also compresses profit margins, increasing the desire to engage in opportunistic reporting activities. However, corporations that have higher leverage have tighter supervision of debt covenants and hence reduce the discretion for such manipulations.

5.0 Conclusion and Recommendations

The research indicates that although free cash flow may facilitate earnings management for certain managers, financial leverage substantially mitigates this occurrence. This indicates that the organisation of a company's finance significantly affects the quality of its financial reporting and the resolution of agency conflicts. The report thus advises Nigerian consumer goods firms to incorporate more stringent, accounting-related conditions in their loan arrangements. Such controls would limit the freedom of managers when there is a lot of free cash flow, which would make financial reports more trustworthy and protect the interests of stakeholders.

However, given the nature of the observational data, the results ought to be interpreted as associational rather than causal. The limited sample size ($N = 19$) constrains estimator efficiency, compounded by potential measurement error in the accrual-based EM proxy. Although diagnostic tests validated model integrity, the proliferation of instruments poses a danger that GMM estimators must approach with caution. In subsequent research, actual earnings management strategies and direct data on covenant breaches should be amalgamated.

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