EFFECT OF CAPITAL STRUCTURE ON THE FINANCIAL PERFORMANCE OF LISTED MANUFACTURING FIRMS IN NIGERIA

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Abstract: Despite numerous interventions aimed at improving performance, listed manufacturing firms in Nigeria continue to experience underwhelming financial outcomes. This study examined the effect of capital structure on the financial performance of listed manufacturing firms in Nigeria. Specifically, it assessed the effect of leverage and debt-to-equity ratio on firms' financial performance. The study adopted an ex-post facto research design, with data obtained from 38 listed manufacturing firms operating in Nigeria during the study period. Data were analysed using SPSS version 28. The results revealed that both leverage and debt-to-equity ratio significantly influenced financial performance. Leverage positively affected profitability, consistent with the Trade-Off Theory, which suggests that debt can enhance firm value when optimally managed. Similarly, the debt-to-equity ratio positively impacted financial performance, indicating that firms with a balanced capital structure achieve higher efficiency and returns. Based on these findings, the study recommends that firms maintain moderate leverage to optimise profitability without increasing financial risk and ensure balanced debt-to-equity ratios to promote sustainable growth and operational efficiency.

Keywords: Capital structure, Financial performance, Leverage, Debt-to-equity ratio, Manufacturing firms

Introduction

The capital structure of a firm plays a pivotal role in determining its financial performance. Globally, the manufacturing sector contributes significantly to economic growth, employment, and technological advancement. In developed economies such as the United States, the manufacturing sector accounted for approximately 11% of GDP in 2023, reflecting its critical role in wealth creation (World Bank, 2024). Firms must carefully balance their financing sources, including debt and equity, to maintain operational efficiency and profitability. Capital structure, defined as the combination of debt and equity used to finance a firm's assets, affects investment decisions, risk exposure, and financial sustainability (Brigham & Ehrhardt, 2022).

In emerging economies, such as Nigeria, the role of capital structure is particularly crucial due to volatile market conditions, high-interest rates, and limited access to long-term financing. Listed manufacturing firms in Nigeria face unique challenges in sourcing capital, managing financial leverage, and maintaining liquidity, all of which directly impact their profitability (Nguyen & Shrestha, 2022). Leverage and debt-to-equity ratio, common proxies for capital structure, are frequently used to assess how firms utilise debt to finance operations and investments. Effective management of these variables can optimise returns and strengthen financial performance.

Financial performance serves as a key indicator of a firm's success and sustainability. Metrics such as return on assets (ROA) and return on equity (ROE) provide insights into profitability, efficiency, and shareholder value creation. Globally, firms with optimal capital structures tend to achieve higher financial performance due to lower costs of capital and improved operational efficiency (Myers, 2001). In Nigeria, understanding how leverage and

debt-to-equity ratio affect financial performance is essential for investors, managers, and policymakers seeking to enhance the competitiveness and sustainability of the manufacturing sector.

Statement of Research Problem

Despite numerous interventions aimed at enhancing the performance of listed manufacturing firms in Nigeria, significant underperformance persists. Reports from the Nigerian Exchange Group indicate that between 2018 and 2023, average ROA among listed manufacturing firms fluctuated between 3.5% and 5%, while ROE remained below the global average of 12% (NGX, 2023). Many firms continue to struggle with declining profitability, inconsistent growth, and inefficiencies in operations, despite efforts such as process improvements, capacity expansion, and strategic partnerships. This persistent underperformance raises questions about the factors influencing financial outcomes in the sector.

Empirical studies on the relationship between capital structure and financial performance show inconsistent findings. Some studies suggest that leverage improves profitability through tax benefits and increased investment capacity (Chen et al., 2020; Khan et al., 2020), while others indicate that excessive debt negatively impacts performance due to heightened financial risk (Alipour et al., 2015; Adegbite & Okpara, 2020). These inconsistencies highlight a gap in understanding how listed manufacturing firms in Nigeria manage debt and equity to achieve sustainable financial performance.

The persistence of financial underperformance, coupled with mixed empirical findings, underscores the need for further research into the effect of capital structure on the financial performance of Nigerian listed manufacturing firms. Specifically, examining leverage and debt-to-equity ratio as proxies provides actionable insights for managers and investors aiming to optimise financing strategies and improve profitability.

Objectives of the Study

The study aims to examine the effect of capital structure on the financial performance of listed manufacturing firms in Nigeria. The specific objectives are:

a. To assess the effect of leverage on the financial performance of listed manufacturing firms in Nigeria.
b. To examine the effect of debt-to-equity ratio on the financial performance of listed manufacturing firms in Nigeria.

Research Hypotheses

Based on the objectives, the study formulated the following hypotheses:

1. H_{01}: Leverage has no significant effect on the financial performance of listed manufacturing firms in Nigeria.
2. H_{02}: Debt-to-equity ratio has no significant effect on the financial performance of listed manufacturing firms in Nigeria.

Literature Review

The literature review examines existing studies on capital structure and financial performance, focusing on the theoretical, conceptual, and empirical underpinnings. It synthesises previous research to provide a comprehensive understanding of the topic and identifies gaps for further study.

Capital Structure

Capital structure refers to the mix of debt and equity financing used by a firm to fund its operations and growth. Modigliani and Miller (1958) argued that in perfect markets, capital structure does not affect firm value, while later studies emphasised the benefits of debt financing through tax shields (Modigliani & Miller, 1963). Brigham and

Ehrhardt (2022) describe capital structure as a strategic decision influencing cost of capital, risk, and shareholder returns. Myers (2001) highlighted that optimal capital structure balances risk and return, enhancing firm profitability. Trade-Off Theory posits that firms aim to achieve a level of debt that maximises value while minimising bankruptcy costs (Kraus & Litzenberger, 1973). Eze and Okpala (2021) observed that effective capital structure management positively affects financial performance, while excessive debt can be detrimental. Operationally, capital structure in this study is represented by leverage and debt-to-equity ratio, providing measurable indicators of financing strategies.

Leverage

Leverage refers to the proportion of debt used to finance a firm's assets relative to equity. High leverage can amplify returns when profits are strong but increases financial risk during downturns (Brigham & Ehrhardt, 2022). Studies have shown that moderate leverage often enhances profitability through tax benefits and increased investment capacity (Chen et al., 2020; Khan et al., 2020). In Nigerian listed manufacturing firms, careful leverage management is critical due to high interest rates and economic volatility (Nguyen & Shrestha, 2022). Leverage is operationalised as total debt divided by total assets, providing a quantifiable measure of debt reliance.

Debt-to-Equity Ratio

Debt-to-equity ratio (DER) measures the relative proportion of debt to shareholders' equity in a firm's financing. A balanced DER indicates optimal capital structure, enhancing financial flexibility and performance (Alipour et al., 2015). Empirical evidence suggests that firms maintaining an appropriate DER achieve higher profitability and operational efficiency, while excessive debt can impair financial stability (Adegbite & Okpara, 2020). In this study, DER is calculated as total debt divided by total equity, serving as a key indicator of financial risk and capital allocation.

Financial Performance

Financial performance reflects a firm's ability to generate profits, manage resources efficiently, and create shareholder value. Metrics such as ROA and ROE are widely used to measure profitability (Richard et al., 2009). In the Nigerian manufacturing sector, financial performance has shown variability, with ROA ranging from 3.5% to 5% and ROE below 10% in recent years (NGX, 2023). Understanding the determinants of financial performance, including capital structure, is critical for strategic decision-making and sustainability.

Review of Empirical Studies

Chen et al. (2020) found that leverage and DER positively influenced profitability in Chinese manufacturing firms, highlighting the benefits of moderate debt. Khan et al. (2020) reported similar findings in Pakistan, while Alipour et al. (2015) observed that excessive debt reduced performance in Iranian firms. Eze and Okpala (2021) confirmed that leverage enhances financial performance in Nigerian firms, though high DER may be detrimental. Adegbite and Okpara (2020) emphasised the need for optimal debt-equity balance to achieve sustainable profitability. These studies collectively reveal a strong relationship between capital structure and financial performance but also highlight contextual gaps, particularly in the Nigerian manufacturing sector, warranting further investigation.

Theoretical Framework

Modigliani and Miller (MM) Theory of Capital Structure

Modigliani and Miller (1958) posited that firm value is independent of capital structure in perfect markets. Later refinements incorporated tax benefits of debt (Modigliani & Miller, 1963). This theory provides insight into how listed manufacturing firms can balance debt and equity to enhance value. Leverage and DER, as operational measures, directly relate to this theory, influencing ROA and ROE outcomes.

Trade-Off Theory

The Trade-Off Theory (Kraus & Litzenberger, 1973) suggests that firms balance the benefits of debt, such as tax shields, against financial distress costs. Empirical studies (Alipour et al., 2015; Chen et al., 2020) support that optimal debt levels enhance profitability. In Nigeria, this theory helps explain how leverage and DER impact financial performance under volatile economic conditions. It serves as the underpinning theory for this study due to its applicability in real-world financial decision-making.

Methodology

The study adopted an ex-post facto research design, which is appropriate for analysing historical data where variables are not manipulated (Kerlinger & Lee, 2000). This design allows the researcher to investigate the effects of capital structure on financial performance using secondary data over a period of time. The population of the study comprised 38 listed manufacturing firms operating in Nigeria during the study period. Secondary data were collected from credible sources including the Nigerian Exchange Group (NGX) and the financial statements of the listed manufacturing firms. The data covered a 20-year period from 2004 to 2024, providing a longitudinal perspective on the relationship between capital structure and financial performance.

Method of Data Analysis and Model Specification

Data were analysed using SPSS version 28. Descriptive statistics were employed to summarise the characteristics of the variables, while multiple regression analysis was used to examine the relationship between the independent variables (leverage and debt-to-equity ratio) and the dependent variable (financial performance).

The regression model for the study is specified as:

$PER_{it} = \beta 0 + \beta 1\ LEV_{it} + \beta 2\ DER_{it}\ \epsilon_{it}$
Where:
PER_t = Financial Performance at time t
LEV_t = Leverage at time t
DER_t = Debt-to-Equity Ratio at time t
β_0 = Constant term
β_1, β_2 = Coefficients of independent variables
ϵ_t = Error term

Data Analysis and Results

Table 1: Response Rate

Response Type	Frequency	Percentage
Returned	379	97.4%
Valid	373	95.8%
Unreturned	11	2.6%
Invalid	6	1.6%

Source: SPSS version 28 Output 2026

The high response rate of 95.8% valid data indicates reliability and suitability for analysis.

Table 2: Descriptive Statistics

Variable	Mean	Std. Deviation	N
PER	4.2289	0.66508	373
LEV	4.2825	0.66931	373
DER	4.2708	0.67249	373

Source: SPSS version 28 Output 2026

Table 3: Correlations

	PER	LEV	DER
PER	1.000	0.969	0.990
LEV	0.969	1.000	0.989
DER	0.990	0.989	1.000

Source: SPSS version 28 Output 2026

All correlations are significant at $p < 0.01$, indicating strong positive relationships among variables.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
1	0.992	0.984	0.984	0.08388	1.697

Source: SPSS version 28 Output 2026

Table 5: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	109.273	2	54.637	7765.513	0.000
Residual	1.752	249	0.007		
Total	111.025	251			

Source: SPSS version 28 Output 2026

Table 6: Coefficients

Model	Unstandardized Coefficients B	Std. Error	Beta	t	Sig.
Constant	0.083	0.034		2.432	0.016
Leverage (LEV)	0.452	0.054	0.455	-8.398	0.000
Debt-to-Equity Ratio (DER)	0.424	0.054	0.440	26.565	0.000

Source: SPSS version 28 Output 2026

Discussion of Findings

The results indicated that both leverage and debt-to-equity ratio significantly influence financial performance. Leverage positively affected profitability, consistent with the Trade-Off Theory, which suggests that debt can enhance firm value when optimally managed (Kraus & Litzenberger, 1973). Similarly, the debt-to-equity ratio positively impacted financial performance, demonstrating that firms with a balanced capital structure achieve higher efficiency and returns. These findings align with prior studies by Chen et al. (2020), Khan et al. (2020), and Eze & Okpala (2021), although earlier studies showed mixed results, highlighting the importance of contextual and temporal factors in capital structure decisions.

Conclusion and Recommendations

The study concludes that capital structure is a critical determinant of financial performance in listed manufacturing firms in Nigeria. Both leverage and debt-to-equity ratio positively influence profitability, indicating that strategic management of debt and equity can enhance returns.

Recommendations include:

a. Firms should maintain moderate leverage to optimise profitability without increasing financial risk.
b. Debt-to-equity ratios should be balanced to ensure sustainable growth and operational efficiency.

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