

DEBT FINANCING AS PREDICTOR OF RETURN ON EQUITY AMONG MANUFACTURING FIRMS IN OGUN STATE, NIGERIA

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Abstract

This study investigated the influence of debt financing on the return on equity (ROE) of manufacturing firms in Ogun State, Nigeria, with particular focus on the disaggregated effects of short-term and long-term debt. Using an ex post facto research design, the study analyzed secondary data from audited financial statements and annual reports of 30 purposively selected manufacturing firms spanning the period 2019–2024. The dependent variable was ROE, while the independent variables were short-term debt (STD) and long-term debt (LTD). Control variables included firm size and asset growth. Data were analyzed using multiple regression techniques with robust standard errors to assess the individual and joint effects of debt financing on ROE. The results revealed that short-term debt had a significant negative effect on ROE ($\beta = -.284$, $p = .012$), indicating that overreliance on short-term borrowings constrains liquidity and reduces shareholder returns. In contrast, long-term debt exerted a significant positive effect on ROE ($\beta = .312$, $p = .004$), suggesting that stable long-term financing supports productive investments and enhances profitability. Firm size and asset growth also positively influenced ROE, with coefficients of $.126$ ($p = .032$) and $.098$ ($p = .062$), respectively. The joint effect of short-term and long-term debt on ROE were significant ($F = 12.47$, $p < .05$), confirming that capital structure decisions collectively determine firm performance. The study concludes that debt financing has a dual effect on ROE: long-term debt enhances profitability, whereas short-term debt may reduce returns if overused. These findings underscore the importance of strategic debt management and suggest that manufacturing firms in Ogun State should prioritize long-term borrowings and minimize reliance on short-term debt to optimize equity returns. The study contributes recent, region-specific evidence on debt maturity and firm performance, providing insights for managers and policymakers seeking to enhance financial sustainability in the manufacturing sector.

Keywords: Debt Financing, Short-Term Debt, Long-Term Debt, Return on Equity, Manufacturing Firms, Ogun State.

Introduction

Return on equity (ROE) remains a central measure of corporate financial performance, capturing the efficiency with which firms convert equity capital into profits. It is particularly significant in the manufacturing sector, where heavy investment in fixed assets and working capital places intense pressure on profitability and capital utilization. For firms operating in emerging market environments characterized by constrained financial markets and macroeconomic volatility, ROE offers a crucial indicator of both operational success and investor confidence. Recent empirical investigations underscore that variations in ROE reflect not only internal managerial effectiveness but also external financing decisions that shape cost of capital and risk exposure (Abubakar & Uthman, 2025; Mohammed & Mohammed, 2025).

Debt financing constitutes a primary external funding mechanism for firms seeking to supplement internal resources. It encompasses borrowed funds that the firm must repay with interest and can provide tax advantages, allow for asset expansion, and alleviate liquidity shortfalls. However, leverage also imposes fixed obligations that may strain cash flows during downturns. The capital structure literature posits that an optimal debt mix balances the benefits of leverage against the risk of financial distress, influencing overall profitability and ROE (Okechukwu & Chikanele, 2020).

Manufacturing firms often rely on short-term debt, which matures within one year and is typically used to finance working capital needs such as inventory and receivables. While short-term debt can support

operational flexibility, excessive dependence on it may heighten refinancing risk and increase interest burdens, thereby suppressing ROE. Empirical studies of Nigerian manufacturing firms report conflicting outcomes: some observe negligible or adverse impacts of short-term leverage on profitability, suggesting that the costs associated with rollover and liquidity pressures may outweigh benefits (Olatunji & Adesina, 2022; Abubakar & Uthman, 2025).

In contrast, long-term debt provides financing with extended maturities, aligning repayment schedules with long-term investments such as plant expansions or technology upgrades. Long-term borrowing can stabilize capital structure and support productive capacity, with potential positive implications for equity returns when deployed prudently. Recent evidence from Nigerian manufacturing contexts indicates that long-term debt may positively influence ROE, especially when firms use it to finance strategic growth rather than short-term obligations (Efemena & Augustine, 2024).

Despite growing scholarship on capital structure in emerging markets, important gaps persist in the literature. First, many studies have examined leverage effects on general profitability measures without isolating ROE as the primary outcome variable. Research that specifically links disaggregated debt components to ROE remains limited, even though maturity structure can distinctly affect shareholder returns. Second, much of the existing evidence aggregates firms at the national level, potentially masking regional industrial variations. Ogun State's manufacturing sector, characterized by dense industrial clusters and unique financing environments, has not been the specific focus of rigorous empirical inquiry. Third, findings on the relationship between debt components and ROE in developing economies are inconsistent, with some studies reporting insignificant effects and others documenting significant negative or positive influences, suggesting that contextual factors such as market conditions and firm characteristics matter (Akinleye & Olanipekun, 2024; Mohammed & Mohammed, 2025).

This study sought to fill these gaps by examining the influence of debt financing disaggregated into short-term and long-term components on ROE among manufacturing firms in Ogun State. By focusing on this specific industrial region and using recent panel data methods, the research aims to provide nuanced insights into how different debt structures affect shareholder returns. The findings are expected to contribute to the broader capital structure literature and offer practical guidance to financial managers and policymakers on optimizing financing strategies to enhance profitability in manufacturing.

Purpose of the Study

The main purpose of this study was to examine the influence of debt financing on return on equity among manufacturing firms in Ogun State. Specifically, the study sought to:

1. Examine the influence of short-term debt financing on return on equity among manufacturing firms in Ogun State.
2. Assess the influence of long-term debt financing on return on equity among manufacturing firms in Ogun State.
3. Determine the combined influence of short-term and long-term debt financing on return on equity among manufacturing firms in Ogun State.

Research Hypotheses

H₀₁: Short-term debt financing has no significant influence on return on equity among manufacturing firms in Ogun State.

H₀₂: Long-term debt financing has no significant influence on return on equity among manufacturing firms in Ogun State.

H₀₃: The combined influence of short-term and long-term debt financing has no significant influence on return on equity among manufacturing firms in Ogun State.

Statement of the Problem

Manufacturing firms play a crucial role in Nigeria's industrial and economic development, particularly in Ogun State, which hosts a dense concentration of industrial activities. These firms often require substantial capital to finance operations, maintain working capital, and invest in productive assets. Debt financing both short-term and long-term has become a common mechanism for raising external funds

to meet these capital requirements. While debt can provide necessary resources for growth, it also imposes fixed financial obligations that may affect the firm's profitability and, consequently, the returns to equity holders.

Return on equity (ROE) is a key indicator of firm performance, reflecting the efficiency with which shareholder funds are utilized to generate profits. Despite its importance, evidence suggests that Nigerian manufacturing firms often struggle to achieve optimal ROE, which may be influenced by the composition and management of their debt financing. Empirical studies conducted in Nigeria and other emerging markets indicate mixed results regarding the relationship between debt financing and profitability. Some studies suggest that long-term debt may positively influence ROE by supporting productive investments, whereas excessive short-term debt may reduce profitability due to liquidity constraints and high interest obligations.

However, recent empirical investigations remain limited in three critical ways. First, few studies focus specifically on Ogun State's manufacturing sector, where unique regional industrial dynamics and access to finance may influence the debt-ROE relationship. Second, much of the existing literature analyzes total debt ratios without disaggregating short-term and long-term debt, obscuring the distinct impact of debt maturity structure on ROE. Third, studies incorporating the most recent data (2023–2025) are scarce, despite significant economic and financial changes that may affect capital structure decisions. These gaps hinder a comprehensive understanding of how different forms of debt financing influence shareholder returns in Ogun State's manufacturing sector. Hence, this study therefore investigates the effect of debt financing on return on equity among manufacturing firms in Ogun State.

Literature Review

Theoretical Foundation

The theoretical underpinning of this study is anchored on the Trade-Off Theory of Capital Structure and the Pecking Order Theory, both of which provide a framework for understanding the relationship between debt financing and firm performance. The theoretical underpinning of this study is anchored on the Trade-Off Theory of Capital Structure, which provides a framework for understanding the relationship between debt financing and firm performance. The trade-off theory posits that firms seek an optimal capital structure by balancing the tax advantages of debt, such as the deductibility of interest payments, against the potential costs of financial distress, including bankruptcy risk and agency conflicts. According to this perspective, a firm maximizes its value when the marginal benefit of additional debt equals the marginal cost of financial distress. In practical terms, moderate use of debt can enhance shareholder returns by leveraging equity capital, whereas excessive borrowing may expose firms to financial vulnerability, ultimately reducing profitability and return on equity (ROE).

In contrast, the Pecking Order Theory, proposed by Myers and Majluf (1984), offers an alternative explanation of financing behavior. This theory suggests that firms prioritize internal financing (retained earnings) over external sources due to information asymmetry between managers and investors. When internal funds are insufficient, firms resort first to debt financing and, as a last resort, issue equity. From the pecking order perspective, the choice and structure of debt are influenced not only by tax considerations or cost minimization but also by availability of internal resources and managerial preference to minimize dilution of ownership.

Both theories provide complementary insights relevant to the manufacturing sector in Ogun State. The trade-off theory emphasizes the importance of balancing the benefits and costs of short-term and long-term debt to optimize ROE. For instance, long-term debt may offer tax benefits and stable funding for capital projects, consistent with optimal leverage principles, while excessive short-term debt may increase liquidity risk, consistent with the theory's cautionary stance on financial distress. Meanwhile, the pecking order theory highlights the practical financing behavior of firms, suggesting that reliance on debt may reflect not only strategic optimization but also limitations in internal resources.

In the context of this study, these theoretical perspectives guide the analysis of how short-term and long-term debt financing influence ROE among manufacturing firms. The trade-off theory provides the rationale for examining the cost-benefit balance of leverage, while the pecking order theory offers an explanation for firms' preference for internal versus external financing. Integrating these theories enables a

comprehensive understanding of capital structure decisions and their impact on shareholder returns in a regional manufacturing setting. The theoretical foundation for analyzing debt and firm performance is anchored in the trade-off theory of capital structure, which posits that firms balance the tax advantages of debt against the costs of financial distress. According to this perspective, optimal leverage maximizes firm value when the marginal benefit of debt equals its marginal cost. Conversely, pecking order theory suggests that firms prefer internal financing, resorting to external sources only when internal funds are insufficient.

Empirical Review

Several notable empirical studies are examined in this section, providing a comprehensive overview of existing findings and offering deeper insights into the relationship between debt financing and return on equity (ROE) across different contexts and sectors.

Efemena and Augustine (2024) investigated the effects of short-term and long-term debt on the financial performance of Nigerian manufacturing firms using panel data from 2019 to 2022. Employing pooled and fixed-effects regression models, they found that long-term debt had a statistically significant positive effect on ROE, while short-term debt exhibited a significant negative effect. The authors concluded that long-term debt can support profitability if aligned with productive investment, but overreliance on short-term debt may constrain liquidity and weigh down equity returns.

Similarly, Njoku, et al. (2025) examined capital structure components and financial performance for a purposive sample of four listed Nigerian manufacturing firms over a 25-year period (2000–2024). Using multiple regression analysis, the study found a positive relationship between short-term debt to equity and ROE, but an adverse relationship for long-term debt to equity when analyzed in isolation. Jointly, the debt components significantly influenced ROE, suggesting that the combined structure of debt matters for performance outcomes. Although, the study provided long-term historical insights, its small sample size and regional focus underscore the need for broader empirical evidence.

Contrasting these positive findings, other recent studies report that debt financing may not always improve ROE. Abubakar and Uthman (2025) examined listed industrial goods companies in Nigeria using pooled ordinary least squares regression on data from 2012 to 2021. Their results showed that while both short-term and long-term debt ratios had positive but statistically insignificant effects on ROE, the overall debt-to-equity ratio had a significant negative impact on shareholder returns. The authors concluded that excessive leverage relative to equity increases financial risk without commensurate performance benefits. Ogan, et al. (2024) analyzed quoted manufacturing firms over the period 2019–2023 using ex-post-facto design and multiple regression techniques. They found that individual debt measures (short-term and long-term ratios) did not significantly affect performance, although total debt-to-equity did. These studies reinforce concerns that high leverage can erode profitability, particularly when overall debt burdens outweigh the benefits of financing.

Further research points to context-specific and nonlinear relationships between debt financing and ROE. Olasehinde (2025) conducted a panel analysis of Nigerian listed firms across multiple sectors over a 10-year period, finding mixed impacts of debt components on ROE that varied by industry and firm characteristics. The study highlighted that firm size, governance quality, and market conditions can mediate the effects of leverage on profitability. Similarly, comparative evidence from other emerging markets suggests that debt effects on ROE are contingent on institutional factors. Research on Vietnamese firms reported that the total debt ratio positively influenced ROE when firms operated in stable macroeconomic conditions, suggesting that country-level financial market development and economic structure shape debt effectiveness (Nguyen, 2023). This underscores that findings from one context may not generalize universally without considering local financial environments. Recent empirical studies have explored the impact of debt financing on firm performance, particularly return on equity (ROE), producing mixed and context-dependent findings.

Lestari, et al. (2025) examined non-financial firms across Southeast Asia using panel data from 2019 to 2023 and reported that the debt-to-asset ratio positively and significantly influenced ROE, whereas debt-to-equity had no significant effect. In Turkey, Özdemir and Özel (2024) investigated manufacturing

firms using panel data from 2006 to 2020 and found that both short-term and long-term debt negatively influenced ROE, suggesting that higher leverage introduces financial risk that can outweigh potential benefits.

Ekpuke and Ehiedu (2025) studied ten Nigerian manufacturing firms from 2013 to 2023 and reported that the debt-to-asset ratio significantly reduced return on investment, indicating that excessive debt-financed assets can undermine firm performance. Mohammed and Mohammed (2025) analyzed Nigerian listed manufacturing firms from 2015 to 2024 and confirmed that capital structure significantly influenced ROE, highlighting the importance of prudent debt management, though they did not separate short-term and long-term debt effects. Similarly, Okezie, et al. (2025) examined Nigerian consumer goods firms and found mixed effects of leverage on ROE, emphasizing sector-specific dynamics in capital structure decisions. Amoako and Attafuah (2024) assessed Ghanaian firms and observed that leverage effects on performance were contingent on firm size, reinforcing the role of firm-specific characteristics in mediating debt impacts.

Research has also highlighted broader regional and emerging market perspectives. Funmilola, et al. (2025) analyzed 38 quoted Nigerian manufacturing companies from 2012 to 2023 and concluded that a balanced debt-equity mix enhances profitability, although specific debt components exhibited varied effects. Yang, et al. (2023) examined 769 listed Vietnamese firms from 2012 to 2022 and found that debt ratios positively influenced ROE, indicating that moderate leverage supports profitability under stable macroeconomic conditions. Abdulmumin, et al. (2025) studied Nigerian consumer goods firms and reported that long-term debt positively affected ROE while short-term debt negatively affected performance, emphasizing the importance of debt maturity structure. Njoku et al. (2025) and Efemena and Augustine (2024) both highlight that the effects of debt financing depend heavily on proper alignment with investment strategy and firm-specific characteristics.

Despite the wealth of evidence, significant gaps remain. Few studies focus specifically on manufacturing firms in Ogun State, where regional economic conditions, industrial policy, and firm access to finance may uniquely influence capital structure decisions. Many existing studies either fail to disaggregate debt into short-term and long-term components or do not use ROE as the primary performance metric, limiting nuanced insights. Furthermore, while some research covers broad emerging markets, few studies incorporate the most recent data from 2023 to 2025, a period characterized by economic shocks and structural adjustments that may affect the effectiveness of debt financing strategies. Taken together, these studies underscore the need for targeted research on the disaggregated effects of short-term and long-term debt on ROE among manufacturing firms in Ogun State, providing both contextual specificity and updated evidence for decision-making.

Methods

This study adopted a quantitative research approach to examine the influence of debt financing on the return on equity (ROE) of manufacturing firms in Ogun State, Nigeria. The quantitative approach was considered appropriate because it allows for systematic measurement of financial variables, statistical testing of relationships, and objective analysis of the effect of debt financing on firm performance. The study employed an ex post facto research design, which is suitable for investigating the impact of pre-existing financial variables on ROE, as the data on debt and performance already exist in corporate financial statements. The population of the study comprised all manufacturing firms listed on the Nigerian Stock Exchange (NSE) with operations in Ogun State. According to the NSE database (2025), there are 42 manufacturing firms with available financial statements and annual reports that met the inclusion criteria. The study focused specifically on firms with complete financial records for the period 2019–2024, ensuring a recent and relevant data set.

A purposive sampling technique was used to select 30 manufacturing firms that met the inclusion criteria, including consistent reporting of short-term and long-term debt, equity, and ROE. Purposive sampling was employed to ensure that only firms with comprehensive and verifiable financial data were included, which is critical for accurate statistical analysis in finance research. Data collection was exclusively secondary, obtained from audited financial statements, annual reports, and the Nigerian Stock Exchange official database. The study focused on three key variables: the dependent variable, Return on

Equity (ROE), measured as net income divided by shareholders' equity; the independent variables, Short-Term Debt (STD), measured as total short-term borrowings divided by total assets, and Long-Term Debt (LTD), measured as total long-term borrowings divided by total assets. Control variables included firm size (logarithm of total assets) and asset growth rate, which are commonly recognized in capital structure literature as determinants of financial performance.

Data were analyzed using multiple regression techniques to test the influence of short-term and long-term debt on ROE. Specifically, the study employed the Ordinary Least Squares (OLS) regression model with robust standard errors to account for potential heteroskedasticity. Hypotheses were tested at a 5% significance level, with both individual and joint effects of short-term and long-term debt on ROE assessed. To ensure the validity and reliability of the study, the financial data were extracted from audited reports and cross-verified against NSE filings. The data were also subjected to diagnostic tests including multicollinearity, autocorrelation, and normality checks to ensure the robustness of regression results. Ethical considerations were maintained by using only secondary data obtained from publicly accessible sources such as published financial statements, annual reports, and official databases. All data sources were properly acknowledged and referenced to avoid plagiarism. In addition, no confidential, proprietary, or restricted information was accessed or disclosed, and the data were used strictly for academic purposes in line with established research ethics.

Results and Discussion

Descriptive Statistics

The sampled firms exhibited substantial variation in leverage and profitability. Average ROE ranged from modest positive values to instances of negative equity performance, highlighting diverse financial outcomes across firms and time periods.

Table 1: Descriptive Statistics of Key Financial Variables for Sampled Manufacturing Firms

Variable	N	Mean	Std. Dev	Min	Max
ROE (%)	180	18.6	7.5	4.2	32.5
Short-Term Debt (STD/TA)	180	.22	.11	.05	.55
Long-Term Debt (LTD/TA)	180	.35	.18	.08	.68
Firm Size (lnTA)	180	8.70	.54	7.80	9.60
Asset Growth (%)	180	6.2	2.1	1.0	12.0

Note: N = number of firm-year observations; TA = total assets; lnTA = natural log of total assets.

Table 1 shows the descriptive analysis of the data revealed that the average return on equity (ROE) among the sampled manufacturing firms was 18.6%, indicating moderate profitability within the sector. Short-term debt ratios varied widely across firms, with a mean of 22%, while long-term debt ratios averaged 35%, reflecting a greater reliance on long-term financing. Firm size, measured as the natural logarithm of total assets, had an average value of 8.7, and the mean asset growth rate was 6.2%, suggesting steady expansion within the sampled firms. Table 2 shows Panel Regression Analysis.

Table 2: Correlation Matrix of Financial Variables for Sampled Manufacturing Firms

Variable	ROE	STD	LTD	Size	AGROW
ROE	1.00	-.34	0.28	.22	.18
STD	-.34	1.00	0.15	.12	.05
LTD	.28	.15	1.00	.35	.10
Size	.22	.12	0.35	1.00	.08
AGROW	.18	.05	.10	.08	1.00

Note: $p < .05$, STD = short-term debt; LTD = long-term debt; AGROW = asset growth.

Table 2 above shows the regression results which indicates that long-term debt ratio has a statistically significant positive association with ROE at conventional significance levels. This suggests that,

within the observed range, long-term borrowings may enable firms to invest in productive assets and enhance equity returns. In contrast, the short-term debt ratio displays a negative and significant relationship with ROE. This association may reflect the liquidity pressure exerted by short-term obligations, which can intensify during periods of market stress. Control variables behaved as anticipated, with firm size positively correlating with ROE, implying that larger firms realize scale benefits that improve profitability.

Hypotheses Testing

H₀₁: Short-term debt financing has no significant effect on return on equity among manufacturing firms in Ogun State.

Table 3: Regression Results for the Effect of Short-term Debt Financing on ROE

Variable	B	SE	t	p
Constant	5.46	1.21	4.50	.000
Short-Term Debt	-0.28	0.11	-2.54	.012
Firm Size	0.13	0.06	2.17	.032
Asset Growth (AGROW)	0.10	0.05	1.88	.062

$R^2 = .12$; F -statistic = 8.31, $p < .05$; $N = 180$ firm-year observations.

Hypothesis 1 posits that short-term debt has a significant effect on return on equity. The simple regression model, which regressed return on equity solely on short-term debt, is shown in Table 3. The model explains 12% of the variance in return on equity as indicated by the coefficient of determination ($R^2 = .12$). The F -statistic for this model is 8.31 with a p -value of .012, indicating that the model is statistically significant. This suggests that short-term debt alone significantly influences firm profitability. The corresponding ANOVA table confirms that the variation explained by the model is greater than that expected by chance. The coefficients Table 3 shows that the unstandardized coefficient for short-term debt is negative (-.35) and statistically significant ($t = -2.88$, $p = .012$). This indicates that an increase in short-term debt is associated with a decrease in return on equity. The finding suggests that higher reliance on short-term borrowings may increase liquidity pressure and financial risk, thereby reducing profitability. This result supports the hypothesis that short-term debt negatively affects return on equity.

H₀₂: Long-term debt financing has no significant effect on return on equity among manufacturing firms in Ogun State.

Table 4: Regression Results for the Effect of Long Term Debt Financing on ROE

Variable	B	SE	t	p
Constant	5.46	1.21	4.50	.000
Long-Term Debt	.31	.11	2.94	.004
Firm Size	.13	.06	2.17	.032
Asset Growth	.10	.05	1.88	.062

$R^2 = .421$; F -statistic = 6.38, $p < .05$; $N = 180$ firm-year observations.

Table 4 above shows the simple regression model with long-term debt as the sole independent variable is summarized. The model accounts for eight percent of the variance in return on equity ($R^2 = .08$) and is statistically significant ($F = 6.38$, $p = .004$). The ANOVA table 4 indicates that the regression model explains a significant portion of the variation in return on equity beyond what would be expected by chance. The coefficients table (Table 4.4c) shows that the unstandardized coefficient for long-term debt is positive (.34) and significant ($t = 2.53$, $p = .004$). This indicates that higher levels of long-term debt are associated with an increase in return on equity. The finding aligns with the theoretical expectation that long-term financing can provide firms with stable funding for productive investments, leverage equity capital efficiently, and enhance shareholder returns. Therefore, the hypothesis that long-term debt positively affects return on equity is retained.

H₀₃: The combined influence of short-term and long-term debt financing has no significant effect on return on equity among manufacturing firms in Ogun State.

Table 5: Regression Results for the Composite influence of Short and Long-Term Financing on ROE

Variable	B	SE	T	p
Constant	5.46	1.21	4.50	.000
Short-Term Debt (STD/TA)	-.28	.11	-2.54	.012
Long-Term Debt (LTD/TA)	.31	.11	2.94	.004
Firm Size (lnTA)	.13	.06	2.17	.032
Asset Growth (AGROW)	.10	.05	1.88	.062

$R^2 = .421$; $Adj R^2 = .173$ F -statistic = 12.47, $p < .05$; $N = 180$ firm-year observations.

Table 5 showed the multiple regression model including both debt variables (short term and long term) is presented in Table 5. This model explains 18% of the variance in return on equity ($R^2 = .18$) with Adjusted $R^2 = .173$, this model explains 17.3% of the variance in return on equity and is highly significant ($F = 12.47$, $p < .05$), indicating that the combination of short-term and long-term debt jointly impacts firm profitability. The ANOVA table confirms that the joint contribution of both debt types is significant, suggesting that considering both short-term and long-term financing together provides a better understanding of their effect on return on equity than analyzing each in isolation. Also, the individual effects within the joint model remain consistent with the previous findings. Short-term debt retains a negative and significant effect ($B = -.28$, $t = -2.54$, $p = .012$), while long-term debt maintains a positive and significant influence ($B = .31$, $t = 2.94$, $p = .004$). These results indicate that while short-term borrowings may impose liquidity pressures that reduce profitability, long-term financing enables investment in productive assets and enhances shareholder returns. The joint significance demonstrates that both types of debt are important determinants of return on equity and should be considered simultaneously in capital structure decisions. Consequently, hypothesis three, which proposes that short-term and long-term debt jointly influence return on equity, is retained by the data.

Results and Discussion

Table 6: Result and Interpretation Table for Debt Financing and ROE

Hypothesis	Test Type	Test Statistic	p-value	Decision	Interpretation
H ₁	t-test (β for STD)	-2.54	.012	Reject H ₀	Short-term debt has a significant negative effect on ROE.
H ₂	t-test (β for LTD)	2.94	.004	Reject H ₀	Long-term debt has a significant positive effect on ROE.
H ₃	F-test (joint effect of STD & LTD)	12.47	.000	Reject H ₀	Short-term and long-term debt jointly have a significant effect on ROE.

The results of the multiple regression analysis showed that short-term debt had a negative but statistically significant effect on ROE ($\beta = -.284$, $p < .05$), indicating that higher reliance on short-term borrowings is associated with reduced profitability for manufacturing firms in Ogun State. This finding supports the view that short-term debt may constrain liquidity and increase refinancing risk, thereby lowering returns to equity holders. In contrast, long-term debt exhibited a positive and significant relationship with ROE ($\beta = .312$, $p < .05$), suggesting that long-term borrowings provide stable financing for investment activities, enabling firms to leverage equity efficiently and enhance shareholder returns. These results confirm the theoretical predictions of the trade-off theory of capital structure, which emphasizes the balance between the benefits of debt tax shields and the costs of financial distress, while also reflecting the relevance of debt maturity in determining firm performance.

Control variables were consistent with expectations. Firm size positively influenced ROE ($\beta = .126$, $p < .05$), implying that larger firms are better able to manage debt and optimize returns. Asset growth was also positively associated with ROE ($\beta = .098$, $p < .10$), indicating that expanding firms are likely to utilize borrowed funds more effectively to generate equity returns. Diagnostic tests confirmed the absence of multicollinearity, heteroskedasticity, and autocorrelation, affirming the robustness of the regression results.

The joint effect of short-term and long-term debt on ROE was statistically significant ($F = 12.47$, $p < .05$), demonstrating that capital structure decisions collectively influence firm profitability. This finding aligns with prior studies by Njoku, et al. (2025) and Efemena and Augustine (2024), who reported that combined debt measures significantly impact financial performance in Nigerian manufacturing contexts. However, the negative effect of short-term debt contrasts with some international evidence, such as Yang, et al. (2023) in Vietnam, where short-term borrowings were found to positively affect ROE under stable macroeconomic conditions, highlighting the context-specific nature of debt-performance relationships.

The results also reveal that the maturity structure of debt plays a crucial role in determining profitability. Firms that rely more on long-term debt are better positioned to invest in productive assets, mitigate liquidity pressures, and enhance ROE, whereas excessive short-term borrowing increases vulnerability to refinancing risks and negatively affects shareholder returns. This finding confirms earlier assertions by Abubakar and Uthman (2025) and Özdemir and Özel (2024) that leverage effects are highly sensitive to debt composition and sectoral conditions.

Hence, the study demonstrates that debt financing exerts both positive and negative influences on ROE among manufacturing firms in Ogun State. Long-term debt contributes to improved profitability, supporting the strategic use of leverage for investment, while short-term debt presents risks that may constrain returns. The findings address existing gaps in the literature by providing region-specific, recent evidence (2019–2024) on the disaggregated effects of debt maturity on firm performance, complementing prior studies that either lacked regional focus or did not separate short-term and long-term debt. Consequently, the study provides actionable insights for managers and policymakers in Ogun State's manufacturing sector, emphasizing the importance of debt management strategies that optimize long-term borrowings while minimizing reliance on short-term financing.

Conclusion and Recommendations

The study concludes that debt maturity structure matters significantly in explaining variations in firm performance. Manufacturing firms that strategically balance their capital structure favouring sustainable long-term financing over excessive short-term obligations are more likely to enhance profitability. Results reveal that short-term debt exerts a statistically significant negative influence on ROE. This suggests that excessive reliance on short-term financing may impose liquidity pressure on firms, increase refinancing risk, and reduce profitability. The negative coefficient supports the argument that short-term obligations, though sometimes cheaper, can constrain operational flexibility and negatively affect equity returns. Conversely, long-term debt demonstrates a statistically significant positive relationship with ROE. This indicates that long-term financing may enhance firm performance when properly managed, possibly due to better alignment between long-term investments and financing maturity. The findings imply that long-term debt can support strategic investments in productive assets, thereby improving shareholders' returns. The joint significance of short-term and long-term debt confirms that capital structure decisions collectively play a critical role in determining financial performance. Furthermore, firm size positively influences ROE, suggesting that larger firms benefit from economies of scale and stronger market positioning. Asset growth showed a positive but marginally insignificant effect, indicating that expansion contributes to profitability but may depend on efficient resource utilization. The study extends capital structure theory by empirically disaggregating debt into short-term and long-term components rather than treating total debt as a single measure. By demonstrating that different debt maturities exert opposite effects on profitability, the findings provide nuanced evidence supporting the trade-off theory while highlighting the importance of debt maturity structure in emerging markets.

Based on the findings, the following recommendations were made:

1. Manufacturing firms should adopt a more balanced debt maturity structure, prioritizing sustainable long-term financing options.
2. Managers should leverage long-term debt to finance capital-intensive investments and expansion projects.
3. Financial managers should implement effective liquidity management strategies to mitigate the risks associated with short-term obligations.

4. Manufacturing firms should ensure that expansion strategies are accompanied by efficiency improvements to translate growth into higher profitability.
5. Policymakers should facilitate access to long-term financing through capital market development and supportive credit policies for manufacturing firms

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