

Financial Structure on Firm Value: Analysis of Non-Financial Sector Firms in Nigeria

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Abstract

The sustainability of a firm's financial and business comparative advantage endogenously anchors on the determination of the best-fit capital structure mix to achieve optimal use of the limited and available resources. This study assessed the financial structure's effect on a firm's market value in 40 listed non-financial firms in Nigeria. The dataset was collated from their audited annual financial statements reported from 2001-2024. The study adopted a triangulation method of analysis, which comprised a barrage of accounting, pre-post estimation techniques, and the panel technique. The random effect model was selected as the best-fit technique of analysis using Hausman's test. The dynamic nature of a firm's financial structure is influenced by various operational and business activities within and outside of the firm. Results revealed that total and long-term debt positively influenced market value, due to tax shield benefits and investors' perception of long-term debt as a strategic investment, reflecting financial stability and confidence in the firm's future cash flows. Short-term debt's negative influence on market value revealed that short-term debt was detrimental to the market perception and valuation of the firms. It aligned with the pecking order theory, where firms prioritise internal funds and avoid short-term debt due to asymmetric information and higher perceived risk by investors. The debt structure's influence on the firm's market value varied based on usage and profit-generating efficiency of the firm. The pecking order, trade-off, and agency theories corroborated the study results. The study concluded that a firm's financial structure mix is relevant to its market value and thus supports the Modigliani and Miller (1963) relevant proposition of tax shield advantage on debt, enhancing the firm's after-tax cash flows, improving market value, and financial position.

JEL Classification: D41; G32; P12; M41; M19

Keywords: Financial structure, market value, equity, debt, non-financial firms, Nigeria

1. Introduction

The ultimate financial decision of a firm is anchored on its cost minimisation, productivity, market share, and shareholder value maximisation. The realisation of these decisions rests on balancing equity and debt to ensure sufficient operational funding, growth sustainability, and shareholder wealth maximisation. However, the identification of the equilibrium mixes of equity and debt funding sources remains a mystifying puzzle in corporate finance, especially in emerging markets, where access to diverse financing instruments is limited. The debate

centres on whether the structure of financing, equity or debt component, or both, significantly influences firm value. Theories propose that the best equilibrium mixes are dependent on traits that regulate the diverse costs-benefits accompanying equity-debt sources (Ayange et al., 2021; Udo et al., 2024).

Traditional theories provide contradictory perspectives on what constitutes the best financial structure mix and how they influence a firm's market value. Modigliani & Miller (MM) (1958) argued that the financing structure of a firm (debt and equity) is irrelevant to its market value under perfect market conditions of no taxes, rational investors, perfect competition, and no bankruptcy cost. This implies that whether a firm is financed by debt or equity, the market value is sovereign of its financial structure decisions (Ayange et al., 2021; Udo et al., 2024). Regardless of the unrealistic assumption of the MM 1958 argument, this assumption reveals the circumstances under which a firm's capital structure is considered irrelevant and provides a clue on what makes a firm's financial structure relevant.

In 1963, MM revised the 1958 proposition in response to real-world financial imperfections, particularly the effect of corporate taxes, to argue that a firm's financial structure decisions are relevant to its market value under imperfect market conditions. The pecking order theory asserts that large firms with huge turnover leverage their firms such that their equity portion is higher than their debts in their operational activities and investments. The trade-off theory suggests that firms with diverse asset portfolios should use debt financing to prevent illiquidity, which has a dire influence on their daily operations. The agency cost theory posits that firms should focus their financial structure to reduce agency costs (Siddik et al., 2017). Udo et al. (2024) revealed that the financing decision of a firm varies in direct proportion to the risk rate of its capital source. As such, the equilibrium mixes cover an analysis of several key factors of risk, growth, and profitability that influence the firm's market value.

Diverse empirical studies on firm financial structure focus on the equity side of the equilibrium mixes while ignoring the debt side of the equilibrium mixes, especially their short-term and long-term compositions. This study addresses a critical gap by focusing on the debt structure's impact on firm value, with specific attention to non-financial sector firms in Nigeria.

Nigeria presents a unique case: its financial market is underdeveloped, with limited long-term debt instruments and a dominance of short-term financing. Data from this study shows that, on average, short-term debt accounts for 50.2% of total debt, while long-term debt constitutes only 14.6%. This heavy reliance on short-term debt leads to maturity mismatches, where long-term investments are funded with short-term obligations, exposing firms to liquidity and default risks that may erode market value. This problem is further exacerbated by Nigeria's high lending rates (ranging from 11.68% to 27.58%), which amplify the cost of borrowing and reduce the net benefit of leverage. Despite these conditions, non-financial firms continue to depend on debt from financial institutions, which supply about 67.7% of the liquidity available to the sector. The key unresolved issue, therefore, is whether this prevailing debt structure contributes positively or negatively to firm market value in such a constrained market environment.

This study seeks to investigate the causal nexus between financial structure, disaggregated into total debt, short-term debt, and long-term debt, on firm value in Nigeria's non-financial sector. The study contributes to the literature as it focuses on the debt structure of the financial structure of the firm. This study disaggregates debt to assess its distinct impact on firm value. By situating the analysis within the context of Nigeria's underdeveloped financial market and high-interest environment, the study provides localised insights into the applicability of global financial structure theories.

The study focuses on the non-financial sector firms, which are critical to economic development, contributing significantly to employment and GDP, but are often understudied in financial structure literature. Due to data limitations, regulatory focus on financial

institutions, and the analytical complexity arising from sectoral heterogeneity. This study addresses this gap by focusing on how the debt structure influences the market value of non-financial firms in an emerging market context. Gill et al. (2011) revealed that debt positively influences firm value than equity. Given the various theoretical bedrocks and the contradiction in empirical findings, it is critical to evaluate the financial structure cause-and-effect nexus on non-financial firm market value in Nigeria. The study is one of the few non-financial sector studies in Nigeria.

2. Literature Review

Empirically, extant studies adopt leverage ratios as quantitative metrics of a firm's financial structure. Goldsmith & Lipsey (1963) argued that leverage is a more indicative predictor of potential capital gains than actual capital gains, as it identifies firms most vulnerable to market volatility. The theoretical perspective posits that a higher proportion of debt in the financial structure enhance firm value in the short run through tax shields and increased returns on equity, but may erode value in the long run due to financial distress risks while providing a non-significant buffer to creditors and investors in the event of liquidation (Graham et al., 2001; Udo et al., 2024). The market timing view, advanced by Baker et al. (2002) and Welch (2004), posits that financing decisions are influenced by stock price movements, with firms issuing equity when prices are high and adjusting capital structure dynamically thereafter.

In emerging economies, however, financing behaviour diverges from developed market patterns. Singh et al. (1992) and Singh (1995) observed that firms in developing countries often rely disproportionately on short-term debt, following an inverse pecking order, due to limited access to long-term financing. This reliance increases refinancing risk and exposes firms to interest rate volatility.

Agency theory supports moderate leverage as a disciplinary tool for managers (Berger & Udell, 2006), but empirical results are mixed. Rehman et al. (2012), Adeyemi & Oboh (2011), and Tze-Sam & Heng (2011) found that leverage below 1.5 improves market value, while higher leverage reduces it. Such contradictory findings underscore the need for context-specific research that examines the nuanced effects of debt structure on firm value, particularly in underdeveloped markets like Nigeria.

2.1 Theoretical Framework

Table 1
Summary of Theoretical Review

Theories	Proposition
The Irrelevant Theorem	
MM (1958)	The theory revealed that a firm's financing decision is irrelevant to its market value. The MM perfect market climate assumptions are unrealistic. But their propositions are valuable as they provide a clue on the requirement to make the financial structure relevant.
The Relevant Theorem	
MM (1963)	The 1958 "perfect market condition" assumption was relaxed by the 1963 theorem. Tax is an interest-deductible expense, but dividend payments to stockholders are not deductible. The disparate treatment affects cash flow and encourages businesses to use debt in their financial arrangements. MM posit that a 100% debt financial structure will be the most advantageous one when all other factors are equal and other presumptions are true. As a result, leverage positively influences firm value.
Trade-off Theory Kraus et al. (1973) and Myers (1984)	The financing decision of a firm embraces the trade-off between debt tax benefits and financial distress costs. Firms set their debt-equity ratio target to reach the desired result. The theorem posits that the capital sources of a firm are based on the cost-benefit analysis of

maintainable or revertible debt ratios to determine the equilibrium mix between debt and equity.

Agency Theory Jensen et al. (1976) and Myers (1977)		The theorem explores the principal (shareholder) and the agent (manager) nexus. The agent and principal conflict emanates from misalignment and utility maximisation for personal interests. Based on prior techniques, there is consistency with the trade-off theory. Since agency cost and outsider ownership reduce firm value, the agent maximises utility to the detriment of the firm value. Agency cost discretion rests on the control right allocation within the firm. The theorem focused on the identification of the most efficient contract governing the agent-principal nexus, which measures behavioural cost, risk outcome transfer to the agent, and trade-off.
Pecking Theory, (1984)	Order Myers	The theorem is a substitute for the trade-off model supporting a negative nexus between value and financing mix. Firm financial instruments should be prioritised based on: inside funds, debt, and equity. The theory further postulates that firms embrace internal funding over external financing, but in the existence of profitable investment opportunities, external financing is adopted. Under this model, the hierarchical order of sources of capital is embraced from the least risky to the riskiest. Myers and Majluf (1984) initiated the ranking due to the adverse selection problem, emanating from information asymmetric between managers and investors. Increased financing costs can be attributed to asymmetric information.
Dynamic Off	Trade-Off	The dynamic trade-off theorem upholds that financial structure decisions of a firm are not static but evolve around the dynamic nature of the market. Firms continuously adjust their debt levels to maintain an optimal balance between tax advantages and distress costs.

Source: Author (2025)

2.2 Empirical Review

Extensive theoretical frameworks revealed dependable arguments; therefore, extraordinary and profound knowledge is required to persuade and establish that one theory is more competent and appropriate than another. For such reasons, several empirical studies were carried out to obtain statistical conclusions through illustrative market observations (see Table 2).

Table 2
Summary Empirical Review

Authors	Scope	Empirical nexus between market value and leverage	Theoretical Support
Nguyen et al. (2020)	Listed Food and Beverage firms in Vietnam from 2014-2018.	Positive	Modigliani & Miller (1963)
Nguyen et al. 2021	Listed Food and Beverages firms in Vietnam	Positive	Agency Theory
Udo et al. (2024)	Oil and Gas Firms in Nigeria	Positive	

Ayange et al. (2021)	15 listed manufacturing firms in Nigeria from 1999-2018	Positive	
Luu (2021)	listed chemical companies	Positive	
Bilgin & Dinc 2019	listed large firms	Positive	
Abubakar et al. (2018)	Listed conglomerate in Nigeria, 2005-2016.	Positive	Modigliani and Miller (1963)
Devereux et al. (2018)	U.K. firms from 2001–2009	Positive	
Vijayakumaran (2017)	853 industrial firm in China from 2003-2010	Positive	Agency theory
Ajibola et al. (2018),	Quoted conglomerate firms	Positive	
Tajudeen et al. (2021)	Listed firms in Nigeria from 2009 to 2017pharmaceutical	Negative	Information Asymmetry
Osagie & Dan Enadeghe, (2022)	Non-financial firms in Sub-Saharan Africa	Negative	
Alfisah et al. (2022)	Food and beverage company value	Negative	
Chadha et al. (2016)	422 listed firms in India manufacturing	Negative	Trade-off theory and
El-Maude, Addul-Rahman, & Ahmad (2016)	4 listed firms in Nigeria Manufacturing (cement companies) 2010-2014	Negative	agency theory
Avci (2016)	110 firms in Turkey from 2003-2015 Manufacturing	Negative	
Phan (2016)	95 listed firms on the Vietnam stock market	Negative	

	exchange markets from 2007-2013		
	Manufacturing		
Vuong (2017)	142 listed firms in Vietnam from 2009-2015, industrial and service	Negative	Pecking order
Almahadin & Oround (2019)	Listed industrial and service in the Jordanian Stock Exchange 2013-2017	Negative	Theory
Ramadhan al. (2022)	Non-financial companies listed on the Indonesian stock exchange for 2017-2019	Mixed	Information Asymmetry
Afza et al. (2017)	333 non-financial firms in Pakistan 2006-2013	Mixed	
Mehmood al. (2019)	520 firms from South Asia (Pakistan, India, Sri Lanka, Bangladesh), 2004-2007 Manufacturing	Mixed	Agency theory
Olaoye et al. (2021)	Pharmaceutical Firms in Nigeria 2012-2017	Mixed	Information Asymmetry

Source: Author (2025)

2.3 Knowledge Gap

Existing studies examining the relationship between financial structure and firm value yield inconsistent results, particularly in emerging markets. A significant shortcoming in the existing literature is the aggregation of debt into a single measure, which obscures the distinct effects that long-term and short-term debt can have on firm value. This distinction is especially important in contexts like Nigeria, where structural limitations in the capital market encourage heavy reliance on short-term debt, potentially altering risk profiles and market valuation dynamics. Moreover, the use of Tobin's Q as an integrated market-accounting measure of firm value is underexplored in the Nigerian non-financial sector, with most prior research either focusing on financial institutions or adopting narrower valuation metrics. Methodologically, many studies have relied on estimation techniques that fail to address endogeneity, unobserved heterogeneity, and dynamic adjustments in capital structure.

This study advances the literature by (i) disaggregating debt into total, long-term, and short-term components to capture their heterogeneous effects on firm value; (ii) applying Tobin's Q as a comprehensive valuation proxy; and (iii) employing robust panel data econometric methods, supported by extensive pre-estimation and diagnostic testing, to produce context-specific and methodologically sound evidence. These contributions provide fresh insights into the capital structure firm value nexus in the underexamined Nigerian non-financial sector, with implications for corporate financing policy and market regulation.

2.4 Development of Study Hypothesis

The review of extant empirical studies reveals divergent results regarding the nexus between financial structure and firm market value. These inconsistencies stem from differences in research models, proxies, analytical techniques, and study scopes. Nevertheless, the agency theory, trade-off theory, and pecking order theory provide complementary perspectives on how financing decisions influence firm value. According to these theories, a firm can maximise its market value by maintaining an optimal debt ratio (Udo et al., 2024; Ayange et al., 2022; Chadha & Sharma, 2016; Mehmood et al., 2019; Vuong, 2017).

Long-term debt imposes fixed, multi-year financial obligations, while market liberalisation in emerging economies has been associated with increased reliance on short-term debt and reduced use of long-term debt (Lucey & Zhang, 2011). Financial structure decisions also affect a firm's market position through their influence on operational expansion and the efficient use of debt (Fosu, 2013). In contexts with lax financial and legal institutions, credit providers often prefer short-term debt to monitor borrowers more closely and mitigate default risks (Udo et al., 2024). However, when short-term debt is not optimally managed, it can create maturity mismatches and financial strain (Ayange et al., 2021). Given that debt can be categorised into total, long-term, and short-term components, it follows that each may exert distinct effects on the market value of non-financial firms in Nigeria.

Hypotheses

H₁: Long-term debt ratio has a significant effect on the market value of non-financial firms in Nigeria.

H₂: Short-term debt ratio has a significant effect on the market value of non-financial firms in Nigeria.

H₃: Total debt ratio has a significant effect on the market value of non-financial firms in Nigeria.

3. Data and Method of Analysis

The study scope comprises all the selected quoted firms on the NSE from January 2001-December 2022. The panel random effect regression model was adopted to analyse the dataset collected from the audited annual financial report of the selected non-financial firms in Nigeria. The key unit of measurement for all the variables is the naira (₦). Some criteria were adopted in gathering the sample firms to guard against data omission and ensure uniformity. Non-operational firms and firms with operational and regulatory glitches with the regulators within this study period were omitted. This selection process provided forty (40) listed non-financial firms, as shown below (Table 3: Studied Firms as of December 2020).

Table 3
Studied Firms as of December 2024

S/N	Sectors	No. of firms	sector	Firms
1	Agriculture	3	1	Livestock feeds
			2	Okomu
			3	Presco
2	Conglomerates	7	4	Chellarams
			5	John Holt
			6	Scoa
			7	UACN
3	Construction/Real Estate	1	8	Julius Berger

4	Consumer goods	9	9	Cadbury
			10	Flour Mills of Nigeria
			11	Guinness
			12	International Breweries
			13	Nigerian brew
			14	Nestle
			15	PZ
			16	Unilever
			17	Vitafoam
6	Healthcare	4	18	Glaxo Smithkline
			19	May & Baker
			20	Morison
			21	Neimeth
8	Industrial goods	8	22	Berger paints
			23	CAP
			24	Meyer
			25	Beta glass
			26	Cutix
			27	Cement Co. of Northern Nigeria
			28	Dangote cement
			29	Lafarge Africa
10	Oil and Gas	7	30	Conoil
			31	Eterna
			32	Forte
			33	Mobil
			34	MRS
			35	Oando
			36	Total
11	Services	4	37	Academy press
			38	Learn Africa
			39	University press
			40	Interlinked technologies
Total			40	

Source: Author (2025)

Table 4: Variables Employed in Empirical Investigation

Variables	Calculation
Firm market value proxy by Tobin's Q	Tobin's Q = $(MVS + MVD) / RVA$ $MVS = \text{Market value of all outstanding stock}$ $MVD = \text{Market value of all debt}$ $RVA = \text{Replacement value of all production capacity}$
Total Debt (TD)	$(TD) = \frac{\text{Total Debt}}{\text{Total Asset}}$
Long-Term Debt (LTDR)	$(LTDR) = \frac{\text{Long-term Debt}}{\text{Total Asset}}$
Short-Term Debt (STDR)	$(STDR) = \frac{\text{Short Term Debt}}{\text{Total Assets}}$
Firm Size (FS)	It is a key factor in a firm's profitability and is a proxy for the natural logarithm of total assets (Onaolapo & Kajola, 2010).
Age of the Firm (AFM)	AFM is proxied by years from incorporation to the date of observation.

Source: Author (2025)

3.2 Model Specification

Firm market value = f (financial Structure indicators)

Hypotheses 1-3 were estimated as expressed below:

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1(TD_{it}) + \beta_2(AF_{it}) + \beta_3(FMS_{it}) + \beta_4(AS_{it}) + \mu_{it} \dots \dots \dots (\text{eq1})$$

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1(LTDR_{it}) + \beta_2(AF_{it}) + \beta_3(FMS_{it}) + \beta_4(AS_{it}) + \mu_{it} \dots \dots \dots (\text{eq2})$$

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1(STDR_{it}) + \beta_2(FMA_{it}) + \beta_3(FMS_{it}) + \beta_4(AS_{it}) + \mu_{it} \dots \dots \dots (\text{eq3})$$

- a. Estimation Procedure: The procedure follows an array of pre-tests, a correlation matrix, cross-sectional dependence test results, panel estimation, and diagnostic tests.
- b. Pre-Test: Panel Unit Root: Was performed squarely to evade spurious results and confirm possible variables' stationarity.

3. Data Analysis and Results: Descriptive Statistics**Table 5: Descriptive Statistics**

	TD	FMA	FMS	LTDR	STDR	TOBINS_Q
Mean	0.362	48.325	7.176	0.135	0.521	4.598
Median	0.382	48.000	7.237	0.099	0.451	1.350
Std. Dev.	0.381	16.603	1.051	0.138	0.410	23.914
Skewness	-4.532	0.285	-0.300	4.134	5.765	11.804
Kurtosis	6.149	3.181	4.174	5.357	5.740	4.770
Jarque-Bera	111608.5	11.943	58.022	62085.63	83620.27	890901.5
Probability	0.000	0.00254	0.000	0.000	0.000	0.000

Source: Author (2025)

The basic descriptive statistics result reported in Table 5 indicates that the mean and median values of the series are not extremely far apart. At a glance, the variables are positively skewed with excess kurtosis except for TD and FMS, which are negative. From the results of the Jarque–Bera statistic, it can be inferred that the series are not normally distributed. The kurtosis of the series TD, LTD, STD, and Tobin's Q is leptokurtic, while FMA is mesokurtic.

Table 6: Unit Root Test Results

Variable s	Levin, & Chut	Lin Stat	Breitung t-	Im, Pesaran & Shin W-stat	ADF - Fisher Chi-Sq	PP - Fisher Chi-Sq	Integr ation	Inference
LTDR	- 5.04624*** (0.0000)	-3.24709*** (0.0006)	-8.83137*** (0.0000)	224.085*** (0.0000)	553.570** * (0.0000)	I (0)	Stationary	
STDR	- 7.65698*** (0.0000)	-6.69537*** (0.0000)	-10.9615*** (0.0000)	264.491*** (0.0000)	601.664** * (0.0000)	I (0)	Stationary	
TD	- 16.3910*** (0.0000)	-4.75932*** (0.0000)	-14.8302*** (0.0000)	286.553*** (0.0000)	611.929** * (0.0000)	I (0)	Stationary	
Tobin'Q	- 13.6964*** (0.0000)	-8.55655*** (0.0000)	-13.3875*** (0.0000)	305.841 (0.0000)	631.703** * (0.0000)	I (0)	Stationary	

FAM	-	-2.86266*	-9.24501***	195.335***	458.173**	I (0)	Stationary
	8.96798***	(0.0021)	(0.0000)	(0.0000)	*		
	(0.0000)				(0.0000)		
FMS	-	-4.96586***	-7.57390***	199.070***	443.128**	I (0)	Stationary
	7.97401***	(0.0000)	(0.0000)	(0.0000)	*		
	(0.0000)				(0.0000)		

Source: Researcher's Computation (2025)

The unit root results in Table 6 indicate that the variables attained stability at the level order of integration I(0). These results give credibility to the adoption of the panel regression model.

4.1 Panel Regression Analysis

Model 1: Long-term debt significantly impacts on non-financial firm market value in Nigeria. The Cross-Section Hausman χ^2 value of 23.240 and p-value of 0.176 reveal a non-significant effect at alpha (α) of 5%. This result supports the adoption of the random effect model as the unobserved firm-specific effects are uncorrelated with the regressors.

Table 7: Financial Structure Versus Market Value in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTDR	18.75380	5.377865	3.487220	0.0005
FMA	-0.051487	0.088927	-0.578987	0.5628
LOG_FMS	1.884202	1.010960	1.863776	0.0627
AST	3.329605	3.001660	1.109254	0.2677
C	21.63535	7.669242	2.821055	0.0049
Other Parameters				
R2	0.74		DW stat	2.644
F-Stat	4.048		Prob(F-stat)	0.0000

Source: Authors' Computation (2025)

The results in Table 7 reveal a significant linear nexus between market value, FMS, AST, and LTDR. LTDR positively influences the firm's market by 18.75%. This implies that a 1% increase in LTDR is associated with an 18.75% increase in market value, ceteris paribus. This magnitude reveals that strategic use of long-term debt can materially enhance shareholder value, potentially through the exploitation of tax shield benefits and the alignment of financing maturity with investment horizons.

FMS and AST positively and non-significantly impact on firm's market value by 1.88% and 3.32%, respectively. The positive impact is consistent with theoretical expectations that larger firms and those with more tangible assets enjoy greater access to capital and investor confidence. FMA negative and non-significant impact on firm market value by 0.051%,

indicating that maturity alone does not guarantee higher market valuation in the Nigerian non-financial context.

These results contradict MM's (1985) irrelevant proposition due to debt and tax shield benefits and align with the 1963 proposition, which incorporates the tax shield advantage of debt. The positive LTDR–market value nexus indicates that, under Nigeria's imperfect market conditions, moderate long-term leverage enhances firm valuation by lowering the weighted average cost of capital and potentially disciplining managerial decision-making.

The results also corroborate empirical evidence from Udo et al. (2024); Ayange et al. (2021); Nguyen et al. (2020), Ayange et al. (2021), Devereux et al. (2018), Kieschnick & Moussawi (2018), and Vijayakumaran (2017), who similarly documented a positive association between debt utilisation and market performance. In the Nigerian context, however, the relatively underdeveloped debt market and high borrowing costs necessitate prudent leverage management to avoid financial distress risks.

From a practical standpoint, the evidence suggests that carefully structured long-term debt financing can be a potent tool for value creation in non-financial firms, particularly in dynamic market environments where political stability, macroeconomic conditions, industry trends, and investor sentiment interact to shape capital market valuations.

Model 2: Short-term significant impact on firm value in Nigeria

The Cross-Section Hausman χ^2 value of 13.077 and the p-value of 0.109 are non-significant at alpha (α) levels of 5%. This implies that firm-specific unobserved effects are uncorrelated with the explanatory variables, thus supporting the adoption of the random effect model.

Table 8: Panel Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STDR	-0.252869	0.048794	-5.182328	0.0000
FMA	-0.006151	0.002824	-2.178228	0.0297
LOG_FMS	0.278712	0.029174	9.553607	0.0000
AST	0.040840	0.079824	0.511628	0.6091
C	2.637581	0.243093	10.85010	0.0000
Other Parameters				
R ²	0.73	DW stat	2.685	
F-Stat	50.0269	Prob(F-stat)	0.0000	

Source: Author's Computation (2025)

In contrast to model 1, the short-term debt results in Table 8 reveal a negative and statistically significant linear cause-and-effect nexus between market value and short-term debt (STDR). This implies that a 1% increase in the short-term debt ratio reduces firm market value by approximately 25.3%. This effect is substantial and suggests that excessive reliance on short-term financing erodes shareholder value.

FMS exerts a positive and highly significant influence on market value by 27.87% consistent with the view that larger firms benefit from economies of scale, greater market visibility, and stronger investor confidence. FMA negatively and significantly impacts market

value by 6.15%, implying that older firms do not necessarily translate longevity into higher valuation, possibly due to operational rigidity or diminished growth opportunities. AST positively and non-significantly impacts on market value by 4.08%, revealing that collateralizable assets may not be a primary driver of market valuation in Nigeria's non-financial sector.

Theoretically, these results are consistent with the pecking order theory, which posits that firms prefer internal financing first, followed by debt, and then equity issuance as a last resort. The finding also aligns with the signaling theory, as a high proportion of short-term debt can be interpreted by investors as a signal of financial vulnerability and liquidity risk. Furthermore, the agency cost theory suggests that short-term debt increases monitoring and refinancing pressures, which, if excessive, can hinder long-term value creation.

The negative nexus between STDR and firm market value also resonates with Modigliani and Miller's (1963) framework under imperfect markets, where financial distress costs offset potential tax advantages of debt. In emerging economies like Nigeria, weak credit markets, underdeveloped long-term lending infrastructure, and volatile macroeconomic conditions amplify the refinancing and rollover risks associated with short-term borrowing.

Overall, the empirical evidence indicates that excessive short-term debt utilisation undermines market valuation in Nigerian non-financial firms by exacerbating refinancing risk, elevating bankruptcy potential, and diminishing investor confidence. This finding aligns with prior studies by Tajudeen et al. (2021), Udo et al. (2024), Ayange et al. (2021), Chadha & Sharma (2016), and Avci (2016), which also documented the detrimental impact of short-term leverage on firm performance and valuation.

Model 3: Total debt significantly impacts firm value in Nigeria

The Cross-Section Hausman χ^2 value of 10.010 and p-value of 0.040 is non-significant at alpha (α) levels of 5%. This result validates the adoption of the random effects model.

Table 9: Panel Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TD	0.110358	0.050600	2.180973	0.0295
FMA	-0.008769	0.002827	-3.102149	0.0020
LOG_FMS	0.297006	0.029420	-10.09546	0.0000
AST	0.129141	0.079037	1.633923	0.1027
C	3.027339	0.233888	12.94355	0.0000
Other Parameters				
R ²	0.92	DW-stat	2.715	
F-Stat	43.449	Prob(F-stat)	0.0000	

Source: Author's Computation (2025)

Table 9 reveals a positive and statistically significant linear cause-and-effect nexus between market value and total-term debt (TD). This implies that a 1% increase in total debt is associated with an approximate 0.11% increase in the firm's market value, indicating that debt financing,

when optimally managed, enhances market valuation. The positive coefficient supports the trade-off theory and Modigliani and Miller's (1963) proposition (with taxes), where the tax shield from interest deductibility outweighs the marginal costs of financial distress at moderate debt levels.

The results further indicate that FMS positively influences market value by 29.70%, reinforcing the notion that larger firms benefit from greater market credibility, economies of scale, and reduced information asymmetry. In contrast, FMA negatively and significantly impacts market value by 8.8%, indicating that older firms may face operational rigidity or reduced growth prospects, which can dampen investor expectations. AST positively and non-significantly impacts, indicating that collateral value is not a primary determinant of market valuation in Nigeria's non-financial sector.

From a strategic perspective, the results imply that managing total debt within an optimal range aligned with growth opportunities, macroeconomic conditions, and investor sentiment. However, exceeding this optimal threshold risks eroding value through elevated bankruptcy costs, refinancing pressures, and reduced financial flexibility. These results are consistent with earlier findings in this study (Models 1 and 2), which demonstrated the positive impact of long-term debt and the negative impact of short-term debt. Collectively, the evidence reinforces the importance of debt maturity composition in addition to total leverage levels. Similar conclusions are found in Nguyen et al. (2020), Vijayakumaran (2017), and Kieschnick & Moussawi (2018), highlighting the universal relevance of the debt-value nexus across emerging and developed markets.

Across the three models, debt maturity composition emerges as a critical determinant of firm market value in Nigeria's non-financial sector. Long-term debt exerts a strong positive influence, supporting the trade-off theory's optimal leverage premise, while short-term debt significantly erodes market value, consistent with pecking order and agency theory concerns over refinancing risk and financial instability. Total debt shows a moderate positive effect, indicating that an optimal leverage mix balancing tax benefits against distress costs enhances valuation. These results collectively reveal that debt structure matters as much as how much debt is used, underscoring the strategic importance of aligning maturity profiles with growth prospects, risk tolerance, and market conditions.

Conclusion

This study examined the cause-and-effect nexus between financial structure measured through long-term debt ratio, short-term debt ratio, and total debt ratio on the market value of non-financial firms in Nigeria, using Tobin's Q as a proxy. The empirical results demonstrate that the maturity composition of debt is as important as the overall leverage level. Long-term debt exerts a significant positive impact on market value, reflecting the benefits of stability, lower refinancing risk, and alignment with strategic growth objectives. Conversely, short-term debt negatively and significantly impacts, underscoring the vulnerabilities associated with liquidity risk, fund mismatches, and investor concerns over financial instability. Total debt, while showing a modest positive effect, highlights the importance of maintaining an optimal balance between tax benefits and potential distress costs. These results corroborate elements of the trade-off, pecking order, and agency theories, while challenging the MM 1958 irrelevance proposition under real-world conditions of market imperfections. Overall, results reveal that debt structure decisions must be strategic, context-specific, and responsive to macroeconomic, industry, and institutional dynamics to maximise firm value in Nigeria's evolving capital market environment. This study recommends that non-financial firms in Nigeria should strategically increase the share of long-term debt while limiting excessive short-term borrowing to reduce refinancing risk, stabilise cash flows, and enhance market value. Firms should target a debt level that maximises the tax shield benefits without incurring high financial distress

costs, adjusting leverage dynamically in response to macroeconomic and industry conditions. Regulators and policymakers should create incentives for firms to adopt balanced debt maturity structures through tax policies, credit market reforms, and financial literacy programs to strengthen corporate value creation and economic resilience in Nigeria's non-financial sector.

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