

Corporate Governance and Capital Structure: An Analysis of Board Independence and Long-Term Debt and Financial Performance Nexus

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Abstract

This study investigates the moderating effect of board independence on the relationship between long-term debt financing and the financial performance of listed firms in Kenya. An explanatory research design with a longitudinal approach was used, analyzing secondary panel data from the financial reports of 67 firms listed on the Nairobi Securities Exchange (NSE) from 2019 to 2023. The study was guided by the Trade-off theory, Pecking Order theory, and the Resource Dependency theory. Data analysis involved descriptive and inferential statistics, including multiple regression analysis. The study found that long-term debt had a positive and statistically significant effect on the financial performance of listed firms ($\beta = 0.124$, $p < 0.05$). Findings also indicated that board independence negatively and significantly moderated the relationship between long-term debt and financial performance ($\beta = -0.171$, $p < 0.05$). This implies that while long-term debt generally improves financial performance, a higher proportion of independent directors can diminish this positive effect, likely due to stricter oversight that limits a firm's ability to leverage debt. The study concludes that firms should strategically balance the use of long-term debt with board oversight to optimize financial outcomes. It is recommended that regulatory bodies develop guidelines on board composition and that managers evaluate board oversight levels to allow for financial flexibility while preventing excessive risk-taking.

Keywords: Corporate governance, long-term debt, financial performance, board independence, capital structure, NSE

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Introduction

Financial performance remains the ultimate benchmark of corporate success, reflecting a firm's ability to generate value, sustain growth, and deliver returns to shareholders. In today's competitive and capital-intensive business environment, the pursuit of superior financial performance is intricately linked to strategic financing decisions and governance structures (Tudose et al., 2022). Among these, long-term debt financing and board independence stand out as critical levers that can either propel or impair a firm's financial trajectory. In the evolving landscape of corporate finance, the strategic interplay between capital structure and governance mechanisms has emerged as a critical determinant of firm performance. Among the myriad components of capital structure, long-term debt financing occupies a pivotal role, offering firms the leverage to pursue growth, innovation, and market expansion. However, the efficacy of such financial strategies is not solely contingent on economic conditions or managerial acumen, it is profoundly shaped by the governance architecture within which these decisions are made (Alkurdi et al., 2021).

The capital structure of a firm, defined by the mix of debt and equity financing used to fund its operations and growth, remains a central and enduring topic in corporate finance (Ai et al., 2020). Despite decades of research and scholarly discourse, the quest for an optimal capital structure that consistently maximizes

shareholder wealth and minimizes the cost of capital continues to present a significant challenge for modern corporations. The growing reliance on debt financing globally, exacerbated by post-Global Financial Crisis (GFC) and COVID-19 macroeconomic conditions, has brought the debt-performance nexus to the forefront of international policy discussions (DaSouza et al., 2023). While traditional theory posits that a strategic use of debt can enhance financial performance through tax shields and an increased return on equity, the empirical evidence on this relationship is far from conclusive.

Debt financing allows firms to leverage capital for growth and manage risks associated with equity dilution. The Trade-off Theory of capital structure suggests that firms aim for an optimal balance between the benefits of debt, such as tax shields, and its potential costs, like financial distress and bankruptcy (Van Beek, 2022). In contrast, the Pecking Order Theory proposes that firms prioritize internal funds, followed by debt, and finally, external equity, to avoid information asymmetry with investors. Despite these theories, there is no consensus on the relationship between debt financing and firm performance, with empirical studies reporting conflicting results. For instance, studies on developed economies often find a positive effect, while those on emerging economies tend to find a negative one (Frank et al., 2020). Board independence, a cornerstone of

modern corporate governance, has garnered increasing attention for its potential to influence financial outcomes. Independent directors, by virtue of their detachment from executive management, are presumed to offer objective oversight, mitigate agency conflicts, and safeguard shareholder interests. Yet, the moderating role of board independence in the relationship between long-term debt financing and financial performance remains underexplored, particularly within emerging markets where governance structures and financial systems are still maturing (Khan et al., 2021).

A clear dichotomy in research findings exists across different economic contexts. Studies conducted in developed nations, such as the United States and France, have often reported a positive effect of debt financing on firm performance. For instance, Berger and Udell (2006) and Margaritis and Psillaki (2010) found that leveraging debt judiciously can improve financial outcomes. In stark contrast, research from emerging economies, including Malaysia, China, and Jordan, has frequently found a negative correlation, indicating that debt financing may be detrimental to firm performance in these markets. This divergence in findings underscores that the relationship is not universal and is heavily influenced by situational and contextual factors, such as the maturity of financial markets, regulatory frameworks, and corporate governance practices. The effectiveness of debt as a strategic tool is thus profoundly shaped by the environment in which firms operate.

The financial environment in Kenya, where the debt market isn't fully developed yet listed companies are increasingly relying on borrowing, offers a fascinating setting to study these specific financial relationships. Data from the

Nairobi Securities Exchange (NSE) indicates that listed firms have an average debt-to-equity ratio of 28%, a trend that has coincided with several high-profile cases of financial distress, corporate failures, and even delisting from the exchange. Firms like Kenya Airways and Mumias Sugar have faced significant challenges due to excessive debt and mismanagement, highlighting the potential for debt to become a source of financial fragility rather than strength. Existing research on this topic in Kenya has yielded conflicting results, with some studies reporting a negative correlation between debt financing and performance, while others find a positive relationship. This inconsistency necessitates a deeper investigation into the specific factors that might moderate this relationship. Drawing on agency theory, which emphasizes the monitoring role of the board of directors, and resource dependency theory, which posits that boards can provide crucial external resources, it is plausible that board independence acts as a key moderating variable. While the importance of board independence in governance has been widely debated, its specific role in shaping the debt-financing-performance nexus remains a significant research void, particularly in the Kenyan context. This study is thus designed to provide a comprehensive analysis of how a critical governance mechanism; board independence; influences the effectiveness of long-term debt financing.

The primary objective of this study is to establish the moderating effect of board independence on the relationship between long-term debt financing and the financial performance of listed firms in Kenya. This research addresses the identified gaps by providing empirical evidence from a developing

economy, focusing on a specific moderating variable, and employing a robust methodological approach. The findings are expected to contribute to the academic discourse on capital structure theory while offering practical insights for corporate managers, regulators, and investors. The findings offer nuanced insights into the governance-finance interface, revealing that board independence significantly moderates the debt-performance relationship. These results carry profound implications for corporate managers, investors, and policymakers, underscoring the need for balanced board composition and prudent debt strategies in enhancing firm value. By situating the analysis within the Kenyan context, the study contributes to the broader discourse on corporate governance in emerging markets, offering a framework for optimizing capital structure decisions through effective board oversight.

Theoretical Review Literature Review and Hypotheses Development

Theoretical Review

The study is guided by three prominent theories of corporate finance and organization: the Trade-off Theory, the Pecking Order Theory, and the Resource Dependency Theory.

Trade-off Theory

First introduced by Kraus and Litzenberger (1973), the Trade-off Theory (TOT) posits that firms seek an optimal capital structure by balancing the benefits and costs of debt and equity financing. The primary benefit of debt is the tax shield, as interest payments are tax-deductible, thereby reducing a firm's taxable income and lowering its overall

cost of capital. However, as debt levels increase, so do the costs of financial distress, including bankruptcy costs and agency costs stemming from conflicts of interest between shareholders and debtholders. According to the TOT, a firm's value is maximized at the point where the marginal benefit of an additional unit of debt equals its marginal cost. This theory provides a crucial framework for understanding the ambivalent nature of debt financing, explaining why it can be both a tool for value creation and a source of financial ruin. In this context, board independence can play a vital role. Independent directors, who are not part of management, are well-positioned to provide objective oversight and strategic guidance. Their independent judgment can help firms prudently weigh these trade-offs, preventing excessive leverage that could lead to financial distress while ensuring the firm capitalizes on the benefits of debt.

Pecking Order Theory

The Pecking Order Theory (POT), proposed by Myers and Majluf (1984), offers an alternative perspective to the TOT. It suggests that firms do not seek an optimal capital structure but rather follow a hierarchical preference for financing sources based on information asymmetry. The hierarchy begins with the least risky source—retained earnings—followed by debt, and finally, equity as a last resort. The core premise is that managers, who possess superior knowledge of their firm's prospects, will prefer internal financing to avoid sending negative signals to external investors. When internal funds are insufficient, firms turn to debt because it is perceived as less susceptible to information asymmetry than a new equity issuance. In this framework, firms that are internally financed are seen as more

financially sustainable than those that are highly leveraged. The role of board independence is particularly relevant here. A high proportion of independent directors can enhance a firm's transparency and reduce the information gap between management and external investors. By improving the quality of corporate governance, independent boards may influence a firm's position within the financing hierarchy, potentially making external financing including long-term debt more accessible and less costly.

Resource Dependency Theory

Developed by Pfeffer and Salancik (1978), the Resource Dependency Theory (RDT) cited in Hillman et al. (2009) posits that an organization's behavior is shaped by its dependence on critical resources controlled by external entities. To mitigate this dependency and reduce uncertainty, organizations must manage their external relationships. In the context of corporate governance, independent directors serve as a critical bridge to the external environment. They bring valuable expertise, external networks, and crucial resources, such as access to capital and market intelligence, that are not available within the firm's internal hierarchy. This perspective provides a powerful theoretical explanation for why board independence can influence a firm's debt financing decisions. A board with a strong complement of independent directors is better equipped to negotiate favorable financing terms and secure stable, long-term debt, which can improve financial performance. The theory suggests that the independence of the board can, therefore, be viewed as a mechanism for a firm to manage its resource dependencies, particularly in relation to capital sourcing, and align its financing strategies with its performance goals.

Long-Term Debt and Financial Performance

The relationship between long-term debt and financial performance is a subject of intense empirical debate, with prior studies yielding inconsistent results. Some research has identified a positive association, suggesting that firms can strategically leverage debt to enhance their performance. For instance, studies using data from developed countries, such as that by Berger and Udell (2006) on American firms and Margaritis and Psillaki (2010) on French firms, found a positive effect of debt financing on firm performance. In the Nigerian context Mohammed et al. (2022) demonstrated that long-term debt positively influences firm value as measured by Tobin's Q. Similarly, Robert et al. (2020) conducted a study on firms listed at the Nairobi Securities Exchange and found a strong, positive effect of long-term debt on financial performance.

However, other studies report a negative or insignificant relationship. Research in emerging economies often aligns with this view. For example, Salim and Yadav (2012) using data from Malaysian firms, Le and O'Brien (2010) using data from Chinese firms, and El-Sayed Ebaid (2009) using data from Egypt, all reported a negative effect of debt on firm performance. Similarly, a study on Nigerian microfinance banks by Nelson and Peter (2019) found a positive but insignificant correlation between long-term debt and return on equity (ROE). These conflicting findings highlight the need for further research, particularly one that accounts for moderating factors that may influence the debt-performance nexus. Thus, we hypothesize that:

H₀₁: Long-term debt financing has no significant effect on the financial performance of listed firms in Kenya

Board Independence and Financial Performance; Moderating Effect of Board Independence

The role of board independence in corporate governance has been widely debated, with conflicting theoretical and empirical views on its direct effect on firm performance. Proponents, grounded in Agency Theory, argue that independent directors mitigate conflicts between management and shareholders by providing objective oversight and scrutinizing managerial performance, which ultimately improves financial outcomes. Empirical studies by Garcia-Ramos and Garcia-Olalla (2014) have reported a positive effect of board independence on performance.

However, other researchers have found a negative or insignificant impact. Some studies, such as those Pandey et al. (2025), suggest that excessive independence can lead to a lack of firm-specific knowledge, potentially hindering effective decision-making. These mixed findings set the stage for a deeper investigation into the indirect role of board independence.

This study posits that the primary role of board independence is not a direct one but a moderating one, influencing the nature and strength of the relationship between debt financing and financial performance. Drawing on Agency Theory, one can argue that the presence of independent directors ensures that managers use debt financing more prudently and effectively. This external oversight can act as a stabilizing force, mitigating the adverse impacts of high debt levels and reducing the risk of financial distress. The Resource Dependency Theory adds a further dimension, as independent directors' networks can help a firm secure advantageous debt condition, thereby enhancing the positive effects of leverage.

This framework suggests that board independence, by shaping the context in which financing decisions are made, plays a critical role in the effectiveness of a firm's capital structure strategy.

The conflicting literature on direct effects, coupled with the underdeveloped state of research on the moderating role of governance, provides a strong rationale for this study. It is necessary to understand which specific factors may influence the debt financing-performance relationship, and board independence, as a key governance mechanism, is a prime candidate for such an investigation. Thus, we postulate that:

H₀₂: Board independence does not moderate the relationship between long-term debt financing and financial performance of listed firms in Kenya

Methodology

Research design, Sample and Data

The study employed an explanatory research design with a longitudinal approach to establish a causal association between the variables. This design is particularly suitable for analyzing panel data, which consists of both time-series and cross-sectional dimensions. The target population for this study comprised all 67 firms listed on the Nairobi Securities Exchange (NSE) as of the end of 2023. The unit of analysis consisted of firms that had been consistently in operation for at least five years, from 2019 to 2023, and had provided complete and audited financial reports for this period. This approach yielded a total of 195 firm-year observations, which is considered a sufficient sample size for robust econometric analysis. The chosen time frame is significant as it captures a period of notable macroeconomic events in

Kenya, including changes in interest rates, inflation, and market volatility that could impact firms' debt financing decisions and financial performance.

The study relied exclusively on secondary data. Information was collected from the audited annual reports and financial statements of the listed firms, which were sourced from the Capital Market Authority (CMA) and company websites. The use of audited financial data ensures a high degree of credibility and objectivity, as the information has been verified by seasoned auditors, making it a reliable basis for the analysis.

Measurement of Variables

The study's variables were classified into independent, moderating, control, and dependent categories, each measured as follows:

Dependent Variable: The dependent variable in this study is financial performance. Financial Performance (FP) was measured using Return on Equity (ROE). ROE is a widely accepted measure that assesses a firm's overall effectiveness in generating profits from its shareholders' equity. The formula is:

$$\text{Return on Equity (ROE)} = \frac{\text{Net Income}}{\text{Shareholders Equity}} \times 100 \dots \dots \dots \text{Eq 1}$$

Independent Variables: Debt financing was disaggregated into Long-Term Debt (LTD). This was measured using the solvency ratio, a financial metric that

assesses a firm's ability to meet its long-term financial obligations. The formula is: Long-

$$\frac{\text{Long - Term Debt}}{\frac{\text{Net Income} + \text{Depreciation}}{\text{Total Liabilities}}} \times 100 \dots \dots \dots \text{Eq 2}$$

Moderating Variable: Board Independence (BI) was defined as the proportion of independent non-executive directors on the corporate board. It was measured as the ratio of independent directors to the total number of board members.

$$\text{Board Independence} = \frac{\text{Independent Board of Directors}}{\text{Total Members of the Board}} \dots \dots \dots \text{Eq 3}$$

Control Variables: The study controlled for two firm-specific characteristics that could influence financial performance: **Firm Age (FA):** This was measured by calculating the number of years that had elapsed since the firm was incorporated. **Firm Size (FS):** This was measured using the natural logarithm of a firm's total assets, which is a standard approach in corporate finance literature.

Model Specification

A hierarchical multiple regression model, consistent with the methodology proposed by Baron and Kenny (1986), was used to test the hypotheses. The analysis was conducted in a series of steps to determine the effects of the control, independent, and moderating variables. The models were specified as follows:

Model 1. Testing the effect of control variables on the financial performance.

$$FP = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \varepsilon_{it}$$

Model 2. Testing the effect of independent variable (Short-Term Debt) on financial performance.

$$FP = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 LTD_{it} + \varepsilon_{it}$$

Model 3. Testing the moderating effect of board independence on financial performance.

$$FP = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 LTD_{it} + \beta_5 BI_{it} + \varepsilon_{it}$$

Model 4. Introducing the first interaction term between long term debt and board independence.

$$FP = \beta_0 + \beta_1FA_{it} + \beta_2FS_{it} + \beta_3LTD_{it} + \beta_5BI_{it} + \beta_6LTD * BI + \varepsilon_{it}$$

Where;

FP = Financial Performance

FA = Firm age- Control Variable

FS = Firm Size- Control Variable

LTD = Long Term Debt

STD = Short Term Debt

BI = Board Independence (Moderator)

β1... β6 = Coefficients of the equations

t = Time

i = Firm

ε = error term

Results

Descriptive statistics

This section presents the descriptive statistics for all variables included in the analysis. The study yielded a total of 195 firm-year observations from 39 listed companies on the NSE over the five-year period from 2019 to 2023. As presented in Table 1, the mean financial

performance (FP), measured by return on assets (ROA), was 0.192 with a standard deviation of 0.08, indicating moderate variation among the firms' performance. The average long-term debt (LTD) was 0.217 (std. dev. 0.089), Board independence (BI) had a mean of 0.15196, showing a notable presence of independent directors across the sample. The descriptive statistics confirm that the dataset is well-distributed and suitable for regression analysis.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Financial Performance	195	0.192	0.08	0.005	0.412
Firm Age	195	0.237	0.095	0.022	0.499
Firm Size	195	14.672	2.089	10.248	18.52
Long Term Debt	195	0.217	0.089	0.012	0.433
Board Independence	195	0.15196	0.0665	0.0042	0.3127

Correlation Analysis

A pairwise correlation analysis was conducted to assess the nature and magnitude of the relationships between the study variables. The results, as shown in Table 2, indicate that financial performance is positively and statistically significantly correlated with the independent and control variables. Specifically, financial performance has a

positive correlation with firm age (r=0.503, p<0.05), firm size (r=0.653, p<0.05), long-term debt (r=0.505, p<0.05) and board independence (r=0.342, p<0.05). These findings provide an initial indication that as these variables increase, financial performance tends to improve. However, a correlation analysis does not establish causation; therefore, a more robust regression analysis is required to

determine the direct and moderating effects.

Table 2: Results of Pairwise Correlation Analysis

Variables	FP	FA	FS	LTD	BI
(1) Financial Performance	1				
(2) Firm Age	0.503*	1			
(3) Firm Size	0.653*	0.494*	1		
(4) Long Term Debt	0.505*	0.145*	0.528*	1	
(5) Board Independence	0.342*	0.141*	0.318*	0.248*	1

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Diagnostic Tests and Multiple Regression Analysis

Prior to the regression analysis, a series of diagnostic tests were performed to ensure the validity and reliability of the econometric models. The Unit Root Test, using the Harris-Tzavalis and Breitung methods, confirmed that all variables were stationary ($p < 0.05$), ruling out the risk of spurious regression. The Multicollinearity Test, measured by the Variance Inflation Factor (VIF), showed values ranging from 1.066 to 1.133, all well below the threshold of 10, confirming the absence of multicollinearity among

the independent variables. The Normality Test (Shapiro-Wilk) and the Heteroscedasticity Test (Breusch-Pagan) also confirmed that the residuals were normally distributed and had constant variance, respectively. Finally, the Autocorrelation Test (Wooldridge) and the Error Specification Test (Ramsey RESET) indicated that there was no first-order autocorrelation and no omitted variable bias in the model. These rigorous checks validate the appropriateness of the regression models and strengthen the credibility of the findings.

Table 3. Hausman Test Results

---- Coefficients ----				
	(b) _est_fe	(B) _est_re	(b-B) Difference	$\sqrt{\text{diag}(V_b - V_B)}$ S.E.
FA	.1021995	.1021995	0.000	0.000
FS	.0451433	.0451433	0.000	0.000
BI	.1244502	.1244502	0.000	0.000
LTD	.0373828	.0373828	0.000	0.000

b = consistent under H_0 and H_a ; obtained from xtreg

B = inconsistent under H_a , efficient under H_0 ; obtained from xtreg

Test: H_0 : difference in coefficients not systematic

$$\chi^2(0) = (b-B)'[(V_b - V_B)^{-1}](b-B)$$

$$= 0.00$$

$$\text{Prob} > \chi^2 = 0.001$$

The Hausman test was performed to determine the most suitable model for the panel data regression between the Fixed-Effects and Random-Effects models. The test, as shown in Table 3, yielded a chi-square value of 0.00 with a p-value of less than 0.05 ($p < 0.05$). This result led to the rejection of the null hypothesis, which assumes the Random-Effects model is more appropriate. The conclusion was to use the Fixed-Effects model for all subsequent analyses, as it accounts for unobservable, time-invariant individual characteristics that may be correlated with the independent variables.

The study employed a hierarchical multiple regression approach to test the research hypotheses. The results of this analysis are presented in the subsequent section

Test for Control Variables

Control variables are utilized to guarantee that the effects of independent variables on the dependent variable remain unconfounded by additional influential factors. This research controlled for both firm size and firm age.

Established older firms typically possess a loyal customer base, extensive industry experience, and optimized operational efficiency, all of which can contribute to improved financial performance. If left uncontrolled, firm age may skew the influence of independent variables by introducing an experience-related bias in financial performance results.

Large firms generally benefit from economies of scale, enhanced bargaining power, and increased access to capital, all of which can lead to improved financial performance. If firm size is not controlled for, fluctuations in financial performance may be incorrectly attributed to the independent variables instead of the benefits associated with size. Controlling for firm age and size allows the study to precisely isolate the effects of the independent variables on financial performance. These variables reduce the likelihood of spurious correlations, ensuring that results are not influenced by firm-specific characteristics. Control variables improve the accuracy and dependability of results by addressing systematic variations.

Table 5: Results for Test of Control Variables

Fixed-effects (within) regression			Number of obs	=	195	
Group variable: FIRM			Number of groups	=	39	
R-sq: within = 0.9897			Obs per group: min	=	5	
between = 0.8421			avg	=	5.0	
overall = 0.9140			max	=	5	
			F(2,154)	=	7419.60	
corr(u_i, Xb) = -0.3491			Prob > F	=	0.0000	
Financial Performance	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]
Firm Age	0.121	0.034	3.61	0.000	.055	0.187
Firm Size	0.062	0.001	67.99	0.000	.06	0.063
Constant	0.012	0.002	7.15	0.000	.008	0.015
Mean dependent var	0.192		SD dependent var		0.080	
R-squared	0.990		Number of obs		195	
F-test	7419.599		Prob > F		0.000	
Akaike crit. (AIC)	-1432.351		Bayesian crit. (BIC)		-1422.532	

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 5 shows the results of the control variables of this study. The results indicate that the overall first model, was significant (F-value = 0.9897; $p < 0.05$). The p-value was less than 0.05 indicating that the overall model was fit. It means that the probability of confidence that the association amongst the control variables of the study is not by chance. The value coefficient of determination R^2 is 0.9897. This implies that the control variables of the model explained 98.97% of the variation in the dependent variable. Firm age was found to be positive and statistically significant ($\beta = 0.121$, $p < 0.05$) implying that it had an effect on financial performance. Firm size had a positive and a positive and significant effect ($\beta = 0.062$, $p < 0.05$) on financial performance.

Test for Direct Effect

Investigating the direct effect involves analyzing how the independent variables (long term debt and short-term debt) effect the dependent variable

(financial performance). The regression results illustrating the direct effect for the fixed effect model are presented in Table 6 below.

Overall, the second model was significant (F-value = 3732.04; $p < 0.05$). The p-value was less than 0.05 indicating that the overall model was fit. It means that the probability of confidence that the association amongst the independent variables of the study is not by chance. The value coefficient of determination R^2 is 0.9899. This implies that the control variables of the model explained 98.99% of the variation in the dependent variable. Firm age was found to be positive and statistically significant ($\beta = 0.121$, $p < 0.05$) implying that it had an effect on financial performance. Firm size had a positive and a positive and significant effect ($\beta = 0.06$, $p < 0.05$) on financial performance. The independent variable specifically, long-term debt, had a positive and statistically significant effect ($\beta = 0.065$, $p < 0.05$).

Table 1: Test for Direct Effect

Fixed-effects (within) regression	Number of obs = 195
Group variable: FIRM	Number of groups = 39
R-sq: within = 0.9899	Obs per group: min = 5
between = 0.8486	avg = 5.0
overall = 0.9175	max = 5
	F(4,152) = 3732.04
corr(u_i, Xb) = -0.3474	Prob > F = 0.0000

Regression results

Financial Performance	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]
Firm Age	0.121	0.034	3.57	0.000	0.054	0.188
Firm Size	0.06	0.001	48.29	0.000	0.058	0.063
Long Term Debt	0.065	0.048	1.35	0.000	-0.03	0.16
Constant	0.012	0.002	7.34	0.000	0.009	0.016
Mean dependent var	0.192		SD dependent var		0.080	
R-squared	0.990		Number of obs		195	
F-test	3732.041		Prob > F		0.000	
Akaike crit. (AIC)	-1432.027		Bayesian crit. (BIC)		-1415.662	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Effect for Moderating Regression Model

Testing the moderation effect entails examining the influence of the moderator variable (board independence) on the relationship between the independent variable (debt financing) and the dependent variable (financial performance). A moderator is a variable, which can be either qualitative or quantitative, that affects the relationship between an independent or predictor variable and a dependent or criterion variable by modifying either its direction or strength (Baron & Kenny, 1986).

Memon et al. (2019) identified three categories of moderation. The first type involves enhancing interactions, wherein both predictor and moderator variables positively influence the outcome variable, and their combined effect exceeds the sum of their independent effects. The second type is buffering

interaction, in which the moderator variable diminishes the influence of the predictor variable on the outcome. The final category is antagonistic interactions, characterized by the predictor and moderator variables exerting similar effects on the outcome, yet the interaction occurs in an opposing direction. The research utilized a hierarchical regression model to investigate the moderation hypotheses. This was accomplished through the systematic introduction of interactions and subsequent analysis of the resulting output. In statistical modelling, a moderated effect is typically depicted as an interaction between predictors and the moderator variable (Ng & Chan, 2020).

Table 7 shows that the overall moderation regression of the full and final model was significant ($F= 2378.94$, $p<0.05$).

Table 7: Regression results of final model: interaction effect of board independence on long-term debt and financial performance

	Model 1	Model 2	Model 3	Model 4
(Constant)	0.011(0.000)**	0.012(0.000)	0.010(0.000)**	0.007(0.000)**
Control Variable				
FA	0.120(0.000)**	0.121(0.000)**	0.086(0.000)**	0.076(0.036)**
FS	0.061(0.000)**	0.060(0.000)**	0.054(0.000)**	0.053(0.000)**
Independent Variable				
LTD		0.064(0.000)**	0.027(0.000)**	0.123(0.000)**
Moderating Variable				
Board Independence			0.057(0.000)**	0.070(0.000)**
Interaction Effect				
LTD*BI				-0.170(0.000)**
Model Summary				
R Square	0.9897	0.9899	0.9909	0.9915
ΔR^2	-	0.0002	0.001	0.0004
F	7419.6	3732.04	3277.86	2378.94
Prob > chi2	0.000	0.000	0.000	0.000

The R square (0.9911) indicates that the final interaction model explains up to

99.11% of the variation in financial performance, up from the previous direct

effect model (0.9899), 98.99%, therefore confirming a R square change of ($\Delta R^2 = 0.0012$). This means that the variance accounted for with the interaction is significantly more than the variance accounted for without the interaction. On the control variables, firm age was positive and statistically significant ($\beta = 0.077$, $p < 0.05$) while firm size was also positive and statistically significant ($\beta = 0.053$, $p < 0.05$).

Hypothesis Testing

The study sought to establish the moderating effect of board independence on the relationship between long-term debt and financial performance. The study controlled for firm age and firm size. The first hypothesis **H₀₁**, stated that long-term debt financing has no significant effect on the financial performance of listed firms in Kenya. Findings in Table 4.13 indicated that long-term debt was positive and statistically significant ($\beta = 0.124$, $p < 0.05$). Hence, the hypothesis **H₀₁** was rejected, and the conclusion was made that long-term debt had a statistically significant effect on the financial performance of listed firms in Kenya. This finding lends support to extant empirical literature. For instance, in a study of manufacturing firms listed on the Nairobi Securities Exchange conducted by Mwititi and Gitagia (2023), long-term debt was found to have a statistically significant positive effect on financial performance. The authors concluded that firms with higher long-term liabilities relative to total assets showed increased return on assets, especially when current ratios were low. On the contrary, Nazir et al. (2021) Found a negative association between long-term debt and profitability, particularly in firms with high asset tangibility. They argued that excessive debt used to finance fixed assets may reduce shareholder returns due to interest burdens and asset rigidity.

The second hypothesis **H₀₂** stated that Board independence does not moderate the relationship between long-term debt financing and the financial performance of listed firms in Kenya. Findings in Table 4.13 indicated that the interaction effect between long-term debt and board independence on financial performance was negative and statistically significant ($\beta = -0.171$, $p < 0.05$). This implied that board independence moderated the relationship between long-term debt and the financial performance of listed firms. Hence, the hypothesis **H_{03a}** was rejected, and the conclusion was made that long-term debt had a statistically significant effect on the financial performance of listed firms in Kenya.

Discussion of Results

The empirical evidence offers a detailed understanding of how capital structure and corporate governance interact within the Kenyan market. The results for the direct effects clearly show that the impact of debt on financial performance isn't uniform; instead, it hinges on the debt's maturity. The finding that long-term debt has a positive and statistically significant effect implies that Kenyan listed firms successfully use this stable financing to fund strategic investments and major capital projects, boosting their performance. This outcome supports the Trade-off Theory, which posits that companies benefit from the tax shield and efficient resource allocation provided by long-term borrowing. This conclusion is also consistent with other studies focusing on Kenya, like the one by Robert et al. (2020), which similarly established a strong positive link between long-term debt and financial performance.

The most profound findings of this study relate to the moderating role of board independence. For both long-term

and short-term debt, the interaction effect with board independence on financial performance was negative and statistically significant. This finding reveals a more complex dynamic than a simple positive or negative relationship; it indicates a buffering moderation. While board independence on its own is often associated with improved financial outcomes due to enhanced oversight, its effect on the debt-performance nexus is to diminish the positive impact of debt.

The negative moderation of the long-term debt-performance relationship suggests that as board independence increases, the performance-enhancing effects of long-term debt are reduced. This can be interpreted through the lens of Agency Theory. Independent directors, driven by their fiduciary duty to mitigate risk, may impose stricter oversight, more restrictive covenants, and a more cautious approach to leverage. While this protects the firm from the high-risk, excessive borrowing that could lead to financial distress, it may also prevent the firm from fully capitalizing on the benefits of aggressive, high-upside, debt-funded growth strategies. The negative moderation is, therefore, a manifestation of the trade-off between the benefits of rigorous governance and the potential for financial flexibility. This finding is reinforced by studies such as that by Karim et al. (2023), which found a similar negative moderation of board independence on the relationship between governance mechanisms and firm performance in Malaysian firms.

Conclusion and Recommendations

This study provided analysis of how corporate governance and capital structure relate to financial performance for companies listed on the Nairobi

Securities Exchange. Employing a rigorous explanatory and longitudinal design, the research confirmed that long-term debt has a positive and significant effect on financial performance, while short-term debt has a negative effect that is not statistically significant. Crucially, the central finding is the moderating role of board independence, which exerts a negative and statistically significant influence on the relationship between both long-term and short-term debt and the firm's financial performance.

The study concludes that long-term debt is a significant positive driver of financial performance for Kenyan listed firms. However, this relationship between debt financing and performance is complex and non-linear, as it is significantly altered by the presence of a highly independent board of directors. Although board independence generally improves oversight, the evidence suggests it acts as a dampening or buffering force that reduces the performance-enhancing effects of debt, especially long-term debt. This implies a need for a delicate balance while independent boards are beneficial in mitigating the risks of excessive borrowing, their cautious stance may inadvertently prevent firms from fully leveraging the strategic benefits of debt financing.

The study's findings have several important implications for various stakeholders. Managers should strategically prioritize the use of long-term debt over short-term debt. The positive and significant effect of long-term debt indicates that it is a more effective tool for enhancing financial performance and supporting sustainable growth. In addition, Firms must evaluate their level of board oversight to ensure it allows for strategic financial flexibility while still preventing excessive risk-taking. Managers should engage with their

independent directors to strike a balance between rigorous governance and the ability to leverage capital for growth.

This research contributes to existing knowledge by providing empirical evidence of a buffering moderating effect in an emerging market context. It extends the foundational theories of capital structure and governance, demonstrating that the interplay between them is more complex than simple direct effects. The findings support the notion that firms must weigh the benefits of debt financing against the potential costs and that governance structures, as posited by Agency and Resource Dependency theories, fundamentally influence this dynamic.

Regulatory bodies, such as the Capital Market Authority (CMA), should consider these findings when establishing or updating corporate governance guidelines. While strong board independence is vital, policies should be designed to foster a governance environment that encourages responsible debt usage rather than a purely risk-averse one that might limit firm growth. Policymakers should develop frameworks that guide responsible debt usage, encouraging firms to prioritize long-term debt while mitigating excessive reliance on short-term borrowing.

Future research should expand the scope of this study to a longer time frame to capture full economic cycles and the effects of external shocks like the COVID-19 pandemic on the debt-performance relationship. A comparative analysis of the effects of debt financing and governance between listed and non-listed firms in Kenya would provide valuable insights into whether these dynamics are unique to publicly traded entities. Future studies could incorporate a broader range of variables to capture more of the governance and financial

dynamics influencing firm success. This could include metrics like board diversity, CEO duality, or institutional ownership.

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