Moderating Effect of Corporate Governance on the Relationship between Capital Structure and Corporate Financial Performance

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DOI: https://doi.org/10.47772/IJRISS.2026.101000721

Received: 08 November 2026; Accepted: 13 November 2026; Published: 17 November 2026

ABSTRACT

Corporate sector firms are generally recognized as the dominant business entities in the financial market and they can contribute much to the economic development of a country. The financial performance is a key for the success of the firms. However, it is determined by several factors. Capital Structure, the proportion between debt and equity capital used to finance the business, has been recognized as one of the such significant factors by many researchers in the past. However, the relationship between the two variables have been identified as a mix of positive and negative in different empirical settings, leaving it inconclusive. This problem is assumed to be caused by certain moderators. Corporate Governance, which is defined as the system by which companies are directed and controlled, is considered as one of the significant moderators on the impact of the capital structure on the financial performance.

This study identified a research problem as a contextual gap in explaining the moderating influence of Corporate Governance proxies on the impact of the capital structure on the financial performance in the corporate sector. Hence, this study examined the level and variations of the Corporate Governance, Capital Structure, Financial Performance using a sample of 110 public limited companies listed as at end of 2025 in the Colombo Stock Exchange in Sri Lanka as a cross sectional study design. The study further investigated the linear relationship between the capital structure and the financial performance, effect of capital structure on the financial performance, and the moderating effect of corporate governance proxies on the functional relationship between the capital structure and financial performance of those companies by controlling company's characteristics, especially firm size, applying the Pearson Correlation, Ordinary Least Square Hierarchical and Moderating Regression in the SPSS and PROCESS V4.2. The capital structure and the financial performance were measured by Total Debt/Equity and Return on Assets (ROA) respectively as a continuous interval measure by the researcher with the retrospective cross-sectional observations from the annual reports of the sampled companies for the period of 2024/2025.

From the data analysis, it was found that the listed companies in Sri Lanka are characterized with average of 0.29 proportion of Total Debt/Equity ratio with the standard deviation of 0.15. Similarly, the average of Return on Assets (ROA) was found at 2.2% with the standard deviation of 6.8%. The correlation between these variables was +0.766, which was strong and significant at 95% confidence level. Further, the simple and multiple regression analysis revealed the capital structure has a significant positive impact on the financial performance, substantiating the hypothesis formulated in this research with the reviews of theories and past empirical studies. It is argued that when the proportion of debt capital over equity capital increases, the financial leverage benefit is gained and as a result the profit after tax decreases resulting decline in ROA.

Hence, it is concluded that the capital structure is present with significant variations among the listed companies in the Sri Lankan context and they have significant positive relationship with the financial performance. The Corporate Governance was measured with two proxy variables, Board Size and Board Independence, both were treated as continuous variables. The board size was measured with number of directors in the board. Board Independence was measured with the number of non-executive members in the board. The results of moderating effect analysis showed that the positive impact of the capital structure on the financial performance when Board Size and Board Independence were at their mean values. The positive effect is significantly stronger when the

Board Size is above the average. Similarly, the positive effect is weaker when the board independence is higher than average. These findings are validating the hypotheses, and adding the new knowledge to the literature in explaining the impact of the capital structure on the financial performance under the different state of Corporate Governance.

It can be reasoned that the finding suggests that a larger board may provide additional expertise, experience and monitoring capacity, which could contribute to more effective financial and capital structure decisions. However, the direct effect of Board Size was not statistically significant, suggesting that its potential contribution to financial performance is more evident through its interaction with capital structure than through its direct relationship with financial performance. In contrast, Board Independence demonstrated a statistically significant negative moderating effect on the functional relationship between capital structure and financial performance. This indicates that higher levels of Board Independence weaken the positive relationship between capital structure and financial performance. Although Board Independence may strengthen corporate monitoring and accountability, its interaction with capital structure suggests that higher board independence does not necessarily reinforce the positive financial performance associated with capital structure decisions. The direct conditional relationship between Board Independence and financial performance was also negative and statistically significant.

Overall, the study highlights that Board Size and Board Independence do not necessarily perform identical roles in the functional relationship between capital structure and financial performance. While Board Size strengthens the positive relationship, Board Independence weakens it. These findings emphasize the importance of considering different corporate governance characteristics when examining the financial consequences of capital structure decisions. Therefore, the effectiveness of corporate governance mechanisms should not be assessed solely through their direct relationships with financial performance but also through their potential moderating roles in important corporate financial decisions.

However, large number of observations on these variables can improve the accuracy of the results, validity of conclusions and implication. This study has only applied the conceptual model that could investigate the moderating effect of Board Size and Independence on the nexus of Debt/Equity and ROA. If this model is modified to include more moderating proxies related to corporate governance, such as board diversity, and CEO duality, and the proxies related to financial performance such as ROE and Tobin's Q, the scope of the analysis of moderating effect of corporate governance on the link between capital structure and financial performance might be improved.

Key words: Capital Structure, Total Debt/Equity, Corporate Governance, Board Size, Board Independence, and Financial Performance.

INTRODUCTION

This study attempts to examine the moderating effect of the corporate governance on the link between capital structure (the capital leverage between debt capital and equity capital) on financial performance of public limited companies in the Sri Lankan context. Financial performance indicates the extent to which a firm can use its assets for its primary operating activities to generate revenues. This term is also used as a general measure of a firm's overall financial strength over a given period. In many profitable companies, the corporate governance is seen as the key tool to lead their success. An effective capital structure is also critical to organizational success. Reference [19] argued that an optimal capital structure is an important internal factor of an organization to determine its financial performance. But, the capital structure is determined by the decisions of the corporate governance.

The concept of capital structure is described as the mix of various forms of external funds, known as capital, used to finance a business. It consists of shareholders' equity, preference shares, long term and short term debts. This is detailed in a company's statement of financial position. The larger the debt component is in relation to the other sources of capital, the greater financial leverage the firm is said to have. Too much debt can increase the risk of the company and reduce its financial flexibility, which at some point creates concern among investors and results in a greater cost of capital. Board of directors of a company is responsible for establishing a capital

structure for the company that makes optimal use of financial leverage and holds the cost of capital as low as possible [19] [22]. A firm's capital structure is relevant to its value in the real world [19].

The use of debt (such as bonds or bank loans) in a company's capital structure is beneficial up to a certain point. When debt is a portion of a firm's capital structure, it permits the company to achieve greater earnings per share than would be possible by issuing equity. This is because the interest paid by the firm on the debt is tax-deductible. The reduction in taxes permits a greater portion of the company's operating income to be available to investors. The related increase in earnings per share is called financial leverage, which can be beneficial when the business is expanding and profitable, but it is detrimental when the business enters a contraction phase. The interest on the debt must be paid regardless of the level of the company's operating income, which may ultimately lead to bankruptcy. If the firm does not prosper and profits do not meet management's expectations, too much debt (i.e., too much leverage) increases the risk that the firm may not be able to pay its creditors. At some point this makes investors apprehensive and increases the firm's cost of borrowing or issuing new equity [19].

It is important that a company's management recognizes the risk inherent in taking on debt, and maintains an optimal capital structure with an appropriate balance between debt and equity [16]. An optimal capital structure is one that is consistent with minimizing the cost of debt and equity financing and maximizing the value of the firm. Internal policy decisions with respect to capital structure and debt ratios must be tempered by a recognition of how outsiders view the strength of the firm's financial position [35]. Key considerations include maintaining the firm's credit rating at a level where it can attract new external funds on reasonable terms, and maintaining a stable dividend policy and good earnings record [19].

Once management has decided how much debt should be used in the capital structure, decisions must be made as to the appropriate mix of short-term debt and long-term debt. Increasing the percentage of short-term debt can enhance a firm's financial flexibility, since the borrower's commitment to pay interest is for a shorter period of time. But short-term debt also exposes the firm to greater refinancing risk. Therefore, as the percentage of short-term debt in a firm's capital structure increases, equity holders will expect greater returns on equity to compensate for the increased risk [17].

Therefore, companies should use an appropriate mix of equity and debt that minimizes the cost of capital and maximizes the value of the firm, which is referred to as the optimal capital structure. Capital structure affects profitability mainly through costs and risk. When a company takes on more debt, it has to pay interest. If earnings from its assets are not sufficient to cover those costs, net profit declines and thereby return on assets reduces. But if debt helps earn more than its cost, it might boost the return on investment.

Capital structure significantly affects profitability by balancing the benefits realized through financial leverage against the risks caused by increased bankruptcy costs and higher interest burden. Using debt can boost shareholder returns and decrease the overall cost of capital if managed well, but too much debt raises financial risk, potentially harming profits and firm value. As the interest expense on debt is tax-deductible, it can yield "tax shield", which lowers the effective cost of borrowing, which increases a company's after-tax profit.

These theoretical phenomena need the validation in empirical settings. Hence, the impact of capital structure on the financial performance of firms have been studied empirically by many researches in many countries. Many empirical studies show a negative link between capital structure and performance (measured by ROE, ROA, or Tobin's Q) suggesting excessive leverage hurts profitability due to increased bankruptcy risk, agency costs, or inefficient resource use. The key researchers are: Reference [12], [51], [56], [13], [24]. The recent work in South Asia and Nigeria (2024-2025) also finds this inverse relationship in various emerging markets.

The negative impact of capital structure on firm performance revealed by the empirical researches conform the theoretical thoughts that the negative impact often stems from excessive debt raising costs such as bankruptcy; agency conflicts; high interest; and overwhelming tax benefits, leading to lower profitability. As explained by Pecking Order Theory firms use more debt when they are highly profitable, but too much causes managerial distraction, risk aversion, and agency costs due to managerial decisions selecting risky projects or excessive perks that hurt shareholder wealth. More debt makes higher mandatory interest payments, draining cash flow and reducing net income. High leverage increases the probability of default, leading to costly legal fees and asset

fire-sales, damaging firm value. Debt can shift risk towards debt holders, leading shareholders or managers to take on overly risky projects (Asset Substitution) or underinvest (Debt Overhang). Managers might use debt to fund empire-building (perquisites) or avoid tough decisions, creating agency costs that reduce performance.

The Agency Cost Theory explains how these conflicts, driven by capital structure, negatively impact performance. Issuing debt can signal financial distress when managers only borrow when internal funds are low, making investors wary. As explained by the Pecking Order Theory, while profitable firms prefer less debt, if they take on too much for growth, the associated risk outweighs benefits. As per the Trade-Off Theory, while debt offers tax shields, exceeding the optimal point where debt benefits equal costs leads to performance decline. Excessive leverage can distract management from core operations, reducing overall efficiency and profitability.

Empirical research on the impact of the capital structure on the financial performance has also yielded mixed and often contradictory results, with findings varying across different countries, industries, time periods, and performance measures used. However, several studies have found a positive relationship: Reference [1], [9], [14], [18], [25], [32], [34], [38] [43], [47], [48].

The positive impact of capital structure on firm performance revealed by the empirical researches conform the theoretical judgements that the positive impact primarily stems from the tax-deductibility of interest payments, the potential to amplify shareholder returns due to the leverage effect, and the mitigation of agency costs. As stated in the Trade-off theory, interest payments on debt are tax-deductible expenses for a company, which reduces its overall tax liability. This creates a "tax shield" that increases the company's after-tax earnings and cash flow, thereby enhancing profitability and firm value. The trade-off theory suggests that firms should use debt up to an optimal point where the benefits from this tax shield are balanced against the costs of potential financial distress or bankruptcy. Using debt financing (leverage) can magnify the returns to equity holders. When the return generated from using borrowed funds is higher than the interest cost of that debt, the excess return increases the earnings available to shareholders, leading to a higher Return on Equity (ROE) and earnings per share (EPS). This is an effective way to boost shareholder value when a company's operations are performing well.

As the Agency theory suggests when potential conflicts of interest between a company's managers and its shareholders are present, managers might use a firm's free cash flow for their own benefit, by investing in unprofitable projects or demanding high perks, rather than maximizing shareholder value. But, since the debt financing imposes a disciplinary mechanism on management, the obligation to make regular interest and principal payments forces managers to operate more efficiently, manage cash flows prudently, and avoid wasteful expenditures to meet these fixed commitments. By committing cash to debt servicing, less is available for managers to use at their discretion, which aligns their interests more closely with those of the shareholders. According to signaling theory, a company's decision to take on more debt can be interpreted by investors as a positive signal about its future prospects. Management is more likely to use debt when they are confident the company will generate sufficient future cash flows to cover the debt obligations. This positive signal can attract investors and lead to an increase in the firm's market value.

These theoretical thoughts and empirical researchers suggest an optimal capital structure for firms. An optimal capital structure is crucial because it finds the perfect mix of debt and equity to maximize firm value by minimizing the Weighted Average Cost of Capital (WACC), boosting profitability, enhancing financial flexibility for growth or crises, and reducing bankruptcy risk. This balance ensures low funding costs while avoiding excessive risk, keeping investors happy, and providing stability for long-term survival and expansion. In essence, an optimal capital structure is a dynamic strategy to finance growth efficiently, maintain stability, and maximize returns for shareholders by carefully balancing the cheaper, riskier debt with more expensive, safer equity. Theories suggest maximizing debt up to 100 percent in perfect markets, but, real-world factors like taxes, distress costs, and agency issues mean a hybrid approach is best, often around a 1:1 debt-to-equity ratio for medium-sized firms, but varies significantly by industry, risk, and growth stage.

However, the capital structure decision is made by the corporate governance mechanism. The primary decision-makers for a company's capital structure are the Finance Managers and the Board of Directors, working to find

the optimal mix of debt and equity to minimize the cost of capital (WACC) and maximize shareholder wealth, balancing risk tolerance with growth opportunities, and considering legal and industry factors.

Corporate governance (CG) guides capital structure by setting rules for management, balancing stakeholder interests (shareholders and creditors) to reduce agency conflicts (manager greed vs. owner goals), ensure transparency, and monitor financial policies, leading to optimal debt/equity mixes that enhance firm value, risk management, and long-term sustainability, often reducing excessive debt by promoting independent oversight.

High-quality CG positively influences capital structure by reducing agency costs, increasing transparency, and boosting investor confidence, allowing firms to access cheaper debt and potentially take on more leverage, while poor CG can discourage debt due to higher risks, leading to reliance on internal funds or equity. Strong CG mechanisms like independent boards, audit committees, and concentrated ownership enforce discipline, leading to optimal debt levels and better financing decisions that balance growth, stability, and costs for the firm.

This study finds a research problem that the past empirical researches have studied the impact of the capital structure on the financial performance of firms in different study settings using different methodologies and concluded with positive and negative relationship, leaving an inconclusive finding in common study setting, and highlighting the importance of optimal capital structure. This study raises a question about what could be the main factor that influences the decision on optimal capital structure that would determine the relationship with financial performance of firms. This study assumes that corporate governance mechanism, that determine the capital structure as optimal, could moderate the impact of the capital structure on the financial performance of companies in difference sizes across various industries.

The past empirical researches have studied such problem and concluded with significant moderating effect of CG. Numerous studies explored how CG moderate relationship between the capital structure and firm performance, finding varied results. Some researchers found good governance characterized with board independence, and ownership structure often improves performance, especially with higher debt, reducing agency costs, while some research shows CG attributes like board size or CEO duality have mixed or insignificant impacts, highlighting the need for contextual (country or market) and specific CG factor analysis, with examples including studies by Reference: [32], [30], [44], [54].

Some studies in the Sri Lankan context have also explored CG moderating the link between Capital Structure and Financial Performance, finding that governance aspects like board independence, ownership structure (insider or managerial), and board committees significantly influence how debt leverage affects profitability (ROA, ROE) or firm value (Tobin's Q), often strengthening positive links or mitigating negative impacts, especially in manufacturing firms, showing that better governance enhances performance from financial leverage. Key researchers and papers include those by Reference: [2], [57], [63].

However, an empirical gap is still observed in providing more contemporary evidence obtained from the corporate sector in Sri Lankan context.

In Sri Lanka, there are 289 companies listed on the Colombo Stock Exchange (CSE) representing 19 GICS industry groups as of March 31, 2026. The annual reports of these companies disclose information about the corporate governance, capital structure, and financial performance metrics. However, the analysis of the capital structure and its effects are not described in detail. The annual reports describe the role of the management boards of the company in formulating the overall business strategy in association with corporate management and determines corporate goals to achieve higher financial performance.

Problem Statement

The literature review revealed that a lack of recent empirical studies has been conducted in Sri Lankan context to evaluate the moderating effect of the Corporate Governance on the link between capital structure and financial performance among the listed companies across all the sectors. Some studies have been conducted only on specific industries such as manufacturing, banking, and finance [2], [57], [63]. The major limitation of these studies was the validity of the measurement of variables with the limited observations of date obtained from the

particular sector, even longitudinally. It is therefore important to investigate the moderating impact of the CG on the impact of the capital structure on the financial performance among the listed companies with the observations and measurement of variables in many sectors. In order to fill the theoretical and empirical validity gaps in previous research, this study attempted to study the problem with improved research designs.

Hence, from the introduction and background described above, the problem of the study has been defined as an interrogative statement that "To what extent of the Corporate Governance moderates the impact of the capital structure on the financial performance of listed companies across the various industries in the Sri Lankan context"?

Research Questions

Based on the research problem identified above, the following research questions have been raised for the study:

1. What is the optimal level of the Capital Structure (Total Debt/Equity); average Financial Performance (ROA); the forms of Corporate Governance (Board Size and Board Independence); and the variations in those variables prevailing among the corporate sector in Sri Lankan context?

2. What is the direction and degree of direct relationship between the Capital Structure (Total Debt/Equity), and the Financial Performance (ROA) prevalent among companies?

3. How do the variations in Capital Structure (Total Debt/Equity) influence the corporate Financial Performance (ROA) controlling for the firm size?

4. To what extent the two primary proxies of Corporate Governance (Board Size and Board Independence) independently and jointly moderate the impact of the Capital Structure (Debt/Equity) on the Corporate Financial Performance (ROA) controlling for firm size?

Objectives of the Study

Based on the research questions raised above, the following objectives were set for the study:

1. To identify the optimal level of the Capital Structure (Total Debt/Equity); average Financial Performance (ROA); the forms of Corporate Governance (Board Size and Board Independence); and the variations in those variables prevailing among the corporate sector in Sri Lankan context?

2. To find out the direction and degree of direct relationship between the Capital Structure (Total Debt/Equity), and the Corporate Financial Performance (ROA) in this context.

3. To find out the impact of the Capital Structure (Total Debt/Equity) on the Corporate Financial Performance (ROA) in the study setting controlling for the firm size.

4. To ascertain the extent to which the two primary proxies of Corporate Governance (Board Size and Board Independence) independently and jointly moderate the impact of the Capital Structure (Total Debt/Equity) on the Corporate Financial Performance (ROA).

LITERATURE REVIEW

The concept of Capital Structure is an important subject within the field of financial management. Capital structure refers to the specific combination of long-term funding sources that a company uses to finance its operations and growth. These are named debt and equity. Several scholars and financial experts have defined capital structure. Reference [66] describes capital structure as the combination of a company's long-term financial resources, including equity capital, retained earnings, and long-term debt. Reference [67] defines it as the mix of permanent long-term financing components, such as debt, preference shares, and equity shares, used by a firm. Reference [66] states that the capital structure of a company includes all long-term capital resources, such as loans, bonds, shares, and reserves. Reference [68] provides a simple definition of capital structure as the

composition of debt capital and equity capital. Reference [69] expand this, classifying capital structure into three parts: equity capital, preference capital, and long-term debt capital, highlighting the role of preference shares. Reference [70] distinguishes capital structure from financial structure, noting that capital structure focuses solely on the relationship between long-term debt and equity, while financial structure is a broader concept that includes short-term liabilities as well.

While many scholars provide a general definition of capital structure as the mix of debt and equity, the specification of total debt, including long term and short-term debts, is frequently an operational definition used in empirical studies rather than a specific theoretical definition attributed to one or a few key researchers. Reference [70] used the broad definition in his work on the trade-off theory. Reference [71] used the board concept on building his pecking order theory. They conferred the balance of using different forms of financing, which essentially includes various types of debt and equity. While their foundational theories focused more on long-term implications like tax shields and financial distress costs, subsequent empirical research building on their theories often adopts comprehensive measures of total debt. Reference [60] used long-term debt, short-term debt, and convertible debt in measuring capital structure. Reference [28] used the term of total debt in presenting his agency theory paper.

Rather than a single definition from one scholar, the inclusion of total debt (both short-term and long-term) and equity in the definition of capital structure is a widely adopted approach in contemporary financial research and practice to measure a firm's overall financial leverage. Academic literature and corporate finance resources generally define capital structure in this comprehensive way, considering all sources of internal and external funding.

These definitions highlight that capital structure is not merely about raising capital only either by equity or debt, but involves choosing the right mix of short term and long term debt and equity for stability, growth, and sustainability. The capital structure can be operationally defined and measured by the three proportions: Short Term Debt to Equity, Long Term Debt to Equity, and Total Debt to Equity. The use, relevance, and importance of these measures in researches are discussed below:

Short-Term Debt / Equity

In corporate finance and capital structure research, the short-term debt-to-equity ratio measures the proportion of a firm's immediate financial obligations (due within one year) relative to its shareholders' equity. While total or long-term debt-to-equity ratios show aggregate leverage, they can mask when cash outflows are actually due. Researchers use the short-term component to evaluate immediate liquidity pressure and working capital strain. Short-term borrowings (such as commercial paper, short-term bank loans, or the current portion of long-term debt) require prompt cash settlement or regular rollover. Studies use this metric to test how sensitive a firm is to sudden credit tightening or cash flow shortfalls.

Rather than treating debt as a monolithic block, empirical studies separate short-term and long-term debt from total debt to see which type drives agency costs, bankruptcy risk, or impacts operational performance. High short-term debt-to-equity ratios expose a company to severe rollover risk. If credit markets freeze or interest rates spike, the firm may struggle to renew short-term lines, potentially triggering distress even if long-term solvency looks acceptable. Short-term debt often carries lower nominal interest rates than long-term debt. Research frequently explores why firms trade off this cheaper short-term financing against the heightened risk of forced liquidation or costly renegotiations. Reference [72] investigates the relationship between short-term leverage and profitability metrics like Return on Assets (ROA) or Return on Equity (ROE), often finding that excessive short-term reliance exerts a negative pressure on operational performance due to constant cash-servicing demands. Short-term debt acts as a "monitoring device." Frequent maturity dates force managers to repeatedly justify the firm's health to banks and short-term lenders, reducing agency problems between shareholders and creditors, though it increases the general burden on management.

Long-Term Debt / Equity

Scholars often define capital structure focusing on long-term debt and equity because it reflects the permanent financing mix affecting risk, cost, and control, while the Total Debt/Equity (D/E) ratio is a broader leverage measure used for solvency or risk assessment and empirically testing theories, but long-term choices drive fundamental value decisions, explaining the academic emphasis on the core, long-term components. The choice between long-term debt and equity is a core strategic decision, influencing Weighted Average Cost of Capital and firm value. Long-term debt has fixed interest payments exposing financial risk and no voting rights to have control, while equity dilutes ownership. This trade-off is central to capital structure theories like Modigliani-Miller and Pecking Order. Scholars focus on the mix of permanent capital that funds ongoing operations, rather than temporary working capital.

From the theoretical point of view, long-term debt/equity is the relevant indicator of capital structure for emphasizing theoretical value, while practitioners and researchers often use total debt/equity for risk assessment and empirical testing, but both relate to the fundamental debt-equity balance.

In essence, while the measurement is a simplification of the theory, it is a valid and practical approach within the constraints of empirical financial research. When a long-term debt becomes repayable in installments, generally only the portion due within the next year (or operating cycle, if longer) is reclassified as a current liability on the statement of financial position. The remaining portion, due in periods beyond the next year, remains classified as a long-term debt. This accounting treatment is given as per the accounting standards. This classification provides financial statement users with accurate information about the entity's liquidity and the timing of its cash outflows for debt repayment.

In capital-structure theory, permanent debt capital refers to debt that has no fixed repayment of principal in the near future, remains in the business for a long or indefinite period, requires mainly interest payments, not regular principal reductions. Examples include Irredeemable debentures, Perpetual bonds, and Long-term loans with a lump repayment far in the future. Such debt behaves almost like equity in terms of stability of funds.

When long-term debt is repaid in installments, the principal reduces every year, part of the debt becomes current liability within each accounting period, and the funds are not permanently retained in the business. Therefore, it fails the “permanency” criterion. At the beginning, the loan is classified as long-term debt, over time, the portion repayable within 12 months is treated as Current liability; and only the remaining balance continues as long-term debt. In capital structure analysis, such debt is classified as Redeemable or Term debt, not permanent debt capital.

Most scholars agree debt that requires periodic repayment of principal cannot be regarded as permanent capital because it does not remain continuously employed in the business. It is part of long-term financing, but not part of permanent capital in the strict theoretical sense. A long-term debt repayable in periodic or annual installments should not be fully recognized as permanent debt capital. Although it is a long-term source of finance, the obligation to repay principal periodically reduces the permanency of funds. Therefore, only irredeemable or very long-term non-amortizing debt qualifies as permanent debt capital under capital structure definitions.

Scholars define capital structure the proportion between permanent long-term debt and equity. This definition emphasizes structure, not a single-period number. In practice, capital structure does vary over periods because firms issue or redeem long-term debt, and equity changes due to retained earnings and new share issues. Installment repayments gradually reduce long-term debt, reclassifying between long-term and current portions. Therefore, capital structure is a *time-varying variable*, even if it is conceptually long-term.

Modern finance literature refers to this as dynamic capital structure. The optimal capital structure decision is a long-term strategic decision rather than a short-term annual one. Permanent debt, especially irredeemable or non-amortizing long-term debt, remains in the firm over extended periods and does not require frequent restructuring. Therefore, year-to-year changes in capital structure ratios do not imply new optimal capital structure decisions but represent gradual adjustments around a long-run target. Firms have a target (optimal)

capital structure, and they adjust toward it gradually over time, not every year. This is known as Dynamic trade-off theory or Partial adjustment model.

Total Debt / Equity

While capital structure is fundamentally about mix of debt and equity, the Total Debt/Equity (D/E) ratio is used because it provides a holistic view of a company's financial leverage, including both short-term debt for working capital needs and long-term obligations for growth and investment against shareholder funds, revealing overall risk and financing strategy better than just long-term debt alone. Including short-term debt shows a company's immediate liquidity reliance, offering a more complete picture of financial health than focusing only on long-term obligations.

In practice, researchers often use various proxies and ratios to measure capital structure due to data availability and the need for quantifiable metrics in empirical studies. The measurements often differ from the pure theoretical definition in several key ways. The theoretical definition focuses on permanent, long-term financing. However, many empirical studies use total debt (including short-term liabilities) in their measures (e.g., total debt to total assets or debt-to-equity ratio) because short-term debt can also be a significant and persistent source of funding for a firm.

Financial Performance

Financial performance is a subjective measure of how well a firm can use assets from its principal operations to generate revenues. The company’s financial performance can be viewed from the financial statements reported by the company [20]. The company’s success is basically explained by its performance over a certain period of time. The financial performance of a firm indicates the extent to which its financial goals have been achieved [10]. Financial performance principally reflects business sector outcomes and results that show the overall financial strength of the sector over a definite period of time [13]. It indicates how well an entity is utilizing its resources to maximize the owner’s wealth and profitability. Financial performance also shows the strength of the financial position of an organization.

In academic and empirical research, financial performance is commonly measured by categorizing metrics into accounting-based indicators, market-based indicators, and hybrid/economic models.

Accounting measures rely on historical data derived from a firm's core financial statements (Statement of Profit or Loss and Other Comprehensive Income, Statement of Financial Position, and Cash Flow Statement). They reflect past operational efficiency and internal resource management. Market-based indicators rely on stock market and valuation data. In research literature, they are frequently used as a proxy for investor perception, risk, and future growth potential.

Return on Assets (ROA) and Return on Equity (ROE) are core profitability and efficiency metrics used in empirical and corporate finance research to evaluate how effectively a firm utilizes its resources to generate the net income. ROA measures operational efficiency by showing how much profit a company generates from its total asset base, regardless of how those assets are financed. ROE measures profitability relative to the capital provided by equity shareholders, reflecting the return on net assets owned by investors. In quantitative finance and accounting research ROA and ROE frequently serve as proxies for firm performance, profitability, or managerial competence.

The Impact of the capital structure on the financial performance

The capital structure of a firm is a long-term strategic decision being made by top management and in general perception, it can affect the financial performance of the firm. However, in theoretical and empirical views, the relationship is not clearly concluded. The main theories and models that explain the impact of capital structure on financial performance are the trade-off theory, the pecking order theory, the agency theory, and the signaling theory. The trade-off theory and agency theory proposed a positive link. The empirical evidence and findings from previous studies support or challenge these theories and models. Each of these theories and models has its

own assumptions, predictions, and implications, and none of them can fully capture the reality and complexity of the capital structure and financial performance relationship. However, they can provide useful insights and frameworks for understanding and analyzing the effects of different financing decisions on the profitability and efficiency of the firm.

The trade-off theory implies that capital structure affects financial performance through the net effect of the tax shield and the financial distress. The pecking order theory implies that capital structure reflects the financial performance and the financing needs of the firm, rather than affecting it. The agency theory implies that capital structure affects financial performance through the agency costs of debt and equity. Debt can reduce agency costs by forcing managers to be more disciplined, improving performance. The signaling theory implies that capital structure affects financial performance through the market reaction and the valuation of the firm. Reference [73] showed debt interest deductibility lowers taxes, increasing firm value and performance. Firms balance debt's tax benefits against bankruptcy costs; achieving this balance (optimal structure) enhances performance.

Capital structure affects the profitability and efficiency of a business in several ways. First, capital structure affects the net income and earnings per share (EPS) of the business, as the interest expense reduces the taxable income and the number of shares outstanding affects the eps. Second, capital structure affects the return on equity (ROE) and return on assets (ROA) of the business, as the leverage magnifies the returns for the shareholders and the assets.

Third, capital structure affects the operating margin and asset turnover of the business, as the interest coverage ratio and the debt-to-asset ratio measure the ability of the business to generate enough operating income to cover its interest payments and to use its assets efficiently. Fourth, capital structure affects the liquidity and solvency of the business, as the current ratio and the debt-to-equity ratio measure the ability of the business to meet its short-term and long-term obligations. Therefore, a business has to monitor the impact of capital structure on its profitability and efficiency, and adjust its capital structure accordingly.

Many empirical studies find a positive link between capital structure and firm performance, often citing debt's tax shield benefits, agency cost reduction (disciplining managers), and its role in achieving an optimal balance [9], [13], [15], [21], [4], [7], [28], [36].

A significant body of empirical research across various countries and time periods has found a negative relationship between capital structure and firm financial performance. [3], [10], [11], [12], [13], [23], [24], [39], [33], [42], [45], [51], [53], [56], [58], [60], [61], [62]. These studies suggest that while debt can offer tax shield benefits, excessive leverage can increase financial distress costs, agency conflicts, and overall risk, ultimately eroding profitability.

While much research shows mixed results, studies finding no significant link between capital structure and financial performance (or a very weak one) often point to factors like industry differences, country contexts, or specific firm characteristics, showing inconsistency with traditional theories, suggesting performance drivers might lie elsewhere. [1], [20], [74], [75], [76]. These studies suggest country-specific factors (laws, tax systems, market maturity) heavily influence outcomes, so findings in one country don't always apply elsewhere. The banking sector might behave differently from manufacturing or consumer goods sectors, with performance drivers varying [9]. Internal factors, management quality, and even lagged performance can mask or outweigh capital structure effects. Differences in data and estimation methods can lead to varied results. The academic literature is heavily mixed, with many studies showing no clear-cut positive or negative link, highlighting the complexity and context-dependency of capital structure's impact on financial performance, challenging simple applications of trade-off or pecking order theories.

The Moderating effect of Corporate Governance on Impact of the capital structure on the financial performance

Corporate governance is the system of rules, practices, and processes that directs and controls a company, balancing the interests of its many stakeholders such as shareholders, management, customers, government, and

community by ensuring transparency, accountability, fairness, and responsibility, ultimately aiming for long-term success and value creation. It defines how power is exercised, decisions are made, and management is held responsible through structures like the board of directors, setting the ethical tone and strategic direction. Corporate governance provides the framework for running a company ethically and effectively, ensuring it serves its purpose within its broader societal and legal context.

Corporate governance has been studied extensively by many researchers in business field. In corporate governance researches, various characteristics of a company's board, ownership, and structure are used as proxy variables to measure the quality and effectiveness of its governance mechanisms. Board Characteristics such as board size, board independence, CEO duality, Board meeting frequency/diligence, Audit committee independence/size, and board diversity are frequently used by researchers as the proxy variables representing corporate governance.

Board size refers to the total number of directors on the board. Generally, a sufficient size is needed for diverse expertise, but boards that are too large may be less efficient. Board independence is typically measured as the proportion or percentage of independent non-executive directors on the board. A higher proportion is often considered to enhance monitoring quality and reduce conflicts of interest.

CEO duality is considered as a dummy variable, given 1 if the CEO is also the board chairperson, 0 otherwise, used to assess the concentration of power in a single individual. Board meeting frequency or diligence means the number of board and/or audit committee meetings held per year, which can be a proxy for the directors' time and effort spent on monitoring management. Audit committee independence or size is similar to overall board independence, focusing specifically on the composition and size of the audit committee. Board diversity indicates the presence of members from diverse backgrounds, such as gender, age, or professional expertise, often measured using dummy variables or ratios.

Empirical research consistently shows corporate governance moderates the capital structure and financial performance link, with strong governance having board independence, gender diversity, and institutional ownership generally improving performance by mitigating agency costs, while weaker governance exacerbates conflicts, often leading to less optimal debt use and lower returns, though findings vary by country and specific CG variables, with recent studies highlighting these nuances in emerging markets exploring diverse CG aspects like board composition and their moderating roles [49], [50], [31], [14].

Much research uses agency theory [27] to argue that governance mechanisms align interests of managers with shareholders, influencing debt choices and performance. Independent directors and female directors often correlate positively with better financial performance (ROA) and encourage higher leverage, signaling confidence and better monitoring. Higher institutional ownership is linked to better firm value and can positively influence capital structure decisions.

Recent studies in Emerging Markets in Asia and Africa increasingly examine these relationships, finding varied results but emphasizing the significant impact of strong governance on CS-FP dynamics, particularly in less regulated environments. [49], [50], [31], [14], [8], [87], [78].

Although optimal capital structure is a long-term strategic decision and does not change mechanically every financial year, observed variations are not random but reflect gradual adjustments toward a target structure. Corporate governance does not necessitate annual restructuring of capital structure; however, it influences financing behavior, agency costs, and managerial discipline. Therefore, corporate governance can theoretically moderate the relationship between capital structure and firm performance, and such a hypothesis is consistent with modern financial theories.

Corporate governance can influence refinancing decisions, creditworthiness default risk, and future borrowing costs. Corporate governance can determine effectiveness of cost of debt over time. Corporate governance is also responsible for investment quality, asset utilization, risk management, agency costs, free cash flow misuse. All of these directly affect the Operating profit and Asset productivity. Hence, corporate governance quality determines whether debt disciplines managers or creates distress and whether retained earnings are productively

reinvested or wasted in unproductive assets. Hence, the relationship between capital structure changes and financial performance changes is dependent on the changes in the corporate governance quality.

Although the cost of permanent long-term debt is contractually fixed in the short run, corporate governance does not primarily operate through adjusting the cost of debt. Instead, governance affects managerial discipline, operational efficiency, and the quality of investment decisions. Consequently, corporate governance moderates the relationship between capital structure changes, which are largely driven by variations in equity rather than permanent debt, and firm performance as measured by ROA. Longitudinal variations in ROA arise from changes in profit generation and asset utilization, which are themselves influenced by governance quality. Therefore, the moderating role of corporate governance in the capital structure-performance relationship is theoretically valid under modern finance and agency theories.

Theories relevant to Capital Structure and Financial Performance

This study reviews various fundamental theories linking capital structure with corporate financial performance. These theories are trade-off theory, pecking order theory, agency theory, and signaling theory.

A. Trade-off Theory

The trade-off theory suggests that there is an optimal capital structure that balances the benefits and costs of debt and equity. The main benefit of debt is the tax shield, which reduces the taxable income and increases the after-tax cash flow of the firm. The main cost of debt is the financial distress, which increases the probability of bankruptcy and reduces the value of the firm.

The trade-off theory of capital structure is the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. The classical version of the hypothesis goes back to Kraus and Litzenberger [79] who considered a balance between the dead-weight costs of bankruptcy and the tax saving benefits of debt. Often agency costs are also included in the balance. An important purpose of the theory is to explain the fact that companies usually are financed partly with debt and partly with equity. It states that there is an advantage to financing with debt, the tax benefits of debt and there is a cost of financing with debt, the costs of financial distress including bankruptcy costs of debt and non-bankruptcy costs (e.g. staff leaving, suppliers demanding disadvantageous payment terms, bondholder/stockholder infighting, etc.). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing.

The modern trade-off theory is a foundational concept in corporate finance that posits firms strategically balance the benefits of debt financing (primarily interest tax shields) against the costs associated with financial distress (such as bankruptcy costs and agency costs) to achieve an optimal capital structure. The more recent model is Dynamic Trade-Off Theory that explains firms adjust their capital structure over time in response to changing market conditions, interest rates, and cash flows. They incorporate the real-world friction of adjustment costs, providing a more realistic explanation for why firms' debt levels might fluctuate and why a wide variation in leverage ratios is observed across different companies. The trade-off theory implies that capital structure affects financial performance through the net effect of the tax shield and the financial distress.

B. Pecking Order Theory

The pecking order theory suggests that there is no optimal capital structure, but rather a hierarchy of financing preferences that reflects the information asymmetry between the managers and the investors. The information asymmetry means that the managers have more information about the firm's prospects and risks than the investors, and they may act in their own interests rather than the shareholders' interests.

The pecking order theory assumes that the managers are reluctant to issue new equity, because it signals that the firm is overvalued and it dilutes the existing shareholders' ownership and control. Therefore, the managers prefer to use internal funds (such as retained earnings) first, then debt, and finally equity, as the last resort. According

to this theory, firms with high profitability, low risk, and low growth opportunities should use less debt, while firms with low profitability, high risk, and high growth opportunities should use more debt. The pecking order theory implies that capital structure reflects the financial performance and the financing needs of the firm, rather than affects it.

C. Agency Theory

The agency theory suggests that there is a conflict of interest between the managers and the shareholders, and between the shareholders and the debt holders, due to the separation of ownership and control. The agency theory assumes that the managers may pursue their own goals, such as personal wealth, power, or reputation, rather than the shareholders' goals, such as maximizing the firm value. The managers may also take excessive risks, invest in negative net present value projects, or consume excessive perks, at the expense of the shareholders. The debt holders, on the other hand, may impose restrictive covenants, monitor the firm's activities, or threaten to liquidate the firm, to protect their claims, at the expense of the shareholders.

According to this theory, debt can have both positive and negative effects on financial performance. On the one hand, debt can reduce the agency costs of equity, by aligning the interests of the managers and the shareholders, and by disciplining the managers to be more efficient and profitable. On the other hand, debt can increase the agency costs of debt, by creating a debt overhang problem, which discourages the managers from undertaking positive net present value projects, and by increasing the risk of financial distress and bankruptcy. The agency theory implies that capital structure affects financial performance through the agency costs of debt and equity.

D. Signaling Theory

The signaling theory suggests that there is a difference in the quality and the value of the firms, and that the managers have more information about the firm's quality and value than the investors. The signaling theory assumes that the managers want to convey their private information to the investors, and that the investors interpret the financing decisions of the managers as signals of the firm's quality and value.

According to this theory, debt can be a positive signal, because it indicates that the firm is confident about its future cash flows and its ability to repay the debt, and that it is willing to bear the costs and risks of debt. Equity, on the other hand, can be a negative signal, because it indicates that the firm is uncertain about its future cash flows and its growth prospects, and that it wants to take advantage of the overvaluation of the firm. The signaling theory implies that capital structure affects financial performance through the market reaction and the valuation of the firm.

E. Relevance of Theories

With the review of theoretical framework in the literature, it is concluded that the Agency theory greatly become relevant to this research of studying the moderating effect of corporate governance on the relationship between capital structure on the financial performance.

Further, the modern trade-off theory and signaling theory also relate to the elements in the capital structure. These theories support for the importance of moderating role of corporate governance in determining the impact of capital structure on the financial performance of companies.

Review on Previous Empirical Studies

Many empirical studies find a positive link between capital structure with the mix of debt and equity and firm performance, often citing debt's tax shield benefits, agency cost reduction by disciplining managers, and its role in achieving an optimal balance, and those supporting the Trade-Off Theory and Agency Theory often finding positive results, though some studies show mixed or negative results. For this study, the previous researches conducted from two decades before are review categorizing into positive and negative relationship in chronological order. Researches that found positive link are reviewed as follows:

Reference [9] conducted a study among 695 companies in the U.S. banking industry and found a statistically significant positive relationship between the level of debt and firm performance. Reference [1] found a significant positive link between capital structure and firm performance for Ghanaian firms using data collected between 1998 and 2002 from the companies listed on the Ghana Stock Exchange, specifically showing that short-term debt to total assets and total debt to total assets positively influenced profitability, indicating debt could boost performance in that context. This study used correlation and regression analysis on providing early empirical support for positive capital structure and performance relationships.

Reference [10] provided evidence to support a positive link between capital structure and firm performance. which indeed found a positive link between capital structure (specifically financial leverage) and firm performance, showing that debt can enhance firm value by reducing agency costs and improving efficiency, particularly for SMEs. Reference [18] focused on the United States and found a positive relationship between capital structure and firm performance.

Reference [14] found in their study of Thai firms that higher debt ratios (financial leverage) positively influence firm performance, suggesting that debt can enhance profitability, though other studies show mixed results, with some finding negative effects or different impacts depending on firm size. Their work also explored corporate governance and found that financial leverage acted as a mediating factor in how board size affected performance in large firms.

Reference [32] found that a unit increase in leverage increases firms' performance in a small transition country. challenges the conventional view on leverage by suggesting a positive correlation between leverage and firm performance within the specific context of a small transition country. The researchers found that, in this unique economic environment, a one-unit increase in financial leverage actually led to an improvement in firms' performance indicators.

Reference [47] found a positive impact of the capital structure on the financial performance in companies listed on the Tehran Stock Exchange. Reference [25] had findings from an examination of listed Nigerian banks revealed that capital structure has a significant positive influence on the profitability of these banks. meaning increased debt or equity mix positively affects bank earnings, aligning with other Nigerian studies suggesting debt can boost performance, though optimal ratios remain crucial for maximizing profits.

Reference [38] empirically investigated the impact of capital structure on financial performance in the textile sector of Pakistan and found a positive impact. Reference [36] concluded there is a statistically significant positive impact of leverage on financial performance (measured by Tobin's Q), with firm size moderating this effect. This study concluded that leverage had a significant positive effect on financial performance (measured by Tobin's Q), and firm size as measured by total revenue has a positive moderating impact on this relationship. Reference [30] discovered that capital structure has a moderate positive effect on firm value, though they noted an overreliance on debt diminishes it.

Reference [4] found that total debt measures have a positive effect on firm value, though the long-term debt ratio had a negative effect on Tobin's Q in their study. Reference [7] investigated specific optimal capital structure configurations (such as 70% debt–30% equity) in 750 non-financial firms listed on the NYSE from 2003 to 2020. They found that these higher debt financing levels (70%, 61.8%, and 50% debt) exerted a positive influence on both Return on Assets (ROA) and Return on Equity (ROE), suggesting practical debt-equity proportions can enhance performance.

Researches that found negative link are reviewed as follows:

A significant body of empirical research across various countries and time periods has found a negative relationship between capital structure with high debt/equity ratio and firm financial performance.

Reference [60] reported a negative relationship between capital structure and firm performance in US firms. Reference [33] observed that the debt-equity ratio negatively affected corporate performance. Reference [12] found a negative relationship between capital structure and firm performance in Hong Kong. Reference [56]

found a negative relationship for listed firms in the Amman Stock Exchange. Reference [24] found a negative relationship between capital structure and firm performance in Chinese firms.

Reference [43] studied among 11 listed trading companies in Sri Lanka and concluded there was a positive impact of the capital structure on the financial performance.

Reference [51] found a negative relationship for firms in Tehran. Reference [53] conducted research on listed companies in Bursa Malaysia and found a negative relationship between capital structure and firm performance (ROA, ROCE, and EPS). Reference [23], analyzing the relationship between performance (ROE and Tobin's Q) and capital structure for 36 Bangladeshi firms, found negative impacts on financial performance. Reference [13] found a negative relationship between capital structure and performance in India. Reference [62] found a negative and significant effect of debt ratios on Return on Assets.

Reference [39] and Reference [58] reported a negative relationship between the long-term debt-to-capitalization ratio and ROA. Reference [3] found that capital structure was negatively correlated with financial performance (ROA and ROE) in Nigerian firms.

Reference [42] found a negative and significant relationship between the long-term debt-to-capitalization ratio and ROE. Reference [46] similarly found a negative and significant relationship between the long-term debt-to-capitalization ratio and ROE. Reference [61] reported a negative relationship between debt ratios and ROE among listed consumer goods firms in Nigeria.

Reference [82] studied on Vietnamese feed producers and found that capital structure had a negative impact on performance, with the effect being stronger for larger firms. Reference [83] conducted a study on South Asian manufacturing firms and found a statistically significant negative relationship between capital structure (debt-to-equity and debt-to-asset ratios) and performance (ROE) from 2019-2023 data.

These studies suggest that while debt can offer tax shield benefits, excessive leverage can increase financial distress costs, agency conflicts, and overall risk, ultimately eroding profitability.

While much research shows mixed results, studies finding no significant or a very weak link between capital structure and financial performance often point to factors like industry differences, country contexts, or specific firm characteristics.

Reference [1] found no significant impact of capital structure on firm performance in Ghana. Reference [75] found capital structure had no significant effect on certain performance measures (ROA, ROE, DYIELD) for companies in the Bahrain Bourse, though it affected EPS. Reference [20] found no significant association between capital structure components and financial performance in Sri Lankan manufacturing companies, suggesting other factors are more influential.

Institutional Differences might have been a reason for the inconsistencies of findings. Studies suggest country-specific factors such as laws, tax systems, and market maturity, heavily influence outcomes, so findings in one country do not always apply elsewhere. Industry differences could be a cause as well. The banking sector [9] might behave differently from manufacturing or consumer goods sectors, with performance drivers varying. Firm-Specific Characteristics like management quality, and lagged performance can mask or outweigh capital structure effects. Methodological differences in relation to variables and data used and estimation methods could lead to varied results. Some researchers have used both long-term and short-term debt or either to define capital structure while they have applied the ROA and ROE or either to measure financial performance. Some studies would have ignored controlling for autocorrelation and firm size.

Therefore, the academic literature is heavily mixed, with many studies showing no clear-cut positive or negative link, highlighting the complexity and context-dependency of capital structure's impact on financial performance, challenging simple applications of trade-off or pecking order theories. The relationship between capital structure and the financial performance in different context should therefore be investigated with a conceptual model having some relevant moderating variables. This study attempted to investigate the moderating effect of

corporate governance, as one of the company specific factor, on the relationship between the two variables. This is the moderator that is assumed relevant and significant with support of previous researches.

Reference [40] examined the moderating effect of corporate governance on the relationship between capital structure and firm performance using secondary data in the form of financial reports at the end of 2019 from micro-financial institutions (rural banks) with a total of 506 units in Indonesia. They found a positive relationship, and with the moderation analysis it was revealed that the size of the board of commissioners could strengthen the relationship between capital structure and company performance.

Reference [37] investigated board independence as a moderator in the capital structure and performance link using Malaysian firm data obtained from 2010 to 2019 and reported that board independence significantly and negatively moderates the relationship.

Reference [55] used firm-level panel data extracted from the Gulf Cooperation Council (GCC) emerging stock Markets firms from 2015 to 2020 to explore how corporate governance proxies such as board size, and institutional ownership moderates the effect of capital structure on financial performance. They found that governance mechanisms in terms of board size and institutional ownership could moderate this relationship in emerging markets.

Reference [26] brought an evidence from manufacturing firms in Pakistan to show that corporate governance moderates the effect of capital structure on profitability measures like ROA and ROE. Reference [29] examined the impact of corporate governance as moderator variables on the capital structure and company performance relationship within non-cyclical consumer companies listed on the Indonesia Stock Exchange from 2021 to 2023 using secondary data obtained from 54 samples. They found that both long-term and short-term debt-to-total assets ratios had a significant negative impact on ROE, however, corporate governance factors like Board Size, Commissioner Size, and shareholder size did not moderate this relationship.

Reference [6]) investigated the moderating role of corporate governance in the relationship between corporate structure and firm performance using Panel data of 148 non-financial firms belonging to 16 different sectors companies listed on the PSX between 2004 to 2019. They found that the board size and board composition with female directors moderate the association among capital structure and firm performance.

Reference [37] investigated the relationship between capital structure and firm performance by exploring the moderating effect of one of the corporate governance mechanisms, namely board independence. Panel data regression was employed based on a sample of 492 non-financial listed companies in Malaysia from 2010 to 2019. They found that capital structure has a significant positive impact on firm performance and board independence significantly and negatively moderates the relationship between capital structure and firm performance.

The empirical review revealed that these researches have been conducted in different countries using different methodology and measurement of variables. However, the study in Sri Lankan context is very rare and indicates an empirical gap to be filled with the contemporary research in this field.

Conceptualization Of Variables

This study was a cross-sectional explanatory study. The main concepts of the study are the capital structure, corporate governance and the Financial Performance. The first concept is indicated with the proxy variables such as Short Term Debt/ Equity ratio, Long Term Debt / Equity ratio, and Total debt/ Equity ratio. The corporate governance is indicated with the proxy variables such as Board Size, and Board Independence. The Return on Asset and Return on Equity are the proxy indicators for the financial performance. These capital structure and corporate governance proxy variables were measured by the formulas that are substituted with the relevant data obtained from the annual reports of selected companies listed in Colombo Stock Exchange, and the Return on Assets was measured by the calculation of the ratio using data contented in the annual reports of the same companies.

The Conceptual Framework is shown in the fig.1.The capital structure is assumed to the independent construct, and the Financial Performance is the dependent construct. The construct of Corporate Governance is assumed to be the moderating variable in the model. The capital structure is operationalized into a single independent proxy variable as Total Debt to Equity ratio. Financial Performance is also operationalized into a single dependent proxy variable, as the Return on Assets (ROA). Board Size and Board Independence are the two proxies representing the Corporate Governance.

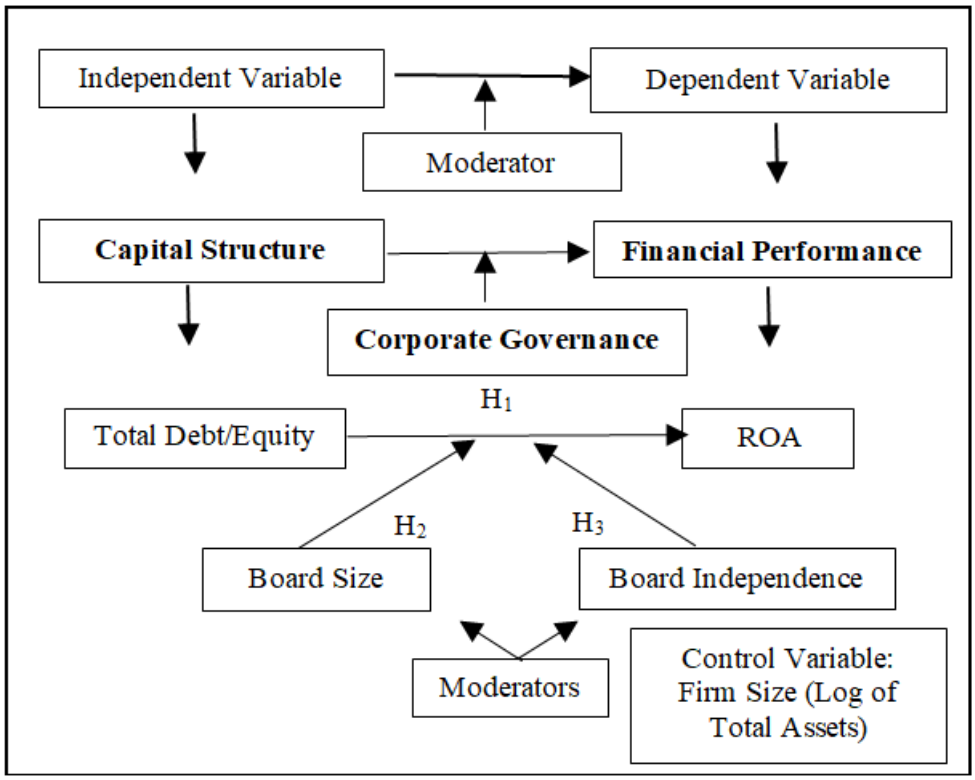

Fig. 1: Conceptual Framework

(Source: Developed by the researcher for the study purpose)

Capital Structure

While many scholars provide a general definition of capital structure as the mix of debt and equity, the specification of total debt, including long term and short-term debts, is frequently an operational definition used in empirical studies rather than a specific theoretical definition attributed to one or a few key researchers. However, this research considers one comprehensive definition of the capital structure: Total debt/ Equity. Total debt includes both short-term debts (such as commercial paper, short-term bank loans, bank overdraft, credit card balance, and the current portion of long-term debt), and long-term debts known as fixed interest bearing financial obligations due more than one year (such as preference share capital, mortgaged loan, long-term bank loans, lease obligations, and corporate bonds or debenture)

Corporate Governance

Corporate governance is the system of rules, practices, and processes that directs and controls a company, balancing the interests of its many stakeholders such as shareholders, management, customers, government, and community by ensuring transparency, accountability, fairness, and responsibility, ultimately aiming for long-term success and value creation. It defines how power is exercised, decisions are made, and management is held responsible through structures like the board of directors, setting the ethical tone and strategic direction.

Corporate governance provides the framework for running a company ethically and effectively, ensuring it serves its purpose within its broader societal and legal context. various characteristics of a company's board, ownership, and structure are used as proxy variables to measure the quality and effectiveness of its governance

mechanisms. Board Characteristics such as board size, board independence, CEO duality, Board meeting frequency/diligence, Audit committee independence/size, and board diversity are frequently used by researchers as the proxy variables representing corporate governance. However, this research considers two proxy construct of the corporate governance. They are the Board Size and Board Independence.

Board Size

Board size refers to the total number of directors on the board. Generally, a sufficient size is needed for diverse expertise, but boards that are too large may be less efficient. Board independence is typically measured as the proportion or percentage of independent non-executive directors on the board. A higher proportion is often considered to enhance monitoring quality and reduce conflicts of interest.

Board Independence

Board independence is typically measured as the proportion or percentage of independent non-executive directors on the board. A higher proportion is often considered to enhance monitoring quality and reduce conflicts of interest.

Financial Performance

Financial performance is a general measure of a firm's overall financial performance over a given period of time and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregate. Financial performance is a subjective measure of how well a firm can use assets from its principal business activities to generate revenues. Financial performance is the degree to which financial goals are being or have been achieved [70].

Financial performance is measured by Return on assets (ROA) in this research. ROA is a profitability ratio that helps determine how efficiently a company utilizes its assets. ROA is a comprehensive efficiency metric that explains how efficiently and effectively a company is using its assets to generate profits. The higher ratio will be better for the company itself. If a particular company has a higher ROA, it can generate higher profits, which tends to attract more investors to buy its shares. ROA is the ratio between net profit after interest and taxes and total assets.

ROA measures how efficiently a company uses all its assets financed by debt and equity to generate profit, showing operational efficiency, while ROE measures how well it generates profit specifically from shareholders' invested money, showing shareholder return. The key difference lies in leverage. ROA considers total resources, whereas ROE isolates equity, meaning a large gap (ROE > ROA) often indicates significant debt usage, which amplifies equity returns but adds risk. When debt increases assets, ROA decreases. But it does not directly change equity.

Hence, high debt often boosts ROE above ROA. This is known as financial leverage. ROA is great for comparing companies with different capital structures while ROE is vital for shareholders assessing their specific returns.

Hypotheses

To answer the research questions of this study, the following hypotheses were formulated based on the literature review:

Impact of the capital structure on the financial performance.

The literature review on theoretical framework and empirical studies help to formulate the hypotheses for this study. The main theories and models that explain the impact of capital structure on financial performance are the trade-off theory, the pecking order theory, the agency theory, and the signaling theory. The trade-off theory and agency theory proposed a positive link. The trade-off theory implies that capital structure affects financial performance through the net effect of the tax shield and the financial distress. Firms balance tax benefits of debt

against bankruptcy costs. Achieving this balance enhances performance. Reference [73] showed debt interest deductibility lowers taxes, increasing firm value and performance.

The pecking order theory implies that capital structure reflects the financial performance and the financing needs of the firm, rather than affecting it. The agency theory implies that capital structure affects financial performance through the agency costs of debt and equity. Debt can reduce agency costs by forcing managers to be more disciplined, improving performance.

The signaling theory implies that capital structure affects financial performance through the market reaction and the valuation of the firm. According to this theory, debt can be a positive signal, because it indicates that the firm is confident about its future cash flows and its ability to repay the debt, and that it is willing to bear the costs and risks of debt.

Capital structure affects the profitability and efficiency of a business in several ways. First, capital structure affects the net income and earnings per share (EPS) of the business, as the interest expense reduces the taxable income and the number of shares outstanding affects the eps. Second, capital structure affects the return on equity (ROE) and return on assets (ROA) of the business, as the leverage magnifies the returns for the shareholders and the assets.

Third, capital structure affects the operating margin and asset turnover of the business, as the interest coverage ratio and the debt-to-asset ratio measure the ability of the business to generate enough operating income to cover its interest payments and to use its assets efficiently. Fourth, capital structure affects the liquidity and solvency of the business, as the current ratio and the debt-to-equity ratio measure the ability of the business to meet its short-term and long-term obligations. Therefore, a business has to monitor the impact of capital structure on its profitability and efficiency, and adjust its capital structure accordingly.

Many empirical studies find a positive link between capital structure and firm performance, often citing debt's tax shield benefits, agency cost reduction by disciplining managers, and its role in achieving an optimal balance [9], [13], [15], [21], [27], [4], [7], [36], [80], [81].

These literature review on theoretical framework and empirical studies help to formulate the following hypothesis to investigate the above relationship in Sri Lankan Corporate context:

H_1: The Capital Structure (Total debt/Equity) has a significant impact on Financial Performance (ROA) of companies.

Moderating Effect of Corporate Governance on the impact of the capital structure on the financial performance.

Empirical research consistently shows corporate governance moderates the capital structure and financial performance link. Strong governance having board independence, gender diversity, and institutional ownership generally improves performance by mitigating agency costs. while, weaker governance intensifies conflicts, often leading to less optimal debt use and lower returns. However, findings vary by country and specific corporate governance variables. Recent studies exploring diverse corporate governance aspects like board composition and their moderating roles highlight these nuances in emerging markets. [49], [50], [31], [14].

Much research uses agency theory [28] to argue that governance mechanisms align interests of managers with shareholders, influencing debt choices and performance. Independent directors and female directors often correlate positively with better financial performance (ROA, ROE) and encourage higher leverage, signalling confidence and better monitoring. Higher institutional ownership is linked to better firm value and can positively influence capital structure decisions.

Recent studies in Emerging Markets in Asia and Africa increasingly examine these relationships, finding varied results but emphasizing the significant impact of strong governance on Capital structure and financial performance dynamics, particularly in less regulated environments. [49], [50], [31], [14], [8], [77], [78].

The literature review on theoretical framework and these empirical studies help to formulate the following hypotheses to investigate the above problem in the Sri Lankan Corporate context:

H_2: The Board Size significantly moderates the impact of the capital structure (Total Debt/Equity) on the financial performance (ROA) of companies.

H_3: The Board Independence significantly moderates the impact of the capital structure (Total Debt/Equity) on the financial performance (ROA) of companies.

Operationalization Of Variables

In this research, the capital structure is operationally defined as the proportion between debt and equity. The debt is operationally defined as the total debt consisting of long-term debt and short-term debt as a whole. Consisting with theoretical view, this research considers the Total debt/Equity as independent variable referring to capital structure in the conceptual framework. Long-term debt represents the interest bearing non-current financial liabilities for listed companies. These are the financial obligations due more than one year from the date of the statement of financial position. They are primarily used to finance long-term assets or company expansions. The typical long-term debt items are the interest bearing bank loans, notes payable, and debentures with a maturity date beyond 12 months, Bonds Payable, Obligations for long-term lease agreements. It does not include operational liabilities like deferred tax liabilities, Pension and Post-Retirement Benefit Obligations, deferred revenue, long-term warranty liabilities, and Contingent Liabilities. The preference share capital also is considered as part of long-term debt capital.

The short-term debt refers to the current liabilities that include current portion of the interest bearing long-term debt, and other short-term debts. It does not include operating current liabilities like accounts payable, payroll due, payroll taxes, accrued expenses, income taxes, interest payable, accrued interest, utilities, rental fees, any other. The financial performance is operationalized with the single indicator, Return on Assets (ROA) that is operationally defined as the proportion of net income after tax to the total assets. [67], [70].

METHODOLOGY

The study was carried out using data obtained from the sample of 100 out of 288 listed companies operating in 19 GICS sectors representing the Energy (1), Materials (8), Capital Goods (9) Commercial & Professional Services (1), Transportation (1), Automobiles & Components (1), Consumer Durables & Apparel (4), Consumer Services (12), Retailing (5), Food & Staples Retailing (2), Food, Beverage & Tobacco (17), Household & Personal Products (1), Health Care Equipment & Services (3), Banks (4), Diversified Financials (18), Insurance (3), Telecommunication Services (1), Utilities (2), and Real Estate (7) industries in Sri Lanka. The sample size is sufficient to meet the statistical requirements for accuracy and significance so that the findings and conclusions can be generalized to the total population. The sample of companies was selected on a stratified random sampling method, being the strata as the type of industry.

The data on net profit after tax, equity, long-term liabilities, current liabilities, total assets, number of total members and non-executive members in the board of directors were extracted from the annual reports of 110 companies for the reporting period of year 2024/2025 to be used in calculating the Return on Assets (ROA) in order to measure the financial performance of the companies as for the cross section of a reference period. Similarly, the long-term and short-term debt items were obtained from the same annual reports for the same period in order to measure the total debt/equity. The data on the number of total members and non-executive members in the board of directors were used for measuring the board size, and board independence.

Method of Data Analysis and Hypothesis Testing

The descriptive, Pearson correlation, and linear regression analysis analyses were applied as techniques to analyze and evaluate the data collected using the SPSS software version 28.0 with PROCESS V4.2. The descriptive analysis was done to find out the frequency distribution, skewness, mean, and standard deviation for every variable. Pearson Correlation analyses were done separately among the Total debt/Equity, Board Size,

Board Independence, Firm Size and ROA in the reference year of study conducted as a cross section in time. Hierarchical Regression analysis was applied to evaluate the main effect of firm size (control variable) and Total Debt/Equity on ROA. Moderation analysis was done for finding out the moderation effect of Board Size, and Board Independence on the relationship between Total debt/Equity and the ROA using separate regression model 2 in the PROCESS V4.2, visualized with graphical analysis using the Excel-based tool for the moderation-effect graphing templates developed by Jeremy Dawson.

The fitted ordinary least square linear regression model for the main effect (including control variable-firm size) was:

Model 1: $Y_{ROA} = \beta0 + \beta1\ (TDE)\ it + \beta2\ (FSZ)\ it + \varepsilon$.

The fitted multiple regression model (with moderators and interaction terms) were:

Model 2: $Y_{ROA} = \beta0 + \beta1\ (TDE)\ it + \beta2\ (BSZ)\ it + \beta3\ (BIN)\ it + \beta4\ (TDE*BSZ)\ it + +\beta5\ (TDE*BIN)\ it + \beta6\ (FSZ)\ it + \varepsilon$.

where,

Y =Financial Performance (ROA); β0 = Intercept of formula; β1, β2, β3, β4, β5, β6 = Slope coefficients; TDE = Total Debt / Equity; BSZ =Board Size; BIN=Board Independence; (TDE*BSZ) = Interaction term between TDE and BSZ; (TDE*BIN) = Interaction term between TDE and BIN; FSZ=Firm Size =log of Total Assets; ε = Random Error Term; i = Firm; t = Time period.

A hypothesis testing was done by forming the Null Hypothesis (H_0) and Alternate Hypothesis (H_A). Hypotheses were tested using the results of Hierarchical regression analysis in SPSS and Moderation regression analyses in PROCESS V4.2, choosing a probability level of significance (p value) at 5% for measuring the error judgment. Decision Criteria for the Results of Regression were: If $P \geq 0.05$, then there is no significant impact of the assumed independent variable on the dependent variable and there is no significant impact of the assumed moderating variables on the relationship between the assumed independent variable and dependent variable. If $P \leq 0.05$, then there is a significant impact of the assumed independent variable on the dependent variables and there is a significant impact of the assumed moderating variables on the relationship between the assumed independent variables and dependent variables.

RESULTS AND DISCUSSION

The results of data analysis are presented below in order consistent with research questions and objectives for this study. Accordingly, the results of descriptive analysis are presented to answer the first research question. The output of bivariate correlation analysis explains the answers to the second research question. The statistics of hierarchical linear regression analysis provide the answers to the third research question. Finally, the output of moderating regression analysis obtained from the PROCESS v4.2 statistical software is detailed to find answers to the fourth research question in the study.

Results of Descriptive Analysis

A descriptive analysis was done on the data collected on the capital structure variable, corporate governance variables, financial performance variable to find answer to the first research question in the study. The results of the analysis, as presented in Table 1, indicated that the data recorded on all the variables are approximately normally distributed. The mean values of 0.293, 8.25, 0.616, and 0.022 were found as the answers for the average value of Total debt/Equity, Board size, Board Independence, and ROA respectively in the sample. The variations in these variables are observed significant as indicated by the standard deviations of 0.149, 2.794, 1.935, and 0.0683 and other statistics.

Table 1 Descriptive Statistics

Variables	N	Mean	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
Firm Size (Log)	110	7.158	1.010	5.34	9.59	0.912	0.229
Total Debt/Equity	110	0.293	0.149	0.07	0.67	0.934	0.119
Board Size	110	8.25	2.794	3.00	16.00	0.435	-0.158
Board Independence	110	0.616	1.935	0.110	0.95	-0.248	-0.574
Return on Assets	110	0.022	0.068	-0.160	0.210	0.041	0.640

Source: Output of SPSS Analysis

Results of Bivariate Correlation Analysis

Pearson's Correlation analysis as extracted in Tables 2 indicated that the capital structure (Total Debt/Equity) is positively and significantly correlated with the Returns on Assets (ROA) of the companies, with coefficient of 0.766. This gives the answer for the second research question raised.

Table 2 Pearson Correlation between the Capital Structure (Total Debt/Equity) and Financial Performance (ROA)

Variables	ROA	TDE
ROA	1.000	-
TDE	0.766**	1.000

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Output of SPSS Analysis

Results of Simple Linear Regression Analysis

The simple regression analysis was done to determine the effect of the capital structure (Total Debt/Equity) on the Financial Performance (ROA) without controlling for firm size. The statistics are summarized in the Table 3.

Table 3 Statistics of Simple Regression of the Capital Structure (Total Debt/Equity) on the Financial Performance (ROA)

Regressing	TDE with ROA
Method	Linear
R	0.766
R Square	0.587
Adjusted R Sq	0.584
Standard Error	0.044

Sum of Square	0.299
F	153.8
Sig. F	<0.001
T	12.40
Sig. T	< 0.001
b - Constant	0.022
b	0.350
Beta	0.766

Source: Output of SPSS Analysis

Regressing the mean-centered TDE with ROA resulted the b value of the Total Debt/Equity, the gradient of the regression, at 0.35 with the t value of 12.4, which is significant at 95% (Sig.t < 0.001). As indicated by R Square, 58.7% of the variance of ROA is explained by Total Debt/Equity with a standardized beta of 0.766. The F value is 153.77, which is significant at 95% (Sig.F < 0.001), which suggests that Total Debt/Equity alone has significantly explained 58.7% of the variance of Return on Assets of the companies, leaving the remaining 41.3% of the variation is influenced by other unmeasured factors. This result relates the part of research question 3 of this study.

Output of Hierarchical Regression Analysis

The objective of using hierarchical regression method was to determine the effect of the capital structure (Total Debt/Equity) on the Financial Performance (ROA) with controlling for firm size. The statistics of Hierarchical multiple regression analysis, as summarized in Tables 4 (Coefficients) and 5 (Model Summary), show that under the model 1, regressing the mean-centered FSZ with ROA resulted the b value of the firm size, the gradient of the regression, at -0.007, which is insignificant at 95% (Sig.t >0.001). As indicated by R Square, only 1.1% of the variance of ROA is explained by Firm Size with a standardized beta of - 0.105. The F value is 1.197, which is insignificant at 95% (Sig.F > 0.001), which suggests that Firm Size has insignificantly explained 1.1% of the variance of Return on Assets of the companies.

Table 4 Coefficients of Hierarchical Regression of Firm Size (FSZ), and Total Debt/Equity (TDE) on Return on Assets (ROA)

Models	Variables	Unstandardized b coefficients	Standard Beta	t	Sig.t
Model 1	Constant	0.022	-	3.380	0.001
	FSZ	-0.007	-0.105	-1.094	0.276
Model 2	Constant	0.022	-	5.210	<0.001
	FSZ	-0.001	-0.021	-0.334	0.739
	TDE	0.349	0.764	12.238	<0.001

Source: Output of SPSS Analysis

Table 5 Model Summary of Hierarchical Regression of Firm Size (FSZ), and Total Debt/Equity (TDE) on Return on Assets (ROA)

Model	R	R^2	Adjusted R^2	R^2 Change	F	Sig. F
1	0.105	0.011	0.002	0.011	1.197	0.276
2	0.767	0.588	0.580	0.577	76.31	<0.001

Source: Output of SPSS Analysis

Under the Model 2, regressing the mean-centered FSZ and TDE with ROA resulted the b values of the firm size and TDE, the gradients of the regression, at -0.001 and 0.349 respectively. The coefficient of TDE is significant at 95% (Sig.t <0.001). As indicated by R Square, 58.8% of the variance of ROA is explained jointly by Firm Size and TDE. The F value is 76.31, which is significant at 95% (Sig.F= <0.001), which suggests that the independent variable, TDE, by controlling Firm size have significantly explained 58.8% of the variations in the Financial Performance (ROA) of the companies. The R^2 change, 0.577, indicates that TDE has a significant additional explanatory power in the model.

Results of Moderating Regression Analysis

As a multivariate analysis, the Multiple Moderating Regression analysis was done using PROCESS v4.2 in order to investigate the moderating effects of Corporate Governance Variables (Board Size and Board Independence) on the impact of the Capital Structure (Total Debt/Equity) on the Financial Performance (Return on Assets). The results of regressing the independent variable (TDE), two moderators (BS and BI) and their interaction terms (TDE*BS and TDE*BI), and the control variable (FSZ) against the dependent variable (ROA) are shown in Table 6 (Model Summary) and Table 7 (Coefficients).

Table 6 Model Summary of Moderating Regression of TDE, BSZ, BIN, (TDE*BSZ),(TDE*BIN) and FSZ with ROA

Model	R	R^2	Adjusted R^2	Mean of Standard Error	F	Sig. F
2	0.805	0.648	0.627	0.0017	31.56	0.000

Source: Output of PROCESS v4.2 of SPSS

The model summary of moderating multiple regression analysis as summarized in Table 6 revealed that the overall regression model was statistically significant indicating that the independent variable, moderating variables, interaction variables, and the control variable have conjointly significantly explained the variations in Return on Assets with the R^2 value of 0.648. The F value is 31.56, which is significant at 95% (Sig.F= 0.000), which suggests that the all these variables have significantly explained 64.8% of the variations in the ROA of the companies, while the remaining 35.2% is attributable to factors not included in the model and random variation. This indicates that the proposed moderation model has considerable explanatory power.

The strengths of the conditional influence that each of the independent and moderating variables have on the dependent variable (ROA) were determined by the use of multi regression coefficients of the independent and moderating variables. The influence of each variable is shown in the Tables 7.

Table 7 Influence of the Independent and moderating variables on Dependent Variable (ROA)

Variables	Unstandardized b coefficients	Standard Error of b	t	Sig.t
Constant	0.0499	0.0303	1.647	0.1026

TDE	0.4941	0.0806	6.133	0.0000
BSZ	0.0029	0.0019	1.528	0.1297
BIN	-0.1172	0.0572	-2.049	0.0430
TDE*BSZ	0.0222	0.0103	2.154	0.0335
TDE*BIN	-0.9020	0.2349	-3.839	0.0002
FSZ	-0.0016	0.0041	-0.395	0.6934

Source: Output of PROCESS v4.2 of SPSS

A. Main effect of Total Debt/Equity

As shown in the Table 7, Total Debt/Equity (TDE) has the strongest significant positive effect on the Return on Assets (ROA) with an unstandardized beta of 0.4941. This indicates that capital structure (TDE) has a significant positive impact on financial performance (ROA), when Board Size and Board Independence are at their mean values. In other words, at the average levels of Board Size and Board Independence, a one-unit increase in TDE is associated with a 0.4941-unit increase in ROA, holding Firm Size constant.

This is the conditional effect of TDE in the moderation model. It is not necessarily the same as the TDE coefficient in the separate main-effect regression containing only TDE and FSZ.

B. Direct effect of Board Size

The results show that Board Size (BSZ) has an insignificant positive effect on the ROA with the unstandardized beta of 0.0029 (t=1.528, p=0.1297, Sig.t = > 0.05). The coefficient of Board Size is positive but statistically insignificant. This indicates that Board Size does not have a statistically significant direct relationship with ROA when TDE is at its mean value. However, this finding does not mean that Board Size cannot moderate the relationship between TDE and ROA.

C. Moderation effect of Board Size

The results show that the interaction of Board Size (BSZ) with TDE has a significant positive effect on the ROA with the unstandardized beta of 0.0222 (t=2.154, p=0.0335, Sig.t = < 0.05). This indicates that Board Size positively moderates the relationship between Capital Structure and Financial Performance. In other words, as Board Size increases, the positive relationship between TDE and ROA becomes stronger.

The important finding is that although Board Size does not have a significant direct effect on ROA, it has a significant moderating effect on the relationship between TDE and ROA.

D. Direct effect of Board Independence

Board Independence (BIN) has a significant negative effect on the ROA with the unstandardized beta of -0.1172 (t=-2.049, p=0.0430, Sig.t = > 0.05). This suggests that Board Independence has a significant negative conditional relationship with ROA when TDE is at its mean value. However, because the model includes an interaction between TDE and BIN, this coefficient cannot be interpreted as an unconditional negative relationship across all levels of TDE.

E. Moderation effect of Board Independence

The results show that the interaction of Board Independence (BIN) with TDE has a significant negative effect on the ROA with the unstandardized beta of 0.9020 (t=-3.839, p=0.0002, Sig.t = < 0.05). This indicates that Board Independence negatively moderates the relationship between Capital Structure and Financial

Performance. In other words, as Board Independence increases, the positive relationship between TDE and ROA becomes weaker. This is a remarkable contrast with Board Size. Board Size strengthens the positive TDE–ROA relationship. Board Independence weakens the positive TDE–ROA relationship. Importantly, a negative moderating effect does not necessarily mean that the overall relationship between TDE and ROA becomes negative. The conditional effects need to be examined to establish this.

F. Direct effect of Firm Size as a control variable

The moderating regression results show that Firm Size (FSZ) has an insignificant negative effect on the ROA with the unstandardized beta of -0.0016 (t=-0.395, p=0.6934, Sig.t = > 0.05). Therefore, Firm Size does not have a statistically significant conditional relationship with ROA in this moderation model. Nevertheless, it is appropriate to retain FSZ as a control variable because it is included based on the theoretical and methodological justification, not simply on its statistical significance.

G. R^2 change: Contribution of the interaction terms

The results of test of highest order unconditional interactions summarized in the Table 8 show that he interaction between TDE and BSZ produces an R^2 change of 0.0159 (1.59%), which is statistically significant (F = 4.641, p = 0.0335). This indicates that the interaction between Capital Structure and Board Size contributes significantly to explaining the variation in ROA.

The results of test of highest order unconditional interactions are summarized in the Table 8.

Table 8 Test of Highest Order Unconditional Interactions

Variables	R^2 Change	F	Sig.F
TDE*BSZ	0.0159	4.6410	0.0335
TDE*BIN	0.0504	14.7411	0.0002
Both	0.0506	7.3912	0.0010

Source: Output of PROCESS v4.2 of SPSS

The interaction between TDE and BIN produces an R^2 change of 0.0504 (5.04%), which is statistically significant (F = 14.741, p = 0.0002). This indicates that the interaction between Capital Structure and Board Independence also makes a statistically significant contribution to explaining the variation in ROA.

When both interaction terms are considered jointly, they produce an R^2 change of 0.0506 (5.06%), which is statistically significant (F = 7.391, p = 0.001). This indicates that the two moderating effects jointly improve the explanatory power of the regression model. There is a remarkable finding from the results that Board Independence appears to have a stronger moderating contribution than Board Size.

However, comparing the individual R^2 changes of 0.0159 and 0.0504 cannot be interpreted as additive or as independent shares of explained variance. The joint R^2 change is 0.0506, and the individual interaction tests are not a substitute for a formal comparison of the two moderation coefficients.

H. Conditional effects of TDE at different moderator levels

The results of Conditional effects of TDE on ROA at different moderator levels interactions are summarized in the Table 9.

Table 9 Conditional effects of TDE on ROA at different moderator levels interactions

Board Size	Board Independence	TDE Effect	p-value
Low	Low	0.6067	0.0000
Low	Average	0.4322	0.0000
Low	High	0.2576	0.0008
Average	Low	0.6687	0.0000
Average	Average	0.4941	0.0000
Average	High	0.3196	0.0000
High	Low	0.7306	0.0000
High	Average	0.5561	0.0000
High	High	0.3816	0.0000

Source: Output of PROCESS v4.2 of SPSS

This output explains the direction of the two moderation effects. PROCESS calculated the conditional effect of TDE at Low Board Size (mean − 1 SD), Average Board Size (mean), and High Board Size (mean + 1 SD). All of the nine conditional effects are positive and statistically significant.

Table 10 Conditional effects when Board Independence is at its average level.

Board Size	Board Independence	TDE Effect	p-value
Low	Average	0.4322	0.0000
Average	Average	0.4941	0.0000
High	Average	0.5561	0.0000

Source: Output of PROCESS v4.2 of SPSS

Table 10 shows that as Board Size increases from low to high, the effect of TDE on ROA increases from 0.4322 to 0.5561. This provides further evidence that Board Size strengthens the positive relationship between Capital Structure and Financial Performance.

Table 11 Conditional effects when Board Size is at its average level.

Board Independence	Board Size	TDE Effect	p-value
Low	Average	0.6687	0.0000
Average	Average	0.4941	0.0000
High	Average	0.3196	0.0000

Source: Output of PROCESS v4.2 of SPSS

Table 11 shows that as Board Independence increases from low to high, the effect of TDE on ROA decreases from 0.6687 to 0.3196.

This confirms that Board Independence weakens the positive relationship between Capital Structure and Financial Performance. It is finally concluded that even at high Board Independence, the relationship between TDE and ROA remains positive and statistically significant. Thus, Board Independence weakens the positive effect but does not reverse its direction within the moderator values examined.

I. Regression Equations derived

Model 1: Main Effect

The regression equation for the Main Effect of the independent variable (TDE) and the control variable (FSZ) on the dependent variable (ROA) was derived from the output of Hierarchical Linear Regression analysis in the SPSS as follows:

$FP_{(ROA)} = 0.022 + 0.349(TDE) - 0.001(FSZ)$

Model 2: Moderation Effect (Two-way Interaction)

The regression equation for the whole model including with the Moderation Effect of the two moderators was derived from the output of Moderating Regression analysis in the PROCESS v.4.2 as follows:

$FP_{(ROA)} = 0.0499 + 0.4941(TDE) - 0.0016(FSZ) + 0.0029(BSZ) - 0.1172(BIN) + 0.0222(TDE*BSZ) - 0.9020(TDE*BIN)$

This equation uses the unstandardized coefficients and mean-centred TDE, BSZ and BIN, as specified in the PROCESS output. The equation demonstrates that the two moderators have different effects on the TDE–ROA relationship.

J. Visualization of Moderation Effect of Board Size and Board Independence

The moderation effect of moderator is visualized in graph in Fig.2 and Fig.3 generated using The Excel-based tool, which is one of the moderation-effect graphing templates developed by Jeremy Dawson.

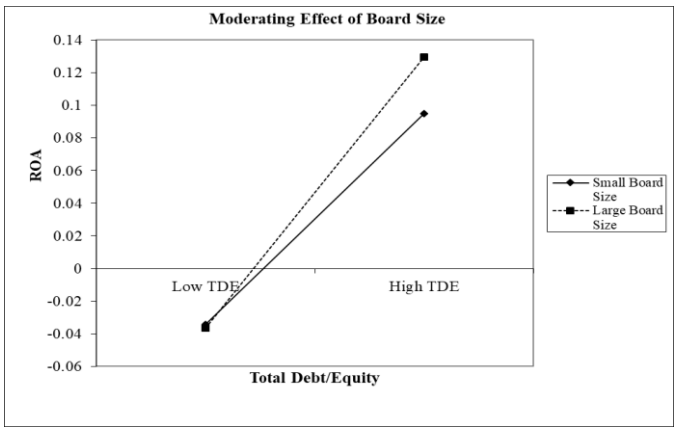

Fig. 2: Visualization of Moderating Effect of Board Size

(Source: Output of worksheet plots two-way linear interaction effects estimated via regression analysis from www.jeremydawson.co.uk/slopes.htm)

Fig.2 shows that as Board Size increases from smaller to larger, the effect of TDE on ROA increases the slope coefficient from 0.4322 to 0.5561. This provides further evidence that Board Size strengthens the positive relationship between Capital Structure and Financial Performance.

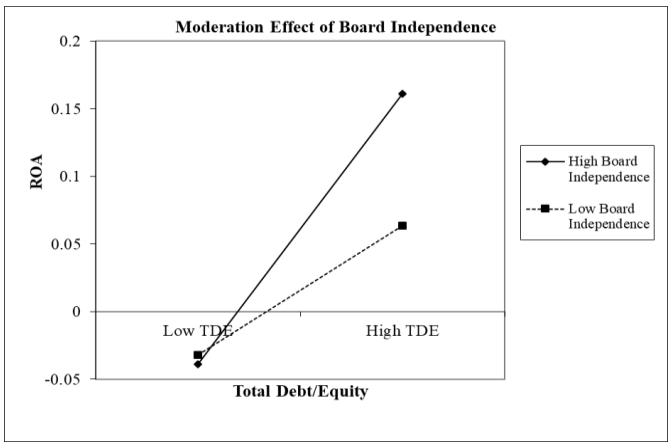

Fig. 3: Visualization of Moderating Effect of Board Independence

(Source: Output of worksheet plots two-way linear interaction effects estimated via regression analysis from www.jeremydawson.co.uk/slopes.htm)

Fig.3 shows that as Board Independence increases from low to high, the effect of TDE on ROA decreases the slope coefficient 0.6687 to 0.3196. This provides further evidence that Board Independence weakens the positive relationship between Capital Structure and Financial Performance, nevertheless even at high Board Independence, the relationship between TDE and ROA remains positive and statistically significant.

K. Summary of Moderating Regression Analysis on the PROCESS

The moderation analysis was conducted using PROCESS Model 2 (Hayes, 2022) to examine the moderating effects of Board Size and Board Independence on the relationship between Capital Structure and Financial Performance, controlling for Firm Size. The overall regression model was statistically significant ($F = 31.562$, $p < 0.001$), explaining 64.77% of the variation in financial performance ($R^2 = 0.6477$).

The results revealed a significant positive interaction effect between Capital Structure and Board Size ($B = 0.0222$, $t = 2.1543$, $p = 0.0335$). This finding indicates that Board Size positively moderates the relationship between Capital Structure and Financial Performance, suggesting that the positive relationship becomes stronger as Board Size increases. The interaction contributed an additional 1.59% to the explained variance in financial performance ($\Delta R^2 = 0.0159$, $p = 0.0335$).

Similarly, Board Independence demonstrated a statistically significant negative moderating effect on the relationship between Capital Structure and Financial Performance ($B = -0.9020$, $t = -3.8394$, $p = 0.0002$). This indicates that higher levels of Board Independence weaken the positive relationship between Capital Structure and Financial Performance. The interaction contributed an additional 5.04% to the explained variance ($\Delta R^2 = 0.0504$, $p = 0.0002$).

Furthermore, the two interaction terms jointly contributed an additional 5.06% to the explained variance in financial performance ($\Delta R^2 = 0.0506$, $F = 7.3912$, $p = 0.0010$). The conditional effects analysis further confirmed that the relationship between Capital Structure and Financial Performance remained positive and statistically significant across all examined combinations of Board Size and Board Independence.

Hypothesis Testing

A. Hypothesis 1

The hypothesis H_1 was: The Total debt/Equity has a significant impact on ROA (b≠0). The null hypothesis was formulated as H_0: Total debt/Equity has no significant impact on ROA (b=0). According to the results of linear hierarchical regression analysis, the coefficient of regression (b) for this variable is found at 0.349 which was significant at 95% confidence level (P>0.05). Therefore, according to the regression coefficient the null hypothesis is rejected and the alternative hypothesis is accepted since the b value is found significant. Hence, the data supported the hypothesis that the Total debt/Equity capital structure has a significant impact on the Return on Assets of the listed companies under the study.

B. Hypothesis 2

The hypothesis H_2 was: The Board Size significantly moderates the impact of the capital structure (Total Debt/Equity) on the financial performance (ROA) of companies (b≠0). The null hypothesis was formulated as H_0: The Board Size does not significantly moderate the impact of the capital structure (Total Debt/Equity) on the financial performance (ROA) of companies (b=0). According to the results of moderating effect regression analysis, the regression coefficient of the interaction term of Board Size (b) is found at 0.0222 which was significant at 95% confidence level (P>0.05). Therefore, according to the regression coefficient the null hypothesis is rejected and the alternative hypothesis is accepted since the b value is found significant. Hence, the data supported the hypothesis that the Board Size significantly moderates the impact of the capital structure (Total Debt/Equity) on the financial performance (ROA) of the listed companies under the study.

C. Hypothesis 3

The hypothesis H_3 was: The Board Independence significantly moderates the impact of the capital structure (Total Debt/Equity) on the Financial Performance (ROA) of companies (b≠0). The null hypothesis was formulated as H_0: The Board Independence does not significantly moderate the impact of the capital structure (Total Debt/Equity) on the Financial Performance (ROA) of companies (b=0). According to the results of moderating effect regression analysis, the regression coefficient of the interaction term of Board Independence (b) is found at -0.902 which was significant at 95% confidence level (P>0.05).

Therefore, according to the regression coefficient the null hypothesis is rejected and the alternative hypothesis is accepted since the b value is found significant. Hence, the data supported the hypothesis that the Board Independence significantly moderates the impact of the capital structure (Total Debt/Equity) on the financial performance (ROA) of the listed companies under the study.

CONCLUSIONS AND RECOMMENDATIONS

This study found that the average level of ROA is prevailing among the listed companies under the study at 2.20% (mean = 0.022) with the variation of 6.8% and ranging from -16.0% to 21.0%. It was observed that the average level of Total debt/Equity is prevailing among the listed companies under the study at the proportion of 0.29 (mean = 0.2928) with the variation of 14.95% and ranging from 0.07 to 0.60. Further, it was found that there is a significant positive relationship between Total debt/Equity and the ROA of the listed companies under the study.

This relationship was found to be strong as indicated with the correlation coefficient of 0.766, which is more than the lower bound of a strong correlation (0.5). The Hierarchical linear regression analysis revealed that Total debt/Equity had a significant positive effect on ROA (the Standardized Beta value of 0.764 at Sig.t = 0.001) controlling for Firm Size and was found to be a significant predictor of financial performance. These findings empirically confirm the arguments given by [4], [7], [9], [13], [15], [21], [27], [28], [36], [80], [81] that the degree of Total debt/Equity structure to predict better Return on Assets is significant.

This study found that the average level of board size is observed among the listed companies under the study at a medium size having 8 members (mean =8.25) with the variation of 2.79 and ranging from 3 to 16. Further, it was found that the board size has a strong significant moderation effect on the impact of Total debt/Equity on ROA (the unstandardized Beta value of 0.0222 at Sig.t = 0.0426). This finding empirically confirm the arguments given by [49], [50], [31], [14], [8], [87], [78]. that the corporate governance characterized by the board size has a significant effect of moderating the power of Total debt/Equity structure on predicting the Return on Assets.

This study found that the average level of board independence is observed among the listed companies under the study at a moderate level of having about 62% of non-executive members in the board of directors (mean =0.6164) with the variation of 19.3% and ranging from 11% to 95%. Further, it was found that the board independence has a strong significant positive moderation effect on the impact of Total debt/Equity on ROA (the unstandardized Beta value of 0.490 at Sig.t = 0.001). This finding empirically confirm the arguments given by [49], [50], [31], [14], [8], [87], [78]. that the corporate governance characterized by the independence has a significant effect of moderating the power of Total debt/Equity structure on predicting the Return on Assets.

Further, the study found that the board independence has a significant strong negative moderation effect on the impact of Total debt/Equity on ROA (the Beta value of -0.9020 at Sig.t = 0.0002). This finding empirically confirm the arguments given by [49], [50], [31], [14], [8], [87], [78]. that the corporate governance characterized by the independence has a significant effect of moderating the power of Total debt/Equity structure on predicting the Return on Assets.

More importantly, the findings demonstrated that Board Size significantly and positively moderates the relationship between capital structure and financial performance (B = 0.0222, p = 0.0335). This indicates that the positive relationship between capital structure and financial performance becomes stronger as Board Size increases. The finding suggests that a larger board may provide additional expertise, experience and monitoring capacity, which could contribute to more effective financial and capital structure decisions. However, the direct effect of Board Size was not statistically significant, suggesting that its potential contribution to financial performance is more evident through its interaction with capital structure than through its direct relationship with financial performance.

In contrast, Board Independence demonstrated a statistically significant negative moderating effect on the relationship between capital structure and financial performance (B = -0.9020, p = 0.0002). This indicates that higher levels of Board Independence weaken the positive relationship between capital structure and financial performance. Although Board Independence may strengthen corporate monitoring and accountability, its interaction with capital structure suggests that higher board independence does not necessarily reinforce the positive financial performance associated with capital structure decisions. The direct conditional relationship between Board Independence and financial performance was also negative and statistically significant (B = -0.1172, p = 0.0430).

Furthermore, the two interaction terms jointly contributed an additional 5.06% to the explained variance in financial performance ($\Delta R^2 = 0.0506$, p = 0.001). The overall moderation model explained 64.77% of the variation in financial performance ($R^2 = 0.6477$), demonstrating the explanatory contribution of incorporating corporate governance interactions into the capital structure–financial performance relationship.

Overall, the study highlights that Board Size and Board Independence do not necessarily perform identical roles in the relationship between capital structure and financial performance. While Board Size strengthens the positive relationship, Board Independence weakens it. These findings emphasize the importance of considering different corporate governance characteristics when examining the financial consequences of capital structure decisions. Therefore, the effectiveness of corporate governance mechanisms should not be assessed solely through their direct relationships with financial performance but also through their potential moderating roles in important corporate financial decisions.

It is concluded that the capital structure (Total Debt/Equity) has been strongly, positively, and significantly correlated with the financial performance (ROA) in the Sri Lankan Corporate Sector. Further, the capital structure has a significant positive impact on the financial performance of the companies. Furthermore,

Corporate Governance Proxies, Board Size and Board Independence, have significant moderating effect on the impact of capital structure and financial performance. Board Size positively moderates the relationship between Capital Structure and Financial Performance, suggesting that the positive relationship becomes stronger as Board Size increases. Board Independence demonstrates a statistically significant negative moderating effect on the relationship between Capital Structure and Financial Performance, cautioning higher levels of Board Independence weaken the positive relationship between Capital Structure and Financial Performance. It is therefore recommended that companies improve their financial performance if they particularly increase the Total debt/equity proportion in their capital structure.

The positive relationship between capital structure and financial performance highlights the importance of developing appropriate capital structure policies. Company directors and financial managers should carefully evaluate the use of debt financing as part of their corporate financing strategies. Rather than adopting a uniform financing policy, companies should consider their financial capacity, debt-servicing ability, expected returns and associated financial risks when determining their capital structure. The findings suggest that capital structure decisions should also be considered alongside the characteristics of the corporate governance structure. The contrasting moderating effects of Board Size and Board Independence indicate that corporate governance mechanisms may influence financial performance through different channels. Therefore, companies should adopt an integrated approach to corporate governance and financial management. Board composition, director expertise, monitoring responsibilities and financing strategies should be considered together when evaluating major corporate financial decisions.

Limitations And Directions For Future Research

Although the study provides useful instincts, several limitations should be acknowledged. The analysis focused on a limited number of explanatory and corporate governance variables. Future studies could incorporate additional corporate governance characteristics, such as board meeting frequency, CEO duality, financial expertise and ownership structure, to obtain a more comprehensive understanding of the effect of capital structure on financial performance. The study examined Board Size and Board Independence as separate moderators. Future research could investigate whether these two characteristics jointly interact with capital structure through a three-way interaction model. Future studies could examine whether the moderating relationships differ across industries, company sizes and financial conditions. Such investigations may provide further insights into the circumstances under which corporate governance mechanisms contribute to corporate financial performance. Hence, future researchers could employ longitudinal data and alternative measures of financial performance and capital structure to examine the consistency of these effects over time.

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