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Financial Performance Implications of Capital Structure Choices: Evidence from Listed Non-Financial Companies in Sri Lanka.

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Abstract

Capital structure decisions are considered as critical in the present highly competitive financial world, as firms strategically adopt them to accomplish their goals. The composition of a firm's capital influences its overall cost of financing and value. Particularly, firms need to cautiously evaluate the advantages of debt financing in contrast to the potential costs of insolvency and financial distress. The primary objective of the study is to examine the extent to which capital structure choices influence the financial performance of non-financial companies in Sri Lanka. This study includes the independent variables of the Debt-to-Equity Ratio and Debt to-Total Assets Ratio, reflecting the proportion of debt and equity used to finance operations and growth and the dependent variables are Return on Equity (ROE) and Return on Assets (ROA), which measure financial performance. Under the stratified random sampling method 70 non-financial companies were selected and the relevant data of the sample companies were collected for the period from 2020 to 2024 from the audited annual financial statements of the companies. The statistical techniques of Pearson's correlation and panel data regression were used to analyse the association between the capital structure decisions and the financial performance. The findings of this study reveal that Debt-to-Total Assets Ratio has a significant negative impact on ROA of listed non-financial companies in Sri Lanka, which indicates that beyond a certain threshold, leverage does not improve performance but instead limits profitability. This finding supports the view that maintaining an optimal capital structure is a prerequisite for achieving operational efficiency and long-term financial stability. Furthermore, the study concludes that Debt-to-Total Assets Ratio and Debt-to-Equity Ratio have significant negative impact on ROE of listed non-financial companies in Sri Lanka which suggests that beyond a certain threshold, leverage does not generate value for shareholders but instead reduces equity returns, highlighting the importance of maintaining a balanced and sustainable capital structure. Based on the findings of the study, it is recommended that firms should implement a strategically balanced financing policy to improve operational performance of the firms. Firms should maintain an optimum capital structure by restricting excessive dependence on debt and whenever possible it is advantageous to provide more emphasis to internally generated funds. Moreover, companies should adopt proper financial risk management practices to match the maturity structure of debt with asset life cycles to prevent potential liquidity pressures. This study offers broad and comprehensive practical implications that are highly valuable for policymakers.

Keywords: Capital structure, financial performance, non-financial companies, debt-to-equity ratio, debt to-total assets ratio.

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1.0 Background of the Study

Firms require capital for their uninterrupted operations, risk absorption, future expansions and financial stability and they raise the needed capital from different sources. These sources of capital may be internal or external to the firms. In addition, it can be divided in to debt and equity financing. Stage of the firm, firm's size, cost of capital and risk profile are the major factors determine the choice of source of capital (Myers, 1984).

In the field of corporate financial management, the financing decision is considered as the fundamental decision which involves in deciding how and where to raise fund to satisfy the investment needs of the firm. Particularly, the main focus of the financing decision is to determine the ideal combination of debt and equity in the total capital to be raised to finance investments of the firm (Ross, Westerfield, & Jaffe, 2023).

Capital structure decisions are considered as critical in the present highly competitive financial world, as firms tactically adopt them to accomplish their goals. The composition of a firm's capital influences its overall cost of financing. By adopting an optimal balance between debt and equity, a firm can minimise its weighted average cost of capital (WACC) and enhance its overall value (Myers, 1984). In addition, capital structure adoptions highly influence agency relationships within a firm. Jensen and Meckling (1976) indicated that the usage of debt capital can serve as a surveillance device by diminishing the free cash flow in hand for managerial discretion. It supports to reduce disputes between shareholders and managers. On the other hand, an excessive dependence on debt may create conflicts between shareholders and creditors, as shareholders might undertake projects with higher risks that could transfer wealth from lenders to owners. Furthermore, capital structure has significant impact on ownership patterns and corporate governance. Additional equity financing may dilute present shareholders' ownership and voting rights, however with the support of debt financing firms can raise necessary fund without changing control structures. Thus, decisions about the mix of debt and equity have tactical implications for governance and control. Moreover, decisions regarding capital structure can influence on the balance between risk and return. Increasing leverage advances a firm's financial risk, as it is obliged to pay fixed interest irrespective of its performance. Even though debt can offer higher returns for shareholders during gainful periods, it also amplifies the possibility of financial difficulties during economic downturns. Firms need to cautiously assess the advantages of debt financing in contrast to the potential costs of insolvency and financial distress, consistent with the trade-off theory. Against this backdrop, it is important to study the impact of capital structure decisions on the financial performance of firms.

2.0 Problem Statement

Financial performance implications of capital structure choices are considered as a key focus in the researches in the area of corporate finance. However, empirical results in this area remains contradictory and inconclusive in the Sri Lankan context. The capital structure decisions which particularly involve in determining the choice between debt and equity financing is a major issue for the companies operating in developing economies like Sri Lanka. In the Sri Lankan context, a prominent gap remains between the theoretical benefits of leverage and its real-world outcomes. Even though debt financing is theoretically considered as advantageous owing to tax shield benefits, the comparatively high cost of borrowing in Sri Lanka frequently results in lower profitability and higher default risk. Several recent studies on

Sri Lankan companies reveal the negative association between debt ratios and return on assets (ROA) and these evidences challenges the traditional notion of leverage inherently increases shareholder value. The bank oriented financial system and unstable interest rate conditions forced companies to decide their financing options based on the financial performance (Levine ,2002). In the context of Sri Lanka, corporate financing behaviour is highly influenced by the characteristics and structure of the local capital market. Companies in Sri Lank operate within a comparatively small and less liquid capital market, operated by the Colombo Stock Exchange. These firms particularly non-finance companies experience exchange rate fluctuations, high costs of borrowing, macroeconomic instability, and limited access to long-term sources of financing. These characteristics can strengthen information asymmetry and negatively affect the preference on equity issuance (Samarakoon, 2010). Simultaneously, firms in developing markets have limited internal financing scope due to the availability of limited profit and retained earnings and it pushes the firms toward external financing (Booth et al., 2001). Currently, bank loans become as a key source of external financing for companies due to the institutional developments and expansion of lending activities of commercial banks in Sri Lanka (Colombage, 2005). However, compared to financial firms, non-financial firms highly free from rigid regulatory capital requirements and it provides more freedom for non-financial firms regarding capital structure decisions. Moreover, the recent economic crisis situations may also play an important role in the selection of financing methods of the companies and affect the traditional financing choices. These conditions may limit the availability of internal cash flows in companies and raise the cost of debt. Due to these reasons the companies may be forced rely on financing source of equity capital. On the other hand, in the periods of uncertainty companies may be reluctant to dilute ownership and whenever possible they may prefer to utilize retained earnings. Therefore, the dominant problem addressed in this study is to determine the extent to which capital structure choices influence the financial performance of non-financial companies in Sri Lanka.

3.0 Review of Literature

Numerous theories are available in the finance literature to elucidate the capital structure decisions of firms and the impact of these capital structure decisions on the financial performance of these firms. The key theories applicable to this study include the Modigliani and Miller Theory, Trade-off Theory, Pecking Order Theory and Agency Theory. The Modigliani and Miller Theory is considered as a cornerstone of contemporary capital structure theory. Franco Modigliani and Merton Miller (1958) indicated that under the perfect capital markets situations, firm value is not affected by capital structure decisions. This irrelevance proposition proposes that in a frictionless market, the combination of debt and equity is inconsequential. Later, Modigliani and Miller (1963) merged corporate taxation in their model and indicated that firms could maximize value by adopting more debt since interest payments are tax-deductible. The Trade-Off Theory of capital structure suggests that firms select their capital structure that maximises value by matching the gains of debt, mainly tax shields, against the costs connected with potential financial distress, such as bankruptcy and agency costs (Kraus and Litzenberger, 1973). Successive advancements of the theory integrated agency costs and gains and Jensen and Meckling (1976) indicate that debt can alleviate agency problems between managers and shareholders by disciplining managers through compulsory interest payments. Myers (1984) states that firms with steady cash flows and tangible assets are more

likely to engage higher leverage, as their possibility of distress is lower and their assets can act as collateral. Thus, the theory indicates the presence of a target leverage ratio toward which firms adjust over time. Pecking Order Theory convinces that owing to information asymmetry between managers and investors, firms tend to follow a hierarchical order of financing decisions. Firms show the first preference on internally generated funds (retained earnings) and the next preference is on debt financing. Raising capital through new equity issuance is considered as a last option (Myers and Majluf, 1984). This study is mainly based on the Trade-Off Theory of capital structure which indicates that businesses need to maintain an optimal capital structure by matching the benefits of debt financing against the costs related with financial distress and moderate levels of debt may improve performance of the firms, whereas over usage of debt may result in poor performance. In Sri Lanka, companies face the issues of restricted access to long-term financing facilities and higher level of borrowing costs. In this background, excessive dependence on debt financing may lead to poor financial performance by increasing interest obligations and financial risk. Accordingly, the Trade-Off Theory offers the fundamental theoretical explanation for the anticipated association between capital structure and financial performance of listed non-financial companies in Sri Lanka. In the process of validating these models, several empirical studies have been conducted both globally and within Sri Lanka. Berger and Bonaccorsi di Patti (2006) examined the 695 companies in the US banking industry and found the positive impact of financial leverage on firm performance. This finding was confirmed by the studies conducted by Fosu (2013) in South African firms and Ramezani et al. (2013) in Tehran Stock Exchange. Gill et al. (2011) observed a positive association between debt and ROE in the service and manufacturing firms listed on the New York Stock Exchange in the period from 2005 to 2007.

Furthermore, positive relationships between different measures on capital structure and performance measures were found in numerous studies conducted in different countries such as in Nigeria (Adesina at al., 2015), Pakistan (Mujahid and Akhtar, 2014), Ghana (Musah, 2017; Abor, 2005), Malaysia (Zuraidah, Norhasniza & Shashazrina, 2012; Tan and Hamid, 2016), Vietnam (Dinh and Pham, 2020; Le, 2017), South Africa (Fosu, 2013), Iran (Ramezani et al., 2013), Germany (Abdullah and Tursoy, 2021). Moreover, numerous studies have observed a negative association between debt and financial performance, indicating that higher debt levels may result in poor profitability. The relationship between debt and profitability in the materials sector companies in Saudi Arabia was investigated by Hajisaaid (2020) and found a negative association between long-term debt to total assets (LDA) and profitability and short term debt to total assets (SDA) and profitability.A study conducted by Essel (2024) in Ghana's capital market concluded that total debt to total assets, total debt to total equity, and long-term debt are negatively associated with firm performance. Similarly, Le and Phan (2017) observed significant negative associations between all debt ratios and firm performance in Vietnam and the study carried out by Pham (2020 confirmed this result. Dawar (2014) also found a negative relationship between financial leverage and profitability and suggested that excessive debt may result in higher agency costs and operational inefficiencies. Gleason et al. (2000) concluded that sales growth, return on assets, and pre-tax income were negatively affected by firm's capital structure and it indicated that higher level of debt in a firm's capital structure helps to diminish its overall performance. Furthermore, in Malaysia, Salim and Yadav (2012) observed negative impact of long-term debt, short term debt, and total debt on Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS).

In addition, the following studies have also identified negative relationships between different measures of capital structure and indicators of firm performance; which were conducted across various countries such as Pakistan (Khan, 2012), Jordan (Zeitun and Tian, 2007; Al-Taani, 2013), Canada (Hossain and Nguyen, 2016), Bangladesh (Hasan, Ahsan, Rahaman & Alam, 2014), Vietnam (Nguyen and Nguyen, 2019), Malaysia (Salim and Yadav, 2012; Sahari, Rahim & Tinggi, 2019), Saudi Arabia (Hajisaaid, 2020), Kenya (Cheruyot, and Ntoiti, 2015) Iran (Sadeghian, Latifi, Soroush, & Aghabagher, 2012). Empirical evidence in the Sri Lankan context specifies that capital structure decisions significantly influence firms' financial performance, with varying impacts depending on firm-specific factors, industry characteristics and macroeconomic conditions. Pratheepkanth (2011) investigated the companies listed on the Colombo Stock Exchange (CSE) and found a negative association between capital structure and profitability. The study specifies that companies with higher levels of leverage are likely to show weaker financial performance, as extreme dependence on debt financing raise interest obligations and financial risk, thus diminishing key performance indicators such as return on assets (ROA) and return on equity (ROE). In the Sri Lankan context, the findings advocate that the costs connected with debt financing may exceed its potential benefits. Similarly, Lingesiya and Premkanth (2011) conducted a study in the manufacturing sector and observed long-term debt and total debt ratios are negatively associated with firm performance. Their results point out that higher leverage can negatively affect performance in capital-intensive industries such as manufacturing, where substantial fixed costs and operational risks enhance the burden of debt. Equally, Velnampy and Niresh (2012) identified an adverse association between capital structure and profitability in Sri Lankan banks over the period 2002–2009, indicating that excessive debt can limit performance in extremely regulated financial firms.

A study conducted by Leon (2013) among 30 listed manufacturing companies, declared that leverage exerted a significant negative consequence on return on equity (ROE), whereas no significant association was observed with return on assets (ROA). This advocates that higher level of debt financing may corrode shareholders' returns even when operational performance is in stable position. Moreover, Abeywardhana and Magoro (2017) conducted a comparative study by comparing Sri Lankan and South African firms and found that long-term debt had a positive impact on firm performance in Sri Lanka, while short long-term debt contributed negatively. Their findings point out the vital role of debt maturity structure in shaping the performance outcomes of leverage.

In the context of Sri Lanakan banking industry, Sivalingam and Kengatharan (2018) reported that long-term debt and short-term ratios do not have a significant association with return on assets (ROA) or return on equity (ROE). Nevertheless, they observed that the total debt-to-assets ratio was negatively related to these performance indicators, inferring that the collective level of indebtedness, rather than the specific composition of debt, may negatively affect the performance of banks. Tharsika and Pratheepkanth (2023) investigated 50 non-financial Sri Lankan listed companies from 2020 to 2024, to identify how governance practices and capital structure interact to shape corporate performances. The authors studied whether leverage moderates the relationship between board composition and financial performance and concluded that financing choices are not isolated but interact particularly with certain governance factors to increase firm performance.

Moreover, Kooragama et al. (2018), examined d 33 manufacturing companies listed in the Colombo Stock Exchange over the period 2011–2016 and found a negative relationship between the debt-to-equity ratio and Return on Equity (ROE) and Return on Capital Employed (ROCE). The study also confirmed the negative impact of excessive debt financing on profitability, in the capital-intensive industries. Ekanayake, Silva & Tholangamuwa (2025) examined the impact of capital structure on the financial performance from 2019 to 2023 and found a statistically significant negative association between capital structure, measured in terms of debt-to-asset and debt-to-equity ratios, and firm performance, as measured by Return on Equity (ROE). The results mentioned that excessive debt leads to poor financial performance, highlighting the necessity for an optimal capital structure to improve firm profitability. Establishing an absolute relationship between capital structure and financial performance remains a challenge due to significant empirical contradictions and contextual gaps in the existing literature. Whereas initial insights have been provided by prior studies, results differ severely across sectors; some research concludes a positive association between debt and profitability in the banking sectors (Berger and Bonaccorsi di Patti, 2006), whereas studies on the manufacturing and capital goods sectors often indicate negative relationships (Kooragama et al. (2018). Further, most of the studies have been conducted in developed economies with stable macroeconomic conditions, established capital markets, and varied financing choices. On the other hand, developing markets such as Sri Lanka are characterized by comparatively high borrowing costs, infant capital markets, concentrated ownership structures, and restricted access to long-term debt financing. While a limited number of local researches have explored relationships between leverage and performance among companies listed in the Colombo Stock Exchange, their findings are fragmented and restricted to specific sectors and short time periods. Moreover, many studies failed to consider the recent macroeconomic instability, new regulatory requirements, and financial restrictions that may affect capital structure decisions and firm performance in Sri Lanka. Thus, there is a clear research gap in offering a complete and up-to-date analysis of how capital structure options affect the financial performance of Sri Lankan firms within the exclusive economic and institutional context of the country. Therefore, to address these limitations, the present study examines listed non-financial firms for a longer period using various financial indicators, providing a clear and more updated understanding of the impact of capital structure on financial performance.

Based on the Trade-Off Theory and empirical evidences regarding the capital structure on financial performance, the following hypotheses are formulated.

H1: Capital structure has a significant impact on the financial performance of listed non-financial companies in Sri Lanka.

$H1_{(a)}$: Debt financing has a significant impact on Return on Equity (ROE) of listed non-financial companies in Sri Lanka.

$H1_{(b)}$: Debt financing has a significant impact on Return on Assets (ROA) of listed non-financial companies in Sri Lanka.

4.0 Conceptual Framework

Figure 1 shows the conceptual frame work of the study. This study includes the independent variables of the Debt-to-Equity Ratio and Debt to-Total Assets Ratio, reflecting the proportion of debt and equity used to finance operations and growth. The dependent variables are Return on Equity (ROE) and Return on Assets (ROA), which measure profitability, efficiency, and shareholder value. The study also includes control variables: firm size, firm age, and liquidity, which account for company scale, experience, and potential to expand.

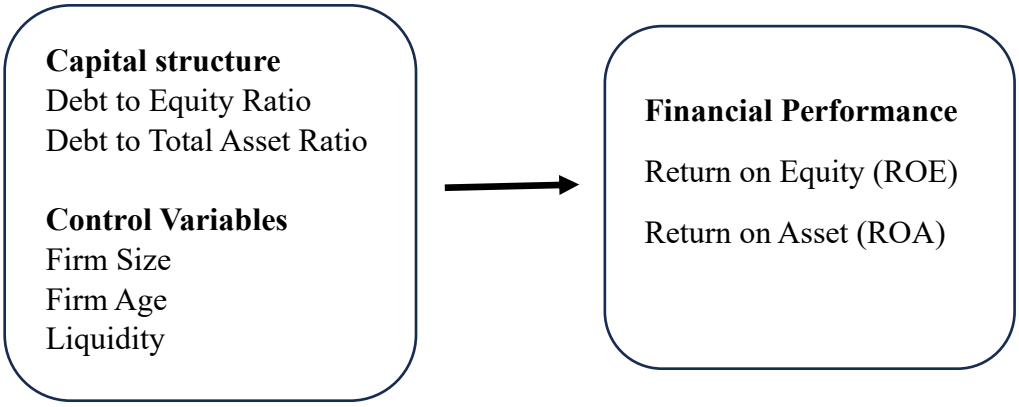


Figure 1: Conceptual Framework
Source: Developed by Researcher

5.0 Research Methodology

This research study grounded in the positivist paradigm aims on identifying explanatory relationships and causal associations by means of a quantitative method. Therefore, this study follows a deductive research design, as it aims to study causal associations among variables in order to test predetermined hypotheses. The study employs a quantitative methodology to collect panel data to assess the financial performance implications of capital structure choices of non-financial companies. Subsequently, the causal association between capital structure and financial performance was examined using panel data regression analysis.

6.0 Sample and Data Collection

The population of the study includes 222 non-financial companies listed on the Colombo Stock Exchange, Sri Lanka. Financial institutions such as insurance companies and banks are excluded in this study due to their exclusive nature of business and capital structures patterns. A stratified random sample of 70 non-financial companies, representing approximately 32% of the non-financial population, was selected to ensure proportional representation across all sectors and the sector-wise distribution of sample companies is shown in table 01. The study covers the period from 2020 to 2024 and the necessary data were collected from the audited annual financial statements of the companies.

Table 01: Sector-wise Distribution of Sample Companies

Sector Under 20 GICS	Number of Companies Selected
Telecommunication Services	02

House Hold and Personal Product	01
Food Beverage and Tobacco	18
Utilities	04
Health Care Equipment and Services	04
Real-Estate Management & Development	04
Materials	04
Capital Goods	09
Automobiles and Components	01
Consumer Durable & Apparel	02
Consumer Service	14
Retailing	04
Food Staples and Retailing	01
Commercial and Professional Services	02
Total Number of Sample Companies	70

7.0 Results and Interpretation

7.1 Correlation Analysis

Table 02 Correlation Analysis

Variables	DER	DTA	FS	FA	LD	ROA	ROE
DER	1.000000 -----						
DTA	0.447409 0.0000	1.000000 -----					
FS	0.065586 0.2210	0.074830 0.1624	1.000000 -----				
FA	-0.074407 0.1648	-0.114865 0.0317	-0.149752 0.0050	1.000000 -----			
LD	-0.147074 0.0058	-0.503308 0.0000	0.118440 0.0267	0.058809 0.2725	1.000000 -----		
ROA	-0.152550 0.0042	-0.138613 0.0094	0.106686 0.0461	0.159086 0.0028	0.168434 0.0016	1.000000 -----	
ROE	-0.210796 0.0001	-0.043081 0.4217	0.123037 0.0213	0.049844 0.3525	0.044788 0.4035	0.443745 0.0000	1.000000 -----

According to table 02, Debt-to-Equity Ratio (DER) (r=-0.152550, p< 0.01) and Debt-to-Total Assets Ratio (DTA) (-0.138613, p< 0.01) have a statistically significant negative relationship with ROA at 0.01 significant level. Similarly, Debt-to-Equity Ratio (DER) (r=-0.210796, p< 0.01) has a statistically negative relationship with ROE. However, there is no significant relationship between Debt-to-Total Assets Ratio (DTA) and ROE (r=-0.043081, p= 0.422). Moreover, Firm Age (r= 0.159086, p< 0.01) and Liquidity (r= 0.168434, p< 0.01) have a statistically positive relationship with ROA at 0.01 significant level. Firm Size has a statistically positive association with ROA (r=0.106686, p< 0.05) and ROE (r=0.123037, p< 0.05) at 0.05

significant level. However, Firm Age (r=0.049844, p= 0.353) and Liquidity (r= 0.044788, p=0.404) have a statistically insignificant positive relationship with ROE.

7.2 Multicollinearity Analysis of the Variables

When explanatory variables are extremely correlated, the precision of statistical inferences may be weakened. Therefore, multicollinearity analysis was conducted to decide whether strong correlations exist among the independent variables included in the regression model.

Table 03: Variance Inflation Factor

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.003002	87.03403	NA
DER	1.13E-06	1.50212	1.373231
DTA	0.000941	6.469921	1.690993
FS	2.07E-05	34.94765	1.062340
FA	0.000535	1.22032	1.050321
LD	4.59E-06	2.238550	1.398889

According to table 03, all variables have Centered VIF values less than 2, indicating that the independent variables are sufficiently independent for a reliable regression analysis.

7.3 Unit Root Test

Since non-stationary variables may lead to spurious regression results, it is essential to test for stationarity prior to panel regression analysis. The Levin, Lin and Chu (LLC) panel unit root test was employed to examine the stationarity of the variables. The null hypothesis assumes the presence of a unit root, while the alternative hypothesis assumes stationarity.

Table 04: Unit Root Test

Variables	Zero Level		Conclusion
	t-statistics	Probability	
Debt-to-Equity Ratio (DER)	-10.8150	0.0000	DER is stationary at level, I(0).
Debt-to-Total Assets Ratio (DTA)	-13.7954	0.0000	DTA is stationary at level, I(0).
Return on Assets (ROA)	-18.5314	0.0000	ROA is stationary at level, I(0).
Return on Equity (ROE)	-19.0453	0.0000	ROE is stationary at level, I(0).
Firm Size (FS)	-33.9113	0.0000	FS is stationary at level, I(0).
Firm Age (FA)	-37.7151	0.0000	FA is stationary at level, I(0).
Liquidity (LD)	-7.9279	0.0000	Liquidity is stationary at level, I(0).

The results presented in Table 04 show that all variables have statistically significant test statistics ($p < 0.05$). Therefore, the null hypothesis of unit root is rejected. This indicates that all variables are stationary at level, i.e., I(0), and can be used in regression analysis without differencing.

7.4 Panel regression analysis

Panel regression analysis is conducted in order to examine the impact of capital structure on financial performance measured by ROA and ROE. Table 05 represents the results of panel data regression analysis to examine the impact of capital structure on ROA.

7.4.1 Regression Analysis based on Return on Assets (ROA)

Table 05: Panel Data Regression Analysis of ROA

Variables	Pooled OLS	Random Effect	Fixed Effect
Constant (C)	-0.145051	-0.106809	-0.150816
	(0.0085)	(0.2466)	(0.5622)
Debt-to-Equity Ratio (DER)	-0.002288	0.000479	0.000978
	(0.0320)	(0.5407)	(0.2259)
Debt-to-Total Assets Ratio (DTA)	-0.006324	-0.108130	-0.171299
	(0.8368)	(0.0012)	(0.0001)
Firm Size (FS)	0.010744	0.011655	0.002102
	(0.0188)	(0.1174)	(0.9026)
Firm Age (FA)	0.070304	0.069967	0.160379
	(0.0025)	(0.0891)	(0.3356)
Liquidity (LD)	0.004157	0.001230	0.000762
	(0.0531)	(0.5150)	(0.7134)
R-squared	0.0799	0.0531	0.7279
Adjusted R-squared	0.0665	0.0393	0.6547
F-statistic	5.9751	3.8588	9.9410
Prob (F-statistic)	0.0000	0.0020	0.0000
Observations	350	350	350

The table 05 presents the findings of the panel data regression analysis conducted to investigate the impact of capital structure on ROA of listed non-financial companies in Sri Lanka. The results are presented for three estimation approaches; pooled Ordinary Least Squares (OLS), Fixed Effects (FE), and Random Effects (RE); to examine the relationship between leverage measures and ROA.

Given the panel nature of the dataset, it is important to determine the most appropriate estimation technique to ensure consistent and reliable results. Therefore, the model selection and diagnostic tests of the Redundant Fixed Effects Test (F-test), the Breusch–Pagan Lagrange Multiplier (LM) test, and the Hausman specification test were performed.

Redundant Fixed Effects Test (F-test)

The F-test was conducted to compare the Pooled OLS and Fixed Effects models and the null hypothesis assumes that Pooled OLS is appropriate, while the alternative hypothesis

assumes that Fixed Effects are most suitable. The F-test results showed in the table 06 specifies a significant p-value (p = 0.0000), indicating that the Fixed Effects model is more appropriate than the Pooled OLS model for analyzing Return on Assets (ROA).

Table 06: Redundant Fixed Effects Test of ROA

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.659475	(69,275)	0.0000
Cross-section Chi-square	430.747542	69	0.0000

Breusch – Pagan Lagrange Multiplier Test

The Breusch-Pagan LM test was conducted to decide between the Pooled OLS and Random Effect Model.

H0: p value > 0.05 – Pooled OLS model is more appropriate

H1: p value < 0.05 – Random effect model is more appropriate

Table 07: Breusch – Pagan Lagrange Multiplier Test of ROA

Test Hypothesis			
	Cross-section	Time	Both
Breusch-Pagan	246.7275	1.652191	248.3797
	(0.0000)	(0.1987)	(0.0000)

The results in the table 07 show that the cross-section and overall (both) statistics are significant (p < 0.05), while the time effect is not significant (p > 0.05). This indicates that cross-sectional effects are present, and the Random Effects model is more appropriate than the Pooled OLS model for analyzing the impact of capital structure on ROA of the listed non-financial companies in Sri Lanka over five consecutive years.

Hausman Test

The Hausman test was conducted to decide whether a fixed effects model or a random effects model is more appropriate for panel data analysis.

H0: p value > 0.05 – Random effect model is more appropriate

H1: p value < 0.05 – Fixed effect model is more appropriate

Table 08: Hausman Test of ROA

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.184536	5	0.0217

Source: Survey Data

Table 08 exhibits the results of Hausman Test which shows a significant p-value (p = 0.0217), indicating that the Fixed Effects model is more suitable than the Random Effects model for analyzing the impact of capital structure on ROA. Thus, based on the Hausman test results, the Fixed Effects model is selected as the final model for interpretation.

Table 09: Fixed Effects Regression model of ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.150816	0.259890	-0.580307	0.5622
Debt-to-Equity Ratio	0.000978	0.000806	1.213770	0.2259
Debt to-Total Assets Ratio	-0.171299	0.043400	-3.946960	0.0001
Firm Size	0.002102	0.017164	0.122490	0.9026
Firm Age	0.160379	0.166261	0.964626	0.3356
Liquidity	0.000762	0.002072	0.367623	0.7134
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.059239	R-squared		0.727894
Mean dependent var	0.049725	Adjusted R-squared		0.654673
S.D. dependent var	0.113726	S.E. of regression		0.066831
Akaike info criterion	-2.385899	Sum squared resid		1.228244
Schwarz criterion	-1.559199	Log likelihood		492.5324
Hannan-Quinn criter.	-2.056844	F-statistic		9.941022
Durbin-Watson stat	1.977516	Prob(F-statistic)		0.000000

As shown in table 09, the results of fixed effects model indicate that the R-squared value of 0.7279 indicates that approximately 72.79% of the variation in ROA is explained by the independent variables and firm-specific fixed effects, while the adjusted R-squared of 0.6547 confirms robustness after adjusting for the number of predictors. The F-statistic of 9.941 ($p<0.001$) indicates that the set of explanatory variables collectively explains significant variation in ROA. These indicate the strong explanatory power of the model. Moreover, Debt-to-Equity Ratio (ß=0.000978, $P>0.05$) has not shown any significant impact on ROA. Similar findings have been detected in other studies where the impact of Debt-to-Equity Ratio on profitability varies by context and industry (Peiris, 2019). The insignificant impact of Debt-to-Equity Ratio aligns with the pecking order theory, where firms prioritize internal financing over debt but do not always show a uniform impact on performance. In contrast, the regression coefficient for Debt to-Total Assets Ratio stands at -0.171299 with t statistics of -3.94696 at 5% significant levels ($p< 0.05$). It can be stated that Debt to-Total Assets Ratio has a significant negative impact on ROA. Hence, the larger that Debt to-Total Assets Ratio will decrease the ROA and vice versa. This finding aligns with prior study conducted by Ravindran & Kengatharan (2021). This finding suggests that companies with a higher proportion of debt-financed assets tend to generate lower operating returns from their total asset base. According to the Trade-off Theory firms must balance the tax benefits of debt against the costs of possible

financial distress. When firms surpass their optimum capital structure, the cost of servicing debt (interest expenses) diminishes operating income, thus, lowering ROA. In Sri Lanka, borrowing costs are relatively high and access to long-term financing is restricted. In addition, increased debt obligations may also restrict investment in profitable projects, and constrain managerial flexibility. If the assets attained through debt do not generate a return significantly greater than the cost of borrowing, the overall ROA will certainly decline. Moreover, in this model the control variables of firm size, firm age, and liquidity have not shown any significant impact on ROA. Overall, the results highlight the importance of careful debt management to optimize ROA. in Sri Lanka's non-financial sector.

7.4.2 Regression Analysis based on Return on Equity (ROE)

Table 10: Panel data regression analysis of ROE

Variables	Pooled OLS	Random Effect	Fixed Effect
Constant (C)	-0.967724	-0.811028	3.381103
	(0.0185)	(0.1230)	(0.2197)
Debt-to-Equity Ratio	-0.033351	-0.043889	-0.057824
	(0.0000)	(0.0000)	(0.0000)
Debt to-Total Assets Ratio	0.261598	0.099863	-1.223213
	(0.2539)	(0.6950)	(0.0082)
Firm Size (FS)	0.088096	0.091934	-0.043395
	(0.0099)	(0.0342)	(0.8112)
Firm Age (FA)	0.194351	0.144485	-1.499545
	(0.2607)	(0.5193)	(0.3945)
Liquidity (LD)	0.007151	-0.000293	-0.002303
	(0.6547)	(0.9861)	(0.9164)
R-squared	0.0698	0.0987	0.4472
Adjusted R-squared	0.0563	0.0856	0.2985
F-statistic	5.1659	7.5359	3.0067
Prob (F-statistic)	0.0001	0.0000	0.0000
Observations	350	350	350

The table 10 presents the results of panel data regression analysis used to examine the impact of capital structure on the ROE of the listed non-financial companies in Sri Lanka. Since the study uses panel data, the model selection and diagnostic tests of the Redundant Fixed Effects Test (F-test), the Breusch–Pagan Lagrange Multiplier (LM) test, and the Hausman specification test were performed and the results are as follows.

Redundant Fixed Effects Test (F-test)

Table 11: Redundant Fixed Effects Test of ROE

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.278525	(69,275)	0.0000
Cross-section Chi-square	158.255849	69	0.0000

Source: Survey Data

The F-test results shown in table 11, exhibit a significant p-value (p = 0.0000), indicating that the Fixed Effects model is more appropriate than the Pooled OLS model for analyzing Return on Equity.

Breusch – Pagan Lagrange Multiplier Test

Table 12: Breusch – Pagan Lagrange Multiplier Test of ROE

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	25.18429	0.039483	25.22377
	(0.0000)	(0.8425)	(0.0000)

Source: Survey Data

The LM test results in the table 12 indicates that the cross-section and overall (both) statistics are significant ($p < 0.05$), while the time effect is not significant ($p > 0.05$). This indicates that cross-sectional effects are present, and the random effects model is more appropriate than the Pooled OLS model.

Hausman Test

Table 13 Hausman Test of ROE

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	28.463162	5	0.0000

Source: Survey Data

Table 13 shows the results of the Hausman test which specify a significant p-value (p = 0.0000), indicating that the Fixed Effects model is the most suitable for analyzing ROE.

Table 14: Fixed Effect Regression Model of ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.381103	2.748643	1.230099	0.2197
DER	-0.057824	0.008523	-6.784318	0.0000
DTA	-1.223213	0.459008	-2.664903	0.0082
FS	-0.043395	0.181528	-0.239052	0.8112
FA	-1.499545	1.758403	-0.852788	0.3945
LD	-0.002303	0.021913	-0.105095	0.9164

Effects Specification			
Cross-section fixed (dummy variables)			
Root MSE	0.626524	R-squared	0.447228
Mean dependent var	0.062494	Adjusted R-squared	0.298483
S.D. dependent var	0.843890	S.E. of regression	0.706814
Akaike info criterion	2.331311	Sum squared resid	137.3862
Schwarz criterion	3.158011	Log likelihood	-332.9794
Hannan-Quinn criter.	2.660367	F-statistic	3.006661
Durbin-Watson stat	2.926973	Prob(F-statistic)	0.000000

According to the results of fixed effects model shown in table14, the R-squared value is 0.4472 indicating that approximately 44.729% of the observed variation in ROE can be explained by the differences in Debt-to-Equity Ratio and Debt to-Total Assets Ratio and firm specific fixed effects; while the adjusted R-squared of 0.2985 confirms robustness after adjusting for the number of predictors. The F-statistic of 3.007 ($p = 0.001$) indicates that the set of explanatory variables collectively explains significant variation in ROE and it could be concluded that the model has adequate explanatory power.

According to results, the regression coefficient for Debt-to-Equity Ratio stands -0.057824 with t statistics of -6.784318 at 5% significant levels ($p< 0.05$). Thus, it can be concluded that Debt-to-Equity Ratio has a significant negative impact on ROE and it implies that firms with higher relative debt compared to shareholders' equity tend to generate lower returns for their owners. Moreover, the regression coefficient for Debt to-Total Assets Ratio stands -1.223213 with t statistics -2.664903 at 0.05 significant levels ($p< 0.05$). Thus, it can be concluded that Debt to-Total Assets Ratio has a significant negative impact on ROE and indicates that firms with a higher proportion of debt-financed assets tend to generate lower returns for shareholders.

Theoretically, these results align with the Trade-Off Theory highlights that excessive debt increases interest obligations and financial distress. When firms surpass their optimal capital structure, rising interest expenses and repayment obligations diminish net income available to shareholders, directly lowering ROE. Moreover, the Pecking Order Theory which states that firms with strong earnings gather retained profits and depend less on external debt, whereas less profitable firms depend more on borrowing. Consequently, a higher Debt-to-Equity Ratio may reflect poor internal performance, thereby explaining its negative association with ROE. In addition, from an agency theory viewpoint, high leverage can raise conflicts between creditors and shareholders, leading to restrictive debt covenants and conservative managerial decisions that may restrict profitable investment chances. Since ROE is a measure of the return produced on shareholders' funds, any decrease in net income due to higher financial expenditures or inappropriate capital allocation will negatively affect this ratio.

In addition, the economic conditions of Sri Lanka also play a significant role in the relationship between leverage and financial performance of companies. During the study period, business in Sri Lanka functioned under the environments of severe economic uncertainty, limited access

to long-term financing facilities, exchange rate instability and higher interest rates. It may support to reduce the profit generated from borrowed funds. Further, the bank-oriented financial system of Sri Lanka may be another reason for this situation. Sri Lankan non-financial companies excessively depend on bank borrowing and it results in higher levels of liquidity pressures and financial risk.

However, in agreement with the Trade-Off Theory, optimum levels of debt usage may improve financial performance. The negative associations found in this study indicate that many non-financial companies may have functioned beyond their optimal debt levels during the study period, where they experienced the debt related costs outweighed its benefits. Therefore, the findings of the study emphasized the need for an optimal rather than a minimal level of debt financing.

In this model also the control variables of firm size, firm age, and liquidity have not shown any significant effect on ROE.

8.0 Conclusion

This study examines the impact of capital structure on financial performance of listed non-financial companies in Sri Lanka. The results of the study reveals that Debt-to-Total Assets Ratio has a significant negative impact on ROA of listed non-financial companies in Sri Lanka, which indicates that beyond a certain threshold, leverage does not improve performance but instead limits profitability. This finding supports the view that maintaining an optimal capital structure is a prerequisite for achieving operational efficiency and long-term financial stability. Furthermore, the study concludes that Debt-to-Total Assets Ratio and Debt-to-Equity Ratio have significant negative impact on ROE of listed non-financial companies in Sri Lanka which suggests that beyond a certain threshold, leverage does not generate value for shareholders but instead reduces equity returns, highlighting the importance of maintaining a balanced and sustainable capital structure.

9.0 Recommendations

Given the significant negative impact of the capital structure on financial performance, firms should implement a strategically balanced financing policy to improve operational performance of the firms. As indicated by the Trade-Off Theory, firms should maintain an optimum capital structure by restricting excessive dependence on debt and whenever possible it is advantageous to provide more emphasis to internally generated funds. In agreement with the Pecking Order Theory firms should strengthen retained earnings through efficient utilization of assets, enhanced cost control, and profit reinvestment tactics to diminish over reliance on external borrowing. Simultaneously, firms should review their capital structure regularly to evaluate whether present leverage levels exceed sustainable thresholds.

In addition, companies should adopt proper financial risk management practices to match the maturity structure of debt with asset life cycles to prevent potential liquidity pressures. When making decision to raise new debt, managers should assess the anticipated return on investment to ensure that anticipated returns surpass the cost of borrowing. Furthermore, improving operational efficiency and strengthening cash flow management can also support to increase ROA without increasing leverage. Particularly, Management should identify under-utilized assets that are currently financed by debt but are not creating a adequate return to cover their

interest costs and take necessary actions regarding them. Further, by raising sales volume without altering the asset base, the firm can attain higher net income, which results into a higher ROE. In addition, Government authorities should take necessary actions for improving access to long-term, lower-cost financing options which may diminish firms' over dependence on short-term high-cost debt, thereby supporting sustainable firm performance. Overall, adopting moderate leverage, implementing appropriate financial risk management practices, improving internal financing capacity, enhancing asset utilization and strengthening financial planning mechanisms are essential steps to mitigate the adverse effect of high debt levels on financial performance.

10.0 Policy and Practical Implications

The findings of this study offer important implications for managers, investors, lenders, and policymakers. For managers, the results indicate the necessity of maintaining an optimal capital structure and managers should frequently review leverage ratios and debt servicing capacity. In addition, managers should ensure that projects financed through debt should provide more return than the related borrowing costs. Managers may strengthen internal financing capability of companies by enhancing profitability and adopting proper working capital management and dividend policies. For investors, the findings suggest that during the investment decision making process leverage indicators of the companies should be carefully evaluated by investors since extremely leveraged companies may experience lower future profitability and higher financial risk. For lenders and financial institutions, the results emphasize the need for carrying out comprehensive credit assessments in addition n to traditional collateral requirements. Particularly, pattern of cash flow, profitability and debt repayment ability should be evaluated. Furthermore, lenders and financial institutions may offer financing schemes with flexible repayment schedules based on the cash flow patterns of businesses. For regulators and policymakers, the findings specify the importance to enhance availability of long-term financing sources for the corporate sector with reasonable cost. The necessary measures should be implemented to develop capital market, improve participation in debt market and ensure financial market stability for the purpose of reducing extreme dependence on short-term bank borrowing.

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