Firm Specific Factors of Corporate Debt Decisions in a Frontier Market

G. Mithila[1]& L. Kengatharan [2]

ARTICLE INFORMATION	ABSTRACT
	This study investigates firm specific determinants of debt financing among Sri Lanka's listed capital goods companies, a capital-intensive sector within a frontier setting. Grounded in trade off and pecking order theories, the analysis evaluates the influence of profitability, liquidity, asset tangibility, non-debt tax shields, operating and investment cashflows, interest costs and firm size on debt decisions. Using panel data from 25 firms over ten years (2015-2024), the analysis applies pooled OLS, fixed effects and random effects. The results show that profitability, liquidity and operating cash flow are negatively associated with debt decision, while asset tangibility and firm size positively affect the debt decision, consistent with collateral-based borrowing and trade off considerations. Non debt tax shields and investment cash flows exhibit limited effects, and higher interest costs are linked to lower debt usage. The study contributes by focusing on a frontier market during and after the 2022 crisis, modeling two leverage ratios alongside cash flow decompositions and clarifying when classical theories prevail in constrained institutional contexts. The findings offer practical implications for managers in structuring financing decisions and provide policymakers and investors with insights into debt behaviour in under researched frontier economies.

[1]Corresponding Author, Department of Financial Management, University of Jaffna, Sri Lanka. Email: *gmithila@univ.jfn.ac.lk*

[2]Department of Financial Management, University of Jaffna, Sri Lanka. Email Address: *lingesiya@univ.jfn.ac.lk*

1. Introduction

Financial capital is one of the important determinants for business operational decisions and affects the company's sustainability (Pathak & Chandani, 2023). Since internally generated funds may not be sufficient all the time to run the business smoothly, Businesses can go to two different sources of funds, namely equity and debt financing. (Lyubov and Heshmati, 2023; Boateng *et al.*, 2022; Hossain, 2021). Debt financing involves borrowing funds through loans and bonds while through selling company shares to investors, the company can raise equity funds. Earlier studies in this field highlight the importance of borrowing due to its accessibility and tax shield benefits which allow the companies to reduce debt financing costs and enhance profitability. Furthermore, obtaining the equity funds may result in a loss of ownership for the firm, as the equity providers become part owners of the firm. However, unlike debt financing, equity does not require regular repayments. This can improve cash flow and reduce the financial pressure on the company which allows the company to focus on long-term growth. Hence, the decision between debt and equity financing remains comprehensive and complex due to factors such as risk, costs, and control over businesses (Ali et al., 2022).

Capital structure has been a central topic in financial economics since Modigliani and Miller's (1958) seminal study which demonstrated that in markets without frictions and with uniform expectations, the capital structure of a firm is irrelevant. Later, Modigliani and Miller (1963), incorporated corporate taxes into their model and showed that the value of the firm increases with the amount of debt due to the tax deductibility of interest payments. This finding led to the formulation of the trade-off theory (Kraus & Litzenberger, 1973) which suggested that firms balance the tax advantages of debt with the costs of financial distress. Further, Myers and Majluf (1984) developed pecking order theory which mentioned that firms prioritize their sources of funding based on the principle of least effort or resistance, typically preferring internal financing, debt and equity as a last resort. Therefore, based on the theoretical evidence firms find it difficult to decide whether these debt financing adds value or not. Further, empirical evidences show that there were contracting results on the factors determining the debt decisions in the global and emerging markets (Khan et al., 2024; Ersoy, 2022; Rani et al., 2020; Sohrabi & Movaghari, 2020; Matemilola et al., 2019; Rashid et al., 2023; Pathak and Chandani, 2023; Lyubov and Heshmati, 2023; Afiezan *et al.*, 2020).

The ongoing impact from the financial crises in Sri Lanka adds urgency to these decisions since most of the businesses fail to make informed decisions and major failure of businesses due to mismanagement of funds. The financial crisis in Sri Lanka, particularly the 2022 sovereign default and ensuring economic turmoil, has exacerbated challenges for firms seeking debt financing. Hyperinflation, currency depreciation, and foreign exchange shortages have increased the cost of imported capital goods, strained liquidity and heightened default risks (Thilina Kaluthotage, 2023). Central bank interventions, such as interest rate hikes to curb inflation, have tightened credit availability, forcing firms to reassess debt sustainability. This ongoing impact from the financial crises in Sri Lanka adds urgency to these decisions since most of the businesses fail to make informed decisions and major failure of businesses due to mismanagement of funds.

Prevailing research, though extensive, primarily focuses on the other developed and emerging markets creating an empirical research gap for understanding the determinants of debt financing specific to Sri Lankan firms. In the Sri Lankan context, most studies examine the determinants of capital structure, including both equity and debt financing (Buvanendra et al., 2016; Arachchi, 2019; Mayuri & Kengatharan, 2019; Yogendrajah & Thanabalasingam, 2011) and few studies focus on the determinants of debt financing decisions (Godakanda & Manawaduge, 2022; Haleem, 2020) which produced contradicting results. Therefore, this study focuses solely on the determinants of debt financing because this is directly affected by the central decisions on average interest rates paid by firms. Recently central bank has adjusted the interest rates to adjust the economic conditions to face and come out from the crisis. (CBSL, 2023; Uditha Jayasinghe, 2024).

Despite rich global evidence, results on the signs and magnitudes of key determinants remain mixed

across contexts, especially outside developed markets. In Sri Lanka's capital goods sector, exposed to collateral needs, import intensive investment and the 2022 macro financial shock, the interaction between cash flow capacity, asset tangibility and borrowing costs may differ from standard predictions. This study addresses that gap by quantifying how core firm level factors relate to two leverage measures (DA and DE) over 2015-2024 and by identifying which classical mechanisms (trade off vs pecking order) dominate under frontier market constraints. Therefore, the research problem is, in a frontier market setting with tight credit conditions and raised funding frictions, it remains unclear which internal factors most strongly drive corporate leverage and whether their effects align with trade off or pecking order predictions for capital intensive firms listed on the Colombo Stock Exchange (CSE). The primary reason for considering this industry is that it is one of the largest daily turnovers among the non-financial companies listed in Sri Lanka.

To address the research problem following research questions are formulated.

- Do profitability, liquidity, asset tangibility, non-debt tax shields, cash flow components and interest cost influence leverage, measured by debt to assets and debt to equity in Sri Lanka's capital goods sector?
- Which theoretical framework explains the observed associations?
- Are the signs and magnitude of these effects consistent across the two leverage measures?

In line with these questions, the study follows three specific objectives. This first seeks to estimate the effects of profitability, liquidity, tangibility, non-debt tax shields, operating and investment cash flows, interest cost and firm size on leverage, measured by debt to assets and debt to equity. Building on this. It tests whether the directions of these effects confirm the predictions of trade off theory and/or pecking order theory or other theories. Finally, it compares coefficient patterns across the two leverage measures to evaluate the impact on alternative debt definitions.

This study contributes to capital structure research by isolating firm specific determinants of debt financing in a frontier market setting where crisis conditions heighten financing frictions. By focusing on debt rather than the broader mix of equity and debt, the analysis clarifies whether trade off or pecking order theory better explains borrowing behaviour under credit constraints. Practically, the findings guide managers in capital intensive sectors on balancing internal and external financing, while offering policymakers evidence on how firm level factors interact with monetary interventions and debt sustainability in Sri Lanka.

The next section reviews the relevant literature on debt financing. The methodology and data are then described, followed by the analysis and discussion of results. The paper concludes with key findings, implications, limitations and suggestions for future research.

Literature Review

Theoretical Background

The financing decisions of firms are explained through several capital structure theories developed over the past decades. These frameworks provide different perspective on how firms balance debt and equity, and they form the foundation for examining firm specific determinants of leverage. Among the most influential are the Modigliani and Miller theory, the trade-off theory, the pecking order theory, market timing theory, agency-based approaches and free cash flow hypotheses

Modigliani and Miller Theory (MM)

Modigliani and Miller (1958) argue that in perfect capital markets, a firm's value is independent of its capital structure, whether financed through debt and equity. This proposition relies on assumptions, including the absence of taxes, transaction and flotation costs, asymmetric information, bankruptcy costs and government intervention, alongside homogeneous investor expectations. Recognizing these limitations, Modigliani and Miller (1963) later incorporated corporate taxes, demonstrating that debt creates value through the tax deductibility of interest payments. This adjustment implies that firms can enhance value by

increasing leverage, provided the benefits of the tax shield outweigh potential costs.

Trade off theory
This theory suggests that there should be a balance between the advantages and disadvantages of debt financing (Kraus & Litzenberger, 1973). The benefits include tax shields benefits that lower the cost of debt while the costs of debt include bankruptcy costs from excessive leverage and agency costs arising from conflicts between principals and agents. Consequently, advantages of tax shield diminish as the expected bankruptcy and agency costs increase.

Pecking order theory
The pecking order theory diverges from the conventional approach of explicitly balancing debt and equity to reduce the cost of capital. Instead, this theory prioritizes different sources of finance to determine the optimal capital structure. This suggests that businesses should first use internal financing such as retained earnings, followed by debt financing, and finally issuing new equities. The rationale is that internal funding is cheaper than external options, like debt and new equities, thus maximizing the business's value.

Market timing theory
Baker and Wurgler (2002) used this theory which explored the concept of market timing for equity using a weighted average of the market to book ratio based on the external financing. This market timing theory suggests that companies adjust towards a target debt ratio over time but prefer equity financing when the market places a higher value on their equity. Over time, such financing choices affect the observed capital structure, even without a static target.

Agency cost theory
Agency cost theory (Jensen & Meckling, 1976) highlights conflicts of interest between shareholders, managers and creditors. Debt can reduce agency costs of equity by imposing fixed obligations, thereby limiting managerial discretion. However, excessive leverage may generate agency costs of debt, including risk shifting, underinvestment or asset substitution, where managers pursue high risk strategies that benefit shareholders at creditors' expense.

Free cash flow theory
Extending agency perspectives, Jensen (1986) introduced the free cash flow theory, which argue that firms with substantial discretionary cash flows are prone to wasteful investments and empire building. Debt mitigates such inefficiencies by enforcing regular interest and principal payments, constraining managerial opportunism and improving capital allocation discipline.

Empirical Evidence

H1: There is a positive relationship between firm size and leverage level

According to trade off theory, more profitable firms tend to utilize more debt to get the benefits through tax shields and a lower expected cost of financial distress (Rani et al., 2020). However, pecking order theory says that managers prefer to use internal fund and profitable firms are less likely seek external funds as they will generate more internal funds (Rashid et al., 2023; Ersoy, 2022; Sohrabi & Movaghari, 2020). In this study, negative relationship is hypothesized.

H2: There is a negative relationship between firm profitability and leverage level

Additionally, firms with sufficient level of liquidity will have a positive impact on the debt financing decisions as suggested by trade off theory. This says firms use debt to ensure they can cover their financial commitments (Rani et al., 2020; Kaur et al., 2020). However, pecking order theory states that firms with higher liquidity require less external financing and borrowing because they tend to have sufficient internal fund to fulfil their needs (Ersoy, 2022; Kahya et al., 2020; Godakanda & Manawaduge, 2022).

H3: There is a negative relationship between liquidity and leverage level.

Non debt tax shield can lead to decrease in taxable income. Hence both trade off theory and pecking order theory suggest a negative relationship between non debt tax shield and debt financing decisions (Matemilola et al., 2019). However, some empirical evidence shows a positive relationship (Ersoy, 2022) while some studies

show insignificant relationship (Godakanda & Manawaduge, 2022).

H4: There is a negative relationship between non debt tax shield and leverage level.

Further, trade off theory suggests that tangible assets can be used as collateral, which reduces the risk for creditors and enables firms to carry higher levels of debt (Rashid et al., 2023; Godakanda & Manawaduge, 2022). On the other hand, the pecking order theory argues that there is a negative relationship. Since tangible assets reduce the information asymmetry, the cost of issuing equity is lower. Hence, firms with high levels of tangible assets are expected to use less debt (Ersoy, 2022).

H5: There is a positive relationship between tangible assets level and leverage level.

According to the trade-off theory, it can be justified that firms with higher operating cash flows are better positioned to service debt obligations, reducing default risk. This may encourage greater debt usage to exploit tax shields while maintaining repayment capacity. However, by using pecking order theory, it can be justified that strong operating cash flows reduce reliance on external financing. Firms prioritize internal funds over debt to avoid asymmetric information costs and retain control.

H6: There is a negative relationship between operating cashflow and leverage level.

From the trade-off theory perspective, positive cash flows from investments, such as asset sales, enhance collateral value and liquidity, enabling firms to secure additional debt for growth while optimizing tax benefits. Conversely, the pecking order theory suggests that cash inflows from divestment reduce reliance on external financing, as firms prioritize reinvesting internal funds over debt to avoid ownership dilution and restrictive covenants.

H7: There is a negative relationship between investment cash flow and leverage level.

From the trade-off theory perspective, higher interest rates increase the cost of debt, discouraging leverage. However, firms may still opt for debt financing if marginal tax benefits outweigh the interest expenses, making debt a viable option despite the rising cost. In contrast, the pecking order theory suggests that elevated interest rates signal higher borrowing costs and increased lender risk perceptions, leading firms to avoid costly debt in favour of internal funds or equity to minimize financial distress and preserve control. According to Karpavičius and Yu (2017), borrowing costs showed the impact is either zero or slightly negative in US industrial firms.

H8: There is a negative relationship between interest cost and leverage level.

The contrasting theoretical predictions and inconsistent empirical evidence across different contexts highlight the need for future research. While many studies in developed and emerging markets have examined firm specific determinants of capital structure, fewer have focused on debt financing only, especially within frontier markets. In Sri Lanka's capital goods sector, where collateral requirements, volatile interest costs and crisis driven liquidity constraints exist, these determinants may operate differently. This study addresses that gap by empirically testing the relevance of classical

Conceptualization

This chart shows the conceptual framework of the study after reviewing the literature.
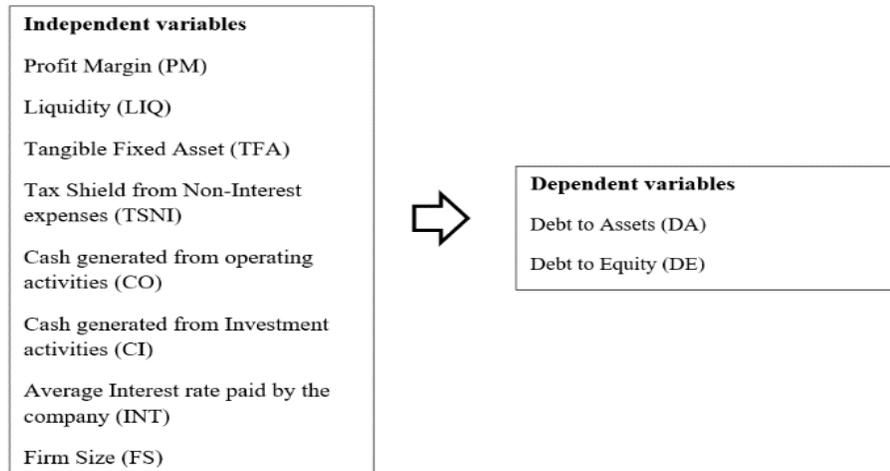
Independent variables

Profit Margin (PM)

Liquidity (LIQ)

Tangible Fixed Asset (TFA)

Tax Shield from Non-Interest expenses (TSNI)

Cash generated from operating activities (CO)

Cash generated from Investment activities (CI)

Average Interest rate paid by the company (INT)

Firm Size (FS)

Dependent variables

Debt to Assets (DA)

Debt to Equity (DE)

Figure 1: Conceptual Framework

Conceptualization

Variables	Indicator	Measurement	Reference
Profit Margin (PM)	Measure of available profit to distribute among debt and equity holders and other obligations	$\frac{\text{EBIT}}{\text{Total Assets}}$	Ersoy (2022) Hossain (2021)
Liquidity (LIQ)	Available short-term resources to pay off debt obligation	$\frac{\text{Current Asset}}{\text{Current Liabilities}}$	Ersoy (2022)
Tangible Fixed Asset level (TFA)	Investment in tangible assets	$\frac{\text{Fixed Assets (Tangible)}}{\text{Total Assets}}$	Ersoy (2022)
Tax Shield from Non-Interest expenses (TSNI)	Expenses which are applicable to get tax shield other than interest expenses	$\frac{\text{Total Depreciation}}{\text{Total Assets}}$	Ersoy (2022)
Cash generated from Operating activities (CO)	Net cash used/generated from operating activities	$\frac{\text{Net Operating Cash Flow}}{\text{Total Assets}}$	Author Constructed
Cash flow from Investment activities (CI)	Net cash used/generated from investment activities	$\frac{\text{Net Cash from Investment Activities}}{\text{Total Assets}}$	Author Constructed
Average Interest rate paid by the company (INT)	Annual Interest Expenses paid to amount of debt holding	$\frac{\text{Annual Interest Expenses}}{\text{Total Debt}}$	Arachchi (2019)
Debt to Assets (DA)	Measure the debt level to invest in total asset	$\frac{\text{Total Debt}}{\text{Total Asset}}$	Ersoy (2022)
Debt to Equity (DE)	Measure the debt level to the other source equity	$\frac{\text{Total Debt}}{\text{Total Equity}}$	(Munawar, 2020)
Firm Size (SIZE)	Size of the firm to decide the debt financing	Log (Total Assets)	Ersoy (2022) Hossain (2021)

Source: Survey Data

Research Design and Methods

This paper analyses the internal factors' impact on debt financing decisions of the companies. The philosophical assumptions of this research are examined through its ontological, epistemological

and axiological perspectives. Ontologically, the study takes an objective stance, pointing out the existence of universal truth concerning the identification of key internal factors affecting debt financing decisions. Epistemologically, knowledge in this research is derived from multiple regression to find out the internal factors which affect the debt financing. Further, researchers maintain a detach approach, ensuring they remain separate from the research process. Axiologically, the study follows value free assumptions. Hence this research follows a positivist paradigm and employs a deductive approach. Further, this research uses the quantitative methodology to understand the internal factors which influence the debt financing decisions.

This research focuses on the capital goods companies in Sri Lankan market. As of 31st March 2024, there were 27 companies listed under this sector, following the removal of two delisted companies. All the companies are considered for the analysis for the 10-year periods from April 2015 to December 2024. During the data cleaning process, two outlier companies were removed, and 25 companies are finally taken for analysis. Secondary data are collected from respective companies' website, financial statements and Colombo stock exchange website.

The independent variables of this study are Profit Margin (PM), Liquidity level (LIQ), Fixed Asset (FA), Tax Shield from Non-Interest expenses (TSNI), Cash generated from operating activities (CO), Cash generated from Investment activities (CI) and Average Interest rate paid by the company (INT) while Firm Size (FS) is taken to control the analysis. Further, to measure the debt financing of the companies, Debt to Assets (DA) and Debt to Equity (DE) ratios are taken. (Pathak and Chandani, 2023; Lyubov and Heshmati, 2023; Afiezan *et al.*, 2020)

Initially descriptive statistics, correlation analysis, and unit root test are carried out. After confirming the suitability of the data for the analysis, to test the hypotheses, random effect method, and fixed effect method are carried out. Model selection followed standard panel data procedures. The F test was used to assess whether fixed effect improve on pooled OLS, and the Breusch Pagan LM test was applied to determine whether random effects are preferred to pooled OLS. Finally, the Hausman test was done to choose between fixed and random effects.

Model Specification

The following panel data regression model is used for testing the impact on debt to assets

$$DA = \beta_0 + \beta_1 PR_{it} + \beta_2 LIQ_{it} + \beta_3 TFA_{it} + \beta_4 TSNI_{it} + \beta_5 CO_{it} + \beta_6 CI_{it} + \beta_7 INT_{it} + \beta_8 LogFS_{it} + e_{it}$$

The following panel data regression model is used for testing the impact on debt to equity

$$DE = \beta_0 + \beta_1 PR_{it} + \beta_2 LIQ_{it} + \beta_3 TFA_{it} + \beta_4 TSNI_{it} + \beta_5 CO_{it} + \beta_6 CI_{it} + \beta_7 INT_{it} + \beta_8 LogFS_{it} + e_{it}$$

Where,
DA   - Debt to Assets
DE   - Debt to Equity
PM   - Profitability
LIQ   - Liquidity
TFA   - Tangible Fixed Asset
TSNI   - Tax Shield from Non-Interest expenses
CO   - Cash generated from operating activities
CI   - Cash generated from Investment activities
INT   - Average Interest rate paid by the company
FS   - Firm Size
β_0 - Constant Value
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$ - Coefficients Variables
e   - Error term

Findings and Discussion

Descriptive Statistics

Summary of collected data presented below.

Variable	Observation	Mean	Std. Dev.	Min	Max
DA	250	0.213688	0.1463217	0.0003139	0.6615995
DE	250	0.8581357	3.396776	0.0003858	50.42283
PM	250	0.0819424	0.0827799	-0.5298958	0.3078747
LIQ	250	2.075688	1.979574	0.333983	20.62055
TFA	250	0.2894083	0.149517	0.0063788	0.6095859
TSNI	250	0.018283	0.008325	0.000000	0.044966
CO	250	0.0344056	0.1114606	-0.6646686	0.4094592
CI	250	-0.0227087	.0764613	-.3048809	.6833198
INT	250	0.2930200	1.1514100	.00090840	16.34161
FS	250	7.206575	1.253887	4.165126	9.952551

Source: Author Constructed

Table 1: Summary Statistics of the variables

The mean DA value is 0.21 ranging from 0.00 to 0.66. Additionally, the average DE is 0.85 with a range of 0.00 to 50.42. The independent variable, PM has an average value of 0.08 with a minimum of negative 0.53 and maximum of 0.31 while average LIQ value is 2.08. Further, TFA has an average of 0.29, maximum of 0.61 and a minimum of 0.01. The average TSNI is 0.02 with a range from 0.00 to 0.05. Mean CO is 0.03 and ranges between negative 0.67 to 0.41. The CI records an average value of negative 0.02 with a minimum value of negative 0.03 and maximum value of 0.68. Average interest rate is 0.29 with a range from 0.00 to 16.34. FS has a mean value of 7.21 ranging from 4.16 and 9.95.

Correlation Analysis

To identify the association among the variables, correlation analysis is carried out.

	DA	DE	PM	LIQ	TFA	TSNI	CO	CI	INT	FS
DA	1.0000									
	-									
DE	-0.3859	1.0000								
	0.0000	-								
PM	-0.1229	-0.2840	1.0000							
	0.0523	0.0000	-							
LIQ	-0.4816	-0.1249	-0.148	1.0000						
	0.0000	0.0485	0.0191	-						
TFA	0.3215	0.0877	0.0954	-0.2271	1.00000					
	0.0000	0.1670	0.1323	0.0003	-					
TSNI	0.3254	0.0386	0.1955	-0.3391	0.3879	1.0000				
	0.0000	0.5438	0.0019	0.0000	0.0000	-				
CO	-0.2021	-0.2381	0.5103	-0.0871	0.0667	0.1668	1.0000			
	0.0013	0.0000	0.0000	0.1670	0.2935	0.0082	-			
CI	-0.098	-0.001	-0.4071	0.2097	-0.217	-0.2053	-0.3954	1.0000		
	0.1215	0.9854	0.0000	0.0009	0.0005	0.0011	0.0000	-		
INT	-0.215	-0.0376	0.1080	0.1067	-0.0189	0.0021	0.0902	-0.0191	1.0000	
	0.0006	0.5542	0.0884	0.0922	0.7656	0.9738	0.1551	0.7632	-	
FS	0.0041	-0.1070	0.1296	-0.0258	0.2891	-0.0570	-0.0080	-0.0364	0.0575	1.0000
	0.9485	0.0914	0.0406	0.6849	0.0000	0.3696	0.9000	0.5663	0.3651	-

Source: Author Constructed

Table: Correlation matrix with probability

Based on the above table, no strong relationship between the variables is evident.

Unit root test

To understand the stationary of the series, especially to test whether the mean variance and co variances are constant over time, Levin, Lin and

Chu unit root test is performed and following results are received.

Variable	Levin, Lin and Chu unit root result at level		Conclusion
	t- statistics	Probability	
DA	-11.4709	0.0000	Stationary at zero level
DE	-8.8665	0.0000	Stationary at zero level
PM	-10.2006	0.0000	Stationary at zero level
LIQ	-10.5447	0.0000	Stationary at zero level
TFA	-7.7853	0.0010	Stationary at zero level
TSNI	-7.0828	0.0000	Stationary at zero level
CO	-19.8416	0.0000	Stationary at zero level
CI	-13.8134	0.0000	Stationary at zero level
INT	-31.7255	0.0000	Stationary at zero level
FS	-2.6461	0.0019	Stationary at zero level

Source: Author Constructed

Table: Unit root test

These above results reveal that all variables are stationary at zero level. This reveals that data series does not have a spurious relationship and means reverting, which is essential for ensuring the validity of subsequent regression analyses.

Normality Test

The table below shows the normality results of residuals.

	DA	DE
Jarque Bera Normality	21.0345	41.0345
Chi (2)	0.7954	0.4672

Source: Author Constructed

Table: Jarque – Bera test for H0: Normality Test Results

The Jarque Bera normality test was conducted for both dependent variable regressions to assess the normality of the data, yielding chi square values are higher than the significance level of 0.05 which shows that data used in this study follow normal distribution.

Multicollinearity Test

Following table 05 shows the multicollinearity among the variable.

Variable	VIF	1/VIF
PM	1.52	0.657782
LIQ	1.19	0.842493
TFA	1.38	0.724510
TSNI	1.37	0.730627
CO	1.45	0.688175
CI	1.35	0.741439
INT	1.03	0.967221
FS	1.17	0.853746
Mean VIF	1.31	

Source: Author Constructed

Table: VIF

Table 05 indicates the absence of multicollinearity among the independent variables as the VIF values are below 10.

All three models are employed to test the hypotheses of research for the dependent variable of DA.

Regression Analysis

Regression Analysis for DA

Variable	Random Effect Model	Fixed Effect Model	Pooled OLS Model
Coefficient (C)	0.2518 (p=0.008)	0.3323 (p=0.126)	0.2240 (p=0.000)
PM	-0.1189 (p=0.189)	-0.1306 (p=0.156)	-0.2291 (p=0.036)
LIQ	-0.0168 (p=0.000)	-0.0138 (p=0.003)	-0.0289 (p=0.000)
TFA	-0.0210 (p=0.752)	-0.0824 (p=0.261)	0.1782 (p=0.002)
TSNI	0.4947 (p=0.615)	-0.5162 (p=0.612)	2.9238 (p=0.005)
CO	-0.2476 (p=0.000)	-0.2356 (p=0.000)	-0.3079 (p=0.000)
CI	-0.1047 (p=0.198)	-0.0871 (p=0.269)	-0.1751 (p=0.115)
INT	-0.0080 (p=0.068)	-0.0065 (p=0.125)	-0.0172 (p=0.008)
FS	0.0017 (p=0.895)	-0.0053 (p=0.854)	-0.0035 (p=0.582)
Adjusted R²	0.3111	0.1501	0.3823
Model Statistic	Wald chi²(8) = 63.24 (p=0.000)	F = 7.12 (p=0.000)	F = 20.27 (p=0.000)

Source: Author Constructed

Table: Random-effects GLS regression analysis, Fixed effect model, Pooled OLS method for the dependent variable of DA

According to Random effect model, it can be observed that Adjusted R Square value of 0.3111 suggests that approximately 31% of the variation in the dependent variable is explained by the independent variables in the dependent variables in the dependent mode are explained by the independent variables in the model. The wald chi squared statistic is 63.24 (p=0.000), indicating the overall model is statistically significant.

Fixed model adjusted R^2 is 15% which describes that the firm-specific factors which are considered for the study explains 15% of the variability in the DA while other factors which are not considered for the study explains the 85% of the variation. F statistic of the model is 7.12 with probability of 0.00000 which is less than the coefficient of 0.05 which implies overall model is significant and suitable for the analysis.

Based on the pooled OLS, approximately 38.23% of the variation in the dependent variable is explained by the independent variables in the model. Further, the model is statistically significant overall (F statistic = 20.27, p<0.05).

Next to select the best model among these, Hausman test, Breusch and Pagan LM test and F test are utilized.

Tests	Hausman test	Breusch and Pagan LM test	F test
	chi2= 22.46 Prob > chi2 = 0.0741	chibar2(01) = 255.05 Prob > chi2 = 0.0845	F (1, 217) = 2.36 Prob > F = 0.1256
Comparison	Fixed effect VS Random	Random VS Pooled	Fixed VS Pooled
Suitable Model	Random Model Selected	Pooled OLS	Pooled OLS

Source: Author Constructed

Table: Hausman test

The Chi square result of Hausman test is 22.09 with a probability of 0.0741 which indicates that random effect model is suitable compared to Fixed model. Then Breusch and Pagen LM test is conducted to select the most suitable model among Pooled and Random models which reveals that since chibar2 is equal to 255.05 with a probability to 0.0845, pooled OLS is selected as most suitable model. Further, F test is again performed to select the model among Fixed and Pooled OLS which also supported the Pooled OLS. Therefore, it was concluded the Pooled OLS is the best model to explain the relationship with DA.

Pooled OLS model revealed that (Table 06), both PM and LIQ have negative and statistically significant impact on DA with the probability of 0.036 and 0.000 respectively. The reasons would be higher profit-earning companies would have sufficient internally generated funds hence there will be a less likely reason to go for debt financing while higher liquidity ratios imply there are higher possibility of resolving the short-term obligations without getting additional debt finance. This is supported by Ersoy (2022). Further CO also reveals a negative significant relationship (p= 0.000), indicates that companies generating more cash from operations are less likely depending on the debt financing, possibly they have sufficient internal funds to meet their need. INT also shows

a negative significant relationship (p=0.008) which highlights higher interest rates may discourage companies from taking on more debt due to the higher cost of financing.

Meantime TFA has a positive significant relationship with a probability of 0.0002. Higher tangibility supports possible collateralization which motivates the lenders to give more debt to the company (Pathak & Chandani, 2023). However, Ersoy (2022) confirmed a negative significant relationship between these variables. Further TSNI also has a positive significant coefficient (p=0.005) which suggests that tax shields from non-interest expenses (Depreciation and Amortization) are associated with a higher debt to asset ratio. Firms might leverage tax shields to increase debt financing since it provides tax savings. This is supported by Ersoy (2022).

Further, CI and FS do not have any impact on the DA which is in line with the result of Ali, Rangone and Farooq (2022) who confirmed an insignificant relationship between FS and DA. However, Ersoy (2022) confirmed that there is a negative significant relationship between firm size and debt financing decisions.

Regression Analysis for DE

Next, all three models are employed to test the hypotheses for the dependent variable of DE.

DE	Random Effect Model	Fixed Effect Model	Pooled OLS Model
Coefficient (C)	3.7801 (p=0.006)	-21.8684 (p=0.021)	3.7801 (p=0.006)
PM	-10.9130 (p=0.000)	-16.3722 (p=0.000)	-10.9130 (p=0.000)
LIQ	-0.2310 (p=0.037)	0.2195 (p=0.269)	-0.2310 (p=0.038)
TFA	2.2008 (p=0.164)	4.9188 (p=0.125)	2.2008 (p=0.165)
TSNI	1.2456 (p=0.965)	-7.9311 (p=0.075)	1.2456 (p=1.246)
CO	-5.3965 (p=0.013)	-2.9329 (p=0.191)	-5.3965 (p=0.014)
CI	-5.9035 (p=0.053)	-0.0871 (p=0.269)	-5.9035 (p=0.055)
INT	0.0802 (p=0.652)	-0.0065 (p=0.125)	0.0802 (p=0.652)
FS	-0.3025 (p=0.082)	3.2748 (p=0.009)	-0.3025 (p=0.083)
Adjusted R²	0.3542	0.0558	0.1261
Model Statistic	Wald chi² (8) = 43.94 (p=0.000)	F = 4.64 (p=0.000)	F = 5.49 (p=0.000)

Source: Author Constructed

Table 2: Random-effects GLS regression analysis, Fixed effect model, Pooled OLS method for the dependent variable of DE

According to Random effect model, the Adjusted R^2 of 0.1542 indicates that independent variables collectively explain 35.42% of the variation in DE. Further, Wald chi- squared statistics of 43.94 (p = 0.000), show that the independent variables as a group are statistically significant in explaining the dependent variable.

The adjusted R^2 of the fixed model is 5.58% which describes that the firm-specific factors which are considered for the study explain only 5.58% of the variability in the DTE. F statistic of the model is 4.64 with probability of 0.00000 which is less than the coefficient of 0.05. This implies overall model is significant and appropriate for the analysis.

This Pooled model's adjusted R^2 of 0.1261 reveals that 12.61% of the variation in the DE is explained by the independent variables taken for the study. Further, F statistics of 5.49 with a p value of 0.000 indicate that overall model is statistically significant.

Next to select the best model among these, Hausman test, Breusch and Pagan LM test and F test are utilized.

Tests	Hausman test	Breusch and Pagan LM test	F test
	chi2= 9.20 Prob > chi2 = 0.3257	chibar2(01) = 23.04 Prob > chi2 = 0.007	F (1, 217) = 5.36 Prob > F = 0.0215
Comparison	Fixed effect VS Random	Random VS Pooled	Fixed VS Pooled
Suitable Model	Random Model	Random	Fixed

Source: Author Constructed

Table: Hausman test

F test is performed to compare the fixed effects and pooled OLS model which supports the use of fixed model over pooled OLS. The results of the Hausman test were a chi square value of 9.2 with a probability of 0.3257, indicating that the random effect model is more suitable than fixed effect model. Subsequently, the LM test is conducted to choose between the Pooled OLS and Random effects models. The test produced a chi bar2 value of 23.04 with a probability of 0.007, further confirming random effect model is most appropriate to explain the relationship with DE.

Hence, the results of random model (Table 09) reveal that PM, LIQ and CO have a negative significant impact on DE with a P value of 0.0000, 0.037 and 0.013 respectively. All other variables are considered as insignificant as p values are higher than the significant level of 0.05.

Discussion

The regression results provide critical insights into the determinants of debt financing decisions, as measured by DA and DE ratios. The findings align with established theories such as pecking order theory, trade off theory, and agency cost frameworks, while also introducing contradictions that urge deeper exploration.

The regression analysis reveals a positive and statistically significant constant term for both DA and DE ratios, implying that firms maintain a baseline level of debt even in the absence of influencing factors such as profitability or liquidity. This finding aligns with the trade-off theory, which posits that firms strategically balance the tax advantages of debt against potentials bankruptcy costs (Kraus & Litzenberger, 1973). Further, agency cost theory highlights debt's role in disciplining managerial behaviour by limiting free cash flow misuse (Jensen, 1986). However, opposing arguments challenge the universality of this baseline. Strebulaev and Yang (2013) demonstrate that approximately 10% of US firms operate with zero debt, a phenomenon often attributed to industry specific norms such as technology sectors favouring equity or risk averse financial strategies. Furthermore, non-financial motives, particularly in start-ups and family-owned enterprises, drive debt avoidance to retain control, even at the expense of tax inefficiencies. Methodologically, the significance of the constant term could mask omitted variables, such as industry dynamics or governance structures, which influence baseline debt levels. For instance, capital intensive industries might inherently carry higher debt, while firms with strong governance may prioritize equity to mitigate agency risks. Future research should incorporate these variables to separate true baseline debt from contextual factors, enhancing the model's explanatory power. Hence, while the constant term broadly supports trade-off theory, its interpretation requires caution, acknowledging sectoral diversity and strategic

financial behaviours that challenge conventional leverage norms.

The negative and significant relationship between profit margin and both DA and DE, indicates that more profitable firms tend to rely less on debt. This result supports the pecking order theory, which posits that firms prefer internal financing over external debt when they are profitable (Myers & Majluf, 1984). The negative impact of profitability firms has sufficiently retained earnings to fund investments, reducing the need for debt. Recent studies also reinforce this finding. For instance, a study on Fin Tech start-ups in the UK found that profitability was inversely related to debt financing, as firms with higher profitability preferred to rely on equity or internal funds. (Giaretta & Chesini, 2021). Additionally, Rajan and Zingales (1995) confirmed that profitability negatively correlates with leverage across various sectors. Titman and Wessels (1988) argue that firms with high earnings prefer to avoid debt due to the costs associated with financial distress and agency problems. Kenton and Smith (2021) highlighted that even though high profit margins can lower the default risks, as they enhance a firm's ability to meet debt obligations, some firms may still prefer equity financing to preserve financial flexibility and avoid fixed commitments associated with debt. Almeida and Campello (2007) found that profitable firms often prefer internal financing to mitigate asymmetric information costs associated with external funding. However, some argue that profitable firms should take on more debt to capitalize on the tax benefits of interest payments. Modigliani and Miller (1963) suggest that firms could increase their debt levels to reduce their overall tax liabilities. Yet, this argument is more applicable to firms in developed markets with stable tax structures and may not be held in countries with tax incentives that differ from traditional models. Further, debt issuance can serve as a signal of management's confidence in a firm's future cash flow. Highly profitable firms may choose to borrow to finance expansions, thereby conveying positive information to the market and potentially enhancing their valuation (Sony & Bhaduri, 2021).

Liquidity has a significant negative impact on both DA and DE, suggesting that firms with higher liquidity rely less on debt financing. This finding

aligns with Jensen's (1986) free cash flow theory, which suggests that firms with abundant liquidity prefer internal financing to avoid the costs associated with external financing. Firms with high liquidity are also able to self-finance their operations without resorting to debt. Ozkan (2001) supports this view and found that firms with strong liquidity reserves rely on internal financing and avoid debt to maintain financial flexibility. However, other studies indicate that highly liquid firms still choose to take on debt to capitalize on favourable financing conditions, such as low interest rates, or to optimize their capital structure. Frank and Goyal (2009) argue that liquidity alone does not necessarily preclude debt financing if firms see debt as a valuable instrument for diversifying their capital structure. A recent report by Richard Tylar (2024) highlights that UK firms are becoming increasingly cautions about borrowing due to witnessing financial distress among their peers. This growing aversion to debt supports the view that firms with strong liquidity may be more reluctant to rely on debt financing.

Next, the relationship between tangible fixed assets and debt financing is positive and significant for DA, but in significant for DE, suggesting that firms with more tangible assets can use them as collateral to secure debt but may not necessarily increase equity-based leverage. This finding is consistent with asset-based lending theories, which posit that tangible assets reduce the risk to lenders, making it easier for firms to obtain debt financing (Harris & Raviv, 1991). The results are supported by studies showing that firms with substantial fixed assets have higher debt capacity due to the collateral value of those assets. In developing economies, such as Sri Lanka, firms with significant tangible assets are often able to secure loans, even in the absence of strong credit histories. However, market imperfections may sometimes prevent firms from fully utilizing their asset-banked borrowing capacity, particularly if access to credit markets is limited (Booth et al., 2001). Further, in knowledge-based sectors, such as technology firms often possess significant intangible assets like intellectual property and brand value. Traditional financing methods that rely on tangible assets as collateral may not be suitable for these companies. Instead, they often turn to equity financing or specialized debt instruments (Falato et al., 2022). During the periods of asset bubbles, inflated valuations of tangible fixed assets can lead to overleverage, resulting in financial instability and potential defaults when the bubble burst. Understanding the dynamics of asset bubbles and their impact on economic growth is crucial for managing such risks (Hori & Im, 2023).

TSNI positively influences DA but has no significant effect on DE suggesting that firms leverage tax shields to increase debt financing but do not necessarily increase equity-based leverage. This result is consistent with the trade-off theory, which argues that firms seek to balance the tax benefits of debt against the costs of financial distress (Modigliani & Miller, 1963). DeAngelo and Masulis (1980) suggest that firms with high non debt tax shields, such as depreciation or R&D expenses, use debt as a complementary tax saving tool. Graham (2000) also finds that firms with high non debt tax shields still use debt to enhance the tax efficiency of their capital structure. The positive relationship between tax shields and debt financing found in this study highlights the role of tax considerations in capital structure decisions. However, some researchers argue that firms with substantial non debt tax shields may not require additional debt to maximize their tax savings (Fama & French, 2002). For instance, firms with high depreciation expenses may prefer fund operations through equity or internal cash flow rather than relying on debt to take advantage of tax shields.

Cash from operations negatively impacts DA and DE, indicating that firms with higher operating cash flow rely less on debt. This is consistent with Myers' (1984) pecking order theory, which posits that firms with strong internal cash flow prefer to use internal resources rather than take on debt. Firms with higher operating cash flow have less need for external financing, as they can fund their investments from retained earnings. Fama and French (2002) support this finding, showing that firms with stable cash flows typically maintain lower debt levels to avoid interest costs. However, some firms may still opt for debt financing even when they have strong cash flow, especially if they want to preserve cash for future investments or diversify their financing sources (Modigliani & Miller, 1963).

The relationship between cash from investments and debt financing is insignificant for both DA and DE, suggesting that investment activities do not significantly influence debt decisions. This finding aligns with the view that financing decisions are often determined by operational cash flow rather than investment cash flow (Baker & Wurgler, 2002). Some studies have found that firms in capital intensive industries rely more on debt to finance investments, as the cost of capital can be high, and equity financing may be too costly. Some studies have found that firms in capital intensive industries rely more on debt to finance investments, as the cost of capital can be high, and equity financing may be too costly (Shyam-Sunder & C. Myers, 1999). However, in this study, investment activities did not have a significant impact on debt financing decisions, which may reflect the sector specific nature of the capital goods industry, where firms tend to finance investments through a mix of internal resources and equity.

Further, the study finds that interest rates negatively impact DA, but have no significant effect on DE, suggesting that higher interest rates discourage borrowing, especially in terms of debt to asset ratios. This finding supports the traditional view that higher borrowing costs reduce the attractiveness of debt financing (Modigliani & Miller, 1963). Frank and Goyal (2009) that firms are highly sensitive to interest rate changes and may adjust their capital structures accordingly. Lower interest rates make borrowing more attractive, leading firms to increase their leverage. However, higher interest rates may discourage firms from taking on additional debt, especially if the cost of borrowing exceeds the benefits of leverage. Recent studies also highlight the impact of interest rates on corporate debt levels. In 2024, firms capitalized on favourable financing conditions, issuing substantial debt as credit spreads reached their lowest levels since mid-2000s (Barbuscia & Shankar, 2024). This highlights the sensitivity of corporate borrowing to interest rate environments, with firms responding to favourable borrowing conditions by increasing debt issuance.

Firm size is found to be insignificant for both DA and DE, suggesting that firm size does not significantly impact debt financing decisions in this study. This result contrasts with the trade-off theory, which posits that larger firms have better access to credit markets and lower bankruptcy risks, making them more likely to use debt (Rajan & Zingales, 1995). However, some studies suggest that the relationship between firm size and leverage is not always straightforward. Titman and Wessels (1988) argue that larger firms may have more diverse financing options, making size less relevant in determining debt levels. Furthermore, the insignificance of firm size in this study could reflect the sector specific characteristics of the capital goods industry, where firms may have access to debt financing.

Overall, the negative coefficients on profitability and liquidity (RQ1) indicate preference for internal funds, consistent with pecking order theory (RQ2). Positive effects of tangibility and size align with collateral and diversification channels emphasized by trade off theory. These patterns hold for both DA and DE, with slightly larger magnitudes for DE (RQ3), suggesting equity relative to assets is more sensitive to firm fundamentals.

Implications

Theoretical Implications

The findings contribute to capital structure theory by providing new evidence from a frontier market's industrial sector. The coexistence of pecking order and trade off patterns suggests that no single theory explains firm behaviour, however, a contingent view is needed. Firms under informational constraints and in evolving markets rely first on internal funds (Boateng et al., 2022). However, the significant role of tangibility and size indicates that trade-off considerations still play a role. This supports the notion of a dynamic trade off where firms may have a target debt ratio but slowly adjust toward it using different instruments over time. By documenting these patterns in Sri Lanka's capital goods sector, this study extends the literature beyond the developed country and broad sector analyses, which highlights Stoiljković et al.'s (2022) point that capital structure theories can explain the behaviour of companies in developing countries.

Managerial Implications

For corporate managers in the capital goods sector, the results highlight the importance of internal financial management. Profitability and liquidity are key to maintaining low debt levels, so managers should focus on boosting margins and efficient working capital when companies want to reduce financial leverage. At the same time, findings show that firms with more tangible assets can safely carry more debt. It suggests that expansion plans should be aligned with asset backing, managers can strategically finance plants and equipment with debt but should remain cautious about excessive short-term borrowing. The positive size effect implies that as firms grow, they can leverage their scale for additional financing, but the weaker than expected size influence also warns that small to midsize firms are not necessarily at a financing disadvantage. In practice, managers should monitor the trade-off between short-term liquidity needs and long-term obligations. As Stoiljković et al. (2022) findings, heavy reliance on short term debt can increase the risk of refinancing. Hence, firms should build contingency plans. Understanding these determinants can help managers fine tune financing strategies to support sustainable growth.

Policy Implications

For regulators and policymakers, the evidence suggests several points. Negligible impact of NDTS and fluctuating interest rates implies that tax policy and monetary policy have limited direct influence on capital goods firms' leverage. Instead, corporate governance and transparency which relate to pecking behaviour, may be more critical. Policymakers might therefore consider incentives that encourage prudent debt use, such as tax credits for interest payments or stronger credit information systems, to reduce reliance on informal credit channels. Further, since large firms use more debt and small firms more equity, efforts to deepen capital markets such as developing corporate bond markets, could help smaller firms access long term debt, balancing the capital structure in the sector. Khan et al. (2024) argue that robust capital structure research provides valuable insights for policy makers to design pro development policies. Policies that stabilize the banking sector and interest rates would likely encourage optimal borrowing. Hence, given the prominence of pecking order behaviour, policies enhancing

transparency and reducing information asymmetry could allow efficient firms to more readily tap debt markets rather than relying solely on retained earnings.

Conclusion

In Summary, this study examines which firm specific factors influence debt financing in Sri Lanka's listed capital goods companies. Analysing 25 companies over 2015- 2024, the study examines factors Profit Margin, Liquidity level, Tangible Fixed Asset, Tax Shield from Non-Interest expenses, Cash generated from operating activities, Cash generated from Investment activities, Average Interest rate paid by the company. Findings revealed that higher profitability liquidity, cash generated from operational activities and average interest rate paid discourage debt reliance while increased asset tangibility and tax shields from noninterest positively impact debt decisions. Interestingly, firm size and cash flow from investment activities show no such significant impact on debt decisions. This highlights the importance of considering Profitability, Liquidity, Cash from operations, Non-Debt Tax Shield, Interest rate and Asset Tangibility in guiding debt financing decisions. The results largely support established capital structure theories such as the pecking order theory, trade off theory, and agency cost theory. The negative relationship between profitability and debt financing aligns with the pecking order theory, indicating that firms prefer internal financing over debt when they generate sufficient earnings. Similarly, the negative impact of liquidity supports the free cash flow theory, as firms with abundant liquidity tend to self-finance their operations rather than incur debt-related costs. The positive influence of asset tangibility is consistent with asset-based lending theories, as firms with substantial tangible assets can leverage them as collateral to secure debt financing. Additionally, the role of tax shields in promoting debt usage reinforces the trade-off theory, highlighting firms' efforts to balance tax advantages against financial distress costs. Since the study identifies a negative relationship between profitability and liquidity with debt decisions and a positive impact from tax shields and asset tangibility, practitioners such as financial managers should consider these firm specific

factors as key criteria when making debt financing decisions. Additionally, researchers can use this paper to gain valuable insights into debt financing decisions influenced by internal factors. Furthermore, regulatory bodies like the central bank and government can align policy changes with the study's findings to promote more effective financial practices. Limitation of the study is debt financing decision is not only affected by internal factors. However, other significant factors such as managerial behaviour, credit ratings, potential costs of financial distress, financial flexibility and project risks, also play a role. Future research could incorporate these elements to provide a more comprehensive understanding of the debt decisions of Sri Lankan companies.

References

Abbasov, A. M., Mamedov, Z. F. & Aliev, S. A. (2019). Digitalization of the banking sector: New challenges and prospects. Economics and Management, 6, 81–89. https://doi.org/10.35854/1998-1627-2019-6-81-89

Addula, S.R., Meduri, K., Nadella, G.S. & Gonaygunta, H., (2024). AI and Blockchain in Finance: Opportunities and Challenges for the Banking Sector. International Journal of Advanced Research in Computer and Communication Engineering, 13(2), 184-190. https://doi.org/10.17148/IJARCCE.2024.13231

Akter, S., Michael, K., Uddin, M. R., McCarthy, G. & Rahman, M. (2020). Transforming business using digital innovations: The application of AI, blockchain, cloud and data analytics. Annals of Operations Research 308, 7–39. https://doi.org/10.1007/s10479-020-03620-w

Arshard, A. & Imthiyas, M. (2024). DIGITAL INNOVATION AND IMPLEMENTATION OF FINTECH ON BANKING AND FINANCIAL SECTOR IN SRI LANKA, Инновационные исследования в современном мире: теория и практика, 3(1), 95-102. https://doi.org/10.5281/zenodo.10578923

State Bank A. (2021). Annual Report 2021. Colombo: State Bank A. https://www.boc.lk/financial/annual-reports.

State Bank A. (2022). Annual Report 2022. Colombo: State Bank A. https://www.boc.lk/financial/annual-reports.

State Bank A. (2023). Annual Report 2023. Colombo: State Bank A. https://www.boc.lk/financial/annual-reports.

Berman, S. J. (2012). Digital transformation: opportunities to create new business models. Strategy & Leadership, 40(2), 16–24. https://doi.org/10.1108/10878571211209314

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A. & Venkatraman, N. (2013). Digital Business Strategy: Toward a Next Generation of Insights. MIS Quarterly, 37(2), 471–482. http://www.jstor.org/stable/43825919

Boufounou, P., Mavroudi, M., Toudas, K. & Georgakopoulos, G. (2022). Digital Transformation of the Greek Banking Sector in the COVID Era. Sustainability, 14(19), 11855. https://doi.org/10.3390/su141911855

Centobelli, P., Cerchione, R., Del Vecchio, P., Oropallo, E. & Secundo, G. (2022). Blockchain technology design in accounting: Game changer to tackle fraud or technological fairy tale? Accounting, Auditing & Accountability Journal, 35 (7), 1566–1597. https://doi.org/10.1108/AAAJ-10-2020-4994

Central Bank of Sri Lanka. (2024). Licensed Commercial Banks. Central Bank of Sri Lanka. https://www.cbsl.gov.lk/en/authorized-financial-institutions/licensed-commercial-banks

Commercial Bank PLC. (2021). Annual Report 2021. Sri Lanka: Commercial Bank PLC. https://cdn.cse.lk/cmt/upload_report_file/369_1646645087138.pdf

Commercial Bank PLC. (2022). Annual Report 2022. Sri Lanka: Commercial Bank PLC. https://cdn.cse.lk/cmt/upload_report_file/369_1680176832035.pdf

Commercial Bank PLC. (2023). Annual Report 2023. Sri Lanka: Commercial Bank PLC. https://cdn.cse.lk/cmt/upload_report_file/369_1709636062232.pdf

Cuesta, C., Ruesta, M., Tuesta, D. & Urbiola, P. (2015). The Digital Tansformation of the Banking Industry. BBVA Research, 1–10. https://www.bbvaresearch.com/wp-content/uploads/2015/08/EN_Observatorio_Banca_Digital_vf3.pdf

Diener, F. & Špacek, M. (2021). Digital Transformation in Banking: A Managerial Perspective on Barriers to Change. Sustainability, 13(4), 2032. https://doi.org/10.3390/su13042032

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. American Sociological Review, 48(2), 147–160. https://doi.org/10.2307/2095101.

Dissanayake, D. R. & Ismail, D. N. (2015). Relationship between celebrity endorsement and brand attitude: With reference to financial services sector brands in Sri Lanka. In Conference Proceedings of 6th International Conference on Business and Information (ICBI), 472–487.

Fairooz, H. M. M. & Wickramasinghe, C. N. (2019). Innovation and Development of Digital Finance: A Review on Digital Transformation in Banking & Financial Sector of Sri Lanka, Asian Journal of Economics, Finance and Management, 1(1): 69-78. https://www.journaleconomics.org/index.php/AJEFM/article/view/9

Gartner. (2017, February 7). Gartner Says 8.4 Billion Connected 'Things' Will Be in Use in 2017, Up 31 Percent From 2016. https://www.gartner.com/newsroom/id/3598917

Gonçalves, M.J.A. da Silva, A.C.F. & Ferreira, C.G. (2022). The Future of Accounting: How Will Digital Transformation Impact the Sector? Informatics, 9, 19. https://doi.org/10.3390/informatics9010019

Goonawardena, E., Surangi, H. & Ranwala, R. (2023). Impact of Digital Transformation on Small and Medium Enterprises Performance in The Sri Lankan Apparel Sector, Sri Lanka Journal of Marketing by Department of Marketing Management, 9(2), 161-180. https://doi.org/10.4038/sljmuok.v9i2.123

Gunawardene, N. (2017). Digital Transformation in Sri Lanka: Opportunities and Challenges in Pursuit of Liberal Policies. Friedrich Naumann Foundation Sri Lanka. http://www.rticommission.lk/web/images/pdf/DigitalTransformationinSriLankareportFINAL-30Nov2017.pdf

Gunawardene, N. (2017). Digital Transformation in Sri Lanka: Opportunities and Challenges in Pursuit of Liberal Policies. Friedrich Naumann Foundation Sri Lanka. Retrieved from http://www.rticommission.lk/web/images/pdf/DigitalTransformationinSriLankareportFINAL-30Nov2017.pdf

Hatton Natioanl Bank. (2021). Annual Report 2021. Sri Lanka: Hatton National Bank. https://www.hnb.net/images/annual_reports/2021/integrated-report-2021.pdf

Hatton Natioanl Bank. (2022). Annual Report 2022. Sri Lanka: Hatton National Bank. https://www.hnb.net/images/annual_reports/2022/integrated-report-2022.pdf

Hatton Natioanl Bank. (2023). Annual Report 2023. Sri Lanka: Hatton National Bank. https://www.hnb.net/images/annual_reports/2023/integrated-report-2023.pdf

Hess, T., Benlian, A., Matt, C. & Wiesböck, F. (2016). Options for formulating a digital transformation strategy. MIS Quarterly Executive, 15(2), 123–139.

I-SCOOP, (2018). Digital Transformation: Deep Dive Into The Customer Experience. https://www.i-scoop.eu/digital-transformation/digital-transformation-deep-dive-customer experience/

Jayalath, J. A. R. C. & Premaratne, S. C. (2021). Analysis of Digital Transformation challenges to overcome by Banks and Financial Institutions in Sri Lanka, International Journal of Research Publications, https://doi.org/10.47119/IJRP100841920212260

Jayawardena, C., Ahmad, A. & Jaharadak, A. A. (2020). The Leadership and Technology Acceptance perspective of Digital Transformation in Sri Lankan Hotels: A pilot study, Solid State Technology, 63(2), 3782-3801.

Jayawardena, C., Ahmad, A., Valeri, M. & Jaharadak, A, A. (2023). Technology acceptance antecedents in digital transformation in hospitality industry, International Journal of Hospitality Management, 108, 103350. https://doi.org/10.1016/j.ijhm.2022.103350

Khanboubi, F. & Boulmakoul, A. (2019) Digital transformation in the banking sector: surveys exploration and analytics, International Journal of Information Systems and Change Management, 11(2), 93–127. https://doi.org/10.1504/IJISCM.2019.104613

Kitsios, F., Giatsidis, I. & Kamariotou, M. (2021). Digital Transformation and Strategy in the Banking Sector: Evaluating the Acceptance Rate of E-Services. J. Open Innov. Technol. Mark. Complex. 7(3), 204. https://doi.org/10.3390/joitmc7030204

KPMG. (2017). 'The pulse of Fintech Q2 2017', Global Analysis of Investment in Fintech, KPMG International, pp.5–6. https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2017/07/pulse-of-fintech-q2-2017.pdf

Madanayake, S. & Yapa, S. R. (2023). Factors influencing Digital Transformation Success: A Study on a Sri Lankan Commercial Bank, SLIIT Business Review, 3(1), 103-138 https://doi.org/10.54389/ONHU3795

Maomao, C., Xinyuan, L., Jing, Z. & Yuanxiang, L. (2018). 'The impacts of digital business strategy on firm performance: the mediation analysis of e-collaboration capability', International Journal of Information Systems and Change Management, 10(2), 123-131. https://doi.org/10.1504/IJISCM.2018.094603

Meena, M. M. R. & Parimalarani, G. (2020). IMPACT OF DIGITAL TRANSFORMATION ON EMPLOYMENT IN BANKING SECTOR, INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH, 9(1).

Meraghni, O., bekkouche, L. & demdoum, Z. (2021). IMPACT OF DIGITAL TRANSFORMATION ON ACCOUNTING INFORMATION SYSTEMS – EVIDENCE FROM ALGERIAN FIRMS, Economics and Business, 35, 249–264. https://doi.org/10.2478/eb-2021-017

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. American Journal of Sociology, 83(2), 340–363. https://doi.org/10.1086/226550.

Ncr.com, (2021). Why banks must increase tech spend and invest in digital first. https://www.ncr.com/banking/increased-tech-spending

OECD. (2020). The Digital Transformation of SMEs. Organisation for Economic Co-operation and Development. Retrieved from https://www.oecd.org/digital/digital-transformation-smes.pdf

State Bank B. (2021). Annual Report 2021. Colombo: State Bank B. https://www.peoplesbank.lk/roastoth/2024/05/Peoples-Bank-Annual-Report-2023.pdf.

State Bank B. (2022). Annual Report 2022. Colombo: State Bank B. https://www.peoplesbank.lk/roastoth/2023/04/Peoples-Bank-Annual-Report-2022-1.pdf.

State Bank B. (2023). Annual Report 2023. Colombo: State Bank B. https://www.peoplesbank.lk/roastoth/2024/05/Peoples-Bank-Annual-Report-2023.pdf.

Perera, N. (2021). IMPACT OF DIGITAL TRANSFORMATION IN MEASURING BUSINESS PERFORMANCE OF SMALL & MEDIUM SCALE BUSINESSES IN SRI LANKA, International Journal of Economics, Business and Management Research, 5(7), 1-25.

Phornlaphatrachakorn, K. & NaKalasindhu, K. (2021). Digital Accounting, Financial Reporting Quality and Digital Transformation: Evidence from Thai Listed Firms. The Journal of Asian Finance, Economics and Business, 8(8), 409–419

Pratt, M. K. (2021). 10 digital transformation benefits for business. https://searchcio.techtarget.com/tip/Top-10-digital-transformation-benefits-for-business

Rajapaksha, T. (2021). Investigating the Acceptance of Digital Banking Applications in Rural vs City in Sri Lanka. Retrieved from https://doi.org/10.13140/RG.2.2.30632.08969

Reus, D. L. L. P. (2019). China's New regulation of third-party payment services. http://diazreus.com/will-paypalthrive-in-china-chinas-new-regulation-ofthird-party-payment-services

Rodrigues, L. F., Oliveira, A. & Rodrigues, H. (2023) Technology management has a significant impact on digital transformation in the banking sector, International Review of Economics and Finance, 88, 1375–1388. https://doi.org/10.1016/j.iref.2023.07.040

Sajić, M., Bundalo, D., Bundalo, Z. and Pašalić, D. (2018). Digital technologies in the transformation of classical retail bank into digital bank, 2017 25th Telecommunication Forum (TELFOR), Belgrade, Serbia. 1–4. https://doi.org/10.1109/TELFOR.2017.8249404

Samarakoon, S. M. D. D., Johar, M.G.M. & Khatibi, A. (2023). The impact of digital transformation adoption towards broadcasting industry in Sri Lanka, Journal of Print and Media Technology Research, 12(2), 73-96. https://doi.org/10.14622/JPMTR-2227

Sathananthan, S., Hoetker, P., Gamrad, D., Katterbach, D. & Myrzik, J. (2017). Realizing digital transformation through a digital business model design process, Internet of Things Business Models, Users, and Networks, https://doi.org/10.1109/ctte.2017.8260996

Scardovi, C. (2017). Digital Transformation in Financial Services, Springer International Publishing, Cham, Switzerland, 1-5. https://doi.org/10.1007-978-3-319-66945-8

Scott, W. R. (1983). The organization of environments: Network, cultural, and historical elements. In J. W. Meyer & W. R. Scott (Eds.), Organizational Environments: Ritual and Rationality (pp. 155–178). Sage Publications.

Seow, P. S., Goh, C., Pan, G., Yong, M. & Chek, J. (2021). Embracing Digital Transformation in Accounting & Finance. Research Collection School of Accountancy, Singapore Management University. https://ink.library.smu.edu.sg/soa_research/2020

Sloboda, L., Dunas, N. & Limanski, A. (2018). Contemporary Challenges and Risks of Retail Banking Development in Ukraine. Banks and Bank Systems, 13, 88–97.

Tharinthu rajapaksha, (2021). INVESTIGATING THE ACCEPTANCE OF DIGITAL BANKING APPLICATIONS IN RURAL VS CITY IN SRI LANKA, https://doi.org/10.13140/RG.2.2.30632.08969

The Digital Transformation of SMEs. Paris: Organisation for Economic Co-operation and Development. https://www.oecd.org/digital/digital-transformation-smes.pdf

Thipwiwatpotjana, S. (2021). Digital Transformation of Accounting Firms: The Perspective of Employees from Quality Accounting Firms in Thailand. Human Behavior, Development and Society, Conference proceedings, 22(1), 53–62.

Tidd, J. & Bessant, J. R. (2020). Managing innovation: Integrating technological, market, and organizational change. John Wiley and Sons.

Tsindeliani, I. A., Proshunin, M. M., Sadovskaya, T. D., Popkova, Z. G., Davydova, M. A. & Babayan, O. A. (2022). Digital transformation of the banking system in the context of sustainable development, Journal of Money Laundering Control, 25(1), 165-180. https://doi.org/10.1108/JMLC-02-2021-0011

Tsindeliani, I.A., Proshunin, M.M., Sadovskaya, T.D., Popkova, Z.G., Davydova, M.A. & Babayan, O.A. (2022). Digital transformation of the banking system in the context of sustainable development. Journal of Money Laundering Control, 25(1), 165-180. https://doi.org/10.1108/JMLC-02-2021-0011

Valsamidis, S., Tsourgiannis, L., Perdiki, F. & Ferelis, V. (2024). Digital transformation in banking industry: a 3-level approach, intellectual economics, 18(1), 106–131.

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. Journal of strategic information, 28(2), 118-144. https://doi.org/10.1016/j.jsis.2019.01.003

Vivekanandan, L. & Jayasena, V. (2011). Link between the expectations of retail banking customer and electronic banking solutions, IEEE

International Summer Conference of Asia Pacific Business Innovation and Technology Management, Dalian, 226-230. https://doi.org/10.1109/apbitm.2011.5996328

Yapa, R. (2022). Digital Transformation in Sri Lanka: A Sectoral Analysis of Banks. Sri Lanka Journal of Economics and Finance, 6(1), 101-115.

Zucker, L. G. (1987). Institutional theories of organization. Annual Review of Sociology, 13, 443–464.
https://doi.org/10.1146/annurev.so.13.080187.002303