Mediating Role of Capital Structure Between Determinants of Capital Structure and Firm Value: A Path Analysis Using Econometrics Model

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ABSTRACT

This study investigates the mediating role of capital structure between the determinants of capital structure and firm value, with a focus on non-financial firms listed on the Colombo Stock Exchange. A sample of 90 firms from twelve industry sectors was analyzed for the period of 8 years from 2013 to 2020 using secondary data extracted from financial reports. The research categorizes variables into three constructs: firm value (dependent variable), capital structure (mediating variable), and determinants of capital structure (independent variables), which include firm-specific attributes such as profitability, asset tangibility, liquidity, firm size, growth opportunity, and earning volatility and corporate governance practices such as board size, board composition, managerial ownership, board meetings, and CEO position. Employing an econometric model and the Sobel test for multiple independent variables, the results reveal that capital structure significantly and partially mediates the effects of profitability on firm value. Moreover, profitability, board size, and board meetings exhibit significant direct effects on firm value. This study contributes to the literature by providing empirical evidence on the indirect effects of profitability via capital structure mediation on firm value in the Sri Lankan context and demonstrates how path analysis can be applied to panel data with multiple independent variables using econometrics models.

Keywords: Determinants of Capital Structure, Firm Value, Path Analysis, Econometrics Models, Sobel test

INTRODUCTION

Capital structure refers to the mix of debt and equity used by a firm to finance its operations and investments. It emphasizes the importance of finding the right balance between debt and equity to maximize firm value and satisfy stakeholders. The Modigliani and Miller theory is introduced as a foundational theory in capital structure, suggesting that financial leverage has no impact on firm value in an ideal market. However, alternative theories such as the trade-off theory, pecking order theory, and agency cost theory argue that real-world imperfections make capital structure decisions relevant. The purpose of the study is to examine the mediating role of capital structure between determinants of capital structure and firm value. This study seeks to contribute to the existing literature by investigating the mediating effects of capital structure on the relationship between determinants of capital structure and firm value. By adopting an econometric model and employing the Sobel test for multiple independent variables, the research aims to provide a novel approach to understanding the indirect effects of determinants of capital structure on firm value through capital structure mediation.

LITERATURE

ReviewCapital structure of a firm refers to the combination of debt and equity used to finance its operations and investments. It represents the sources of funding that support the company's activities and assets. Debt,

which includes loans, bonds, and borrowing, requires repayment with interest over a specified period. Equity, on the other hand, represents the ownership stake held by shareholders, obtained through the issuance of shares.

Firm value, also referred to as company value or enterprise value, represents the overall worth of a business entity. It is a measure of the economic value of a company, considering both its tangible and intangible assets. Firm value reflects the market's perception of the company's ability to generate future cash flows. The importance of firm value to business firms encompasses several key aspects.

Capital structure theories.

Modigliani and Miller's Irrelevance Theory: This seminal theory asserts that, under certain ideal assumptions (perfect capital markets, no taxes, no bankruptcy costs, and information symmetry), capital structure decisions have no impact on firm value.

Trade-Off Theory: This theory posits that firms face a trade-off between the tax benefits of debt and the costs of financial distress. An optimal capital structure is achieved by balancing these opposing forces, leading companies to target a specific debt-to-equity ratio to maximize value.

Pecking Order Theory: formalized by Myers and Majluf (1984), this theory suggests that firms prefer internal financing (retained earnings) over external financing (debt and equity) leading to a hierarchy where retained earnings are used first, followed by debt, and equity issuance is the last resort.

Agency Cost Theory: This theory emphasizes the agency relationship between shareholders and managers. It posits that managers may make suboptimal financing decisions due to differing risk preferences.

Signaling Theory: This theory suggests that firms choose their capital structure to signal their true value to the market. Issuing equity is seen as a negative signal, as it implies the firm's stock is overvalued. In contrast, issuing debt is perceived positively, as it indicates confidence in future cash flows.

Market Timing Theory: This theory posits that firms consider market conditions when making capital structure decisions. Firms tend to issue equity when their stock is overvalued and use debt when their stock is undervalued, aligning with the idea of exploiting market mispricing.

Empirical Review

Khaki and Akin (2020) found that profitability is negatively correlated with leverage, whereas Doan (2019) discovered a positive influence of profitability on capital structure. Tangible assets have also been studied in relation to leverage. Khaki and Akin (2020) reported that firms with tangible assets tend to employ higher debt levels, contrasting with the findings of Briones and Chang (2017), who found a negative statistical relationship between tangibility and debt levels.

Growth opportunity in determining capital structure has been examined as well. Briones and Chang (2017) concluded that growth isn't statistically significant, whereas Pratheepan and Banda (2016) revealed a significant positive relationship between growth and leverage. The impact of liquidity on leverage has been debated, with Molla (2019) finding no significant relationship, whereas Kasthury and Anandasayanan (2019) observed a significant negative impact of liquidity on leverage.

The effect of firm size on leverage has yielded varied results. Pratheepan and Banda (2016) established a positive relationship firm size and leverage, while Hussain and Miras (2015) documented a significant negative relationship between firm size and total debt ratio. Earnings volatility's relationship with leverage also varies, as Akhtar and Oliver (2009) identified a negative association, whereas other studies (Booth et al., 2001; Deesomsak et al., 2004; Ellili and Farouk, 2011) highlighted a positive effect.

The impact of board size on capital structure demonstrated conflicting findings, with Ajanthan (2013) showing a negative relationship and Sheikh and Wang (2012) discovered that larger boards correlate with higher debt

levels. Managerial ownership played a role in capital structure decisions, where Kulathunga et al. (2017) found that higher ownership led to a preference for equity financing. Sewpersadh (2019) found a positive correlation between CEO duality and leverage, while Sheikh and Wang (2012) suggested an insignificant effect.

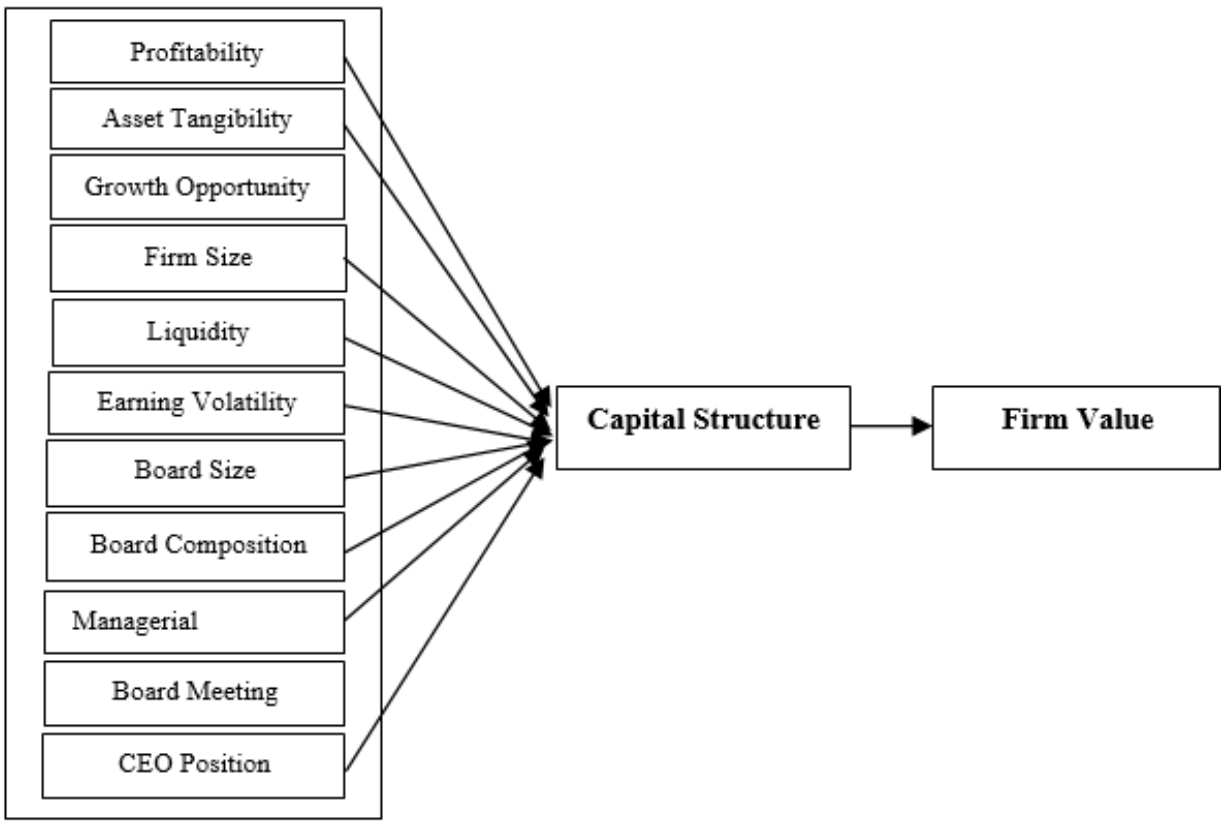
Regarding the relationship between financial leverage and firm value, Panyagometh (2022) found no significant impact, a conclusion aligned with Winata et al. (2020), who also observed no direct effect of debt ratios on firm value. Conversely, Almahadin and Oroud (2019) reported that a higher debt ratio correlated with decreased firm value.

METHODOLOGY

This section will provide a comprehensive overview of the research design, including the conceptual framework, hypotheses, population and sample, data collection methods and tools, variable definition, econometric models, analytical tools.

Conceptual Framework

The study has developed a conceptual framework to illustrate the relationships between the determinants of capital structure and firm value mediated through capital structure and has formulated the hypotheses to investigate indirect effects of capital structure determinants on firm value.



Hypothesis

H_1: Determinants of capital structure have a statistically significant on capital structure

H_2: Capital structure has a statistically significant effect on firm value.

H_3: Capital structure, when incorporated with its determinants, has a statistically significant effect on firm value.

H_4: Determinants of capital structure have a statistically significant indirect effects on firm value mediated through capital structure.

Population and Sample

To conduct the study, the population consists of non-financial firms listed on the Colombo Stock Exchange. Financial firms are excluded due to their significant differences in financial statements and leverage ratios. A sample of 90 listed companies from twelve industry groups was selected based on data availability. The data covers an eight-year period from 2013 to 2020. Secondary data from the financial reports of the sample companies were collected to measure the variables.

Variables description

The variables were categorized into the constructs, including firm value, capital structure, and determinants of capital structure. The measurement methods for each variable are provided.

In this study, the determinants of capital structure are considered independent variables, while firm value is the dependent variable. Capital structure is treated as the mediating variable between its determinants and firm value.

Table 1: Details of constructs, variables, measurements, and reference

Constructs	Variables	Measurement	Reference
Firm Value	Price -Earnings ratio	Market price / EPS	Kausar et al(2014),
Capital structure	Long-term debt to total assets	Long term debt /Total assets	Bevan and Danbolt (2002),
Firm-Specific Attributes	Profitability	EBIT to total assets	Rajan and Zingales (1995), Titman and Wessels (1988)
	Tangibility	Fixed assets to total assets	Rajan and Zingales (1995), Frank and Goyal (2009)
	Growth opportunity	Percentage change in total assets	Dissanayake (2019), Kausar et al. (2014), Khaki & Akin (2020), Wahome et al. (2015)
	Firm size	Natural logarithm of total assets	Daeli & Endri (2018), Panyagometh (2022), Molla (2019), Sutrisno (2016), Hossain & Yakub (2014)
	Liquidity	Current assets minus inventory divided by current liabilities	Pratheepan & Banda (2016), Hussain & Miras (2015)
	Earnings volatility	Standard deviation of earnings before interest and taxes, divided by total assets	Li & Islam (2019), Luu (2021)
Corporate Governance Practice	Board Size	Number of Directors	Abor (2007),
	Board Composition	Total no of non-executive directors/ total no of Director	Weisbach (1988),
	Managerial Ownership	Total no. of shares owned by members of board/Total no of shares	Boroujeni et al., (2013), Al-Thuneibat, (2018),
	Board Meeting	Number of Board Meetings	Mudalige & Ekanayake (20015), Sheikh & Wang (2011)
	CEO Position	Log of number of years	Berger et al. (1997), Wen et al.

		in CEO position	(2002)

Econometric Models

The study aims to establish linear relationships between the variables using econometric models. Specific models are developed to test the formulated hypotheses and examine the mediating effects of capital structure.

Model-1 focuses on the impact of firm specific attributes such as profitability (PRO), asset tangibility (TAN), growth opportunity (GO), firm size (SIZ), liquidity (LIQ), and earnings volatility (EV) and variables of corporate governance practices, such as board size (BS), board composition (BC), managerial ownership (MO), board meetings (BM), and CEO position (CP) on capital structure measured by long-term debt to total assets ratio. This model identifies determinants of capital structure that have a statistically significant

$$LDA_{it}=\alpha+ß_1PRO_{it}+ß_2TAN_{it}+ß_3GO_{it}+ß_4SIZ_{it}+ß_5LIQ_{it}+ß_6EV_{it}+ß_7BS_{it}+ß_8BC_{it}+ß_9MO_{it}+ß_{10}BM_{it}+ß_{11}CP_{it}+\mu_{it}$$

Model 2 is designed to apply regression analysis in estimating the impact of capital structure as the mediating variable on firm value, measured by price-earnings ratio, and this model corresponds to hypothesis H_2. The path analysis can be conducted under the condition of finding a significant effect of the mediating variable.

$$PER_{it} = \alpha2 + ß2LDA_{it} + \mu2_{it}$$

Model 3 focuses on only the direct effects. The ultimate objective is the path analysis based on Baron and Kenny approach. This model corresponds to hypothesis H_3

Model 4 represents the indirect effects of the independent variables on firm value via the mediating variable, capital structure. This model is consistent with hypothesis H_4.

Sobel Test for panel data

The Sobel test is one of the general ways to assess the significance of the indirect effect in the mediation analysis. It allows determination of whether the mediating variable actually mediates the relationship between the determinants of capital structure and firm value.

The Sobel test statistic (Z) is calculated using the formula given below:

$$Z = (a \times b) / \sqrt{(b^2 \times SE_a^2 + a^2 \times SE_b^2)}$$

Where:

a: represents the unstandardized coefficient of the independent variable on the mediating variable (Model-1).

b: represents the unstandardized coefficient of the mediating variable on the dependent variable (Model-2).

SE_a: represents the standard error of the coefficient a.

SE_b: represents the standard error of the coefficient b.

To interpret the Sobel test statistic, the study compares its absolute value to the critical value corresponding to the desired level of significance-often $\alpha = 0.05$, which indicates a 95% confidence level. If the absolute value of the test statistic exceeds the critical value-usually 1.96 for a 95% confidence level-then the mediating effect is considered statistically significant.

Conversion of a standardized coefficient into an unstandardized coefficient

To convert a standardized coefficient (also known as a beta coefficient) back into an unstandardized coefficient in a regression analysis, the following formula can be used

$b=\beta \times (SD_y/SD_x)$

The formula states that the unstandardized coefficient (b) is obtained by multiplying the standardized coefficient (β) by the ratio of the standard deviation of the dependent variable (SD_y) to the independent variable (SD_x).

Where:

b: unstandardized coefficient.

β: standardized coefficient.

SD_y : standard deviation of the dependent variable.

SD_x : standard deviation of the independent variable.

Analysis Tools and Techniques

The techniques of inferential data analysis have been used that include multiple regression analysis, and path analysis. The analysis is sequential, starting with the testing of hypotheses H_1 to H_4 and then the identification of the determinants of capital structure. Data analysis was done using EViews 14 software widely used in econometrics for handling time-series and panel data.

RESULTS AND DISCUSSION

Analysis on the determinants of capital structure

Table 2 displays regression of long-term debt to total assets ratio on variables related to firm-specific attributes and corporate governance practice. The purpose of this analysis is to examine the determinants of capital structure which have a statistically significant effects on capital structure.

Table 2: Regression of long-term debt to total assets ratio on variables related to firm-specific attributes and corporate governance practice.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.014741	0.037969	0.388233	0.6980
PRO	-0.133928	0.029617	-4.522052	0.0000
TAN	0.073164	0.015706	4.658346	0.0000
GO	-0.053492	0.045206	-1.183284	0.2371
SIZ	0.003335	0.003726	0.894951	0.3711
LIQ	-0.004108	0.001537	-2.672750	0.0077
EV	-0.002741	0.002329	-1.176703	0.2397
BS	0.008858	0.001850	4.789165	0.0000
BC	-0.045975	0.020809	-2.209357	0.0275
BM	0.003102	0.001012	3.064506	0.0023
MO	0.000199	0.000742	0.268358	0.7885
CP	0.022017	0.011125	1.979104	0.0482

(PRO-Profitability, TAN-Asset tangibility, GO-Growth opportunity, SIZ-Firm size,

LIQ-Liquidity, EV-Earnings volatility, BS-Board size, BC-Board composition,

BM-Board meeting, MO- Managerial ownership, CP-CEO position)

The above table shows that profitability has a negative impact on the long-term debt to total assets ratio. Some studies found a negative correlation, meaning that the more profitable companies tend to carry less debt, as

shown by Khaki and Akin (2020), Çekrezi (2013), Malinic et al. (2013), and Hossain and Ali (2012). Asset Tangibility has a significant positive relation to long-term debt to total assets ratio. Firms that have more tangible are likely to use more debt finance. Some studies (Khaki and Akin, 2020; Hussain and Miras, 2015; Yasin, 2014; Ghazouani, 2013) indicated a positive relationship, suggesting that firms with tangible assets tend to employ higher levels of debt.

Liquidity exhibits its significant impact on long-term debt to total assets ratio as well. That is, a firm with a higher degree of liquidity shows a lower amount of long-term debt to total assets ratio. Some researchers documented significant negative influence of liquidity on the firms' leverage, for instance, Kasthury and Anandasayanan (2019) and Hussain and Miras (2015) reported that the firms with higher liquidity has lower leverage. Firm size, growth opportunity and earnings volatility have no significant effects on capital structure.

These findings further tend to show that board size has a positive significant effect on long-term debt to total assets ratio, meaning that larger boards are more likely to show more debt. Sheikh and Wang, 2012 postulate that firms with larger boards are likely to have high levels of debts.

The study indicated that board composition has a negative significant impact on long-term debt to total assets ratio. This may indicate that a board composed of a mix of non-executive directors is more conservative in making their financing decisions, which may provide a lower level of long-term debt for the company.

Board meetings is also proved to contribute positively and significantly to the long-term debt to total assets ratio. Rajendran (2012) reported that the more frequent board meeting leads to be higher level of leverage.

The study also identifies the impact of the tenure of the CEO on the ratio of long-term debt to total assets. Firms where the CEO also held the position for a long period tend to have a higher long-term debt to total assets ratio. On the other hand, the research findings indicate that managerial ownership did not illustrate statistically significant effect on long-term debt ratio.

From the regression analysis, profitability, asset tangibility and liquidity, are the determinants of capital structure in relation to firm specific attributes and board size, board composition, board meeting, and CEO position are the determinants of capital structure in relation to corporate governance practices in Sri Lankan context.

Analysis of effects of capital structure on firm value

Table 3 presents a regression analysis carried out to establish the relationship between capital structure represented by the long-term debt to asset ratio and firm value represented by the price earnings ratio. The analysis in this context is a method to establishing whether capital structure mediates the relationship between its determinants and firm value.

Table 3: Regression analysis of price earnings ratio on long-term debt to assets ratio.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.68165	0.653653	16.34146	0.0000
LDA	-14.03220	3.642054	-3.852826	0.0001

The coefficient and p-value suggest that there is a significant negative relation between long-term debt and firm value. Further, the t-statistic confirms that this relationship is statistically significant. This analysis brings out the importance of capital structure in understanding firm value and sets the stage for further investigation into the mediating role of capital structure in the relationship between its determinants and firm value.

Analysis of direct effects of determinants of capital structure on firm value

Table 4 presents the regression results of the price-earning ratio on the determinants of capital structure, including capital structure measured by long-term debt to assets ratio, in the table below. The main motivation

for this regression analysis is that, according to Baron and Kenny (1986), such analysis allows for an examination of the direct effects of determinants of capital structure on firm value.

Table 4: Regression analysis of price earnings ratio on determinants of capital structure, incorporating capital structure

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.931708	2.453764	2.009854	0.0448
PRO	17.32179	2.952456	5.866909	0.0000
TAN	-0.387155	1.549563	-0.249848	0.8028
LIQ	0.186233	0.149607	1.244814	0.2136
BS	0.568684	0.184651	3.079779	0.0022
BC	-2.143437	2.017036	-1.062667	0.2883
BM	-0.300292	0.097856	-3.068712	0.0022
CP	2.848759	1.071233	2.659327	0.0080
LDA	-10.19856	3.690426	-2.763518	0.0059

(LDA- Long-term debt to assets ratio, PRO-Profitability, TAN-Asset tangibility,

LIQ-Liquidity, BS-Board size, BC-Board composition, BM-Board meeting, CP-CEO position)

The above table's standardized coefficients are the direct effects of determinants of capital structure on firm value except for the long-term debt to asset ratio. All the above-mentioned four variables- profitability, board size, board meetings, and CEO position-exhibit statistically significant effects on firm value, hence, are qualified and satisfy the "sufficient" condition required for performing a path analysis. The mediating effects can be derived with the help of a standardized coefficient of long-term debt to assets ratio denoted as $ß_m$.

Analysis of indirect effects of determinants of capital structure on firm value.

Table 5 presents the regression analysis of the long-term debt to total assets ratio which measures capital structure, on identified determinants of capital structure. The purpose of conducting this regression analysis is to calculate indirect effects of the determinants of capital structure on firm value.

Table 5: Regression analysis of long-term debt to total assets ratio on identified determinants of capital structure

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.038713	0.024876	1.556238	0.1201
PRO	-0.136778	0.029541	-4.630093	0.0000
TAN	0.076523	0.015472	4.945743	0.0000
LIQ	-0.003884	0.001512	-2.568496	0.0104
BS	0.008774	0.001846	4.752895	0.0000
BC	-0.043781	0.020417	-2.144289	0.0323
BM	0.003109	0.000987	3.150837	0.0017
CP	0.021043	0.010850	1.939432	0.0528

(PRO-Profitability, TAN-Asset tangibility, LIQ-Liquidity, BS-Board size,

BC-Board composition, BM-Board meeting, CP-CEO position)

The above table was used to determine the mediation effects or indirect effects with the help of standardized coefficients. It was found that variables such as profitability, asset tangibility, liquidity, board size, board composition, and board meetings showed statistical significance, which is a prerequisite for path analysis.

The following, Table 6 and Table 8, show the path analysis results that investigate the indirect effect of capital structure determinants on firm value through capital structure. In testing the significance of the indirect effect, the Sobel test was done. If the Sobel test statistic is greater than 1.96, then a particular determinants of capital structure has a significant effect on firm value mediated by capital structure.

Table 6: Indirect effects of determinants of capital structure on firm value mediated through capital structure.

Independent Variables	Coefficients(ß)	Coefficients of mediating variable ($ß_m$)	Indirect effect
PRO	-0.136778	-10.19856	1.39494
TAN	0.076523	-10.19856	-0.78042
LIQ	-0.003884	-10.19856	0.03961
BS	0.008774	-10.19856	-0.08948
BC	-0.043781	-10.19856	0.44650
BM	0.003109	-10.19856	-0.03171
CP	0.021043	-10.19856	-0.21461

(PRO-Profitability, TAN-Asset tangibility, LIQ-Liquidity, BS-Board size, BC-Board composition,

BM-Board meeting, CP-CEO position)

The above table displays the indirect effects of capital structure determinants on firm value, which are mediated through capital structure.

The results in the above table were obtained using revised econometrics Model-1, Model-3 and Model-4, as presented below.

Model-1 (Table 5)

$$LDA_{it}=\alpha 1+ß1_1PRO_{it}+ß1_2TAN_{it}+ß1_3LIQ_{it}+ß1_4BS_{it}+ß1_5BC_{it}+ß1_6BM_{it}+ß1_7CP_{it}+\mu 1_{it}$$

Model-3(Table 4)

$$PER_{it}=\alpha 3+ß3_1PRO_{it}+ß3_2TAN_{it}+ß3_3LIQ_{it}+ß3_4BS_{it}+ß3_5BC_{it}+ß3_6BM_{it}+ß3_7CP_i+ß_mLDA_{it}+\mu 3_{it}$$

Model-4(Table 6)

$$PER_{it}=\alpha 4+ß_m{*}ß1_1PRO_{it}+ß_m{*}ß1_2TAN_{it}+ß_m{*}ß1_3LIQ_{it}+ß_m{*}ß1_4BS_{it}+ß_m{*}\ ß1_5BC_{it}+ß_m{*}ß1_6BM_{it}+ß_m{*}ß1_7CP_{it}+\mu 4_{it}$$

Sobel Test for determinants of capital structure

Table 7 shows the Sobel test statistic. The Sobel test is a common statistical method of testing the significance of the indirect effect in mediation analysis. It helps to determine whether the mediating variable indeed mediates the relationship between the determinants of capital structure and firm value. The mediating effect is considered statistically significant if the absolute value of Sobel's test statistic exceeds the critical value, usually 1.96 for a 95 percent confidence level. Since output from EViews 14 does not show unstandardized coefficients, standardized coefficients or the beta coefficient of capital structure determinants has been converted into an unstandardized coefficient in the regression analysis.

Table 7: Sobel test statistic

Independent Variables	Unstandardized Coefficients and Std.Error				Sobel Test
	a	SE_a	b	SE_b	
PRO	-0.1113	0.0295	-1383.2759	3.6421	3.767
TAN	0.0321	0.0155	-1383.2759	3.6421	-2.075
LIQ	-0.0002	0.0015	-1383.2759	3.6421	0.132
BS	0.0004	0.0018	-1383.2759	3.6421	-0.217
BC	-0.0248	0.0204	-1383.2759	3.6421	1.215

BM	0.0001	0.0010	-1383.2759	3.6421	-0.101
CP	0.0064	0.0109	-1383.2759	3.6421	-0.590

(PRO-Profitability, TAN-Asset tangibility, LIQ-Liquidity, BS-Board size, BC-Board composition, BM-Board meeting, CP-CEO position)

Table 8: Summary of direct effects, indirect effects, and significance between independent variables (Determinants of capital structure) and firm value (price - earning ratio).

Independent Variables	**Standardized Coefficients and Significant**		**Indirect effect**	**Sobel Test**
	Direct effect	Prob.		
PRO	17.3218	0.0000	1.39494	3.767
TAN	-0.3872	0.8028	-0.78042	-2.075
LIQ	0.1862	0.2136	0.03961	0.132
BS	0.5687	0.0022	-0.08948	-0.217
BC	-2.1434	0.2883	0.44650	1.215
BM	-0.3003	0.0022	-0.03171	-0.101
CP	2.8488	0.0080	-0.21461	-0.590

(PRO-Profitability, TAN-Asset tangibility, LIQ-Liquidity, BS-Board size, BC-Board composition, BM-Board meeting, CP-CEO position)

The Sobel statistical values confirm that profitability has significant indirect effects on firm value, which is mediated by capital structure since profitability has greater than 1.96 in the Sobel test value. This would, therefore, imply that a change in profitability may cause changes in the capital structure, which in turn influences the firm value.

If, on the other hand, in the approach of Baron and Kenny, a mediating variable does not have an effect on the dependent variable significantly, it means that mediating variable fully mediates the effect of the independent variables on dependent variable. In cases when mediating variable has an effect on dependent variable, it indicates that mediating variable only partially mediates the effects of independent variables on dependent variable. Capital structure, as a mediating variable, measured by LDA, has a significant effect on firm value measured by PER when integrated with its determinants. Therefore, the capital structure only partially mediates the effects of profitability on firm value.

CONCLUSION

This study examined the mediating role of capital structure between determinants of capital structure and firm value. The results indicated that variables such as profitability, tangibility, liquidity, board size, board composition, and board meetings had significant impacts on capital structure. Furthermore, profitability, board size, and board meetings were found to have significant direct effects on firm value. The analysis also revealed that capital structure, as a mediating variable, measured by LDA, has a significant effect on firm value measured by PER when integrated with its determinants. Therefore, capital structure is only able to partially mediate the effect of profitability, on firm value. This study has contributed by exploring indirect effects and employing an econometric model to demonstrate the Sobel test for multiple independent variables.

REFERENCE

1. Abor, J. (2007). Corporate governance and financing decisions of Ghanaian listed firms. Corporate Governance: International Journal of Business in Society, 7(1), 83–92. https://doi.org/10.1108/14720700710727131
2. Agyei, J., Sun, S., & Abrokwah, E. (2020). Trade-off theory versus pecking order theory: Ghanaian evidence. SAGE Open, 10(3), 1-13.
3. Ajanthan, A. (2013). Impact of corporate governance practices on firm capital structure and profitability: A study of selected hotels and restaurant companies in Sri Lanka. Research Journal of Finance and Accounting, 4(10).

4. Akhtar, S., & Oliver, B. (2009). Determinants of capital structure for Japanese multinational and domestic corporations. International Review of Finance, 9, 1-26.
5. Almahadin, H. A., & Oroud, Y. (2019). Capital structure-firm value nexus: The moderating role of profitability. Revista Finanzas y Política Económica, 11(2), 375-386. https://doi.org/10.14718/revfinanzpolitecon.2019.11.2.9
6. Al-Thuneibat, A. (2018). The relationship between the ownership structure, capital structure, and performance. Journal of Accounting, Business & Management, 25(1), 1–20.
7. Baker, M. and Wurgler, J. (2002). Market Timing and Capital Structure, Journal of Finance, 57 (1), 1-32.
8. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173–1182.
9. Berger, P. G., Ofek, E., & Yermack, D. L. (1997). Managerial entrenchment and capital structure decisions. Journal of Finance, 52(4), 1411–1438. https://doi.org/10.1111/j.1540-6261.1997.tb01115.x
10. Bevan, A. A., & Danbolt, J. (2002). Capital structure and its determinants in the UK A decomposition analysis. Applied Financial Economics, 12(3), 159-170.
11. Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. Journal of Finance, 56, 87-130.
12. Boroujeni, H. N., Noroozi, M., Nadem, M., & Chadegani, A. A. (2013). The impact of capital structure and ownership structure on firm performance: A case study of Iranian companies. Research Journal of Applied Sciences, Engineering & Technology, 6(22), 4265–4270.
13. Briones, O., & Chang, M. (2017). A combined assessment of capital structure determinants in a developing economy. International Research Journal of Finance and Economics, 162.
14. Çekrezi, A. (2013). Impact of firm-specific factors on capital structure decision: An empirical study of Albanian firms. European Journal of Sustainable Development, 2(4), 135-148. ISSN: 2239-5938.
15. Daeli, C., & Endri. (2018). Determinants of firm value: A case study of cigarette companies listed on the Indonesia Stock Exchange. International Journal of Managerial Studies and Research, 6(8), 51-59.
16. Deesomsak, R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: Evidence from the Asia Pacific region. Journal of Multinational Financial Management, 14, 387-405.
17. Dissanayake, D. M. S. B. (2019). Relevance of pecking order and trade-off theories in financial decision making: Empirical evidence in the Sri Lankan companies. International Journal of Science and Research (IJSR), 8(7). ISSN: 2319-7064.
18. Doan, T. T. (2019). Firm-specific factors as determinants of capital structure: Evidence from an emerging country. International Journal of Economics and Management Systems, 4.
19. Ellili, N. D., & Farouk, S. (2011). Examining the capital structure determinants: Empirical analysis of companies traded on Abu Dhabi Stock Exchange. International Research Journal of Finance and Economics. Retrieved from http://www.eurojournals.com/IRJFE_67_08.pdf.
20. Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? Financial Management, 38(1), 1–37. https://doi.org/10.1111/j.1755-053X.2009.01026.x
21. Ghazouani, T. (2013). The capital structure through the trade-off theory: Evidence from Tunisian firms. International Journal of Economics and Financial Issues, 3(3), 625-636. ISSN: 2146-4138.
22. Hossain, M. F., & Ali, M. A. (2012). Impact of firm-specific factors on capital structure decision: An empirical study of Bangladeshi companies. International Journal of Business Research and Management (IJBRM), 3(4).
23. Hossain, M. M., & Yakub, K. M. (2014). Impact of firm characteristics on capital structure of banking industry of Bangladesh. IOSR Journal of Business and Management (IOSR-JBM), 16(4), 17-25.
24. Hussain, S. S., & Miras, H. (2015). The determinants of capital structure for Malaysian food producing companies. International Journal of Accounting & Business Management, 3(1), 138-161.
25. Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. American Economic Review, 76(2), 323–329.
26. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, 3(4), 305 360.

27. Kasthury, S., & Anandasayanan, S. (2019). Impact of Firm Specific Factors on Capital Structure: Evidence from Listed Companies in Colombo Stock Exchange of Sri Lanka. In Proceedings of the Vavuniya Campus International Research Symposium, (pp. 13).
28. Kausar, A., Nazir, M. S., & Butt, H. A. (2014). Capital structure and firm value: Empirical evidence from Pakistan. Asian Journal of Research in Economics and Finance, 1(1), 11–22.
29. Khaki, A. R., & Akin, A. (2020). Factors affecting the capital structure: New evidence from GCC countries. Journal of International Studies, 13(1), 9-27.
30. Kraus, A. & Litzenberger, R. Z. (1973). A State Preference Model of Optimal Financial Leverage, Journal of Finance, 911-922.
31. Kulathunga, K. M. K. N. S., Perera, L. A. S., & Anagipura, G. N. (2017). The relationship between capital structure and ownership structure: Evidence from listed companies in hotel and manufacturing sectors in Sri Lanka. Kelaniya Journal of Management, 6(2), 33.
32. Li, L., & Islam, S. Z. (2019). Firm and industry-specific determinants of capital structure: Evidence from the Australian market. International Review of Economics & Finance, 59, 425-437.
33. Luu, D. H. (2021). The impact of capital structure on firm value: A case study in Vietnam. Journal of Asian Finance, Economics and Business, 8(5), 287-292.
34. Malinić, D., Denčić-Mihajlov, K., & Ljubenović, E. (2013). The determinants of capital structure in emerging capital markets: Evidence from Serbia. European Research Studies, 16(2), 98-119.
35. Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. American Economic Review, 48(3), 261-297.
36. Molla, M. E. (2019). Factors influencing capital structure on firm's value: A study on DSE listed companies. International Journal of Science and Business, 3(1), 132-145.
37. Mudalige, N., & Ekanayake, A. (2015). The influence of corporate governance on capital structure decisions of listed companies in Sri Lanka. Modern Sri Lanka Studies, VI(1).
38. Myers, S. C., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 13(2), 187-221.
39. Panyagometh, K. (2022). The determinants of firm value: A path analysis of Thai listed non-financial companies. Academy of Entrepreneurship Journal, 28(S4), 1-16.
40. Pratheepan, T., & Weerakoon Banda, Y. K. (2016). The determinants of capital structure: Evidence from selected listed companies in Sri Lanka. International Journal of Economics and Financial, 8(2), 94.
41. Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. Journal of Finance, 50(5), 1421–1460. https://doi.org/10.1111/j.1540-6261.1995.tb05184.x
42. Rajendran, K., 2012, Effect of corporate governance on capital structure: case of the Sri Lankan listed manufacturing companies. Journal of Arts, Science & Commerce.
43. Ross, S. A.(1977). The determination of financial structure: the incentive-signalling approach. The Bell Journal of Economics, 8(1),23-40.
44. Sewpersadh, N. S. (2019). A theoretical and econometric evaluation of corporate governance and capital structure in JSE-listed companies. [Abstract]. Journal of Corporate Finance, 15(3), 123-145.
45. Sheikh, N. A., & Wang, Z. (2012). Effects of corporate governance on capital structure: Empirical evidence from Pakistan. Journal of Management Development, 31(2), 152-166. DOI: 10.1108/14720701211275569.
46. Sobel, Michael E. 1982. "Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models." Sociological Methodology, 13, 290–312.
47. Sutrisno. (2016). Capital structure determinants and their impact on firm value: Evidence from Indonesia. Economics World, 4(4), 179-186.
48. Titman, S., & Wessel, R. (1988). The determinants of capital structure choice. Journal of Finance, 43(1), 1-19.
49. Wahome, M. N., Memba, F., & Muturi, W. (2015). The influence of firm-specific factors on capital structure of insurance industry in Kenya. International Journal of Scientific and Research Publications, 5(8), 1.
50. Weisbach, M. S. (1988). Outside directors and CEO turnover. Journal of Financial Economics, 20, 431–460.

51. Wen, Y., Rwegasira, K. and Bilderbeek, J. (2002), ‘‘Corporate governance and capital structure decisions of Chinese listed firms’’, Corporate Governance: An International Review, Vol. 10 No. 2, pp. 75-8
52. Winata, D., Endri, E., Yuliantini, T., & Hamid, A. A. (2020). The influence of capital structure on firm value with tax factors and firm size as intervening variables. TEST Engineering & Management, 83, 18131-18141. ISSN 0193-4120.
53. Yasin, N. (2014). Determinants of capital structure of listed companies of textile and sugar sector during different economic periods. IOSR Journal of Business and Management, 16(3), 76-81.

APPENDIX

A: Conversion of Standardized Coefficient to Unstandardized coefficient and calculation of Sobel Test

Independent Variable	Standardized Coefficient	Standard deviation	Standard deviation (LDA)	Unstandardized coefficient
PRO	-0.136778	0.1523	0.1239	-0.1113
TAN	0.076523	0.2952	0.1239	0.0321
LIQ	-0.003884	2.9439	0.1239	-0.0002
BS	0.008774	2.4173	0.1239	0.0004
BC	-0.043781	0.2183	0.1239	-0.0248
BM	0.003109	4.5689	0.1239	0.0001
CP	0.021043	0.4103	0.1239	0.0064
Mediating variable	Coefficient	Standard deviation	Standard deviation (PER)	Unstandardized coefficient
LDA	-14.0322	0.1239	12.2139	-1383.2759

Formula

$b=\beta \times (SD_y/SD_x)$

The formula states that the unstandardized coefficient (b) is obtained by multiplying the standardized coefficient (β) by the ratio of the standard deviation of the dependent variable (SD_y) to the independent variable (SD_x).

Where:

b: unstandardized coefficient.

β: standardized coefficient.

SD_y : standard deviation of the dependent variable.

SD_x : standard deviation of the independent variable.