Capital Structure and Firm Performance: How Does Marketing Expense Interact?

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Authors’ contributions
This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT
Focus of the study is to examine the role of marketing expense in the relation between capital structure and firm performance using 35 public limited companies listed in Colombo Stock Exchange (CSE), Sri Lanka for the period 2012 to 2019. Inconclusive evidence reported on the role of marketing expense along with unavailability of sound literature raise the need of a study in this nature. The study employs total debt to total asset ratio to represent the leverage of a company while return on assets as proxy for firm performance. Further, return on equity has been introduced to test the robustness of each model developed within the study. Followed by a general descriptive analysis, panel data regression models have been designed to observe the mediator or moderator role of marketing expenditure in determining the relationship between the main variables of the study. Moreover, the study has taken a fair attempt to eliminate model specification bias by incorporating control variables to the main regression models. As per the regression model outputs it was observed that marketing expense operates as a moderator variable in Sri Lanka and most importantly it is weakening the adverse impact created by excessive debt level on firm performance. These findings appeal for a developed capital market in Sri Lanka and highlight the radical decision making under resource-based view. The results of the study agree with the related literature in other parts of the world.

Keywords: Capital structure; CSE; firm performance; marketing expenses; mediator/moderator.
1. INTRODUCTION

Among the different variables of a business firm, Marketing is considered one of the most critical aspects of such a business. Also, many firms prefer to spend more on marketing than production costs [1]. In the history of the marketing discipline, sufficient attention is paid to the role played by marketing in explaining the performances of business firms [2]. Nevertheless, a lacuna exists in studying marketing expenses as an essential variable in the financial discipline [3].

During the past, the scholars’ attention has been drawn towards the capital structure decisions on the performance of firms [4,5,6,7,8] but the findings present a contradictory idea whether adding debt gives positive or negative value to the firms. Further, such studies have paid more attention to the developed markets. No adequate studies are performed in developing countries to understand the relationship between capital structure and firm performances [9]. Thus, it would be worthwhile to study the relationship between firm performances and the capital structure of a firm in Sri Lanka, which is also a developing country. Besides, only a few studies have been conducted to understand the relationship between capital structure and firm performance in the Sri Lankan context [10].

Scholars have presented different ideas regarding the influence of capital structure on the performance of a firm. A study conducted in Nigeria reports a significant relationship between capital structure and firm performance, especially when debt financing is moderately employed [11]. Further, a study conducted using the firms operating in Bombay Stock Market - India found a negative relationship between capital structure and firm performance [12]. Though the seminal study conducted by Modigliani & Miller [13] argues that capital structure is irrelevant in determining the value of the firm and its performance, some scholars claimed that the performance of a firm could be enhanced with the use of debt financing if it is extensively monitored by the creditors [14]. Thus, literature provides mixed evidence regarding the effect of leverage on firm performances. To support the idea that leverage cost has more disadvantages for a firm, Antoniou, Guney & Paudyal [15] declared that there is a negative effect of financial leverage on firm performance, while some scholars depict the change in leverage of a firm negatively on the price of the stock of such firms [16].

A study conducted in Thailand highlights that financial leverage is negatively related with the performance of a firm [17] while it is noted that the leverage gives benefits for the firm performance. Margaritis & Psillaki [6] depict that higher financial leverage or a lower equity capital ratio result in better firm performance, and Connelly, Limpaphayom & Nagarajan [18] illustrate no relationship between financial leverage and firm performance. Therefore, it is evident that the effect of capital structure on firm performance gives mixed results. Thus, studying the impact of capital structure on firms’ performances is still needed to contribute to the existing literature.

The companies operating in Sri Lanka are highly dependent on the debt financing mechanism rather than going towards the corporate debt market. On the other hand, though it is evident that the Sri Lankan companies prefer to have short-term loans rather than long-term loans for the firm operations, these short-term loans lead to high interest compared to long-term loans [10]. According to Manawaduge et al. [10] the main reason for companies not adopting long-term debt to finance the Sri Lankan firms is that Sri Lanka currently does not have a developed long-term debt market. This draws attention to the need to establish an organised long-term debt market here in Sri Lanka.

The resource advantage theory of competition has identified a relationship between resource, marketing, and performance [19]. When a firm has debt as a funding source, a manager needs to invest optimally in marketing expenses to get the maximum benefit [1] because, in the short term, it would look as spending the high-cost debt not usefully. Still, hopefully in the long term, this marketing strategy would result in enhancing the financial performance. To this end, Gyan, Brahmana & Karim [20] stated that according to the resource-based view, it is vital for a good manager to align organisational strategies with business strategies.

Moreover, the studies discussing the marketing expenses and the effect of such expenses are yet to be explored because it is difficult to find adequate, consistent results regarding whether the marketing expenses are behaving as a mediating or a moderating variable between the debt ratio and performances of firms. To support
this idea, first, it was found that the scholars argue that marketing plays as a moderator between the debt leverage and value of the firm [21,22,23]. On the other hand, it is revealed that marketing expenses mediate the relationship between level of debt usage and firm performance. It shows that marketing expenses are impacted by leverage because when debt is high, the firms have to make interest payments on that, and thereby, the firms have to reduce the marketing expenses [24]. Further, leverage has a clear impact on financial performance [20] and marketing expenditures also influence firm performances [25]. Thus, based on the logic of identifying moderator and mediator variables developed by Baron & Kenny [26] the variables, i.e., leverage, firm performances, and the marketing expenses, have mediation relations. This proves that there is mixed evidence to depict that marketing expenses both mediate and moderate the firm performances, which raises the need to conduct this study.

Thus, this study examines whether marketing expenses play a mediator or moderator between the relationship of capital structure and financial performances of the firms operating in CSE – Sri Lanka. Thirty-five listed entities classified under “Material” and “Capital Goods” in CSE were selected, and the specified time duration is from 2012 and ending in 2019. Primary attention was given to choose the firm’s operations before 2021 because many firms are experiencing the negative consequences of the prevailing Covid-19 pandemic.

2. LITERATURE REVIEW

2.1 Theoretical Review

This section focuses on reviewing some theories vital for understanding the impact of capital structure on the performance of a firm and the moderation and mediation of the impact by the marketing expenses. Modigliani and Miller theory, Pecking Order theory, and Trade-off theory are discussed below to build a solid theoretical base for literature review.

Capital structure is one of the crucial influencers on firm performance. Hence, several researchers have scrutinised the optimal level of debt to be held in a firm as it extensively impacts the firm’s value maximisation. Most of the contemporary theories of capital structure are developed upon the master theory of Modigliani & Miller [13] which states that if the market condition is flatteringly perfect, the capital structure is an irrelevant factor in determining the value maximisation of the firm. Nevertheless, the capital structure directly impacts the firm’s value under imperfect market conditions. According to Modigliani & Miller [27] when the firm increases its debt level by levelling corporate tax shield advantage, it may impact the firm’s value.

Moreover, Miller [28] states that corporate taxes are advantageous to the firm value up to the level of tax shield, but personal taxes may negatively impact. According to Miller [28] the trade-off theory emphasises all the companies have an optimal level of debt and equity combination to maximise the profit and value of the firms, and the companies try to match its combination of capital structure to the optimal level. Further, the theory describes that all the firms have to consider the decision of capital structure as it is relevant, and the appropriate debt level allows them to benefit from tax shield. The trade-off theory explains that optimal level of capital structure can be accomplished when the firm’s marginal benefit of an additional component of debt is almost identical to the firm’s marginal cost of an additional component of debt [29,30,31]. The dynamic trade-off theory states that a firm can adjust its debt-to-equity ratio as indicated by comparing the benefit of adjusting the capital structure and the change in cost from then on [32,33]. Myers & Majluf [34] highlight that the firm will finance its money requirement initially from retained earnings and lately from debt sources in pecking order theory.

In contrast, equity capital will be last in the source of the fund priority list. The theory argued that the internal and external fund requirement is exactly similar to the firm’s leverage. Myers [35] states that the firm will primarily generate funds from safe and lower risky sources of funds and then move to the risky sources. The equity is less prioritised when the managers know about the firm’s financial condition than the shareholders. Some scholars have argued that companies raise funds from internal sources such as retained earnings than external sources as they have more control over dividend payments [30].

The Agency theory concept discusses the conflict of interest between shareholders & managers and shareholders & bondholders. Jensen & Meckling [36] state the decision of capital structure helps reduce the agency costs to an acceptable level. Furthermore, many studies argue that a higher level of debt will
reduce agency costs but might cause the liquidation of firms and highlight that increased level of debt will, in turn, negatively affect the reputation and pressure to pay compensation to debtholders [37,38]. These studies have mentioned an increase in leverage results in decreasing agency costs while enhancing the performance of a firm. Berger & Bonaccorsi di Patti [39] developed a contradictory argument. Accordingly, an increase in leverage may result in higher agency costs, such as bankruptcy costs, and it may create negative cashflows and performance through financial distress. Many scholars have pointed out that such diverse factors might influence the firm’s capital structure and its value based on the industry in which they operate [40,41]. Most studies are conducted in the developed countries such as the USA and European countries. In contrast, developing countries receive less attention in examining the impact of capital structure on a firm’s performance regardless of the primary economic variances among these countries [39,42]. According to Booth et al. [43] country-specific factors, namely, GDP growth rate, inflation rate, and capital market development, systematically affect the debt ratio in developing countries. Further, according to Mayer [44] selecting process of a capital structure in developing countries differs from developed countries.

2.2 Empirical Review

This section focuses on reviewing empirical findings on the impact of capital structure on the performance of a firm and the moderation and mediation of the effect of the marketing expenses in the international and Sri Lankan contexts. Accounting-based measurements are widely used than market-based measurements when considering capital structure measures [45]. According to Zeitun & Tian [46] many factors such as maturity of debt and tax rates impact the firm’s performance. They need to be considered concerning capital structure measurements. The environmental, organisational, and strategic factors can positively or negatively affect the firm’s performance as measured by profitability and growth [47]. The economic factors, ownership structure, and risk management are the main influencing factors regarding ROE ratio and ROA ratio as proxies of financial performance [48]. Many scholars have studied the impact of capital structure on firm performance, but empirical findings have produced varied results. Some scholars have concluded positive results of adding debt to the firm’s capital structure [49,50]. According to Hadlock & James [51] firms with higher debt financing generates more profits than firms with lower debt capital. The proxies of firm performance, ROA [52] and ROE [52,53] positively correlate with the capital structure proxy of debt to asset ratio. According to Nurainun et al. [54] the debt-to-equity ratio impacts the firm performance as measured using ROA. Consistently, debt to asset and debt to equity ratios have a positive impact on the ROA as a proxy of financial performance [1,20].

Nirajini & Priya [55] state that capital structure proxies have a significant influence on firm performance. Similarly, Goyal [50] states that a significant positive relationship exists between debt financing and profitability measured by ROE and ROA ratios. In contrast, Abeyratne & Thilakerathne [56] reported that the capital structure proxy of debt to asset ratio negatively affect the performance of a firm when measured using ROA and ROE. Februansyah & Yanuarti [57] conclude a negative impact of debt-to-equity ratio on firm performance as measured by ROA ratio. According to Perera & Wijesinghe [58] a negative relationship exists between capital structure proxy of debt to asset ratio with ROA, ROE, and Net profit margin. San & Heng [59] examined the influence of capital structure on the performance of a firm by using debt to asset ratio and ROA ratio as proxies. They concluded an insignificant negative relationship between capital structure and the firm’s performance. Ebaid [4] shows a weak to low impact of capital structure on financial performance in the Egyptian listed companies by using ROA and ROE ratio as the proxies for the financial performance. According to Dilrukshi & Thilakaratne [60] there is an insignificant negative relationship between capital structure and firm performance. In contrast, Zulaecha [61] argues that there is no significant relationship between leverage and financial performance.

Several studies reveal that the marketing events performed to satisfy stakeholder expectations can affect the firm value and the performance [62,63]. Joshi & Hanssens [64] state that the marketing events that create customer loyalty, repurchase, and price insensitivities can directly impact the sales and profit of the firm. If the investors can analyse the marketing data of the firm, they might take an accurate picture of the firm’s future cashflow [64].
As per Srinivasan et al. [65] the term market productivity denotes the strategic reaction of the firm in an unfavourable environment. They also argued that it might improve the firm performance due to capitalising on the opportunity in the recession. Also, it will be a driving signal of debt financing. In addition, marketing expenses can be tactically used to provide information about the signal of transferring debt to the market. Levinthal & March [66] state that when the firm is signalling about the alleviated distress under debt financing, that signal does not express the firm has future growth opportunities. In this situation, marketing activities will show short-term rather than long-term performance. Therefore, the investor who needs long-term value maximisation will not invest in such firms as the firm has only short-term profitability.

According to Erikson & Jacobson [67] spending on marketing activities favourably affects the stock price and state the increase in marketing activities as prospects of future profitability enhancement. Bae et al. [21] declare the marketing expense as a moderating variable in the relationship between capital structure and firm value. Grewal & Tansuhaj [68] state that high leveraged firms are affected by adverse environment pressure and argue that higher leveraged firms are affected by the inability to generate funds, increase of inflexibility, and inadequate tactical opportunities. Therefore, it identified that the marketing spending of high leveraged firms focuses on increasing the firm performance under unfavourable environmental situations. Gruca & Rego [62] state that marketing spending can provide a protected growth to the firm's performance and financial status. It further argues that marketing activities can enrich the cashflow volatility of the firm and protect the growth of the shareholder's value. Scholars have identified that the firms with higher satisfied customers are exposed to lower risk, and it will generate more profit due to customer loyalty [69]. Meyer & Ujah [70] state a positive relationship between marketing expenses and the performance of a firm, whereas it has no impact on the firm's leverage. Fischer & Himme [24] reported that leverage has a significant impact on the performance of a company, whereas Cheng et al. [25] state that marketing expenses have a significant impact on a firm’s performance. Thus, based on Baron & Kenny [26] marketing expenditure and financial performance may reflect a mediation relation.

Even though Setyawati & Ramadhanti [1] have examined the mediating effect of marketing expenditure, a mediating effect has not been recognised based on the analysis. On the other hand, scholars have identified marketing expenditure as a moderator variable [1,21,22].

The findings of the preceding scholars on the influence of capital structure on the performance of a firm and the moderation and mediation of the impact by the marketing expenses are inconsistent and different studies have concluded mixed results. The confusion and lack of investigation on the research topic in the international and Sri Lankan contexts have created a requirement for further investigation on this research topic.

### 2.3 Hypothesis

The following hypotheses are developed for the research study.

Gyan et al. [20] state that leverage impacts the firm’s performance, whereas Fischer & Himme [24] state that leverage impact on advertising expenses of the firm. According to Baron & Kenny [26] marketing expenses have a mediating effect on the effects of leverage on a firm’s performance. Based on the previous research, the hypothesis is developed as follows.

\[ H_1: \text{Marketing expenses mediate the impact of leverage on firm performance} \]

According to previous scholars, marketing expenses have a moderator impact on the performance of a firm [71,72] whereas some others show that the impact of the leverage on the value of the firms is moderated by marketing expenses [22,73]. Therefore, the following hypothesis is developed.

\[ H_2: \text{The impact of leverage on firm performance is moderated by marketing expenses} \]

The methodology section provides a detailed description of the approaches followed to address these hypotheses.

### 3. RESEARCH METHOD

#### 3.1 Variables and measurement

Previous literature has employed different measures to reflect the firm performance, which ranges from accounting-based ratios such as ROA, ROE, asset turnover, etc [20,52,54,56] to market performance-based indicators such as...
share market returns and Tobin's Q [14,74]. One-half of the empirical studies used either accounting ratios or market indicators [50,57] while the remaining focused on both varieties of these measures [10,46,75,76] to observe the impact.

In this study, it has been selected one of the widely accepted accounting ratios – ROA, to indicate the firm performance and, in addition, ROE as a performance proxy to check the robustness of the empirical models. Both ROA and ROE operate as dependent variables of the current study. To evaluate the impact of leverage on firm performance, this study has employed total debt to total asset ratio which is the primary explanatory variable of our study. The selection of this ratio is in line with previous literature [52,53,56,59] since it has been commonly used in the same context.

The performance of a public limited company can be determined by a larger scale of factors in addition to leverage, such as other firm-specific or industry-specific factors [9,77] and even macroeconomic determinants [78]. Thus, it is needed to consider them as control variables to the study, which will reduce the model specification bias. With that motive, firm size, sales growth, and tangibility have been introduced as control variables of the study to represent firm-specific features. Firm size is given by the natural logarithm of the company’s total assets, already tested, and found to have a significant impact on firm performance by previous literature [1,9]. The sales growth variable indicates the percentage increase of total sales of the prior year. Firms with higher sales growth are expected to perform well since they can attract more lucrative investment opportunities compared to others [6]. Tangibility or the asset structure is measured by a ratio of net fixed assets to total assets. However, the literature reveals an inconclusive impact of tangibility on firm performance, leading to diverse relationships [9,10].

The significant contribution of this study to the capital structure literature is its focus on mediating and moderating roles of marketing expenditure on the relationship between firm performance and leverage. By following the similar approach of Setyawati & Ramadhanti [1] the current study applied the natural logarithm of firm marketing expenditure to observe its mediating and moderating behaviour.

3.2 Data and Empirical Model

3.2.1 Sample and data

Since the access to accurate and reliable financial information from private limited corporations was limited, the sample for the study was selected from public limited companies currently listed in CSE, the only share market established in Sri Lanka. According to CSE, 282 public limited companies are registered under 24 industry groups following the Global Industry Classification Standards (GICS) with a market capitalisation of Rs. 3,111.25 Bn as of 31 March 2021. The current study uses a total number of companies classified under “Materials” and “Capital goods” as its sample comprising 49 listed entities. These two industry groups are the leading contributors to the Sri Lankan economy and claimed approximately 23% of the total market capitalisation as of 31 March 2021. The study collected secondary data from company annual reports for eight years from 2012 to 2019. Due to incomplete data,14 companies were excluded from the sample; thus, the sample size was reduced to 35 companies representing two GICS industry groups. Table 1 summarises the data considered in the current study.

3.2.2 Empirical model

This study follows panel data regression methodology to test the two research hypotheses developed in earlier sections. The first hypothesis is used to observe the mediation effect of marketing expenditure on the relationship between leverage and firm performance. According to Baron & Kenny [26] and Bennett [79] three conditions must be satisfied to identify a mediator effect: (a) independent variable is a significant predictor of the mediator variable, (b) mediator significantly predicts the variation in the outcome variable, (c) given both (a) and (b) in the model, the direct relationship between outcome and independent variables become insignificant.

Moreover, we can illustrate the statistical model of a mediator effect as follows (Fig. 1).
Table 1. Variables’ definition and explanation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition and Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>Return on assets has been calculated annually as a ratio of net-profit to average total assets for the period 2012-2019</td>
</tr>
<tr>
<td>ROE</td>
<td>Return on equity has been calculated annually as a ratio of net-profit to average total equity for the period 2012-2019</td>
</tr>
<tr>
<td>LEV</td>
<td>Leverage is measured by the book value of total debt divided by the book value of total assets for each year for the period 2012-2019</td>
</tr>
<tr>
<td>SIZE</td>
<td>Firm size is given by the natural logarithm of total assets at the end of each year starting from 2012 to 2019</td>
</tr>
<tr>
<td>GROW</td>
<td>Sales growth is the annual percentage increase of total sales of each firm from the previous year for the period 2012-2019</td>
</tr>
<tr>
<td>TANG</td>
<td>Tangibility is the ratio of net fixed assets to total assets calculated at the end of each year starting from 2012 to 2019</td>
</tr>
<tr>
<td>MKT</td>
<td>Natural logarithm of annual marketing expenditure of each firm for the period 2012-2019</td>
</tr>
</tbody>
</table>

Source: Compiled by authors

Fig. 1. Mediation effect

The statistical model presented in Fig. 1 suggests three different equations to test the mediation effect. Equation (1) indicates that the mediator (ME) is significantly predicted by the independent variable X, equation (2) shows that independent variable X is a significant predictor of the outcome variable Y, and equation (3) should be developed containing both X and ME as predictors on Y. Additionally, two conditions must be satisfied in equation (3) to conclude a mediator effect: (i) ME should be a significant predictor of Y, (ii) direct impact of X on Y is less significant than that of equation (2).

Accordingly, the current study formulates the following regression models to test the mediation effect.

MKT_{it} = \beta_0 + \beta_1 LEV_{it} + \mu_{i,t} \hspace{2cm} (1)

\[ ROA_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 SIZE_{it} + \beta_3 GROW_{it} + \beta_4 TANG_{it} + \beta_5 MKT_{it} + \mu_{i,t} \hspace{2cm} (2) \]

\[ ROA_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 SIZE_{it} + \beta_3 GROW_{it} + \beta_4 TANG_{it} + \mu_{i,t} \hspace{2cm} (3) \]

Here MKT_{it} is the marketing expenditure of firm i at time t; ROA_{it} return on assets of firm i at time t; LEV_{it} is the total debt to total assets of firm i at time t; SIZE_{it} the size of firm i at time t; GROW_{it} is the sales growth of firm i at time t; TANG_{it} the tangibility of firm i at time t; \beta_0 is the intercept term; \beta_1 - \beta_5 coefficients of the predictor variables; \mu_{i,t} is the stochastic error term of firm i at time t. Since we employ ROE as a performance proxy to check the robustness, the same regression models can be rewritten on ROE except for model (1).
Hypothesis 2 is developed to test the moderator effect of marketing expenditure, and it can be performed using two approaches. The first approach suggests employing hierarchical multiple regression analysis [79] comprised of two steps as given in Fig. 2.

However, this study follows the second approach tested by Setyawati & Ramadhanti [1] where all predictors are used in one step, including the interaction term (i.e., the product of independent variable – X and moderator variable – MO).

\[
\text{ROA}_{it} = \beta_0 + \beta_1 \text{LEV}_{it} + \beta_2 \text{SIZE}_{it} + \\
\beta_3 \text{GROW}_{it} + \beta_4 \text{TANG}_{it} + \beta_5 \text{MKT}_{it} + \\
\beta_6 \text{INT}_{it} + \mu_{it}
\]

The above regression model (4) represents the second approach discussed earlier. The major difference of this method is the inclusion of all explanatory variables at once, including the interaction term. Here \( \text{INT}_{it} \) is the interaction term derived from the product of leverage and marketing expenditure of firm \( i \) at time \( t \); \( \beta_0 \) is the intercept term; \( \beta_1 \) – \( \beta_6 \) coefficients of the predictor variables; \( \mu_{it} \) is the stochastic error term of firm \( i \) at time \( t \). If the interaction term becomes a significant predictor of the outcome variable, a moderator effect is present. In addition, the sign of the coefficient of interaction term indicates the direction of the moderation effect. Like the mediation effect, the same model (4) can be rewritten on ROE to perform a robustness check.

The current study employs panel data regression methodology, which provides better estimates compared to a pooled regression model since the latter does not consider systematic differences between the firms under the study [9]. However, when using the panel data regression methodology, it is required to select between two-panel data models: fixed effect (FE) and random effect (RE) models. The FE model assumes that entity-specific error is constant across time, whereas it is a random variable in the RE model [10]. This study performed the Hausman specification test to select between FE and RE models.

4. RESULTS AND DISCUSSION

4.1 Empirical Results

This section of the article presents the empirical results of the analysis conducted using EViews software. First, the results reveal the summary statistics of the data followed by more on correlation matrices along with variance inflation factors (VIF). Finally, the results of panel data regression models are presented in a detailed manner.

4.1.1 Descriptive statistics

Table 2 shows summary statistics of the variables considered in the current study. A mean value of 39 percent in the leverage ratio indicates that, on average, the selected companies from two industry groups are moderately levered. However, the maximum value of 97 percent confirms the existence of highly levered companies in the sample as well. The average ROA value is less than that of ROE, but the latter has reported a greater dispersion around its mean resulting in a high standard deviation compared to ROA. Except for LEV, SIZE, and MKT, all other variables indicate highly skewed data distributions and signify non-
normality. Since the study consists of 280 observations, it is considered a large sample. Thus, the central limit theorem can be applied.

Table 3 indicates the correlation matrix of all the variables along with VIF values. The highest pairwise correlation has been reported between ROA and ROE, which are the outcome variables of the study. A moderate level of correlation can be observed between marketing expenditure and firm size, suggesting that larger firms tend to expend more on promotion and advertising than smaller companies. Reported VIF of predictor variables confirm the absence of multicollinearity, and all the values are within the acceptable limits.

4.1.2 Regression results

4.1.2.1 Mediator testing

The current study formulated three different panel data regression models in the methodology section to test the mediation effect. The first model checks whether LEV is a significant predictor of MKT, which is considered to be a mediator. According to the results in Table 4, LEV is statistically significant in explaining the variation of MKT with a highly significant F-statistic. Model 02 observed the direct impact of LEV on our outcome variable, ROA, and reported a highly significant negative relationship. Model 03 presents the indirect impact by including all the predictor variables. However, MKT is not significant in this model; therefore, the mediation effect is not available. According to Bennett [79] the mediator variable should be a significant predictor of the outcome variable in equation 3 to conclude a mediation effect.

Except for MKT, all other variables become significant in model 3 with an overall explanatory power of 68 percent. LEV and TANG variables create a negative impact on firm performance and GROW and SIZE are positively related.

As explained in the methodology section, ROE was selected to perform a robustness check, and Table 5 presents the results. Since model 01 is not affected by ROE, the study does not present the results once again in the table 5; thus, it contains only the regression outputs of models 02 and 03 by taking ROE as the dependent variable. Similar to the ROA results, model 02 in Table 5 indicates a significant direct relationship between LEV and ROE. The overall model is highly significant, and LEV explains 59 percent of the variation in ROE. Even in model 03, MKT is not significant, while other variables report the same impact as observed earlier. The overall model is highly significant, with an adjusted-R² value of 58 percent. The model is robust since the results generated for ROE are not significantly different from that of ROA.

Table 2. Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>ROA</th>
<th>ROE</th>
<th>LEV</th>
<th>GROW</th>
<th>SIZE</th>
<th>TANG</th>
<th>MKT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.0850</td>
<td>0.1918</td>
<td>0.3857</td>
<td>0.1547</td>
<td>20.456</td>
<td>0.3435</td>
<td>16.8080</td>
</tr>
<tr>
<td>Max.</td>
<td>1.1767</td>
<td>3.6915</td>
<td>0.9789</td>
<td>6.5884</td>
<td>24.219</td>
<td>0.8615</td>
<td>21.8771</td>
</tr>
<tr>
<td>Min.</td>
<td>-0.2607</td>
<td>-0.3544</td>
<td>0.0023</td>
<td>-1.0000</td>
<td>15.616</td>
<td>0.0031</td>
<td>10.1470</td>
</tr>
<tr>
<td>STD</td>
<td>0.1585</td>
<td>0.4874</td>
<td>0.1733</td>
<td>0.6169</td>
<td>2.2312</td>
<td>0.3300</td>
<td>2.4459</td>
</tr>
<tr>
<td>Skew.</td>
<td>3.1993</td>
<td>4.8085</td>
<td>0.0118</td>
<td>5.8462</td>
<td>-0.4983</td>
<td>3.6131</td>
<td>-0.2608</td>
</tr>
<tr>
<td>Obs.</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>280</td>
<td>280</td>
</tr>
</tbody>
</table>

Source: Research Results

Table 3. Correlation matrix and variance inflation factors (VIF)

<table>
<thead>
<tr>
<th>Variable</th>
<th>ROA</th>
<th>ROE</th>
<th>LEV</th>
<th>GROW</th>
<th>SIZE</th>
<th>TANG</th>
<th>MKT</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.843</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>-0.164</td>
<td>-0.026</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.042</td>
</tr>
<tr>
<td>GROW</td>
<td>0.023</td>
<td>0.027</td>
<td>0.007</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td>1.008</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.285</td>
<td>0.235</td>
<td>-0.178</td>
<td>0.060</td>
<td>1.000</td>
<td></td>
<td></td>
<td>1.128</td>
</tr>
<tr>
<td>TANG</td>
<td>-0.092</td>
<td>-0.105</td>
<td>0.084</td>
<td>-0.025</td>
<td>0.022</td>
<td>1.000</td>
<td></td>
<td>1.010</td>
</tr>
<tr>
<td>MKT</td>
<td>0.353</td>
<td>0.302</td>
<td>0.144</td>
<td>0.022</td>
<td>0.474</td>
<td>0.018</td>
<td>1.000</td>
<td>1.053</td>
</tr>
</tbody>
</table>

Source: Research Results
Table 4. Mediator testing results

<table>
<thead>
<tr>
<th>Model 01</th>
<th>Model 02</th>
<th>Model 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT Fixed Effect</td>
<td>ROA Fixed Effect</td>
<td>ROA Fixed Effect</td>
</tr>
<tr>
<td>Constant</td>
<td>16.435***</td>
<td>0.193***</td>
</tr>
<tr>
<td>LEV</td>
<td>0.965***</td>
<td>-0.281***</td>
</tr>
<tr>
<td>GROW</td>
<td>0.019**</td>
<td>0.068**</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.007</td>
<td>0.000</td>
</tr>
<tr>
<td>TANG</td>
<td>0.726</td>
<td>0.681</td>
</tr>
<tr>
<td>MKT</td>
<td>0.556</td>
<td>0.692</td>
</tr>
<tr>
<td>R²</td>
<td>0.556</td>
<td>0.692</td>
</tr>
<tr>
<td>Adjusted-R²</td>
<td>0.539</td>
<td>0.648</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.740</td>
<td>1.863</td>
</tr>
</tbody>
</table>

Note: *** P<0.01, ** P<0.05, * P<0.1
Source: Research Results

Table 5. Robustness test for the mediation model

<table>
<thead>
<tr>
<th>Model 02</th>
<th>Model 03</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE Fixed Effect</td>
<td>ROE Fixed Effect</td>
</tr>
<tr>
<td>Constant</td>
<td>0.255***</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.165**</td>
</tr>
<tr>
<td>GROW</td>
<td>0.029*</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.194*</td>
</tr>
<tr>
<td>TANG</td>
<td>0.598</td>
</tr>
<tr>
<td>MKT</td>
<td>0.584</td>
</tr>
<tr>
<td>Adjusted-R²</td>
<td>0.000</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.784</td>
</tr>
</tbody>
</table>

Note: *** P<0.01, ** P<0.05, * P<0.1
Source: Research Results

Table 6. Moderator effect and robustness test

<table>
<thead>
<tr>
<th>Model 04</th>
<th>Model 04</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA Fixed Effect</td>
<td>ROE Fixed Effect</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.328***</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.216***</td>
</tr>
<tr>
<td>GROW</td>
<td>0.020**</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.083***</td>
</tr>
<tr>
<td>TANG</td>
<td>-0.142**</td>
</tr>
<tr>
<td>MKT</td>
<td>0.007</td>
</tr>
<tr>
<td>INT</td>
<td>-0.001***</td>
</tr>
<tr>
<td>R²</td>
<td>0.730</td>
</tr>
<tr>
<td>Adjusted-R²</td>
<td>0.685</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.074</td>
</tr>
</tbody>
</table>

Note: *** P<0.01, ** P<0.05, * P<0.1
Source: Research Results

4.1.2.2 Moderator testing

Table 6 summarises the moderator testing results along with robustness test outputs. As per the approach explained in the methodology section, regression model 04 for ROA is tested with all the predictor variables at once. In this
approach, the interaction term is also treated as one of the predictor variables that must be statistically significant to present a moderator effect. The test results for ROA signifies that INT is significant and creates a negative impact on firm performance while MKT is insignificant. Therefore, the moderation effect is evident in model 04, which was formulated on ROA.

LEV and TANG variables have also reported a negative impact on firm performance. Similar to the mediator testing results, GROW and SIZE variables indicate a positive relationship with the primary outcome variable. The overall model is highly significant and explains 69 percent of the variation in ROA.

The study tested model 04 once again by taking ROE as a performance proxy to check the robustness. According to Table 6, the moderation effect is still present since INT is significant, indicating a negative impact on firm performance. Further, the findings indicate that 60 percent of the variation in ROE is explained by the predictor variables collectively. Since it is impossible to observe major differences in the robustness testing compared to the basic model of ROA, the model 04 was used to check whether the moderation effect is robust.

Hausman specification test was employed to select between FE and RE models, and the FE model was preferred in all the cases. Additionally, all the regression models are free from autocorrelation issues since the reported Durbin-Watson statistics are within the acceptable range of 1.5 to 2.5 [80].

4.2 Discussion

This section elaborates the outcomes of the econometric models employed to address aforementioned research questions. Primary focus of the study is given the consideration, i.e., to determine whether marketing expenditure plays the mediation or moderation effect in the relationship between leverage and firm performance in Sri Lanka. Thereafter the discussion is further extended to explain the impact of independent variables within the study on firm performance.

By following the approaches specified by Baron & Kenny [26], Bennett [79] and Setyawati & Ramadhanti [1] it can be concluded that marketing expenditure moderates the relationship between leverage and firm performance, but it does not mediate the relationship. Therefore, this study favours the second research hypothesis while rejecting the first, which is on mediation effect. This result agrees with previous studies of Bae et al. [21], Liang & Frosten [71], Hirunyawipada & Xiong [72] and Setyawati & Ramadhanti [1] conducted in other parts of the world. To the authors' understanding, this work could be considered as the first attempt in Sri Lanka to test the mediation and moderation effect of marketing expenditure in determining the relationship between leverage and firm performance. Therefore, it is hardly possible to compare and contrast the moderation effect observed in Sri Lanka with related literature in the same context.

The next important point to highlight is the nature of the moderation effect, which is given by the sign of the interaction term. Test results Table 6, including the robustness check, confirm a negative interaction effect, but it should be explained with the general relationship that exists within the main variables, leverage, and firm performance. Since there is only the moderation effect, this discussion is solely based on Model 04 for ROA. Empirical results indicate a negative relationship between firm performance and leverage in Sri Lanka, which means a higher level of debt deteriorates the performance in public limited companies registered in CSE. This result is not surprising as many previous studies in Sri Lanka [10,77] have observed the same association. The possible reason for this outcome is that most public limited companies in Sri Lanka are moderately levered while employing more short-term debt compared to long-term debt for their financial requirements [10] which is also evident from the selected sample of the study and Table 7 presents the observations.

Table 7. Utilisation of Short-term Debt

<table>
<thead>
<tr>
<th></th>
<th>Total Debt to Total Assets</th>
<th>Short-term Debt to Total Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.3857</td>
<td>0.2460</td>
</tr>
<tr>
<td>Max</td>
<td>0.9789</td>
<td>0.9618</td>
</tr>
<tr>
<td>Min</td>
<td>0.0023</td>
<td>8.50E-05</td>
</tr>
</tbody>
</table>

Source: Research Results
This intensive use of short-term debt is triggered by the underdeveloped nature of the Sri Lankan long-term debt market. Thus, firms often select high-cost short-term funding sources that will increase their overall cost of capital. In return, it will produce a negative impact on financial performance.

However, introducing a marketing expenditure as the moderator variable would strengthen or weaken this established association between capital structure and performance of a firm, as reflected from the sign of the interaction term. Therefore, the negative interaction term observed in Table 6 can be interpreted as weakening the existing relationship between the basic variables. This means that a higher level of corporate debt leads to lower firm performance, but this effect is weakened by the use of a higher level of marketing expenditure. Supported with the literature, it was highlighted that most Sri Lankan firms listed in CSE use short-term debt intensively compared to long-term debt, but such firms seem to utilise those collected financial resources effectively on marketing expenditure as one of their business strategies to mitigate the adverse effect generated by their capital structure decision. Even though this tendency looks irrational in terms of short-term viewpoint, the benefits will be realised in long-term [1] with increased firm performance once the business is well established. According to the resource-based view, what really matters now is aligning organisational strategies with its business strategies properly while adapting to the business surrounding [20].

When considering the control variable-related findings of the main statistical model, which consists of ROA, the firms with higher growth opportunities indicate higher future performance. In summary, the study results reveal that there is a significant positive relationship between GROW and ROA, which supports the results of the previous studies [37,38]. In reference to Table 6, SIZE has a significant positive relationship with ROA. The findings support the work of Zeitun & Tian [46] which states a similar conclusion and according to them, large firms have more capacity to generate higher profits and market return compared to smaller firms as a result of economies of scale. Based on the study's findings, a significant negative relationship is observed between the control variable of TANG and ROA. This evidence contradicts the previous study findings where it has been observed a significantly positive relationship between TANG and firm performance [5,49,51]. Further, these studies reveal that efficient utilisation of assets and tax rates can influence either positive or negative relationships between the stated variables.

5. CONCLUSION

Previous research which investigates the relationship between capital structure and performance of a firm depicts contradictory ideas, and the effect of marketing expenses as a mediator or moderator between debt ratio and firm performances is not evident. Thus, to this end, this study aimed to find whether marketing expenses play a mediator or moderator between the relationship of leverage and financial performance of 35 firms operating in CSE from 2012 to 2019. The results of this study indicate that marketing behaves as a moderator between leverage and firm performance in Sri Lanka.

The present study made a solid empirical contribution by theorising the relationship between leverage and financial performance when marketing expenses act as a moderator between the two variables (i.e., leverage and financial performance). Policymakers are given an indication that the long-term debt market is not developed in Sri Lanka, and it is vital to improving such markets. Further, this study sheds light on many practical implications. Basically, the existing study informs managers about to what extent they should go for sources of financing when determining the firm's capital structure.

In conclusion, the study concerned only 35 firms operating in the CSE, and the time duration considered for the study is limited to 2012 – 2019. The authors suggest future researchers avoid this limitation by increasing the number of firms and the time duration for the study. Besides, future researchers can obtain the managers' opinion to understand the relationship between leverage and financial performance. Thus, future researchers can focus more on mixed methodological aspects in such studies. Since this study considered only firm size, sales growth, and tangibility as the control variables, future researchers can use more aspects such as ownership and governance characteristics. The investigations can also be extended across different countries as a comparative study.
DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES


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