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Original Article

Capital Structure, Financial Performance, and Firm Value: Insights from a Mediation Perspective

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Abstract: *This research explores the effect of capital structure on a firm's value, with an emphasis on how financial performance acts as a mediator in 13 FMCG companies from the Nifty FMCG Index. A balanced panel dataset comprising 130 observations over ten years (2013-2014 to 2022-2023) was used for data analysis, employing Panel Data Regression, Path Analysis, and the Sobel test. The empirical evidence suggests that higher reliance on debt financing enhances both financial performance and firm value. Mediation analysis indicates that financial performance partially and complementarily mediates the relationship between capital structure and firm value, with both direct and indirect effects being positive. Considering the partial and complementary mediation effect of financial performance on firm value, FMCG firms should try to align their capital structure decision with financial performance for building long-term value in the company. The study provides valuable insights for financial managers in FMCG companies, emphasizing the importance of aligning capital structure decisions with financial performance.*

Keywords: *Capital Structure, Financial Performance, Firm Value, FMCG, Mediation.*

I. INTRODUCTION

A company's primary goal is to promote the wealth of its shareholders by enhancing the firm's value. The company is expected to increase its firm value with systematic capital structure planning. The decision on capital structure is important in corporate finance, involving determining the most suitable sources of funding and their efficient utilization, which are pivotal for achieving success for any firm. Myers (2001), in their study, explained capital structure as "The study of capital structure attempts to explain the mix of securities and financing sources used by corporations to finance real investment." A proper choice of debt-equity mix minimizes insolvency risk and maximizes value. "The market value of any firm is independent of its capital structure and is given by capitalizing its expected return at the rate p_k appropriate to its class" (Modigliani & Miller, 1958). In their subsequent research, they introduced the impact of corporate taxation with a proposition that highlighted the tax benefits of debt and hypothesized that value is affected by its capital structure (Modigliani & Miller, 1963). Selecting the optimal debt-equity mix is akin to a puzzle, which financial analysts and researchers continually strive to solve.

Extensive research has been conducted, resulting in the formulation of various theories. The trade-off theory suggested "The optimization of the firm's financial structure involves a trade-off between the tax advantage of debt and bankruptcy penalties" (Kraus & Litzenberger, 1973). According to Jensen and Meckling (1976), "the presence of agency costs leads to the existence of an optimal capital structure; that is, the mix of debt and equity which minimizes the total agency costs". The Pecking order theory suggested that "Firms prefer internal financing and if external financing is required, firms issue the safest security first. That is, they start with debt, then possibly hybrid securities such as convertible bonds, and issue equity only as a last resort" (Myers, 1984). Although these theories provide an important perspective for capital structure decisions in firms, several studies have been conducted since then, and the search for the optimal capital structure that minimizes the cost of capital, reduces business-related risk, provides flexibility, and maximizes the firm's value continues.

The study attempts to contribute to the present literature by testing the impact of capital structure on the firm value of the FMCG industry in India, which is the fourth largest industry and a key contributor to the economic development of India. The study explores whether using debt in capital structure can enhance the financial performance and value of FMCG companies in India.

II. LITERATURE REVIEW

A) Studies Related to Capital Structure, Financial Performance, and Firm Value

Capital structure decisions have become a challenging issue for finance managers in the present complex corporate world. The finance literature has no universal theory regarding the optimal debt-equity mix. Numerous studies have investigated the association between capital structure, financial performance, and firm valuation. Azhagaiah and Gavoury (2011) concluded that higher reliance on debt funds tends to adversely affect the net profit of IT firms in India. Pratheepkanth (2011) found that long-term borrowings have a negative relationship with net profit margin, ROI, and ROA and a weak positive relationship with gross profit margin. Rajhans (2013) identified the financial determinants of firm value. The research findings were consistent with the proposition of M & M (1958), indicating that changes in leverage levels do not impact firm valuation. Short-term debt and overall debt to total assets were found to positively correlate with profitability in the industrial and service sectors (Gill et al., 2011). Mujahid and Akhtar (2014) revealed that high leverage significantly favours a firm's performance and shareholder wealth. Zeitun and Tian (2014) found that the short-term debt ratio had a positive and significant impact on the Tobin's Q, a market performance measure, indicating that firms with high short-term borrowings tend to have a high growth rate and good performance. The research conclusions of Cole et al. (2015) match the conclusion of Pratheepkanth (2011) and prove that capital structure has an adverse relationship with NPM, ROA and operating return, however, they also pointed out that the correlation between capital structure and NPM exhibits variability across sectors, while leverage enhances profitability in the industrial sector, it diminishes it in the energy sector and remains neutral in the healthcare sector. Vătavu (2015) observed that companies with a high percentage of equity in their capital mix resulted in the maximum profitable companies, as the firm performance was positively impacted by shareholders' equity, whereas debt ratios had a negative impact on profitability.

Budianto and Bustaman (2016) found that capital structure could not directly affect financial performance, but it affects value. However, Hadiwijaya et al. (2016) observed that capital structure has an insignificant direct effect on value, but rather indirectly mediates through its interaction with corporate governance. Sinha (2017) discovered that prolonged financial debt negatively influences Tobin's Q. Aggarwal and Padhan (2017) discovered that leverage, liquidity, size, firm quality, and economic growth substantially influence firm value. Jaisinghani and Kanjilal (2017) categorized the sample firms by size and discovered that the impact of capital structure on financial performance varies considerably between large and small firms. They proposed that large firms have a greater ability to leverage higher debt than small firms, suggesting a significant non-linear relationship between debt and profitability in the Indian manufacturing sector. Uzliawati et al. (2018) noted that the long-term debt ratio has a significant positive effect on firm value. Diantimala et al. (2021) noted that the selection of debt-equity mix positively affects firm valuation. Rahul (2023) found that long-term and short-term liabilities have a big positive effect on market capitalization, while short-term debt has a big negative effect. Karimah et al. (2024) discovered that capital structure has a moderate effect on value, while an overreliance on debt diminishes firm value. Wulandari and Istiqomah (2024) discovered that capital structure and firm size significantly detriment value. Afolabi et al. (2025) showed that total debt measures have a positive effect on firm value, while the long-term debt ratio has a negative effect on Tobin's Q.

B) Studies Related to Capital Structure with Mediation Analysis

Hirdinis (2019) noted that capital structure had a positive effect on value, size had a negative effect on value, and profitability had no effect on firm value. The research also indicated that profitability does not function as a significant mediator between capital structure, size, and firm value. Mubyarto's (2020) findings show that when capital structure acted as a mediator, profitability had a negative indirect effect on value. This shows that the relationship between these variables is subtle and complicated. However, Sudrajat and Setiyawati (2021) found that no significant indirect effect linking capital structure, firm size, profitability, and value. Syamsudin et al. (2021) proved that firm valuation was significantly positively influenced by capital structure, investment decisions, and profitability, with profitability moderating the influence of investment decisions and capital structure on value, and suggested that the impact of capital structure and investment choices on firm value could be enhanced by higher financial performance. Conversely, Hastuti and Carolina (2022) revealed that the value is influenced by profitability but not by capital structure, and interest rates could not moderate capital structure and profitability on value. Talreja et al. (2023) indicated a partial mediating effect of the firm growth on the relationship between capital structure and firm value. Al-Nimer et al. (2024) revealed that liquidity risk has a full mediation effect between capital structure and profitability. Baroon et al. (2025) discovered that capital structure partially mediates the relationship between profitability and firm value, and they also found that board size, profitability, and the frequency of board meetings significantly affect firm value.

The literature review revealed that, despite substantial research conducted in this domain, inconsistencies persist in the findings. Certain studies have demonstrated that debt diminishes profitability and firm value (Azhagaiah & Gavoury, 2011; Vătavu, 2015; Sinha, 2017). Conversely, alternative studies identified a positive impact (Gill et al., 2011; Mujahid & Akhtar, 2014). Some research studies have yielded inconsistent or context-dependent results, demonstrating that the interplay among

capital structure, profitability, and value differs by size, industry, and time period (Cole et al., 2015; Jaisinghani & Kanjilal, 2017; Karimah et al., 2024). Mediation-based studies produce conflicting results, as evidenced by the research of Talreja et al. (2023) and Baroon et al. (2025), indicating a partial mediation effect of profitability or growth. Other studies, however, showed no significant effects or even negative effects (Hirdinis, 2019; Mubyarto, 2020; Sudrajat & Setiyawati, 2021). These differing outcomes underscore the intricate relationship among debt, profitability, and value, highlighting the necessity for more thorough mediation analysis. Nonetheless, there is a scarcity of research in India that has investigated the influence of capital structure on firm value, utilizing financial performance as a mediating variable. This study investigates the correlation between capital structure and firm value, emphasizing the mediating influence of financial performance.

III. METHODOLOGY

A) Objectives of the Study

- To evaluate the impact of Capital Structure on Firm Value.
- To assess the impact of Capital Structure on Financial Performance.
- To analyze the impact of Financial Performance on Firm Value.
- To examine the impact of Capital Structure on Firm Value with Financial Performance as a mediating variable.

B) Hypotheses

The Null hypotheses formulated for the present research are as follows.

- H01: There is no significant impact of Capital Structure on Firm Value.
- H02: There is no significant impact of Capital Structure on Financial Performance.
- H03: There is no significant impact of Financial Performance on Firm Value.
- H04: Financial Performance does not mediate the impact of Capital Structure on Firm Value

C) Sample and Data Collection

This research is conducted on the FMCG industry. The sample companies are drawn from the Nifty FMCG Index. 15 FMCG companies are constituents of the Nifty FMCG Index as of 31st January 2024. Two companies with negative profits and an incomplete dataset have been excluded from the sample. The research employed a balanced panel data set consisting of 13 FMCG companies with 130 observations over ten years from 1st April 2013 to 31st March 2023. The required secondary data is obtained from the CMIE Prowess IQ Database.

D) Operational Definitions of Variable

Table 1: Selected Measures

Variables	Proxy	Definition	References
Capital Structure	DER	$\frac{Long-Term\ Debt}{Shareholder's\ Equity}$	Azhagaiah and Gavoury (2011), Hirdinis (2019)
Financial performance	ROE	$\frac{Net\ Profit}{Shareholder's\ Equity}$	Zeitun and Tian (2014), Vătavu (2015)
Firm Value	PBV	$\frac{Market\ value\ per\ share}{Book\ value\ per\ share}$	Hirdinis (2019), Aggarwal and Padhan (2017)

Table 1 summarises the measures employed for key variables in the study. The study employs the DER as the representative indicator of capital structure. Financial performance, as the mediating variable, is represented by ROE, and PBV is employed as a measure for the dependent variable, Firm Value.

E) Panel Regression Analysis

The study applies the Panel Data Regression method to analyse data. Panel data comprising observations on several different entities observed over time, and always consisting of a minimum of two dimensions, *i* denoting the cross-sectional units and *t* denoting the time periods (Hsiao, 2022). Three different techniques are applied to estimate models in the panel data regression.

- Pooled Ordinary Least Squares Model (Pooled OLS)
- Random Effect Model (REM)
- Fixed Effect Model (FEM)

The study performed the Breusch-Pagan LM Test and the Hausman Test to determine the best-fit model. The POLS method is applied and tested through the LM test to estimate whether the POLS is more suitable than REM (Wooldridge, 2010). The Hausman test is employed to identify the preferred model between REM and FEM (Hausman, 1978). The F-test, also known as the fixed effect redundant test, is conducted to test whether POLS or FEM is the better fit for the data. The presence of multicollinearity tends to increase the variance of estimated coefficients (Gujarati, 2003). The Variance Inflation

Factor test has been employed to detect multicollinearity. The ADF test is employed to identify stationarity to assess whether the data has stationarity or unit roots (Dickey & Fuller, 1979).

F) Path Analysis and Sobel Test

"Path analysis is a statistical method used to examine hypothesized (causal) relationships between two or more variables" (Lleras, 2005). The Sobel test examines the mediation effect in the relationship between an independent and a dependent variable (Neiheisel, 2017). The Sobel test is used to assess the significance of the indirect effect (Sobel, 1982). A coefficient of zero on path C signifies complete mediation, whereas a decrease in path C′ that remains greater than zero denotes partial mediation (Sobel, 1982). By multiplying the path, the indirect impact is computed. The paths designed are as follows:

- Path A: From DER to ROE
- Path B: From ROE to PBV
- Direct Path C: From DER to PBV (before including mediating variable ROE)
- Direct Path C': From DER to PBV (after including mediating variable ROE)

The value of the t-statistic is computed by applying the following formula:

$$T - statistics = \frac{ab}{\sqrt{(a^2 * se_b^2 + b^2 * se_a^2}}$$

IV. RESULTS AND DISCUSSION

Table 2: Descriptive Statistics of Variables

	DER	ROE	PBV
Mean	0.28	0.34	18.28
Median	0.12	0.27	13.31
Maximum	1.89	1.18	85.68
Minimum	0.01	0.03	1.32
Std. Dev.	0.39	0.26	16.65
Observations	130	130	130

Source: *Author's compilation*

Table 2 exhibits the descriptive statistics of selected measures of 13 FMCG companies. The average value of DER is 0.28 times, indicating that the FMCG companies show generally low reliance on debt, as reflected in DER that vary between 0.01 and 1.89. The average ROE is 34% indicating that companies are efficient in generating returns on equity. The mean value of the PB is 18.28 times, indicating that investors are willing to pay a high price for every rupee of book value per share.

Table 3: Stationarity Test Results

ADF test			
Variables	T-Statistics	P-value	Inference
LDER	75.1167	0.0000	Stationary
ROE	49.0432	0.0041	Stationary
PBV	45.4712	0.0104	Stationary

Source: *Author's compilation*

The null hypothesis of the ADF test assumes that all panels contain a unit root (Dickey & Fuller, 1979). The ADF test results shown in Table 3 confirm that the panel data is stationary at a 5% significance level, leading to the rejection of the null hypothesis.

Table 4: Selection of Model

	F-test	Breusch Pagan test	Hausman test	Preferred model
DER→PBV	0.0000	0.0000	0.9844	Random Effect
DER→ROE	0.0000	0.0000	0.8463	Random Effect
ROE→PBV	0.0000	0.0001	0.9563	Random Effect

Source: *Author's compilation*

According to Table 4, the LM test and F-test ($p < 0.05$), the Pooled OLS was found unsuitable. The Hausman test outcomes support the use of REM over the FEM. The Random Effect Model presents the panel regression equations as follows:

$$PBV_{it} = a_0 + \beta_1 DER_{it} + \varepsilon_{it} + \mu_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

$$ROE_{it} = a_1 + \beta_2 DER_{it} + \varepsilon_{it} + \mu_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$PBV_{it} = a_2 + \beta_3 DER_{it} + \beta_4 ROE_{it} + \varepsilon_{it} + \mu_{it} \ldots\ldots\ldots\ldots (3)$$

A) Results of Panel Data Regression

Table 5: Results of Regression analysis (DER→PBV)

Variable	Coefficient	Std. Error	t-Statistics	Prob.	Result
DER	23.8148	3.5973	6.6202	0.0000	Significant
Adjusted R^2 = 0.2508					

Source: *Author's compilation*

Table 5 presents the outcomes of equation (1). The results suggest that DER significantly positively affects PBV. Consequently, the null hypothesis is rejected, as capital structure accounts for approximately 25.08% of the variation in firm value. Based on Table 5, the outcomes of Path C can be portrayed as follows:

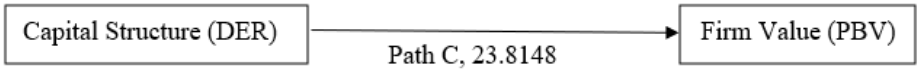

Figure 1. Direct Path (DER to PBV)

Table 6: Results of Regression analysis (DER→ROE)

Variable	Coefficient	Std. Error	t-Statistics	Prob.	Results
DER	0.3250	0.0578	5.6217	0.000	Significant
Adjusted R^2 = 0.1929					

Source: *Author's compilation*

Table 6 reports the estimates from Equation (2), showing that DER significantly positively impacts ROE. Consequently, the null hypothesis H_{02} is rejected.

Table 7: Results of Regression analysis (DER→ROE→PBV)

Variable	Coefficient	Std. Error	t-Statistics	Prob.	VIF
DER	6.8583	2.2156	3.09954	0.0024	1.4160
ROE	52.0596	3.0549	17.0411	0.0000	1.7211
Adjusted R^2 = 0.7732					

Source: *Author's compilation*

Table 7 presents the results of equation (3), indicating that ROE has a significant positive impact on PBV at a 1% significance level. Based on the outcomes, the null hypothesis H03 is rejected. The R-squared value of 0.77 shows that approximately 77.32% of the variation in firm value is accounted for by DER and ROE. Based on Table 7, the path analysis can be portrayed as follows:

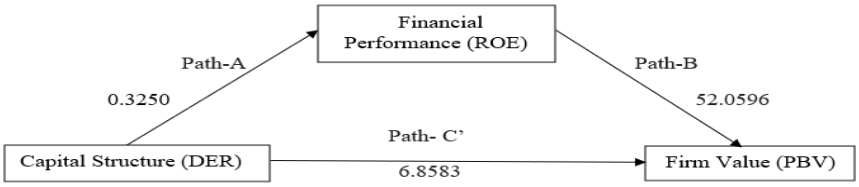

Figure 2. Path Analysis

B) Sobel Test Results

The Sobel test was performed to assess whether financial performance significantly mediates the effect of capital structure on firm value. The findings of the Sobel test are reported below:

Table 8: Sobel Test Results

Path	Indirect impact	St. Error	T-statistics	Results
A	0.3250	S_{ab} = 3.55	5.369	0.0000
B	52.0596			(Significant)

The results of Table 8 show the impact of Capital Structure on Firm Value with Financial Performance as a mediating variable. The calculation of the indirect impact was performed using the Sobel test.

$$\text{T-statistics} = \frac{ab}{\sqrt{(a^2 * se_b^2 + b^2 * se_a^2}}$$

$$= \frac{0.3250 * 52.0596}{\sqrt{\left(0.3250^2\right)\left(3.0549^2\right) + \left(52.0596^2\right)\left(0.0578^2\right)}}$$

$$= \frac{16.9193}{\sqrt{(0.9857) + (8.94367)}}$$

$$= \frac{16.9193}{3.1511}$$

$$= 5.369$$

The t-statistic value of 5.369 is compared to the standard value of the table, which shows that 5.369 is greater than 1.96. This means that financial performance may play a role in the relationship between capital structure and firm value. So, the null hypothesis H04 is no longer valid. Table 5 shows a coefficient of 23.8148 on Path C, which means that Capital Structure has a direct effecst on Firm Value. Table 7 shows a coefficient of 6.8583 on Path C', which means that Capital Structure has a direct effect on Firm Value, including financial performance. When we look at both equations, we see that the regression coefficient for Capital Structure goes down from 23.8148 to 6.8583. This means that financial performance may partially mediate the effect of Capital Structure on Value.

V. CONCLUSION

The results of the study show that FMCG companies that use more debt financing have higher firm value. These results align with the findings of Uzliawati et al. (2018), Hirdinis (2019), and Diantimala et al. (2021), while contradicting the conclusions of Sinha (2017). The capital structure also has a big positive effect on how well the business does financially. These findings align with the research by Mujahid and Akhtar (2014), which indicated that an increase in debt leads to a rise in return on equity. The results do not corroborate the findings of Azhagaiah and Gavoury (2011), Pratheepkanth (2011), Cole et al. (2015), and Vătavu (2015). Mediation analysis shows that business performance contributes to the effect of capital structure on firm value, and that it also works well with capital structure. The indirect effect of capital structure on firm value, when accounting for financial performance as a mediating variable, is significantly positive, suggesting a partial mediation effect, as demonstrated by a reduction in the regression coefficient related to capital structure. The direct impact of capital structure on firm value and the indirect impact via financial performance are both positive, validating the concept of complementary mediation. According to Collier (2020), complementary mediation is when the indirect effect (through the mediator) and the direct effect have the same effect. The findings align with the prior study by Hastuti and Carolina (2022) and contradict the outcomes of Sudrajat and Setiyawati (2021). The study's results show that when a company does better financially, its value goes up by the same amount. The study's results back up the trade-off theory, which says that profitable companies should optimize their capital structure. It also says that every company should aim for a debt level where the tax shield present value benefit equals the present value of bankruptcy costs (Kraus & Litzenberger, 1973).

A) Suggestions and Recommendations

The financial performance of a company can affect how its capital structure affects its value. This means that FMCG companies should pay more attention to their capital structure and work to improve their financial performance by making their operations more efficient in order to increase their value. The study indicates that synchronizing capital structure decisions with financial performance regarding profitability is crucial for cultivating long-term value within a company. When a company can make money, it can keep its finances stable and stay competitive in the market by balancing equity and debt financing. These results are especially important for other developing markets, where companies often have to rely on debt because they can't get equity financing easily. The favorable impact of capital structure on firm value, augmented by the synergistic effect of financial performance, suggests that sectors beyond FMCG, including pharmaceuticals, energy, and consumer services, may also benefit from a strategic approach to debt management. This study provides significant insights into the intricacies of financial decision-making within FMCG companies. Given the partial and complementary mediation effect of financial performance on firm value, FMCG companies should use both direct and indirect paths when making financial decisions to make sure they are taking a full approach to creating value. This information may be especially useful in developing economies where investors and creditors closely watch a company's performance as a sign of stability. The study's results are useful for financial controllers, financial managers, and managing directors of fast-moving consumer goods (FMCG) companies. They give useful information for creating the right capital structures.

B) Future Research Directions

Subsequent investigations may augment this research by analyzing the consistency of the relationships among capital structure, financial performance, and firm value across various industries and emerging economies. Structural Equation

Modelling (SEM), which can be used to look at complicated relationships between variables, can also be used to do mediation analysis. This will give you more information to help you make decisions about your capital structure. These kinds of extensions would make the findings more useful in other situations and give managers and policymakers more information.

Conflicts of Interest

The authors declare that there is no conflict of interest concerning the publication of this paper.

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