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IMPLICATIONS OF LEVERAGE ON THE INDIAN STOCK PRICES OF SELECTED FMCG COMPANIES

Vaibhav Gallani, Dr. Megha Shah

PhD Scholar
GLS University, Ahmedabad
Email: vaibhav.gallani@gmail.com

Associate Professor (Faculty of Management)
GLS University, Ahmedabad
Email: megha.shah@glsuniversity.ac.in

Abstract

This study aims to investigate and comprehend the impact of operating leverage on the five-year profitability of FMCG companies in India. (2018–2022) for the five chosen companies on the basis of Enterprise Value. Here Operating Leverage is being used as Independent Variable. While Price to Earnings Ratio (PE Ratio) and Price to Book Ratio (PB Ratio) are being used as dependent variable. The results of the research indicate that there is a negative and substantial association between Operating Leverage and Price to Earnings Ratio, whereas there is a negative but minor relationship between Operating Leverage and Price to Book Ratio. The researcher suggests that the company should have the ideal amount of debt financing based on these in order to guarantee the reasonable stock returns.

Keywords: *FMCG Companies, Operating Leverage, Stock Prices, Enterprise Value*

INTRODUCTION

Leverage refers to the strategic use of borrowed funds or financial instruments to amplify the potential returns on an investment or to magnify the impact of a particular action. It involves utilizing debt or other financial mechanisms to finance operations, investments, or strategic initiatives. The concept of leverage revolves around the idea of utilizing external funds to generate a higher return on equity. If the investments made with borrowed funds do not perform as expected, the losses incurred are magnified. Therefore, managing leverage effectively is crucial, as it involves striking the right balance between the potential for higher returns and the associated risk. In the context of the FMCG sector in India, leverage plays a significant role in shaping the financial performance and stock prices of companies operating in this industry. The FMCG sector in India is characterized by intense competition, evolving consumer preferences, and the need for continuous innovation. For company management, understanding the impact of leverage on stock prices is important for strategic planning and investor relations. By examining how changes in leverage levels may influence stock performance, management can make informed decisions to enhance shareholder value, attract investment capital, and strengthen market competitiveness. This knowledge helps companies assess the potential market reactions to their leverage decisions and adjust their strategies accordingly. The findings can inform the development of guidelines and regulations related to leverage and capital structure in the FMCG sector. Policymakers can use this knowledge to promote responsible financial practices, ensure market stability, and protect investor interests.

LITERATURE REVIEW

(Malhotra & Tandon, 2013) conducted a study to know the different factors that influence the share price of the companies listed on the National Stock Exchange (NSE). For this purpose, different variables like book value per share, dividend per share, earnings per share, dividend coverage ratio, price-earnings ratio, etc. were taken into consideration. The study was conducted for a time period of six years with a total sample size of 95 companies listed on NSE. It was found that the book value of a share, earnings per share, and price-earnings ratio are having a positive relationship with the share price while other selected variables were having a negative relation with the share price.

(Kumar P. , 2017) researched to know the impact of earnings per share and price-earnings ratio on the market price of the company. The research was mainly focused on the auto sector and the total sample size was of 8 companies. After using multiple regression analysis researcher found that both the independent variables are having a positive significant impact on the share price of the company which implies that increased profitability creates more valuation of the share price.

(Sukhija, 2014) researched the fundamental factors affecting the stock price of BSE listed companies in India. Various variables were used in the study were book value per share, dividend per share, earnings per share,

payout ratio, price-earnings ratio, return on capital employed, growth, etc. The research was mainly focused on industries like auto and ancillaries, drugs and pharmaceuticals, IT and Communications and entertainment sector. A total of 39 sample companies was selected for research. In different industries, different selected variables having a significant impact like in case of FMCG industry DPR, ROCE, and DPS were having significant in determining the share price and having positive relationships while in case of auto sector book value of a share, EPS, and growth were the main determinants out of which EPS was having negative relation while in case of Pharmaceutical companies it was found that BVS, DPS, and cover were the main factors out of which only book value was having positive relationships and in case of IT and Communication sector it was found that BVS, ROCE, and EPS were the main determinants out of which EPS was only having the negative relation.

(Sharma, 2011) in his research focused mainly on finding out the determinants of the share price. For research, the researcher undertook variables like earnings per share, book value per share, dividend per share, price-earnings ratio, dividend payout ratio, and size (in terms of sales and net worth). The reference period selected for the research was 1993-94 to 2008-09 with 115 selected companies. After conducting correlation and multiple regression analysis it was found that earnings per share, dividend per share, price-earnings ratio, and book value per share were having significant negative relation with the share price of the company while dividend per share was having significant positive relation with the share price of the company.

(P.Srinivasan, 2012) conducted the research to find out the factors affecting the share price of the company for some time of 2006 – 2011 with 6 major sectors selected. Variables like earnings per share, dividend per share, price-earnings ratio, size of the firm, and a book value of the share were used in the study. In each sector selected share price was affected by at least 2 selected variables. On a large scale, it was found that earnings per share and price-earnings ratio were having a significant impact on the valuation of the share price.

RESEARCH GAP

Through the above literature review, it can be found out that very few research studies have been done considering the implications of the leverage on the stock prices. Moreover, the studies that have been done also relate to the past periods. Hence need arose to conduct a research study which focuses on the implications of both leverages (financial and operating leverage) on the stock prices of the FMCG sector in the current scenario.

RESEARCH METHODOLOGY

The study aims to investigate how financial leverage and operating leverage affects the SP of FMCG companies. Delving into theoretical aspects, the research aims to comprehensively explore operating leverage, financial leverage and SP within the FMCG sector. The study's objectives collectively strive to enhance understanding regarding leverage's impact on the stock prices of selected FMCG companies operating in India.

I. Objectives of the Study

1) To analyze the distribution of Operating Leverage, Financial Leverage and stock prices among the sample companies.

2) To examine the impact of leverage on stock prices of selected FMCG Companies in India.

II. Research Variables

i) Independent Variables

a) Financial leverage (FL): It is evaluated through three essential ratios i.e., the DER, ICR, and DAR. It represents the degree to which a company employs debt financing within its capital structure. The DER compares the total debt of the company to its shareholders' equity, offering insights into the proportion of funding derived from debt. Meanwhile, the ICR examines the company's capability to meet its interest obligations using its operating income, indicating its ability to handle debt commitments. Lastly, the DAR juxtaposes the total debt against the total assets of the company, illustrating the percentage of assets financed through debt. These ratios play a crucial role in assessing the level of financial risk and the company's reliance on debt in its operational framework.

b) Operating Leverage (OL): OL represents the degree to which fixed costs are present in a company's cost structure. It measures the impact of fixed costs on a company's profitability. It reflects the company's cost structure and the relationship between fixed and variable costs. More OL indicates that a larger portion of costs is fixed, meaning that changes in revenue can have a significant impact on profitability. OL affects the company's break-even point, profitability margins, and risk exposure. It helps understand the cost dynamics and the potential impact on FP under different levels of sales or production.

ii) Dependent Variables

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a) P/E Ratio: The price-to-earnings ratio is a valuation metric that compares the stock price with the earnings per share. It reflects the market's perception of the company's future earnings potential. (Damodaran, 2012)

b) P/B Ratio: The price-to-book ratio compares the stock price with the book value per share. It provides insights into the market's assessment of the company's net asset value. (Brealey & Myers, 2013)

III) Hypothesis of the Study

H_0 There is no significant impact between PER and DER.
H_1 There is a significant impact between PER and DER.

$H_{0.1}$ There is no significant impact between PER and ICR.
$H_{1.1}$ There is a significant impact between PER and ICR.

$H_{0.2}$ There is no significant impact between PER and DAR.
$H_{1.2}$ There is a significant impact between PER and DAR.

$H_{0.3}$ There is no significant impact between PER and OL.
$H_{1.3}$ There is a significant impact between PER and OL.

$H_{0.4}$ There is no significant impact between PBR and DER.
$H_{1.4}$ There is a significant impact between PBR and DER.

$H_{0.5}$ There is no significant impact between PB Ratio and ICR.
$H_{1.5}$ There is a significant impact between PB Ratio and ICR.

$H_{0.6}$ There is no significant impact between PBR and DAR.
$H_{1.6}$ There is a significant impact between PBR and DAR.

$H_{0.7}$ There is no significant impact between PBR and OL.
$H_{1.7}$ There is a significant impact between PBR and OL.

IV) Sampling Design

A suitable sampling approach for this study would involve employing a **stratified random sample**. This method is employed when the population is divided into distinct strata or groups with similar characteristics. In this case, the strata would comprise the top 30 FMCG companies selected based on their EV. From each stratum, a random sample would be drawn. This sampling design proves appropriate for the study as it ensures the inclusion of all top 30 FMCG companies in the sample, leading to a representative representation of the entire population. Additionally, by stratifying the sample based on EV levels, we can control for the impact of varying Enterprise value on the stock prices of the company.

V) Source Of Data Collection

For this study, the data collection process relied on **secondary sources**, ensuring access to reliable and comprehensive financial information. Specifically, all the financial data and variables pertinent to the research were sourced from the ACE Knowledge and Research Portal. The financial information specifically focuses on the top 30 Indian FMCG companies, as of March 2022, providing a well-rounded representation of the industry's key players. The selection of these companies was meticulously based on their EV, ensuring that the study encompassed the most influential and significant entities within the FMCG sector. By drawing from this rich dataset, the study is equipped to delve into the intricate relationships between OL, FP, and SP, offering valuable insights into the dynamic landscape of the Indian FMCG industry.

VI) Duration Of Research

The duration of the study spans a duration of ten years, encompassing data from **2013 to 2022**. This extensive time frame provides a comprehensive view of the trends and changes that have occurred within the selected FMCG companies over the years.

VII) Statistical Technique

The primary statistical technique utilized for the main analysis is **panel regression**. Panel regression is particularly suitable for longitudinal panel studies as it allows for the examination of how variables change over time and across different entities (FMCG companies in this case). The panel regression models will be specified based on the research objectives and include the dependent and independent variables of interest, along with any control variables. The results will be interpreted considering the research questions and hypotheses along with the help of statistical software named STRATA.

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DATA ANALYSIS

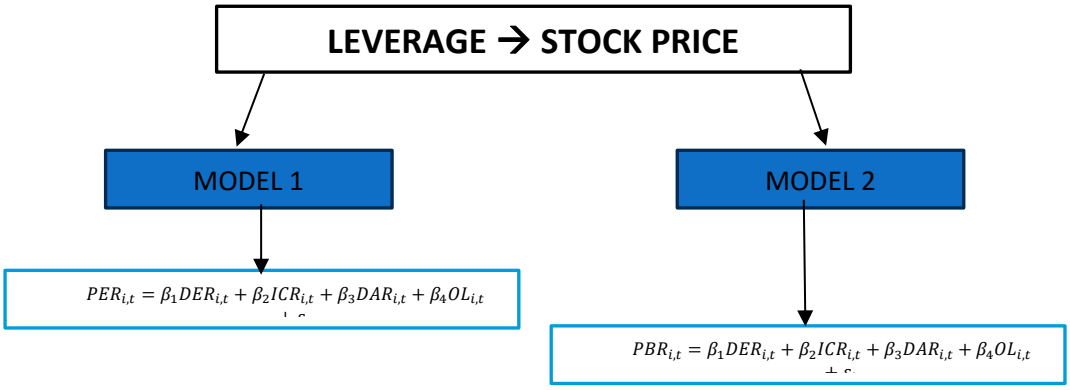
In this study, we employ three different panel regression approaches: Ordinary Least Square (OLS), Fixed Effects (FE), and Random Effects (RE) models, like the approach used by Rangi & Aithal in 2021. After estimating the three models, we conduct diagnostic tests to assess the validity and performance of each model. The Breusch-Pagan Lagrange Multiplier test checks for the presence of heteroscedasticity, which could potentially affect the efficiency and accuracy of our estimates. Additionally, we employ the Hausman test to determine whether the RE model is consistent and efficient compared to the FE model. This test guides us in selecting the most appropriate panel regression approach for our analysis, along with other diagnostic tests that we will perform.

Table1: *Test of Multicollinearity*

Variables	VIF
Debt Equity Ratio	1.13
Interest Coverage Ratio	1.04
Debt Assets Ratio	1.04
Operating Leverage Ratio	1.04

The Variance Inflation Factor (VIF) measures multicollinearity among the independent variables. A VIF value below 5 is considered acceptable, indicating that multicollinearity is not a significant concern (Kennedy, P., 2008). Based on the VIF values provided in table 4.10, it seems that there is no evidence of significant multicollinearity among the independent variables (financial leverage & operating leverage) in your panel data. VIF values close to 1 indicate that the variables are not highly correlated with each other, which is a good sign in regression analysis.

Figure: *Flowchart of models of Leverage to Stock price*



Model 1: $\boldsymbol{PER_{i,t} = \beta_1 DER_{i,t} + \beta_2 ICR_{i,t} + \beta_3 DAR_{i,t} + \beta_4 OL_{i,t} + \varepsilon_{i,t}}$
where PER is price to earnings ratio, DER is debt equity ratio, ICR is interest coverage ratio, DAR is debt asset ratio and OL is operating leverage.

Table1: *Breusch-Pagan Lagrange Multiplier & Hausman test*

Tests	Pooled OLS vs Random Effects	Fixed Effects vs Random Effects
Breusch Pagan (Prob.)	13.68 (0.00)	
Hausman		50.02
Prob.		0.00
Wald (Chi Sq.)		12.01
Prob.		0.01

Firstly, the Breusch-Pagan Lagrange Multiplier test is conducted to compare the Pooled OLS model with the RE Model. The test results showed that the p-value for this test is 0.00, indicating null hypothesis is rejected. Hence, Fixed effect or Random effects is appropriate. (Paul & Mitra, 2018). Secondly, the Hausman test is performed to compare the RE Model with the FE Model. The test results revealed a p-value of 0.00, indicating that there is a significant difference between these two models. Thus, the researcher rejects the null hypothesis, implying FE Model is more appropriate (Hausman, J. A., 1978).

Table 2: *Panel Regression Analysis Output*

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Variables	Fixed Effect	
	Beta	T (Prob)
Constant	65.07	10.09 (0.00)
Debt Equity Ratio	-0.12	-0.73 (0.46)
Interest Coverage Ratio	-0.01	-2.04 (0.04)
Debt Assets Ratio	-92.04	-3.14 (0.00)
Operating Leverage Ratio	0.01	0.58 (0.55)
R Square	0.04	
F-Statistics	3.76 (0.00)	

Findings:
Among the financial ratios, only the ICR exhibits a statistically significant negative impact on the PE ratio (coefficient: -0.01, t-value: -2.04, $p < 0.05$). This suggests that as the interest coverage ratio decreases, the PE ratio tends to decrease as well. Similarly, the DAR shows a significant negative impact on the PE ratio (coefficient: -3.14, t-value: -3.14, $p < 0.05$). As the DAR increases, the PE ratio tends to decrease. On the other hand, the DER, OL Ratio do not appear to have statistically significant effects on the PE ratio (t-values: -0.73, -3.14, and 0.58, respectively). Thus we can say that the FE model provides valuable insights into the relationships between PER and the different leverage indicators, with significant impacts observed for the ICR and DAR. However, DER, and OL Ratio did not show statistically significant effects on PER.

Model 2:

$$PBR_{i,t} = \beta_1 DER_{i,t} + \beta_2 ICR_{i,t} + \beta_3 DAR_{i,t} + \beta_4 OL_{i,t} + \varepsilon_{i,t}$$

Table 3: *Breusch-Pagan Lagrange Multiplier & Hausman test*

Tests	Pooled OLS vs Random Effects	Fixed Effects vs Random Effects
Breusch Pagan (Prob.)	14.24 (0.00)	
Hausman		1.10
Prob.		0.89
Wald (Chi Sq.)		23.42
Prob.		0.00

Firstly, the Breusch-Pagan Lagrange Multiplier test is conducted to compare the Pooled OLS model with the RE model. The test results showed that the p-value for this test is 0.00, indicating null hypothesis is rejected. Hence, Random Effects or Fixed effect model is appropriate. (Paul & Mitra, 2018). Secondly, the Hausman test is performed to compare the RE model with the FE model. The test results revealed a p-value of 0.89, indicating that there is no significant difference between these two models. Thus, the researcher accepts the null hypothesis, implying RE model is more appropriate (Hausman, J. A., 1978).

Table 4: *Panel Regression Analysis Output*

Variables	Random Effect	
	Beta	T (Prob)
Constant	16.27	7.61 (0.00)
Debt Equity Ratio	-0.02	-0.62 (0.53)
Interest Coverage Ratio	-0.00	-0.96 (0.33)
Debt Assets Ratio	-22.43	-4.57 (0.00)
Operating Leverage Ratio	0.00	1.11 (0.26)
R Square	0.18	
F-Statistics		3.53(0.00)

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FINDINGS

The findings indicate that the DER has no statistically significant and positive impact on the P/B Ratio, with a beta coefficient of -0.02 (T-value of -0.62, $p > 0.05$). However, both the ICR and the DAR do not exhibit statistically significant associations with the P/B Ratio. The ICR has a beta coefficient of 0 (T-value of -0.96, $p > 0.05$), suggesting that changes in the interest coverage do not have a substantial impact on the market valuation of a company based on its book value. Similarly, the OL shows no statistically significant effect on the P/B Ratio, with a beta coefficient of 0 (T-value of 1.11, $p > 0.05$). Changes in OL Ratio do not seem to have a significant impact on the book value valuation of a company by the market.Overall, the random effects model explains a moderate proportion of the variability in the P/B Ratio, as indicated by the R-square value of 0.18. This suggests that the included financial ratios can collectively explain around 18% of the variations in the P/B Ratio, while the remaining variability is influenced by other factors not accounted for in the model.

CONCLUSION

During our analysis, we explored the intricate relationships between two key valuation metrics, the Price-to-Earnings Ratio (P/E Ratio) and the Price-to-Book Ratio (P/B Ratio), with several critical financial indicators. Our objective was to discern whether these valuation metrics significantly influenced the financial health and performance of companies, as measured by various metrics. The results presented a mixed bag of outcomes, shedding light on the multifaceted dynamics at play within the corporate financial landscape. For the P/E Ratio, our investigation revealed an insignificant impact on the Debt Equity Ratio and Operating Leverage. This indicates that variations in P/E Ratio have limited bearing on a company's ability to meet interest payments and its reliance on debt financing. Focussing to the P/B Ratio, we observed that it had an insignificant influence on the Debt Equity Ratio, Interest Coverage Ratio, and Operating Leverage. This implies that changes in P/B Ratio do not significantly affect these metrics. The Debt Asset Ratio, while insignificantly impacted, suggested a slightly more complex relationship with P/B Ratio, indicating that this valuation metric may have a limited role in influencing the debt structure of a company.

These results can serve as a valuable resource for financial analysts and decision-makers as they navigate the complexities of the corporate financial world, helping them appreciate the multifaceted relationships that underpin financial stability and growth.

REFERENCES

[1] Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. Journal of Risk Finance, 6(5), 438–445. Https://doi.org/10.1108/15265940510633505
[2] Baser, N., Brahmbhatt, M., & Singh, B. (2012). Capital structure decisions: A study in leverage and profitability of infrastructure companies in India. Journal of Commerce and Accounting Research, 1(1), 18–25.
[3] Bhardwaj, A., & Chaudhary, V. (2010). An analysis of debt equity structure of selected pharmaceutical firms in India. Summer Internship Society.
[4] Bhatti, A., Majeed, K., & Khan, W. A. (2010). Affect of leverage on risk and stock returns: Evidence from Pakistani Companies. International Research Journal of Finance and Economics, 32–49.
[5] Bhayani, S. (2009). Impact of financial leverage on Cost of Capital and Valuation of Firm: A study of Indian Cement Industry. Paradigm, 13(2), 43–49.
[6] Bhayani, S. (2010). Determinant of Profitability in Indian Cement Industry: An economic analysis. South Asian Journal of Management.
[7] Bhidé, A. (1988). Why Not Leverage Your Company to the Hilt? Harvard Business Review. Https://hbr.org/1988/05/why-not-leverage-your-company-to-the-hilt
[8] Brealey, R. A., & Myers, S. C. (2013). Principles of corporate finance. McGraw Hill Higher Education.
[9] Brigham, E. F., & Houston, J. F. (2016). Cengage Learning. In Fundamentals of Financial Management.
[10] Carlson, R. (2020). What Is Leverage? The Balance. Https://www.thebalancemoney.com/what-is-leverage-393481
[11] Chowdhury, A., & Chowdhury, S. (2010). Impact of capital structure on firm's value: Evidence from Bangladesh. Business and Economic Horizons, 3(3), 111–122.
[12] Dalci, I. (2018). Impact of financial leverage on profitability of listed manufacturing firms in China. Pacific Accounting Review, 30(4), 410–432. Https://doi.org/10.1108/par-01-2018-0008

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[13] Damodaran, A. (2012). Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. John Wiley & Sons.

[14] Daryanto, W. M., Samidi, S., & Siregar, D. J. (2018). The impact of financial liquidity and leverage on financial performance: Evidence from property and real estate enterprises in Indonesia. Management Science Letters, 8(12), 1345–1352. Https://doi.org/10.5267/j.msl.2018.9.005