



An Empirical Study on the Impact of Financial Leverage on Profitability of Selected Indian Automobile Companies.

Yogesh Chandra¹, Dr. Manoj Singh Negi², Dr. Uma Adhikari³

¹Student MBA Final Year, Faculty of Commerce and Business Management, Amrapali University.

^{2,3}Assistant Professor, Faculty of Commerce and Business Management, Amrapali University.

Abstract-- This research paper shows how financial leverage affects the profit of selected automobile companies in India from FY21 to FY25. Financial leverage all about using borrowed money or debt in business. The research paper checks whether taking more debt helps companies earn more profit or not. It also compares companies with high debt and low debt.

In this research paper the researcher uses secondary data collected from Screener and annual reports of ten automobile companies listed on Indian stock exchanges. To measure profit, the study uses Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). Different statistical tools like descriptive statistics, correlation, regression, and t-test are used for analysis.

The results show that debt has both good and bad effects on profitability. Companies with more debt usually have lower ROA, which means they are not able to use their assets efficiently. The study also shows that higher debt reduces net profit margin. However, debt does not have a strong effect on ROE, which means it does not always increase returns for shareholders.

The t-test results show that companies with low debt perform better in ROA and NPM than companies with high debt. But there is no big difference in ROE between the two groups. The study concludes that too much debt is not good for automobile companies. A balanced mix of debt and equity is better for stable profit and financial performance.

This research paper helps in understanding how debt affects automobile companies in India, especially during the COVID and post-COVID period. The findings can help managers, investors, banks, and policymakers make better financial decisions.

Keywords-- Financial Leverage, Profitability, Capital Structure, Debt-to-Equity Ratio, Return on Assets, Return on Equity,

I. INTRODUCTION

Financial leverage means using borrowed money in a business to increase profit. Many companies use loans and debt to expand their business, buy machines, improve technology, and increase production. When debt is used properly, it can help a company earn more profit. But if the company is unable to manage the debt, it can also create financial problems. Therefore, the use of debt is an important financial decision for every company.

Profitability shows how well a company earns profit from its business activities. It helps to measure the financial performance and efficiency of a company. A profitable company can survive for a long time, attract investors, and grow in the future. Different financial ratios like Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) are commonly used to measure profitability.

The automobile industry is one of the most important industries in India. It provides employment to many people and contributes greatly to the Indian economy. Automobile companies need large investments for factories, machinery, research, and development. Because of these high investment needs, many automobile companies use both debt and equity for financing their business operations.

Different automobile companies use different levels of debt. Some companies prefer low debt, while others depend more on borrowed money. This difference may affect their profitability and financial performance. Therefore, it becomes important to study whether financial leverage has a positive or negative impact on profitability.

This research paper focuses on selected automobile companies in India during the period from FY21 to FY25. The study examines the relationship between financial leverage and profitability by using financial ratios such as Debt-to-Equity Ratio, Return on Assets, Return on Equity, and Net Profit Margin. Statistical tools like correlation, regression, and t-test are also used to analyse the data and understand the impact of financial leverage on profitability.

II. LITERATURE REVIEW

A review of literature means studying the work done by other researchers on a similar topic. It helps to understand previous studies, theories, and findings related to the research topic. It also helps to identify research gaps and understand why the present study is important.

Many researchers have studied the relationship between financial leverage and profitability. Some studies found that debt improves profitability, while other studies found that high debt reduces company performance. The effect of financial leverage depends on how effectively companies use borrowed money.

Modigliani and Miller (1958) explained that in a perfect market, the value of a company does not depend on the use of debt or equity. Later, in 1963, they added that debt can provide tax benefits because interest paid on debt reduces taxable income. This theory became an important base for capital structure studies.

Myers and Majluf (1984) introduced the Pecking Order Theory. According to this theory, companies first prefer internal funds, then debt, and lastly equity financing. This theory suggests that profitable firms usually use less debt because they already have enough internal funds.

Jensen and Meckling (1976) explained Agency Theory. They stated that debt can sometimes improve company discipline because managers become more careful while using company resources. However, too much debt can increase financial pressure and risk.

Rajan and Zingales (1995) studied companies from G-7 countries and found that profitability and debt have a negative relationship. Their study showed that profitable companies usually depend less on borrowed funds.

Fama and French (2002) also found a negative relationship between leverage and profitability in US firms. They explained that profitable firms mostly use retained earnings instead of debt financing.

III. RESEARCH METHODOLOGY

This study uses a quantitative research methodology because the research is based on financial data and statistical analysis. The study is descriptive and analytical in nature as it examines the relationship between financial leverage and profitability. Secondary data has been used in this research, and the data was collected from Screener and annual reports of selected automobile companies.

The study includes ten automobile companies listed on Indian stock exchanges. The data covers five financial years from FY21 to FY25. The independent variable used in the study is the Debt-to-Equity Ratio (D/E), while Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) are used as profitability measures.

Different statistical tools such as descriptive statistics, Pearson correlation, simple linear regression, and independent sample t-test have been used to analyze the data and examine the impact of financial leverage on profitability.

Objectives Of The Study:

1. To measure leverage and profitability levels from FY21 to FY25.
2. To examine the relationship between D/E ratio and profitability measures (ROA, ROE, NPM).

3. To compare the performance of high-debt vs. low-debt firms.
4. To provide recommendations for capital structure management.

Hypotheses Of The Study

H01: There is no significant relationship between financial leverage (FL) and Return on Assets (ROA) of selected Indian automobile companies.

H02: There is no significant relationship between financial leverage (FL) and Return on Equity (ROE) of selected Indian automobile companies.

H03: There is no significant relationship between financial leverage (FL) and Net Profit Margin (NPM) of selected Indian automobile companies.

H04: There is no significant difference in ROA between high-debt and low-debt automobile companies.

H05: There is no significant difference in ROE between high-debt and low-debt automobile companies.

H06: There is no significant difference in NPM between high-debt and low-debt automobile companies.

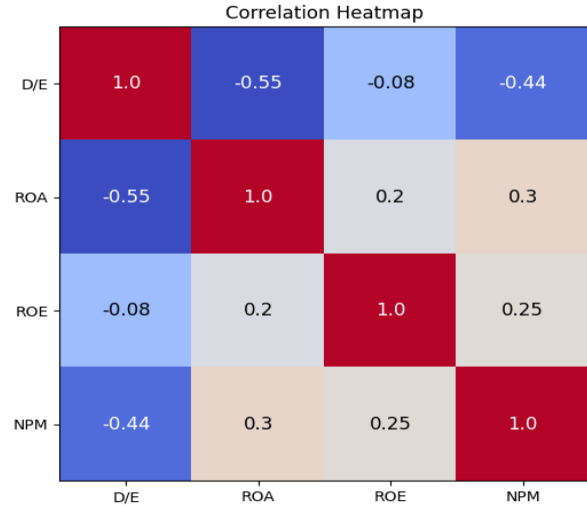
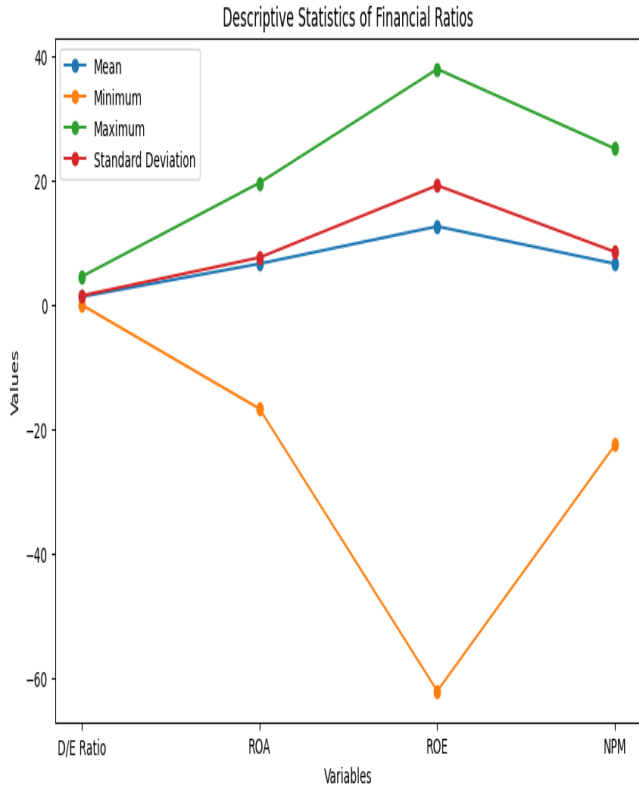
IV. DATA ANALYSIS AND INTERPRETATION

4.1 Descriptive Statistics

Descriptive statistics help to understand the average performance and variation in financial leverage and profitability of selected automobile companies during the study period.

Table 4.1: Descriptive Statistics of Financial Ratios

Variable	Mean	Minimum	Maximum	Standard Deviation
D/E Ratio	1.30	0.00	4.53	1.47
ROA	6.6%	-16.7%	19.6%	7.6%
ROE	12.6%	-62.1%	37.9%	19.2%
NPM	6.6%	-22.5%	25.1%	8.5%



Interpretation

The average Debt-to-Equity ratio of 1.30 shows that selected automobile companies use a moderate level of debt in their capital structure. The profitability ratios show both positive and negative values, which means some companies earned high profits while some faced losses during the study period. The high standard deviation in ROE indicates that shareholder returns varied greatly among companies. Overall, the automobile sector showed mixed financial performance during FY21 to FY25.

4.2 Correlation Analysis

Correlation analysis is used to measure the relationship between financial leverage and profitability.

Table 4.2: Correlation Results

Variables	Correlation (r)	Interpretation
D/E vs ROA	-0.547	Moderate Negative
D/E vs ROE	-0.084	Very Weak Negative
D/E vs NPM	-0.438	Moderate Negative

Interpretation

The correlation between D/E and ROA is negative, which means companies with higher debt generally have lower asset efficiency. The relationship between D/E and ROE is very weak, showing that leverage does not strongly affect shareholder returns. The negative relationship between D/E and NPM indicates that high debt reduces profit margin.

4.3 Regression Analysis

Regression analysis is used to examine the impact of financial leverage on profitability.

Table 4.3: Regression Results

Dependent Variable	Regression Equation	R ² Value	p-value	Hypothesis Decision
ROA	ROA = -0.0282(D/E) + 0.103	0.299	0.00004	Reject H01
ROE	ROE = -0.011(D/E) + 0.14	0.007	0.56097	Accept H02
NPM	NPM = -0.0254(D/E) + 0.0995	0.191	0.00148	Reject H03



Interpretation:

The regression result for ROA shows a negative relationship between leverage and asset efficiency. The p-value is less than 0.05, so the null hypothesis (H01) is rejected. This means financial leverage significantly affects ROA.

For ROE, the p-value is greater than 0.05, so H02 is accepted. This means there is no significant relationship between leverage and ROE.

For NPM, the p-value is less than 0.05, so H03 is rejected. This indicates that leverage has a significant negative impact on net profit margin.

4.4 T-Test Analysis

The independent sample t-test is used to compare profitability between high-debt firms and low-debt firms.

Table 4.4: T-Test Results

Variable	p-value	Interpretation	Hypothesis Decision
ROA	0.00000169	Significant Difference	Reject H04
ROE	0.283	No Significant Difference	Accept H05
NPM	0.000084	Significant Difference	Reject H06

Interpretation

The t-test result for ROA shows a significant difference between high-debt and low-debt firms. Therefore, H04 is rejected. Low-debt firms perform better in asset utilization.

For ROE, the p-value is greater than 0.05, so H05 is accepted. This means there is no significant difference in shareholder returns between high-debt and low-debt firms.

For NPM, the p-value is less than 0.05, so H06 is rejected. This shows that debt level significantly affects profit margin.

V. CONCLUSION

This study examined the impact of financial leverage on profitability in selected Indian automobile companies during the period FY21 to FY25. The study used financial ratios such as Debt-to-Equity Ratio (D/E), Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) to analyze the relationship between debt and profitability. Statistical tools like correlation, regression, and t-test were also used for analysis.

The findings of the study show that financial leverage has both positive and negative effects on profitability. Higher debt levels reduce asset efficiency and net profit margin, which means companies with excessive debt face more financial pressure and lower profitability. The study found a significant negative relationship between D/E ratio and ROA as well as NPM. However, the relationship between leverage and ROE was weak and not statistically significant.

The comparison between high-debt and low-debt firms also showed that low-debt firms performed better in terms of asset efficiency and profit margin. This suggests that companies with balanced or lower debt levels are financially more stable and efficient.

Overall, the study concludes that financial leverage should be used carefully in automobile companies. Moderate debt may help companies in growth and expansion, but excessive debt can reduce profitability and increase financial risk. Therefore, automobile companies should maintain a balanced capital structure to achieve stable financial performance and long-term growth.

REFERENCES

- [1] Brealey, R. A., Myers, S. C., & Allen, F. (2017). Principles of corporate finance (12th ed.). McGraw-Hill Education.
- [2] Booth, L., Aivazian, V., Demirgüç-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *The Journal of Finance*, 56(1), 87–130.
- [3] Brigham, E. F., & Ehrhardt, M. C. (2016). Financial management: Theory and practice (15th ed.). Cengage Learning.



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- [4] Datta, S., & Agarwal, S. (2009). Determinants of capital structure in Indian firms. *Indian Journal of Economics and Business*, 8(1), 1–17.
- [5] Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *The Review of Financial Studies*, 15(1), 1–33.
- [6] Gupta, P., & Sharma, D. (2014). Capital structure and firm performance in Indian manufacturing firms.
- [7] *International Journal of Management Studies*, 6(2), 45–56.
- [8] Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- [9] Kumar, R., & Verma, S. (2022). Financial performance of Indian automobile firms in the post-COVID period. *International Journal of Finance and Economics*, 27(3), 2150–2165.
- [10] Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance*, 34(3), 621–632.
- [11] Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261–297.
- [12] Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. *The American Economic Review*, 53(3), 433–443.
- [13] Mohanty, P. (2004). Institutional investors and capital structure in India. *IIMB Management Review*, 16(4), 37–50.
- [14] Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- [15] Pandey, I. M. (2004). Capital structure and market power interaction: Evidence from India. *Vikalpa*, 29(2), 23–32.
- [16] Pandey, I. M. (2015). *Financial management* (11th ed.). Vikas Publishing House.
- [17] Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? *The Journal of Finance*, 50(5), 1421–1460.
- [18] Sharma, A., & Kumari, S. (2013). Impact of financial leverage on profitability of automobile companies in India. *International Journal of Research in Commerce and Management*, 4(10), 45–50.
- [19] Singh, B., & Singh, S. (2016). Capital structure and financial performance: Evidence from Indian automobile industry. *Journal of Business and Management*, 18(5), 1–6.
- [20] Zeitun, R., & Tian, G. G. (2007). Capital structure and corporate performance: Evidence from Jordan. *Australasian Accounting Business & Finance Journal*, 1(4), 40–61.