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Driving Value: The Interplay Between Capital Structure and Financial Health in Indian Automobile Companies

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Abstract

A basic financial concept, which is called capital structure. It is the combination of equity, debt or both that is available for firms to fund their operations and investments. One of the most important decisions in corporate finance is the strategic choice of capital structure, which can impact the performance and sustainability of a company. Capital structure has received much attention in academic research over the years, especially in the field of corporate finance. The present study aims to examine the effect of the capital structure on the financial performance of the automobile companies in India as the industry plays a pivotal role in the Indian economy. The study highlights five top automobile companies namely, Tata Motors, TVS Motor Company Limited, Ashok Leyland, Hero MotoCorp Limited, and Bajaj Auto Limited. Studies were conducted for five years from 2015 to 20244 and the financial data of these companies were retrieved from their annual reports. This study examines the effect of capital structure on the performance indicators like net profit before tax, total assets, earnings per share and dividend payout ratios. The companies selected are used in the study of the independent variables which are total debt and total owned capital. For analysis, statistical tools and techniques are used to analyse the relationship. The study reveals that the differences in capital structure decisions have significant effects on the performance of the companies. But some firms have constant levels of owned capital over time, indicating that other variables, like debt per capita, or other financial dimensions may be more relevant in explaining firm performance over time. The report emphasizes the importance of the automobile industry's capital structure and its impact on performance, along with potential optimization strategies and decision-making processes to improve competitiveness in the face of constantly changing market dynamics.

Keywords: *Automobile Industry, Capital Structure, net profit before tax, rate of dividends, Earnings per share.*

1. INTRODUCTION

Capital is the lifeblood and nerve centre of every kind of business. Without blood, a man cannot survive; without capital, it isn't easy to survive any type of business form of organisation. Capital is essential for any type of business organisations. Capital of a business is dependent on the size and the kind of business concern. It can come from various sources. There are two types of capital: owned capital and borrowed capital. Capital structure is a financial term that relates to the method by which an organisation has

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financed its long-term and short-term capital structure. The long-term capital consists of ordinary shares and reserves, preference shares, debentures, bank loans etc and the short term capital consists of bank overdraft, trade creditors etc. So the capital structure of the firm may be defined as the combination/composition/structure of its liability capital or its capital. Business organisation, which in turn is exhibited in the form of profit maximisation, wealth maximisation, return on assets maximisation and shareholder returns maximisation, is closely related to capital structure. Capital structure plays a vital role in determining the company's risk level, and the fixed cost enables knowing whether the company is involved in the production process or fixed financial charges. It most likely refers to the firm's debt-to-equity ratio, which indicates how risky a company is. If a firm has a higher percentage of debt, then the firm is said to be highly levered and thus has a higher risk, and if the firm has a lower percentage of debt compared to the equity portion, then the firm has a lower risk. The capital structure of a business or firm can be divided into two categories: Owned capital and Borrowed capital. It reflects the manner in which a company has financed its overall operation and growth for using various sources of funds available to it. The choice of the appropriate capital structure is very important in financial management; it is closely related to the value of the company.India's automobile industry is the fourth largest automobile manufacturing company in the world. The Indian Industry has manufactured around 28.4 million vehicles since the period of 2023-2024, comprising of passenger vehicles, commercial vehicles, three wheelers, two wheelers and quadricycles. The industry has received a boost from the government schemes like Make in India and Production Linked Incentive (PLI) schemes. Emphasis on indigenous manufacture of EVs has put India on the map of global automotive industry. The Indian Auto industry accounts for around 6 per cent of the national GDP and adds to the manufacturing GDP which is 40 per cent of the national GDP. The booming middle-class families in India, rising youth population and growing interest of the automobile companies in the rural market is the reason, why the two-wheeler market has become the most dominant market in the Indian automotive industry.

1.1 Optimal Capital Structure:

The main objective of financial management is wealth maximisation. Thus, the managers should choose such a type of capital structure that enables the maximisation of wealth. To fulfil this objective, the managers should do some analysis. Among the various analyses, the EBIT-EPS-MPS analysis is one type of analysis. It helps to choose a capital structure that will help towards the maximisation of the market price per share. To achieve that goal, all capital structures should have the same level of EBIT and EPS should be calculated. Once this, to obtain MPS multiply either the Price-Earnings Ratio or the Cost of Equity with EPS. The other notable analysis is an Indifference Point analysis. With the help of this analysis, we can find the answer to some questions, like what will happen if EBIT changes, and whether it will change the decision. The use of indifference point analysis will be used to answer this question. Another analysis, like these two, is the Financial Break-Even Point analysis. As the capital structure changes, so does financial risk.

1.2 Importance of Capital Structure:

The smooth running of the firm is greatly dependent on the capital structure. A sound capital structure of a firm increases the market price of shares which helps in increasing the value of the firm. A proper capital structure is important to an organisation because it enables it to utilise its resources in an effective and efficient manner. Pre-defined capital structure helps in determining the financial requirement of business organisation and also in raising the funds in such a ratio from different sources of funds for the optimum utilisation. With an effective Capital structure, protection of the firm from undercapitalization and overcapitalization can be achieved. An efficient capital structure helps management enhance the profit of the farm by increasing the earnings per share. An

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increase in earnings per share in the market makes it easier to increase the leverage ratio of the firm's capital structure. For the firm, debt capital is the lowest cost capital. If the company makes more profit on the money invested than what the fixed interest rate it pays, then the company's debt-holders are said to be trading on equity. A good capital structure of any business enterprise tries to maximise shareholders' wealth by minimising the overall cost of capital. This can be achieved by taking long-term debt into the capital structure because it is more cost effective to take the debt than preference shares or equity shares and the interest on the debt is tax deductible. A relevant capital structure does not allow any firm or company to borrow too much capital because, if the firm is not earning well, it is hard for the firm to pay the compulsory interest to all debt capital holders and there may be a possibility of the firm becoming insolvent. Capital structure that is relevant to the business allows either to increase the amount of debt capital or to decrease it, depending on the changing conditions; capital can be adjusted. A relevant capital structure does not allow equity shareholders' control of the business to be diluted. A rise in the capital structure of a business (debt) will also increase the risk associated with finance, or financial risk. By having an optimum mix of debt and equity in the capital structure, a business enterprise is more protected from different financial risks.

1.4 Problem Statement

A sound business capital structure produces consistent profits and substantial shareholder returns. The mix of debt and equity in the company's capital structure is a crucial financial choice that affects the shareholders' return and risk. The current study aids the selected automobile company in determining the most effective capital structure to boost business profits. Additionally, this study intends to determine how capital structure affects the performance of a few Indian automobile businesses.

Objectives of Study

1. To know about the capital structure followed in the selected automobile industries in India.
2. To analyse the impact of capital structure on the performance of selected Indian automobile industries.

2. REVIEW OF LITERATURE

The capital structure choice is a topic that is widely discussed in corporate finance. In a perfect capital market, Modigliani and Miller (1958) theorized that the value of a firm is unaffected by its capital structure. But Modigliani and Miller (1963) reworked this claim and included corporate taxes and stated that companies should borrow all the money they can to take advantage of the tax shield benefit. Later theoretical developments involved the formulation of the Trade-Off Theory for firms to consider the costs of financial distress and financial benefits of debt. (Myers, 1984). Jensen and Meckling (1976) first implemented the concept of the Agency Theory perspective. It asserts that the decision of capital structure is affected by agency problems between shareholders and bond holders. Myers and Majluf (1984) once again introduced the Pecking Order Theory. It implies that the internal funding is more preferred than external funding, and debt financing is more preferred than equity financing because of information asymmetry between the managers and investors. Since then, these theories have provided the basis for extensive empirical research in developed and developing countries, such as the Indian automobile industry.

Booth et al. (2001) established that the leverage ratios vary from country to country but variables affecting capital structure in developed countries also influence the financing decision in developing countries like India, Pakistan and Brazil. Harris and Raviv (1991) begin a thorough analysis of the theory and facts of capital structure. It finds that there are positive relationships between leverage and tangible assets, non-debt tax shields, investment opportunities, and firm size. It is negatively related to volatility, advertising expenditure, profitability, and probability of bankruptcy. Capital structure theory has been empirically tested by Titman & Wessels (1988) who applied a factor-analytical approach which revealed that the following factors are meaningful in

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determining a firm's capital structure: asset structure, non-debt tax shields, growth, uniqueness, industry type, size and profitability. These are the global results that have served as the theoretical framework for the sector-specific studies, including that of the Indian automobile sector.

Using a cross-country framework, Ranjan and Zingales(1995) studied the determinants of capital structure in the G-7 countries and discovered that the size of capital structure and tangibility have positive cross-country relationship. The most consistent factors across all industries around the world that predict leverage are firm size, profitability, tangibility, and growth opportunity. It is well grounded in an empirical basis (Frank&Goyel,2009). This cross-country study was extended by De jong, Kabir and Nguyen(2008) who demonstrated that capital structure is determined by firm-specific and country-specific factors, factors which are particularly relevant in Indian context.

Anu (2015) explored the relationship between debt-equity and market price per share (MPS) of three major companies of India Tata Motors, Mahindra & Mahindra and Maruti Suzuki. Book Value (BV), Return on Assets (ROA), Return on Capital Employed (ROCE) and Earning Per Share (EPS) were used to study this relationship. It is recommended by Titman and Wessels (1988) for the measurement of the capital structure effects. The findings from the study were consistent with the Modigliani and Miller (1963) hypothesis that the capital structure of a firm has an impact on its market share price. Further, the leverage analysis of these three companies showed that the decisions made by the companies in debt financing directly relate to the indicator of market performance. It's the results of Rajan and Zingales (1995) on the relation between leverage and firm value.

Zubairi (2015) analyzed the effect of capital structure and working capital management on profitability of automobile industry of Pakistan. The current ratio was used to measure the working capital management and capital structure was measured by financial leverage, which is consistent with the measurement convention used in the Suresh Babu and Chalam (2016). A supplementary analysis was also carried out that also took into account the operating leverage and firm size, in line with the multi-factor approach that Harris and Raviv (1991) proposed to determine profitability determinants. The empirical results showed positive evidence between profitability and the different finance theories, namely the Trade-Off Theory (Myers, 1984) which reinforced the understanding that optimization of the capital structure is an important component of a firm's profitability in the automobile industry.

In this comparative study of determinants of capital structure for the Indian automobile, IT and hotel industries, Sathyanarayana and Malabali (2015) have analyzed ten years of panel data. The influence of the mentioned variables was measured using multiple regression analysis and multicollinearity tests as in the methodological approach of Titman and Wessells (1988) in their multi-sector study. The study found that there are inconsistencies between the independent variables affecting financial leverage among the different industries. This is consistent with the results of De Jong, Kabir and Nguyen (2008) that country-specific as well as firm-specific factors. It generates sectoral diversity in capital structures. The different results obtained in the automobile, IT and hotel industries highlight the industry-specific nature of capital structure determinants, as highlighted by Harris and Raviv (1991).

The authors Chadha and Sharma (2015) examine the financial leverage firm performance relationship of 422 manufacturing firms listed in the Bombay Stock Exchange (BSE) from the period of 2003-2004 to 2012-2013. The study utilized panel data and ratio analysis methodologies, and ROA, ROE and Tobin's Q were used as measures of financial performance. It follows the benchmarks in corporate finance (Frank & Goyal, 2009). The results of the study indicated that financial leverage negatively and significantly affected Return on Equity (ROE) and supported the agency theory of Jensen and Meckling (1976) which stated that the higher the level of financial leverage, the more agency costs will be incurred and the less

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returns on equity will be obtained. Results indicate that there were no significant effects on ROA or Tobin's Q suggesting that the impact of leverage may differ from that of overall asset efficiency as predicted by the theory of Modigliani and Miller (1958). The size, age, tangibility, growth, asset turnover, and ownership structure of the company were found to be significant variables, which support the multi-variable framework introduced by Harris and Raviv (1991).

Chadha and Sharma (2016) further study their earlier analysis by studying capital structure trends and the impact of leverage on the market value of selected automakers using the same 422-company BSE dataset. Their findings indicated a high degree of debt in corporate capital structures. It is consistent with the Trade-Off Theory prediction that profitable firms use more debt to exploit tax shields (Modigliani & Miller, 1963). There is a weak correlation was found between leverage and firm value, suggesting partial inconsistency with the Trade-Off Theory, and closer alignment with the Pecking Order Theory (Myers, 1984). Size, age, profitability, and growth were found to be positively and significantly correlated with firm value, supporting the cross-country evidence of Rajan and Zingales (1995) that these variables consistently determine capital structure outcomes.

Suresh Babu and Chalam (2016) used panel data from 58 automobile companies listed on the BSE, sourced from the Centre for Monitoring the Indian Economy (CMIE), covering the period from 1997–1998 to 2013–2014. The fixed-effects regression model was employed for analysis, a methodology widely used in capital structure panel studies to control for firm-specific unobservable heterogeneity (Frank & Goyal, 2009). Risk and liquidity were found to be positively correlated with leverage, while profitability, scale, tangibility, growth, and absence of a debt tax shield were negatively correlated, consistent with the theoretical predictions of the Trade-Off and Pecking Order theories (Myers, 1984; Myers & Majluf, 1984). Among these determinants, only profitability emerged as statistically significant, a finding that echoes the cross-country evidence of Rajan and Zingales (1995) on the primacy of profitability in capital structure decisions.

Using Ordinary Least Squares (OLS) regression analysis on the automobile sector data for the period from 2008 to 2014, Singh (2017) found that the main factors that influence the capital structure of the automobile sector are risk, tangibility, size, liquidity and profitability. It is observed that the profitability and leverage have negative relationship, which is in line with the Pecking Order Theory (Myers and Majluf 1984) which states that profitable companies do not rely on external borrowing for financing, they opt to use their retained earnings instead. The study highlighted that equity financing is preferred by the profitable, liquid and asset rich auto companies, which is in congruence with the empirical evidence of Booth et al. (2001) which shows a similar trend for developing country firms. In line with the wider theoretical debate around the high costs of financial distress, Singh (2017) recommend that Indian automotive companies turn towards equity financing and earnings retention.

The authors Nalwade and Jagtap (2017) analyse the capital structure of four automobile firms from 2006 to 2016. It is analyzing how changes in the composition of capital structure affect share value and the cost of the capital. By using the correlation analysis they showed that there is a negative correlation between share value and total capital. It implies that too much capital accumulation does not increase the value of the firm, which is at least partly in line with the agency theory of Jensen and Meckling (1976) which cautioned against overly debt financed overinvestment. The study highlights the significance of debt-equity ratio in the capital structure for the optimal cost of capital. It is in harmony with the Trade-Off Theory perspective of Modigliani & Miller (1963) and Myers (1984). Based on the graphical and correlation analysis, the further support was given to the fact that the implication of the choice of capital structure is directly measurable and has its impact on the wealth of shareholders and the central argument of

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Modigliani and Miller (1958) was found to be valid even in the context of the automobile industry in India.

Taking the automobile sectors from the Bombay Stock Exchange listed companies, Kavitha and Mohanraj (2019) have used the regression analysis on the data set of major automobile companies in India for the period 2006 to 2016 to determine the impact of firm size, profitability, liquidity and the worth of the collateral on the capital structure of the respective companies. The negative relationship between capital structure and liquidity is correlated with the Pecking Order Theory that suggests that the liquid firm has an inclination towards the utilization of funds available than debts (Myers & Majluf, 1984). In contrast, profitability and cost of debt and firm size was found to be positively associated with capital structure, partially supporting the argument of the Trade-Off theory that larger and more profitable firms would be a bit more able to carry a higher level of debt (Modigliani & Miller, 1963; Myers, 1984). This is dual alignment with several theories and a result of the complex financing behaviour of all the automobile companies in India, as found by Booth et al. (2001) and Chen (2004) across the countries.

Rashmi Soni, Shah, and Chawla (2020) take the Harris and Raviv (1991) broad definition of capital structure and define multi-dimensional capital structure by including owned capital, owed capital, and control, cost of capital, and flexibility. The study argues that Indian automotive industry is one of the largest industries in the world with contribution towards GDP of around 7% and emphasises that capital structure optimisation is of great importance for sustaining growth in the case of such a massive industry as the automotive (Booth et al., 2001). Financial ratios of leading Automobile firms listed in BSE were analyzed, but there weren't any significant correlations were found among the determinants of capital structure indicating that financial ratios cannot be the sole indicator of the complexity of financial decisions. The results reiterate the importance of adopting more advanced econometric approaches like the use of panel data analysis to uncover the actual impact of the determinants of capital structure in the Indian motor industry, as earlier shown by Chadha and Sharma (2015, 2016) and Suresh Babu and Chalam (2016).

Overall, the existing literature reveals several consistent patterns in automobile sector capital structure research. Profitability is almost universally found to be negatively associated with leverage, validating the Pecking Order Theory across diverse geographies and time periods (Myers & Majluf, 1984; Rajan & Zingales, 1995; Frank & Goyal, 2009). Firm size and tangibility are generally positively related to debt levels, consistent with the Trade-Off Theory prediction that larger firms with more tangible assets can bear higher financial distress costs (Modigliani & Miller, 1963; Titman & Wessels, 1988). Liquidity is predominantly negatively related to leverage in the Indian automobile context (Kavitha & Mohanraj, 2019; Singh, 2017), while growth shows mixed results across studies, a divergence observed globally by Harris and Raviv (1991). The review identifies a gap in the literature regarding the simultaneous examination of firm-specific, industry-specific, and macroeconomic determinants of capital structure in the Indian automobile industry, which justifies the empirical investigation undertaken in the present study.

2.1 Research Gap

The researcher has reviewed many kinds of literature related to the topic, and some of the studies are about foreign companies and some of the studies are about the subsidiaries of foreign holding companies. Most of the research indicated sources of finance and used limited data for analysis. Most of the studies analysed data from only two to three companies and a maximum of five to six years of data. Thus, to fulfil the gap, this research study is based on the top five Indian automobile companies and the last ten years of data from 2014-15 to 2023-24 were used in this analysis.

2.2 Hypothesis

1. The capital structure of the company doesn’t affect the performance of the company

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2. There is no significant relationship between capital structure and the performance of the company.

3. METHODOLOGY AND DATA

In this study under sampling methods, simple random sampling method is used while collecting sampling. Here, the population area is the automobile industry, and the sample size is the top 5 automobile manufacturing companies. Generally, there are two types of data we found while collecting data. One is primary data, and the other is secondary data. In this study, secondary data has been used for this study. Here, data are collected from various published sources such as newspapers, journals, the company's annual report, etc. There are various statistical tools or statistical methods that involve the mathematical formulas, models and techniques that help with data analysis. It may be called as statistical techniques or statistical methods. In this study, both descriptive statistics and inferential statistics were used for data analysis. In descriptive statistics, the measure of central tendency was used, and in the case of inferential statistics, correlation analysis was used with the help of STATA. Various tables and graphs have been used for the data analysis. Descriptive statistics concern organised analysis and presentation. There are various variables used in this study, like the cost of capital, the financial performance of the company, leverage, profitability, tangibility, growth rate of the companies in the automobile industry, debt-equity ratio, etc.

4. ANALYSIS AND INTERPRETATION

4.1 Descriptive Statistics Analysis

Table 1. Descriptive Statistics

Company	Variables	Mean	SD	Min	Max
ASHOK LEYLAND	NPBT	1123.834	1165.42	411.91	3792.18
	TA	16105.36	4103.633	10593	23611.75
	EPS	2.921429	2.796723	-1.07	8.92
	TB	2282.786	791.0384	853	3367
	OC	274.3171	42.14836	133	293.63
Bajaj Auto	NPBT	5772.772	1593.182	4026	9822.01
	TA	21743.46	8636.579	9247.53	34250.65
	EPS	147.4071	45.78106	97.2	264.6
	TB	241.0871	93.99536	126.59	452.13
	OC	288.1843	3.10386	279.18	289.37
HERO MotoCorp	NPBT	3856.545	988.6593	2404.76	5244.16
	TA	15982.13	5624.845	9641.65	25571.55
	EPS	143.9907	31.99985	96.54	187.36
	TB	412.8107	419.6404	74.43	1506.72
	OC	39.94929	0.013281	39.94	39.98
TATA MOTORS	NPBT	-291.539	3474.005	7127.34	7850.82
	TA	53690.06	14486.6	6683.74	65059.66
	EPS	-0.72071	10.14153	-21.06	20.61

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	TB	14384.87	3205.512	8614.53	19752.97
	OC	692.7629	53.43851	634.75	766.5
TVS MOTOR	NPBT	877.2814	722.9491	163.58	2780.66
	TA	10776.4	12297.1	1201.55	42220.46
	EPS	13.025	9.259857	2.44	35.5
	TB	878.8786	479.8251	317.38	1737.79
	OC	47.51	0	47.51	47.51

(*Note: The table reports descriptive statistics for Net Profit Before Tax (NPBT), Total Assets (TA), Earnings per Share (EPS), Total Borrowed Capital (TB), and Owned Capital (OC). Reported measures include the arithmetic mean, standard deviation, minimum, and maximum values*)

Table 1 shows descriptive statistical information for all five selected companies. Ashok Leyland Company has a moderate average net profit before tax of Rs 1,124 crores, but this figure is presented by high instability because the standard deviation is more than the mean. This indicates significant fluctuation in profitability across the observed time. A steady growth has been seen in Companies' total assets during the observed period. Ashok Leyland Limited maintains a moderate level of debt. In the case of owned capital, it has a lower return than debt capital, but it is stable during the observed period. The low variability in owned capital shows a steady strategy and steady growth rather than equity issuances. Bajaj Auto Limited has the highest average net profit before tax and an impressive average EPS of Rs 147.41indicating superior profitability and value generation. Bajaj Auto operates with the lowest debt level among all companies. The owned capital of Bajaj Auto Limited is not only the highest but also incredibly stable, reflecting good financial discipline, strong retained earnings and a strategy that is predominantly self-financed with a very robust equity cushion. The Hero MotoCorp company shows strong and stable operation. It maintains a robust average NPBT of Rs. 3856.55 crores and a very high average EPS of Rs. 143.99. The debt shows high variability, suggesting strategic, periodic leveraging. Its average owned capital is Rs 39.95 crores, and the standard deviation is very low, which means it is possibly characterised by high-level leverage or specific corporate restructuring. The stability suggests the capital level is intentionally maintained. Tata Motors' financial information reveals data of immense scale and high volatility. It has the largest Asset structure, but it is the only company among all observed companies that has a negative average of Net profit before tax and earnings per share, indicating a period of significant loss. It carries the highest debt burden, and its owned capital is also the largest. .it also shows moderate growth over time. The substantial equity base is essential to absorb the losses and support the debt required to fund its efficient and effective operation. The TVS Motor Company shows its growth and expansion. Its average Net Profit before tax is healthy but volatile, and its total assets show massive expansion over the period. This growth is supported by a moderate level of borrowing. Total owned capital is completely unchanged while assets grew exponentially, implying that this growth has been financed almost entirely by debt and retained earnings, not by raising new equity. That can be a strategy to avoid the misconception of existing shareholder ownership.

4.2. EMPIRICAL RESULTS AND ANALYSIS

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Table 2. Correlation Table

Company Name		TB	OC
Ashok	NPBT	-0.5971**	0.19
	TA	-0.0584	0.5535**
	EPS	-0.629**	0.156
Bajaj Auto	NPBT	-0.584**	-0.805***
	TA	-0.7945***	-0.5383**
	EPS	-0.5455**	-0.8196***
Hero	NPBT	-0.5036*	0.336
	TA	-0.0576	0.9108***
	EPS	-0.4325	0.3806
TATA MOTORS	NPBT	-0.6459**	0.0989
	TA	0.697***	-0.089
	EPS	-0.6528**	0.1193
TVS	NPBT	0.7537***	.
	TA	0.7679***	.
	EPS	0.7686***	.

(Note: Correlations are significant at 10%, 5%, and 1% are represented as *, **, *** respectively)

Table 2 reports the correlation coefficients between NPBT, TA, and EPS with TB and OC. Statistical significance is denoted by p-values: $p < 0.10$ (*), $p < 0.05$ (**), and $p < 0.01$ (***). In Ahok Leyland Limited, there are significant negative relations between total borrowed capital and both net profit before tax and earnings per share. This indicates that for Ashok Leyland, a higher level of debt capital is associated with lower profitability and lower returns to shareholders. It indicates that the debt is often used as a buffer in the harder times rather than for funding effective growth. There is a significant positive correlation between total assets and owned capital. It can be observed that total assets are increasing and may be financed by owned capital because it is also in an increasing trend, which is a financially prudent strategy. In the case of Bajaj Auto Limited, there is a strong negative correlation between total borrowed capital and all three financial performance indicators. This suggests that increasing high profitability leads to a decrease in owned capital, possibly through large dividend payout. In Hero MotoCorp, there is a negative correlation between total borrowed capital and net profit before tax. It represents that, like Ashok Leland, higher debt is associated with lower profits for this company. The link between total borrowed capital, total assets, and earnings per share is negative but not strong enough to be significant. The owned capital is strongly and very positively correlated with total assets. There is the strongest relationship between them. It confirms that the asset growth is overwhelmingly financed by equity, not debt. This is a very prudent and stable financing policy. In the case of Tata Motors, there is a significant negative correlation between borrowed capital and net profit before tax, as well as earnings per share. This shows that Tata Motors primarily acquires assets; however, this strategy has not translated into profitability in the studied period. Higher debt is associated with lower profits and shareholder return, most likely due to high interest costs and challenges of integrating new assets. The owned capital and performance indicator correlation is weak and insignificant. This suggests that changes in Tata's large, owned capital are not primarily a driver of its volatile profitability in the short term. In the case of TVS Motors, there is a very strong and positive correlation of total borrowed capital with all three financial performance indicators.

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Table 3. Regression Results for the Effect of Total Borrowed Capital (TB) and Owned Capital (OC) on Automobile Companies' Performance Indicators.

Variables	NPBT (a)	TA (b)	EPS (c)
TB	–0.735*** (0.129)	3.287*** (0.731)	–0.002 (0.002)
OC	12.127* (6.381)	–28.704 (36.078)	0.017 (0.107)
Constant	1685.938 (1696.966)	19401.747** (9594.596)	65.921** (28.571)
Observations	70	70	70
R-squared	0.344	0.243	0.020
Mean Dep. Var	2267.779	23659.482	61.325
SD Dep. Var	2877.870	18225.144	73.901
F-test (Prob > F)	16.499 (0.000)	10.123 (0.000)	0.653 (0.688)
AIC / BIC	1224.620 / 1231.366	1467.150 / 1473.896	652.830 / 659.575

(Note: Table 3 presents regression results assessing the impact of Total Borrowed Capital (TB) and Owned Capital (OC) on three performance indicators of automobile companies: Net Profit Before Tax (NPBT), Total Assets (TA), and Earnings per Share (EPS). Reported values are regression coefficients, with standard errors shown in parentheses. ****, *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively*)

The regression analysis in **Table 3** provides evidence of the differential impact of capital structure components on firm performance indicators in the automobile sector. For profitability measured by net profit before tax (NPBT), total borrowed capital (TB) shows a strong and statistically significant negative effect with a coefficient of -0.735 ($p<0.01$), indicating that the adverse impact of debt due to the cost of paying interest is higher than the benefits they get from borrowing. There is a positive relationship between total owned capital and net profit before tax, with a coefficient of 12.127, which is statistically significant at 10%. This makes sense as equity does not come with mandatory interest payments that reduce profit. When the dependent variable is Total Assets (TA), TB has a coefficient of 3.287 ($p < 0.01$), reflecting that companies that take on more debt typically have larger assets. However, Owned Capital (OC) carries a negative and statistically insignificant coefficient (–28.704, $p = 0.429$), implying no meaningful equity impact on asset levels. In the 4th table, there is a negligible relationship between the variables, indicating that capital structure does not play a significant role in determining shareholder value (EPS). These results represent a capital structure trade-off: while debt significantly supports asset growth, it simultaneously reduces profitability, and owned capital shows only a limited role across all performance measures.

Table 4. Analysis of Ashok Leyland Limited

Variables	NPBT (a)	TA (b)	EPS (c)
TB	–0.857** (0.357)	0.121 (1.316)	–0.002** (0.001)
OC	2.894 (6.704)	54.221* (24.707)	0.004 (0.016)
Constant	2286.241 (2135.349)	956.457 (7869.076)	6.735 (4.990)
Observations	14	14	14
R-squared	0.367	0.307	0.400
Mean Dep. Var	1123.834	16105.363	2.921
SD Dep. Var	1165.420	4103.633	2.797
F-test (Prob > F)	3.191 (0.081)	2.435 (0.133)	3.664 (0.060)
AIC / BIC	235.990 / 237.907	272.511 / 274.428	66.341 / 68.259

(*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. NPBT = Net Profit Before Tax; TA = Total Assets; EPS = Earnings Per Share; TB = Total Borrowings; OC = Owned Capital.)

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The above **Table 4** gives the result of the regression analysis between capital structure and the financial performance of Ashok Leyland Ltd. In the first, total borrowed capital (TB) is statistically significant and has a negative relationship with net profit before tax (NPBT). The total owned capital does not have a statistically significant effect on net profit before tax. This model is 36 per cent, explaining the variation in net profit before tax of the Asok Leyland company. The total borrowed capital does not significantly impact Ashok Leyland's asset size. The marginally significant owned capital shows a strong positive relationship with total assets. Total borrowed capital has a significant negative effect on EPS. Total owned capital does not show a significant direct impact on EPS. This model explains 40 per cent of the changes in earnings per share of the Ashok Leyland company.

Table 5. Analysis of Bajaj Auto Limited

Variables	NPBT (a)	TA (b)	EPS (c)
TB	–5.688* (2.767)	–63.392*** (16.216)	–0.139 (0.080)
OC	–350.507*** (83.794)	–799.352 (491.070)	–10.559*** (2.424)
Constant	108154.600*** (23914.555)	267387.120* (140150.170)	3223.846*** (691.879)
Observations	14	14	14
R-squared	0.746	0.703	0.742
Mean Dep. Var	5772.772	21743.461	147.407
SD Dep. Var	1593.182	8636.579	45.781
F-test (Prob > F)	16.125 (0.001)	13.003 (0.001)	15.834 (0.001)
AIC / BIC	231.983 / 233.900	281.493 / 283.410	132.784 / 134.701

(*** p < 0.01, ** p < 0.05, * p < 0.10. NPBT = Net Profit Before Tax; TA = Total Assets; EPS = Earnings Per Share; TB = Total Borrowings; OC = Owned Capital.)

Table 5 presents linear regression analysis between capital structure and the financial performance of Bajaj Auto Limited. In the 2nd column, the total borrowed capital has a negative impact on net profit before tax, and it is marginally significant. In the case of owned capital, it is a major cost driver for Bajaj Auto Limited. Total owned capital has a very strong and highly significant negative relationship with profit. This model explains nearly 75 per cent of the changes in the net profit before tax of Bajaj Auto Limited. Then the impact of capital structure on the total assets of the company reports that total borrowed capital has a strong and highly negative relationship with total assets. Total owned capital also shows a large negative relationship with total assets, but it is not statistically significant. The model is strong and explains over 70 per cent of the variation in the total assets of the company. Next, result show that there is a negative impact of owned capital on the EPS of the company. Total borrowed capital has a negative but insignificant relationship with EPS. The model explains over 74 per cent of the changes in Earnings Per Share.

Table 6. Analysis of Hero MotoCorp

Variables	NPBT (a)	TA (b)	EPS (c)
TB	–1.298** (0.548)	–2.241 (1.538)	–0.037* (0.018)
OC	29842.403 (17330.563)	394099.370*** (48609.658)	1054.455* (577.959)
Constant	–1187790.400 (692317.020)	–15727081.000*** (1941846.500)	–41965.497* (23088.173)
Observations	14	14	14
R-squared	0.412	0.857	0.376
Mean Dep. Var	3856.545	15982.133	143.991
SD Dep. Var	988.659	5624.845	32.000
F-test (Prob > F)	3.856 (0.054)	32.993 (0.000)	3.313 (0.075)

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AIC / BIC	230.353 / 232.271	259.231 / 261.148	135.133 / 137.050

(*** p < 0.01, ** p < 0.05, * p < 0.10. NPBT = Net Profit Before Tax; TA = Total Assets; EPS = Earnings Per Share; TB = Total Borrowings; OC = Owned Capital.)

Table 6 reports the impact of capital structure on net profit before tax, total assets, and earnings per share through regression analysis. The second column shows the regression analysis of capital structure and net profit before tax. Total borrowed capital has a significant negative impact on net profit before tax. Owned capital is an enormous positive coefficient, but it is not statistically significant. It means that the data suggest a massive positive relationship, but one cannot be confident that this effect is real. In the 3rd column, this is the most definitive result for Hero Motors. The total owned capital has a highly significant and enormous positive relationship with total assets. Total borrowed capital is negative and insignificant to total assets. This model has incredible explanatory power for assets. It means total owned capital is the dominant driver of Hero MotoCorp's assets. Both owned and borrowed capital show marginal significance in influencing EPS. Total borrowed capital shows a negative relationship, suggesting it hurts shareholder earnings per share. Total owned capital has a strong positive relationship with earnings per share.

Table 7. Analysis of Tata Motors Limited

Variables	**NPBT (a)**	**TA (b)**	**EPS (c)**
TB	–0.796*** (0.240)	3.558*** (0.925)	–0.002*** (0.001)
OC	20.122 (14.393)	–85.303 (55.509)	0.063 (0.041)
Constant	–2778.698 (9597.085)	61609.347 (37013.149)	–10.543 (27.348)
Observations	14	14	14
R-squared	0.505	0.577	0.528
Mean Dep. Var	–291.539	53690.056	–0.721
SD Dep. Var	3474.005	14486.599	10.142
F-test (Prob > F)	5.614 (0.021)	7.493 (0.009)	6.164 (0.016)
AIC / BIC	263.130 / 265.047	300.925 / 302.842	99.034 / 100.951

(*** p < 0.01, ** p < 0.05, * p < 0.10. NPBT = Net Profit Before Tax; TA = Total Assets; EPS = Earnings Per Share; TB = Total Borrowings; OC = Owned Capital.)

Here, the **table 7** shows linear regression analysis of Tata Motors Limited. In the second column, there is a highly negative relation between total borrowed capital and net profit before tax. If we check the significance, there is a high significance and a statistically strong relationship between them. In the case of owned capital and net profit before tax, there is an insignificant and highly positive relation. The model explains 50.5 per cent of the variation in Tata Motors' net profit before tax. The 3rd column shows the regression analysis between the independent variables (owned capital and borrowed capital) and Total Assets. Here, there is a positive relation between total borrowed capital and total assets, and it is highly significant. In the case of owned capital and borrowed capital, it shows a very highly negative as well as insignificant relationship. The model explains 57.7% of the variation in the total assets of Tata Motors Ltd. The 4th column shows the case and effect relation between capital structure and earnings per share. There is a slightly negative relation between total borrowed capital and earnings per share. An increase of one unit of total borrowed capital is associated with a 0.002 unit decrease in earnings per share. There is a significant relation between eps and borrowed capital. In the case of owned capital, one unit of increase is associated with a 0.063 unit increase in eps, but it is not statistically significant. The model explains 52.8 per cent of the variation in eps of Tata Motors Limited.

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Table 8. Analysis of TVS Motors

Variables	NPBT (a)	TA (b)	EPS (c)
TB	1.136*** (0.286)	19.681*** (4.739)	0.015*** (0.004)
OC	0 (.)	0 (.)	0 (.)
Constant	–120.722 (283.894)	–6520.559 (4706.059)	–0.011 (3.539)
Observations	14	14	14
R-squared	0.568	0.590	0.591
Mean Dep. Var	877.281	10776.399	13.025
SD Dep. Var	722.949	12297.098	9.260
F-test (Prob > F)	15.779 (0.002)	17.248 (0.001)	17.318 (0.001)
AIC / BIC	215.275 / 216.553	293.899 / 295.178	92.506 / 93.784

(*** p < 0.01, ** p < 0.05, * p < 0.10. NPBT = Net Profit Before Tax; TA = Total Assets; EPS = Earnings Per Share; TB = Total Borrowings; OC = Owned Capital.)

The above **table 8** shows the regression analysis of capital structure and financial performance of TVS Motor Company. In the second column, the Total borrowed capital has a strongly significant and positive association with net profit before tax. With an increase of one unit of total borrowed capital associated with an increase of 1.136 units of net profit before tax. In the 3rd table, the total borrowed capital is very positively related to total assets and is also highly significant. This table indicates that total borrowed capital is a key driver of both growth and profitability for TVS Motor Company. A one-unit increase in total borrowed capital is associated with a 19.681-unit increase in Total Assets. The 4th column shows the regression analysis of EPS with the independent variables.

5. FINDINGS, SUGGESTIONS, AND CONCLUSION

5.1. FINDINGS:

For most companies (Ashok Leyland, Hero MotoCorp, Tata Motors, Bajaj Auto), debt has a significant negative relationship with profitability (NPBT and EPS). This suggests that increased borrowing often leads to higher interest costs, reducing net profit. TVS Motor is an exception, where debt positively and significantly correlates with NPBT, TA, and EPS, indicating effective use of leverage for growth and profitability. Hero MotoCorp shows a very strong positive relationship between owned capital and total assets, indicating that equity financing is a major driver of asset growth. Bajaj Auto exhibits a strong negative relationship between owned capital and all performance metrics (NPBT, TA, EPS), which may be due to high dividend payouts or share buybacks reducing the equity base. For other firms, owned capital has a limited or insignificant impact on short-term performance. Tata Motors uses debt to acquire assets, but this hasn't translated into profitability, likely due to high integration costs and interest burdens. Hero MotoCorp and Bajaj Auto rely more on internal financing and retained earnings, showing conservative financial policies. TVS Motor successfully uses debt to fuel growth and profitability. The regression models for NPBT and TA are generally significant and explain a substantial portion of variance (R^2 between 0.24–0.86). The EPS model is less explanatory, indicating that other factors (e.g., market conditions, operational efficiency) may also influence earnings per share.

5.2. SUGGESTIONS

Highly Leveraged Firms (e.g., Tata Motors, Ashok Leyland) should focus on Restructuring of debt to reduce interest burden. All high-leverage firms should focus on profitable investments to ensure borrowed capital generates returns exceeding the cost of debt, and consider the engagement of equity capital to improve financial stability and reduce risk.

Firms with Low Debt (e.g., Bajaj Auto, Hero MotoCorp) should evaluate opportunities for strategic leverage to fund growth without compromising

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financial health. They must optimise dividend policies to balance shareholder returns and retained earnings for future investments.

For TVS Motor Ltd , the company can continue leveraging debt effectively, but monitor debt levels to avoid over-leverage in volatile markets, and maintain strong operational performance to ensure debt continues to contribute positively to growth.

There are some General Recommendations that all companies may adopt a hybrid capital structure tailored to business cycles, growth phases, and industry dynamics. And use financial forecasting and scenario analysis to evaluate the impact of different capital structures on performance. They can also aim to improve cost efficiency to enhance profitability regardless of capital structure.

5.3. Conclusion

The study confirms that capital structure significantly influences the financial performance of automobile companies in India, though the nature and extent of this impact vary across firms. Debt generally reduces profitability due to interest costs, but can be beneficial if used strategically for growth, as seen in TVS Motor. Equity financing supports stability and asset growth, but may not directly enhance short-term profitability. The null hypothesis that "capital structure does not affect performance" is rejected. The study affirms that a well-balanced capital structure is crucial for maximising shareholder value, minimising risk, and ensuring sustainable growth. Future research could include more macroeconomic variables, longer time frames, and cross-industry comparisons to deepen understanding of capital structure dynamics.

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