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FINANCIAL STABILITY, PROFITABILITY AND GROWTH ANALYSIS: A STUDY ON SELECT INDIAN AUTOMOBILE COMPANIES

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Abstract *The financial ratios have a vital importance in making financial decision for well-being of companies. In this paper, various solvency, profitability, liquidity and efficiency ratios are measured for analyzing the present position of India's leading automobile companies. On the same time, by choosing five popular and well established companies, an attempt has been made to show whether the automobile industry were solvent for last six years and to what extent they are financially sound. A comparative study relating to GP, NP, ROCE and EPS of the five selected firms has been shown with analytical explanations. The study also reveals how to keep the long-term solvency position of the firms by improving their conditions after analyzing the solvency and efficiency ratios. The data has been collected from annual reports, publications, books and panel data from annual reports and various websites.*

Keywords: *Debt Equity, Efficiency Ratios, Liquidity Ratios, Profitability Ratios, Proprietary, Solvency Ratios, Turnover*

INTRODUCTION

Background

The Indian automobile industry has emerged as a core sector in the Indian economy. India is emerging as one of the fastest growing passenger car and two wheeler manufacturers. Global and Indian manufacturers are focusing their efforts to develop innovative products technologies and economic cars.

Frenchman Jean Joseph Etienne developed the first practical internal combustion engine in 1860, and later most notably Karl Benz and Gottlib Daimler produced gas powered vehicles that ultimately dominated the industry due to lighter and less expensive to build. In 1914 Henry Ford began to mass produce cars using assembly lines. In 1920 General Motors further changed the industry by changing the car design. The automobile industry now a hundred years old and it has been considered one of the main engines of industrial growth of the 20th century. Today's automobile contains 12,000 separate parts sourced from a highly competitive and diverse range of suppliers. Henceforth their financial records' are getting huge and complicated. The companies are required to maintain proper financial statements for calculation of earnings, cost control, cost reduction, and inter-firm comparison, trend of business and for other interested parties like creditors, lenders, researchers etc.

Financial statements are statements that contains summarized information of firm's financial affairs organized systematically. They are the end products of the accounting system. On the basis of information contained in the financial statements, the users predict the firm's earnings capacity and thereby make economic decisions regarding investment and financing.

Technically, financial ratios can be divided into several categories, sometimes overlapping with one another. A financial ratio is of the form X/Y, where X and Y are figures derived from the financial statements or other sources of financial information. In traditional financial ratio analysis both the X and the Y are based on financial statements. If both or one of them comes from the income statement the ratio can be called dynamic while if both come from the balance sheet it can be called static.

RATIO ANALYSIS

The ratio analysis is the most powerful tool of financial analysis. Several ratios calculated from the accounting data can be grouped into various classes according to financial activity or function to be evaluated. There was rapid

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expansion of financial knowledge in nineteenth century and to study this rapidly expanding knowledge analyst first compared similar items then moved further and compared current assets and liabilities as well with other ratios. In that period current ratio was the most significant ratio among all other available ratios. To analyze the operating results DuPont analysis is also used. The result divided into three parts and then compared with other companies to point out the problem and strong areas of business. Bliss (1923) says basic relationship within the business is indicated by the ratios and developed complete model based on the ratios. The purpose model was not mature but inspired others to start working on this theory.

Definition: Ratio analysis is the process of identifying strength and weakness in the various areas of an organization with the help of ratios of relevant accounting figures.

Importance:

- *Forecasting and Planning:* The trend analysis with the help of ratios is very much helpful in business forecasting and planning.
- *Budgeting***:** While preparing budgets of different functions, past ratios must be used as guide for harmonization among them.
- *Evaluation of Performance:* Activities of various departments can be evaluated with the help of ratios.
- *Communication:* Pertinent information can be communicated more meaningfully and systematically to the outsiders.
- *Measurement of Efficiency:* The technique of ratio analysis throws light on the degree of managerial efficiency for utilization of various assets.
- *Inter-firm Comparison:* The best way of inter-firm comparison is to compare the relevant ratios of the organization with those of the competitor or the average ratios of the industry.
- *Indication of Liquidity Position:* With the help of ratio analysis conclusions can be drawn regarding liquidity position that is short term debt paying ability of the firm
- *Indicating Long-Term Solvency:* Ratio analysis is also helpful in assessing the long-term solvency position that is long-term debt paying capacity of the firm.

Relevance of the Topic

Profit & Loss Account and Balance Sheet is the end product of financial accounting, while Profit & Loss Account reveals the results of operation of the business for a defined period of time, Balance Sheet reflects the financial position of the business at a point of ending the period. No meaningful inference can be drawn simply by looking at the absolute figures of the financial statement. An accounting figure becomes meaningful only when it is related to some other relevant accounting figure. Here arises the need of ratio analysis. Thus the present study has been selected.

LITERATURE REVIEW

Financial ratios are widely used for the purposes to calculate the profitability and financial condition of a firm or company. The firm involves many interested parties, like the owners, management, personnel, customers, suppliers, competitors and academics, each having their views in applying financial statement analysis in their evaluations. Practitioners use financial ratios, for instance, to forecast the future success of companies, while the researchers' main interest has been to develop models exploiting these ratios.

International

- Smith Jr. and Florida (1994) in their paper reveal the role of a particular type of agglomeration, the co-location of backward- and forward-linked manufacturing enterprises, in the process of industrial location.
- Boschma and Wenting (2007) in their article aims to describe and explain the spatial evolution of the automobile sector in Great Britain. Their analysis was based on a database of all entries and exits in this sector during the period 1895–1968. Cox regressions show that spinoff dynamics, agglomeration economies and time of entry have had a significant effect on the survival rate of automobile firms during the period 1895–1968.
- Gaiardelli, Saccani and Lucrezia (2007) in their study reveal that after-sales activities are acknowledged as a relevant source of revenue, profit and competitive advantage in most manufacturing industries. Top and middle management, therefore, should focus on the definition of a structured business performance measurement system for the after-sales business.
- Daniel Moses Joshuva (2012) focused on the financial status of Tata Motors Ltd Company has stable growth and also suggested to reduce the expenditure. Decrease in expenses will increase the profitability. Author also suggested that company should utilize its working capital efficiently.

National

- Moore and Atkinson (1961) point out the relationship between capacity to pay and financial ratios and shows

results of ratio analysis influence the borrowing ability of firms.

- Sorter and Becker (1964) examined the relationship between psychological model and corporate personality of financial ratios and find out that long-established corporation maintain greater liquidity and solvency ratios.
- Beaver (1966) also examined the prediction power of ratio analysis and point out ratios ability to predict failure as early as five years before the collapsed. Statistical technique used in the study was more powerful than earlier studies and fund statement data was used to calculate ratio. This study set the foundation for future research on ratio analysis.
- Horrigan (1968) says ratios analysis has come into existence since early ages and the main reason of the development of ratio analysis was its use in the analysis of the properties of ratios in 300 B.C. In recent time it is used as a standard tool for the analysis of financial statement. In nineteenth century main reasons of using ratio analysis are power of financial institutions and shifting of management to professional managers. Ratio analysis used for two purposes that are credit and managerial. In managerial approach profitability and in credit approach capacity of firm to pay debts is the main point of focus. Generally, ratio analysis is used credit analysis.
- Libby (1975) reduces an original 14-ratio set to five financial factors by a principal component analysis in connection with a bankruptcy study.
- Bird and McHugh (1977) adopt an efficient Shapiro-Wilk small-sample test for the normality of financial ratios for an Australian sample of five ratios over six years. Like Deakin they find in their independent study that normality is transient across financial ratios and time.
- Aho (1980) includes also cash-flow based profitability ratios in a factorization study for 24 financial ratios of 57 Finnish firms in 1967–76. His financial characteristic factors become financial structure, profitability, liquidity, working capital turnover and financial opportunities for investments.
- Barnes (1982) shows how the non-normality of financial ratios can result from the underlying relationships of the constituents of the financial ratios. He is thus able to tie in the ratio format aspects with the distributional properties of financial ratios (to be discussed later in review). In the discussion on Barnes's paper (Horrigan, 1983; Barens, 1983), Horrigan puts forward that financial ratio research should be more interested in the role of the financial ratios themselves than in "the nature of the ratios 'components or to the ratios' incidental role as data size deflators."
- Gombola and Ketz (1983) again found that the fund and income statement are produced for different purpose and profitability ratios did not has the information that cash-flow ratios provide. In other words both ratios gave important as well as different information from one and other.
- Gombola and Ketz (1983) include cash-flow based (adjusted for all accruals and deferrals) financial ratios in their factorization of 40 financial ratios for a sample of 119 Compustat firms for 1962–80. Contrary to the earlier studies, the cash-flow based financial ratios load on a distinct factor. The results are not sensitive to using historical costs vs. general price-level adjusted data.
- Another example is Richardson and Davidson (1984). Hutchinson, Meric and Meric (1988) also classify ratios with principal component analysis in a study attempting to identify small firms which have achieved quotation on the UK Enlisted Securities Market.
- Martikainen (1993) classifies financial ratios and tests their stability with transformation analysis in a study on identifying the key factors which determine stock returns.
- Deshmukh (2001) has categorized the methodology used in the literature into conceptual, descriptive, empirical, exploratory cross-sectional and exploratory longitudinal approaches. Based on this, some possible research issues are also identified, viz., resource-based operations strategy, relevance of manufacturing strategy to small and medium enterprises, manufacturing strategy in the context of green manufacturing and performance measurement.
- Chandra (2004) in his study saw India as their global manufacturing hub for small cars, and the government's new Auto Policy intends to build on, such developments. The government also anticipates undertaking policies that will reduce the environmental impact of automobiles, an issue that will be of escalating importance as the vehicle population in the cities and rest of the country continues to grow.
- Vikkraman and Varadharaja (2004) established that the automobile industry is considered to be one of the fastest growing sectors in any developing and even in a developed country. Due to its deep forward and backward linkages with several key segments of the economy, the automobile industry is having a strong multiplier effect on the growth of a country and hence is capable of being the driver of economic growth.
- Patel (2010) in his paper shows that Tata Motors has issued equity capital rather than going for preference share which means the company's dividend will not

be fixed but the company has provided a good amount of dividend to shareholders. Despite of having large reserves, company has opted for loan funds. The company had a good operating income which shows that the company has a sustainable growth.

- Tariq (2012), in his study has showed that Financial ratios are an excellent and scientific way to analyze firm's financial position. They are important indicators and are widely used to summarize the information in a company's financial statements in assessing and evaluating its financial health. Indian automobile industry moving on cyclical growth and showing the reflection of economic dynamics has been playing an imperative role in this radical phase and thus invite investigative analysis for smooth future.
- Ray (2012) in her study tries to evaluate the performance of Indian automobile industry in terms of various financial indicators, sales trend, production trend, export trend etc. for the period of 2003–04 to 2009–10. The result suggests that the automobile industry has been passing through turbulent phases characterized by enhanced debt burden, low utilization of assets, and above all, huge liquidity crunch. The key to success in the industry is to improve labour productivity, labour flexibility, and capital efficiency.
- Rana (2013) showed that Maruti Suzuki India Limited is India's leading & largest Passenger car manufacturer which accounting for nearly 50 percent of the total industry sales. With a view to cater the demand of all types of customer the company has variety of brands in its basket. The company has received ample awards and achievements due to its continuous innovations and technological up gradations.
- Azhagaiah and Sankaran (2014) showed that the automobile industry development of the nation and contribute to the considerable portion of Gross Domestic Product (GDP). The automobile industry has grown a reasonable capture in four wheeler companies in India play a vital role in economic segments in both passenger cars and commercial vehicles in rural and urban areas.

OBJECTIVES OF THE STUDY

- To study the profitability position through various ratios among the firms.
- To study the liquidity position through various related ratios for testing short term solvency of the firm.
- To study the solvency position through various related ratios to measure the long-term solvency position of the firm.
- To analyze the efficiency ratios or turnover ratios to measure how far the firms efficiently operating the stock, receivables, payables and total assets.

RESEARCH METHODOLOGY

Secondary data source:

The paper has been prepared by taking data from annual reports, publications, books and panel data which have collected from various websites.

After collection of data the solvency, liquidity, efficiency and profitability ratios have been calculated and to find out the mean and standard deviations of various ratios for drawing conclusions and recommendations.

This study comprises of;

- Inter-firm comparison are made between the automobile companies, chosen on the basis total assets are Tata Motors, Maruti Suzuki, Mahindra and Mahindra, Bajaj Auto Ltd, Hero Motors.
- Comparison has done on the basis of various available industry standards.
- Comparisons with respect to mean of last five years data of five companies are also done.

Categories of ratios to be calculated for analysis are:

- Liquidity Ratios.
- Solvency Ratios.
- Efficiency Ratios.
- Profitability Ratios.

After calculation the ratios are plotted in a bar diagram to analyze the trend of financial position of the companies.

This study of analysis and the calculations of the ratios have done from the data collected from the annual reports and panel data of last five years.

CONCEPTUAL FRAMEWORK

National Scenario

The Indian automobile industry has come a long way since the first car ran in the streets of Mumbai in 1898. In the beginning of the year the industry were characterized by unfavorable government policies. After liberalization and globalization in 1991 industrial policy had a salutary impact on automobile industry and on the Indian economy as a whole. Automobile industry in the country is one of the key sectors of economy in terms of employment opportunity that it offers. There are more than fifty companies in automobile industry in India that comprises all vehicles including two

wheelers, three wheelers, passenger car, multi utility vehicles, LCV, HCV, MCV, agricultural and earth moving vehicles. Since inception of automobile industry in India from 1942 to 1991 only 31 companies have been established while in post-liberalization period rest of the companies formed. The vision of Indian government is to establish a competitive automobile sector. In this regard the GOI has released many policies and provided many incentives to the automobile companies. To formulate reforms in the next generation the govt. emphasizing on greener cars, automotive research and development and also to improve vehicle safety.

India is a multibillion dollar market for automobile, accessories and components. In recent years there has been a marked rise in the number of international industrial concern is setting up a base in India. Currently the level of car ownership is moderate but with the increase in standard of living, this is expected to increase considerably in future.

In this chapter we analyze the financial performance of five leading automobile companies of India for reviewing the financial strength and challenges, and thereafter how improve and overcome those challenges for better performance in future.

International Scenario

The automobile industry has emerged as a major force for main industries like steel, iron, aluminum, rubber, plastic, glass and auto ancillary industries and on the other side down stream industries like transportation, insurance, banking and advertising. The international market is growing only two percent per annum and not expected to pick up due to the increasing levels of saturation in the larger car markets of the world. On the other side the worldwide trend is towards superior quality of the product and longevity which leads to slowdown in sales. The world car market leaders are mainly Japan and USA with around forty-two percent of the total world car market. Among the top car manufacturing companies General Motors and Ford Motors group of USA lead with a contribution fifteen and twelve percent respectively. Volkswagen and Toyota stand third and fourth to the world car production.

Automakers that have been enjoying a generally prosperous spell would have to rethink on the way of vehicle designing, manufacturing and distribution or sold. Already producers' like General motors, Volkswagen and Toyota have begun to reexamine their pricing strategy, research and development and their dealer relationship. On the other side some multinational companies like Daimler Benz's tie-up with Chrysier of the US, Ford's acquiring of Daewoo and tie-up with Volvo Car Corporation and Renault acquiring a stake in Nissan for economy in terms of cost and create significant new opportunities for growth.

SOLVENCY RATIOS

Debt Equity Ratio

This ratio expresses the relationship between debt capital and shareholders fund of the company. So it reflects the financial soundness of the firm. It indicates that dependence of firm on outside firm is high. In this case the firm is exposed to greater financial risk. This is because if the firm does not perform well for some reason it will face problem in payment of interest and repayment of principal in time. On the other hand a firm with low debt equity ratio will provide a high margin of safety to outsiders of capital. However debt capital is generally cheaper in favorable market condition a firm with high debt equity ratio can enhance the return of equity shareholders. The following formula has been considered for calculation of debt equity ratio generally.

Debt Equity Ratio = Long-Term Debt + Short Term Debt/ Shareholders Fund

Shareholders Fund = Equity Share Capital + Preference Share Capital + Reserve and Surplus

Table 1: Debt Equity Ratio of five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	1.63	1	1.06	0.83	0.85	0.81	1.03
Maruti Suzuki India Ltd	0.013	0.01	0.05	0.08	0.08	0.05	0.047
Bajaj Auto Ltd	0	0.01	0.01	0.01	0.02	0.05	0.076
Mahindra & Mahindra Ltd	0.135	0.16	0.22	0.24	0.26	0.27	0.1917
Hero Honda Ltd	0.356	0	0.02	0.09	0.15	0.19	0.098

From Table 1 it is clearly shown that more or less automobile companies capital structure basically on own (share) capital. Only Tata Motors Ltd same proportion of debt capital and equity capital in the year 2015–16 as in that year it was 1:1

and just preceding that year 2014–15 it was slightly more than that. On the other side if we consider the mean value of debt equity ratio of all the companies there are also it was less than one proportion to equity which implies companies are not at all interested for using the debt capital or rather gear up the capital. From Table 1 and graph it was clearly showing that Bajaj Auto Ltd. using minimum debt capital in the capital structure among the other companies.

Proprietary Ratio

It is the ratio of proprietorship fund to total assets and is generally expressed as a percentage or proportions. It indicates how much of total assets have been procured with ownership fund. It is the test of solvency position of the firm. Higher this ratio lower is the dependence on external fund and hence greater is the solvency of the firm. Therefore a high proprietary ratio is desirable from solvency point of view. However a too high proprietary ratio also indicates that the firm is conservative in using debt capital. In that case it cannot be able to get the benefit of trading on equity.

The Proprietary Ratio = Proprietary Fund/Total Assets

Proprietary Fund = Share Capital + Reserve and Surplus

Table 2: Proprietary Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	0.355	0.394	0.274	0.357	0.355	0.35	0.348
Maruti Suzuki India Ltd	0.709	0.69	0.7	0.68	0.69	0.68	0.69
Bajaj Auto Ltd	0.818	0.788	0.689	0.658	0.636	0.545	0.689
Mahindra & Mahindra Ltd	0.653	0.838	0.795	0.765	0.771	0.741	0.761
Hero Honda Ltd	0.688	0.985	0.985	0.939	0.837	0.708	0.857

From Table 2 and bar diagram we can find that Hero Honda Ltd using their proprietorship fund for acquiring near about ninety percent of total assets, on the other side Tata Motors Ltd using near about thirty five percent of proprietorship fund in total assets. It implies that Tata Motors using lower amount of proprietorship fund in total assets on the other side other automobile companies utilizing much more amount for acquiring such assets. It means other than Tata Motors Ltd all other automobile companies in our sample using internal funds which will ultimately strengthen the financial solvency.

Capital Gearing Ratio

This ratio expresses the relation between fixed income bearing capital and equity shareholders fund in the capital structure of the firm. Thus

Capital Gearing Ratio = Preference Share Capital + Debenture + Long-Term Debt/Equity shareholders Fund

A firm with Capital Gearing Ratio (CGR) more than one is called highly geared firm and vice versa. The implication of gearing ratio may be considered from the view point of long-term solvency of the firm and return of equity shareholders. High CGR means greater dependence of the firm on debt and preference share capital. It indicates that the firm has assumed a high degree of financial risk. The firm has to redeem this capital as per stipulated schedule and has to pay interest on debt at fixed rate regardless of the profit and pay dividend on preference capital at a fixed rate subject to availability of profit. However on the other side favorable market condition when the rate of return of the firm is higher than the average rate of interest and preference dividend, a high gearing ratio will be a blessing to the equity shareholders.

Table 3: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	0.712	0.62	0.65	0.47	0.41	0.43	0.549
Maruti Suzuki India Ltd	0	0	0.1	0.02	0.01	0	0.007
Bajaj Auto Ltd	0	0.01	0.01	0.01	0.01	0.02	0.01
Mahindra & Mahindra Ltd	0.102	0.1	0.17	0.22	0.24	0.24	0.179
Hero Honda Ltd	0	0	0	0	0	0	0

From Table 3 and bar chart of the five companies for five years we can analyze the situation of the companies. It is clearly showing that Tata Motors Ltd. has high geared capital compare to all other company on the other side Hero Honda Ltd has almost no geared capital and Mahindra and Mahindra Ltd has a moderately geared capital. Bajaj Auto Ltd and Maruti Suzuki India Ltd also have a very small amount of debt capital in their capital structure, which implies that they are like to utilize own capital for smooth running of business without paying the interest to outsiders.

Interest Coverage Ratio (ICR)

It is computed by dividing EBIT by the annual interest charges. Thus

Interest Coverage Ratio = EBIT/Annual Interest Charges

EBIT = Earnings Before Interest and Taxes

The interest coverage ratio indicates firm's ability to meet its interest obligations. It shows how many times interest is covered by earnings available for its payments. For safety high interest coverage ratio is preferable. However a too high interest coverage ratio may be the result of using a very small dose of debt capital in the capital structure. In that case the firm cannot avail the benefit of trading on equity. Again a too low interest coverage ratio may be the result of using excessive debt capital.

Table 4: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	-0.309	0.8	-1.47	-0.88	1.39	2.56	0.349
Maruti Suzuki India Ltd	112.2	81.18	21.62	19.32	14.77	35.74	47.47
Bajaj Auto Ltd	2733.97	11032.9	630.11	5677.67	3594.79	177.09	3974.42
Mahindra & Mahindra Ltd	32.866	28.24	20.45	17.86	24.26	23.16	24.47
Hero Honda Ltd	770.99	2044.99	301.16	243.58	189.68	135.49	614.32

From Table 4 and bar diagram of five automobile companies for five years it is clearly shown that Bajaj Auto Ltd. has a highest interest coverage ratio among other companies which is highly preferable from the companies view point as the company is able to meet the payment of interest in a right time which will ultimately helpful for getting loan in future from the market. Hero Honda Ltd. also has a very good number of interest coverage ratios. On the side Tata Motors Ltd have a minor interest coverage ratio and in 2014–15 and 2013–14 in these two years they have a negative interest coverage ratio and its mean value also during these five years is less than one which is not a financially healthy situation. So from the above discussion we can conclude that all the companies have an excellent or good interest coverage ratio except Tata Motors Ltd.

Liquidity Ratio

Current Ratio

It is the ratio of current assets to current liabilities thus,

Current Ratio = Current Assets/Current Liabilities

current assets = cash and those assets which are expected to be converted into cash shortly, generally within the year like sundry debtors, stock prepaid expenses etc. current liabilities are those which are supposed to be paid within a year such as creditors, bills payable, proposed dividend provision for tax, outstanding expenses maturing within a year. Current ratio measures short term solvency or liquidity position of the firm as a convention current ratio 2:1 is taken as standard which means that each rupee of current liability should be backed by current assets valued two rupees. If the actual value of current assets reduced to half, the firm will not face any problem in current liabilities. On the basis of following table and bar chart we are going to analyze the situation of five companies in last five years.

Table 5: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	0.581	0.56	0.49	0.43	0.44	0.5	0.50
Maruti Suzuki India Ltd	0.650	0.55	0.59	0.69	0.86	1.08	0.737
Bajaj Auto Ltd	2.923	0.93	0.76	0.75	0.85	0.76	0.978
Mahindra & Mahindra Ltd	1.317	0.81	0.92	0.94	0.88	0.82	1.2155
Hero Honda Ltd	1.821	0.71	0.66	0.51	0.41	0.25	0.642

As per Table 5 and graph that all the automobile companies in the sample have more or less close except Tata Motors Ltd and Hero Honda Ltd, in these two companies ratio is less than industries standard. On the other side M&M Ltd, Bajaj Auto Ltd, and Hero Honda Ltd. has near about .80:1 of their current ratio as per mean value of last five years. Good current ratio implies to meet its current obligation in time which will create goodwill of the company and helpful for getting short term credit from suppliers and bank as overdraft.

Acid Test Ratio

It is the ratio of quick assets to quick liabilities. It is a measure for judging immediate solvency position of a firm. Thus

Acid Test Ratio = Current Assets – Stock/Current Liabilities – Bank Overdraft.

Quick assets include cash, and those assets which are immediately convertible to cash like debtors, bills receivable, and marketable securities. Inventory is not considered quick asset as it's generally takes long period for realization. Bank overdraft is excluded from quick liabilities as it is generally used as a permanent source of financing by the firm. As a convention acid test ratio 1:1 is taken as standard indicating that each rupee of quick liability should be backed by quick assets of equal value. It is more penetrating test of liquidity than current ratio.

Table 6: Acid Test Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	0.355	0.358	0.343	0.239	0.361	0.578	0.3723
Maruti Suzuki India Ltd	0.42	0.28	0.29	0.59	0.63	0.81	0.5033
Bajaj Auto Ltd	2.697	0.91	0.65	0.57	0.69	0.74	0.87
Mahindra & Mahindra Ltd	1.088	0.71	0.76	0.81	0.67	0.65	1.0495
Hero Honda Ltd	1.66	0.5	0.56	0.39	0.41	0.24	0.53133

From Table 6 and bar diagram it is clearly showing that in 2015–16 the acid test ratio of Bajaj Auto Ltd is .91:1 which is very much close to as per industry standard, on the other side all other companies have less than that in 2014–15 M&M Ltd has the highest proportion of quick assets over quick liabilities compare to other companies. If we consider the mean value then also we will find that Bajaj Auto Ltd. and M&M Ltd. have a quick ratio of .70:1 (app) and all other companies in our sample have less than that which generally implies that for other companies quick assets are not properly backing the quick liabilities.

Efficiency Ratio

Inventory Turnover Ratio

This ratio is calculated by dividing cost of goods sold by the average inventory thus

Inventory Turnover Ratio = Cost of Goods Sold/Average Stock

By virtue of inventory turnover ratio the firm can understand that how many times stocks are consuming during a specified time. Higher of this ratio is highly accepted by the company.

Table 7: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	6.794	9.61	9.12	9.08	10.91	13.97	9.914
Maruti Suzuki India Ltd	17.504	22.43	25.11	27.53	26.99	24.6	24.027
Bajaj Auto Ltd	7.481	31.28	30.95	32.94	31.42	32.1	31.81
Mahindra & Mahindra Ltd	12.996	17.02	15.51	16.51	18.17	16.95	15.274
Hero Honda Ltd	32.17	41.46	39.46	41.58	39.11	42.04	36.108

From Table 7 and bar diagram it is showing that on an average all the companies have a good inventory ratio especially for Hero Honda Ltd, Maruti Suzuki India Ltd and Bajaj Auto Ltd. excellent inventory ratio shows higher production and bigger volume of sales which will ultimately generates the higher revenue for the companies. In this analysis in last five years average there is also showing that Hero Honda Ltd is the highest in turnover ratio and there after Bajaj Auto Ltd and Maruti Suzuki India Ltd which implies the companies are performing well in all aspects. This performance is highly acceptable and appreciable.

Debtors Turnover Ratio

It is the ratio of credit sales to average receivables thus

Debtors Turnover Ratio = Credit Sales/Average Receivables

When a firm sells goods on credit book debt is created. The book debt should be realized shortly otherwise companies fund remains blocked outside the business. So firms' liquidity that is the degree of ability to meet short term obligation is related among other factors, to quality of debtors. Higher debtors' turnover ratio means shorter average collection period which indicates efficiency in collection of debt.

Table 8: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	23.529	34.77	33.92	24.88	21.79	22.3	26.865
Maruti Suzuki India Ltd	61.459	55.11	44.4	33.86	40.78	44.83	46.74
Bajaj Auto Ltd	27.16	33.43	29.77	27.66	37.26	55.47	34.213
Mahindra & Mahindra Ltd	17.346	17.2	16.04	18.28	20.99	21.54	20.202
Hero Honda Ltd	21.687	23.09	25.37	34.25	54.75	125.27	46.68

From the above calculations in Table 8 and also the bar diagram shows that all the companies taken above have a good debtor's turnover ratio. In the last two years performance of Maruti Suzuki India Ltd is excellent which is near about 50 times. If we consider the mean value of last five years there is showing that Hero Honda Ltd. have slightly better from Maruti Suzuki India Ltd due to extraordinary performance in 2011–12. All other companies have a good turnover ratio which will increase the profitability and ultimately total growth of the companies.

Creditors Turnover Ratio

This ratio indicates number of times average creditors turnover in relation to purchase during the period. It reflects firm's ability to avail of credit facility from the suppliers. The formula applied for calculation for such ratio is

Creditors Turnover Ratio = Annual Credit Purchase/Average Payables

A low creditor's turnover ratio is apparently favorable as in that case firm enjoys lengthy credit period. However, low credit turnover ratio may not always be desirable because, it may damage the goodwill of the firm and also create uncertainty in future supply of materials. So this ratio is neither too high nor too low. If there is significant deviation from industry standard, action should be taken to make it conform to industry average ratio.

Table 9: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	5.158	8.11	8.11	7.6	9.36	11.77	8.35
Maruti Suzuki India Ltd	5.925	6.89	7.45	7.45	8.9	9.36	7.66
Bajaj Auto Ltd	6.861	9.36	9.13	7.77	8.3	8.49	8.148
Mahindra & Mahindra Ltd	4.599	6.64	6.52	7.02	7.77	7.16	7.0
Hero Honda Ltd	5.835	8.11	9.125	10.43	9.87	9.36	8.58

In Table 9 calculation and presentation it is showing that creditor's turnover ratio is lower than other two efficiency ratio which implies companies are getting higher credit period for paying their dues which is equivalent to an interest free credit facility. In the above calculation in the recent year Bajaj Auto Ltd. creditors' turnover ratio is slightly higher from Hero Honda Ltd but in initial year Hero Honda Ltd have a higher creditor's turnover ratio. If we consider the mean value of last five years there is also showing that almost all the companies have same creditors' turnover ratio which is approximately eight times.

Assets Turnover Ratio

This is the ratio of total sales to average total assets. Thus

Total Assets Turnover Ratio = Total Sales/Total Assets

Total assets turnover ratio indicates the degree of managerial efficiency in utilization of resources deployed in the firm. A high of this ratio reveals firm ability to generally larger volume of sales with respect to a given amount of total assets. On the other hand a low asset turnover ratio indicates inefficiency of utilization of assets. It will not only mean idle investments of assets but also cause unproductive expenses for depreciation, maintenance and upkeep of assets. A too high of this ratio may also be the result of overtrading by the firm. It is the situation when firm operates with resources less than commensurate with volume of operation. This is not a healthy practice as it is likely to disrupt the normal operation. A too low of total asset turnover ratio will also impair the profitability.

Table 10: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	.839	1.19	1.06	1.02	1.3	1.53	1.157
Maruti Suzuki India Ltd	1.515	2.5	2.3	2.24	2.64	2.54	2.289
Bajaj Auto Ltd	1.09	1.95	2.07	2.24	2.83	3.43	2.437
Mahindra & Mahindra Ltd	1.197	1.74	1.76	2.11	2.46	2.32	1.913
Hero Honda Ltd	2.099	4.2	4.65	4.55	4.26	4.5	3.893

From the Table 10 and graph it is clearly showing that Hero Honda Ltd have a good asset turnover ratio with respect to the other companies in our sample. In last five years data mean value also establishing that there is a consistent performance and almost double from the other companies which is very healthy from the companies view point. On the other side Tata Motor Ltd have a very poor asset turnover ratio compare to other companies. On the other side Bajaj Auto, Maruti Suzuki India Ltd and M&M Ltd have more or less satisfactory performance for utilizing the assets generation of revenue and profit.

Profitability Ratio

Gross Profit Ratio

This is the ratio of gross profit to net sales and is expressed in percentage. Thus

Gross Profit Ratio = Gross Profit/Sales*100

This ratio throws light at the degree of managerial efficiency in production, and sales performance. It speaks of ability of the firm to widen the gap between sales and cost of sales. A high gross profit ratio reveals that the firm is able to produce

goods at a relatively lower cost or it may be due to relatively lower cost or it may be due to relatively higher price. A high gross profit ratio is the indication of good management. On the other side low gross profit ratio may indicate higher cost of production, which is due to inefficient purchase, inept manpower planning, underutilization of capacity or fall in sale price which is beyond the control of management.

Table 11: Ratio of five companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	26.507	6.146	-3.778	3.046	4.451	5.428	6.966
Maruti Suzuki India Ltd	27.57	16.207	14.69	13.16	11.13	9.23	15.33
Bajaj Auto Ltd	29.74	25.09	20.13	23.92	22.17	21.36	23.89
Mahindra & Mahindra Ltd	25.44	16.909	14.02	15.725	15.44	16.807	18.107
Hero Honda Ltd	30.678	16.9	14.02	15.73	15.44	16.8	17.388

From Table 11 and bar diagram it is clearly showing that Bajaj Auto Ltd have a great gross profit ratio. If we consider the data of M&M, Hero Honda and Maruti Suzuki India Ltd they have almost same G.P. Ratio which implies all the companies management are running their business quiet efficiently and prudently. If we consider the mean value of these four companies there is also showing that the companies are maintaining same percentage of G.P. Ratio throughout the last five years which implies consistent performance of these companies. On the other side if we see the G.P. Ratio of Tata Motors Ltd which are very poor and in 2014–15 its came down to negative, and there average G.P. Rate of last five years is also very poor which implies company is going through a bad time.

Net Profit Ratio

This is the ratio of net profit to sales and is usually expressed in percentage.

Net Profit Ratio = Net Profit/Net Sales*100

This ratio indicates the efficiency of management manufacturing, administering and selling the product. This ratio is of special interest of owners as it states how much of sales is left for them after meeting all expenses. A high net profit ratio is enable the firm to withstand the hardship in adverse situation like falling selling price, increasing raw material cost or declining demand etc. a low net profit ratio is the danger signal of the firm. As the return to owner is poor the firm will find it difficult to raise further capital to expansion.

Table 12: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	-0.050	-0.477	-12.17	-3.435	1.366	3.014	-1.958
Maruti Suzuki India Ltd	9.496	7.72	6.49	5.62	4.75	4.12	6.366
Bajaj Auto Ltd	16.865	15.05	13.53	15.96	15.05	15.78	14.385
Mahindra & Mahindra Ltd	8.4	10.51	8.28	7.54	7.96	9.18	10.055
Hero Honda Ltd	10.94	10.51	8.28	7.54	7.96	9.18	8.645

From Table 12 and bar diagram it is clearly showing the performance of Bajaj Auto Ltd is exceptionally well compare to other company. On the other side Tata Motors Ltd is making a loss in last successive three years which is not a good result for a company. M&M, Hero Honda and Maruti Suzuki India Ltd performance also not remarkable but in 2015–16 the performance are more than average and the companies are gradually improving year by year which is also showing in the bar diagram.

Operating Profit Ratio

The ratio of operating profit to sales and expressed in percentage.

Operating Profit = Operating Profit/Sales*100

Operating Profit = Net Profit + Non Operating Expenses – Non Operating Income.

This can also be computed by subtracting the operating expenses from 100. The ratio indicates the extent of sales revenue available from interest, tax and dividend payments. Naturally the firm should aim at reasonably high operating ratio.

Table 13: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	-4.24	9.642	0.661	6.993	7.551	7.671	4.713
Maruti Suzuki India Ltd	12.866	16.348	15.09	13.56	11.57	9.39	13.137
Bajaj Auto Ltd	23.51	25.092	20.167	23.93	22.171	21.476	21.323
Mahindra & Mahindra Ltd	9.85	16.916	14.065	15.772	15.494	16.891	17.108
Hero Honda Ltd	15.1	16.91	14.065	15.77	15.5	16.89	14.83

From Table 13 and bar chart it is clearly showing that operating profit ratio is remarkable excellent in Bajaj Auto Ltd as usual and there after M&M Ltd, Hero Honda Ltd and Maruti Suzuki India Ltd again if we consider the data of Tata Motors Ltd it is showing that in current year profit percentage is improved significantly which is very much acceptable from companies view point.

Return on Capital Employed

It measures the overall efficiency with which the firm is being run by the management and is expected as follows

ROCE = Profit before Interest and Tax/Capital Employed

It indicates the earning capacity of the net assets. This is the barometer of the overall performance of the firm. To judge the adequacy of the return of investments it should be compared with industry average. If the rate of return of the firm is relatively poor, it would be very difficult to reward the investors for their investments. The investors will not take the management into confidence and the prospective investors will shy from investing in the firm. So action must be taken to improve the ratio.

Table 14: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	-0.0133	3.04	0	-3.2	5.11	8.06	2.166
Maruti Suzuki India Ltd	12.98	25.31	18.61	15.56	15.1	12.69	16.7084
Bajaj Auto Ltd	30.32	43	37.55	49.33	57.26	67.39	49.755
Mahindra & Mahindra Ltd	16.01	17.51	19.01	22.63	26.27	25.44	23.53
Hero Honda Ltd	44	59.81	53.03	48.23	37.53	51.47	44.347

From Table 14 and bar diagram it is clearly showing that return on capital employed is near about fifty percent in Bajaj Auto Ltd and Hero Honda Ltd. on the other side Maruti Suzuki India Ltd and M&M Ltd results are good but not too good as other two wheeler and three wheeler company. On the other side Tata Motors return on capital employed is very poor which is not acceptable from management, present shareholders and prospective investors view point.

Earnings Per Share

Earnings per share are the ratio of total earnings available to equity shareholders to the total number of equity shares.

Earnings per share = Earnings Available to Equity Shareholders/Number of Equity Shares

This ratio indicates profitability per share basis and is widely used by the prospective equity shareholders as guide to investment decision in the firm it is directly related to the performance of the firm as well as market quotation of the firm.

Table 15: Ratio of Five Companies for 2011–17

Company/Year	2016–17	2015–16	2014–15	2013–14	2012–13	2011–12	Mean
Tata Motors Ltd	-7.3	0.69	0	0.75	0.7	3.34	-0.303
Maruti Suzuki India Ltd	242.91	144.25	117.79	90.11	77.85	55.37	121.38
Bajaj Auto Ltd	132.30	115.02	87.29	103.58	97.53	96.51	111.508
Mahindra & Mahindra Ltd	66.70	51.82	54.44	61.9	55.22	47.16	67.14
Hero Honda Ltd	169.12	142.2	108.26	94.56	95.87	111.79	103.23

If we see Table 15 and bar chart of EPS we will find that Hero Honda, Maruti Suzuki India Ltd and Bajaj Auto Ltd result is exceptionally brilliant, M&M Ltd also has a good number in last five years also but again the result of Tata Motors Ltd is very poor due to weak performance in top line. The EPS will show the actual performance of the company and good EPS will have the positive impact on market price of the share and which will help to increase the shareholders fund for fundamental growth and generate prospective investors.

CONCLUSION

From the above analysis we can conclude that,

- Debt equity ratio of the automobile companies are not as per industry standard which is 2:1, this is due to companies capital structure mainly based on shareholders fund not on debt capital.
- If we consider the proprietary ratio of the companies then there will be a strong trend that almost all the companies are procured their assets from their proprietorship fund except Tata Motors Ltd.
- As the assets are procured from proprietors fund hence the companies is using minimum debt capital which implies low geared capital.
- The interest coverage ratio of all the companies has a very good result due to good earning capacity and on the other side very low amount of debt capital.
- In the case of current ratio it is clearly showing that this ratio is less than industry standard (2:1) which may be happened due to higher amount of current liability or lower amount of current assets.
- In acid test ratio the average or mean value showing that it is near about fifty percent of quick liability blocked by quick assets.
- Inventory turnover ratio signifies how efficiently stocks are used in production and in this study it has find that almost all the companies' stock turnover ratios quiet satisfactory.
- In this study, debtors' turnover ratio found that, all most all the companies' debtors' collection is very efficient except M&M Ltd which has slightly low as debtors are in a big value and they have given some relaxations for paying their dues.
- Creditors turnover ratio of the companies are very low which is very much desirable due the companies are getting one type of credit or loan facility without paying any interest.
- In asset turnover ratio we have found that companies are using efficiently their assets and to generate larger volume of sales especially for Hero Motors Ltd.
- In the case of gross profit ratio we have found that all the companies GP Ratio is quite satisfactory except in Tata Motors Ltd which may be due to high cost or low sale price of their product.
- After the analysis of net profit ratio it seems to be very low except Bajaj Auto Ltd. on the other side in Tata Motors Ltd it became negative which is not desirable in any circumstances. There may be a possibility of capital erosion which will damage the capital structure of the company.
- If we see the operating profit ratio it is also quite satisfactory except in Tata Motors Ltd.
- In the case of ROCE the maximum results generated by Bajaj Auto and Hero Honda Ltd. M&M Ltd and Maruti Suzuki India Ltd has also good amount of such ratio but its significantly very low in Tata Motors Ltd due to may be higher amount of debt capital or lower earning capacity of the company.
- In this study we find that EPS of all most all the companies in our sample produce very good amount of EPS which is highly desirable for the equity shares point of view except in Tata Motors ltd.

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