CHAPTER II
REVIEW OF LITERATURE

This chapter of the research report has been presenting review of literature related to financial performance of automobile companies in India and in other countries. The researcher has presented 65 reviews of related literatures in this chapter.

Santanu Kumar Ghosh and Paritosh Chandra Sinha (2007) in his study assessed can Firm’s capital structure Decision help an Investor (A Risk Averter or Risk Taker) A case study on Automobile Industry in India? The question of relevance of the capital structure in the context of Share holder’s value maximization remains unsolved as yet. In this paper the hypothesis is leverage variable can explain firm’s value maximization and the same has been tested in the context of the Automobile industries in India. Our results reveal that share holder’s returns very significantly with significant variance in firm’s dept levels. Firm are more conservative in maintenance of long-term dept to equity ratio than that of total debt to equity ratio. Increase in dept levels does not contain always good news to the investors and risk takers act differently.

Manor Selvi .A. and Vijaya Kumar.A (2007) in this study structure of profit rates in India automobile industries – a comparison an attempt has been made in this study to examine the trends of profit of selected Indian automobile

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Industries over the period from 1991-92 to 2003-04. It shows a declining trend in profitability of ten out of eighteen industries (55.55 per cent). India automobile industries studied here is a very big cause of concern. The falling tendency of profit rates of these industries is a proof of adverse effect of various control on prices, output, expansion and investment etc., extended by government on these industries over time.

Vijaya Kumar. A and Manor Selvi. A. (2008)\(^3\) made an attempt to find the relevance of Stem and Stewart’s claim and the hypothesis that MVA of the firm is largely positive associated with its EVA generating capacity in Indian context. The study also portray the temperament of association between MVA and other selected traditional financial variables like Earning Per Share (EPS), Return On Capital Employed (ROCE), Net Operating Profit After Tax (NOPAT) and Return On Net Worth (RONW). The result of the study reveals that supporting Stem and Stewart’s claim positively associates the relationship between MVA and EVA. Further, the results revealed ROCE as the most significant related variable with MVA followed by EPS and EVA. The study concludes that EVA and MVA itself positions in an appearance as the most outstanding factors in the definitive analysis as having a decisive on a firm’s value.

Ashima (2009)\(^4\) in his doctoral research work analysed financial performance of Maruti Suzuki India Ltd. and Hyundai Motors India Ltd. and

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compared the results. For this purpose the researcher used ratio analysis as financial tool and appropriate statistical tools for analysis. The study was based on secondary data and they were collected from annual reports and other sources. The study period was ten years from 1998-99 to 2007-08. The researcher described key findings of the study and recommendations in his research report.

Amuthan R and Ramachandram A (2009)\(^5\) undertook a study entitled “Inflationary Pressure on the Automobile Industry”. The researchers stated that Inflation is the relentless phenomena for every country in the world. In the third week of July 2008, inflation climbed to 11.98%. It may not have crossed the significant mark of 12%. The R.B.I. hoped to contain inflation with a 5 - 5.5% band. However, given the current scenario, RBI has got the target of 7% by March 2009. Stiff hikes in the repo rate and CRR will go a long way in reducing inflation. (Reference- Editorial Column, The Hindu dated Aug.5 2008). However, rising inflation coupled with depreciating US$ cause tight liquidity conditions and a slowdown in the global economy is an unexpected challenge for the policy makers across the globe.

Ashima and Chitkara (2010)\(^6\) in their study analysed financial performance of Maruti and Hyundai. Financial performance evaluation has been done on the basis of some selected parameters like Liquidity, Profitability, Efficiency, Leverage Ratios and Market Value Ratios for the period from 2000 to


2009. The comparison of the financial performance of Maruti and Hyundai revealed that Maruti was a better company in market valuation in comparison to Hyundai.

**Vivek Sharma (2011)**\(^7\) analysed Liquidity, Risk and Profitability of Maruti India Ltd. The study was ten years from 2001 to 2010. The collected data were analyzed using various ratios and the researcher also applied t test. The study found that profitability of Maruti Suzuki India Ltd was satisfactory. The liquidity position of the company was fluctuating but was acceptable. The study also evidenced that the profitability was increasing at good pace showing the efficiency of the company.

**Vijayakumar (2011)**\(^8\) in their study examined the relationship between liquidity and profitability of automobile companies in India. The study period was 13 years from 1996-97 to 2008-09. Sample size of the study was 20 companies. The companies under automobile industry were classified into three sectors namely; Commercial vehicles, Passenger cars and Multiutility vehicles and two and three wheelers. The study applied correlation and multiple regression model as statistical tools. The study found a significant negative relationship between profitability and Accounts Receivable Period (ARP), Inventory Conversion Period (ICP) and Cash Conversion Cycle (CCC) for a sample of Indian automobile industry. The researcher suggested that managers could create value for their

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shareholders by reducing the number of days of accounts receivable and inventories to a reasonable minimum.

**Vijayakumar (2011)** in his study made an attempt to examine the relationship between firm structure and profitability of Indian automobile companies. The study considered the variables of firm size, growth, liquidity, leverage, age, post profitability, market share and capital-output ratio. The study employed regression model and ratio analysis as tools of analysis. Sample size of the study was 20 automobile firms in India. The results demonstrate that firm size and growth were important determinants of profitability in the Indian automobile industry and a positive relationship was found between profitability and firm size and growth.

**Sanjay and Butalal Ajmera (2011)** in their study analysed financial leverage, earnings and dividend of Maruti Suzuki India ltd. The study period was eight years from 2001-02 to 2008-09. For the purpose of analysis, the researcher used ratio techniques and correlation-co-efficient and ‘t’ test as statistical tools. The study found that dividend payout was in decreasing trend during the study period. The company was enabling to maximize the EPS by the reverse operation of financial leverage. The company successfully pulled down the degree of financial leverage to reap the EPS advantage.

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Vijayakumar (2011)\textsuperscript{11} in his study analysed the determinants of profitability of Indian automobile industry. The study period was nine years from 1991-92 to 2003-04. Sample size of the study was 18 automobile companies. The study found that the selected variables explained 99 per cent of variation in profitability in Indian automobile industry. It was also evident from the results that size was the strongest determinant of profitability followed by the variables of vertical integration, past profitability, growth rate of assets and inventory turnover ratio. The selected variables had both positive and negative contribution in variation of profit rate.

Nishi Sharma (2011)\textsuperscript{12} in a study analysed the financial performance of Indian Automobile Industry. For this purpose the researcher selected four automobile companies in India for a period of 10 years from 2001-02 to 2010-11. The selection of the company was done on the basis of their market share. The study found that the financial performance of Mahindra & Mahindra Limited as well as Tata Motors was very satisfactory in terms of profitability as well as managerial efficiency to generate sales from the use of assets. But their liquidity positions were not so sound. The liquidity position of commercial vehicle manufactures was better than passenger vehicle manufacturers. The financial performance of Ashok Leyland was comparatively poor. A better long term solvency scenario for passenger vehicle industry Maruti Suzuki and commercial


vehicle industry VST Tillers was found. The performance of Hindustan Motors, from the passenger vehicle segment, is not very satisfactory.

**Pasupathi (2012)** in his study made an attempt to study the Operational Adequacy of Working Capital Management of Selected Indian Automobile Industries. It covered seventeen major units in the automobile industry. The study period was 15 years from 1992-93 to 2006-07. The study used a variety of financial ratios to accomplish the objectives and used discriminant analysis to examine the adequacy of working capital. The results of the study showed that the size of net working capital in terms of monthly operational requirements appeared to be stronger than sales requirements in all the years. In the years 1992-93 to 2006-07, Ashok Leyland Ltd in commercial vehicles sector, Mahindra and Mahindra Ltd. in passenger cars and multiutility vehicles sector and Bajaj Auto Ltd in two and three wheelers sector units maintained adequate size of the working capital throughout the period under study.

**Velmathi and Ganesan (2012)** in his study made an attempt to examine the inventory management of commercial vehicle industry in India. Five Commercial vehicle companies were selected for the purpose of the study namely, Ashok Leyland Ltd. (ALL), Tata Motors Ltd. (TML), Force Motors Ltd. (FML), Eicher Motors Ltd.(EML) and SML Isuzu Ltd.(SML). The period of the study selected was ten years from 2000-01 to 2009-10. The researchers used Mean,

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Standard Deviation and Co-efficient of variation, Linear Regression Analysis and Karl Pearson’s Co-efficient of Correlation as statistical tools. The study found that inventory of all units in the Indian commercial vehicle industry was very good in their management of inventory. A strong correlation was found between inventory and sales. It was also found that the Inventory is the largest asset among current assets in manufacturing concerns.

Dhanabhakyam and Kavitha (2012)\textsuperscript{15} analyzed the efficiency of asset utilization by selected automobile companies. The researchers used Ratio Analysis and Correlation Analysis as tools of analysis. The study found that the selected automobile companies performed well in efficient utilization of asset and financing pattern of asset and this will help the companies to take the important financial decisions on the fixed and current assets.

Dharmendra and Mistry (2012)\textsuperscript{16} in their study ascertained the determinants of profitability in Indian automotive industry. The study was undertaken for a period of five years from 2004-05 to 2008-09. This study used descriptive analysis and ratio analysis. Size, Liquidity, Inventory Turnover Ratio and Debt-Equity Ratio were found to be dominants in determining profitability of Indian Automobiles Industry. The study also found that DE, ITR and SIZE were the most important determinants of the profitability which affected the profitability of the companies under the study positively. Liquidity was found to have negative


effect on the profitability. DE was the most important determinant of profitability of the automobiles industry because its regression coefficients were the highest and found statistically significant for most of the years under the study which suggested that there was a positive relationship between profitability and DE.

Amir Hossein Jamali and Asgharasadi (2012)\textsuperscript{17} in their study investigated the relationship between the management efficiency and the firms’ profitability. A sample of 13 auto manufacturing companies listed on the Bombay Stock Exchange were selected for the study for a period of 5 years from 2006 to 2010. The researcher applied Pearson’s Coefficient Correlation test and Ratio Analysis as tools of analysis. The study found that the calculated GP ratio for Indian companies shows that auto line industries and ASAL Ltd had highest gross profit of Indian automobile industries in Pune city and the asset turnover ratio of the selected companies for Maharashtra Scooters and kinetic engineering were highest in this matter which clearly indicated that the management team of these two companies were more effective to create more profit. Based on the results, the study concluded that profitability and management efficiency were highly correlated to each other.

Tariq Zafar and Khalid (2012)\textsuperscript{18} analyzed qualitative and quantitative performance of Maruti &Tata Companies to investigate their risk and returns factors. The Study found that Maruti had better strategic position in comparison to

\textsuperscript{17} Amir Hossein Jamali and Asgharasadi, (2012), Management Efficiency and Profitability in Indian Automobile Industry: From Theory to Practice, Indian Journal of Science and Technology, Vol. 5 No. 5, pp. 2779 – 2781.

its competitor in all the respective ratios. It had secured top position in Liquidity analysis, in profitability analysis in relation to sales and in relation to investment, in efficiency analysis, in leverage analysis, in market valuation and has secured first rank. Tata on other hand, with almost second rank in all the respective analysis, has secured second position.

Rajavathana and Ganesamoorthy (2013)\textsuperscript{19} in their study analysed the working capital performance of selected automobile companies in India using Ratio Analysis and Y-Score model. The study found that TATA Motors Ltd. and Mahindra and Mahindra Ltd. suffered by negative working capital for six and two years respectively. These companies did not have current, liquid and absolute liquid ratios as per the standard norms in majority of the years of the study period. The results showed that these companies did not perform well in terms of working capital management. The study also found that on the basis of the results of Y-score model, the working capital management of both the companies was good during the first half of the study period, but during the second half of the study period it was not good.

Muninarayanaaappa and Shruti Aggarwal (2013)\textsuperscript{20} in their study analysed the impact of sources of finance and the cost of capital on the company’s liquidity and the profitability with special reference to Mahindra and Mahindra Ltd. for a period of five years from 2005 to 2009. The researcher used secondary


data for this contrived study setting. The study used t-test, Ratio Analysis, Trend Analysis, Correlation and Regression. The study found that Mahindra and Mahindra Ltd. was a low debt company signifying its dependence mainly on its internal accruals for its financial requirements. Mahindra and Mahindra Ltd. continued to strengthen its financial position by channelising these internal accruals to fund its expansion programmes.

Ganesamoorthy and Rajavathana (2013)\(^{21}\) in their study attempted to know the relationship between working capital management and profitability of selected automobile companies such as Tata Motors Ltd. and Mahindra and Mahindra Ltd. Working capital management of both the companies had insignificant relationship with profitability. Current ratio of Tata Motors Ltd. had positive relationship with profitability, whereas it had negative relationship in case of Mahindra and Mahindra Ltd. Average Collection Period and Average Payment Period had negative relationship with profitability of both the companies. The inventory Conversion Period of Tata Motors Ltd. had positive relationship with profitability, but in case of Mahindra and Mahindra Ltd it was negative relationship. Cash Conversion Cycle of both the companies had positive relationship with profitability, but the quantum of Tata Motors Ltd was higher than Mahindra and Mahindra Ltd. It was summarized that the working capital management had insignificant relationship with profitability of Tata Motors Ltd. and Mahindra and Mahindra Ltd.

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Muruga Ganesh and Mathivathani (2013)\textsuperscript{22} compared the firms Tata Motors and Ashok Leyland for a better understanding of the wealth creation of the two organisations. The objectives of the research were to measure and compare the wealth of the selected automobile industries and to provide the suitable suggestion for the selected industries and for the investors for their Wealth Maximization. The study evidenced that the stock market was sometimes highly volatile. The share price of automobile sector was highly fluctuating. The researchers suggested that the company might improve the cash flows by improving its sales performance, so that the company might obtain the constant and positive return in the future. The company might reduce its cost of capital further by altering its capital structure to improve the economic value of the shareholders.

Singh (2013)\textsuperscript{23} in this study made an attempt to investigate the relation between return on capital employed and various components of working capital. The researcher considered return on capital employed as a measure of profitability which was a dependent variable. The researchers selected 12 companies from automobile sector. The study period was twelve years from 1999 to 2010. The researcher used Correlation Analysis, Ratio Analysis and Regression Analysis as tools of analysis. The researcher found that working capital turnover ratio (WCTR), current ratio (CR), day’s inventory outstanding (DIO) and day’s sales outstanding (DSO) were negatively correlated at 1\% significance. Inventory


turnover ratio (ITO), sales to turnover ratio (STAR) and SIZE of the firms were positively related to profitability at 1% significance. But current ratio (CR), and cash conversion cycle (CCC) was thought negative but at 5% significance level. However he observed no relationship between net working capital ratio (NWCR) and profitability of the firms in automobile industry.

Dharmaraj and Kathirvel (2013) in their study assessed the financial strength of the automobile industry. Analysis of variance was used as statistical tool. The study found that financial performance of Atul Auto Ltd, Ashok Leyland, HMT Ltd, Tata Motors Ltd, and SML ISUZU Ltd were highly improved as compared to the group average value for all ratios. In India there was a huge scope for automobile companies. They were financially strong and they were growing at the rate of 17% per annum and contributing to the Indian economy reasonably. The results of this study implied that it might be necessary for all companies to take all required decisions to enhance their financial position.

Moses Joshuva Daniel (2013) in his study analysed the overall financial status of the TATA MOTORS LTD. The study was undertaken for the period of 5 years from 2006-07 to 2010-11. In order to analyse the financial status in terms of profitability, solvency, activity and financial stability various accounting ratios were used. Finding of the study showed that the company’s financial performance was satisfactory. The company had stable growth and it showed a greater status in all the areas it worked. The company was suggested to reduce the expenditure as it

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increased every year. Decrease in expenses would increase the profitability. Amount of net profit increased but the net profit ratio decreased.

**Vijayakumar and Sri devi (2013)** attempted to analyse the relationship between size and profitability, and growth and profitability of the selected Indian automobile companies. The period of study was 13 years from 1996-97 to 2008-09. The analysis of the relationship between firm size and firm profitability in two and three wheelers sector companies found firm size affecting profitability. The results showed negative and significant evidence in two and three wheelers sector companies. Among the various companies selected for the study, some companies showed positive relationships while others did not. Therefore, while bigger firms performed better, the opposite held true in two and three wheelers sector companies.

**Dharmaraj and Kathirvel (2013)** made an attempt to find out the effect of FDI on the financial performance of Indian Automobile Industry. For this purpose, sixteen companies were selected and analysed through various financial ratios. Descriptive statistical tools like Mean, Standard Deviation and Student’s paired ‘t’ test were used to test the hypothesis. The liquidity analysis showed little changes, and profitability analyses showed an increasing trend during post FDI when compared to pre FDI. The efficiency analysis showed that the companies were efficiently utilising the available resources during post FDI as compared to

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pre FDI. It concluded that foreign direct investment in India made positive impact on the financial variables of the Automobile Companies.

**Kokila (2013)**\(^{28}\) focused on financial measures using z-scores with special reference to Bajaj auto limited. The period of study was five years from 2009 to 2013. Two kinds of tools were used. They are statistical tools and financial ratios. The statistical tools used in this study extensively are: Arithmetic Mean and Correlation. Various kinds of ratios were used as the financial tools for the purpose of analysis. Altman Z-Score calculation was helpful to estimate the probability of business bankruptcy of a company. In determining a company’s financial health, Bajaj Auto Limited could be considered as “Safe” company which clearly indicated that it had a low probability of bankruptcy as Altman Z-Score was greater than 3.0. This Z score helped the company to judge financial soundness of the company.

**Ying Deng (2013)**\(^{29}\) in this study examined the operational and financial performance of automobile firms in China and India through a range of accounting ratios. The study consisted of financial data of 8 public companies, four from each country, for a period of six years from 2007 to 2012. The results of this study showed that contrary to public perception, the performance of Chinese automakers measured in terms of their profitability, inventory management, liquidity and solvency, had improved in the period from 2007 to 2012 while that of Indian automakers has continually declined over this period. The study found that

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profitability of the Chinese auto manufactures was higher than that of the Indian auto manufactures and was stable in recent years while the profitability of Indian automakers was on the decline. Profitability of Chinese automakers was largely due to the increase in their profit margin and assets turnover, while the decline in the profitability of the Indian automakers was due to the continuous drop of their profit margin ratio and their inability to increase the level of efficiency in relation to their asset utilization.

Pratibha Jain and Megha Mehta (2013)\textsuperscript{30} studied profitability position of the selected automobile companies in India for a period of five years from 2009 to 2013. The researchers selected 5 automobile companies. The study found that the Indian automobile industries performance was not similar in terms of their profit levels. Profitability analysis was considered as a measure of creditworthiness of the owners, proper usage of resources and efficiency of management of the company. Some relationship was existed between Maruti Suzuki & Tata Motors in terms of profitability. Hero MotoCorp performed very well with the use of new technology and skilled manpower. Tata Motors was a poor performer due to increased manufacturing overheads and cutthroat competition. All selected companies were maintaining different levels of return on their investment.

Arindam Das and Mahasweta Roy (2013)\textsuperscript{31} made a study to analyse the relationship between Economic Value Added and financial performance of automobile companies. It was observed that no effective set of ranking could be


\textsuperscript{31} Arindam Das and Mahasweta Roy (Dutta), (2013), Eva\textsuperscript{tm} and Traditional Financial Measure of Business Performance: A Study on Nse ListedAutomobile Companies, Vidyasagar University Journal of Commerce, Vol. 18, pp. 1 – 14.
formed because the ratios were not dependent on each other. It was also found that the correlation between EVA with profitability and efficiency was positive and statistically significant, but liquidity had no impact on EVA for the sample companies. So the researchers concluded that the information based on EVA was not different from the information based on profitability and efficiency ratios at least in case of their sample companies. To draw more accurate inference in this field, EVA could be computed by making more necessary adjustments on the basis of large number of companies in other industries.

**Saravanan and Abarna (2014)**\(^{32}\) undertook a Study on Liquidity Analysis of Selected Automobile Companies in India. The study covered a period of 5 years covering from 1997-98 to 2012-13. The study selected five automobile companies as sample of the study namely, Ashoak Leyland, Eicher, Forcec, SML and TATA motors. The researcher used Ratio Analysis as appropriate statistical tools. The researchers found that the liquidity ratios concerned with the performance of force motors was better and other companies were to improve their liquidity and turnover for the better performance. A cautious attention had to be paid as far as the liquidity was concerned to improve the profitability.

**Jisha Joseph (2014)**\(^ {33}\) made an attempt to examine the working capital trends and practices of Ashok Leyland. This study covered 10 years data from 2004 to 2013. The researcher applied Ratio Analysis, Regression Analysis,

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Spearman’s Rank Correlation Co-efficient and Student t-test as tools of analysis. The study concluded that the firm had to give little importance to the issues related with working capital. It might be of the reason that the amount and risk involved in capital investment decision were very high. The company suggested that the study must improve its present liquidity position to remain stable at the time of discrepancies or recession.

Prabhakaran and Nazirin Banu (2014)\textsuperscript{34} undertook a study to analyse the overall financial performance of TATA Motors by using financial ratios. The researchers also used Regression, Correlation Analysis and Least Square Method as statistical tools. The study covers a period of seven years between 2006-07 and 2012-13. It was found that the financial status of TATA Motors Ltd was satisfactory. The company had stable growth and it showed a greater status in all the areas it worked. Net Profit of the company deceased during the study period. Utilisation of working capital of the company was efficient.

Gowri and Sekar (2014)\textsuperscript{35} focused on a comparative analysis of financial performance of automobile companies in India. For this purpose the four wheeler automobile companies listed in NSE (CNX Auto) were selected. The study covered a period of 10 years period from 2003–04 to 2011-12. Altman’s Z score was applied to assess the financial performance of the selected companies. By analyzing the values of Z Score, Mahindra and Mahindra Limited and Ashok


Leyland had not reached the average Z Score value throughout the study period. Z Score value of Tata Motors stood above the average for the first two years and then it started declining. The average Z Score value of all the 10 years was high for Maruti Suzuki Ltd. The results also showed that all companies underperformed after the Global Crisis and were trying to overcome the fall.

**Dharmaraj and Velmurugan (2014)**\(^{36}\) studied the determinants of profitability in Indian automobile industry using Multiple Regression Analysis. The period of this study covered fifteen years from 1998 to 2012. The researcher selected 16 automobile companies as sample of the study. The findings of the study strongly suggested that Foreign Direct Investment yielded significant performance improvements. Almost all the select companies in the Automobile Industry were made foreign collaborations after liberalization of FDI policies which lead to increase in performance of this industry. The study also suggested that Government should encourage export of this industry by providing required infrastructure and reliefs to enhance performance. It should continue the importance given to this industry to have a better growth of the country’s economy.

**Apurva and Chauhan (2014)**\(^{37}\) in this paper attempted to study the fundamental analysis of Indian automobile industry with reference to the selected companies. The fundamental analysis considered various factors such as


development of the economy as a whole, development in the industry, past performances of the company, and future prospectus of the company for finding the value of the stock of the company. The findings of the study revealed that although the GDP of India was declining, the production of total number of vehicles in the Industry was in increasing trend. They also found that the major strength of the Indian automobile industry was large domestic market and availability of cheap labour. The raising demand from rural areas of India was acting as the opportunity in expansion of the market. Maruti Suzuki India’s performance was comparatively better than Tata motors Ltd in terms of earning per share, return on capital employed and current ratio.

**Subhamathi (2014)**[^38] made a study to analyse the financial performance of Ashok Leyland. It analysed liquidity, activity and profitability of the company using ratio analysis. The study covered a period of five years from 2006-07 to 2010-11. It was found from the study that Gross Profit and Net profit positions were good. The liquidity position of the company was not satisfactory and it should be increased. Long term solvency position of the company was satisfactory. On the whole overall financial performance of Ashok Leyland was good.

**Latasri (2014)**[^39] undertook a study on the financial performance analysis of Ashok Leyland company Ltd. The researcher used Ratio Analysis, Common - size Statement, Comparative Statement and Trend Analysis for analyzing data. The


study found that the financial performance was fair. It was maintaining good financial performance and further it could improve if the company concentrated on its operating, administrative and selling expenses and by reducing expenses. Despite the price drops in various products, the company was able to maintain a good of market share to make strong margins in market, contributing to the strong financial position of the company.

**Suguna and Thilakam (2014)**\(^{40}\) in their study analysed the financial health of the Commercial Vehicle Industry in India. The researcher used the Altman’s Z-score model to predict the risk of financial distress of the select companies. The study covered a period of 7 years from 2006-07 to 2012-13. It was found from the analysis that the financial health of the TATA Motors Limited was at healthy zone during 2007-08 and 2011-12 and too healthy zone in 2006-07. It is also revealed that the financial health of Suzuki Motors Limited and ASHOK Motors Limited lay both between healthy zone and too healthy zone during the study period. The financial health of the Force Motors Limited was never on the bankruptcy zone except in the years 2007-08. Although ‘Z’ scores in Motors Limited EICHER Motors Limited witnessed a fluctuating trend during the study period, it had never reached the bankruptcy zone.

**Pavitra Yadav and Anita (2014)**\(^{41}\) made a comparative analyse about the financial position of the selected automobile companies of India. Technique of


ratio analysis has been applied to assess the financial position of the companies for the period of four years from 2010 to 13. The study evidenced that the Tata Motors was showing the worse position in terms of profitability and liquidity position, where as the condition was good in case of other selected companies. Profitability of Bajaj Auto Ltd. Was the best among the selected firms.

**Dharmaraj (2014)** made a study to analyse the financial performance of the selected automobile companies in India. The study used Ratio Analysis and CAGR as tools of analysis. The period for this study covered fifteen years from 1998 to 2012. The sample size of the study was 16 automobile companies. The results showed that CAGR of Sales in Companies namely Ashok Leyland Ltd., Hero Motocorp Ltd., Hyundai Motors Ltd., Maharashtra Scooters Ltd., Maruthi Suzuki Ltd., and Tata Motors Ltd. were highly increased. The study also stated that the overcapacity problem was haunting many of the players as demand might not go up significantly. Hence, many players were looking for an external market for Indian automobiles.

**Sumesh Kumar and Gurbachan Kaur Bhatia (2014)** in their study measured the financial performance of the two major automobile companies of Indian origin, namely, Tata Motors and Maruti Suzuki. The researcher used Ratio Analysis as financial tool. The period of this study covered twenty one years from 1992 to 2013. The study found that there was not much difference in the

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companies in short term solvency and liquidity and in profitability. The long term solvency of both the firms was different as the t values of debt equity ratio and equity ratio were significant that means both the firms were different in meeting their long term obligations and long term solvency. The efficiency of utilizing the assets was also different in both the firms as the turnover ratio comparison of both the firms showed the significant difference in the efficiency of both the firms.

**Kamlesh and Dave (2014)** studied the trend analysis of capital structures in Indian Two Wheeler Automobile Companies. The researcher used Ratio Analysis as tools of analysis. The Period of the study covered 11 years from 1999-2000 to 2009-2010. The findings of the study revealed that the ratios of Bajaj Auto Ltd were better than that of Hero Honda Motors Ltd. The capital structure of both the companies showed that they had reached ‘Saturation Point in the segment’. The study concluded that the capital structures of both the selected companies were satisfactory, Bajaj Auto Ltd. was more consistent in its performance than that of Hero Honda Motors Ltd.

**Muruganandam and Natarajan (2014)** in their study made an attempt to know the relationship between the working capital management and the profitability of TVS Ltd. The period of the study was four years from 2010 to 13. The study evidenced that the financial status of TVS Ltd. was good. In the last year the inventory turnover had increased, this was a good sign for the company.

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The company’s liquidity position was very good. With regard to the investments in current assets, there were adequate funds invested in it. The study also suggested that care should be taken by the company not to make further investments in current assets, as it would block the funds, which could otherwise be effectively utilized for some productive purpose. On the whole, the company was moving forward with excellent management.

**Buvaneswari and Kanimozhi (2014)**\(^{46}\) in their study made a comparative Analysis was made between liquidity and profitability of Indian Car Industry. The study used Ratio analysis, Z - Score Analysis as tools of analysis. The period of the study was 5 years from 2008 to 2013. It was found that the financial performance of the Hindustan Motors Ltd. was much less appreciable than Maruti Suzuki India Ltd. The study revealed that the financial performance of Maruti Suzuki India Ltd. was comparatively better than the Hindustan Motors Ltd. and it was able to maintain optimal cost positioning. The study also found that the company was able to meet its entire requirements for capital expenditures and higher level of working capital commitment with higher volume of operations and from its operating cash flows.

**Arijit Ghosh (2014)**\(^{47}\) in a study attempted to analyse the efficiency of fund utilization, both debt and equity, by relating returns to the respective stakeholders supplying the funds as well as the efficiency of working capital in


generating sales of automobile companies in India. The study employed Super Efficiency Model and Factor Analysis as tools of analysis. Based on efficiency measurement and factor score, the companies were then ranked. The study stated that with the help of efficiency scores generated by DEA and subsequent factor analysis it was able to identify comparatively technically efficient automobile companies. Thus, inefficient companies could be identified and proper measures could be undertaken to be at par with the efficient firms. Keeping in mind the constraints of DEA, choice of input and output variables are very crucial.

Sanjay Hiran and Mahendra Sojatia (2014)\textsuperscript{48} in their paper, measured the relationship between capital structure and financial performance of automotive companies in India. The period of the study was five years from 2008-09 to 2012-13. The researchers selected nine companies as sample of the study. The selected companies are Ashok Leyland Ltd., Hero MotoCorp Ltd., TVS Motor Company Ltd., Bajaj Auto Ltd., Mahindra & Mahindra Ltd., Maruti Suzuki India Ltd., Tata Motors Ltd., Force Motors Ltd. and Eicher Motors Ltd. A Linear Regression Model was applied as statistical tool. The researchers evidenced that there was negative and low degree of relationship between the variables under study. This implies that there were many other elements and factors apart from debt equity ratio (capital structure) which determined and affected the financial performance of the companies under study.

Momina Bushra and Kushendra Mishra (2015)\(^{49}\) attempted to study the financial health of the automobile industries in India. The researchers selected five automobile companies as sample of the study viz., Bajaj Auto, Mahindra & Mahindra, Maruti Suzuki India, Tata Motors and TVS Motor Company. Altman Z Score Model was used to predict the financial health of the select automobile companies. Statistical techniques like Mean, Standard Deviation and ANOVA (one way) were also used. Period of the study was five years from 2010 to 14. The findings of this study revealed that Z scores for all the select automobile companies were more than 2.9 during the study period except Tata Motors which according to the study had Z score between 1.8 and 2.9 during the year 2010 and 2011. Hence, at present they all are financially sound. The study concludes that the overall financial health of all the companies was good.

Nandhini and SivaSakthi (2015)\(^{50}\) in their study analysed the impact of leverage on profitability of the TVS Motor Company. The researcher used Ratio Analysis as tools of analysis for the study period of five years from 2008-2009 to 2012-2013. The study found that the company’s overall financial and operating efficiency was satisfactory. The researcher also found that the company suffered from certain weakness and has given some suggestions to overcome it.


Ying Deng (2015)\textsuperscript{51} aimed to examine the operational and financial performance of the four largest automobile manufacturers in China and India through an analysis based on accounting ratios. The study period was six years from 2007 to 2012. The study found that the profitability of the Chinese auto manufactures was higher than that of the Indian auto manufactures and was stable in recent years while the profitability of the Indian automakers was on the decline. The increased profitability of the Chinese automakers was largely due to the increase in their profit margin and assets turnover while the decline in the profitability of the Indian automakers was due to the continuous drop of their profit margin ratio and their inability to increase the level of efficiency in relation to their asset utilisation.

Santhiyavalli and Abirami (2015)\textsuperscript{52} Measured the financial health of the select Indian Automobile Companies. Altman’s Z-Score Model was used to find the select companies health zone for the study period of 15 years from 1999-2000 to 2013-14. The study evidenced that TVS Motors Ltd showed the highest average Z-score value at 4.80. The low average Z-Score of Tata Motors Ltd. was at 2.91 states that the company was at the grey zone and it was the alarm for the management to take necessary steps to improve the performance of the company improving working capital, downsizing long term debt and improving sales. The average Z-score values of Ashok Leyland, Force Motors and Maruti Suzuki were 3.38, 4.39 and 4.37 respectively and implied the companies were in the safer zone.


\textsuperscript{52} Santhiyavalli,G and Abirami,K, (2015), Measuring Firms Financial Health -A Study on Select Indian Automobile Companies, Global Wisdom Research Publications, Volume No - 8, No 4, pp.118 – 128.
Srikanth (2015)\textsuperscript{53} focused on the profitability and financial position of Automobile sector in India during the Post-Liberalization period. The study used Ratio Analysis, Descriptive Statistics like Minimum, Maximum, Mean, Standard Deviation, Co-efficient of Variation, Skewness and Correlation to analyze the data. The study covered a period of 8 years from 2000-01 to 2007-08. The researcher selected top eight companies as sample of the study. The researcher found that the overall profitability was normal with greater fluctuations. Bajaj Auto had highest average Operating profit and highest average Net profit. When overall performance was assessed on the basis of Return on Net worth, Bajaj Auto occupied second position in the industry and it had got third position on the basis of return on capital employed. Current ratio of Maruti Suzuki, Mahindra & Mahindra and Ashok Leyland was satisfactory. It was concluded that the profitability of the automobile industry was very less.

Maheswari (2015)\textsuperscript{54} studied the financial performance of Hero Honda Motors Limited, New Delhi. To know the financial performance of Hero Honda Motors Limited the researcher had to analyze the liquidity, solvency and profitability accounting tool with the help of Ratio Analysis. The study also used Mean, Standard Deviation, Co efficient of Variation, Compound Annual Growth Rate as statistical tools. The study covered a period of 8 years from 2002- 2003 to 2009-2010. The finding of the study showed that liquidity, profitability and solvency showed highly satisfactory financial performance. The company with a

\textsuperscript{53} Srikanth.P, (2015), A Study on the Profitability and Financial position of Automobile Sector in India During the Post Liberalisation Era, Constituent College of Osmania University, Secunderabad (A.P.)

major share in Indian two wheeler markets had a very good potential to improve its profitability in future, if it continued its diligence and care in its financial performance sphere.

**Shrabanti Pal (2015)** in his study evaluated the financial performance of Indian automobile industry. The period of study was 15 years from 1999-2000 to 2013-14. The sample companies were Tata Motors Limited, Maruti Suzuki India Limited, Ashok Leyland Limited, Mahindra and Mahindra Limited, Bajaj Aauto Limited, Hero Motocrop India Limited, Force Motors and Eicher Motors. The results of multiple regression analysis showed that three individual variables working capital to total assets, inventory turnover ratio and dividend payout ratio to cash profit had significant effect on the profitability factor of the concerned industry. It was also found that the three individual variables WCTA, ITR and DPRCP have significant effect on the profitability of the industry.

**Nidhi Agarwal (2015)** focused on the comparative financial performance of Maruti Suzuki India Limited and Tata Motors Limited. The researcher used Ratio Analysis as tool of analysis for the study period of 5 years from 2009-10 to 2013-14. The study suggested that the company should use wisely the borrowed funds and should try to reduce the fixed charges burden gradually by decreasing borrowed funds and by enhancing the owner’s fund. Tata Motors should efficiently control its current assets and liquid assets to pay its current liabilities, so that the

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creditors of the company would feel secured about the repayment of their amounts by the company.

**Venkata Rao and Kanaka Raju (2015)**\(^57\) studied the turnover analysis of the automobile industries in India. Ratios Analysis was used namely, inventory turnover ratio, debtors turnover ratio, fixed assets turnover ratio and total assets turnover ratio. The period of the study was ten years from 2002-03 to 2011-12. The Study observed that there was no significant difference from inventory ratio of TVS Motor Company to the inventory ratio of Tata Motors and the remaining pairs (Hero Motor Crop – TVS Motor, Ashok Layland – Tata Motors, Mahindra & Mahindra – Hero Motor Corp, Hero Motor Corp – Maruthi Suzuki, Mahindra & Mahindra to Ashok Layland and from Maruthi Suzuki to Hero Motor Corporation) witnessed a significant difference with each other regarding inventory turnover ratio.

**Meenakshi Sundari and Sangeetha Malar (2015)**\(^58\) in their study examined the financial performance of TVS Motors Company Limited. Period of the study was five years from 2010 to 2014. The results of the study showed that the financial position of the company was up to the standard. Trend analysis evaluated the trend value of sales and net profit. Based on that, some useful suggestions were also given by the study that the company should take adequate steps to increase the profits. The TVS Motors company had every opportunity to


get its growth to a good extent and it would become a leading two-wheeler manufacturing company in the future.

**Shailja and Tiwari (2015)**\(^{59}\) made an attempt to examine the trends of profitability of two leading Indian automobile two-wheeler companies. Ratio Analysis was used to analyse the data. The study had been carried out for a span of five years from the period 2005-06 to 2009-10. In this study purposive method of sampling was used. It was found that Bajaj was growing very rapidly and it is a point of concern for Hero Honda. Cost of sales for Hero Honda increased much significantly but for Bajaj it turned out to more than 600%. In terms of profits before and after tax, Hero Honda made some good increases especially over the last 2 years. On the whole, the study concluded that profitability of both the companies were satisfactory, but Hero Honda Motors Ltd. was more effective in its performance than Bajaj Auto Ltd.

**Amalesh Patra (2015)**\(^{60}\) analysed the financial statements of Tata motors. The study used financial ratios like liquidity ratio, profitability ratio, activity ratio, debt coverage ratio and efficiency ratio. The period of the study was five years from 2011 to 2015. The study found that profitability of the company was not satisfactory in terms of net profit ratio. Profitability of the company was also not good in terms of operating profit ratio. Activity position of the firm was a little bit satisfactory. Earnings per share which varied from 5.71 to -14.72 was also at bad position and showed company was not able to increase the shareholder’s wealth.

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\(^{59}\) Shailja C. Tiwari, (2015), Analysis of Profitability of Selected Two Major Two-Wheeler Automobile Companies In India. Vol.1(1)

Surekh and Rama Krishnaiah (2015)\textsuperscript{61} undertook a study on financial analysis of Tata motors. Profitability Ratios and Statistical Techniques were used to analyse the data. The study period consisted of 5 years from 2009-10 to 2013-14. The study concluded that the prosperity of Tata Motors Ltd. was wealthy during the study period. It was also found to be in a gradual increasing manner regarding the net sales and the net profits of the company since 2009 onwards. These changes in the profits might have occurred due to: High taxation, High cost of borrowed funds, High depreciation cost, and High expenses. The study concluded that inner strength of the company was remarkable. Company could further improve its profitability through optimum capital gearing and reduction in administration and financial expenses.

Manoj Kumara and Abhilasha (2015)\textsuperscript{62} in their study analysed the financial performance of Indian automobile companies. The period of the study was eight years from 2007 to 2014, considering the accounting approach and using important financial tools. Sample taken for the research paper consisted of ten automobile companies listed in BSE/NSE. The study concluded that the anticipated inputs about this study to the firm was to assist strategic thinkers to pay attention to the appropriate actions that applied latent and strong effect on their automobile performance. The study also evidenced that the analytical strong fit model R-square results 54\% indicated variation of the independent variable on the dependent variable. Further research is needed to focus on the important


parameters like Economic Value added and refined Economic Value Added to reveal and evaluate the overall organizational development performance.

**Krishnaveni and Vidya (2015)**\(^{63}\) in their study analysed liquidity position of Indian Automobile Industry. The study focused on short term liquidity analysis of the Indian automobile industry. The study used Ratio Analysis as financial tool and average, range, co-efficient of variation, compound annual growth rate as statistical tools. The period of the study was ten years from 2004-05 to March 2013-14. It was found that there was significant difference between the current ratio among the selected sectors of the Indian automobile industry, there was no significant difference between the years of the selected study period and there was a significant difference between liquid ratio among the selected sectors of the Indian automobile industry.

**Fatemeh Jafari and Prabhakar Rao (2015)**\(^ {64}\) made a study to assess the relationship between Working Capital System and Profitability in Auto Manufacturing Industries in India. The study found that Hero Motocorp and Maruti Suzuki had a shortage of average inventory which might lead to decline in their sales, therefore the company had to increase the average inventory. TVS Motor was marked by poor sales performance and low inventory hence there should be improvement in the sales of the company and as per the sales rise the inventory requirements to be enhanced. Ashok Leyland had major capital tied up in inventory, so the company had to increase its sales and also reconsider its

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inventory. Tata Motors was overstocked which might lead to a risk of obsolescence and increased inventory holding cost, therefore company had to reduce the inventory.

**Rakhi Hotwani (2015)**\(^{65}\) examined the profitability position of Tata Motors for the period of ten years from 2001-02 to 2010-11. The study concluded that the company had grown significantly from having a turnover of 8918.06 crores in 2001-02 to 48040.46 crores of turnover in 2010-11. The company had created significant wealth for its stakeholders and provided handsome return on investment. The company’s net worth had grown from 2465.06 crores in 2002 to 20013.3 crores in 2011 which implied more than 700% growth in net worth of the company. The study found that the company’s operating margins had always been in double digit after first year of study. Return on net worth was much higher than the reasonable expected return which was a promising factor for the investors. The company’s profit margins had shown fluctuations in last three years which was a worrying factor. Out of last three years, return on net worth had been below 10% in two financial years 08-09 and 10-11.

The researcher has reviewed 65 relevant literature for the present study. The above studies covered a period of earlier to latest years and they did not take all leading automobile companies for analysis. Hence, it is considered as a research gap, and therefore the researcher has selected six leading automobile companies in India for the analysis of financial performance for the period of ten years from 2005-06 to 2014-15.

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