SSRG International Journal of Economics and Management Studies
ISSN: 2393 – 9125 / https://doi.org/10.14445/23939125/IJEMS-V6I10P115

Volume 6 Issue 10, 112-119, Oct 2019

Original Article

Effect of Working Capital Management in the Financial Performance of Select Automobile Companies in India

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Abstract *- Working capital management involves the relationship between short-term assets and short-term liabilities of the firm. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient ability to satisfy maturing short-term debt. Considering the role and importance of working capital in the financial performance of the companies, this paper aims to measure the liquidity and solvency position of six select automobile companies located in India. If the firm desires to improve liquidity, it needs to increase the size of the working capital of the firm. On the other hand, if a company is interested to obtain a greater risk for greater profits, it decreases the size of working capital in relation to its sales.*

The main objective of the research paper is to measure the liquidity and solvency position of the select automobile companies in India and compare the relationship between Industry and companies of Automobiles by using ratios. The study covers six Automobile companies in India, namely, Hero MotoCorp, TVS Motor, Ashok Leyland, Tata Motors, Mahindra and Mahindra, and Maruti Suzuki based on the working capital management performance analysis during the period 2008-09 to 2017-2018.

Keywords *- Automobile Industry, Liquidity, working capital, Current Ratio, and Quick Ratio.*

I. INTRODUCTION

The Indian auto industry became the 4th largest in the world with sales increasing 9.5 percent year-on-year to 4.02 million units (excluding two-wheelers) in 2018. It was the 7th largest manufacturer of commercial vehicles in 2018. The Two Wheelers segment dominates the market in terms of volume owing to a growing middle class and a young population. Moreover, the growing interest of the companies in exploring the rural markets further aided the growth of the sector. India is also a prominent auto exporter and has strong export growth expectations for the near future. Automobile exports grew 20.78 percent during April-November 2018. It is expected to grow at a CAGR of 3.05 percent during 2016-2026. In addition, several initiatives by the Government of India and the major automobile players in the Indian market are expected to make India a leader in the two-wheeler and four-wheeler markets in the world by 2020. As such, the life-blood of the organization for its survival and growth can be considered as proper financial management and its performance, especially working capital management efficiency.

II. WORKING CAPITAL MANAGEMENT: AN OVERVIEW

Business needs funds for short-term purposes to finance current operations. Investment in short-term assets like cash, inventories, debtors, etc., is called 'Short-term Funds' or 'Working Capital'. Even a business that is fully equipped with all types of fixed assets required is bound to collapse without (i) adequate supply of raw materials for processing; (ii) cash to pay for wages, power, and other costs; (iii) creating a stock of finished goods to feed the market demand regularly; and (iv) the ability to grant credit to its customers. All these require working capital. Working capital is thus like the lifeblood of a business. The business will not be able to carry on day-to-day activities without the availability of adequate working capital. The 'Working Capital' can be categorized, as funds needed for carrying out day-to-day operations of the business smoothly. The management of the working capital is equally important as the management of the long-term financial investment. Every running business needs working capital and proper management.

III. LITERATURE REVIEW

Nufazil Altaf and Farooq Ahmad Shah (2018), found that "How does working capital management affect the profitability of Indian companies?" The purpose of this paper is to examine the relationship between working capital management (WCM) and

firm profitability for a sample of 437 non-financial Indian companies. The study is based on secondary financial data obtained from the Capitoline database, pertaining to a period of ten years. This study employs two-step generalized methods of moments (GMM) techniques to arrive at results. The results of the study confirm the inverted U-shape relationship between WCM and firm profitability. In addition, the authors also found that the firms should complete their CCC on an average of 63 days.

Dr. Navena Nesa Kumari and Dr. M. Victor Louis Anthuvan (2017), have investigated in their paper titled **"**The Impact of The Working Capital Management on The Profitability of The Leading Listed Automobile Companies in India" (2006- 2012). The purpose of the research is to analyze whether working capital management can affect the company profitability of the Automobile sector of India. The study has taken into consideration the top S&P CNX 500 manufacturing firms within the geographical area of India. This study has been framed to show how efficiently working capital management impacts the corporate profitability of 10 leading listed Automobile sectors in Chennai.

Mr. Shivakumar and Dr. N Babitha Thimmaiah (2016), in their paper titled "Working Capital Management - Its Impact on Liquidity and Profitability - A Study of Coal India Ltd" makes an attempt to give a conceptual insight on working capital management and assess its impact on liquidity and profitability of Coal India Ltd. The liquidity and profitability tradeoff has become an important aspect for all organizations. The attempt also has been made to test the liquidity and profitability position by using correlation and spearman's rank method. The correlation and spearman's ranking method indicate a weak correlation and a negative relationship between liquidity and profitability. Montreal's test has also been applied to test liquidity performance. It indicates liquidity position of the firm has improved over the study period. The study covers five-year data from 2010-11 to 2014-15. For the analysis ratios indicating working capital performance, some statistical techniques are employed. The select performance indicators have shown a positive outlook except for the debtor's turnover ratio and collection period which have shown a negative trend. The liquidity ratios like current ratio and liquid ratios are above the standard level which indicates a better liquidity position.

Apurba Kumar Sharma (2015), examined the efficiency of working capital management of some select proprietary tea estates registered under the Tea Board of India, operating in Jordan district of Assam during 2008-09 to 2012-13. Instead of calculating a common method of analyzing different working capital management ratios three index values Performance index, Utilization index, and Efficiency index have been used to measure the efficiency of working capital management. Taking average indices of four tea estates a comparison has been made with regard to the efficiency of individual tea estates during the study period. From the present study, it is observed that the average performance efficiency level was satisfactory during the study period. The average performance index was more than 1 in three years during the study period of five years. In the year 2011-12, the average utilization index was more than 1 in three tea estates out of the select four tea estates. Findings of the study reveal that the overall performance of select tea estates was not bad, but the performance of individual tea estates fluctuated during the period of the study.

Sana N. Maswadeh (2015), studied the association between the working capital management strategies and profitability. This study aims to examine the relationship between working capital management strategies (aggressive, moderate, conservative) and profitability. The study relied on the financial statements published by pharmaceutical Jordanian industrial corporations in the last five years, namely 2009-2013, using the Pearson correlation coefficient between classifications according to corporate working capital management strategies, as well as profitability classification (high, medium, and low) to determine whether a statistically significant relationship between the strategies followed for working capital management and profitability of the corporation. The study's results revealed a stronger relationship between working capital management strategy and profitability of Jordanian industrial Pharmaceutical Corporation that followed a moderate strategy compared with those that followed an aggressive strategy. Furthermore, Jordanian pharmaceutical corporations didn't follow a conservative working management strategy. The study recommends the trade-off between risk and profitability in working capital management. Since the corporations that maintain moderate working capital management strategy, making them able to achieve steady profits over the long term, and consequently maintaining the value of the corporation and its value of shareholders.

Muhammad Mehta Azeem and Akin Marsap (2015), investigated the various factors determining the working capital in Pakistani non-financial firms by taking into account different economic and financial variables relating to the business over a period of six years [2004-2009]. Descriptive analysis, ANOVA, correlation, and regression analysis were applied to the panel data to see the relationship of different variables with working capital management. In this study, it is found that operating cycle return on assets, leverage, size and level of economic activity are negatively

related to working capital requirements of a firm whereas operating cash flows and sales growth are positively related to working capital to requirements.

Hina Agha (2014), reviewed the impact of working capital management on profitability. The main purpose of this study is to empirically test the impact of working capital management on profitability. Keeping in mind this objective, he studied the Glaxo-Smith-Kline pharmaceutical company registered in the Karachi stock exchange for the period of 1996-2011. The interpretation of results is that by increasing the debtor's turnover, inventory turnover, and by decreasing creditor's turnover ratios, the company can increase its profitability but there is no significant effect of increasing or decreasing the current ratio on profitability. Therefore the results of the research indicate that through proper working capital management, the company can increase its profitability.

Ojeani and Nneka Roseline (2014) examined the impact of working capital management on the profitability of Pharmaceutical firms listed on the Nigerian Stock Exchange market. Correlation and ex-post facto research design were used in a sample of 5 Pharmaceutical firms. Secondary data for a period of 10 years (2002-2011) was used, and Ordinary Least Squares (OLS) multiple regression was employed in data analysis. The study found that working capital management (account receivables collection management, accounts payables management, inventory management, cash conversion cycle management, operating cash flow management) has a significant impact on the profitability of listed pharmaceutical firms in Nigeria. It is therefore recommended among others that managers should focus on reducing inventory days, collect receivable as soon as possible because it is better to receive inflows sooner than later and delay payment of creditors in order to invest the money in short-term securities which are profitable.

Wobshet Mengesha (2014) examined the impact of working capital management on firms' performance by using audited financial statements of a sample of 11 metal manufacturing private limited companies in Addis Ababa, Ethiopia for the period of 2008 to 2012. The performance was measured in terms of profitability by return on total assets, and return on invested capital as dependent financial performance (profitability) variables. The working capital was determined by the Cash conversion period, Accounts receivable period, inventory conversion period, and accounts payable period are used as independent working capital variables. The data were analyzed using SPSS (version 20.0), estimation equation by both correlation analysis and pooled panel data regression models of cross-sectional and time-series data were used for analysis.

IV. RESEARCH GAP

The review of the literature reveals the existence of many gaps of knowledge in respect of the effect of working capital management on the financial performance of a company. Having all the above evidence that indicates more research works were conducted in the developed countries; research into working capital management and financial performance in developing countries was limited and not well established. The possible reasons include a lack of interest by scholars; no cooperation in working for industry and company; lack of experts; many experts overloaded by more pressing issues; surveys in developing countries are not common and constant changes in the financial systems.

Despite these obstacles, there are a few outstanding research works done in this area as reviewed. Broad-based research into working capital management and its impact on profitability was undertaken in Pakistan, Iran, and India. These studies found that there was a positive relationship between profitability and working capital management. Almost all the components of working capital displayed a significant positive relationship with profitability, which meant that efficient working capital management plays a key role in increasing the profits of the firms. However, there are no comprehensive studies on the measurement of the impact of working capital management on the firms' financial performance; this study adds to the literature by examining the issue of the working capital management practice in the automobile industry covering liquidity, solvency, and profitability management and its impact on the financial performance.

V. STATEMENT OF THE PROBLEM

Managing the financial needs and operations of any business is very crucial to the management of the company because it has an effect on both the profits and liquid assets of the firm. Financial needs are largely classified into two types of needs i) Working capital needs and ii) fixed capital needs. The part of the finance which enables an enterprise to conduct its day-to-day operations is called the working capital. It analyzes short-term assets and liabilities carefully in order to manage the firm's liquidity, monitoring of working capital helps managers operate the firm by making cash available to pay for short-term debt and long-term debt as well as meeting expenses for effective daily operations. This subject is still a very important issue because it affects the short-term investment decisions; and managers can increase the

value of the firm by reducing the working capital ratio to its optimum level (Rahman and Nasr: 2007).

VI. OBJECTIVES OF THE STUDY

The specific objectives are as follows.

i) To examine working capital management practices with specific reference to the automobile industry
ii) To know the liquidity and solvency position of select companies in the automobile industry;
iii) To compare and evaluate liquidity and solvency position of the select automobile companies;
iv) To measure working capital management efficiency through liquidity and solvency and its impact on the financial performance of the select companies.
v) To offer suggestions for improving the working management system in the automobile industry that leads to better financial performance.

VII. RESEARCH DESIGN

a) Scope of the Study: This paper encompasses the study of working capital management and profitability of six Automobile companies in India, namely (i) Hero MotoCorp, (ii) TVS Motor, (iii) Ashok Leyland, (iv) Tata Motors, (v) Mahindra & Mahindra, and (vi) Maruti Suzuki based on the analysis during the period 2008-09 to 2017-2018.

The study measures the liquidity and solvency position of the select companies, therefore, management of both current assets and current liabilities are reviewed. The study highlights the approach of administration of current assets and current liabilities determined to a very large amount of the profit or loss of the firm. The efficient and effective management of current assets and current liabilities is of vital importance for the success of a business. The firm has to use the available resources at an optimum level by managing its current assets and current liabilities efficiently, which will enable the firm to increase its profit and it could be able to meet its current obligations smoothly.

b) Data Collection Methods, Sources, and Types: The data which are required for the analysis has been mainly collected from secondary sources, without compromising primary needs.

c) Secondary data*:* The secondary data are collected from the published annual reports, including financial statement data by industry given in balance sheet, profit, and loss account and key financial statement of the companies for the year 2008-09 to 2017-18 which will be directly obtained from the registered offices and other employees of the respective companies.

As it has been stated above the research data is collected from a more secondary source and secondary data are collected with the content analysis method.

d) Data Analysis Methods: In order to measure the liquidity and solvency position of select companies in the automobile industry using ratios such as the current and quick ratio of select Automobile companies. The responses were obtained from the given data collection instruments, tabulated, interpreted, and analyzed by using descriptive statistics. The interpretation analysis and discussion were based on the results obtained and guided by the literature. The index analysis was employed for the purpose.

VIII. DATA ANALYSIS AND INTERPRETATION

a) Current Ratio: The current ratio is an indication of a firm's market liquidity and ability to settle its short-term liabilities. The current ratio explains the efficiency of a company's operating cycle or its ability to turn its product into cash.

Current Ratio = Current Assets/Current liabilities

Table 1. Statement of Current Ratio of the select Automobile companies

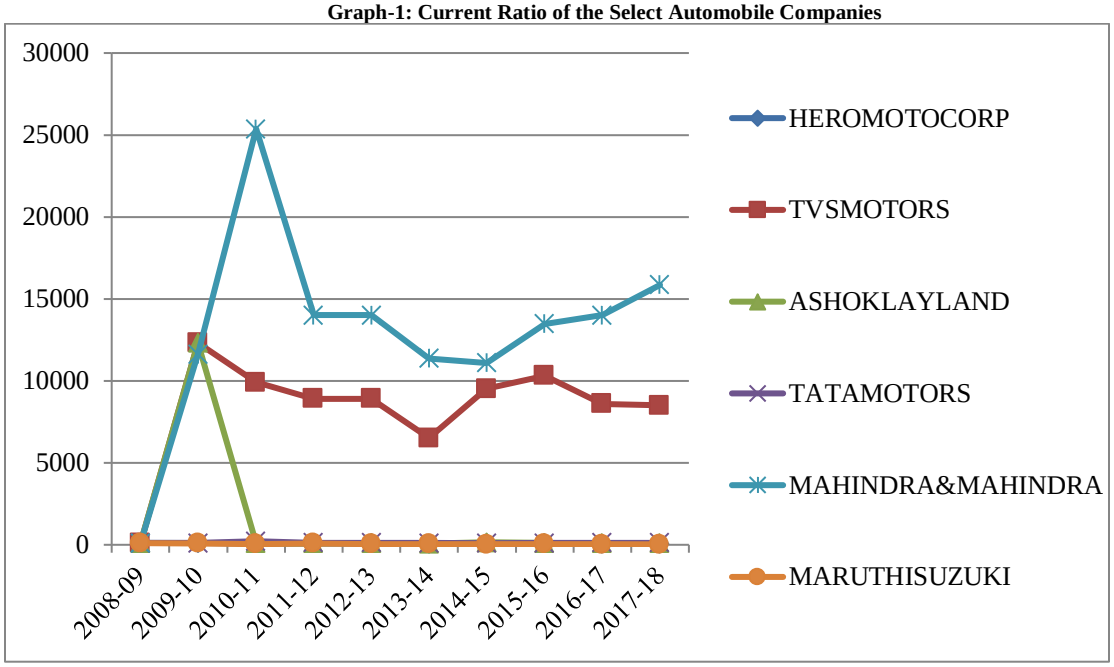
YEARS	HERO MOTORCARS		TVS MOTORS		ASHOK LEYLAND		TATA MOTORS		MAHINDRA& MAHINDRA		MARUTI SUZUKI		INDUSTRY AVERAGE	
	CR	***INDEX***	***CR***	***INDEX***	***CR***	***INDEX***	***CR***	***INDEX***	***CR***	***INDEX***	***CR***	***INDEX***	***CR***	***INDEX***
2008-09	1.1	100.0	0.9	100.0	1.6	100.0	0.4	100.0	0.9	100.0	1.8	100.0	1.1	100.0
2009-10	1.2	110.8	1.0	113.3	1.2	75.3	0.4	100.0	0.9	104.7	1.4	79.1	1.0	92.4
2010-11	1.0	89.2	0.9	98.9	1.3	105.7	1.0	218.2	1.1	129.1	0.9	51.4	1.0	91.5
2011-12	0.9	80.2	1.0	108.9	1.2	94.6	0.5	120.5	0.9	100.0	1.5	83.1	1.0	88.5
2012-13	0.9	80.2	1.0	113.3	0.9	70.5	0.5	120.5	1.0	110.5	1.0	57.6	0.9	78.4
2013-14	0.7	58.6	0.8	88.9	0.8	90.7	0.4	97.7	1.2	138.4	0.8	43.5	0.8	68.8
2014-15	1.0	85.6	0.8	91.1	0.9	120.5	0.4	95.5	1.1	122.1	0.7	38.4	0.8	72.3
2015-16	1.0	92.8	0.7	76.7	1.1	112.8	0.5	115.9	1.1	127.9	0.7	39.5	0.8	75.7
2016-17	0.9	77.5	0.7	76.7	0.9	81.1	0.5	120.5	1.0	119.8	0.6	31.1	0.8	67.3
2017-18	0.9	76.6	0.9	103.3	0.6	68.6	0.6	136.4	1.1	123.3	0.5	27.7	0.8	67.3
AVERAGE	**0.9**	**85.1**	**0.9**	**97.1**	**1.0**	**92.0**	**0.5**	**122.5**	**1.0**	**117.6**	**1.0**	**55.1**	**0.9**	**80.2**

Source: Computed from Annual Reports of the Select Automobile Companies

Table-1 depicts the minimum current ratio chain index in Heromotocorp was 76.6 in 2017-2018, TVS motor was 76.7 in 2015-2018, Ashok Leyland was 68.6 in 2017-2018, Tata motors was 97.7 in 2013-2014, Mahindra & Mahindra was 100 in 2008-2009 and Maruti Suzuki was 27.7 in 2017-2018. The maximum current ratio chained index in Hero moto corp was 110.8 in 2009-2010, Tvs motor was 113.3 in 2012-2013, Ashok Leyland was 120.5 in 2014-2015, Tata motors was 136.4 in 2016-2017, Mahindra & Mahindra was 138.4 in 2013-2014 and Maruti Suzuki was 100 in 2008-2009.

The minimum current ratio chain index among all select companies was found in Maruti Suzuki that was 27.7 in 2017-2018. The maximum current ratio chain index among all select companies was found inTata Motors that was 218.2 in 2010-2011.

Graph-1: Current Ratio of the Select Automobile Companies



Hero MotoCorp recorded the average actual current ratio of 0.90 when compared to the average actual industrial ratio of 0.90. Tata Motors had an average actual current ratio of 0.90 when compared to the average actual industrial ratio of 0.90. As per the average current assets of Tata Motors and Hero MotoCorp, the average of current liabilities was high which resulted in the lower average actual of the current ratio. TVS Motor was close to the average actual current ratio of 0.90 when compared to the average actual industrial ratio of 0.90. the company had stable average current assets and average current liabilities. Maruti Suzuki recorded the highest average actual current ratio of 1.0 as compared to the average actual industrial ratio of 0.9. Mahindra & Mahindra had a high average actual of the current ratio of 1.0 when compared to the average actual industrial ratio of 0.90. Ashok Leyland also had a high average actual current ratio of 1.0 when compared to the average actual industrial ratio of 0.90. In accordance with the average current assets of TVS Motor, Hero MotoCorp, Mahindra & Mahindra, Ashok Leyland, and Maruti Suzuki, the average of current liabilities was low, which led to the higher average actual of the current ratio. The average current assets of TVS Motors only were lower than the average current liabilities which reflected on the average actual current ratio that was below one.

b) Quick Ratio: The quick ratio measures a company s ability to pay off its current liabilities with its most liquid assets. The quick ratio excludes inventory from the current ratio because some companies have difficulty turning their inventory into cash, which compares all current assets to current debts.

Quick ratio = Current Assets-Inventory-Prepaid Expenses/Current Liabilities.

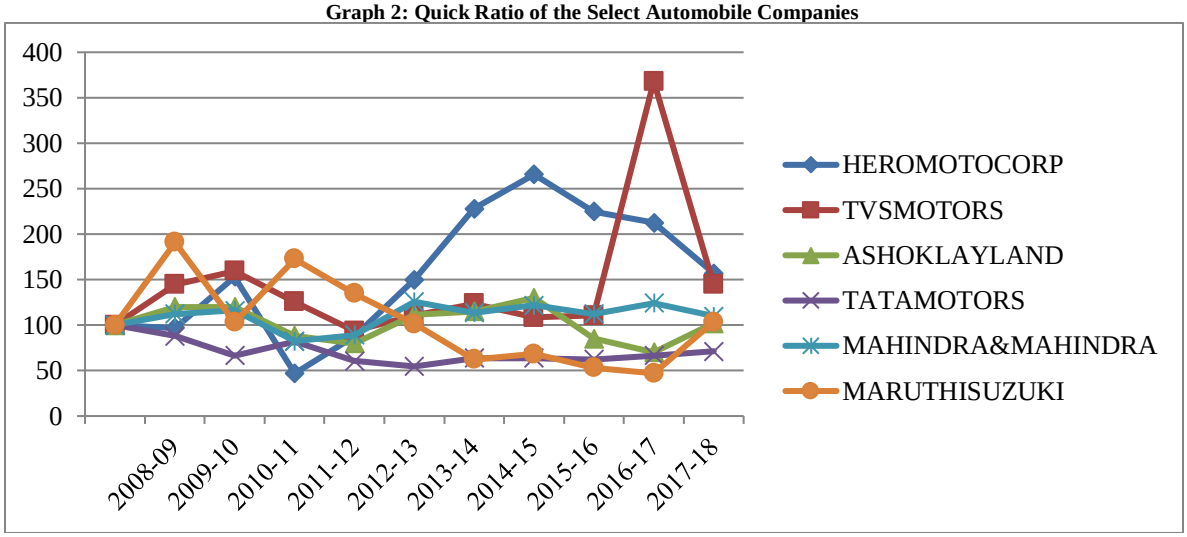
Table 2: Statement of Quick Ratio of the Six Select Automobile companies

YEARS	HERO MOTORCARS		TVS MOTORS		ASHOK LEYLAND		TATA MOTORS		MAHINDRA & MAHINDRA		MARUTI SUZUKI		INDUSTRY AVERAGE	
	QR	INDEX	QR	INDEX	QR	INDEX	QR	INDEX	QR	INDEX	QR	INDEX	QR	INDEX
2008-09	0.32	100	0.47	100	0.6	100	0.66	100	0.74	100	0.66	100	0.58	100
2009-10	0.31	97	0.68	145	0.72	120	0.58	88	0.83	112	1.26	191	0.73	126
2010-11	0.49	153	0.75	160	0.72	120	0.44	67	0.86	116	0.68	103	0.66	113
2011-12	0.15	47	0.59	126	0.53	88	0.54	82	0.61	82	1.14	173	0.59	102
2012-13	0.28	88	0.44	94	0.48	80	0.4	61	0.66	89	0.89	135	0.53	91
2013-14	0.48	150	0.52	111	0.67	112	0.36	55	0.93	126	0.67	102	0.61	104
2014-15	0.73	228	0.58	123	0.69	115	0.42	64	0.84	114	0.41	62	0.61	105
2015-16	0.85	266	0.51	109	0.78	130	0.42	64	0.9	122	0.45	68	0.65	112
2016-17	0.72	225	0.52	111	0.51	85	0.41	62	0.83	112	0.35	53	0.56	96
2017-18	0.68	213	1.73	368	0.42	70	0.44	67	0.92	124	0.31	47	0.75	129
AVERAGE	0.5	157	0.68	144	0.61	102	0.47	71	0.81	110	0.68	103	0.63	108

Source: Computed from Annual Reports of the Select Automobile Companies

As can be seen from the Table-2, the minimum quick ratio chain index in Hero MotoCorp was 47 in 2011-12 TVS motors was 94 in 2012-13 Ashok Leyland was 80 in 2012-13 Tata motors was 55 in 2013-14 Mahindra and Mahindra was 82 in 2011-12 and Maruti Suzuki was 47 in 2017-18 the maximum quick ratio chain index in-hero MotoCorp was 266 in 2015-16, TVs motor was 368 in 2017-18 2010, Ashok Leyland was 130 in 2015-16, Tata Motors was 150 in 2008-09. Mahindra and Mahindra were 124 in 2017-18 and Maruti Suzuki was 191 in 2008-09 with reference to the above-listed companies the minimum quick ratio chain index was founded in Ashok Leyland that was 70 in 2017-18 and the maximum quick ratio chain index was founded in-hero MotoCorp that was 266 in 2015-16.

Graph 2: Quick Ratio of the Select Automobile Companies



The average quick ratio of Hero MotoCorp was 0.50 was the lowest when compared to the average actual industrial ratio of 0.63. The company faced issues with regard to low average debtors and average cash and the company had more average current liabilities when compared to the average quick assets. Therefore, it reflected on the average actual quick ratio, which was very low. The average actual quick ratio of TVS Motor

was 0.68 which was higher than the average actual industrial ratio of 0.63. TVS Motor had problems with considering low the average debtors and the average cash and the company had more average current liabilities when compared to the average quick assets of the company. Tata Motors also had a low average quick ratio of 0.47 when compared to the average actual industrial ratio of 0.63. the average actual quick ratio of TVS motors was 0.68 which was similar to the Maruti Suzuki and it was higher than the average actual industrial ratio of 0.63. Mahindra and Mahindra were marked by the highest average actual quick ratio of 0.81when compared to the average actual industrial ratio of 0.63. Mahindra & Mahindra, Maruti Suzuki, and TVS motors had high average debtors and average cash. In accordance with the average quick assets of Hero Moto Corp, Ashok Leyland, and Tata Motors, the average current liabilities were high which led to the lower average actual of quick ratio.

On the other hand, with reference to the average quick assets of Mahindra & Mahindra, Ashok Leyland, and Maruti Suzuki, the average current liabilities were low, which reflected in the high average actual of quick ratio. All the companies except Maruti Suzuki, the average quick assets were lower than the average current liabilities which, indicated on the average actual quick ratio that was below one.

IX. OBSERVATIONS AND IMPLICATIONS

All the listed companies except for Tata Motors had decreased the current ratio over a period of 10year. In the accounting base year, i.e. 2008-2009 the current assets of Hero MotoCorp, Mahindra & Mahindra, and TVS Motors were greater than their current liabilities, but for Ashok Leyland and Maruti Suzuki and Tata Motors current assets were lower than current liabilities. During 2017-2018 except Mahindra & Mahindra, all other select company current ratios were below one which may create obstacles to meet their short-term obligation.

The higher current ratio indicates the under-utilization of short-term credit and excessive investment in current assets. A lower ratio implies unsafe liquidity and the firm facing difficulties in meeting short-term commitments. One of the basic reasons for the current ratio being high is that a firm has a large proportion of inventory assets that are difficult to liquidate. Hence; it is suggested to reduce the level of inventory to an extent where it can enhance its profits.

When the current ratio is low it shows the inefficiency of the firm in the collection of receivables consequently there would be a possibility of cash balance being very low or higher current liabilities. Therefore, the company would face a challenging situation when meeting short-term debts. To overcome a lower current ratio a company must reduce its current liabilities and maintain an optimum level of inventory.

The quick ratios of Hero MotoCorp and TVS Motor have been increasing among all the listed companies for 10 years. During the base year, i.e. 2008-2009 the quick ratio of Ashok Leyland and Maruti Suzuki was above one, which means those companies' quick assets were over their current liabilities, but for the other companies the quick assets were under their current liabilities. In 2017-2018 the quick ratio of all the companies was recorded below one.

A high quick ratio shows the firm proficiency to meet its current liabilities on time. It also measures a firm's ability to meet current liabilities from its liquid assets. One of the causes for the high quick ratio could be successive cash in a company that should be invested in an appropriate way to earn more profits. A company facing an uncertain business environment and having difficulty borrowing on a short-term basis needs to have a high quick ratio.

A low quick ratio indicates insufficient leverage against liquidity and slow receivable collection. Hence, a company with a lower quick ratio is suggested to take the support of strong operating cash flow and follow stringent policies for the collection of receivables.

X. CONCLUSION

The Government of India plans to make automobile manufacturing the main driver of the "Make in India" initiative, as it expects the passenger vehicles market to triple to 9.4 million units by 2026, as highlighted in the Auto Mission Plan (AMP).

In any sector efficient management of working capital has been recognized as one of the basic functions of finance for the successful conduct of business operations. Based on the analysis of the study results, the automobile firms are recommended to focus more on managing and reducing the liquidity and solvency in order to maximize profitability and to withstand the competitive environment of the dynamic market of the automobile industry. This strategy not only influences the profit-earning capacity of business undertakings but also includes the content of operational efficiency of the automobile sector for its survival and growth prospects in the long run to meet the Auto Mission Plan of India.

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