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# A STUDY ON WORKING CAPITAL MANAGEMENT OF SELECT COMPANIES IN INDIAN AUTO MOBILE INDUSTRIES

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***ABSTRACT***
The Automobile Companies has changed the way people live and work. Indian automobile industry has come a long way from the era of the Ambassador car to Tata Manza. The industry is highly competitive with a number of global and Indian companies present today. It has been growing at a rate of around 18% per annum for the last five years. India is projected to be the third largest auto industry by 2030 after the US and China. The earliest of modern cars was manufactured in the year 1985, shortly the first appearance of the car followed in India. As the century turned three cars were imported in Mumbai (India). Within decade there were total of 1025 cars in the city. India's growing openness, the arrival of new and existing models, easy availability of finance at relatively low rate of interest and price discounts offered by the dealers and main fastness all have stirred the demand for vehicles and a strong growth of the Indian Automobile Companies

***Keywords:Working Capital, Inventory, Receivables, Payables, Work-In-Progress.***

## INTRODUCTION

An Indian Automobile Companies has been one of the emerging companies which contribute the maximum to the growth of the country. The gross domestic product of the sub-continent is highly dependent upon the automobile Companies. The automobile Companies are also the major contributor for the balance of trade of the country.

The origin of automobile is not certain. In this section of automobile history, we will only discuss about the phases of automobile in the development the modernization process since the first car was shipped to India. We will start automotive history from this point of time.

## INTRODUCTION TO WORKING CAPITAL

A study of working capital is of major importance to internal and external analysis because of its close relationship with the day-to-day operation of a business. Working capital management is a process of planning and controlling the level and mix of the current assets of the firm as well as financing these assets. Even in a well-established business with a long history of successful operation, careful attention to the management of working capital results in greater profitability.

Funds that are needed for short-term purpose for the purchase of raw materials, payment of wages and other day-to-day expenses are known as working capital. The goal of working capital management is to manage each of the firm's current assets and current liabilities. Working capital is also known as circulating capital or current capital or revolving capital. Capital required for a business can be classified under two main categories Viz.,

- Fixed capital
- Working capital

Every business needs funds for two purposes for its establishment and carry out its day-to-day operations. Long-term funds are required to create production facilities such as purchase of plant, machinery, land, building, furniture's, etc., Investment in these assets represent that part of the firm's capital which is permanently blocked and it is called as fixed capital. Funds are also needed for short - term purpose for the purchase of raw materials, payment of wages and other day-to- day expenses. These funds are known as working capital. The working capital may rightly to be called as the circulating or revolving capital, because current asset keep revolving fast and are being constantly converted into cash and this cash flows out again in exchange for other current assets.

Effective working capital management is especially important in today's business environment. The internet allows potential customers to choose to buy products and services from competitors all of over the world. In order to survive, an organization must be able to compete. In order to compete, firms will need to have cash available for growth, advertising and research and development of new products. In order to have cash available, a company needs to manage its working capital.

**INTRODUCTION – AUTO MOBILE INDUSTRY**

The automobile is considered as an essential ingredient of nearly every aspect of economic and social development; it opens up new areas, gets land-hitherto unutilized-into economic use and helps in marketing and obtaining a better price for the produce. It also enables productive use of forest and mineral wealth. In short, it extends money economy to the agriculture sector, raises its productivity and creates new demand.

**DEFINITION**

Daniel J.Boorstin, "The automobile has brought farmers to the city and the city to the form. It has siphoned city dwellers to the suburbs and has made the suburbs more cities like".

**DEMAND OF AUTOMOBILES**

Automobile Industries is a major constituent of surface transport. Automobiles as a commodity include passenger cars, commercial vehicles, three wheelers and two wheelers. India has growing market potential for automobiles due to rise in demand. As a result more and more manufacturers are bringing in new forms of the existing product because diffusion of a new product depends upon demand statistics. Automobile manufacturers, particularly car manufacturers, are attracting buyers with new models hoping to tap growing demand for automobiles.

**AUTOMOBILES IN INDIA**

Automobiles make the journey of your life easier and comfortable. It includes any motorized vehicle that is driven by people. For all you people, who prefer to be abreast of all the latest trends and show-ups in the automobile Industries, your journey ends here. Automobile India is a Web site that caters to all facets of automobiles such as prices prevalent in the market, Equipments to adorn your vehicles, services to keep your vehicle in a good shape and more information on the safety and security of your vehicle.

Indian automobiles have come a long way. Earlier the fields of Indian automobiles were dominated by one or two players, but time is totally changed now. Today, Indian automobile is a buzzing Industry, with lots of things happening there.

The first automobile came to Bombay in 1897. Soon the number of cars on Mumbai's roads increased, to warrant the formation of a motoring body that would take up causes that would take up causes that plagued can owners even at that time.

**SELECTED INDIAN AUTO MOBILE INDUSTRIES**

1. HERO MOTORS LIMITED
2. TATA GROUP
3. MAHINDRA GROUP
4. BAJAJ AUTO LIMITED
5. ASHOK LEYLAND
6. YAMAHA MOTORS LIMITED
7. HYUNDAI MOTORS INDIAMLIMITED

**1. HERO MOTORS LIMITED**

**INTRODUCTION**

Hero Honda Motors Ltd, a name gives the origin of the company, the joint venture between India's Hero Group and Honda Motor Company, Japan was the reason for inception of the company, the agreement was signed in

1983 and the company was incorporated in the year of 1984. It is a world's largest two-wheeler manufacturing company and also one of the most successful joint ventures worldwide. These plants collectively are proficient of producing out 4.4 million units per year. Over 20 million Hero Honda two wheelers squash Indian roads.

**THE GROWTHMENT OF COMPANY**

After year from inception, in 1985 the company's first product was released under the name of 'CD 100'. In the year 1994 company's extraordinary product was came to existence, a new motorcycle model 'Splendor' was introduced, apart from this event the company have produced 1,000,000$^{th}$ motorcycle in the same year. An event to the company as well as the habitual, the number of new models and attractive market capture motorcycles was continuously came to subsist and also coming up. Hero Honda has consistently matured at double digits since its commencement and today, every second motorcycle sold in the country is a Hero Honda. Every 30 seconds, someone in India buys Hero Honda's top selling motorcycle 'Splendor'. This festive season, the company sold half a million two wheelers in a single month a feat unparalleled in global automotive history.

**2. TATA GROUP**

**PREFACE OF TATA GROUP**

Tata Sons purchased the Tatanagar shiops from the Government of India on 1$^{st}$ June 1945 for Rs. 25.39 lakhs with the aim of immediately manufacturing steam locomotive boilers. Later it planned to manufactures complete locomotives and other engineering products. Tata Motors Ltd was incorporated in the year of 1945. In world charisma the Tata Motor's Ltd (Formerly known as Tata Engineering and Locomotive Company Ltd) is the fifth-largest medium and heavy bus manufacturer.

The company producing light, medium and heavy commercial vehicles and also manufacturing passenger cars, utility vehicles, excavators and machine tools in manufacturing units located at Jamshedpur, pune, Lucknow and pant Nagar in Uttarahhand . 1946 Tata Engineering was undertaken manufacturer of 5000 'KC' broad gauge open wagons for the Indian Railway. The Managing Agency Tata Sons was transferred to Tata industries on 1st July 1946. In the year 1948 the company made collaboration with Marshal Sons (UK) and introduced Steam Road Roller and in 1950 Collaboration signed with M/s Krauss- Maffei, West Germany for manufacture of steam locomotives. Collaboration with M/s Daimler Benz AG, West Germany was made in the year 1954 for the manufacture of medium commercial vehicles at Jamshedpur.

**3. BAJAJ AUTO LIMITED**

**COMMENCEMENT OF BAJAJ AUTO LTD**

Bajaj Auto Limited (BAL), the flagship of the Bajaj group, manufactures and markets Bajaj scooters, Motor cycles, Three- wheelers and spare parts. Incorporated in 1945 as a private limited company, it went public in 1960. Currently the company has four plants at Akurdi, Waluj, Chakan and pantnagar (Uttarakhand) with an combined installed capacity to produce 4,050,000 nos. of two wheelers and three wheelers. Further the company has an installed capacity to produce 65.20 MW of Wind power.

In 1974-75 Bajaj Auto co-promoted a joint-sector company, Maharashtra Scooters. A plant was set up at Satara and production of Priya scoters commenced in 1976.

**4. MAHINDRA GROUP**

**BEGGINING OF MAHINDRA**

The mahindra brothers joined hands with a distinguished gentleman called Ghulam Mohammed and to make the birth of Mahindra & Mahindra in October 2$^{nd}$ ,1945 as Mahindra & Mohammed , a franchise for assembling jeeps from Willys, USA. Two years later, India became an independent nation and in 1948 Mahindra & Mohammed changed its name to Mahindra & Mahindra (M&M)

The first business was with Mitsublishi Corporation commenced and 5000 tons of wagon builing plates from Yawata Iron & Steel were supplied during the period of 1950. In the year 953 Otis Elevator Company (India) was

established. A joint venture was made with Rubery Owen & Company Limited, UK and established a company under the name of Mahindra Owen.

Mahindra Engineering & chemical Products Limited was originated its operations during the year 1970. In the year 1977, the International Tractor Company of India merged with Mahindra & Mahindra to become its Tractor Division and within two years Mahindra brand of tractors was launched.

**5. ASHOK LEYLAND**
**COMMENCEMENT OF ASHOK LEYLAND**
The company supplies both to state transport undertakings (STUs) and Defence. The company has specially developed light recovery vehicles (LRVs) to the Indian Army. The company has also broken new ground Buses running on CNG fuel in India and this category of buses are running lucratively in Bombay and Delhi. ALL furnished lot of thrust to new range of Intermediate Commercial production of the 709 and 909 models has commenced under the first phase of expansion cum modernization.

**6. YAMAHA MOTOS INDIA**
**ESTABLISHMENT OF YAMAHA MOTO**
Yamaha made its initial foray into Indian in 1985. Subsequently, it entered into a 50v:50joint venture with Escorts Group in 1996. However, in August 2001. Yamaha acquired its remaining stake as well, bringing the Indian operations under its complete control as a 100% subsidiary of Yamaha Motor Co., Ltd, Japan.

**7. HYUNDAI MOTORS INDIA LIMITED**
Hyundai Motor India Ltd (HMIL) is a wholly owned subsidiary of Korea based Hyundai Motor Company and is the second largest and the fastest growing car manufacturer India. HMIL markets 31 variants of passenger cars in six segments. The company has recorded combined sales of 252851 during the calendar year of 2005 with a growth of 17.26% over the previous year.

The data obtained from ministry of commerce and Industries shows high growth obtained since 2001-2002 in Automobile production continuing in the first three quarters of the 2004-2005 Annual growth was 16.0 percent in April Dec 20004, the growth rate in 2003-04 was 15.1 percent .The Automobile Industries growth grew at a compound annual growth rate (CAGRI)of 22 percent between 1992 and 1997 with investment exceeding Rs 50,000 crore, the turnover of the Automobile Industries exceeded Rs 59,518 crore in 2002-03 .

**GROWTH OF INDIAN AUTOMOBILE INDUSTRIES**
The passenger car and motor cycle segment in Indian auto Industries is growing by 8-9 percent.

**CURRENT SCENARIO**
- The Indian Automobile Industries crossed a landmark with total vehicle production of 10 million units.
- Car sales was 8, 82,094 units against 8, 20,179 units in 2004-05.
- The Two wheeler market grew by 13.6 percent with 70, 56,317 units against 62, 09,765 units 2004-05.
- Commercial vehicle segment grew at 10.1 percent with 3,50,683 units 3,18,430 units in 2004-05

**OVERVIEW**
Indian auto market Growth for the year 2005-06.
- The domestic Automobile Industries sales grew 12.87 percent at 89, 10,224 units as against 78, 97,694 units in 2004-05.
- According to the society of Indian automobile manufacturers (SIAM), car sales was 8, 82,094 units against8, 20,179 units in 2004-05.
- The growth of domestic passenger car market was 7.5 percent.
- The Two-wheeler segment the market grew by 13.6 percent with 70, 56,317 units against 62,09,765 units in 2004-05.

- Motor cycle had the upward march 17.1 percent in domestic market touching 58, 15,417 units as against 49, 64,753 units in 2004-05.
- Scooter segment grew by 1.5 percent fall of 9, 08,159 units against 9,22,428 units in 2004-05.
- Commercial vehicles segment grew of 10.1 percent with 3, 50,683 units against 3, 18,430 units in 2004-05.
- Medium and heavy commercial vehicles managed a growth of 4.5 percent against 23 percent growth in the year ended March 31, 2005.
- Three- wheelers sales rose by 17 percent of 3, 60,187 units as against 3,07,862 units in 2004-05.

**MEANING OF WORKING CAPITAL**

"Working capital is the amount of funds necessary to cover the cost of operating the enterprise".

**DEFINITION**

"Circulating capital means of current assets of a company that are changed in the ordinary course of business from one to another, as for example, from cash to inventories, inventories to inventories, receivables into cash".

**OBJECTIVE OF WORKING CAPITAL**

The main objective of working capital cannot be over emphasized. Every business needs some amount of working capital. There are time gaps in purchase of raw materials and production; production sales and realization of cash.

- For the purchases of raw material, components and spares.
- To pay wages and salaries.
- To incur day-to-day expenses and overhead cost such as fuel power and office expenses.
- To meet the selling cost as packing, advertising, etc.
- To provide credit facilities to the customers.
- To maintain the inventories of raw-material, work-in-progress, stores and spares finished stock.

**STATEMENT OF THE PROBLEM**

Increasing liberalization and deregulation has led to an increase in the number of private players. Under this competitive environment every manufacturer, in the automobile companies has to manufacture more attractive, low-cost and luxury cars to augment more buyers. The inventory and working capital of every Company are highly dependent upon the marketability of the respective manufacturer.

This has led the researcher to analyses the inventory and working capital analysis of the selected Indian Automobile Companies. While analyzing the above, it is deemed necessary to analyses the trend as well. Hence, the researcher has selected the inventory and working capital analysis of the selected Indian Automobile Companies.

**OBJECTIVES OF THE STUDY**

**PRIMARY OBJECTIVE**

**"A study on working capital management of select Companies in Indian Automobile Industry"**

**SECONDARY OBJECTIVES**

The researcher has outlined the following as the objectives of the present study.

1. To understand the history of select companies in Indian Automobile Industries.
2. To identify the influencing factors for determining the working capital management of companies.
3. To evaluate the inventory of the selected Indian Automobile Companies
4. To measure the working capital position of the selected companies in the Indian Automobile industry.
5. To offer suggestions for improving the inventory and working capital.

**SCOPE OF THE STUDY**

The present study has considered the inventory and working capital analysis of the selected seven Indian Automobile companies

The following seven companies have been the major players in the Indian Automobile companies and they have been selected for the present study.

1. Hero Honda motor's Ltd
2. Tata Group
3. Bajaj Auto Group
4. Mahindra and Mahindra ltd
5. Ashock Leyland
6. Yamaha Motor's Ltd
7. Hyndai Motor India Ltd

**METHODOLOGY**

The methodology of the study includes Data sources, Period of study, Statistical tools.

**DATA SOURCE**

The present study is mainly based on the secondary data. The data required for the present study have been collected from the annual reports, statistical hand books, leading journals and magazines and websites of the respective companies.

**PERIOD OF STUDY**

This study covers a period of ten years 1998-1999 to 2007-2008. The accounting year starts from April to March.

**STATISTICAL TOOLS USED**

The obtained through various sources have been arranged in a suitable manner and tables were prepared necessary.

- Trend Analysis
- Chi –Square Test
- Correlation Analysis
- T-Test Value

**TREND ANALYSIS**

Trend has been measured to find out the growth factor, the rate of change and also to estimate the future on the basis of growth factor.

A method of least-squares helps to compute the future values.

**Method of Least Squares**

One of the bets wags of obtaining tend values is the method of least square. It is a mathematical method from which a straight line trend is obtained. This line is called the line of the best fit.

By taking the time as independent variable (X) and the Observed value as dependent variable (Y) the trend line of the form.

$y_c = a+bx$ can be fitte

The straight line trend, future period values is represented by the equation. $y_c = a+bx$,

Where. $y_c$ = Trend value

X= Time , a+b are Constant

The value of a and b determined by

$a=\sum Y/N$ and $b=\sum xy/\sum x^2$

a = Mean value of Y

b = Rate of change

**CHI-SQUARE TEST**

The Chi-Square test is one of the most popular statistical inference procedures today.

- $X^2$ Test as a test of Independence
- $X^2$ Test as a Goodness of fit
- $X^2$ Test as a test of homogeactity

**Formula**

Chi-Square test ($X^2$) = $\sum (O-E)^2 / E$

Degrees of freedom = (R-1) (C-1)

Where as, O = Observed Frequency E = Expected Frequency

**CORRELATION ANALYSIS**

In practice we come across a large number of problems involving the use of two or more than two variables. If two quantities vary in such a way that movements in one are accompanied by movements in the other, these quantities are correlated.

**DEFINITION**

"Correlation analysis deals with the association between two or more variables" - Simpson & Kafka.

"Correlation analysis attempts to determine the "degree of relationship" between variables". - Yalun chow.

**Karl Pearson's Co-Efficient of Correlation**

The karl Pearson's method popularly known as Pearson's co-efficient is most widely used in practice. The Pearson co-efficient of correlation denoted by the symbol "r". It is one of the very few symbols that are universally for describing the degree of correlation between two series.

**FORMULA**

$$r = \frac{N\sum dxdy - \sum dx * \sum dy}{\sqrt{N\sum dx^2 - \sum(dx)^2 \; N\sum dy^2 - \sum(dy)^2}}$$

When dx refers to deviations of X series from an assumed mean. i.e. , X-A

$\sum dx$ = Sum of the deviations of x series from an assumed mean.

$\sum dy$ = Sum of the deviations of y series from an assumed mean

$\sum dxdy$ = Sum of the product of the deviations of x and y series from their assumed means.

$\sum dx^2$ = Sum of the squares of the deviations of x series from an assumed mean.

$\sum dy^2$ = Sum of the squares of the deviations of y series from an assumed mean.

- **T- TEST VALUE**

A random of sample from a bivariable normal population. The test of hypothesis that the correlation co-efficient of the population is zero.

$t = r / \sqrt{1-r2} * \sqrt{n-2}$

Variables in the population are uncorrelated.

Degrees of freedom (n-2)

If the calculated value of s\exceeds $t_{0.05}$ for (n-2) d.f. We say that value of r is significant at 5% level. If t<t 0.05 the data are consistent with the hypothesis of an uncorrelated population.

**LIMITATIONS OF THE STUDY**

- This study is restricted only to the selected Indian Automobile Companies.
- The study period covers for 10 years only from 2002-03 to 2011-12.
- This study used only the secondary data.
- This study considers only the working capital and Inventory management of the company.

**FINDINDS**

The main aim of the study is to analyses of Working capital and Inventory of selected Indian Auto mobile companies. For analysis the above the financial data is gathered from the annual reports of the selected Indian automobile Companies are Auto Car, Auto Scooter, Auto Cycle, Auto Tractor, Auto Two wheeler. In this context, the following finding of the study is made by the researcher on the basis of the Statistical analysis.

1. **FINDINGS ABOUT WORKING CAPITAL TREND VALUE**

- Highest positive Trend value was in the year 2010-11 (1483) of Auto Car of the selected companies.
- Highest negative Trend value was in the year 2011-12 (-1078) of Auto Car of the selected companies.
- Highest positive Trend value was in the year 2011-12 (961) of Auto Scooter of the selected companies.
- Highest Negative Trend value was in the year 2007-08 (-318) of Auto Scooter of the selected companies.
- Highest positive Trend value was in the year 2008-09 (706) of Auto Cycle of the selected companies.
- Highest negative Trend value was in the year 2005-06 (-314) of Auto Cycle of the selected companies.
- Highest positive Trend value was in the year 2010-11 (626) of Auto Tractor of the selected companies.
- Highest negative Trend value was in the year 2011-12 (-314) of Auto tractor of the selected companies.
- Highest positive Trend value was in the year 2010-11 (1824) of Auto two wheeler of the selected companies.
- Highest negative Trend value was in the year 2007-08 (2507) of Auto Car of the selected companies.

**FINDINGS ABOUT INVENTORY AND TREND VALUE**

- Highest positive Trend value was in the year 2011-12 (6109) of Auto Car of the selected companies.
- Highest negative Trend value was in the year 2005-06 (-3826) of Auto Car of the selected companies.
- Highest positive Trend value was in the year 2011-12 (212) of Auto two Scooter of the selected companies.
- Highest negative Trend value was in the year 2007-08 (-124) of Auto Scooter of the selected companies.
- Highest positive Trend value was in the year 2010-11 (214) of Auto Cycle of the selected companies.
- Highest negative Trend value was in the year 2002-03 (-189) of Auto Cycle of the selected companies.
- Highest Positive Trend value was in the year 2010-11 (256) of Auto Tractor of the selected companies.
- Highest negative Trend value was in the year 2011-12 (-280) of Auto Tractor of the selected companies.
- Highest positive Trend value was in the year 2010-11 (1074) of Auto two wheeler of the selected companies.
- Highest negative Trend value was in the year 2008-09 (198) of Auto Car of the selected companies.

**2. FINDINGS ABOUT CHI – SQUARE TEST**

- There is no significant relationship between actual working capital and expected working capital of auto car, auto scooter, auto cycle, and auto tractor and auto two wheeler of the selected companies.
- There is no significant relationship between actual inventory and expected inventory of auto car, auto scooter, auto cycle, and auto tractor and auto two wheeler of the selected companies.

3. **FINDINGS ABOUT CORRELATION ANALYSIS**

- The working capital it will affect the inventory of auto car, auto scooter, auto cycle, auto tractor and auto two wheeler of the selected companies.
- The working capital it will affect the cash flow of auto car, auto scooter, auto cycle, auto tractor and auto two wheeler of the selected companies.

**4. FINDINGS ABOUT t–TEST ANALYSIS**

- There is no significant relationship between working capital and inventory of auto car, auto scooter, and auto cycle and auto tractor of the selected companies.
- There is a significant relationship between working capital and inventory of two wheeler of the selected companies.

**SUGGESTIONS**

- The company should maintain their investment in inventories of the optimum level as required by the operational and sales activity.
- There is a significant relation between inventory and Working capital. Hence the company should maintain their current inventory ratio as well as Working capital and also should take some additional measures for inventory and Working capital.
- The companies should increase the equity capital in order to pay the short – term and long term dept.
- The company should make some special steps for reducing their expenses relates with different heads.
- The cost control measures should be taken through optimum utilization of manpower and machine and conservation of energy.
- The company should try to improve the working capital in their Companies to reduce the stock by making sales promotion efforts and to adopt an effort collection policy so as to have good working capital performance.

**CONCLUSION**

The selected Indian auto Mobile Companies plays an indispensable role in the present liberalized economic world without Indian Auto mobile Companies our country cannot achieve their prime target .In this time we are in a position to analysis the said factors under the head of for the further development .

The above Selected Indian Auto mobile Companies place an important role for producing different Auto mobile Products like Auto Car, Auto cycle, Auto Scooter, Auto Tractor, Auto two wheeler.

Apart some minor problems the performance of Working capital and Inventory Management of the company were good. If the above suggestions were implemented means the Selected Indian Auto mobile Companies will reach the highest position in future.

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