Impact of Working Capital Management on the Profitability of Automobile Industry in India- An Empirical Study of Selected Automobile Companies

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Abstract

Working capital management is the discipline of management which is inevitable in all walks of economic life whether in a household or in an enterprise, in the public domain or in private domain,profit oriented or not .The efficient working capital management is most crucial factor in maintaining survival,liquidity,solvency and profitability of any business organization. Moreover, an optimal working capital management positively contributes to the firm's value. Theprofitability and the efficiency of every sector in the nation have direct bearing on the prosperity of economy which can be primarily achieved through efficient working capital management practices. It helps in designing a framework to smoothen the financial constraints of business so as to make effective use of its resources.Keeping in mind the significance of working capital management an attempt has been made to examine its impact on the profitability of Indian automobile industry. The Indian automobile industry is one of the largest in the world with an annual production of 23.36 million vehicles in FY 2014-15.The Automobile industry accounts for 22 per cent of the country's manufacturing gross domestic product (GDP).For the purpose of this research paper threeIndian Automobile company namely Tata motors ltd., Maruti SuzukiIndia ltd and Mahindra &Mahindra ltd. are taken ,as these are the giants companies in Indian Automobile industry and plays a pivotal role in growth of Indianeconomy. For analyzing the result ROCE is used as dependent proxy variable for profitability. Whereas CR, DTR, ITR are used as independent proxy variable for substantiating the impact of working capital management on the profitability of companies.

Keywords: Working capital management, Automobile industry, ROCE, CR, DTR, ITR

Introduction

The working capital management contributes to ensure that a firm is capable enough to continue its day to day operations and it has sufficient ability to satisfy both short-term debt obligations and upcoming operational expenses. It helps in designing a framework to smoothen the financial constraints of business so as make effective use of its resources. The global financial meltdown of economyand the collapses of colossal organizations such as General Motors, Lehman Brothers, Bear Stearns, among others, brought to the forefront of

capital markets research the importance of management of organizational resources, and especially working capital management.Working capital is described as the capital available to meet the day-to-day operations, and depending on the industry, it could be a relatively high percentage of the total assets of the organization. (Charitou, 2010).working capital is the arithmetic difference between two balance sheetaggregated accounts: current assets and current liabilities.Working capital management is important because of its effects on the firm's profitability and risk, and consequently its value (Smith, 1980).Working capital manager makes attempt to optimally use current liabilities with the least amount of current assets through adventurous strategy. Liquidity risk will be considerably higher in executing this strategy. On the other hand, since the volume of current assets reaches the least level, return rate of investment will be considerably higher. (Falavi & Abdoli, 2015). Working capital management is considered to be a vital issue in a firm's overall financial management. Working capital management has both liquidity and profitability insinuations. Favorable working capital management can be achieved by the finance manager of a firm, by trading off between liquidity and profitability in a precise way. It is learnt, that finest management of working capital positively contributes in creating firms' value. (Bagchi, Chakrabarti, & Basu Roy, 2012). Working capital approved the company's ability to continue its activities without endangering liquidity. (Abbasali Pouraghajan, 2012). The management of working capital frequently considered as a tool to maintaining competence of the business inside their operations. (Rehman & Anjum, 2013). On the other handAutomobile industry is one of the key industries in India. It helps economy by procuring foreign currencies through export, it provides more employment opportunities to people both directly and indirectly and some other industries like glass, rubber, iron and fabrics are depended on this industry (Ganesamoorthy & Rajavathana, 2013). The Indian auto industry is one of the largest in the world with an annual production of 23.36 million vehicles in FY 2014-15, (Society of Indian automobile manufacturers).The Automobile industry accounts for 22 per cent of the country's manufacturing gross domestic product (GDP). To match production with demand, many auto makers have started to invest heavily in various segments in the industry in the last few years. The industry has attracted foreign direct investment (FDI) worth US$ 12,232.06 million during the period April 2000 to February 2015, according to the data released by Department of Industrial Policy and Promotion (DIPP), The Government of India encourages foreign investment in the automobile sector and allows 100 per cent FDI under the automatic route. The companies taken for the purpose of my study are Tata motors India ltd., MarutiSuzuki India ltd. and Mahindra & Mahindra ltd.are the leading giant of Indian automobile industry.

Brief Background of Selected Automobile Companies

Maruti Suzuki India Ltd

which was formerly known as Maruti Udyog Limited is a subsidiary of Suzuki Motor Corporation of japan, counted among the top notch automobile companies in India. Company was founded in 1981 and it captures almost 37% of the India's four wheeler market.with a view to fulfill the demand of all types of customer the co. has variety of brand in its basketi.e., ranging from the low budgeted Maruti 800 to the stylish flagship products like Swift, Wagon R, Zen, Omni,Dzire, sx4 sedan and luxury sport vehicle(suv)grand vitara etc.

Tata Motors Limited

Tata Motors Limited (formerly TELCO, short for Tata Engineering and Locomotive Company) is an Indian multinationalautomotive manufacturing company headquartered in Mumbai, Maharashtra, India. And a subsidiary of the Tata Group. It was founded on 1945. Its products include passenger cars, trucks, vans, coaches, buses, construction equipment and military vehicles. It is the world's 17th-largest motor vehicle manufacturing company, fourth-largest truck manufacturer, and second-largest bus manufacturer by volume.

Mahindra and Mahindra Limited

Mahindra and Mahindra Limited (M&M) is an Indian multinational automobile manufacturing corporation headquartered in Mumbai, Maharashtra, India. It was established as steel trading co. in 1945.It is one of the largest vehicle manufacturers by production in India and the largest manufacturer of tractors across the world. It was ranked as the 10th most trusted brand in India, by The Brand Trust Report, India Study 2014. Mahindra produces a wide range of vehicles including MUVs, LCVs and three wheelers. It manufactures over 20 models of cars including larger, multi-utility vehicles like the Scorpio, Bolero and xuv 500 etc.

Review of Literarture

(Shin and Soenen, 1998)into their paper "working capital management and profitability- A case study of Pakistan"highlighted that efficient Working Capital Management (WCM) plays an important role in creating value for the shareholders. The way working capital was managed had a significant impact on both profitability and liquidity. The relationship between the length of Net Trading Cycle, corporate profitability and risk adjusted stock return was examined using correlation and regression analysis, by industry and capital intensity. It was found that there is strong negative relationship between lengths of the firm's nettrading Cycle and its profitability. In addition, shorter net

trade cycles were associated with higher risk adjusted stock returns.

(Abuzar M.A.Eljelly, 2004) into his paper Liquidity-profitability tradeoff: an empirical investigation in an emerging market elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets. The relation between profitability and liquidity was validated, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis. The study concluded that the cash conversion cycle is having more importance as a measure of liquidity than the current ratio that affects profitability. The size variable was found to have significant effect on profitability at the industry level.

Ramachandran & Janakiraman(2009) in their paper titled," The Relationship between Working Capital Management Efficiency and EBIT" concluded that the importance of efficient working capital management is indisputable in paper industry in India. Moreover, an adequate working capital management is essential as it has a direct impact on EBIT and liquidity.

Kulkanya napompech(2012) in her paper "Effects of working capital management on the profitability of Thai listed firms" took 255 companies listed on Thailand stock exchange and showed negative relationship between the gross operating profits and inventory conversion period and receivable collection period, and also validated the essentialrole of working capital management in value creation of firms by shortening the cash conversion cycle.

L.moorthy and R.Rajavathana (2013) in their paper titled "Effects of working capital management on profitability of select automobile companies in India" took two automobile co. namely Tata motors and M&M ltd.and their result showed that both the companies had insignificant relationship with profitability. Although cash conversion cycle of both the co. had positive relationship with profitability but average collection period and average payment period of both the co. proved to be in negative relationship with the profitability .

Iqbal, Nasir &Nadeem (2015) into their paper on "Working Capital Management Antecedents Impact on FirmSpecific Factors: A Ten Year Review of Karachi Stock Exchange"taken seven proxy variables to measure the impact of working capital and its management with the profitability of company. The data were related with the manufacturing sector of Pakistan listed on Karachi stock exchange. Their study showed that working capital has significant relationship with firm's profitability, and firmsize has also significant relation with firm profitability and debt of the firm has also negative significantrelationship with profitability.

Research Gap

After going through the detailed literature review we found that working capital management has a paramount significance in the mind of researcher, as number of researches have been conducted into this particular field. But it is also a matter of concern that very few researches are available on the automobile industry in relation to working capital management. We also found that most of the researchers have used the variable ROA (return on assets) as a dependent proxy variable for analyzing the profitability. So we have tried to make an attempt by opting ROCE (return on capital employed) as a proxy variable for corroborating the effect of working capital management on the profitability of selected Indian automobile companies.

Objectives of the Study

(I) To analyze the working capital position of selected companies.

(II) To assess the impact of working capital management on profitability of selected automobile companies.

Research Methodology

The study is analytical in nature and it is primarily based on secondary data. For this purpose annual reports of selected three automobile companies were approached and calculations were made out of it. The period of study taken for my research is 10 years which ranges from calendar year 2005 to 2014.The companies taken are Maruti Suzuki India ltd., Tata motors ltd. and Mahindra and Mahindra limited respectively. The study used correlation coefficient to check the linear relationship between proxy variable of working capital and proxy variables of profitability, where as regression analysis is used to assess the impact of various proxy variables of working capital on ROCE (return on capital employed) of the selected companies. The independent proxy variable for working capital are taken as current ratio (CR), inventory turnover ratio (ITR),and debtors turnover ratio (DTR).where as ratio of ROCE (return on capital employed) were taken as dependent proxy variable for checking the profitability of companies.SPSS software is used to analyze the data.

The regression models used are as follows:-

1. $ROCE = \alpha + \beta (C.R) + €o$

2. $ROCE = \alpha + \beta (ITR) + €o$

3. $ROCE = \alpha + \beta (DTR) + €o$

Variables of the study

Variable	Abbreviation	Measurement
Return on capital employed	ROCE	Earnings before interest and tax / capital employed
Current ratio	CR	Current assets / current liabilities
Inventory turnover ratio	ITR	Cost of goods sold / Average inventory
Debtors turnover ratio	DTR	Net credit sales / Average account receivables

Hypotheses of the study

Since the objective of this study is to validate co-relevancy between proxy variable of

Profitabilityi.e., ROCE with the other independent variable like CR, DTR, ITR. For this

Purpose a set of testable hypotheses, null hypothesis (H0) versus the alternative

Hypothesis (H1) are framed and proved by using different statistical tools.

Hypothesis 1

HO1: Thereis nosignificant impact of current ratio on ROCE.

H11: There is significant impact of current ratio on ROCE

Hypothesis 2

HO1: There is no significant impact of DTR on ROCE.

H11: There is significant impact of DTR on ROCE.

Hypothesis 3

HO1: There is no significant impact of ITR on ROCE.

H11: There is significant impact of ITR on ROCE.

Data Analysis and Findings

Table (1)Maruti Suzuki India ltd.

Variable	Min.	Max.	Mean	Std. dev.	R	R^2	F	T	β	Sig. (p-value)
ROCE	13.02	30.51	22.79	6.65	-	-	-	-	-	-
CR	0.78	1.91	1.27	0.37	.424	.18	1.75	1.324	7.58	.222
DTR	16.84	43.66	28.86	8.85	.635	.403	5.40	-2.32	-.477	.049
ITR	48.79	30.61	24.92	4.20	.108	.012	.094	.307	.171	.767

Source: Results obtained by using SPSS software

The above mentioned table of Maruti Suzuki India ltd. shows the detail description of data taken for validating the hypotheses. The table (1) also shows values of correlation coefficients and regression coefficients between the dependent variable (ROCE) and various independent variables. The correlation coefficient between current ratio

and profitability is found to be positive (.424) and which indicate that there is positive linear relationship between two variables. The value of regression coefficient corresponding to variable CR is 7.58 and the p value of t-statistic (.222) is greater than .05and therefore we have strong evidence to say that CR have no significant impact on ROCE and we accept our null hypothesis.

The value of R (.635) in case of DTRis also found to be positively related with the dependent variable ROCE. The regression coefficient (β) corresponding to DTR(.477) showed negative impact of independent variable (DTR) on dependent variable (ROCE), although the p value is found to be significant (.049) as it is less than .05.and therefore we have strong evidence to say that DTR of the company have positive and significant impact on ROCE. Therefore we reject our null hypothesis that there is no significant impact of DTR on ROCE. The value of R (.108) for independent variable (ITR) is also found to be positively related with profitability variable ROCE but the relationship seems to be insignificant as the p-value (.767) found to be more than .05 and therefore it validates the acceptability of null hypothesis and shows the insignificant impact of inventory turnover ratio (ITR) on Profitability (ROCE).

Table (2)Tata motors ltd.

Variable	Min.	Max.	Mean	Std. dev.	R	R^2	F	T	β	Sig. (p-value)
ROCE	2.70	28.62	19.91	8.68	-	-	-	-	-	-
CR	0.48	1.12	0.84	0.20	.80	.65	14.98	3.87	32.58	.005
DTR	15.29	22.44	19.29	2.23	.016	.00	.002	.045	.057	.965
ITR	8.25	12.79	10.08	1.84	.44	.19	1.92	1.39	1.93	.203

Source: Results obtained by using SPSS software

The above table (2) of Tata motors ltd shows the detail description of data taken for examining the reliability of hypothesis.Minimum, Maximum, Mean and standard deviationof all the variables are shown with correlation coefficient (R), R^2, F (which shows the significance of model), regression coefficient (β), t, and value of p is shown as significance. ROCE is used as a proxy variable for profitability where as CR, DTR, ITR are independent variable used as proxy for knowing the impact of profitability respectively. The correlation coefficient (R) between current ratio and dependent variable ROCE is found to be positively (.80) which shows strong positive linear relationship between the two variables. Regression coefficient (β) (32.58) between the variables is also found positive (32.58) and the p-value of t-statistic (.005) is less than .05 which shows that the impact of CR on ROCE is positive and significant. So we have strong evidence to reject our null hypothesis and accept the alternative hypothesis.

The value of R between DTR and ROCE is found to be (.016) which shows weak positive linear relationship between the two variables. The value of regression coefficient corresponding to DTR is (.057) and the p-value of t-statistic is (.965), which is greater than the significant value of .05.Thus we have strong evidence to say that there is no significant impact of DTR onROCE of the company and therefore the null hypothesis is accepted

Similarly the independent variable ITR has also positive linear relationship with ROCE and the p- value of t statistic is greater than .05 and which indicate the insignificant impact of ITR on ROCE. Therefore we have strong evidence to accept our null hypothesis.

Table (3) Mahindra& Mahindra ltd.

Variable	Min.	Max.	Mean	Std. dev.	R	R^2	F	T	β	Sig. (p-value)
ROCE	16.39	21.46	18.31	1.82	-	-	-	-	-	-
CR	1.39	2.54	1.76	0.365	.217	.047	.396	0.629	1.08	.547
DTR	6.93	13.56	9.40	2.57	.372	.138	1.28	1.13	0.263	.290
ITR	6.32	11.61	8.90	1.48	.291	.085	0.74	0.861	0.355	.415

Source: Results obtained by using SPSS software

The table shown above gives a clear cut depiction about the variables taken for validating the hypothesis. Where ROCE is used as dependent variable to know the impact of independent variables of working capital on the profitability of Mahindra and Mahindra ltd. The correlation coefficient (R) between the independent variable current ratio with dependent variable ROCE values (.217) which shows very low linear relationship between the variables. P value of t-statistic corresponding to CR is (.547) which is much greater than the significant value (.05, hence it validates that impact is positive and insignificant and we have strong evidence to accept our null hypothesis.

The correlation coefficient between DTR and ROCE is also found to be positive (.372). The value of (β) regression coefficient is (.263) and the p-value of t-statistic is (.290), which is greater than the significant value (.05) which indicates that DTR has insignificant impact on ROCE. Therefore we have strong evidence to accept our null hypothesis.

Relationship between ITR and ROCE is also found to be less strong as correlation coefficient between these two is positive but weakly related. Level of significance at p is (.415) which is greater than .05.hence the null hypothesis once again is accepted with the result that there is an insignificant impact of independent variable ITR on ROCE dependent variable of Mahindra and Mahindra ltd.

Conclusion

The study has analyzed impact of profitability on working capital management of some selected Indian automobile companies. For this purpose ROCE is used as a dependent proxyvariable for profitability where as CR, ITR & DTR is used as independent proxy variable for working capital. The companies taken are Maruti Suzuki India ltd., Tata motors ltd & Mahindra and Mahindra ltd. Based on the above analysis it is found that only debtors turnover ratio in case of Maruti Suzuki India limited and current ratio in case of Tata motors limited are positively related with the profitability and their impact is also found to be significant. And the remaining independent proxy variable in each company are found to be positively but less correlated with the dependent proxy variable of profitability (ROCE).it is also found that rate of inventory turnover is very low in all the companies. As ITR is a measurement of effectively converting the inventory into sales hence this ratio should be improved otherwise it may be problematic for the companies in the long run. Debtor's turnover ratio is found to be significant in Maruti Suzuki only. It is low positively related in the remaining two companies. DTR is an accounting measure used to quantify a firm's effectiveness in extending credit as well as collecting debts. So the DTR should also be highly correlated so as to maintain the liquidity. Current ratio is found to be significant with ROCE in case of Tata motors and it is positively correlated at moderate level in remaining two companies but having insignificant relationship with the profitability of selected companies.

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