"Efficient management of working capital: A study of Automobile industry in India"

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Abstract

Working capital plays an important role in any business and is the lifeline of any business. Working capital management is the one of the top issue faced by most of the manufacturing firms. The main objective of this study is to measure the efficiency of working capital of firms in automobile sector in India and also to determine the impact of efficient management of working capital on the profitability of the firms. Top 10 automobile manufacturing firms of India have been selected as a sample for this study. Secondary source of data has been used for this study for 10 years from 2007-2008 to 2016-2017. The result shows that Force Motors is the most efficient firm whereas Ashok Leyland is the least efficient. The result of correlation and regression analysis showed that there is positive relation between efficiency index and profitability of the firms but the impact is not significant which means there are other components also which affects the profitability of the firm and can be undertaken for further studies.

Keywords: Working capital management, Automobile industry, Efficiency index, Profitability.

Introduction

Working capital plays an important role in any type of business, it maybe small or large enterprise and is the lifeline of any business. In today's dynamic environment, one have to be prepared to face any unseen challenges and have to manage its money in right manner. Some of the methods like Just-in-Time, Economic Order Quantity, etc have already gained much attention for all the firms. Availability of right amount of working capital is of utmost important for any business as it ultimately affects the profitability of the firm. Having right amount of working capital not only helps in increasing the liquidity of the company but it also helps in smooth flow of production, improving goodwill, etc. Companies with shortage of working capital usually face the problems like lack of liquidity, outstanding payments, pressure from suppliers, etc.

Generally, manufacturing firms need more working capital as compared to trading business because of the long operating cycle. Working capital management is the one of the top issue faced by most of the manufacturing firms. Working capital is the arithmetic difference between two balance sheet aggregated 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).

In this research paper, we will try to measure the efficiency of working capital of firms in automobile companies in India. For this purpose, we will take top 10 automobile manufacturing firms of India namely

Tata Motors Ltd., Mahindra & Mahindra Ltd., Maruti Suzuki India Ltd., Hero MotoCorp Ltd., Bajaj Auto Ltd., Ashok Leyland Ltd., Sundaram Clayton Ltd., TVS Motor Company Ltd., Eicher Motors Ltd., and Force Motors Ltd.

Review of Literature

Syed Noorul Shajar, Saleem Akhtar Farooqi (2017) the authors analyzed the working capital position of 3 companies i.e. Maruti Suzuki: Tata Motors Ltd. and Mahindra and Mahindra Limited. They used co-relation & regression method to find out its impact on profitability of these firms. The independent variables are taken as current ratio (CR), inventory turnover ratio (ITR) and debtor turnover ratio (DTR). Ratio of ROCE (return on capital employed) were taken as dependent variable.

Harsh, Vineet, Kaur (2014) in this study the authors tried To measure the overall efficiency of working capital and measured the relationship between efficient management of working capital and profitability of the firm in health care industry. Methodology used in this study is Performance Index of Working Capital, Utilization Index of Working capital and Efficiency Index of Working capital. It was found that in some of firms there is scope for the improvement in management of either the individual components of current assets or the current assets as a whole for generating increased sales revenue.

Ioannis Lazaridis, Dimitrios Tryfonidis(2006) The purpose of this paper is to establish a relationship that profitability, the cash conversion cycle and its components for131 firms which are listed in the ASE. It was found that there is statistical significance between profitability, which was measured through gross operating profit, and the cash conversion cycle. They suggested that managers can create profit by handling the cash conversion cycle effectively and keeping accounts receivables, accounts payables and inventory to an optimum level.

Kesseven Padachi (2006) the author of this article examined the trend in working capital and its impact on the profitability of the firm. Five year data (1998-2003) of 58 manufacturing firms was taken using panel data analysis. Correlation- regression method was used to find out the relation between the two variables. He found that high inventory and receivables have negative impact on the profitability of the firm.

Fatemeh Jafari (2015) the author analyzed the practice of liquidity management and asset and liquidity ratios in six selected Indian auto manufacturing companies for the years 2003- 2012 using secondary source of data. Index of debtors' turnover ratio, fixed assets turnover ratio, inventory turnover and total assets turnover ratio were used. The results of the study indicated that most of the company have failed to manage its inventory as some of them have problem of over-stocking and the other have shortage of stock which in terns reduces the sale and increases the risk.

M. Aravind (2016) the purpose of this article was to understand how various working capital metrics influence the profitability of the manufacturing firms in India. To understand, the data set of 100 manufacturing firms was observed and analyzed for the year 2006-2015. One of the major finding of the study was- most of the firms have high short-term debt and have failed to manage its receivables and inventories.

Research Design

Objective of the study

- To measure the overall efficiency of working capital of the firms
- To understand the relationship between sales and current assets
- To examine the ability of the firms in utilizing its current assets to generate sales.
- To determine the impact of efficiency on profitability.

Need for the study

The finding of this study will help the firms to understand the importance of efficient management of working capital for automobile companies. It is a vital issue confronting managers today is how to maintain a right amount of working capital to maintain liquidity and cost reduction which is associated with holding less or excess of working capital which can ultimately help to improve the efficiency of the firm.

Research gap

- Although there are number of literature on working capital management, very few focused on the automobile sector of India.
- Some of the studies have taken small sample size for the study, which might bring in the question of statistical validity of the results.
- Most of the previous studies have taken liquidity ratios to measure the impact of working capital on the profitability of the firm and very little importance has been given to the fact like relation between sales and current asset, extent of current asset utilization, efficiency, etc.

Research Hypothesis

H0: There is no significant impact of efficiency index on the Profitability of the firms.

H1: There is significant impact of efficiency index on the Profitability of the firms.

Three parameters have been used to calculate the overall efficiency of the working capital. They are:

Performance index of working capital (PI), working capital utilization index (UI) and efficiency index (EI) has been used as dependent variables. Where,

PI for WCM= Proportionate change in sales to change in current asset.

UI for WCM= Current asset/ sales

EI for WCM= PI* UI

On the other hand, **Profitability is defined as Income/ sales and income/ total assets.**

Instrument Design

1. **Descriptive analysis** is generally used to describe the simple feature of the data and provide summary of the sample data. In this study, it presents the summary statistics of the variables used in the analysis.

2. **Correlation** describes the strength of relationship between two variables. In this study the correlation analysis is under taken to determine the relationship between efficiency index and profitability of the firm.

3. **Regression analysis** is used in this study to examine the impact of working capital on profitability of the ten selected automobiles firms in India.

Data collection procedure

Secondary data has been used for the study and is being collected from the annual reports and PROWESS database of Centre for Monitoring Indian Economy for the last 10 years i.e. 2000-08 to 2016-17.

Sample size

A sample of top 10 listed automobile companies of India namely Tata Motors Ltd., Mahindra & Mahindra Ltd., Maruti Suzuki India Ltd., Hero MotoCorp Ltd., Bajaj Auto Ltd., Ashok Leyland Ltd., Sundaram Clayton Ltd., TVS Motor Company Ltd., Eicher Motors Ltd., and Force Motors Ltd. has been taken and data is collected for the last 10 years i.e. 2000-08 to 2016-17.

Statistical Design

Independent variable- Efficiency Index for working capital management is the independent variable and it is measured by **PI* UI**

Where, PI for WCM= Proportionate change in sales to change in current asset.

UI for WCM= Current asset/ sales.

Dependent Variable- Profitability of the firm is the dependent variable used for the study. Profitability has been defined as Income/ sales and income/ total assets

Limitation of the study

This study is limited to the sample of Indian automobile manufacturing firms. The findings of the study are limited to the selected firms and cannot be generalized.

Analysis and Interpretation

To measure the overall efficiency index of working capital of the firms

Company	PI	UI	EI	EI Comparision	
Industry avg.	-4.888	0.261	-0.121	-0.121	
Tata motors	0.34	0.25	0.22	0.22	
M& M	2.08	0.26	0.56	0.56	
Maruti Suzuki	-52.43	0.09	-2.95	-2.95	
Hero Motocorp	1.93	0.18	0.14	0.14	
Bajaj Auto	5.08	0.27	0.96	0.96	
Ashok Leyland	-15.35	0.25	-3.31	-3.31	Least Efficient
Sundaram clayton	2.34	0.42	0.8	0.8	
TVS	0.59	0.18	0.23	0.23	
Eicher motors	2.38	0.36	1.04	1.04	
Force	4.16	0.35	1.1	1.1	Most Efficient

The table shows the efficiency index of working capital. The result shows that most of the firms in the Automobile sector have managed their working capital efficiently. Out of the 10 firms under study, only 2 firms namely Ashok Leyland and Maruti Suzuki have failed to manage their working capital to a great extent. The main reason for their failure was proportionate change in sales was less then proportionate change in current asset. On the other hand, Force motors have managed their working capital most efficiently and have the efficiency index of 1.10. The industry average is negative at -0.121 which means though most of the firms have positive efficiency index, still they are not working at their potential efficiency level.

For the robustness of the study, if we exclude the outliners which have very high or low efficiency index (Maruti Suzuki and Ashok Leyland in this study) to calculate the average industry efficiency index then it would be 0.63 which is positive. So, it means that most have the firms have managed their current assets efficiently and their efficiency index is positive.

To understand the relationship between sales and current assets

Performance index (PI) has been used to understand the relationship between sales and current asset. The result shows that most of the firms have been able to increase their sales with increase in their current assets except 2 firms namely Ashok Leyland and Maruti Suzuki with PI of -15.35 and -52. 43respectively. Bajaj Auto has the highest Performance index 5.08 which means their sales have been increased with the increase in their current assets.

To examine the ability of the firms in utilizing its current assets to generate sales

Utilization index (UI) indicates how well a company has been able to utilize its current assets to generate sales for the firm. The result shows that the overall UI of the Automobile sector is positive and is at 0.261. All the firms under the study have been able to utilize their current assets efficiently to generate sales. Sundaram Clayton has the highest UI with 0.42 followed by Eicher motors and Force motors respectively.

So, we can say that Force motors have managed their working capital most efficiently with the Efficiency index of 1.10. On the other hand Ashok Leyland has failed to manage its working capital efficiently and have the least & negative Efficiency index of -3.31.

Analysis of components which contributed the most for the firm having best Efficiency index for Force Motors.

Force Motors have positive Performance index, Utilization index and Efficiency index. Their Efficiency index of 1.10 is the highest among the 10 firms under this study. In this study, we have tried to find out which individual component of working capital contributes the most for efficient utilization of working capital and results in increased sales. The result shows that inventories as a component of working capital contributes the most followed by cash and cash equivalent which means automobile firms should give more importance to inventory and cash flow management to gain overall working capital efficiency.

Analysis of components which was the reason for having least Efficiency index for Ashok Leyland.

Ashok Leyland has the lowest efficiency index of -3.31. The performance index of the firm is negative but the utilization index is positive which means they have generated considerable sales with increase in the current asset but have not been able to manage its current assets efficiently. The result shows that Force Motors have failed to manage its inventory and trade receivable which has resulted in negative efficiency index.

To determine the impact of efficiency on profitability

Company	EI	Income/sales (Avg. of 10 yrs.)	Income/ Assets (Avg. of 10 yrs.)
Tata Motors	0.22	0.02	0.02
M& M	0.56	0.08	0.11
Maruti Suzuki	-2.95	0.07	0.11
Hero Motocorp	0.14	0.10	0.22
Bajaj Auto	0.96	0.14	0.22
Ashok Leyland	-3.31	0.04	0.04
Sundaram Clayton	0.8	0.04	0.05
TVS	0.23	0.03	0.06
Eicher Motors	1.04	0.12	0.15
Force	1.1	0.08	0.14

The pooled data of 10 firms of automobile sector under the study shows that there is a positive correlation between efficient management of working capital as profitability of the firms. The relationship between efficiency index and income to sales is 0.37 and that of between efficiency index and income to assets is to the extent of 0.30. It means proper management and utilization of current assets results in higher generation of income through sales and ultimately leads to higher profitability for the automobile firms.

The regression analysis shows that there is no significant relationship between efficient working capital management and profitability of the automobile firms which means though efficient management of working capital leads to higher profitability but there are other factors also which has impact on the profitability of the firm.

Summary of findings

The result of first part of the study indicates that Force Motors have managed their working capital most efficiently with Efficiency index of 1.10 and on the other hand, Ashok Leyland is the least efficient firm with efficiency index of -3.31 when working capital management is concerned. The further analysis also indicated that inventories, cash & cash equivalent and trade receivables are the major components of working capital which contributes to the income of the firms and need to be given due importance in its management.

The second part of the study states that there is positive correlation between efficient management of working capital and profitability of the ten selected automobile firms which means profitability increases with increase in the efficiency of working capital management and vice-versa. The results of regression analysis indicated that though there is correlation between efficiency index and profitability, it is not significant. There is no significant impact of efficiency index on the profitability of the firms. So it accepts the null hypothesis and rejects the alternative hypothesis.

Recommendations and conclusion

In the present study of working capital management and its efficiency of the selected ten India automobile manufacturing companies, with the main objective of measuring the efficiency of working capital management. Three index namely performance of various components of current assets (Performance index), the degree of utilization of total current assets in generating sales (utilization index) and efficiency in managing current assets (Efficiency index) has been used for this study. In the second half of the study, relationship between efficiency of working capital management and the profitability of the firms selected has been established by calculating correlation between efficiency index & Income to current assets and efficiency index & income to average total assets.

The results of the research paper suggest that most of the firms under study have performed considerable well as far as the performance of working capital (PI), utilization of current assets to generate sales (UI) and efficiency of working capital (EI) is concerned. Some of the firm have efficiently managed their working capital and have been successful in generating sales with increase in their current asset. Firms which have lower or negative efficiency index need to put in efforts to utilize the current assets properly as to achieve efficiency in working capital management. There is scope for the improvement in managing either the individual components of current assets or the current assets as a whole to achieve efficiency in working capital management. The results of correlation and regression analysis shows that though efficient management of working capital is important to increase profitability of the firms in this sector and there is positive correlation between them, there are other components also which affects the profitability of the firm and can be undertaken for further studies.

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