



A STUDY ON EFFECT OF WORKING CAPITAL AND PROFITABILITY OF MAHINDRA & MAHINDRA LTD

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Abstract:

An accepted financial axiom is that the role of managers is to maximize the wealth by the efficient utilization of resources available to them. The management of Working Capital is one of the most dominant and challenging aspect of the overall financial management. Working Capital has acquired a great significance and sound position for the twin objects of "profitability and liquidity." The efficient working capital management is the most crucial factor in maintain survival, liquidity and profitability of the concerned business enterprise. In this paper an effort has been made to make a case study of Mahindra and Mahindra Limited for assessing the trend of working capital management and also to suggest an appropriate audit program to facilitate proper working capital management in the Automobile Industry. It consumes a great deal of time to increase profitability as well as to maintain proper liquidity at minimum risk. There are many aspects of working capital management which make it an important function of the finance manager. In fact we need to know when to look for working capital funds, how to use them and how measure, plan and control them.

Key Words: Net Working Capital, Current Ratio, Profitability, Liquidity & Risk and Return on Capital Employed

Introduction:

Working capital is a common measure of a company's liquidity, efficiency, and overall health. Because it includes cash, inventory, accounts receivable, accounts payable, the portion of debt due within one year, and other short-term accounts, a company's working capital reflects the results of a host of company activities, including inventory management, debt management, revenue collection, and payments to suppliers.

Working capital is a financial metric which represents operating liquidity available to a business, organization or other entity, including governmental entity. Along with fixed assets such as plant and equipment, working capital is considered a part of operating capital. Gross working capital equals to current assets. Net working capital (NWC) is calculated as current assets minus current liabilities. If current assets are less than current liabilities, an entity has a working capital deficiency, also called a working capital deficit.

A company can be endowed with assets and profitability but short of liquidity if its assets cannot readily be converted into cash. Positive working capital is required to ensure that a firm is able to continue its operations and that it has sufficient funds to satisfy both maturing short-term debt and upcoming operational expenses.

Working Capital Management:

The management of current assets, current liabilities and inter-relationship between them is termed as working capital management. "Working capital management is concerned with problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationship that exist between them." In practice, "There is usually a distinction made between the investment decisions concerning current assets and the financing of working capital."

A study of working capital management is very important for internal and external experts. Sales expansion, dividend declaration, plants expansion, new product line, increase in salaries and wages, rising price level, etc., put added strain on working capital maintenance. Failure of any enterprise is undoubtedly due to poor management and absence of management skill.

Justification on the Topic:

Proper management of working capital is required to ensure that the firm is able to continue its day-to-day operations and it has the sufficient ability to satisfy it's present and upcoming short term expenses. The working capital position helps the investors, creditors, bankers, suppliers, financial institutions, government etc. judge the stability of the enterprise. Working capital is the life blood and nerve centre of business. Just as circulation of blood is essential in the human body for maintaining life, working capital is very essential to maintain the smooth running of the business. No business can run successfully without an adequate amount of working capital. It plays a vital role in the impact of the business. So there exist a number of implication and gaps for enquiry into working capital management of companies; against this background a study was conducted on the working capital position of Mahindra and Mahindra Ltd.

Research Design and Methodology:

In this study the sample company named Mahindra and Mahindra Ltd has been taken for analysis of working capital position. Present study is based on secondary data i.e. published annual reports of the company. These financial data's are edited, classified and tabulated as per the requirements of the study. This study has covered seven years data's from 2011 to 2017 for analyzing the working capital position of Mahindra and Mahindra Ltd.

The profitability and liquidity position have been measured to analyze the working capital position of Mahindra and Mahindra Ltd. The collected data have been analyzed by the various ratios for finding profitability and liquidity. For assessing the behavior of above ratios, Standard deviation (STDEV), Average Annual Growth rate (AAGR), Regression Analysis, Spearman's Rank Correlation Co-efficient and student t-test has been used.

Objectives of the Study:

The main objectives of the study are mentioned below:

- ✓ To analyze the working capital position of the firm.
- ✓ To analyze the effect of liquidity on profitability
- ✓ To analyze the effect of risk on profitability
- ✓ To offer suitable suggestions on the basis of findings of the study.

Hypothesis of the Study:

This study is based on the following null hypothesis (H_0):

- ✓ There is no significant difference between liquidity and profitability of Mahindra and Mahindra Ltd. during the study period.
- ✓ There is no significant difference between risk and profitability of Mahindra and Mahindra Ltd. during the study period.

Company Profile:

Mahindra & Mahindra Ltd. was set up as a steel trading company in 1945 in Ludhiana as Mahindra & Mohammed by brothers K.C. Mahindra and J.C. Mahindra and Malik Ghulam Mohammed. After India gained independence and Pakistan was formed, Mohammed immigrated to Pakistan where he became that country's first Finance Minister. The company changed its name to Mahindra & Mahindra in 1948. It eventually saw a business opportunity in expanding into manufacturing and selling larger MUVs, starting with the assembly under license of the Willys Jeep in India. Soon established as the Jeep manufacturers of India, the company later commenced manufacturing Light Commercial Vehicles (LCVs) and agricultural tractors.

Over the past few years, the company has taken interest in new industries and in foreign markets. They entered the two-wheeler industry by taking over Kinetic Motors in India. M&M also has a controlling stake in the REVA Electric Car Company and acquired South Korea's Sang Yong Motor Company in 2011. In 2010-11 M&M entered in micro drip irrigation with the takeover of EPC Industries Ltd in Nasik. In October 2014, Mahindra and Mahindra acquired a 51% controlling stake in the Peugeot motorcycle.

Review of Literature:

The first literature work in Working Capital Management was pioneered by John Bauer (1916). He examined the Pattern of Operating Revenue for a year and found that the average time taken by consumers for paying for service was two months. The operating revenue for this period was \$200,000 and the expenses incurred were \$120,000. This contributed to the necessity of Working Capital. If the company is a new one with its actual fixed capital and volume of business, it would practically have to provide this amount in its initial investment. Thus, the company actually has to tie up this sum in the business, which intern earns a return on the amount.

Saravanan (2001) examined working capital management in ten Non Banking Financial Companies using working ratios to evaluate the effectiveness of Working Capital Management. He concluded that the sample companies had given more importance to the liquidity aspect in comparison to the profitability.

Parasuraman, N.R (2004) examined Working Capital practices in leading Pharmaceutical Companies in relation to the credit policy and profitability and correlated the relationship. The study found that the companies have employed larger Working Capital for enhancing profitability.

Abdul Raheman (2007) studied the link between Working Capital Management and Profitability of a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years, that is from 1999-2004. The result shows that there is a strong negative relationship between variables of the Working Capital and profitability of the firm. As the cash conversion cycle increases it leads to the decrease in the profitability of the firm.

Analysis of Working Capital Management of Mahindra and Mahindra Ltd:

Net Working Capital Position:

The two concept of working capital are gross working capital and net working capital. The former means the firm's investment in current assets and later the excess of current ratio over the current liabilities. The

excess of current assets over the current liabilities provides measures of safety margin available against uncertainty in realization of current assets and flow of funds.

Table 1: Statement Showing Net Working Capital Position (Rs. in Crore)

Year/Ratio	Current Assets	Current Liabilities	Net Working Capital
March 2011	5442.68	5951.43	-508.75
March 2012	7978.14	7360.17	617.97
March 2013	8943.43	8150.39	793.04
March 2014	11288.92	8766.79	2522.13
March 2015	10128.21	8974.27	1153.94
March 2016	11633.20	10693.67	939.53
March 2017	12455.99	9458.95	2997.04
Mean	9695.80	8479.38	1216.41
STDEV	2439.35	1524.33	1188.11
AAGR	12.89	5.89	-68.91

The above table shows the working capital position of the concern. During the study period working capital showed a fluctuating tendency. The highest value of working capital Rs.2997.04 crore in the year 2017 and least of Rs.-508.75 crore in the year 2011. The net working capital had an average value of Rs.1216.41 crore and also negative average annual growth rate of -68.91% and standard deviation is Rs.1188.11.

Current Ratio:

It is defined as the ratio of current assets to current liabilities. It is an index of technical solvency and an index of the strength of the working capital. A high current ratio is an assurance that a firm will have adequate funds to pay current liabilities and other current payments. The ideal ratio is 2:1 times.

Table 2: Statement Showing Current Ratio (Rs. in Crore)

Year/Ratio	Current Assets	Current Liabilities	Current Ratio
March 2011	5442.68	5951.43	0.91
March 2012	7978.14	7360.17	1.08
March 2013	8943.43	8150.39	1.10
March 2014	11288.92	8766.79	1.29
March 2015	10128.21	8974.27	1.13
March 2016	11633.20	10693.67	1.09
March 2017	12455.99	9458.95	1.37
Mean	9695.80	8479.38	1.14
STDEV	2439.35	1524.33	0.15
AAGR	12.89	5.89	5.05

The above table shows the current ratio as a measure of liquidity position. During the study period it was observed that current ratio is the highest ratio 1.37 times in the year 2017 and least of 0.91 times in the year 2011. The current assets and current liabilities showed a fluctuating trend throughout the study. The average annual growth rate of current assets and current liabilities was 12.89 and 5.89 respectively. The current ratio showed a varying trend with an average ratio of 1.14 times with an average annual growth rate of 5.05%. The standard deviation of the ratio was low with a value of 0.15.

Liquid Ratio or Quick Ratio:

It shows the relationship between liquid assets and current liabilities. It is the firm's capacity to pay its obligation at time of emergency situation. The ideal ratio is 1:1 times.

Table 3: Statement Showing Liquid Ratio (Rs. in Crore)

Year/Ratio	Liquid Assets	Current Liabilities	Liquid Ratio
March 2011	3748.47	5951.43	0.63
March 2012	5619.75	7360.17	0.76
March 2013	6523.66	8150.39	0.80
March 2014	8485.29	8766.79	0.97
March 2015	7690.64	8974.27	0.86
March 2016	8945.27	10693.67	0.84
March 2017	9740.39	9458.95	1.03
Mean	7250.50	8479.38	0.84
STDEV	2091.33	1524.33	0.13
AAGR	15.98	5.89	6.35

The above table shows the liquid ratio of the firm. The ratio had the highest ratio 1.03 times in the year 2017 and least of 0.63 times in the year 2011. The liquid assets of the firm had an average value of Rs.7250.50 crore with an average annual growth rate of 15.98. The liquid ratio showed a varying trend with an average ratio

of 0.84 times with an average annual growth rate of 6.35%. The standard deviation of the ratio was low with a value of 0.13.

Cash Position Ratio (CPR):

It shows how much of total assets is kept in the form of cash is revealed through this ratio. How much per rupee of total assets is kept in the form of cash. Higher the ratio shows less risk, but the lower rate of return as cash by itself does not earn profit.

Table 4: Statement of Cash to Total Assets (Rs. in Crore)

Year/Ratio	Cash	Total Assets	CPR (Times)
March 2011	614.64	19539.78	0.03
March 2012	1188.43	23911.98	0.05
March 2013	1781.41	27453.59	0.06
March 2014	2950.39	31288.65	0.09
March 2015	2064.77	32944.87	0.06
March 2016	2297.03	36412.34	0.06
March 2017	1687.00	39338.31	0.04
Mean	1797.67	30127.07	0.06
STDEV	756.39	6970.25	0.02
AAGR	17.45	10.13	3.38

The above table shows the cash generating capacity of the total assets of the firm. Cash position ratio also showed similar fluctuating tendency like the above ratios. It had a mean value of 0.06 times with an average annual growth rate of 3.38%. The ratio had the highest ratio 0.09 times in the year 2014 and least of 0.03 times in the year 2011. The standard deviation of the ratio was low with a value of 0.02.

Working Capital Turnover Ratio (WCTR):

It reveals the overall picture of the operational capital necessary for maintaining a level of its sales. Higher ratio indicates quick conversion of working capital into sales. Also greater the ratio, shorter is the working capital cycle and better is working capital management.

Table 5: Statement of Annual Sales to Working Capital (Rs. in Crore)

Year/Ratio	Annual Sales	Working Capital	WCTR (Times)
March 2011	23493.72	534.01	43.99
March 2012	31392.03	569.93	55.08
March 2013	39903.12	495.54	80.52
March 2014	39963.36	394.86	101.20
March 2015	38391.61	755.67	50.80
March 2016	40875.07	234.90	174.01
March 2017	43785.36	409.45	106.93
Mean	36829.18	484.91	87.50
STDEV	6998.43	162.98	45.44
AAGR	8.64	-2.33	14.31

The above table shows the sales generated per amount of working capital of the firm. This ratio also showed a fluctuating tendency during the study period. The ratio had an average value of 87.50 times with an average annual growth rate of 14.31%. Net working capital turnover ratio observed the highest value of 174.01 times in the year 2016 and least of 43.99 times in the year 2011. The ratio had a high standard deviation of 45.44.

Analysis of Liquidity, Profitability and Risk Using Spearman’s Rank Correlation and Student t-Test:

Spearman’s Rank Correlation is the relationship between different rankings of the same set of items. A rank correlation measures the degree of similarity between two rankings and can be used to assess its significance.

Student t-distribution is a small test used for testing of hypothesis of the sample size less than 30. If the calculated value of t is less than the table value. The null hypothesis will be accepted and vice versa; for a given significance level.

Liquidity and Profitability Analysis Using Student t-test:

Profitability:

It indicates the percentage of return in the business. A high return on investment shows the company is having a higher rate of profit as percentage of capital employed.

Table 6: Statement showing Profitability (Rs. in Crore)

Year/Ratio	Total Assets	Current Liabilities	Capital Employed	Operating Profit	ROCE (%)
March 2011	19539.78	5951.43	13588.35	23460.26	172.65
March 2012	23911.98	7360.17	16551.81	31852.52	192.45

March 2013	27453.59	8150.39	19303.2	40441.16	209.50
March 2014	31288.65	8766.79	22521.89	40508.50	179.86
March 2015	32944.87	8974.27	23970.6	38945.42	162.47
March 2016	36412.34	10693.67	25718.67	40884.98	158.97
March 2017	39338.31	9458.95	29879.36	43785.36	146.54
Mean	30127.07	8479.38	21647.69	37125.60	174.63
STDEV	6970.25	1524.33	5581.38	7056.56	21.40
AAGR	10.13	5.89	11.99	8.66	-1.51

The above table shows during the period the operating profit ratio a fluctuating trend. The operating profit had the highest value of 209.50 in the year 2013 and the least of 146.54 in the year 2017. The operating profit had a mean value of 174.63 with an average annual growth rate of -1.51%. The standard deviation was moderate with a value of 21.40. The capital employed of the firm had a mean value of Rs. 21647.69 crore with an average annual growth rate of 11.99.

Relationship between Liquidity and Profitability:

Testing of 1st Null Hypothesis:

Table 7: Statement for Calculation of Correlation

Year/Ratio	Current Ratio	R1	ROCE (%)	R2	D = (R2-R1)	D ²
March 2011	0.91	7	172.65	4	-3	9
March 2012	1.08	6	192.45	2	-4	16
March 2013	1.10	4	209.50	1	-3	9
March 2014	1.29	2	179.86	3	1	1
March 2015	1.13	3	162.47	5	2	4
March 2016	1.09	5	158.97	6	1	1
March 2017	1.37	1	146.54	7	6	36
						76

The above table shows the current ratio is used as an indicator of liquidity and ROCE as for measuring profitability. The Spearman's rank coefficient of Correlation(r) between current ratio and ROCE has been shown for which the relevant formula has been used. The test used for determining significance of r is t-test. The Spearman's rank coefficient of Correlation(r) between ROCE and liquidity has been calculated. The t-test is applied for determining significance of r. The computed value of "t" has been compared with the tabulated value of "t".

In the above table $r = -0.36$ and value of $|t| = 0.87$. The table value of "t" at 5% level of significance for 5 degrees of freedom (where $n=7$) is equal to 2.57. Since the computed value of t is less than the table value the null hypothesis (H_0) is accepted.

Profitability and Risk Analysis:

The risk associated with the concern can be calculated. In the aggressive approach the current assets are financed to be short term sources and in case of conservative approach the current assets are financed by both long term and short term sources. The risk faced by the firm can be measured.

Table 8: Statement Showing Risk (Rs. in Crore)

Year/Ratio	Equity + Reserves	Long Term Loans	Fixed Assets	Current Assets	Risk
March 2011	10313.37	1868.13	3906.59	5442.68	8274.91
March 2012	12171.09	1476.68	5080.75	7978.14	8567.02
March 2013	14658.92	2087.47	5821.34	8943.43	10925.05
March 2014	16791.19	3018.12	7105.39	11288.92	12703.92
March 2015	19255.09	3232.26	8108.22	10128.21	14379.13
March 2016	21707.19	4057.44	9518.38	11633.20	16246.25
March 2017	25669.56	768.21	9672.58	12455.99	16765.19
Mean	17223.77	2358.33	7030.46	9695.80	12551.64
STDEV	5409.98	1133.25	2212.07	2439.35	3453.99
AAGR	14.89	-5.89	14.76	12.89	10.26

The above table shows the measure of liquidity. During the study period concerns highest risk of 16765.19% generated a return of 71.71% and least risk of 8274.91% generated a return of 1354.85. The risk taken by the company showed variation in its value with deviation of 3453.99. The average risk taken by the company was 12551.64 with an average annual growth rate of 10.26.

Testing of 2nd Null Hypothesis:

Table 9: Statement for Calculation of Correlation

Year/Ratio	Risk	R3	ROCE (%)	R4	D = (R4-R3)	D ²
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March 2011	8274.91	7	172.65	4	-3	9
March 2012	8567.02	6	192.45	2	-4	16
March 2013	10925.05	5	209.50	1	-4	16
March 2014	12703.92	4	179.86	3	-1	1
March 2015	14379.13	3	162.47	5	2	4
March 2016	16246.25	2	158.97	6	4	16
March 2017	16765.19	1	146.54	7	6	36
						98

The above table shows the Spearman's rank coefficient of Correlation(r) between ROCE and risk factor calculated. The t-test is applied for determining significance of r. The computed value of "t" has been compared with the tabulated value of "t".

In the above table $r = -0.75$ and value of $|r| = 2.54$. The table value of "t" at 5% level of significance for 5 degrees of freedom (where $n=7$) is equal to 2.57. Since the computed value of t is less than the table value the null hypothesis (H_0) is accepted.

Recommendations:

This study is strongly recommended to adopt the following measures immediately for its revival and overcoming working capital crisis. Followings are recommendations which I have observed are as follows:

- ✓ Effort reducing working capital is a continuous exercise and it is an opportunity for improvement.
- ✓ The company has idle cash in bank it should be utilized in purchase of short term marketable securities to boost the financial health of the company.
- ✓ Lack of proper debt management hence a proper credit policy required so company need to adopt an effective credit and collection policy.
- ✓ To make SWOT analysis for determining appropriate revival business strategy for the company.
- ✓ The company is finally advised to follow the principles to manage liquidity, profitability, survival and growth of the business.

Conclusion:

- ✓ The Spearman's rank coefficient of correlation(r) between ROCE and liquidity has been calculated. The "t" test is applied for determining significance of r. Then computed value of 't' has been compared with the tabulated value of 't'. Since the computed value of t is less than the table value the null hypothesis (H_0) is accepted. So there is no significant difference between liquidity and profitability of the firm during the period of study.
- ✓ The Spearman's rank coefficient of correlation(r) between ROCE and Risk factor has been calculated. The "t" test is applied for determining significance of r. Then computed value of 't' has been compared with the tabulated value of 't'. Since the computed value of t is less than the table value the null hypothesis (H_0) is accepted. So there is no significant difference between risk and profitability of the firm during the period of study.

While analyzing the company's performance it is clear that, the firm give little importance to the issues related with working capital. It may be of the reason that the amount and risk involved in capital investment decision are very high. But from the above study we can say that Mahindra and Mahindra Ltd. should give due consideration to improve the working capital management policies irrespective of the economic slowdown. The company must improve its present liquidity position to remain stable at the time of discrepancies or recession. It should also try to generate higher returns from its assets. The company must keep an optimum balance between liquidity and profitability for efficient use of its working capital. At the same time it should not stop formulating certain policies to keep a well-monitored working capital for better profitability, stability, reliability, growth and consistency.

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