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A STUDY OF WORKING CAPITAL MANAGEMENT THROUGH RATIO ANALYSIS WITH REFERENCE TO BHARAT HEAVY ELECTRICALS LIMITED

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ABSTRACT

Working capital is basically based on the current assets which are in the form of cash or which can be easily converted in the form of cash also which helps in meeting day to day requirements of the business enterprise. Inefficient management of working capital will lead to the downfall of the organization and visa verse. The working capital is very essential for the business enterprise. The requirement for having sufficient working capital arises because of the gap in the time between production & realization of cash from sales. The requirement of working capital varies from business enterprise to business enterprise and it also depends upon the nature and objective of the business. Keeping this in view we have tried to evaluate the Working capital position of BHEL for the years 2010-11 to 2014-15. In this study, we used current ratio, quick ratio, absolute liquid ratio, working capital turnover ratio, etc for assessing the working capital position of this organization.

Keywords: Working capital, Current Assets, Current liabilities & Short term liquidity.

INTRODUCTION

The capital is considered as the life of a business. As a human being requires food and air to live similarly a business cannot survive without money which is termed as capital. Every business organization needs money basically for two main purpose, firstly for the establishment of the organization and secondly to carry out its day to day functioning. This capital can be grouped under two main categories i.e. Fixed Capital and Working Capital.

Generally in the business there is an operating cycle involved in the sale & realization of cash. This operating cycle is having a time gap in the purchase of raw materials & converting it into finished goods, then the finished good is sold and there is also a time gap between selling the finished goods and converting it in the form of cash. Some of the main purposes for having the working capital is for the procurement of raw materials, to meet out the day to day expenses, to pay the indirect expenses like administrative expenses, selling & distribution expenses etc., for providing the credit facilities for credit sales, to have the stock of raw materials, work in progress, stores & spares and finished goods, to pay the financial expenses like bank charges, interest on capital, interest on loan, etc., to pay all the direct expenses which are involved in production, etc. This paper, aims at assessing the working capital position of BHEL as well as this paper enables us to examine the factors responsible for significant changes in working capital during the study period from the year 2010-11 to 2014-15.

JUSTIFICATION OF THE TOPIC

Working capital analysis is of great practical importance as it covers a vast area. Keeping in view the importance of working capital analysis, we have carried out the present research work titled "A study of Working Capital Management through ratio analysis with reference to Bharat Heavy Electricals Limited" helps in assessing the short term solvency position as well as the growth of this organization. This paper helps in finding out whether this company has sufficient funds for the procurement of raw materials, whether the organization can easily meet out the day to day expenses or other indirect expenses as well as the organization can provide the credit facilities for credit sales, etc. This topic helps us in judging the short term liquidity position of this organization as well as it helps in indicating the optimum utilization of the current assets, working capital as well as the inventors of this organization.

REVIEW OF LITERATURE

Jain (1993) conducted a study among seven paper companies in India to analyze the basic components of working capital**.** In his study it was revealed that the current ratios in the public sector undertaking during the study period was found to be highly erratic, while the same in private sector undertakings registered continuous decrease. As far as the inventory was concerned his study revealed that it was highly unplanned in public sector undertakings as compared private sector undertakings. His study contributed much in terms of realizing the importance of effective management of working capital.

Salmi and Martikainen (1994) "the research areas are reviewed are the functional form of the financial ratios, distributional characteristics of financial ratios, classification of financial ratios and the estimation of the internal rate of return from financial statements. It is observed that it is typical of financial ratio analysis research that there are several unexpectedly distinct lines with research tradition of their own. A common feature of all the areas of financial ratio analysis seems to be that while significant regularities can be observed, they are not necessarily be stable across the different ratios, industries and time periods. This leaves much space for the development of a more robust theoretical basis and for further empirical research."

Reddy and Rao (1996) conducted a study on Hindustan Cable Ltd for the period 1989-90 to 1993-94. Having studied current ratio, quick ratio, working capital turnover ratio, etc they concluded that the liquidity position of the company was unsatisfactory. However the study revealed that there was a sign of improvement in the management of inventory and ineffectiveness in the management of debtors. The study recommended for effective utilization and control of current assets.

N.K. Sharma (1998) he specified in his book that the practical techniques used in working capital management for measuring the liquidity of the business enterprise and analyzing can be done through its sources of financing. According to him financial managers through working capital management can decide what quantities of cash, other liquid assets, accounts receivables and inventories should be maintained for the business enterprise. According to him the management of working capital plays a very dominant role in maintaining the financial health of the business enterprise during the normal course of business.

Eljelly, Abuzar M.A (2004) empirically examined the relationship between the profitability and liquidity on a sample of joint stock companies which are operated in Saudi Arabia. They found significant negative relationship between the profitability and liquidity position of the firms. At the industry level, the cash conversion cycle was more important than current ratio as a measure of liquidity.

OBJECTIVES OF STUDY

The study fulfils the following objectives:

(i) To analyze the current assets, current liabilities and liquid assets of BHEL for working capital analysis.

(ii) To identify the items responsible for changes in working capital position of BHEL.

HYPOTHESIS

In order to achieve these objectives, the following null hypothesis is framed for testing:

Ho: There is no significant difference in the Working capital position of BHEL during the period of study.

LIMITATIONS

The following are the limitations of the study

(i) Any uneven trend before or beyond the set period will be the limitations of the study as we have considered the data for the last five years.

(ii) This analysis is based on financial information only.

(iii) We have grouped and sub grouped some data for this study.

(iv) Sufficient data & literature was not available for this study.

(v) We have used the secondary data for this study.

Methodology

For the study, statistical data has been collected from the annual reports published by the Bharat Heavy Electricals Limited. The statistical techniques like percentage, averages, coefficient of correlation, coefficient of variation, T-test have also been applied. For proper analysis and evaluation the individual items of profit and loss accounts and balance sheet have also been regrouped.

WORKING CAPITAL ANALYSIS OF BHEL

For analyzing the Working capital analysis of BHEL from the year 2010-11 to 2014-15, liquidity ratios has been used. In order to measure the working capital position we have used the current ratio, quick ratio, as well as the absolute liquid ratio and working capital turnover ratio.

1. **Current Ratio**

The Current ratio measures the firm's short term solvency and it indicates the availability of current assets in rupees for every one rupee of current liability. A greater ratio indicates that the firm has more current assets than current claims & the ideal ratio is considered as 2:1. On the other hand if this ratio is low then it represents the liquidity position of the firm is not good.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table No. 1: Statement Showing Current Ratio (Rs. In Crores)

Year	Current Assets	Current Liabilities	Current Ratio
2010 - 11	43588	25257	1.725779
2011-12	49090	29155	1.683759
2012-13	51410	28197	1.823244
2013-14	52395	25996	2.015502
2014-15	49040	22817	2.149275
Mean	49104.60	26284.40	1.88
SD	3412.44	2503.00	0.20
CV	6.95	9.52	10.52
Growth %	12.51	-9.66	24.54
Average Annual Growth	2.50	-1.93	4.91

Source: Compiled from Annual report of the BHEL (From 2011-2015).

Interpretation

As per table no.1, the working capital position of this organization seems to be improving. Initially it was at 1.72:1 and it got increased to 1.82:1 by 2012-13. There was a further increase as it was at 2.14:1 by 2014-15. The mean was at 1.88: 1 where as the coefficient of variance was at 10.52%. The growth reflected at 24.54% and the average growth was at 4.91%.

2. Liquid Ratio

The liquidity ratio or Quick ratio refers to the ability of the firm to pay its short term obligation as and when they become due. The liquid assets should not include stock & prepaid expenses which cannot be converted into cash within a short period. The ideal ratio is considered as 1:1. It measures the firm's capacity to pay off current obligations immediately and it is a more rigorous test of liquidity than the current ratio. It is used as a complementary ratio to the current ratio.

$$\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Liquid assets = Current assets – (Stock + Prepaid expense)

Table No. 2: Statement Showing Quick Ratio (Rs. In Crores)

Year	Liquid Assets	Current Liabilities	Quick Ratio
2010 - 11	32685	25257	1.294097
2011-12	35565	29155	1.219859
2012-13	39541	28197	1.402312
2013-14	42587	25996	1.638214
2014-15	38929	22817	1.70614
Mean	37861.40	26284.40	1.45
SD	3819.71	2503.00	0.21
CV	10.09	9.52	14.63
Growth %	19.10	-9.66	31.84
Average Annual Growth	3.82	-1.93	6.37

Source: Compiled from Annual report of the BHEL (From 2011-2015).

Interpretation

As per the above table no.2, the quick ratio of this organization seems to be improving. Initially it was at 1. 29:1 and it got increased to 1.40:1 by 2012-13. There was a further increase as it was at 1.70:1 by 2014-15.the quick ratio was more than the ideal ratio of 1:1 throughout the study period. The mean was at 1.45: 1where as the coefficient of variance was at 14.63%. The growth reflected at 31.84% and the average growth was at 6.37%.

3. **Absolute Liquid Ratio**

The absolute liquid ratio is more rigorous than current ratio and quick ratio. This ratio is calculated to find out the firms capacity to pay current obligations very immediately. The absolute liquid ratio is calculated by dividing absolute liquid asset by liquid liabilities. The absolute liquid asset includes cash in hand, cash at bank and marketable securities. The acceptable norm for this ratio is 0.5:1.

$$\text{Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilities}}$$

Absolute liquid assets = Cash in hand+ Bank balance+ Marketable securities

Table No. 3: Statement Showing Absolute Liquid Ratio (Rs. In Crores)

Year	Absolute Liquid Assets	Current Liabilities	Absolute Liquid Ratio
2010 - 11	9706	25257	0.38429
2011-12	6734	29155	0.230972
2012-13	7852	28197	0.278469
2013-14	12019	25996	0.46234
2014-15	9948	22817	0.435991
Mean	9251.80	26284.40	0.36
SD	2040.05	2503.00	0.10
CV	22.05	9.52	27.94
Growth %	2.49	-9.66	13.45

Average Annual Growth	0.50	-1.93	2.69

Source: Compiled from Annual report of the BHEL (From 2011-2015).

Interpretation

As per the above table no. 3 the absolute liquid position of this organization seems to be increasing. Initially it was at0.38:1 and it got increased to0.46:1 by 2013-14. However there was a slight decrease as it was at 0.43:1 by 2014-15. The mean was at 0.36: 1 where as the coefficient of variance was at 27.94%. The growth reflected at 13.54% and the average growth was at 2.69%.

4 Working Capital Turnover Ratio

The Working capital turnover ratio measures the utilization of working capital & the number of times the working capital is rotated in the course of a year. A greater ratio indicates that the organization has utilized the working capital efficiently & on the other hand, if this ratio is low, then it represents organization has not utilized the working capital efficiently.

$$\text{Working capital turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{working capital}}$$

Table No. 4: Statement Showing Working capital turnover Ratio (Rs. In Crores)

Year	Cost of goods sold	Working Capital	Working Capital Turnover Ratio
2010 - 11	23366	18331	1.274671
2011-12	29132	19935	1.461349
2012-13	28171	23213	1.213587
2013-14	22465	26399	0.850979
2014-15	18270	26223	0.696717
Mean	24280.80	22820.20	1.10
SD	4442.17	3640.69	0.32
CV	18.29	15.95	28.71

Growth %	-21.81	43.05	-45.34
Average Annual Growth	-4.36	8.61	-9.07

Source: Compiled from Annual report of the BHEL (From 2011-2015).

As per table no.4, the working capital turnover position of this organization seems to be declining during the study period. Initially it was at 1.27 times and it got increased to 1.21 times by 2012-13. There was a further decrease as it was at 0.69 times by 2014-15. The mean was at 1.10 times where as the co-efficient of variance was at 28.71%. The growth reflected at -45.34 % and the average growth was at -9.07%.

TESTING OF HYPOTHESIS

In this study the hypothesis has been analyzed by t-test as the significance of data can be analyzed by means of statistical tools. Hence correlation & t- test have been applied in this study.

Ho: There is no significant difference in the Working capital position of BHEL during the period of study.

Table No. 5. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Current Assets	49104.60	5	3412.44	1526.09
	Current Liabilities	26284.40	5	2502.99	1119.37

Table No. 6. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Current Assets & Current Liabilities	5	.273	.657

Table No. 7. Paired Samples Test

	Paired Differences	t	df	Sig. (2-

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				tailed)
					Lower	Upper			
Pair 1	Current Assets - Current Liabilities	22820.20	3640.69	1628.17	18299.69	27340.71	14.02	4	.000

Interpretation

$$t = 14.02, \; t_{0.05} = 2.776$$

$$t > t_{0.05}$$

When the degree of freedom is 4 & the level of significance is 5%, the critical value of $t_{0.05}$ is 2.776. Since the calculated value of t is 14.02 which is more than the critical value we conclude that the null hypothesis is rejected there is significant difference in the Working capital position of BHEL during the period of study.

SUGGESTIONS

- Steps should be taken by the company to maintain the current ratio at an ideal standard of 2:1 as the working capital position was satisfactory from 2012 to 2015.
- For the betterment of short term solvency the company should try to reduce its current liabilities.
- The company should try to improve their cash position by taking short term loans or through bank overdraft for making the payments of day to day expenses and other current obligations.
- The company should try to effectively utilize its stock hence the corporation should have better policies to reduce its stock.
- The working capital of the company was not properly utilized as the working capital turnover ratio was low during the study period, hence corporation should try to utilize its working capital efficiently by reducing the cost of goods sold.
- The company should improve the composition of the current assets like inventories, debtors, loans & advances, other current assets & cash and bank balances.

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