A Study of Descriptive Statistics Determinants of Working Capital of SAIL

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Abstract

Various times business failures reason due to lack of working capital. Thus, the finance manager should determine the best possible level of working capital amount and the consumption of current assets and current liabilities. Working capital determines the optimum level of operational capital through trade-off between the risk and profitability. It ensures that the appropriate so urces to funds are used to finance working capital and that the short-term liabilities of the business are met well in time. Much managerial effort is used up in bringing non-optimal levels of current assets and liabilities back toward optimal levels. An optimal level would be one in which a sense of balance is achieved between risk and efficiency. The paper adopts a new approach towards adequacy of working capital management of SAIL (Steel Authority of India Limited).

Keywords: CR, ALR, QR, WCTR, ITOR, ARTR, CTR etc.

Introduction

The size of n e t working capital indicates margin of safety or protection provided to creditors. The main purpose of the study of size is to highlight the change in working capital over the period of study. The turnover of net working capital i.e., net sales to net working capital is calculated to test the efficiency with which the net working capital is utilized. In other words, the working capital turnover ratio helps in assessing the degree of efficiency in the use of short-term funds for generating sales. Sometimes, this ratio is affected by a number of ratios such as inventory turnover ratio and receivables turnover ratio etc. therefore, many diverse causes may lie behind the favourable or unfavourable nature of this ratio.

A high turnover of working capital may be the result of favourable turnover of inventories and accounts receivables. On the other hand, it may reflect inadequacy of net working capital and low turnover of inventories and receivables. Inadequacy of net working capital may be accomplice by an excess of current liabilities. Again a low turnover of working capital may be as a result of an excess of working capital, a larger cash and bank balance, investment of working capital in short-term securities, slow turnover of inventory and receivables.

Larger the sales as compared to the net working capital, the less favourable the situation is likely to be if the resultant turnover of working capital has been made by the use of an excess amount of current credit. The real danger lies in the possibility of a decline in sales due to unforeseen circumstances like cancellation of orders, strikes, natural calamity and competition. Inventory may get accumulated even though sales have substantially decreased. In this event, current liabilities will increase and sufficient funds will not be realized through sales to liquidate them.

The working capital turnover ratio reflects the extent to which a business is getting operated on a small or large amount of working capital in relation to sales. This ratio is also used to study or to detect the over and under trading of a business. A very high working capital turnover ratio may be the outcome of over trading and the over trading is indicated by an increase in the amount of working capital (sales without a corresponding increase in the amount of working capital). On the other hand, a low turnover ratio may be the result of under trading which means that more working capital funds have invested than needed.

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Review of Literature

Through the review of literature the repetition of study can be eliminated and a fresh dimension of the study can be selected. The literature review helps to eliminate the limitations of the existing work which may assist to lengthen the prevailing study. Till now, many studies have been conducted on the different aspects of the Central as well as the State public sector undertaking within the country as well as other countries. The studies adopting an innovative approach towards working capital management are reviewed as below.

Rao and Rao&Ramachandran (2013)

Main aim of his study is to evaluate the trends and parameters of effectiveness of working capital and its utilization in terms of volume of the firms of cotton textiles industry in India. For that three parameters are taken. The output of the study is like that linear growth rate model is used to find out the importance with working capital. The reason behind this was continuous decline in factors.

Dr Arbab Ahmed and Dr Matarneh Bashar (2014)

Research carried with registration technique which is very powerful statistical tool to forecast the working capital. The area of working capital management, that is possible to make the projection after starting the average relationship in the past. For the purpose different components are used and to be finalized result.

Madhavi K. (2015)

She has done research based on empirical study of co relation among liquidity position an profitability of the paper mills in Andhra Pradesh. That has been evaluated ineffective working capital negatively effect on profitability of the paper mills.

K. Madhavi(2016), A well designed and implemented working capital management has a significant contribution for firm's profitability as well as to maintain liquidity powers. The management of working capital is important to the financial health of business of all sizes. The amounts invested in working capital are often high in proportion to the total assets employed and so it is vital that these amounts are used in an efficient way. His study aims to provide empirical evidence about the effects of in current assets and current liabilities of Andhra Pradesh Paper Mills Limited and Seshasayee Paper Mills Limited.

Kalpesh B. Gelda (2017), the study illustrates the banks performance of ICICI and HDFC. ICICI Bank is better in some ratios like Current Ratio, Quick Ratio, Dividend per Share and Total Debts to Owners Funds Ratio. But on the other side, the performance of HDFC Bank is better in some ratios like Earning per Share, Total Assets Turnover Ratio and Return on Net worth Ratio. Overall conclusion of this study is that the performance and working capital management of ICICI Bank is better than the HDFC Bank.

Conclusion

With this view the present study has been analyzed. The different researchers have been done with different industry as well different tools techniques and with different factors which are related with working capital management and profitability of the business area.

Objective of the study

1. To test the significance of difference between the net working capital and net sales.
2. To measure the adequacy of working capital management and the efficiency with which the overall working capital is managed.

Research Methodology

A public sector steel company operating in India i.e. SAIL is been taken into consideration in the present study. The study relates to a period starting from 2002-03 and ending 2015-16. The study is based on the secondary data obtained from the annual reports of the SAIL. In the course of analysis of the study, multiple regression tool is been applied to test the hypothesis.

Data Analysis and Interpretation

Relationship between Net Working Capital and Net Sales

In order to test the significance of difference between the net working capital and net sales presented in table below. It is observed that the correlation, between two variables was 0.25 during the period, showing the low positive correlation existence between the net working capital and net sales.

't' test has been applied to judge whether the correlation between net working capital and net sales is significant. Our null hypothesis is 'there is no significant difference between the above two variables'. It is observed that the calculated value of 't' test is 1.94 while the tabulated critical value of 't' test at 5 percent level of significance is 2.16. The calculated value is less than the tabulated critical value therefore the null hypothesis is been accepted.

Relationship between Net Working Capital and Net Sales with Correlation and 't' test in SAIL (2002-03 to 2015-16)

(□ in crore)

Year	Working Capital	Annual Sales
2002-2003	371.02	13519.38
2003-2004	-23.41	16836.54
2004-2005	-731.29	21296.82
2005-2006	4167.56	28522.83
2006-2007	4955.59	27837.57
2007-2008	9467.16	33923.12
2008-2009	13118.87	39508.45
2009-2010	17536.46	43204.06
2010-2011	22005.63	40551.38
2011-2012	20733.4	42718.71
2012-2013	10007.92	45653.12
2013-2014	5111.52	49349.69
2014-2015	-1449.53	51865.99
2015-2016	-5981.97	50626.65
Correlation	0.25	
't' – test	1.94	

Source: Compiled and tabulated from Annual Report of SAIL from 2002-03 to 2015-16

For the examination of the objective "to measure the adequacy of working capital management and the efficiency with which the overall working capital is managed", the hypothesis is as under:

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Hypothesis (H_0)

There is no significant effect of working capital management on the operating profit of the company.

Multiple regression analysis is widely used to measure the dependence of one variable on one or more independent variables. It is powerful forecasting tool. The dependent variable is generally expressed, as a linear combination of independent variables. For single time series, multiple regressions are not as efficient a forecasting procedure as the auto regressive-moving average schemes. However, it has the advantage that it can be augmented to include other factors in addition to time and seasonality, thus combing some of the advantages of both time series and explanatory approaches to forecasting. The objective of the step wise multiple regression analysis is to identify the variables that influence variables affecting the capital structure determinants of select Indian industries. The general form of multiple Regression equation is,

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + ------ + b_nX_n + \mu$

Where a, b_1, b_2, b_3, ------, b_n are the regression coefficients.

Y is the dependent variable. X_1, X_2, X_3, -----, X_n are the selected variables, which affect the dependent variable Y. These are the independent variables. The residual term, u is that portion of Y that cannot be explained by the independent variables. Once a, b_1, b_2, b_3, ------, b_n are estimated, the values of Y can be predicted for specific values of X_1, X_2, X_3, ------, X_n. Multiple regression assumes a linear relationship (or any relationship that can be transformed to linear) and then determine values for a, b_1, b_2, b_3, ------, b_n in such a way that the mean squared error between the actual and the forecasted figures is as small as possible.

To show the impact of working capital management on profitability of SAIL, various working capital ratios have been considered as independent variables which includes current ratio (CR), quick ratio (QR), absolute liquid ratio (ALR), inventory turnover ratio (ITR), cash turnover ratio (ITR), accounts receivables turnover ratio (ARTR) and working capital turnover ratio (WCTR) and operating profit is taken as dependent variable. For the purpose of establishing relationship between liquidity and profitability, regression model has been put in use.

Multiple Regression Analysis Result:

Multiple Regression Model

$y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7$ Where-X_1= CR, X_2= QR, X_3= ALR, X_4=ITR, X_5=RTR, X_6=CTR, X_7=WCTR.

Variables	Regression Coefficient	Standard error of coefficient	t-value	p-value
CR	0.21	0.63	0.34	0.74
QR	(0.15)	0.52	(0.30)	0.77
ALR	0.04	0.36	0.11	0.91
ITR	(0.005)	0.09	(0.05)	0.95
RTR	(0.02)	0.01	(1.17)	0.28
CTR	0.004	0.006	0.68	0.51
WCTR	(0.0005)	0.005	(0.10)	0.91
Constant	0.23		0.36	0.72
Multiple R = 0.759	R^2 = 0.577	Adjusted R^2 = 0.084	Std. error of estimate = 0.093	

From this model it is depicted that the explanatory variables (CR, QR, ALR, ITR, CTR, ARTR, and WCTR) explains 75.9 % variation in operating profit of SAIL. It can be also validating with the value of adjusted R-square which explains 8.44% variation in the dependent variable. One unit change in CR, ALR and CTR cause 0.23 units, 0.04 units and 0.004 units respectively change in operating profit in the opposite direction whereas one unit change in QR, ITR, ARTR and WCTR cause 0.15 units, 0.005 units, 0.02 units and 0.0005 units respectively decreases operating profit in but in cases of all independent variables are not statistically significant at 5 percent level. A larger insignificant i.e. greater then alfa value 0.05. P-value suggests that the predictors are not associated with change in the response. This means that the probability of t-statistic being greater than t-value of operating profit. Thus the null hypothesis has been accepted as the p-value is more than the common alfa value.

Limitations of the Study

1. The study depends on the published financial data, so all limitations that are hidden in the condensed published financial statements.
2. The study is based on only one public sector steel company, it does not compare with the data and information of efficiently managed private sector companies.
3. Company over all data has been considered, it is a mixture of several major plants, joint ventures etc it is ignored in the study.

Suggestions

Keeping in mind the main findings of the study, the following suggestions are outlined.

It is suggested that the company should try to increase its efficiency for the maximization of profit and try to improve its working capital position. The decline in the

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working capital turnover ratio was the result of the increase in working capital at a higher rate than the increases in sales. It is therefore, suggested that the management of SAIL should make all the efforts to get an appropriate balance between the components of working capital i.e., current assets and current liabilities.

SAIL kept the excessive stock of inventory during the study period, excessive stock are unproductive and represent an investment with a low or zero rate of return. This situation reveals the inefficient inventory management and suggests that there is considerable scope for better control and stimulation of production and sales activities of SAIL. It is found that elements of inefficient sales and marketing strategy had influenced a lot to this unfavorable trend.

It is suggested that SAIL should try to make every effort to reduce the level of inventories up to a reasonable extent and further it should exercise strict control over inventories so as to improve its liquidity and profitability.

Lastly, SAIL is a mixture of many plants, sub plants, joint ventures etc. Therefore to maintain

its top position its all plants should try to obtain there optimum level.

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