

IMPLICATION OF WORKING CAPITAL MANAGEMENT ON THE PROFITABILITY: A CASE OF ONGC LTD, INDIA

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ABSTRACT

Financial Management basically deals with raising of financial resources and its proper allocation in order to maximize shareholders wealth. For a successful running of an organization fixed and current assets play a crucial role as organization generally invests in these options. A firm's working capital consists of its investments in short-term assets like cash and bank balance, inventories, receivable and short term investments. Therefore, the working capital management mainly refers to the management of all these individual current assets. In this research paper an attempt has been made to study the components of working capital and the possible implications of working capital management policies on profitability of ONGC Limited. The paper also attempts to analyze the correlation between liquidity, profitability and return on investments of ONGC. The study is based on secondary data collected from annual reports of ONGC for the period 2000 to 2012. In this paper there is an application of correlation and regression analysis to identify the significant impact of Working capital management on the profitability. Working capital Management is essential as it might have a direct impact on profitability and liquidity.

Keywords: Working capital management, ONGC, Current Assets, Profitability & Liquidity.

Introduction:

Financial Management in an organization mainly focuses on the taking long-term financial decisions, capital budgeting decisions, capital structure, dividends or company valuation decisions. However, management of current assets and liabilities are equally important for an organization and need to be carefully analyzed. The finance manager is constantly engaged in policies to maintain a sound working capital position. Working Capital is an important part of Finance and has an impact on the liquidity of an organization. Working capital Management is crucial to the liquidity position of businesses of all sizes. Excess Working capital leads to unremunerated use of scarce resources and inadequate working capital interrupts the smooth flow of business activity and profitability. The balance allocation of working capital funds between inventories, Debtors and other components of working capital is crucial in Working Capital Management (WCM). Many research work related with WCM have found that finance managers spend a considerable part of time on day to day working capital

decisions since current assets are short term investments that are mainly used for meeting short term commitment . The survival, growth and expansion of the company depend on the ability to meet two vital aspects of WCM; profitability and liquidity. The company has to maintain an optimum level of liquidity to run the business on a continuous basis without any interruption. If the liquid assets are adequate to meet the short term commitment, financial soundness is automatically created and its credit worthiness in the market is maintained. WCM is concerned with the decisions that relates to investment in the current assets, current liabilities and the inter relationship that arise between them. Efficient working capital management is key component of the overall corporate strategy to create shareholder value. Some research work have been undertaken on the WCM practices of both large and small scale organizations in India, UK, US and Belgium using either a survey based approach or by empirical analysis to identify the key factors for organizations to adopt efficient working capital practices or econometric analysis to identify the association between WCM and Profitability. Specific research studies exclusively on the effect of

WCM on profitability of manufacturing organizations are few in numbers, especially for the case of India. Keeping this in view and the wider importance of the potential contribution of the manufacturing sector to the economy of developing countries like India, this research paper is an attempt in this direction and analyze the impact of different WCM variables affecting the profitability in manufacturing firms.

Literature Review:

An enterprise requires fixed as well as working capital. Firms cannot avoid investment in current assets. A firm can exist and survive without making profit but cannot survive without working capital. Thus, working capital management is vital because of its impact on the organization's profitability and risk and hence its value (Smith, 1980). The literature of finance traditionally focused on long term financial decisions. There has been a concerted effort by theoretical economists to analyze financial decisions of business firms within the context of the equilibrium models of financial markets. While these models have been employed to analyze the long term corporate investment and financial decisions, virtually no research has been conducted in an attempt to apply them to working capital decisions (Cohn and Pringle, 1975).

The literature of finance has neglected the short term financial decisions, which is working capital management. Shortage of funds for working capital as well as the over-expansion of working capital has resulted in many businesses to fail and in many cases have reduced their growth (Grass, 1972). Especially, in small scale organizations, working capital management might be the factor that decides success or failure; in larger firms, efficient working capital management can significantly affect the firm risk, return and share (Gitman, 1982). Researchers have analyzed investments, capital structure, dividends and company valuation. However, the investment that firm's make in current assets and the resources used for short term investment represent the main share of assets on a firm's balance sheet which seems to have been relatively neglected in research field.

Working capital management is the related with decision regarding the management of current assets and current liabilities. Maintaining inventory at high level reduces the possible cost of interruption in the production process or loss in business due to the scarcity of inventory, reduces supply costs and protects against price fluctuations among other advantages (Blinder and Manccini, 1991). Granting trade credit favors the firm's sales in various ways. Trade credit can act as an effective price cut (Brennan et al., 1988; and Petersen and Rajan, 1997) and an incentive to customers to acquire merchandise at times of low demand (Emery, 1987). However, firms that invest heavily in inventory and account receivable can suffer low profit due to an inverse relation of liquidity and profitability.

Thus, greater the investment in current assets, lower is the risk, and profitability obtained. Similarly, trade credit is an important source of financing that result in reduction in the

amount required to finance the sums tied up in the inventory and account receivables. (Ng et al., 1999; and Wilner, 2000).

Profitability and liquidity comprise the salient and all too often conflicting goals of working capital management. The conflict arises because the maximization of the firm's returns could seriously threaten liquidity, and on the other hand, the pursuit of liquidity has a tendency to dilute returns. Over the years, analysts have employed traditional ratio analysis as a primary instrument in the measurement of corporate liquidity in the firm, of well-established ratios such as the current and quick ratios (Smith, 1997).

Teruel and Solano (2007) conducted a study to identify the effect of WCM on profitability of small and medium sized Spanish firms. From the study it was concluded that there is a significant negative relationship between an SME's profitability and number of days of accounts receivable and days of inventory. From the studies conducted to identify the trends in WCM and its impact on Mauritian small manufacturing firms (Pandachi 2006) identified that the requirement of working capital of an organization change over time as does its internal cash generation rate. The analysis done by Kerstien and Rai (2007) tried to examine the market reaction to positive and negative earnings changes influenced by large unexpected working capital accruals (LWCAs) and predicts the circumstances where LWCAs lead to varying market expectations of earnings quality. This literature argues that the market is more likely to suspect earnings management and view earnings as being of lower quality when firm's reports small increases in earnings with the help of positive or negative large working capital accruals.

Raheman and Nasr (2007) conducted a study to analyze the relationship between WCM and Profitability in case of Pakistani Firms and made a conclusion that there is a strong negative relationship between variables of WCM and profitability of the firm. He further added that there is a significant negative relationship between liquidity and profitability.

Research work by Appuhami (2008) analysed that the firm's capital expenditure in Thailand has a significant impact on WCM. It revealed that the firm's operating cash flow has a significant relationship with WCM. Many researchers have tried to understand the factors that determine the WCM of an organization. Deloof (2003) investigated the relation between WCM and corporate profitability. He suggested that managers can create value for their shareholders by reducing the number of days of accounts receivable and inventories. An inverse relationship between accounts payable and profitability shows that less profitable organizations wait longer to pay bills i.e., creditors' turnover period is high.

Weinraub and Visscher (1998) observed a tendency of firms with low levels of current ratios to have low levels of current liabilities. There are studies relating to working capital management in Indian context for different industry sectors as well as individual firms. Yadav et al. (2009) conducted a study on Maharashtra's bulk drugs listed

companies in their WCM. Singh and Pandey (2008) conducted study on Hindalco Industries Limited and Vishnani et al. (2007) conducted an empirical study of Indian consumer electronic industry for analyzing the effect of working capital management policies and practices on profitability. Surendra et al. (2001) analyzed the current WCM of three major oil sector companies, namely IOCL, HPCL and BPCL for the period from 1988 to 1997. Saravanan (2001) conducted a study on WCM in non-banking finance companies (NBFC). Reddy (2001), Mansur (2001), Sur (1999) and Reddy (1992) also studied about the working capital management in different industry sectors. These studies particularly explained by the fact that there are industry benchmarks to which firms adhere when setting their working capital investment policies (Hawawini et al., 1986). The firm can increase their profitability by reducing investment on accounts receivable and inventories to a reasonable minimum, indicated by the benchmarks for their industry (Teruel and Solano, 2007). Furthermore, as pointed out by Soenen (1993), cash conversion cycle management tries to collect cash inflow as quickly as possible, and postpone cash outflow as long as possible. This results in to the shortening of cash conversion cycle.

In order to have higher profitability the firms may maintain a low level of short term assets. When the firms do so, their profitability will improve, as less funds are tied up in the idle current assets, but their solvency position will be threatened. Therefore, there must be a balance between the liquidity and profitability of the firms. One objective should not be sacrificed at the cost of the other because both have them are equally important. If an organization does not care about profit, it cannot survive for a longer period. On the other hand, if they do not care about liquidity, there might be a problem of insolvency or bankruptcy. For these reasons working capital management should be given proper time and will ultimately have an impact on the profitability of the firm. This discussion of the importance of working capital management, its different components and its effects on profitability leads us to the problem statement which we will be analyzing. This research paper is focused on working capital management and its impact on profitability for ONGC.

Objectives of the Study:

The main objectives of this research work are:

- ❖ To analyze whether there is a relationship between Working Capital Management and Profitability
- ❖ To find out the effects of different components of working capital management on profitability.
- ❖ To Study a relationship between the objectives of liquidity and profitability of the ONGC Ltd.

Hypothesis:

Null Hypothesis (Ho): There is no significant relation between working capital ratios and profitability

Alternative Hypothesis (H1): It is assumed that there is significant relationship between working Capital ratios and Profitability

Methodology of Study:

For the analysis of data some important ratios relating to working capital management and the ratios which are significant to measures of profitability have been calculated on the basis of data available over a period of 13 years from 2000 to 2012 of the ONGC Ltd. The ratios which have been applied for highlighting the efficiency of working capital management are Current Ratio (CR), Quick Ratio (QR), Current Assets to Total Assets Ratio (CATAR), Current Assets to Sales Ratio (CASR), Working Capital Turnover Ratio (WCTR), Inventory Turnover Ratio (ITR), Debtors Turnover Ratio (DTR) and Cash to sales Ratio (CTS) and the measure of profitability which has been selected is Return on Investment (ROI). For measuring the degree of relationship between the working capital management and the profitability Pearson's simple correlation coefficient have been applied . For judging the joint influence of the selected measures related with impact of working capital management on the profitability, multiple correlation analysis has been applied. In order to assess the joint effect of the selected measures of working capital management on the profitability, multiple regression analysis has been used. Further to examine whether the calculated values of correlation coefficients, partial regression coefficients are statistically significant or not, 't' test has been used and whether the multiple correlation coefficient (R) is statistically significant or not. 'F' test has been used. In addition to this, to judge the effectiveness or the reliability of this relationship the multiple coefficient of determination (denoted by R²) has been used and it is defined as the ratio of explained variation to the total variation of the dependent variable (ROI).

Analysis:

The purpose of this research paper is to study the effect the impact of Working Capital Management (WCM) policies on the profitability of ONGC. This section describes the analytical frame work of data analysis, which describes financial result of ONGC Ltd. and the variables included in this work, the distribution patterns of the data and applied statistical techniques like Correlation and Regression in investigating the relationship between WCM and profitability.

Table 1

Year	ROI	CR	QR	CATAR	CASR	WCTR	ITR	DTR	ACR	cash to sales
2000	0.207	2.28	1.98	0.35	0.59	3.36	13.32	14.11	0.6432	0.0032
2001	0.307	2.78	2.24	0.4	0.6	3.73	15.91	13.56	0.3703	0.0014
2002	0.335	4.01	1.34	0.55	0.8	1.68	16.76	11.55	0.4376	0.0021
2003	0.481	1.51	1.41	0.61	0.65	4.53	22.87	11.11	0.4118	0.0024
2004	0.314	2.11	1.95	0.59	0.97	1.96	13.69	10.12	0.6021	0.0005
2005	0.408	1.46	1.40	0.97	1.20	2.63	18.54	15.27	0.2503	0.0005
2006	0.375	1.42	1.36	1.02	1.41	2.37	16.42	12.91	0.1850	0.0146
2007	0.371	1.41	1.35	1.09	1.47	2.35	19.99	17.61	0.3235	0.0005
2008	0.363	1.56	1.48	0.83	1.15	2.42	122.77	16.87	0.5059	0.0045
2009	0.343	1.45	1.38	0.88	1.30	2.49	111.98	15.16	0.3320	0.0025
2010	0.345	1.39	1.32	0.86	1.49	2.38	87.82	16.87	0.2834	0.0047
2011	0.339	1.36	1.30	0.83	1.44	2.65	94.69	19.17	0.3199	0.0054
2012	0.285	1.15	1.05	0.53	0.82	9.42	14.88	15.24	0.3708	0.2630

Correlation analysis:

The analysis shows that there is a negative correlation between Return on Investment (ROI) on one hand and measures of Working Capital Management (WCM) like Current Ratio (-.290), Quick Ratio (-0.4105), Working capital turnover ratio (-0.175), Debtors Turnover Ratio (-0.074), Absolute Cash Ratio (-0.500) and Cash to sales ratio (-0.273). This shows that with the increase in Current ratio, Quick ratio, Working capital turnover ratio, Debtors turnover ratio, Absolute cash ratio and Cash to sales ratio there is a negative impact i.e. there is a decrease in profitability and vice versa. Current Asset to Total assets Ratio (0.549), Current assets to sales ratio (0.285) and Inventory Turnover ratio (0.100) shows a positive relation with Return on Investment (ROI). This shows that with increase in CATAR, CASR and ITR there is an increase in profitability and vice versa. Through Correlation matrix table it is observed that there is a very high degree of correlation between CATAR and CASR (0.9118) and between WCTR and CTS (0.923). This high degree of correlation indicates that there is an existence of multicollinearity i.e. the existence of high correlation between the independent variables.

Correlation Matrix of ONGC for the time period 2000 to 2012

Table 2

	ROI	CR	QR	CATAR	CASR	WCTR	ITR	DTR	ACR	CTS
ROI	1									
CR	-0.2909	1								
QR	-0.41005	0.440291	1							
CATAR	0.54991	-0.5639	-0.56242	1						
CASR	0.285045	-0.54294	-0.52116	0.911892	1					
WCTR	-0.17575	-0.29952	-0.25721	-0.38212	-0.4066	1				
ITR	0.100192	-0.34593	-0.27646	0.361593	0.512537	-0.25785	1			
DTR	-0.07443	-0.51479	-0.38567	0.490725	0.620837	0.012988	0.594893	1		
ACR	-0.50034	0.39277	0.546075	-0.68489	-0.6168	-0.00464	-0.10375	-0.36493	1	
CTS	-0.27319	-0.27266	-0.41614	-0.23569	-0.20054	0.922756	-0.19673	0.076561	-0.05923	1

Regression Analysis:

The impact of Working Capital ratio on Return on Investment of ONGC is shown with the help of multiple regression analysis.

Table 3

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.506388621	0.152270239	3.32546	0.012669726	0.146306721	0.866430521	0.146306721	0.866430521
Quick Ratio	-0.141462675	0.05416416	-2.61174	0.034825097	-0.269540561	-0.013384788	-0.269540561	-0.013384788
CASR	0.104010788	0.073435469	1.416356	0.19959712	-0.069636503	0.27765808	-0.069636503	0.27765808
WCTR	0.056226507	0.020807971	2.702162	0.030543333	0.007023475	0.105429539	0.007023475	0.105429539
DTR	-0.013673392	0.006413722	-2.1319	0.070472555	-0.028839434	0.00149265	-0.028839434	0.00149265
CTS	-1.824420776	0.5254445011	-3.47214	0.01037578	-3.066900792	-0.581940759	-3.066900792	-0.581940759

Table 4

Regression Statistics	
Multiple R	0.869108911
R Square	0.755350299
Adjusted R Square	0.580600513
Standard Error	0.041611573
Observations	13

Table 5

ANOVA	df	SS	MS	F	Significance F
Regression	5	0.037422262	0.007484	4.322467652	0.040998714
Residual	7	0.012120661	0.001732		
Total	12	0.049542923			

Table 3 shows that profitability is directly or positively affected with WCTR and CASR whereas QR, DTR and CTS shows a negative relationship with profitability which means that with increase in QR, DTR and CTS there is a decrease in profitability of ONGC. Table 3 shows that the impact of different working capital ratios on profitability is statistically significant at 5% level as seen from the values of the regression coefficient. A unit increase in Cash to sales ratio would decrease ROI by 1.82 units. Similarly one unit increase in QR decreases the profitability by 0.14 units whereas with one unit increase in DTR there is a decrease in ROI by 0.01 units. One unit change in CASR and WCTR increases the ROI by 0.10 units and 0.05 units respectively. In Table 5, p value indicates that QR, WCTR and CTS have statistically significant impact on Return on Investment as p value < 0.05 on the other hand DTR and CASR have statistically insignificant effect on profitability.

Table 4 shows that the independent variables explain 75.5% of the variations in the profitability of ONGC. Significance F value 0.041 shown by Table 5 indicates that there is a significant impact of Working Capital ratios on profitability of ONGC.

Conclusion:

The study of correlation reveals both positive and negative coefficients. Out of nine ratios relating to working capital management selected during the period under study, in case of Current Ratio (-.290), Quick Ratio (-0.4105), Working capital turnover ratio (-0.175), Debtors Turnover Ratio (-0.074), Absolute Cash Ratio (-0.500) and Cash to sales ratio (-0.273) shows a negative association with the selected profitability ratio (ROI) and the remaining ratios Current Asset to Total assets Ratio (0.549), Current assets to sales ratio (0.285) and Inventory Turnover ratio (0.100) have a positive relation with profitability (ROI). The study of multiple coefficient of determination (R2) reveals that 75.5% of the total variations in the profitability of ONGC is jointly explained by the independent variables (QR, CASR, WCTR, DTR and CTS) relating to working capital management. Hence, it may be concluded that the increase in the Working capital ratios of the company decreases the profitability of ONGC throughout the study period i.e. significantly effecting ROI. The research paper shows that the liquidity of the company has an impact on profitability. When there is an increase in liquidity the profitability of the company decreases and vice versa.

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