A FINANCIAL STUDY ANALYSING LIQUID RATIOS & PROFITABILITY RATIOS FOR OIL AND NATURAL GAS CORPORATION(ONGC) LIMITED, INDIA

[1]Tanya Varshney, [2]Dr. Rohit Rajwanshi

[1]Research Scholar, Department of management, Dayalbagh educational institute, Agra, India
[2]Assistant professor, Department of management, Dayalbagh educational institute, Agra, India

Abstract: This study is an attempt to establish relationship between several working capital ratios and profitability position of ONGC Ltd. using multiple regression analysis. The multiple regression test has been employed to study the profitability of ONGC ltd in terms of its working capital ratios. The study covers secondary data from ONGC Ltd. annual reports from 2008 to 2018. Ratio analysis has been done to analyse and compare the performance trends over several years. Different ratios such as current ratio (CR), quick ratio (QR), Inventory turnover ratio (ITR), current assets to total asset ratio (CATAR), current assets to sales ratio (CASR), return on investment (ROI), cash to sales ratio(CTS), Absolute cash ratios (ACR), debtors turnover ratio (DTR), Working Capital Turnover Ratio (WCTR) are being calculated in order to study the financial position of ONGC Ltd and also to find the relation of each ratio on one another using correlation test. The study found to have weak significant relationship among working capital components & profitability of ONGC ltd. This study would provide a direction to ONGC and to other companies so as to efficiently manage and maintain working capital requirements in order to improve the profitability position.

Keywords:, Liquid ratios, ONGC ltd., Profitability ratios, Working capital management.

1. INTRODUCTION:

1.1 Oil & Natural Gas Corporation of India (ONGC):- ONGC is among the leading crude oil and natural gas company in India founded on 14TH August 1956. ONGC owns maharatna status. It is estimated that around 70% of Indian domestic production is contributed by ONGC. Many similar business related organizations like IOCL, HPCL, BPCL use crude oil as raw material to produce different petroleum products as finished products. It has its operation in many different countries and ONGC worked internationally through its subsidiary ONGC videsh limited. ONGC is an public sector undertaking of govt of India. Under ministry of petroleum and natural gas the organisation is controlled. Among all oil and natural gas companies, ONGC hold first position in the energy sector of India and also awarded with many prestigious awards and also holds good position in ranking for their corporate social responsibilities work.

1.2 Financial ratio analysis:- Financial ratio analysis gives a clear picture about the profitability position of a company or business such as debt paying capability, fund management and other business related areas. Ratio analysis allow us to compare the performance of company or industry over a period of time, or to compare the performance of various industries with one another likewise in many context. Financial Management deals with taking various decisions for the welfare of business such as capital budgeting decisions, fund management decisions, dividend decisions, managing working capital etc all the decisions are equally important for the organization for its welfare. Working capital management is a very important factor to be taken in consideration for the operation of day to day business activities. It includes management of short term liabilities and current assets. To maintain liquidity of organization a sound working capital position is must. To maintain smooth flow of business activities managers look after all business activities and make decisions accordingly because excess working capital may lead to excess use of scarce resources and insufficient WC may cause an hindrance in the flow of business. so it is mandate to keep sufficient liquid assets and debtors management. Thus for the growth, survival and expansion of business it is required to keep an eye on the working capital decisions as it involves current assets that are of short term in nature and required for day to day survival of business. to maintain the worthiness and soundness of company it is considered that liquid assets must be adequate to cope up with short term issues. Overall, working capital is defined as the excess of current assets to that of current liabilities. So measurement of WC takes both current assets as well as current liabilities in consideration. Ratio analysis is done to evaluate the performance of the organization over a long period of time it is referred as trend analysis or time series. Ratios reflect liquid, profitability, or turnover position of company at a point of time.

For the large, medium or small scale organizations, enormous research work has been done on the working capital management practices. Research work has been carried using survey or by empirical approach to establish relationship between working capital and profitability of organization. This domain is still understudied in Indian context so to explore this area of study and fill this research gap this study is attempted.

2. REVIEW OF LITERATURE

For the efficient flow of business, organization need fixed as well as working capital. Working capital is a crucial component that plays a vital role for the survival of business. ignoring working capital requirements may hinder the growth, or even existence of business and thus management of working capital is very important and can’t be ignored at any stage. **Smith(1980)** study also revealed the importance of working capital for the firm and further stated that working capital has a very direct and crucial role on the profitability and risk for the firm so it needs to be managed effectively. It has already forseen that enormous research studies has been done concerning the long term financial strategic decisions for firms. **Cohn & pringle (1975)** research study is also concerning the similar related situation that very less scholarly efforts has been made to relate long term investment strategy and various financial models in context to study short term working capital management decisions. Thus there is a huge research gap found in finance area. And scholars must make some efforts to study the short term strategic decision making related to finance like management of working capital. **Grass(1972)** research work also depict the similar situation and reported the cause of many business failures due to mismanagement of working capital like insufficient working capital hindering the day to day business activities and over use of scarce resources resulting in excess of working capital both situation are hazardous for survival, existence & growth of business. For small & medium scale organization working capital is a factor of high concern as it is only the deciding factor for the success or failure. **Gitman(1982)** also stated that working capital of firm is crucial deciding factor for any firm's return, risk and their share value.

Many researches are being done which are studying capital budgeting decision, dividend paying capability, capital structure, long term decision making which the researches on short term investment avenues such as importance of current assets, working capital management is still lacking.

Inventory management is also considered as optimal decision as it may result is reduction for many irrelevant costs. And also reduce disruption in the day to day working activities and save business from any uncertain mishappening. **Blinder & Manccini(1991)** also reported in their study about the importance of inventory management for firms. As inventory management has many advantages.

As many research work concluded that more the investment in current assets or more working capital lesser the profitability would be. Thus firms investing more in current assets such as inventories, debtors, are likely to result in less profitability . Thus, greater the investment in current assets, lower is the risk, and profitability obtained.

As we all are well aware that Profitability and liquidity is the piller of any efficient business but still many studied proves a inverse relationship among both and state that with increase in firm's return the liquidity will decline and conversely if liquidity is maintained the profit erodes. **Smith (1997)** study concluded that financial experts consider current & quick ratio to measure corporate liquidity of firm. The study conducted by **Teruel & Solano(2007)** also reported in their findings that there is inverse relationship of profitability and days of inventory, no of days of account receivable. This study was conducted for a small and medium scale industry in spain.

A study conducted in Pakistan to study the relationship among working capital management & profitability of firm by **Raheman and Nasr (2007)** find that there arise a high negative relation between them and also revealed inverse relation between liquidity and profitability of firm. Many researches have tried to determine the components of working capital management. **Appuhami (2008)** study found capital expenditure and operating cash flow of firm to be significantly related with working capital management.

Deloof (2003), Yadav et al. (2009), Singh and Pandey (2008) and Vishnani et al. (2007) all researchers studied the relationship between working capital management & profitability of firm and reported that the organization with less profits require more time to pay their debts resulting in high creditors turnover period. A study analyzing working capital management is also conducted on various oil companies like BPCL, IOCL, HPCL conducted by **Surendra et al. (2001)** over the years from 1988 to 1997.

Teruel and Solano (2007) in their research work found that the profitability of a firm can be increased by reducing their investment in inventories and accounts receivable. **Soenen (1993)** also reported about the cause of short cash conversion cycle as the firm managers always try to collect their cash as soon as possible and delay to pay cash. As the inverse relation of profitability and short term asset is practically proved. So to improve profitability position, the firm tries to maintain low amount of short term assets. As a result the profits rise but the solvency of the firm get threatened.

As the firm has deficient amount of assets in the form of current assets. Thus the balance is must for the smooth flow of business to further grow and expand. Firm should not ignore profits as well should look at their corking capital requirements otherwise the firm may face solvency and bankruptcy. Thus overall literature support the statement that a firm must maintain balance between working capital requirements as well look the firm must be concerned for their profitability also.

Thus this literature provides us with an idea to determine the similar scenario for ONGC ltd focusing on different components of working capital & their relationship with profitability position for the data over the years from 2008 to 2018.

3. OBJECTIVES OF THE STUDY

The objectives of the research study are:

1. To study the various ratios for ONGC Ltd from 2008 to 2018.

2 .To study the relationship between Working Capital Management and Profitability for ONGC ltd.

3. To determine the effects of different components of working capital management on profitability for ONGC ltd.

4. HYPOTHESIS: This study will test the hypothesis related to two components i.e. working capital ratios & profitability ratio.

Null Hypothesis (Ho): There is no relationship between working capital ratios and profitability ratio.

Alternative Hypothesis (H1): There is a relationship between working capital ratios and Profitability ratio.

5. METHODOLOGY : The financial data for ONGC ltd. over the past 11 years from 2008 to 2018 period for ONGC has been collected from secondary sources of data such as ONGC annual reports, articles, websites & journals. Financial Ratios like liquidity ratios, some turnover ratios & profitability ratios for the 11 years has been calculated. Liquid ratios are related to working capital management

So to analyse working capital management ratios like current ratio(CR), quick ratio(QR), inventory turnover ratios(ITR), cash to sales ratio(CTS), current assets to sale ratio(CASR), current asset to total asset ratio (CATAR), debtors turnover ratio(DTR), working capital turnover ratio(WCTR) and absolute cash ratio has been calculated and for profitability measurement return on investment has been calculated . Correlation test has been applied to test the degree of relationship among working capital ratios & profitability ratios. Thus further to analyse the combined impact of working capital ratios on profitability ratio multiple regression test has been employed. The data has been analyse using SPSS.

6. DATA ANALYSIS:

As the research study is done to find the impact of working capital ratios on profitability ratio. The data of ONGC ltd. for 11 years from 2008 to 2018 has been collected from the annual reports and futher by using the data various useful ratios has been calculated. Table 1 shows ratio analysis for ONGC ltd. from 2008 to 2018. Further the data analysis part of the paper covers correlation test, and multiple regression analysis.

											(sales in cr.)
Ratios	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**
CR	0.44	1.55	1.72	1.57	1.56	1.74	1.42	1.35	1.70	1.77	1.99
QR	0.30	1.23	1.41	1.26	1.26	1.41	1.22	1.14	1.60	1.67	0.35
ITR	12.71	12.60	13.78	13.90	14.26	14.55	14.81	16.59	12.88	15.76	17.26
CATAR	0.073	0.121	0.139	0.145	0.15	0.171	0.213	0.175	0.497	0.507	0.522
CASR	0.254	0.386	0.399	0.364	0.357	0.368	0.480	0.392	1.386	1.207	1.080
CTS	0.012	0.123	0.129	0.033	0.129	0.160	0.264	0.218	0.302	0.299	0.373
ACR	0.049	0.569	0.614	0.506	0.794	0.968	0.905	0.895	1.539	1.580	1.644
DTR	11.93	13.05	8.16	7.62	11.16	12.71	15.02	19.38	16.87	15.16	16.87
SALES	84580	77489	77165	82870.96	83468	82552	76130	66152	60206	63929	60137
WC	(27845.31)	10673.81	12895.04	10989.76	10763.53	12953.01	10886.46	6766.94	34271.36	33484.85	32743.87
WCTR	(3.03)	7.25	5.98	7.54	7.75	6.37	6.99	9.77	1.76	1.90	1.83
ROI	0.082	0.078	0.079	0.093	0.123	0.130	0.172	0.147	0.141	0.148	0.173

Source: ONGC annual reports

Table-1

6.1 CORRELATION RESULTS:

Table 2 represent the correlation matrix for ONGC ltd. From 2008 to 2018. Correlation analysis resulted in weak relationship among return on investment and measures of working capital ratios like ROI shows (0.401) quite weak but positive relationship with current assets like wise there is negligible relationship found between ROI and quick assets (0.015) & working capital turnover ratio(0.027) and for all other working capital ratios like inventory turnover ratios(0.743), current assets to total asset ratio(0.669), cash to sales ratio(0.859), absolute cash ratio(0.777) and debtors turnover ratio(0.740) the correlation is found to be significant with return on investment. Overall there is no significant relationship found to be among QR, WCTR, CR with ROI. There is also negative relationship found among variables such as ITR& QR(-0.169), CATAR & WCTR(-0.388) and DTR & WCTR(-0.085). Due to multicollinearity, some variables are also found to be strongly related to one another ACR & CATAR(0.938), CASR& CATAR(0.974), ACR & CTS(0.935). thus correlation results display a weak positive relation between working capital ratios & profitability ratio which is depicting a different picture from literature review. the reasons behind the reverse effect may be the increased working capital requirements, changing consumption, changing market trends, govt policies etc. The correlation results shows similarity with **Vieria(2010)** study. That study also state the positive relationship of working capital ratios & profitability of the firm.

Correlations

		CR	QR	ITR	CATAR	CASR	CTS	ACR	DTR	WCTR	ROI
CR	Correlation	1									
QR	Correlation	.483	1								
ITR	Correlation	.424	-.169	1							
CATAR	Correlation	.567	.122	.461	1						
CASR	Correlation	.503	.214	.271	.974**	1					
CTS	Correlation	.610*	.125	.636*	.869**	.800**	1				
ACR	Correlation	.734*	.280	.579	.938**	.884**	.935**	1			
DTR	Correlation	.103	-.089	.532	.559	.519	.751**	.616*	1		
WCTR	Correlation	.370	.459	.178	-.388	-.434	-.090	-.102	-.085	1	
ROI	Correlation	.401	.015	.743**	.669*	.550	.859**	.777**	.740**	.027	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table -2

6.2 REGRESSION ANALYSIS:

Multiple regression analysis has been performed to analyse the combined effect of working capital measures which showed slight weak correlation with return on investment that are current assets to sales ratio(CASR), quick ratio(QR), Debtor turnover ratio(DTR), working capital turnover ratio(WCTR) and cash to sales ratio(CTS) & profitability ratio return on investment (ROI) for ONGC ltd.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change
1	.895[a]	.801	.602	.022752	.076

Table -3

Table 3 show that the independent variables such as current asset to sales ratio, quick ratio, debtor turnover ratio, Working Capital Turnover Ratio, cash to sales are predicting 80.1% dependent variable ROI and state that the model is fit.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	.010	5	.002	4.024	.076[b]
1	Residual	.003	5	.001		
	Total	.013	10			

a. Dependent Variable: return on investment

b. Predictors: (Constant), current asset to sales ratio, quick ratio, debtor turnover ratio, Working Capital Turnover Ratio, cash to sales

Table-4

Figure 4 depict the significant relationship between independent and dependent variable that is working capital ratios & profitability ratios. The significant F value of 0.076% is clearly reflecting the significant in the relationship between dependent & independent variable

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.067	.040		1.668	.156
quick ratio	-.002	.026	-.023	-.071	.946
cash to sales	.324	.168	1.036	1.926	.112
debtor turnover ratio	.001	.003	.142	.444	.676
Working Capital Turnover Ratio	-005	.004	-.010	-.026	.980
current asset to sales ratio	-.031	.051	-.352	-.612	.567

Table-5

Regression cofficients describe that there is decrease in ROI by 0.002% with increase in per unit of QR, and 0.005% decrease in case of WCTR and and 0.031 % decrease in case of CA. and some variables showed increment of 0.324% in ROI with per unit increase in CTS and 0.001% increase in ROI with per unit increase in DTR.

7. CONCLUSION:

The correlation results depicted slight positive correlation among working capital ratios & profitability ratios such as CR & ROI, QR & ROI, QR & WCTR. The results goes beyond literature but still many studies support the positive relationship among working capital ratios and profitability ratios. With changing business trends, govt policies, and market fluctuations the results are relatable. Some working capital ratios (CTS & CR, ACR & CR, CTS & ITR, CATAR & CASR, CATAR & CTS, CATAR & ACR, CTS & ACR) also showed high correlation among each other while some working capital ratios(ITR & QR, DTR & QR, WCTR& CATAR, CASR & WCTR, CTS & WCTR, ACR& WCTR, DTR& WCTR) show negative correlation among one another. Working capital turnover ratio is found to be negatively correlated with most of the ratios.

Multiple regression analysis showed that all working capital ratios are found to be good predictors for profitability as the R square (coefficient of determination) value state that the independent variables(CASR, QR, DTR, CTS, WCTR) are predicting 80.01% for dependent variable(ROI) that is return on investment and explained that working capital ratios are good measure for profitability.

REFERENCES:

[1]. Smith K (1980), “Profitability versus Liquidity Trade off in Working Capital Management”, in Smith K. K. and St. Paul (Eds.), Reading on the Management of Working Capital, pp. 549-562, West Publishing Company.

[2]. Cohn R A and Pringle J. J. (1975), “Steps Towards an Integration of Corporate Financial Theory”, in Keith V Smith (Ed.), Management of Working Capital: A Reader, p. 369, West Publishing Company, New York.

[3]. Grass M (1972), Control of Working Capital, pp. xi-xiii, Grower Press Limited, Essex.

[4]. Gitman L J (1982), “Cost of Capital Techniques Used by Major US Firms: A Survey and Analysis of Fortune’s 1000”, Financial Management, Vol. 11.

[5]. Blinder A. S., Manccini L. J. (1991), “The Resurgence of Inventory Research: What Have We Learned?” Journal of Economic Survey, Vol. 5, No. 4, pp. 291- 328.

[6]. Smith M B (1997), “Modelling Association Between Working Capital and Operating Profit: Survey

Findings", Journal of Financial Management and Analysis, pp. 51-61.

[7]. Pedro Juan Garcia-Teruel and Pedro Martinez-Solano, (2007), Effects of Working Capital Management on SME Profitability; International Journal of managerial finance, Vol. 3, No. 2, pp 164-177.

[8]. Raheman Abdul, Nasr, Mohamed, (2007), Working Capital Management and Profitability- Case of Pakistani Firms; International Review of Business Research Papers 3, pp 279-300.

[9]. Ranjith Appuhami B.A. (2008), The Impact of firms Capital Expenditure on Working Capital Management: An Empirical study across Industries in Thailand, International Management Review, Vol. 4, No. (1), pp 11-24.

[10]. Deloof, D. (2003), Does Working Capital Management affect Profitability of Belgian Firms? Journal of Business Finance and Accounting Vol. 30 No.3&4, pp 573-587.

[11]. Yadav, Rakesh, Kamath, Vani and Manjrekar, Pradip, (2009), Working Capital Management: A study of Maharashtra's bulk drugs listed companies; Chemical Business, pp 27-34.

[12]. Singh, J. P, and Shishir Pandey, (2008), Impact of Working Capital Management in the Profitability of Hindalco Industries Limited; The ICFAI University Journal of Financial Economics, Vol. 6, No. 4, pp 62-72.

[13]. Vishnani , Sushama and Shah, Bhupesh Kr., (2007), Impact of Working Capital Management Policies on Corporate Performance – An Empirical Study; Global Business Review, Vol. 8, No.2, pp 261-281.

[14]. Surendra, S., Jain, P.K., and Rastogi Ashih, K., (2001), Working Capital Management in oil industry in India; The Management Accountant, Vol. 45, No.11, pp 511-525.

[15]. Soenen, L. (1993), Cash conversion cycle and corporate profitability; Journal of Cash Management, Vol.13, No. 4, pp 53-57.

[16]. *oil and natural gas corporation limited*. (n.d.). Retrieved from ongc: http://www.ongcindia.com