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   INTRODUCTION

   REVIEW OF LITERATURE

   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

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   ACKNOWLEDGMENTS

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   APPENDIX/ANNEXURE

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BOOKS

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITES

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

WORKING CAPITAL MANAGEMENT AND ITS IMPACT ON PROFITABILITY: A CASE STUDY OF DR. REDDY'S LABORATORIES LTD.

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ABSTRACT
Among all the problems of financial management, the problems of working capital management have probably been recognized as the most crucial one. It is because of the fact that working capital always helps a business concern to gain and strength. The objectives of the study is to examine the working capital performance of Dr Reddy's Laboratory during the period 2004-05to 2012-13. Different financial ratios and statistical techniques are also applied for measuring the working capital efficiency. Quick ratio, inventory turnover ratio, Debtors turnover ratio, gross profit ratio, and working capital turnover ratio showed satisfactory performance and current ratio, absolute liquid ratio, operating profit ratio of the company were not found to be satisfactory. The correlation coefficient between liquidity and profitability of the selected company is observed to be (-) 0.0875.

KEYWORDS
Liquidity, Profitability, Working Capital Management.

INTRODUCTION
Working capital means the amount of capital which is required for day to day normal operation of an organization[1]. It is used for running the main operating activities of the concern. for maintaining continuity in main operating activities , a firm has to invest a part of its capital in current assets. It has also to use another part of capital for paying of its current liabilities. It helps by creating income of the firm in an accounting period by means of a recurring rotation of the current assets and current liabilities. The working capital management plays an important role, for success or failure of firm in business because of its effect on firm's profitability as well as on liquidity. Working capital management is about the management of current assets and current liabilities in such a way that a satisfaction level of working capital which maximizes the profits of the firm is maintained.
The basic theme of working capital management is to provide adequate support for smooth and efficient functioning of normal day to day business operation by striking a trade between the three proportions of working capital. They are liquidity, profitability and risk.[6] In the present environment of cut throat competition business does not have any other alternative, than cutting the cost of its operations in order to be competitive as well as financial strong. It is in this connection that effective management of working capital plays a vital role.
Academicians are sharply divided into two schools of thought, according to one school of thought, "Working capital is not a factor of improving profitability and there may be a negative relationship between them". Where as the other schools of thought argue that "Investment in working capital plays a vital role to improve corporate profitability and unless there is a minimum level of working capital output and sales can not be maintained". They argue that inadequacy of working capital keeps fixed assets inoperative.
In fact the relationship between working capital and profitability is still a debatable issue, further more only a few studies on pharmaceutical industry in connection with examining, the relationship between working capital and profitability have been , carried out in India in the recent past. Where as the Indian pharmaceutical industry is playing a vital role in improving average life expectancy; the signing of GATT has injected a series of changes in the industry. Against this backdrop the Indian pharmaceutical industry has been chosen in the present study.
Apparently a large number of considerations play a vital role in the development of arguments and counter arguments in this regard. Against the backdrops of this academic debate an attempt has been made to evaluate the interrelationship between working capital management and profitability of Dr. Reddy's Laboratories during the period 2004-05 to 2012-13.

DR. REDDY'S LABORATORIES LTD- A PROFILE[0]
Dr. Reddy's Laboratories is one of popular pharmaceutical companies with base in more than 100 countries. The medicines of Dr. Reddy's Laboratories Limited are easily available all across the globe. Dr. Reddy's Pharmaceutical Company is very much customer friendly. It takes care of the fact that maximum people get benefited by the products of this pharmaceutical company. It commercialized various treatments so as to provide high tech treatment to the masses. It tries to meet the medical needs of the people. Though Dr. Reddy's Laboratories is located in various parts of the world, it has its headquarters in India. The subsidiaries of this company are found at various countries like US, Germany, UK, Russia, and Brazil. 16 countries have representative offices of Dr. Reddy's Laboratories Limited. 21 countries have third party distribution.

LITERATURE REVIEW
Peel, M.J.Wilson,N and Howorth, C.A. (2000)[8] in their article entitled " Late payment and credit management in the small firm sector: Some empirical evidence," published in International small journal 18(2), page 52-68, suggested that small firm tend to have a relatively high proportion of current asset, less liquidity. They also opine that small firm exihibit volatile cash flows. They found that small firms are highly reliance on short term credit. The article does not cover the large scale industry and had not highlighted specifically in pharmaceutical industry.
Howorth C and Westhead, PP (2003)[5] in their article on " The focus of working capital management in U.K small firms" published in Management accounting Research , Volume 14 No-2, PP- (94-111) was found that small companies stressed on working capital management to improve marginal returns. But the article had not highlighted specifically on working capital management in pharmaceutical industries. Further it had not focused on how the managerial returns could be maximized.
The article did mention the liquidity and profitability in large firms. The article failed to analyze how the profit could be maximized. Smith K, V (1973)[9] examined the state of the art of working capital management and identified eight major theoretical approaches taken towards the management of the working capital. He stressed the need for the development of a viable model with the duel financial goals of profitability and liquidity, and argues that only such models will assist practicing financial managers in their day to day decision making.
Padaachi, Kesseven (2006)[7] in his article on trend in working capital management and its impact on firm's performance: an analysis of Mauritian small manufacturing firms, published on International Review of Business Research papers, Vol.2, no 2, PP 45-58 was found that the paper and printing industry has been able to achieve high scores on the various component s of working capital. He also found that there is a positive impact of working capital management on its profitability. However the study was constrained by the sample size and the nature of the data which have well affected the result. The study did not also cover the large scale industry.
Eljelly, A. (2004)[4] in his article on "Liquidity and Profitability trade off: An empirical investigation in an emerging market," published in International Journal of Commerce and Management, volume 14, no- 2 PP (48-61) has elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet short term obligation and avoid excessive investment in these assets. He has

measured the liquidity and profitability by current ratio and cash conversion cycle (cash gap) on a sample of joint stock companies in Saudi Arabia and it was examined by using the correlation and Regression analysis. However he did not consider the other ratios of measuring liquidity and profitability of the firms.
Deloof , M (2003)[2] in his article on " Does working capital management affects profitability of Belgian firms?" published in 'Journal of business Finance and Accounting' vol-30, No 3& 4 PP(573-587) discussed that most firms had a large amount of cash invested in working capital. Using correlation and regression test he found a significant relationship between gross operating income and the no. of days account receivables, inventories and accounts payable of Belgians firms. He also suggested that managers could create value for their shareholders by reducing the no. of days accounts receivables and inventories to a reasonable minimum. He also suggested that the negative relationship between accounts payable and profitability is consistent within the view that less profitable firm wait longer to their bills.

RESEARCH GAP
Although several studies have been studied in the area of working capital management, a few studies have been carried out in the pharmaceutical industry. More over no comprehensive indices were formed to examine the relationship between liquidity and profitability. Hence, the present study is an attempt to contribute to the existing literature.

OBJECTIVES OF THE STUDY
The main objective of the study is to examine the working capital management of the selected company. To attain the main objective, the following objectives are sought to be achieved:
i) To examine the working capital performance of the selected company.
ii) To study the liquidity position of the selected company.
iii) To examine the relationship between liquidity and profitability of the selected company.

HYPOTHESIS
i) Working capital performance of the selected company is healthy.
ii) There is a significant negative relationship between liquidity and profitability

METHODOLOGY
To carry out the present study the data has been collected from the published annual reports of the company for a period of nine years from 2004-05 to 2012-13. Data have been suitably arranged, classified and tabulated as per requirement for the study. To analyze the working capital performance of the selected company, the technique of ratio analysis has been used.***** To analyze the relationship between liquidity and profitability, Pearson's correlation has been used. To test the significance of the relationship between liquidity and profitability, found out by way of correlation coefficient, t test has been applied.

DATA SOURCE
The data required for the study has been collected from the published annual reports of the selected company.

STUDY PERIOD
We have chosen the study period ranging from 2004-05 to 2012-13.

TOOLS AND TECHNIQUES OF DATA ANALYSIS
The data collected from the published annual reports of the selected company for the eight years period have been suitably arranged, classified and tabulated as per requirement for the study.

WORKING CAPITAL PERFORMANCE OF THE SELECTED SAMPLE COMPANY
To analyze the working capital performance of the selected company, the technique of ratio analysis has been used. The ratios which are taken into consideration are as follows:

TABLE 1: DIFFERENT RATIO WHICH ARE TAKEN INTO CONSIDERATION TO ANALYZE THE WORKING CAPITAL PERFORMANCE OF THE SAMPLE COMPANY

Name of the ratios	Measures
Current ratio	Current asset/current liability
Quick ratio	(current asset- stock)/(current liability- bank over draft)
Absolute liquid ratio	(cash and bank balance+ marketable securities)/(current liabilities – bank over draft)
Inventory turnover ratio(in times)	(sale – gross profit)/ closing stock
Inventory turnover (in days)	365/inventory turnover(in times)
Debtors turnover ratio(in time)	Net sales/ closing debtors
Working capital turnover ratio	Net sales / working capital
Debtors turnover ratio (in days)	365/ debtors turn over in times

ANALYSIS OF THE LIQUIDITY POSITION BY MOTAALS COMPREHENSIVE TEST
In this test the following ratios are taken into consideration. Each of the ratios are expressed as percentage
I) Inventory / current asset
II) Debtors / current assets
III) Cash & bank / current assets.
For i) the lower the ratio the more favorable is the position and ranking has been done in that order. For ii), iii), & iv) the higher the ratio, the more favorable is the position and thus ranking has been done in that order. Ultimate ranking has been done on the principle that lower the points scored the more favorable are the position and vice- versa.

RELATIONSHIP BETWEEN LIQUIDITY AND PROFITABILITY
To analyze the relationship between liquidity and profitability, spearman's Rank correlation has been used. For this purpose Karl Pearson's c correlation coefficient is computed as below.
r= cov(x,y)/sd(x).sd(y) ……………………………….(i)
Where, cov(x,y)= covariance of x and y.
S.d(x)= standard deviation of x
s.d(y)=standard deviation of y
To test the significance of the relationship between liquidity and profitability, found out by way of correlation coefficient, t test has been applied.

The t statistic is given below

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \quad \text{.................... (ii)}$$

Where r = Correlation coefficient, n= No. of observations

In addition to the above simple statistical measured like mean S.D, coefficient of variation have been used in this study

ANALYSIS OF WORKING CAPITAL PERFORMANCE OF DR REDDY'S LABORATORIES

Table 2 shows the different ratios for measuring working capital performance. The current ratios in all the years, except in 2007, 2005 is below 2: 1 (being the standard norms). Again the average of these ratios is 1.62:1 which is also below the standard norms (2:1). It is to say that current ratios of the companies maintained standard norms neither in individual years (except in 2005 & in 2007) nor in that of average. Therefore, current ratios are not in a satisfactory level. However, the standard deviation of current ratio is 0.378. It indicated that current ratio of the different years are more or less steady as its standard deviation is very low and its coefficient of variance 23.35%.

It is observed that firms maintaining the quick ratios above its standard norms (1:1). It is to say that the firm has enough capacity to meet the short term obligation. The quick ratios of the firm range from 1.18:1 to 2.27:1. The mean value of quick ratios is 1.67 with a coefficient of variation 21.92%.

It is observed from the study that the absolute liquid ratio of the firm are ranging from 0.14 in 2005 to .62 in 2013 (standard norms being .5:1) with mean .286 and standard deviation is .142 under the period of study. The co efficient of variation is 49.48%. It is observed from the study that the firm did not maintain the standard norms for the absolute liquid ratio except in 2013.

It is observed from the table that inventory turnover (in times) lies in between 3.99 to 6.02 with a mean of 5.71 (standard norm being 5- 6 times) and standard deviation is 1.65 during the study period. The co-efficient of variation is 29.03%. Again it is observed from the table that inventory velocity lies in between 38.1 days to 74.03 days with an average of 66.59 under the study period. It is observed that the company is maintaining a satisfactory level of inventory which helps to avoid the extra cost for maintaining both the high and low level of inventory under the study period.

Net working capital turnover period of the company is 2.66 on an average with a standard deviation and co-efficient of variation 0.7349 and 27.63% respectively. It is to say that the time taken from cash invested in the business to cash recovery from the business is 137.21 days on an average. If we analyze in depth, it is observed that working capital cycle is a good one.

The gross working capital (sum of current assets) cycle period of the company is 1.50 on average with standard deviation and coefficient of variation 0.267 and 17.85% respectively.

TABLE 2: DISTRIBUTION OF DIFFERENT RATIOS OF WORKING CAPITAL IN DR. REDDY'S LABORATORIES, DURING 2004-05 TO 2012-13

	2005	2006	2007	2008	2009	2010	2011	2012	2013	mean	Standard Deviation	CV (%)
CR	2.02	1.21	2.42	1.74	1.64	1.46	1.13	1.48	1.48	1.62	.378	23.35
QR	2.27	1.74	2.44	1.55	1.42	1.18	1.28	1.58	1.60	1.67	.366	21.92
ALR	.14	.38	.37	.24	.16	.19	.24	.24	.62	.286	.142	49.48
ITR (time)	6.03	3.99	9.58	4.93	5.63	5.69	5.01	5.44	5.51	5.71	1.65	29.03
ITR (days)	60.53	91.47	38.1	74.03	64.83	64.14	72.85	67.10	66.24	-	-	-
DTR (time)		5.30	10.12	6.95	6.58	5.37	5.23	4.66	4.14	5.37	2.52	47.028
DT (days)		68.86	36.06	52.52	55.47	67.97	69.79	78.33	88.16	-	-	-
WCT (time)	1.49	1.58	2.62	2.80	3.30	3.96	3.09	2.58	2.54	2.66	.735	27.63
WCT (days)	244016	231.44	139.36	130.25	110.61	92.12	118.12	141.72	143.62	-	-	-
CAT (time)	1.92	1.30	1.95	1.64	1.32	1.55	1.37	1.34	1.14	1.50	.267	17.85

Note: CR = Current ratio, QR = Quick ratio, ALR = Absolute liquid ratio, IR = Inventory turnover ratio, DT = Debtors turnover Ratio, WCT = Working capital turnover, CAT= Current asset turnover, CV = Co- efficient of variation

Source: Annual Reports of the Company

From **Table 3**, it is shown the percentage of stock out of total current assets hold by the company during the study period. Higher level of inventory holding indicates the lower level of liquidity position. Considering this, the liquidity rank has been done. In case of debtors to current assets, the rank has been scored by keeping in mind that higher amount of debtors out of its total current assets is the indicator of better liquidity position and vice-versa. The rank of debtors to current assets is 1 in 2009 as it is highest and so on.

The same consideration has been applied in case of calculating rank of cash & bank to current assets and loans & advances to current assets. It is necessary to mention that fixed deposits have been included in cash & bank balance.

After getting individual rank all the ranks on particular year has been added to get the total rank and it is found that total rank in 2013, is the lowest and it got ultimate rank 1. It is indicating that the company under the study period recognizes the most sound liquidity position in the year 2013 followed by 2006, 2005, 2007 and 2011 places the 3rd, 4th and 5th position respectively.

It is observed from the total rank that the trend of liquidity position is more or less steady and it is ranging from 16 to 23.

TABLE 3: LIQUIDITY RANKING ANALYSIS OF DR. REDDYS LABORATORYS BY MOTAAL'S TEST

	Inventory to CA (%)	Debtors to c CA (%)	Cash & bank to CA (%)	Loans & advances to CA (%)	Liquidity rank				Total rank	Ultimate rank
	1	2	3	4	1	2	3	4		
2005	18.08	19.58	47.96	14.38	1	8	2	7	18	3
2006	25.01	19.16	36.76	19.06	3	9	3	2	17	2
2007	19.87	20.78	49.51	9.83	2	7	1	9	19	4
2008	36.09	21.36	24.41	18.14	9	6	4	4	23	7
2009	33.82	36.78	14.35	15.05	7	1	8	6	22	6
2010	34.44	29.83	16.97	18.75	8	5	7	3	23	7
2011	32.82	33.86	11.80	21.52	6	4	9	1	20	5
2012	27.86	36.37	23.03	12.74	5	3	6	8	22	6
2013	25.03	36.66	23.25	15.06	4	2	5	5	16	1

Note: CA = current assets

Source: Computed from Annual Reports of the Company

Table 4 shows the different profitability ratios with mean, standard deviation and coefficient of variation under the study period. On analyzing operating profit margin it is observed that the operating profit of the company during the last five years of the study period is satisfactory as it is within the range of the standard norms, being 20% to 25%. The average operating profit margin is also satisfactory with standard deviation and coefficient of variation 5.16 and 26.01% respectively.

Gross profit margin of the company are lying between 1.76 to 20.22 with mean 13.64 and standard deviation and coefficient of variation of 5.77 and 42.31% respectively. The ratios are much below than the standard norms (25% to 30%). Therefore it is to say that the gross profit ratio of the company is not satisfactory under the study period.

The net profits of the company during the last four years are more or less stable and lying in between 12% to 13%. It is highly fluctuating and ranging between -13.19% to 14.61% for the entire study period with standard deviation of 8.257 and coefficient of variation of 119.72%.

Returns on capital employed during the last five years of the study period are satisfactory. It lies between 3.42% and 24.32% under the study period with mean of 16.184, standard deviation of 7.69 and coefficient of variation of 47.52%. It is observed from the study that returns on capital employed of the company reached 24.32% (being the maximum) in the year 2013.

TABLE 4: PROFITABILITY ANALYSIS OF DR. REDDY'S LABORATORIES

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Mean	s.d	CV (%)
Operating profit margin (%)	8.58	14.82	26.02	17.85	21.88	20.73	20.49	25.44	22.98	19.86	5.166	26.01
Gross profit ratio (%)	1.76	7.98	20.22	9.79	14.65	14.82	15.07	20.13	18.33	13.64	5.77	42.31
Net profit ratio (%)	1.74	6.00	14.61	8.58	-13.19	4.96	13.38	13.26	12.74	6.897	8.257	119.72
Return on capital employed (%)	3.42	4.87	21.21	9.04	19.12	21.10	18.64	23.94	24.32	16.18	7.69	47.52

Note: s.d = standard deviation, CV = Co- efficient of variation

Source: Annual Reports of the Company

ESTIMATED RELATIONSHIP BETWEEN LIQUIDITY AND PROFITABILITY

To know the relation between liquidity and profitability, only two ratios are taken. Current ratio is taken as the indicator of overall liquidity and return on capital employed is taken as the principal indicator of profitability. Karl Pearson's correlation coefficient has been calculated to know the relationship between the two variables whether exist or not.

To test the significance of the relationship between liquidity and profitability, work out by way of correlation coefficient, 't'-test has been applied. The t- statistic is as follows:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Where

r = correlation coefficient

n = number of observations

The correlation coefficient between liquidity and profitability of the selected company is observed to be -0.0875 under the study period. The calculated value of t = .23. At 5% level of significance the table value of t (2 tailed) = 3.18. Therefore, the null hypothesis is accepted and concludes that there is an inverse relationship between liquidity and profitability under the study period.

LIMITATION OF THE STUDY

The study has been conducted over a limited period of nine years only. It is mainly based on secondary data and thus it carries all the limitations pertaining to the data collected from secondary sources. The study is based on a single company only

FINDINGS AND CONCLUSIONS

i) Current ratios (except in 2005 and in 2007) are below the standard norm. Therefore, it can be said that working capital performance in respect of current ratio is not satisfactory.
ii) The performances of quick ratios are above the standard norms always under the study period.
iii) Cash holding position of the company is not satisfactory except in 2013 (comparing with the standard norms) under the study period.
iv) Inventory holding position is much better
v) The company's credit policy is found to be liberal under the study period.
vi) The company is in a position to recovery its working capital 2.66 times on an average in a year under the study period which is a good sign for the company.
vii) Company's liquidity position in the year 2013 is very good. The overall liquidity positions are stable under the study period.

viii) The company is maintaining a good return in terms of operation profit margin ratio and return on capital employed during the last five years of the study period.

ix) Net profit margin of the company is also satisfactory.

x) The liquidity position by Motaal's test of the selected company is ranked as 2013, 2006, 2005, 2007, 20011, 2012, 2009, 2008, 2010 respectively.

xi) An inverse relationship between liquidity and profitability is observed for the selected company during the study period.

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