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   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

   SCOPE FOR FURTHER RESEARCH

   ACKNOWLEDGMENTS

   REFERENCES

   APPENDIX/ANNEXURE

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- 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UNPUBLISHED DISSERTATIONS AND THESES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.

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

IMPACT OF WORKING CAPITAL MANAGEMENT ON FIRM'S PERFORMANCE: EVIDENCES FROM LISTED COMPANIES OF INDIA

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ABSTRACT

Working capital management is very significant course of action for any organization which decides the flow and availability of cash and thus results in the effective firm's performance. An attempt has been done to investigate the established traditional relation between working capital management and organization's performance. For the study, a random purposive sample selection is done. All the selected samples are listed in Security Exchange Board of India, Mumbai. Annual reports were collected for the selected samples from the financial year 2006 to 2011. For the analysis purpose advanced statistical tools were rum to obtain the result.

KEYWORDS
working capital management, control variables, ratios, firm's performance, India.

INTRODUCTION
Working capital management has recognized as a crucial decision of organization's financial management decisions. Liquidity and profitability is very essential issue for any organization which should be balanced in daily conduct of the firm. To meet daily or short term obligations, liquidation is important and it again ensures the venture as profitable. Again it has been observed that traditional studies were primarily focused on the long-term strategies like capital structure, investment, debt etc. Short – term assets and liabilities were overlooked but it is important to discuss here that these are very significant part of total asset and thus play an important role in firm's profitability. Effective working capital management is very necessary for any firm to create and maximize its' shareholders value. In general, current asset is an important part of total asset. Excess of current asset may reduce firm's profitability but in the meantime, reduced may result as less liquidity and can be risky to the value of a firm. World has witnessed the impact of short liquidity as recent financial slow-down. Hence, an optimum WCM is expected for the growth of the firm. Previous studies have already established a positive relation between WCM and performance of the firm.

OBJECTIVE OF THE STUDY
The objective of the study leads to investigate impact of WCM on the performance of the selected Indian companies, listed in Security Exchange Board of India, Mumbai in particular. Subsequently, the study is emphasized on one aspect only:

A. To know whether there is any impact of working capital management over the performance of the firm in the name of profitability.

SCOPE OF THE STUDY
This study will investigate the impact of WCM on to performance of the firms and in this ways it will lead to some guidance for the financial managers. By previous researches, it has been cleared that WCM significantly influence the performance but majority of the studies have been conducted for the small scale firms. In the given study, big giants from Indian economy are selected and an attempt will be done to establish the relation. Furthermore, an attempt will be made to clarify, if there is any specific cause among the industries, if any difference is found in the trend of WCM. It will be much benefited for the managers as they can modify their strategies.

LITERATURE REVIEW
Several researches have been conducted on the issue working capital management and its impact on the firm's performance from various aspects in different given economic environment. Some research has been done for small scale industry while some are related with big giants. Deloof (2003) has argued that majority of the firms invest huge amount of cash to maintain the working capital and have significant impact on firm's profitability. He found negative relationship between the gross operating income and different component of working capital for the firms in Belgium. A study is conducted in Pakistan, Raheman and Nasr (2007) who studied on 94 firms listed on Karachi Stock Exchange for a period ranging for 6 years. He defined net operating profit as dependent variable while other components (e.g. average collection period, inventory turnover, average payment period in days, CCC etc.) as independent variable. In analysis, they identified a strong negative relationship between dependent and independent variable. They again found a considerable negative relation between profitability and liquidity while in meantime a positive relation between profitability and the size of the firm.

Another study conducted by Lazaridis and Tryfonidis (2006) in Athens to know relation between WCM and profitability. For the study purpose, a cross-sectional analysis was done with a sample data of 131 listed firms in Athens stock exchange from the year 2001 to 2004. For the study purpose, they defined gross operating profit as dependent and other components as independent and they found significant negative relationship between dependent and independent variables. They offered a suggestion further that mangers can increase profitability with effective handling of CCC and other components at an optimum level. For the analysis purpose, they used correlation and regression models. In another study, Filbeck and Krueger (2005) have selected 32 non-financial firms from USA to know the significance of efficient working capital management. They found significant differences among the firms' WCM practices.

An issue of aggressiveness and WCM was examined by Weinraub and Visscher (1998) by using the short-term data raging from the year 1984 to 93 in USA. For the study purpose, 10 different industry groups were selected to examine the relative relation between aggressiveness and conservative working capital policies. They analyze that one industry significantly follows different WCM policies from another. The study, further, found that there is significantly negative relation between asset and liability policies and they concluded that when firms follow relatively aggressive working capital policies, assets and liabilities are balanced. In the same way another study was conducted by Afza and Nazir (2007) who investigated the relation between aggressive and conservative working capital policies with a sample of 263 public limited firms divided into 17 industrial groups listed in Karachi stock exchange. They collected data from the year 1998 to 2003and applied ANOVA model for analysis along with LSD test. This study supports the previous study conducted by Weinraub and Visscher (1998). Further, researchers applied rank order correlation and result clarifies that the significant difference was stable over all six years study. They also applied OLS regression model to find out the relation between profitability and aggressiveness of working capital and they found significant negative relation.

HYPOTHESIS

Present study discusses WCM and its' impact over the profitability on the selected Indian companies. Previous studies have already established a relationship between the WCM and the variables used in the present study, but the study was for small scale organizations and firms belong to small economies. Present study is focused for big giants and they belong to a very influencing economy. For the convenience of the study following research hypothesis is defined (present paper follows research methodology adopted by Azam &Haider (2011), Padachi (2006) and B Bagchi and Khamrui (2012) :

H_0: Working capital management has insignificant impact on Firms' performance.

H_1: Working capital management has significant impact on Firms' performance.

For the study purpose, different variable has been identified and defined as below:

Variable	Formula	Abbreviation	Nature of Variable
Operating Profit Margin	PBIT/Sales	OPM	Independent
Return on Total Asset	***PBIT/ Total Asset***	***ROTA***	***Dependent***
Asset Turnover	Sales/Total Asset	A_TURN	Independent
Gearing	Debt/Total Asset	GEAR	Independent
Current Ratio	Current Asset / Current Liabilities	CR	Independent
Quick Asset Ratio	(Current Asset–Stocks)/Current Liabilities	QAR	Independent
Current Asset to Total Asset	Current Asset / Total Asset	CA_TA	Independent
Current Liabilities to Total Asset	Current Liabilities / Total Asset	CL_TA	Independent
Stock to Current Asset	Stock / Current Asset	SK_CA	Independent
Trade debtor to Current Asset	Debtor / Current Asset	TD_CA	Independent
No. of days Accounts Receivables	(Account receivables *365) / Sales	AR_DAYS	Independent
No. of Days Accounts Payable	(Accounts Payable*365)/Sales	AP_DAYS	Independent
Current Asset Turnover	Sales / Current Asset	CAT	Independent
LOG10 of Sales		LNS	Independent

DATA COLLECTION

Present study is based on published data in the name of annual reports available on the concerned websites. However, where annual reports were not published at website, researcher has personally requested for the same. All the collected data are from selected Indian companies; listed in Security Exchange Board of India, Mumbai. For the study, data from 97 companies have been collected. All the values considered in this study are from audited and published annual reports. All the annual reports varied from financial year 2006 to 2011 from different sectors of Indian economy. These sectors are: Food and health – 21 companies, Machinery and infrastructure 19, minerals 15, oil and gas 7, steel 15 and utility 20 companies.

TABLE 1: SELECTION OF THE SAMPLE

Industry		No. of Organizations selected	Percentage	No. of years for analysis	No. of observations made
VALID	Food and health	21	21.6	6	8
	MACH & INFRA	19	19.6	6	8
	Minerals	15	15.5	6	8
	Oil and Gas	7	7.2	6	8
	Steel	15	15.5	6	8
	Utility	20	20.6	6	8
	Total	97	100.0	**6**	**8**

The descriptive statistics of the variables are listed in table two

TABLE 2: SUMMARY STATISTICS

	N	Minimum	Maximum	Mean	Std. Deviation
OPM	97	.012	.721	.32242	.236056
ROTA	97	.002	.389	.15395	.091022
A_TURN	97	.010	2.903	.83609	.897968
GEAR	97	.002	1.195	.25223	.379074
CR	97	.674	9.796	2.56364	1.902826
QAR	97	.235	9.562	1.85611	1.928998
CA_TA	97	.006	.739	.39328	.214963
CL_TA	97	.002	.502	.23067	.133931
SK_TA	97	.003	.941	.34073	.179327
TD_CA	97	.035	.359	.18626	.080851
AR_DAYS	97	7.362	220.725	86.20843	80.328960
AP_DAYS	97	11.607	256.158	90.93445	67.975605
CAT	97	.413	7.910	1.96970	1.335628
LNS	97	3.409	5.771	4.28764	.453505
Valid N (list wise)	97				

TABLE 3: SUMMARY STATISTICS (Industry wise)

	Industry											
	FOOD & HEALTH		MACH & INFRA		MINERALS		OIL & GAS		STEEL		UTILITY	
	Mean	Std*	Mean	Std*	Mean	Std*	Mean	Std*	Mean	Std*	Mean	Std*
OPM	.440	.235	.196	.181	.351	.300	.186	.170	.259	.170	.393	.220
ROTA	.211	.028	.144	.069	.225	.110	.087	.066	.065	.087	.140	.070
A_TURN	.840	.895	.850	.557	1.456	1.227	1.305	1.093	.373	.756	.538	.619
GEAR	.203	.416	.191	.278	.578	.530	.217	.218	.154	.316	.204	.273
CR	2.282	.969	1.422	.926	4.072	3.635	2.327	2.103	3.040	1.059	2.537	1.072
QAR	1.383	.791	1.000	.752	3.308	3.936	1.651	2.345	2.063	.841	1.994	1.105
CA_TA	.538	.126	.395	.114	.488	.209	.316	.186	.165	.240	.367	.212
CL_TA	.280	.077	.333	.110	.239	.117	.217	.136	.092	.122	.184	.124
SK_TA	.396	.096	.284	.145	.374	.235	.484	.309	.351	.088	.253	.182
TD_CA	.184	.072	.174	.101	.189	.071	.152	.073	.183	.044	.213	.099
AR_DAYS	130.6	95.45	55.99	67.71	97.767	67.458	24.59	14.26	66.85	67.30	95.72	83.24
AP_DAYS	109.46	61.68	86.43	44.89	124.87	113.62	48.52	32.57	58.16	58.16	89.75	47.66
CAT	1.426	1.096	2.106	.815	2.171	1.295	3.531	2.040	2.119	1.787	1.602	.885
LNS	4.218	.213	4.245	.585	4.194	.337	4.963	.564	4.496	.206	4.079	.435

Std: Standard Deviation*

For the purpose of the analysis, return on total asset is used to measure profitability (used by Padachi 2006). Rota is defined as profit before interest and tax divided by total asset. Table no. 1 gives the details for sample selection while table no. 2 and 3 highlights the summary statistics of the variable which are used in the study. Return on total asset is reported as 15.395% (Padachi has reported 5.6%) while it is highest in the minerals (22.5%). No industry has reported negative ROTA. It has been observed from the table that account receivable days are 86 days while companies clear their accounts payable in 90 days. However, in food and health industry accounts receivable days are 130 while they pay in 109 days. So, funds are required in this industry some more in compare to others.

Working capital is the difference between current assets and current liabilities. Working capital (gross) includes cash and bank balances, debtors, inventories etc. An efficient working capital management depends on a number of factors e.g. level of operation, efficiency, inventory policies, book debt policies and nature of the industry (Padachi 2006). Table 4 presents an analysis of the factors of working capital.

TABLE 4: COMPONENTS OF CURRENT ASSET AND LIQUIDITY RATIO

		CR	QAR	CA_TA	CL_TA	SK_TA	TD_CA
Industry	FOOD & HEALTH	2.282	1.383	.538	.280	.396	.184
	MACH & INFRA	1.422	1.000	.395	.333	.284	.174
	MINERALS	4.072	3.308	.488	.239	.374	.189
	OIL & GAS	2.327	1.651	.316	.217	.484	.152
	STEEL	3.040	2.063	.165	.092	.351	.183
	UTILITY	2.537	1.994	.367	.184	.253	.213

METHOD OF THE ANALYSIS

For analysis purpose, Pearson Correlation Coefficient was run to investigate the impact of working capital management on firm's profitability. ROTA has significant positive correlation with the measure of working capital (Padachi 2006 has reported negative correlation) except current liability, stock and accounts payable day. Hence, an efficient working capital measure will increase the profitability of the organizations. Further, organizations will be able to obtain the desired trade credit whenever they require. However, an extra precaution was taken while interpreting the data, but, still care is expected from the readers' side as this statistical tool does not provide a valid indicator of association. As Padachi (2006) also mentions "examining simple bivariate correlation in a conventional matrix does not take account of each variable's correlation with all other explanatory variable". To support our study, further an OLS regression model tool will be run.

TABLE 5: PEARSON CORRELATION COEFFICIENT

	OPM	ROTA	A_TUR	GEAR	CR	QAR	CATA	CLTA	SKTA	TDCA	ARDAY	APDAY	CAT	LNS
OPM	1	.412**	.539**	-.462**	.595**	.564**	.605**	-.418**	-.437**	.241*	.661**	-.261**	-.755**	-.283**
ROTA		1	.211*	.063	.284**	.268**	.790**	.364**	.076	-.325**	.204*	.224*	-.170	-.297**
A_TUR			1	.874**	-.269**	-.332**	.107	.635**	.665**	-.079	-.025	.798**	.659**	.245*
GEAR				1	-.155	-.223*	-.042	.389**	.530**	.175	.110	.866**	.520**	.270**
CR					1	.979**	.250*	-.623**	-.526**	-.130	.183	-.196	-.486**	-.054
QAR						1	.200*	-614**	-.639**	-.147	.070	-.292**	-.473**	-.127
CATA							1	.341**	.049	-.016	.594**	.192	-.349**	-.112
CLTA								1	.544**	-.167	-.068	.453**	.420**	.025
SKTA									1	-.064	.007	.452**	.591**	.268**
TDCA										1	.613**	.165	-.143	.032
ARDAY											1	.356**	-.477**	.008
APDAY												1	.246*	.184
CAT													1	.244*
LNS														1

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

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

For the further analysis, OLS Regression model is used with following models to investigate the impact of WCM on firms' performance. In the equation explanatory models as ARDAY, APDAY and CAT will be replaced according. Equations are as follows:

ROTA = f (sales, gear, cata, clta, caturn, ardays/apdays/cat) ***....Equation (1)***

$$ROTA = \alpha+\beta_1 sales_{it}+\beta_2 gear_{it}+\beta_3 cata_{it}+\beta_4 clta_{it}+\beta_5 caturn_{it}+\beta_6 ardays_{it}+\beta_7 Dummy_1+\beta_8 Dummy_2+\beta_9 Dummy_3+\varepsilon_{it} \quad ....Equation\ (2)$$

$$ROTA = \alpha+\beta_1 sales_{it}+\beta_2 gear_{it}+\beta_3 cata_{it}+\beta_4 clta_{it}+\beta_5 caturn_{it}+\beta_6 apdays_{it}+\beta_7 Dummy_1+\beta_8 Dummy_2+\beta_9 Dummy_3+\varepsilon_{it} \quad ....Equation\ (3)$$

$$ROTA = \alpha+\beta_1 sales_{it}+\beta_2 gear_{it}+\beta_3 cata_{it}+\beta_4 clta_{it}+\beta_5 caturn_{it}+\beta_6 cat_{it}+\beta_7 Dummy_1+\beta_8 Dummy_2+\beta_9 Dummy_3+\varepsilon_{it} \quad ....Equation\ (4)$$

For the analysis purpose, stepwise ordinary least square regression is done and in this way, all the independent variables were replaced accordingly. Relation between dependent and independent variable is analyzed together for all the industries and thus final impact of independent variable is checked on the profitability. All the analysis is given from table number 6 to 8. The analysis from table 6 shows that when there is change in GEAR by one unit has negative

impact over return on total asset by .003 statistically at 1% level of significant and further change in current liability over total asset has also negative impact with 2.2% at 1% level of significant when current asset turnover ratio is independent variable while in the case of account receivables in day (as independent variable), change in GEAR and current asset to total asset have positive impact over ROTA i.e. .103 and .496 consequently while all other variable are negative. In the case where, accounts payable is independent variable, only current liability to total asset is negative with the value .013 while others are positive at 1% level of significant.

TABLE 6: COEFFICIENTS (WHERE CAT IS INDEPENDENT VARIABLE)

	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df1	df2	Sig. F Change
	.904[a]	.818	.801	.040566	.818	49.414	8	88	.000

Standardized Coefficients	**t-statistic**	Sig.	95.0% Confidence Interval for B	
Beta			L B	U B
	4.324	.000	.128	.345
-.267	-4.427	.000	-.078	-.030
-.012	-.089	.929	-.070	.064
.775	9.544	.000	.260	.396
-.032	-.373	.710	-.139	.095
.067	.660	.511	-.009	.018
.181	.964	.338	-.020	.056

TABLE 7: COEFFICIENTS (WHERE ARDAY IS INDEPENDENT VARIABLE)

R	R^2	Adjusted R^2	Std. Er of the Estimate	Change Statistics				
				R^2 Change	F Change	df1	df2	Sig. F Change
.919[a]	.844	.830	.037566	.844	59.452	8	88	.000

	Unstandardized Coefficients		Standardized Coefficients	**t-statistic**	Sig.	95.0% Confidence Interval for B	
	B	Std. Er	Beta			L B	U B
(Constant)	.223	.041		5.412	.000	.141	.305
LNS	-.047	.009	-.235	-5.098	.000	-.065	-.029
GEAR	.103	.028	.431	3.683	.000	.048	.159
CA_TA	.496	.030	1.172	16.365	.000	.436	.557
CL_TA	-.090	.046	-.132	-1.971	.052	-.180	.001
A_TURN	-.017	.013	-.163	-1.248	.215	-.043	.010
AR_DAYS	-.001	.000	-.551	-8.071	.000	-.001	.000

Dependent variable ROTA

RESULTS OF ANALYSIS

The statistical testing of hypothesis is the important technique in statistical inference (Bagchi & Khamrui, 2012). For the study purpose, two hypotheses were framed as: working capital management has insignificant impact on firm's performance and working capital management has significant impact on firm's performance. From the table researcher found that t-value is more than the significant value in the case of components of working capital management, hence null hypothesis is rejected and alternative hypothesis: working capital management has significant impact on firm's performance is accepted.

CONCLUSION

In the era of cut-throat competition, maximum utilization of the resources at optimum level is very important to enhance the shareholders' and customers' value. Again liquidity is very crucial for the lucid and continues performance of the organization. This is known that if current asset's components are cut, profitability can be increased but it has a significant disadvantage and i.e. it will reduce the liquidity and may be harmful to the firm. Present study wanted to investigate the impact of efficient working capital management over the performance of any firm in Indian economy and the investigation shows that yes, there is significant impact. The study supports some other studies as well e.g. Bagch i& Khamrui (2012) and some other while is inverse with some studies like Padachi (2006). It is further recommended to the organizations that profitability can be enhanced with liquidity if working capital is managed effectively. For the future studies, again it is recommended that it should incorporate some more samples as with much samples only, result may be indicative not conclusive. Further, it is recommended to use some other advance econometrics tools apart from correlation and OLS regression.

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