CHAPTER VII
AN EMPIRACAL ANALYSIS OF LIQUDITY AND PROFITABILITY

CHAPTER VII

AN EMPIRICAL ANALYSIS OF LIQUDITY AND PROFITABILITY

From the literature review, it emerges that the level of sales affects to the level of working capital, and management of various components of current assets (MCCA) affects the profitability. In the light of this background, in this Chapter, an attempt is made to examine, the impact, of sales on working capital and impact of Management of Components of Current Assets (MCCA) on Profitability of the organization. The present study is taken up on a wider base for four industries involving, 52, 24, 39 and 21 companies for the Steel, Cement, Organic Chemicals and the Inorganic Chemicals Industry respectively, involving the time period of ten years. For examining the impact of sales on working capital for all 4 industries regression are run. For this purpose the average of each company in each industry is taken over a period of 10 years.

7.1 IMPACT OF SALES ON WORKING CAPITAL

An attempt is made here to examine impact of Sales on Working Capital. For this purpose, simple regression is carried out. Here Working Capital is taken as the dependent variable and sales is taken as an independent variable Table VII 1 presents the findings of regression run for all four selected industries.

TABLE VII 1

SIMPLE REGRESSION OF WORKING CAPITAL ON SALES

No.	Industry	R^2	Intercept	Slope	t value
1	Steel	0.999	4.134	1.054	1999.633*
2	Cement	0.630	32.46	0.082	6.121*
3	Organic Chemicals	0.77	4.51	0.194	11.14*
4	Inorganic Chemicals	0.80	2.96	0.15	8.67*
*1% level of significance					

In all the industries, the t value is significant at 1% level of significance. On examining the Table VII 1, it is observed that the value of R^2 is the highest for the *Steel Industry* amongst all the industries. The R^2 found to be 0.999, which explains 99.9% variation on working capital. It is logical also when sales increases, the requirements of working capital would be more. For all other industries as well, it is found that sales is an important determinant for working capital. This supports the findings by Malik & Sur[1]

For examining the impact of MCCA on profitability, average of each company for ten years is taken on the one hand, for indicators of profitability, the dependent variable and as an independent variable, i.e. MCCA, the average of ten years figure, for each company is taken.

As known, various measures of profitability are in operation. These are PBDIT, PBIT, PBT, PAT etc. In the ratio form one may consider, ROI, ROA, GPM or NPM as the indicators of profitability. For the purpose of this analysis, ROA and NPM are selected as measures of profitability.

To examine the impact of MCCA on Profitability, the previous one is divided into two broad parts *viz* (a) Ratios indicating Management of Components of Current Assets and : (b) Ratios indicating activity (turnover) of the current assets. For this purpose, simple regression and multiple regressions are used. The following sections present findings of the same.

7.2 IMPACT OF INDICATORS OF MANAGEMENT OF COMPONENTS OF CURRENT ASSETS (MCCA) ON ROA:

Simple Regressions

This section presents the outcome of simple regression of various measures indicating MCCA for each of the four industries on profitability Ratio *viz* ROA.. Ratios assume the same meaning as discussed in Chapter IV and Chapter V.

7.2.1 The impact of various indicators of MCCA on ROA for *Steel Industry* is presented in Table VII 2

From Table VII 2 it emerges that WC/CA affects ROA at 5% level of significance 11.8% of variations in ROA are explained by variations in proportion of WC/CA. Similarly, CB/WC and CB/CA both affect ROA at 5% level of significance. Surprisingly these ratios are found to be positive. This implies that as the proportion of CB/WC and CB/CA increases, ROA increases, this should not generally be the case as higher amount of cash results into idle cash, indicating loss of opportunity to earn on the same.

REC/CA shows that with increase in this ratio, ROA declines at 10% level of significance. This is quite logical because if block of funds in receivables is more, it reduces the opportunities for investment and generating returns on the same.

TABLE VII 2

Simple Regression of ROA on various indicators of MCCA

STEEL INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	CA/TA	8.71E-05	0.015	-0.003	-0.066
2	WC/TA	0.049	-0.003	0.61	1.611
3	WC/CA	0.118	0.004	0.030	2.593**
4	INV/WC	0.004	0.011	0.004	0.443
5	REC/WC	0.002	0.011	0.002	0.309

TABLE VII 2 (Contd.)

6	CB/WC	0.099	0.01	0.051	2.354**
7	INV/CA	0.004	-0.003	0.42	0.481
8	REC/CA	0.063	0.077	-0.125	-1.843***
9	CB/CA	0.115	-0.009	0.306	2.555**
10	INV/GFA	0.008	0.005	0.16	0.644
11	CR	0.003	0.016	-0.001	-0.387
12	QR	0.004	0.016	-0.001	-0.468

* indicates 1% level of significance
** indicates 5% level of significance
*** indicates 10% level of significance

7.2.2 The impact of various indicators of MCCA on ROA for the *Cement Industry* is presented in TABLE VII 3. While examining the impact of various indicators of MCCA on ROA, for *Cement Industry, it* is observed that WC/TA, WC/CA and INV/WC have positive impact on ROA at 10% and 5% level of significance, implying thereby that with increase in these ratios, ROA increases, of these three ratios INV/WC has the highest explanatory power to the tune of 17%. All other 9 ratios are found to have insignificant impact on ROA.

TABLE VII 3

Simple Regression of ROA on various indicators of MCCA

CEMENT INDUSTRY

No	Variable	R^2	Intercept	Slope	t value
1	CA/TA	0.012	0.014	0.046	0.516
2	WC/TA	0.059	0.014	0.101	1.178
3	WC/CA	0.123	0.011	0.047	1.757***
4	INV/WC	0.170	0.021	0.014	2.124**
5	REC/WC	0.095	0.013	0.019	1.525
6	CB/WC	0.034	0.029	-0.009	-0.884
7	INV/CA	3.55E-07	0.027	-0.001	-0.003
8	REC/CA	0.044	0.068	-0.098	-1.010
9	CB/CA	0.004	0.022	0.039	0.305
10	INV/GFA	0.007	0.024	0.022	0.388
11	CR	0.025	0.013	0.006	0.753
12	QR	0.030	0.010	0.014	0.834

** indicates 5% level of significance, *** indicates 10% level of significance

7.2.3 The impact of various indicators of MCCA ratios on ROA for the *Organic Chemicals Industry* is presented in TABLE VII 4

On analysis of Table VII 4, WC/CA is found to have positive impact at 1% level of significance on ROA. This indicates that as WC/CA improves ROA also improves. Similar to *Steel Industry* here it is observed that as REC/CA increases ROA reduces. CR is found to have positive impact on ROA at 10% level of significance. Out of these 3 ratios of MCCA having significant impact on ROA, ratio of WC/CA is found to have highest explanatory power.

TABLE VII 4

Simple Regression of ROA on various indicators of MCCA

ORGANIC CHEMICALS INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	CA/TA	0.003	0.037	-0.020	-0.316
2	WC/TA	0.039	0.010	0.080	1.230
3	WC/CA	0.178	-0.001	0.082	2.828*
4	INV/WC	0.001	0.027	0.001	0.108
5	REC/WC	0.011	0.033	-0.005	-0.650
6	CB/WC	0.003	0.0250	013(0.355)	0.355
7	INV/CA	0.004	0.0140	0.038	0.375
8	REC/CA	0.080	0.010	-0.137	-1.798***
9	CB/CA	0.018	0.020	0.094	0.816
10	INV/GFA	0.030	0.008	0.093	1.068
11	CR	0.072	-0.009	0.014	1.697***
12	QR	0.042	-0.001	0.016	1.286

* indicates 1% level of significance
*** indicates 10% level of significance.

7.2.4 The impact of various indicators of MCCA ratios on ROA for the *Inorganic Chemicals Industry* is presented in TABLE VII 5

A glance at Table VII 5 gives very interesting results. Out of total twelve ratios, seven ratios have significant impact on ROA. WC/TA is found to have positive impact on ROA at 1% level significance, implying thereby as the proportion of WC/TA, increases ROA improves. WC/CA consistently found to be significant for all industries. The explanatory power of this ratio is also found to be the highest amongst all these ratios, to the tune of 48.8%, implying thereby that 48.8% of variations in ROA are explained by variations in WC/CA.

TABLE VII 5

Simple Regression of ROA on various indicators of MCCA

INORGANIC CHEMICALS INDUSTRY

No	Variable	R^2	Intercept	Slope	t value
1	CA/TA	0.018	-0.014	0.051	0.592
2	WC/TA	0.413	-0.438	0.249	3.658*
3	WC/CA	0.488	-0.037	0.115	4.260*
4	INV/WC	0.350	-0.018	0.056	3.197*
5	REC/WC	0.283	-0.008	0.026	2.736**
6	CB/WC	0.175	0.002	0.069	2.008***
7	INV/CA	0.003	0.017	-0.030	-0.226
8	REC/CA	0.054	0.073	-0.125	-1.051
9	CB/CA	0.050	-0.009	0.157	0.995
10	INV/GFA	0.139	0.032	-0.084	-1.754***
11	CR	0.191	-0.070	0.032	2.121**
12	QR	0.102	-0.038	0.029	1.472

* indicates 1% level of significance
** indicates 5% level of significance
*** indicates 10% level of significance.

All three major components of Current Assets is found to have significant impact on ROA, i.e. INV/WC, REC/WC and CB/WC affect positively to ROA. INV/GFA is found to have negative impact on ROA at 10% level of significance, implying thereby as INV/GFA increases ROA reduces. CR found to have positive impact on ROA at 5% level of significance. This is in line with observation for the *Organic Chemicals Industry* This indicates that as the proportion of CA to CL increases ROA increases.

From the Table VII 2 to VII 5 it is observed that:

i) The ratio of WC/CA is having positive significant impact on ROA for all 4 industries.

ii) All three components of Current Assets viz. Inventory, Receivables and Cash & Bank, as a proportion of working capital, one or another affects significantly to ROA for 3 Industries *viz. Steel, Cement and Inorganic Chemicals Industry.*

iii) The ratios of INV/CA and QR are not found to have any significant impact in case of any Industry.

7.3 IMPACT OF INDICATORS OF MCCA ON ROA:

Multiple Regressions

To examine the joint effects of various indicators of MCCA on ROA the multiple regression analysis is carried out for each industry. For carrying out multiple regressions, the simple regression is taken as a base. If a particular indicator of MCCA is found to be significant, then only it is taken for the multiple regressions.

7.3.1 Table VII 6 presents the results of multiple regressions of ROA on various indicators of MCCA for the *Steel Industry.*

TABLE VII 6

Multiple Regressions of ROA on indicators of MCCA

STEEL INDUSTRY

No.	R^2 (Adj. R^2)	b_0	WC/CA (t value)	CB/WC (t value)	REC/CA (t value)	CB/CA (t value)
1	0.173 (0.139)	0.003	0.025 (2.085)**	0.040 (1.798)***		
2	0.118 (0.082)	0.011			-0.033 (-0.395)	0.269 (1.739)***

**indicates 5% level of significance
*** indicates 10% level of significance

While running the regression of ROA on WC/CA and CB/WC it is observed that the value of R^2 improves. Similar results are observed for REC/CA and CB/CA.

7.3.2 Table VIII 7 presents the result of multiple regressions of various indicators of MCCA for the *Cement Industry*. Here again based on simple regression WC/TA and INV/ WC are selected for the purpose of multiple regression.

From the results of the multiple regression, it can be observed that the value of R^2 improves approximately 19% of variations in ROA are explained by WC/TA and INV/ WC taken together. However, it is found that the Co-efficient for WC/CA is not significant. This may be on account of correlation between these two variables. For this purpose the Correlation Co-efficient is computed between the two and it is found to be 0.268041. Moreover, the value of Adj. R^2 is lower than the value of R^2 in simple regression. This indicates lower explanatory power

TABLE VII 7

Multiple Regressions of ROA on various indicators of MCCA

CEMENT INDUSTRY

No.	R^2 (Adj. R^2)	b_0	WC/TA (t value)	INV/WC (t value)
1	0.189 (0.112)	0.014	0.059 (0.703)	0.014 (1.834)***
*** indicates 10% level of significance				

7.3.3 Table VII 8 presents the results of multiple regressions of ROA on various indicators of MCCA ratios for the *Organic Chemicals Industry*

TABLE VII 8

Multiple Regressions of ROA on various indicators of MCCA

ORGANIC CHEMICALS INDUSTRY

No.	R^2 (Adj. R^2)	b_0	WC/CA (t value)	REC/CA (t value)	CR (t value)
1	0.212 (0.169)	0.052	0.073 (2.459)*	-0.093 (-1.262)	
2	0.179 (0.133)	-0.003	0.078 (2.158)**		0.002 (0.181)
3	0.213 (0.146)	0.049	0.070 (1.899)***	-0.093 (-1.243)	0.002 (1.163)
4	0.132 (0.084)	0.059		-0.119 (-1.577)	0.012 (1.466)
* indicates variations at 1% level of significance **indicates 5% level of significance *** indicates variations at 10% level of significance					

Here also based on simple regression WC/CA, REC/CA and CR are selected for the purpose of multiple regression. From the results of the multiple regressions it can be observed that the value of R^2 improves. It is observed that the regression co-efficient of WC/CA is significant in all runs, but regression co-efficient for other two variables are not found to be significant. To examine the effect of multi co-linearity correlation co-efficient is derived between these three variables. This is found to be WC/CA to REC/CA -0.24273, WC/CA to CR is 0.584769 and REC/CA to CR is -0.15479. It is observed that correlation co-efficient between WC/CA and CR was as high as 0.58. Hence, it may be on account of this, the co-efficient of CR is not found significant.

7.3.4 Table VII 9 presents the results of multiple regressions of ROA on various indicators of MCCA for the *Inorganic Chemicals Industry*

TABLE VII 9

Multiple Regressions of ROA on various indicators of MCCA

INORGANIC CHEMICALS INDUSTRY

Sr. No.	R^2 (Adj. R^2)	b_0	WC/TA (t value)	WC/CA (t value)	INV/WC (t value)	REC/WC (t value)	CB/WC (t value)	INV/GFA (t value)	CR (t value)	QR (t value)
1	0.795 (0.727)	-0.030	0.226 (4.202)*		0.034 (1.134)	0.007 (0.380)	-0.012 (-0.278)	-0.096 (-2.848)**		
2	0.720 (0.626)	-0.018		0.080* (2.973)	0.040 (1.141)	-0.004 (0.184)	0.018 (0.366)	-0.077 (-1.855)***		
3	0.360 (0.248)	-0.022			0.057 (1.406)	0.008 (0.322)	-0.032 (-0.529)			
4	0.513 (0.458)	0.007			0.058 (3.712)*			-0.091 (-2.451)**		
5	0.485 (0.427)	-0.082			0.052 (3.199)*				0.028 (2.170)**	
6	0.480 (0.423)	-0.071			0.059 (3.619)*					0.033 (2.128)**
7	0.376 (0.306)	0.013				0.024 (2.609)**		-0.069 (-1.637)		
8	0.429 (0.366)	-0.075				0.024 (2.737)**			0.029 (2.148)**	
9	0.374 (0.304)	-0.051				0.025 (2.792)**				0.027 (1.618)
10	0.374 (0.304)	0.031					0.081 (2.598)**	-0.102 (-2.392)**		
11	0.285 (0.206)	-0.058					0.053 (1.538)		0.026 (1.666)	
12	0.221 (0.134)	-0.029					0.059 (1.655)			0.020 (1.030)

* indicates variations at 1% level of significance
** indicates variations at 5% level of significance

From the Table VII 9, it can be inferred that, when WC/TA, INV/WC, REC/WC, CB/WC and INV/GFA are taken together it has highest explanatory power for ROA. The value of the Adj.R^2 is found to be the highest here at 0.727. When , WC/TA, is replaced with WC/CA keeping other ratios same the value of Adj.R^2 goes down to 0.626, still this is quite high. It may be noted further that, in both these regressions INV/WC, REC/WC and CB/WC are not found to be significant. On examining the correlation coefficient of INV/WC to REC/WC, INV/WC to CB/WC and REC/WC to CB/WC it is found to 0.889, 0.792 and 0.845 respectively. Hence this insignificance is likely

to be on account of this multi co- linearity. However we can conclude that the joint impact of above said variables is significant on ROA.

7.4 IMPACT OF TURNOVER RATIOS ON ROA:

Simple Regression

To study the impact of various turnover ratios on the profitability, simple regression is carried out. The ROA is taken as the dependent variable and 6 turnover ratios are taken as independent variables one by one. The Turnover ratios are TATR, NFATR, WTR, ITR, DTR and CBTR. Table VII 10 to VII 13 presents the results of regression computation for 4 Industries individually.

7.4.1 The impact of various turnover ratios on ROA for the *Steel Industry* is presented in TABLE VII 10

TABLE VII 10

Simple Regression of ROA on various Turnover Ratios

STEEL INDUSTRY

No	Variable	R^2	Intercept	Slope	t value
1	TATR	0.009	0.002	0.007	0.687
2	NFATR	1.07E-05	0.013	9.49E-06	0.023
3	WTR	0.013	0.008	0.001	0.081
4	ITR	0.015	0.001	0.001	0.877
5	DTR	0.070	-0.020	0.005	1.939***
6	CBTR	0.022	0.023	-9.2E-05	-1.079
*** indicates 10% level of significance					

Only DTR is found to have significant impact on ROA at 10% level of significance. No other ratio is found having any significant impact on ROA. Here also DTR is able to explain only 7% variations in ROA.

7.4.2 The impact of various turnover ratios on ROA for the *Cement Industry* is presented in TABLE VII 11

On analysis of TABLE VII 11, it can be inferred that only CBTR is having significant impact on ROA at 10% level of significance. CBTR has negative impact, indicating that as CBTR increases ROA decreases.

TABLE VII 11

Simple Regression of ROA on various Turnover Ratios

CEMENT INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	TATR	0.040	0.002	0.035	0.962
2	NFATR	0.086	-0.010	0.030	1.444
3	WTR	0.115	-0.024	0.001	1.691
4	ITR	0.029	0.010	0.002	0.814
5	DTR	0.011	0.020	0.001	0.495
6	CBTR	0.142	0.051	-0.001(	-1.911***
*** indicates 10% level of significance					

7.4.3 The impact of various turnover ratios on ROA for the *Organic Chemicals Industry* is presented in Table VII 12.

TABLE VII 12

Simple Regression of ROA on various Turnover Ratios

ORGANIC CHEMICALS INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	TATR	0.001	0.024	0.003	0.164
2	NFATR	0.006	0.002	0.002	0.463
3	WTR	0.001	0.028	-9.8E-05	-0.072
4	ITR	0.003	0.023	0.001	0.322
5	DTR	0.073	-0.014	0.008	1.714***
6	CBTR	0.002	0.031	-3.4E-05	-0.248
*** indicates 10% level of significance					

On examining the Table VII 12, it can be observed that only DTR is found to have positive significant impact on ROA. No other ratio is found to have any significant impact on ROA.

7.4.4 The impact of various turnover ratios on ROA for the *Inorganic Chemicals Industry* is presented in TABLE VII 13.

TABLE VII 13

Simple Regression of ROA on various Turnover Ratios

INORGANIC CHEMICALS INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	TATR	0.261	-0.079	0.091	2.592**
2	NFATR	0.503	0.034	-0.006	-4.386*
3	WTR	0.363	-0.024	0.007	3.289*
4	ITR	0.147	-0.038	0.005	1.809***
5	DTR	0.354	-0.088	0.019	3.227*
6	CBTR	0.059	0.022	-0.001	-1.091

* indicates 1% level of significance
** indicates 5% level of significance

On examination of Table VII 13, it can be inferred that TATR, NFATR, WTR, ITR and DTR have significant impact on ROA. All turnover ratios have positive effect except NFATR, where the impact is found to be negative. This seems to be quite logical as the increase in NFATR is likely to reduce ROA. From Tables VII 10 to VII 13, it can be concluded that DTR, is a common variable over three industries having significant impact on ROA.

Thus the Receivables Management should be the are of focus by the management.

7.5 IMPACT OF TURNOVER RATIOS ON ROA

Multiple Regressions

To examine the joint effect of various turnover ratios on profitability the multiple regression analysis is carried out for each Industry. In the analysis, the ROA is taken as the dependent variable and the turnover ratios *viz* TATR, NFATR, WTR, ITR, DTR and CBTR have been taken as the independent variables. The value of R^2 is low. The aim of the study is to find out the impact of these ratios on ROA only and therefore, other variables affecting to ROA are not included.

7.5.1 Table VII 14 presents the results of multiple regressions of ROA on turnover ratios for the *Steel Industry*

TABLE VII 14

Multiple Regressions of ROA on various Turnover Ratios

STEEL INDUSTRY

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
1	0.015 (-0.024)	0.003	0.004 (0.348)		0.001 (0.548)			
2	0.018 (-0.022)	-0.002	0.003 (0.312)			0.001 (0.640)		
3	0.076 (0.039)	-0.018	-0.007 (-0.575)				0.007 (1.884)***	
4	0.066 (0.028)	0.006	0.017 (1.508)					-0.001 (-1.725)***
5	0.095 (0.039)	-0.026	-0.013 (-0.976)			0.002 (1.000)	0.007 (2.029)**	
6	0.081 (0.023)	0.001	0.013 (1.096)			0.001 (0.878)		-0.001 (-1.818)***
7	0.123 (0.068)	-0.013	0.004 (0.261)				0.006 (1.762)***	-0.001 (-1.595)
8	0.149 (0.077)	-0.023	-0.003 (-0.215)			0.002 (1.209)	0.007 (1.944)***	-0.001 (-1.728)***
9	0.013 (-0.027)	0.008		-3.9E-05 (-0.093)	0.001 (0.808)			
10	0.022 (-0.018)	- 0.001	-	-0.001 (-0.544)		0.002 (0.139)		
11	0.070 (0.032)	0.0.32		-4.6E-05 (-0.116)			0.006 (1.925)***	
12	0.031 (-0.009)	0.024		0.001 (0.641)				-0.001 (-1.249)
13	0.083 (0.025)	-0.029		-0.001 (-0.529)		0.001 (0.801)	0.005 (1.787)***	
14	0.058 (-0.001)	0.010		1.8E-05 (0.034)		0.002 (1.173)***		-0.001 (-1.360)
15	0.150 (0.078)	-0.021		0.001 (0.293)		0.002 (0.942)	0.007 (2.257)**	-0.001 (-1.930)***
16	0.077 (0.040)	-0.027				0.001 (0.617)	0.005 (1.809)***	
17	0.058 (0.019)	0.10				0.002 (1.351)		-0.001 (-1.481)
18	0.148 (0.095)	-0.022				0.002 (1.230)	0.006 (2.260)**	-0.001 (-2.003)**
19	0.122 (0.086)	-0.012					0.007 (2.348)**	-0.001 (-1.695)***

** 5% level of significance *** 10% level of significance

While running the multiple regressions of ROA on various turnover ratios for the *Steel Industry*, it was observed that in simple regression only DTR had significant impact. However here all combinations of turnover ratios were selected for running multiple regressions. Totally 19 runs were carried out. DTR was found to have significant impact in all cases. The value of the Adj. R^2 was found to be highest in the 18th run, where ITR, DTR and CBTR are taken as explanatory variable at 0.095. This indicates that 9.5% of variations in ROA are explained by these 3 variables. Here DTR found to have positive significant impact and CBTR is found to have negative significant impact.

7.5.2 Table VII 15 presents the results of multiple regressions of ROA on turnover ratios for the *Cement Industry*

TABLE VII 15

Multiple Regression of ROA on various Turnover Ratios

CEMENT INDUSTRY

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
1	0.150 (0.069)	-0.001	0.033 (0.933)		0.001 (1.645)			
2	0.048 (-0.042)	-0.002	0.027 (0.645)			0.001 (0.414)		
3	0.045 (-0.045)	-0.002	0.033 (0.869)				0.001 (0.331)	-
4	0.168 (0.089)	0.029	0.029 (0.811)					-0.001 (-1.799)***
5	0.050 (-0.093)	-0.003	0.027 (0.633)			0.001 (0.304)	0.001 (0.183)	
6	0.180 (0.057)	0.025	0.019 (0.458)			0.001 (0.530)		-0.001 (-1.793)***
7	0.061 (0.044)	0.029	0.028 (0.776)				5E-05 (0.032)	-0.001 (-1.721)***
8	0.181 (0.009)	0.026	0.018 (0.438)			0.002 (0.551)	-0.001 (-0.190)	-0.001 (1.749)***
9	0.180 (0.102)	-0.009		0.026 (1.295)	0.001 (1.552)			
10	0.097 (0.010)	-0.017		0.027 (1.253)		0.001 (0.488)		
11	0.099 (0.013)	-0.018		0.030 (1.431)			0.001 (0.538)	
12	0.188 (0.110)	0.020		0.022 (1.082)				-0.001 (-1.618)

TABLE VII 15 (Contd.)

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
13	0.102 (-0.032)	-0.021		0.029 (1.264)		0.001 (0.277)	0.001 (0.354)	
14	0.202 (0.082)	0.012		0.019 (0.878)		0.002 (0.600)		-0.001 (-1.625)
15	0.202 (0.034)	0.013		0.019 (0.830)		0.002 (0.539)	-7.2E-05 (-0.041)	-0.001 (-1.542)
16	0.030 (-0.061)	0.009				0.002 (0.652)	0.001 (0.175)	
17	0.171 (0.092)	0.034				0.002 (0.857)		-0.001 (-1.898)***
18	0.173 (0.049)	0.036				0.002 (0.849)	-0.001 (-0.214)	-0.001 (-1.857)***
19	0.143 (0.062)	0.048					0.001 (0.160)	-0.001 (-1.802)***

* 1% level of significance
** 5% level of significance
*** 10% level of significance

Taking the companies for the *Cement Industry* ROA is regressed on various turnover ratios in different combinations. The results of the multiple regressions as presented in Table VII 15 are found to be in line with simple regression. No other ratios except CBTR is found to have significant impact on ROA. The value of Adj. R^2 is found to be the highest in 17th run when ITR and CBTR are taken together. However here again only CBTR is found to be statistically significant. It is also interesting to note that the impact of CBTR on ROA, is consistent for all runs i.e. 0.001.

7.5.3 Table VII 16 presents the results of multiple regressions of ROA on turnover ratios for the *Organic Chemicals Industry*

TABLE VII 16

Multiple Regression of ROA on various Turnover Ratios

ORGANIC CHEMICALS INDUSTRY

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
1	0.001 (-0.054)	0.025	0.004 (0.166)		-0.001 (-0.081)			
2	0.003 (-0.053)	0.024	-0.001 (-0.047)			0.001 (0.277)		
3	0.074 (0.022)	-0.015	0.001 (0.064)				0.008 (1.684)	

TABLE VII 16 **(Contd.)**

No.	R^2	b_0	TATR	NFATR	WTR	ITR	DTR	CBTR
4	0.003 (-0.052)	0.026	0.005 (0.232)					-4.3E-05 (-0.296)
5	0.074 (-0.006)	-0.015	-0.001 (-0.035)			0.001 (0.136)	0.008 (1.645)	
6	0.005 (-0.080)	0.026	0.001 (0.019)			0.001 (0.260)		-4.1E-05 (-0.279)
7	0.074 (-0.006)	-0.014	0.002 (0.080)				0.008 (1.634)	-1.1E-05 (-0.074)
8	0.074 (-0.034)	-0.014	-0.001 (-0.018)			0.001 (0.131)	0.008 (1.594)	-9.8E-06 (-0.068)
9	0.006 (-0.049)	0.023		0.002 (0.453)	-5.3E-05 (-0.038)			
10	0.006 (-0.048)	0.021		0.001 (0.360)		0.001 (0.149)		
11	0.081 (0.030)	-0.020		0.002 (0.541)			0.008 (1.717)***	
12	0.008 (-0.047)	0.026		0.002 (0.484)				-4.1E-05 (-0.293)
13	0.081 (0.002)	-0.020		0.002 (0.519)		-0.001 (-0.076)	0.008 (1.688)	
14	0.009 (-0.076)	0.025		0.002 (0.372)		0.001 (0.174)		-4.3E-05 (-0.303)
15	0.081 (-0.026)	-0.018		0.002 (0.516)		-0.001 (-0.064)	0.008 (1.637)	-1.4E-05 (-0.098)
16	0.074 (-0.005)	-0.015				0.001 (0.155)	0.008 (1.617)	-1E-05 (-0.075)
17	0.074 (0.023)	-0.016				0.001 (0.148)	0.008 (1.665)	
18	0.005 (-0.050)	0.026				0.001 (0.351)		-4E-05 (-0.286)
19	0.074 (0.022)	-0.013					0.008 (1.672)	-7.5E-06 (-0.055)

*** 10% level of significance

On examination of the outcome, it is observed that in run 11th, the value R^2 as well as the Adj. R^2 is highest at 0.081 and 0.030 respectively. Here DTR is found to have significant impact on ROA. None of the other ratios, have any significant impact on ROA.

7.5.4 Table VII 17 presents the results of multiple regressions of ROA on turnover ratios for the *Inorganic Chemicals Industry*

TABLE VII 17

Multiple Regression of ROA on various Turnover Ratios

INORGANIC CHEMICALS INDUSTRY

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
1	0.519 (0.466)	-0.088	0.072 (2.421)**		0.006 (3.109)*			
2	0.364 (0.294)	-0.111	0.084 (2.481)**			0.004 (1.708)		
3	0.422 (0.358)	-0.116	0.053 (1.456)				0.015 (2.238)**	
4	0.283 (0.203)	-0.065	0.086 (2.369)**					-8.6E-05 (-0.733)
5	0.452 (0.355)	-0.128	0.056 (1.531)			0.003 (0.962)	0.012 (1.649)	
6	0.446 (0.347)	-0.092	0.070 (2.098)**			0.006 (2.235)**		-0.001 (-1.579)
7	0.459 (0.363)	-0.010	0.044 (1.189)				0.015 (2.350)**	-0.001 (-1.070)
8	0.525 (0.406)	-0.109	0.044 (1.241)			0.004 (1.500)	0.011 (1.639)	-0.001 (-1.573)
9	0.688 (0.653)	0.007		-0.005 (-4.330)*	0.005 (3.264)*			
10	0.435 (0.482)	0.010		-0.006 (-3.868)*		0.003 (1.095)		
11	0.700 (0.667)	-0.043		-0.005 (-4.555)*			0.015 (3.436)*	
12	0.503 (0.448)	0.035		-0.006 (-4.012)*				-5E-06 (-0.049)
13	0.700 (0.647)	-0.044		-0.005 (-4.284)*		0.001 (0.087)	0.015 (3.067)*	
14	0.546 (0.465)	0.009		-0.005 (-3.019)*		0.003 (1.259)		-7.5E-05 (-0.654)
15	0.700 (0.647)	-0.044		-0.005 (-4.284)*		0.001 (0.087)	0.015 (3.067)*	

TABLE VII 17 (Contd.)

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
16	0.704 (0.630)	-0.044		0.005 (-3.477)*		0.001 (0.288)	0.014 (2.921)*	-4.2E-05 (-0.437)
17	0.480 (0.388)	-0.083				0.004 (1.469)	0.015 (2.409)**	-0.001 (-1.837)***
18	0.302 (0.224)	-0.029				0.007 (2.504)**		-0.001 (-2.000)***
19	0.413 (0.348)	-0.074					0.019 (3.299)*	-0.001 (-1.351)

* 1% level of significance
** 5% level of significance
*** 10% level of significance

While examining the impact of various combinations of turnover ratios on ROA, for the Inorganic Chemicals Industry it is observed that the impact of TATR, NFATR, WTR, ITR, DTR and CBTR, i.e. all turnover ratios are found to be significant in one or the other combinations. The highest value of Adj. R^2 was found when NFATR and DTR are taken, and both the variables are found to have significant impact on ROA, 66.7% of variations in ROA are explained by changes in these two explanatory variables. When NFATR and WTR are taken together then also value of Adj. R^2 is found to be 0.653 indicating there by that 65.3% variation in ROA are explained by these two variables. In brief, it can be said that in case of the Inorganic Chemicals Industry almost all the turnover ratios affect significantly ROA.

From outcome of regressions of these four industries, it can be concluded that even though it is only CBTR or DTR, which either individually or both are affecting ROA, for the *Steel Industry, Cement Industry* and *Organic Chemicals Industry*, incase of *Inorganic Chemicals Industry* all the turnover ratios have significant impact on ROA. Thus turnover ratios can be the predictor of ROA. Moreover, the explanatory power of these turnover ratios for ROA is also considerably high. Thus managing the current assets efficiently can play a vital role in improving ROA.

7.6 IMPACT OF INDICATORS OF MANAGEMENT OF COMPONENTS OF CURRENT ASSETS ON NPM

Simple Regression

In the preceding analysis, Para 7.2 to 7.5, ROA is taken as a measure of profitability. In the second stage, an attempt is made to examine the extent to which various indicators of MCCA affect Net Profit Margin, another measure of profitability. NPM carries same meaning as discussed in Chapter V.

The impact of various indicators of MCCA on NPM is presented from Tables VII 18 to VII 21, for each industry under study seperately.

7.6.1 Table VII 18 presents the impact of various indicators of MCCA on NPM for the *Steel Industry*

From the Table VII 18 it is important to note over here that there are only three ratios, which are found to have positive significant impact *viz.* CA/TA, WC/TA and WC/CA on NPM at 10%, 5% and 1% level of significance respectively. The explanatory power of WC/CA is found to be very high at 61.2% It is important to note over here that even though there are 4 ratios which have significant impact on ROA (Table VII 2), the highest value of R^2 found was only 0.118 (for WC/CA). However here the explanatory power of WC/CA is found to be substantially high with reference to NPM.

TABLE VII 18

Simple Regression of NPM on various indicators of MCCA

STEEL INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	CA/TA	0.055	-2.317	3.547	1.710***
2	WC/TA	0.124	-1.424	3.974	2.660**
3	WC/CA	0.612	-1.301	2.864	8.894*
4	INV/WC	0.003-	-0.459	0.159	0.413
5	REC/WC	0.005-	-0.491	0.133	0.536
6	CB/WC	0.014	-0.438	0.784	0.830
7	INV/CA	0.004	0.221	-1.597	-0.442
8	REC/CA	3.6E-06	-0.417	0.039	0.013
9	CB/CA	0.002	-0.523	1.720	0.328
10	INV/GFA	0.026	-0.953	1.214	1.162
11	CR0.010-	-0.637	0.073	0.712	
12	QR0.007	-0.562	0.077	0.597	

* indicates 1% level of significance
** indicates 5% level of significance

7.6.2 Table VII 19 presents the impact of various indicators of MCCA on NPM for the *Cement Industry*

Table VII 19 presents the outcome of regression analysis when NPM is taken as dependent variable and various indicators of MCCA are taken as independent variable. The three ratios *viz.* WC/TA, WC/CA and INV/WC, which are found to have significant impact on ROA, are also found to have significant impact on NPM. Again, amongst

all ratios, the explanatory power of WC/CA is found to be the highest at 18.7%. Thus, incase of the *Cement Industry* the explanatory power of WC/CA is found to be quite low as compared to the *Steel Industry.* Moreover, it is equally interesting to note that INV/WC has highest impact on ROA, whereas WC/CA has highest impact on NPM.

TABLE VII 19

Simple Regression of NPM on various indicators of MCCA

CEMENT INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	CA/TA	0.041	-0.019	0.148	0.973
2	WC/TA	0.155	-0.013	0.282	2.012***
3	WC/CA	0.187	-0.011	0.101	2.249**
4	INV/WC	0.159	0.013	0.025	2.036***
5	REC/WC	0.095	-0.001	0.033	1.516
6	CB/WC	0.034	0.027	-0.016	-0.880
7	INV/CA	0.002	0.008	0.035	0.195
8	REC/CA	0.033	0.084	-0.148	-0.877
9	CB/CA	0.001	0.020	0.022	0.101
10	INV/GFA	0.052	0.007	0.107	1.095
11	CR0.061	-0.015	0.017	1.191	
12	QR0.065	-0.021	0.033	1.234	

** indicates 5% level of significance
*** indicates 10% level of significance.

7.6.3 Table VII 20 presents the impact of various indicators of MCCA on NPM for the *Organic Chemicals Industry*

On analysis of Table VII 20, it can be observed that for the *Organic Chemicals Industry*, WC/CA and INV/GFA are found to have positive significant impact on NPM. REC/CA, which is found to have negative significant impact on ROA and CR, which is found to have positive significant impact on ROA, are not found to have any significant impact on NPM. Moreover, INV/WC, INV/GFA were not found to have any significant impact on ROA. However, they are found to have significant impact on NPM. Here again the explanatory power of WC/CA is found to be higher as compared to ROA, at 0.263. This implies that 26.3% variations in NPM are explained by WC/CA.

TABLE VII 20

Simple Regression of NPM on various indicators of MCCA

ORGANIC CHEMICALS INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	CA/TA	0.017	-0.105	0.212	0.812
2	WC/TA	0.068	-0.109	0.431	1.650
3	WC/CA	0.263	-0.151	0.410	3.633*
4	INV/WC	0.036	-0.059	0.061	1.178***
5	REC/WC	0.009	-0.034	0.019	0.588
6	CB/WC	0.014	-0.031	0.113	0.738
7	INV/CA	0.009	-0.098	0.242	0.579
8	REC/CA	0.040	0.197	-0.398	-1.243
9	CB/CA	0.003	-0.025	0.177	0.373
10	INV/GFA	0.086	-0.149	0.647	1.864**
11	CR	0.039	-0.122	0.042	1.220
12	QR	0.013	-0.074	0.037	0.704

* 1% level of significance
** 5% level of significance.

7.6.4 Table VII 21 presents the impact of various indicators of MCCA on NPM for the *Inorganic Chemicals Industry*

A glance at Table VII 21 gives very interesting results. Out of total twelve ratios, eight ratios have significant impact of NPM. WC/TA, WC/CA and INV/WC are found to have impact on NPM at 1% level of significance. WC/CA is able to explain 52.9% variations in NPM, this is followed by WC/TA. The ratios, REC/WC, CB/WC, INV/GFA and CR found to affect NPM at 5% level of significance. QR found to affect NPM, only at 10% level of significance.

TABLE VII 21

Simple Regression of NPM on various indicators of MCCA

INORGANIC CHEMICALS INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	CA/TA	0.031	-0.083	0.143	0.780
2	WC/TA	0.511	-0.144	0.595	4.464*
3	WC/CA	0.529	-0.122	0.259	4.624*

TABLE VII 21 (Contd.)

No.	Variable	R^2	Intercept	Slope	t value
4	INV/WC	0.324	-0.076	0.116	3.021*
5	REC/WC	0.232	-0.053	0.050	2.394**
6	CB/WC	0.143	-0.032	0.135	1.783**
7	INV/CA	0.011	0.023	-0.134	-0.474
8	REC/CA	0.006	0.022	-0.087	-0.329
9	CB/CA	0.011	-0.039	0.162	0.467
10	INV/GFA	0.144	0.031	-0.184	-1.786**
11	CR	0.228	-0.205	0.076	2.367**
12	QR	0.149	-0.140	0.075	1.826***

* 1% level of significance
** 5% level of significance

7.7 IMPACT OF INDICATORS OF MANAGEMENT OF COMPONENTS OF CURRENT ASSETS ON NPM

Multiple Regressions

To examine the joint effect of various indicators of MCCA on NPM, the multiple regression analysis is carried out. Here the indicators having significant impact in simple regression are selected for the purpose of examining their joint effect.

7.7.1 In the case of the *Steel Industry* while running simple regression it was observed that CA/TA, WC/TA and CA/TA,WC/CA have significant impact on NPM. It is observed (Table VII 22) that the value of Adj. R^2 is 62.8 when only two variables *viz* CA/TA and WC/CA are taken. This indicates that these variables are able to explain 62.8% variations in NPM.

7.7.2 For the *Cement Industry* WC/TA, WC/CA and INV/CA have significant impact on NPM. As the first two variables are highly related (0.84), only 2 multiple regression runs are taken. It is observed (Table VII 23) that the value of Adj. R^2 improved, only co-efficient of WC/CA is found to be significant. The regression run shows that 19% of variations in NPM are explained by WC/CA and INV/WC.

7.7.3 For the *Organic Chemicals Industry* (Table VII 24) WC/CA, INV/WC and INV/GFA are found to have significant impact on NPM. Here again three multiple regressions are run. The value of the Adj. R^2 found to the highest when WC/CA and INV/WC are taken together, at 0.239.

7.7.4 For *Inorganic Chemicals Industry* eight variables were found to have significant impact on NPM, while running simple regression. As some of them are very highly related only selected multiple regressions are run. These are presented in Table VII 25. From the Table certain important observations can be made. When WC/TA. INV/WC, REC/

WC, CB/WC and INV/GFA are taken together the value of R^2 and Adj. R^2 goes upto 0.87 and 0.827 respectively indicating that, these factors explain variations in NPM to the tune of 82.7%. However, it may be noted that the value of the factors does not show significant t-value. This is attributable to the problem of multi co linearity. The correlation co efficient between INV/WC and REC/WC is as high as 0.88, INV/WC to CB/WC is 0.79, REC/WC and CB/WC is 0.84. When WC/TA and INV/GFA are taken together the explanatory power increases to 69.9%, conveying thereby that out of total change in NPM, 69.9% of variations are explained by these two variables. Hence one can say that if proper care is taken to manage these two variables, profit can, also be managed in a significant manner.

Interestingly, when WC/TA increases, NPM increases and when INV/GFA, increases NPM reduces. Thus care is required to be taken both ways. Now when CR or QR are added to above two variables, the value of R^2 marginally goes down. This indicates that CR and QR do not add to predicating power, when taken in combination with WC/TA and INV/GFA. This insignificant impact of CR and QR is also attributable to the problem of multi co linearity. The correlation co efficient between WC/TA and CR is found to be 0.70 and WC/TA and QR is found to be 0.57.

TABLE VII 22

Multiple Regressions of NPM on indicators of MCCA

STEEL INDUSTRY

No.	R^2 (Adj. R^2)	b_0	CA/TA (t value)	WC/TA (t value)	WC/CA (t value)
1	0.125 (0.089)	-1.617	0.456 (0.178)	3.763 (1.969)***	
2	0.643 (0.628)	0.222	-3.023 (-2.041) ***		3.225 (8.983)*

* 1% level of significance
*** 10% level of significance

TABLE VII 23

Multiple Regressions of NPM on indicators of MCCA

CEMENT INDUSTRY

No.	R^2 (Adj. R^2)	b_0	WC/TA (t value)	WC/CA (t value)	INV/WC (t value)
1	0.248 (0.176)	-0.013	0.221 1.576		0.020 1.604
2	0.264 (0.194)	-0.011		0.079 (1.734)***	0.018 (1.483)

*** 10% level of significance

TABLE VII 24

Multiple Regressions of NPM on indicators of MCCA

ORGANIC CHEMICALS INDUSTRY

No.	R^2 (Adj. R^2)	b_0	WC/CA (t value)	INV/WC (t value)	INV/GFA (t value)
1	0.279 (0.239)	-0.179	0.397 (3.487)*	0.041 0.909	
2	0.275 (0.235)	-0.195	0.375 (3.065)*		0.262 0.774
3	0.133 0.084	-0.213		0.069 (1.394)	0.689 (2.001)**

*1% level of significance
**5% level of significance

TABLE VII 25

Multiple Regressions of NPM on indicators of MCCA.

INORGANIC CHEMICALS INDUSTRY

No.	R^2 Adj. R^2	b_0	WC/TA (t value)	WC/CA (t value)	INV/WC (t value)	REC/WC (t value)	CB/WC (t value)	INV/GFA (t value)	CR (t value)	QR (t value)
1	0.729 (0.699)	-0.086	0.641 (6.229)*					-0.227 (-3.792)*		
2	0.513 (0.459)	-0.131	0.625 (3.250)*						-0.009 (-0.223)	
3	0.513 (0.459)	-0.136	0.614 (3.666)*				(-0.223)			-0.008 (-0.194)
4	0.730 (0.682)	-0.073	0.669 (4.519)*					-0.227 (-3.692)*	-0.008 (-0.271)	
5	0.734 (0.687)	-0.067	0.684 (5.311)*					-0.223 (-3.757)*		-0.018 (-0.571)
6	0.870 (0.827)	-0.108	0.545 (5.919)*		0.086 (1.693)	0.004 (0.129)	-0.030 (-0.394)	-0.221 (-3.837)*		
7	0.599 (0.554)	-0.077		0.243 (4.519)*				-0.129 (-1.764)**		
8	0.531 (0.479)	-0.137		0.248 (3.413)*					0.009 (0.250)	
9	0.533 (0.481)	-0.137		0.248 (3.841)*						0.012 (0.342)
10	0.610 (0.541)	-0.114		0.211 (2.988)*				-0.142 (-1.856)**	0.022 (0.701)	
11	0.605 (0.535)	-0.097		0.228 (3.666)*				-0.132 (-1.764)**		0.017 (0.509)

TABLE VII 25 (Contd.)

No.	R^2 Adj. R^2	b_0	WC/TA (t value)	WC/CA (t value)	INV/WC (t value)	REC/WC (t value)	CB/WC (t value)	INV/GFA (t value)	CR (t value)	QR (t value)
12	0.739 (0.653)	-0.072		0.177 (3.152)*	0.113 (1.545)	-0.029 (-0.633)	0.051 (0.484)	-0.187 (-2.160)**		
13	0.339 (0.222)	-0.086			0.146 (1.636)	0.002 (0.030)	-0.071 (-0.537)			
14	0.491 (0.435)	-0.019			0.121 (3.505)*			-0.198 (-2.427)**		
15	0.492 (0.436)	-0.229			0.106 (3.064)*				0.066 (2.440)**	
16	0.506 (0.452)	-0.208			0.123 (3.609)*					0.083 (2.576)**
17	0.333 (0.258)	-0.004				0.045 (2.257)**		-0.155 (-1.649)		
18	0.415 (0.350)	-0.214				0.045 (2.399)**			0.069 (2.373)**	
19	0.369 (0.299)	-0.164				0.048 (2.501)**				0.072 (1.976)***
20	0.342 (0.269)	0.031					0.160 (2.327)**	-0.218 (-2.330)**		
21	0.292 (0.213)	-0.183					0.094 (1.276)		0.064 (1.942)***	
22	0.230 (0.144)	-0.123					0.105 (1.374)			0.059 (1.424)
23	0.448 (0.351)	0.176						-0.225 (-2.520)*	0.158 (2.191)**	-0.100 (-1.149)

*1% level of significance
** 5% level of significance
*** 10% level of significance

From the analysis of these regressions for all four industries, it can be concluded that WC/CA has been found to affect significantly to NPM. Thus for any organization managing proportion of WC/CA is very important. WC/TA has also been found to be significantly affecting to NPM, except *Organic Chemicals Industry*. Similarly, INV/WC has also been found to be positively significantly affecting to NPM, for all industries except the *Steel Industry*. For the *Inorganic Chemicals Industry*, the indicators of MCCA are found to have a very high impact on NPM.

7.8 IMPACT OF TURNOVER RATIOS ON NPM

Simple Regression

To examine how the utilization of assets affect to the Net Profit Margin, for each industry the impact is examined taking average of each company for various Turnover ratios on the one hand and the NPM on the other .

7.8.1 The impact of various turnover ratios on NPM for the *Steel Industry* is presented in Table VII 26

TABLE VII 26

Simple Regression of NPM on various Turnover Ratios

STEEL INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	TATR	0.034	-1.185	0.530	1.319
2	NFATR	0.003	-0.449	0.006	0.375
3	WTR	0.007	-0.546	0.043	0.605
4	ITR	0.026	-1.004	0.071	1.152
5	DTR	0.037	-1.394	0.165	1.395
6	CBTR	0.015	-0.748	0.003	0.883

While analyzing the impact of turnover ratios on NPM for the *Steel Industry* it is observed that none of the ratios affect significantly to NPM.

7.8.2 The impact of various turnover ratios on NPM for the *Cement Industry* is presented in Table VII 27

TABLE-VII 27

Simple Regression of NPM on various Turnover Ratios

CEMENT INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	TATR	6.52E-05	0.021	0.002	0.038
2	NFATR	0.027	-0.013	0.029	0.785
3	WTR	0.078	0.018	0.002	1.360
4	ITR	0.001	0.017	0.001	0.162
5	DTR	0.002	0.018	0.001	0.185
6	CBTR	0.131	0.062	-0.001	-1.826***
*** 10% level of significance					

On analyzing impact of turnover ratios on NPM for the *Cement Industry*, from Table VII 27, it is observed that only CBTR is able to explain 13.1% of variations in NPM. This is found to be significant at 10% level of significance. It is observed that as CBTR increases NPM reduces. This is similar to the findings for impact of turnover ratios on ROA.

7.8.3 The impact of various turnover ratios on NPM for the *Organic Chemicals Industry* is presented in Table VII 28. Here it is observed that none of the ratios have significant impact on NPM.

TABLE VII 28

Simple Regression of NPM on various Turnover Ratios

ORGNIC CHEMICALS INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	TATR	0.026	-0.010	0.085	0.988
2	NFATR	0.019	-0.048	0.013	0.841
3	WTR	0.013	-0.032	0.004	0.708
4	ITR	0.001	-0.021	0.001	0.166
5	DTR	0.053	-0.156	0.028	1.440
6	CBTR	0.009	-0.041	0.001	0.588

7.8.4 The impact of various turnover ratios on NPM for the *Inorganic Chemicals Industry* is presented in Table VII 29

While examining the impact of various turnover ratios on NPM, it is found from Table VII 29, that all the ratios except CBTR has significant impact on NPM. The results are on a very similar line that of ROA. The value of R^2 for NFATR is found to be very high at 0.598. This implies that NFATR is able to explain 59.8% variations in NPM.

TABLE VII 29

Simple Regression of NPM on various Turnover Ratios

INORGANIC CHEMICALS INDUSTRY

No.	Variable	R^2	Intercept	Slope	t value
1	TATR	0.269	-0.212	0.199	2.647**
2	NFATR	0.598	0.041	-0.015	-5.318*
3	WTR	0.262	-0.079	0.014	2.596**
4	ITR	0.143	-0.119	0.011	1.782***
5	DTR	0.222	-0.186	0.033	2.325**
6	CBTR	0.081	0.014	-0.001	-1.298
*1% level of significance, **5% level of significance, ***10% level of significance					

7.9 IMPACT OF TURNOVER RATIOS ON NPM

Multiple Regressions

From the simple regression it is observed that for the *Steel Industry* and *Organic Chemicals Industry* none of the turnover ratios have significant impact on NPM, and hence, it is not considered for running the multiple regression. Moreover, for the *Cement*

Industry, it is only CBTR, which is found to have significant impact on NPM. Hence, for the Cement Industry, as well, multiple regressions are not carried out. For the *Inorganic Chemicals Industry* out of 6 turnover ratios 5 are found to have significant impact on NPM. Hence this is considered for the purpose of carrying out multiple regression. The results are presented in Table VII 30.

TABLE VII 30

Multiple Regressions of NPM on various Turnover Ratios

INORGANIC CHEMICALS INDUSTRY

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
1	0.441 (0.379)	-0.226	0.165 (2.399)**		0.011 (2.348)**			
2	0.369 (0.299)	-0.277	0.183 (2.536)**			0.009 (1.682)		
3	0.335 (0.261)	-0.262	0.146 (1.751)***				0.020 (1.330)	
4	0.388 (0.280)	-0.295	0.155 (1.874)***			0.007 (1.218)	0.012 (0.736)	
5	0.305 (0.228)	-0.173	0.184 (2.405)**					-0.001 (-0.957)
6	0.382 (0.273)	-0.222	0.125 (1.470)				0.022 (1.456)	-0.001 (-1.139)
7	0.491 (0.364)	-0.248	0.126 (1.583)			0.011 (1.855)***	0.011 (0.093)	-0.001 (-1.802)
8	0.699 (0.666)	-0.002		-0.013 (-5.120)*	0.009 (2.464)**			
9	0.621 (0.578)	-0.003		-0.014 (-4.762)*		0.005 (1.038)		
10	0.689 (0.654)	-0.071		-0.014 (-5.196)*			0.021 (2.286)**	
11	0.690 (0.636)	-0.078		-0.013 (-4.849)*		0.001 (0.308)	0.020 (1.952)***	
12	0.599 (0.554)	0.045		-0.014 (-4.821)*				-4E-05 (-0.206)
13	0.635 (0.570)	-0.007		-0.013 (-3.741)*		0.007 (1.291)		-0.001 (-0.891)
14	0.698 (0.623)	-0.078		-0.012 (-3.895)*		0.003 (0.578)	0.019 (1.830)**	-0.001 (-0.642)
15	0.262 (0.180)	-0.210				0.006 (0.992)	0.026 (1.702)	

TABLE VII 30 (Contd.)

No.	R^2 Adj. R^2	b_0	TATR (t value)	NFATR (t value)	WTR (t value)	ITR (t value)	DTR (t value)	CBTR (t value)
16	0.334 (0.260)	-0.097				0.015 (2.616)**		-0.001 (-2.274) **
17	0.412 (0.308)	-0.174				0.011 (1.769) ***	0.021 (1.495)	-0.001 (-2.081) ***
18	0.303 (0.226)	-0.149					0.033 (2.395) **	-0.001 (-1.455)

*1% level of significance
** 5% level of significance
*** 10% level of significance

On examination of the Table it can be inferred that run 8th has the highest value of R^2 (0.699) and Adj. R^2 (0.666). This indicates that NFATR and WTR jointly are able to explain 66.6% variations in NPM. This is followed by value of Adj. R^2 at 0.654 for NFATR and DTR jointly, when NFATR, ITR and DTR are taken, the value of Adj. R^2 is found to be 0.636. Thus if the level of working capital, inventory and debtors with reference to sales are taken care of then, it will affect positively to NPM, higher the turnover ratios, higher the NPM. With reference to NFATR, the impact is negative, meaning thereby higher the turnover of NFATR lower the NPM.

7.10 CONCLUSIONS

In this chapter, an attempt is made to examine the impact of various indicators of MCCA on ROA and NPM. This is carried out through simple regression as well as multiple regressions. Moreover, an attempt is also made to examine the impact of turnover ratios on ROA and NPM. This is also examined through simple as well as multiple regressions. Based on this regression analysis following inferences can be drawn.

1. WC/CA affects positively to ROA for all 4 selected industries. The predicting power of the same is found to be the highest for Inorganic Chemicals Industry.
2. For the *Steel Industry* over and above WC/CA,CB/WC, REC/CA and CB/CA is found to have significant impact on ROA. However, the predicting power of none of the indicator is crossing 11.8%
3. For the *Cement Industry* WC/TA and INV/WC affects significantly to ROA, over and above WC/CA. The predictor power of none of the indicator crosses 17%
4. For the *Organic Chemicals Industry* again the highest predictor power is 17.8% of WC/CA.
5. For the *Inorganic Chemicals Industry* WC/CA has got high predicting power at 48.8% followed by WC/CA at 41.3%. The maximum number of indicators seven out of twelve are found to have significant impact on ROA.

6. On running the multiple regressions very interesting results are found. For the Inorganic Chemicals Industry it is observed that WC/TA, INV/WC, REC/WC, CB/WC and INV/GFA, jointly are able to explain 72.7% of variations in ROA. This explanatory power goes down to 62.6% when WC/TA is replaced with WC/CA along with INV/WC, REC/WC CB/WC and INV/GFA.

7. On examining the impact of turnover ratios on ROA, it is observed that three ratios are not able to explain changes in ROA to a greater extent. Out of six turnover ratios, for the *Steel Industry* and the *Organic Chemicals Industry*, DTR has significant impact, for the *Cement Industry*, CBTR has significant impact on ROA and for the *Inorganic Chemicals Industry* TATR, NFATR, WTR, ITR and DTR are found to have significant impact of ROA.

8. On examining the joint impact of various turnover ratios on ROA, for Inorganic Chemicals Industry very interesting results are observed. When NFATR and DTR are taken together, they are able to explain 66.7% variations in ROA. Once NFATR ratio is removed, the predicting power goes down to 40.6%

On taking NPM as measure of profitability following inferences are drawn.

9. WC/CA, has got as high as 61% predicting power on NPM for the *Steel Industry*, which is 18%, 26% and 52% respectively for the *Cement, Organic Chemicals* and *Inorganic Chemicals Industry*

10. On running the multiple regressions, of NPM on various indicators of MCCA, very interesting results are found, that WC/CA has been found to affect significantly to NPM. Thus for any organization managing proportion of WC/CA is very important. WC/TA has also been found to be significantly affecting to NPM, except *Organic Chemicals Industry*. Similarly, INV/WC has also been found to be positively significantly affecting to NPM, for all industries except the *Steel Industry*. For the *Inorganic Chemicals Industry*, the indicators of MCCA are found to have a very high impact on NPM.

11. On examining impact of turnover ratios on NPM for the *Steel* and *Organic Chemicals Industry*, it is observed that none of the ratios have significant impact on NPM. For the *Cement Industry*, CBTR is having significant impact and for the *Inorganic Chemicals Industry*, all five turnover ratios except CBTR has significant impact.

12. On examining the joint impact of various turnover ratios on NPM, it is observed that NFATR and WTR are jointly able to explain about 66% variations in NPM for *Inorganic Chemicals Industry.*

Reference

1. Malick A. K. and Sur D., (Sept 99) Working Capital Management: A Case Study of Hindustan Lever Ltd., *Finance India* Vol. XIII No.3 pp 857-871.