Determine Optimum Working Capital Management and Liquidity for FMCG Companies in India

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Abstract: *The Fast Moving Consumer Goods (FMCG) sector is the fourth largest sector in the Indian economy. Working capital deals with day-to-day transactions of companies. This research attempts to find out relation between FMCG companies' working capital management and liquidity with their financial performance. The present research also finds out the optimum levels of working capital management components and optimum level of liquidity for optimum financial performance. To fulfil this purpose, 13 FMCG companies' six-year data, covering from year 2012-13 to year 2016-17 are taken as sample. Ratio analysis used in research to measure working capital management, liquidity and companies' financial performance. Correlation analysis is used to find out type of relation of working capital management and liquidity with companies' performance. Line chart is used in this research to find out optimum level of working capital management and liquidity. This research paper found that average collection period, inventory conversion period, cash conversion cycle and current ratio are negatively related with FMCG companies' performance and there is no significant relation between average payable period and performance of FMCG companies. This research also reported that 9 to 12 days is optimum average collection period, 50 to 75 days is optimum inventory conversion period, (-100) to (-50) days is optimum cash conversion cycle and 0.95 to 1.09 is optimum level of current ratio for FMCG companies in India.*

Key Words: *Fast Moving Consumer Goods(FMCG), Working Capital, Liquidity, Optimum Level.*

1. INTRODUCTION:

The Fast Moving Consumer Goods (FMCG) are popularly known as consumer packaged goods. Products in this category include all consumables (except groceries and pulses) which people buy at regular basis. The most common in this category are soaps, detergents, shampoos, toothpaste, shaving products, packaged food products and household accessories.

FMCG sector is the fourth largest sector in the Indian economy with business of US$ 49 billion in 2016. FMCG revenue grew 14.8% during October-December 2017. Rural segment is the largest contributor to overall revenue of FMCG sector with around 60 per cent of FMCG sector revenue. There are three main segments in this sector – 1. Food and Beverages 2. Healthcare and 3. Household. These sectors' contributions are shown in following pia-chart. (16)
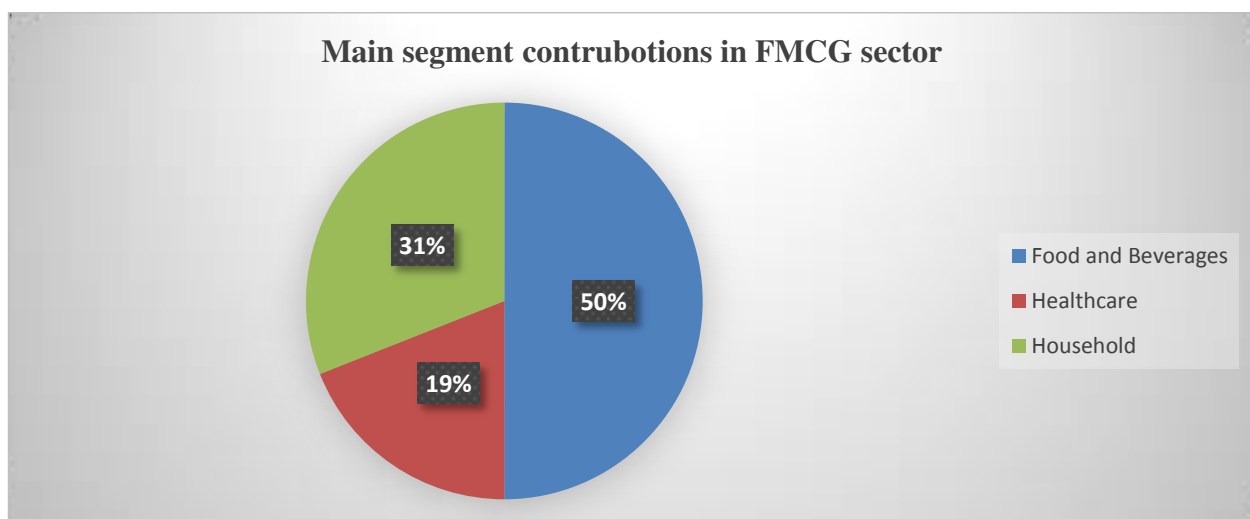
The financial management of company can be divided into two parts: long term financial management and short term financial management. Working capital management is the part of short-term financial management. Working capital management deals with day-to-day transactions. Every business concern has to maintain adequate working capital because excessive working capital means company has idle funds which earns no profit or revenue and inadequate working capital means the company does not have sufficient funds to run its operations.

2. LITERATURE REVIEW:

Average Collection Period and Companies' Performance

According to some past research average collection period is negatively related with profitability of firms which means firm can increase their financial performance by reducing the numbers of average collection period. (1,4,7,9,12,14,15) But some research found opposite result. Their result indicates that firm can maximize their financial performance by increasing average collection period which means firms have to give more credit time to their customers. (10,11)

Inventory Conversion Period and Companies' Performance

There is significant negative relation between inventory conversion period and companies' performance which indicates that much time taken to convert inventory into sells lesser the firms' performance. (1,4,5,7,12,15) However, some past research reported positive relation of inventory conversion period with profitability of firm. (9,10)

Average Payable Period and Companies' Performance

The relationship between average payable period and performance of firm is reported positive by some previous researches. According to them, firm can increase their profitability by paying their creditors late. (1,7,9) The negative relation of average payable period and profitability also reported by other researches. (3,4,11,12)

Cash Conversion Cycle and Companies' Performance

Some previous researches show that increase in days of cash conversion cycle will decline profitability which means there is negative relation between cash conversion cycle and profitability of firm. (2,4,7,8,11,12,15)
There is significate positive relation between cash conversion cycle and profitability which means firm can raise their financial perforce by increasing the days of cash conversion cycle. (1,14)

Liquidity and Companies' Performance

Companies' liquidity means current ratio is negatively related with their performance which means as current ratio increase, profitability of companies will be decrease and vice a versa. (1,5,8)

3.OBJECTIVES

- To analyse relationship of working capital management and liquidity with financial performance of FMCG in India.
- To determine optimum level of working capital management components and liquidity for FMCG companies in India to achieve optimum financial performance.

4.DATA AND DATA COLLECTION

Data type

This research is a quantitative research which is based on secondary data. The data for this research is collected from FMCG companies' annual reports which is available on companies' official websites.

Sample Design

The sample size consists 75 company years covering 13 companies' six-year financial data covering year 2012-13 to year 2016-17. All the other FMCG companies are excluded from study.

5.METHODS

Accounting Methods

To evaluate the companies' performance and working capital management, ration analysis has been used in this research. The common ratios to measure financial performance and working capital management are used in this research which includes below ratios.

Indicators of Companies' performance

1. Return on Assets (ROA)
   Return on Assets is the ratio which measures the net income produced by total assets during a period by comparing net income to the total assets. ROA shows that how efficiently a company can manage its assets to produce profits during a period.

$$ROA = Net\ Profit\ /\ Total\ Assets \times 100$$

2. Return on Equity (ROE)
   Return on Equity is the ration that shows the ability of a company to generate profits from its shareholders' funds.

$$ROE = Net\ Profit\ /\ Shareholders'\ Fund \times 100$$

Indicators of Working Capital Management
3. Average Collection Period (ACP)
   ACP is the ratio which indicates the average number of days elapsed between a credit sale and the date the company collect the payment from the credit sale.

$$ACP = \text{Trade Receivables / Net Sales} \times 365$$

4. Inventory Conversion Period (ICP)
   ICP is the ratio which shows the average number days inventory held before they are sold.

$$ICP = \text{Inventory / Cost of Material Consumed} \times 365$$

5. Average Payable Period (APP)
   APP is the average number of days elapsed between the date of credit purchase and the date the payment for credit purchase.

$$ACP = \text{Trade Payables / Purchase} \times 365$$

6. Cash Conversion Cycle (CCC)
   CCC is the average time taken by a company to convert its investment in inventory and other resource inputs into cash.

$$CCC = ACP + ICP - APP$$

Indicator of Liquidity
7. Current Ratio (CR)
   CR ratio is the ratio which measure a companies' ability to pay off its current liabilities with its current assets.

$$CR = \text{Current Assets / Current Liabilities}$$

Statistical Methods
Descriptive statistics are used in this research to evaluate and summarize the behaviour of the variables. Descriptive statistics include Minimum value, Maximum value, Mean value and Standard deviation value of variables. Correlation analysis is used in present research to find out the type of relationship of working capital management components and liquidity with companies' performance. All data is properly arranged in table and line-charts are used for find out optimum level of working capital management and liquidity.
All calculations are done by using SPSS and MS-excel.

6.DATA ANALYSIS AND FINDINGS

Descriptive Statistics Analysis

Table: 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	75	2.82	39.52	19.0089	8.48169
ROE	75	6.08	141.99	37.4429	27.63075
ACP	75	2.29	45.86	17.1002	11.54879
ICP	75	35.12	298.93	119.4234	64.55599
APP	75	42.14	236.72	126.0181	57.35485
CCC	75	-143.81	227.98	10.5056	86.35228
CR	75	.45	5.47	1.8895	1.20440
Valid N (list wise)	75				

ROA: The average value of ROA is 19% which means every rupee FMCG companies invested in assets during this period, averagely produced 0.19 rupee of net income. The ROA value laid down between 2.82% and 39.52%. The standard deviation value of ROA is 8.48 which indicate that value of ROA can be deviate from mean value by 8.48 percent.

ROE: The mean value of ROE is 37.44% which indicates that during this research period, FMCG companies averagely generate 0.37 rupee on each rupee of shareholders' fund. The minimum value of ROE is 6.08% which means during this period, any FMCG company in this sample did not face negative profitability during this research period. The maximum value of ROE is 141.99% which indicate best performance achieved by company. Standard deviation value for the same variable is 27.63%.

ACP: The average value of ACP indicates that FMCG companies averagely take 17 days to collect their payment from their customers. The standard deviation value of ACP is 11.55 which means the number of days average collection can be deviate by 11 to 12 days from mean value of ACP. The maximum and minimum value of ACP is 45.86 days and 2.29 days respectively.

ICP: The average value of ICP is 119.42 days which is quite high. The average value of ICP is high because FMCG companies have to maintain high level of inventory. The minimum and maximum value for ICP is 35.12 days and 298.92 days respectively with the standard deviation value of 64.56 days.

APP: The mean value of APP indicates that FMCG companies averagely takes 126 days to make their payment for credit purchase. The minimum time taken for this purpose is 42 days and maximum time taken for this purpose is 237 days. The standard deviation value shows that average payment days for credit purchase can be deviate from mean value by 57 days.

CCC: The mean value of CCC indicates that FMCG companies averagely take 10 to 11 days to convert its investment in to inventory and other resource inputs into cash. The minimum time taken for this purpose is -144 days which is good sign of effective working capital management. The maximum time for this purpose is 228 days with the standard deviation value of 86 days,

CR: The average value of CR is 1.89 which shows good strength of FMCG companies to pay its short-term liabilities from its current assets. Standard deviation value of CR is 1.2 which means CR value can be deviate from mean value by 1.2. The minimum and maximum value of CR is 0.45 and 5.47 respectively.

Relation of ACP with ROA and ROE

Table:2 Correlations

		ACP	ROA	ROE
ACP	Pearson Correlation	1	-.339[**]	-.392[**]
	Sig. (2-tailed)		.003	.001
	N	75	75	75
ROA	Pearson Correlation	-.339[**]	1	.838[**]
	Sig. (2-tailed)	.003		.000
	N	75	75	75
ROE	Pearson Correlation	-.392[**]	.838[**]	1
	Sig. (2-tailed)	.001	.000	
	N	75	75	75

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

Table:2 shows correlation of ACP with ROA and ROE. Correlation value of ACP with ROA and ROE are negative which indicates that ACP is negatively related with profitability of companies. The correlation between ACP and ROA is significant at 1% level of significance and correlation between ACP and ROE is also significant at 1% level of significance. So, there is significant negative relation between ACP and profitability of companies.

Table:3 Days of ACP with Average ROA and Average ROE

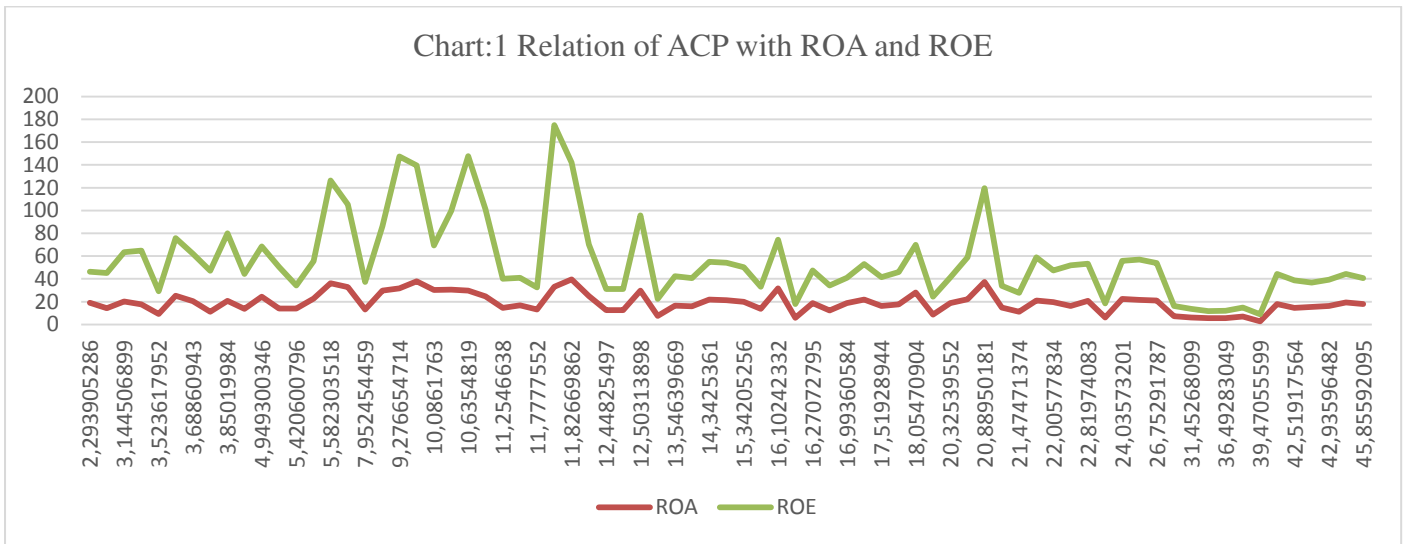| Number of Days of ACP	Average ROA (%)	Average ROE (%)
Less than 3 days	16.74	29.10
3 to 6 Days	19.20	42.49
6 to 9 Days	25.20	51.12
9 to 12 Days	27.24	73.22
12 to 15 Days	17.22	29.36
15 to 18 Days	17.67	26.19
18 to 21 Days	23.02	39.79
21 to 24 Days	15.67	26.04
24 to 27 Days	21.67	33.83
27 to 30 Days	14.24	20.74
30 to 33 Days	5.90	6.88
More than 33 Days	12.96	18.17

Chart:1 Relation of ACP with ROA and ROE

Table:3 and chart:1 shows the relation of ACP with ROA and ROE. When ACP is less than 3 days, average ROA and average ROE are 16.74% and 29.10% respectively. As ACP increase from less than 3 days to 3 to 6 days, average ROA and average ROE is also increase. At this stage of ACP, average value of ROA is 19.20% and average value of ROE is 42.49%. As ACP increase from 3 to 6 days to 6 to 9 days, average value of ROA and ROE is still increasing. When ACP is fallen between 9 to 12 days, ROA and ROE is on optimum level because after that level of ACP, increase in ACP has a negative impact on ROA and ROE. When ACP is between 9 to 12 days, average value of ROA and average value of ROE is 27.24% and 73.22% respectively. Chart:1 also shows that when ACP is between 9 to 12 days, ROA and ROE is on optimum level. So, FMCG companies have to maintain ACP between 9 to 12 days for optimum financial performance.

Relation of ICP with ROA and ROE

Table:4 Correlations

		ICP	ROA	ROE
ICP	Pearson Correlation	1	-.254[*]	-.307[**]
	Sig. (2-tailed)		.028	.007
	N	75	75	75
ROA	Pearson Correlation	-.254[*]	1	.838[**]
	Sig. (2-tailed)	.028		.000
	N	75	75	75
ROE	Pearson Correlation	-.307[**]	.838[**]	1
	Sig. (2-tailed)	.007	.000	
	N	75	75	75

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table:4 shows correlation of ICP with ROA and ROE. Correlation value of ICP with ROA and ROE are negative which indicates that ICP is negatively related with performance of FMCG companies. The correlation between ICP and ROA is significant at 5% level of significance and correlation between ACP and ROE is significant at 1% level of significance. So, ICP has a significant negative impact on FMCG companies' performance.

Table:5 Days of ICP with Average ROA and Average ROE

Days of ICP	Average ROA (%)	Average ROE (%)
Less than 50	20.91	43.63
50-75	24.66	55.90
75-100	22.22	47.47
100-125	17.07	29.35
125-150	9.35	17.68
150-175	6.01	12.05
175-200	8.70	15.78
More than 200	18.27	26.77

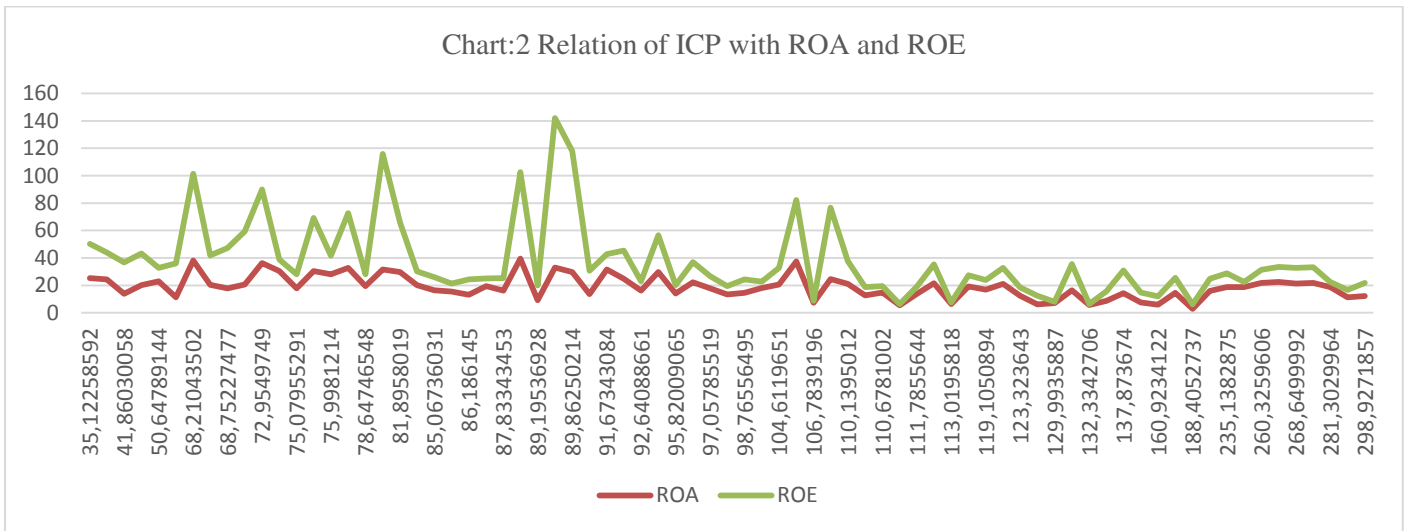Chart:2 Relation of ICP with ROA and ROE

Table:5 and chart:2 shows the relation of ICP with ROA and ROE. As table:5 shows, when ICP is less than 50 days, average value of ROA is 20.91% and average value of ROE is 43.63%. When ICP increase from less then 50 days to 50 to 75 days, average value of ROA and ROE also increase. At this level of ICP, average value of ROA is 24.66% and average value of ROE is 55.90% which is optimum value of both profitability indicators. But, after this level of ICP, average value of ROA and average value of ROE start diminishing. It has a more bad impact on profitability when ICP goes up more than 100 days. So, FMCG companies have to maintain ICP between 50 to 75 days and companies have to take care that ICP is not cross the level of 100 days because when ICP is more than 100 days, it has a more bad impact on performance of company.

Relation of APP with ROA and ROE

Table:6 Correlations

		APP	ROA	ROE
APP	Pearson Correlation	1	.121	.209
	Sig. (2-tailed)		.303	.072
	N	75	75	75
ROA	Pearson Correlation	.121	1	.838**
	Sig. (2-tailed)	.303		.000
	N	75	75	75
ROE	Pearson Correlation	.209	.838**	1
	Sig. (2-tailed)	.072	.000	
	N	75	75	75

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

Table:6 shows the correlation of APP with ROA and ROE. Correlation value of ACP with ROA and ROE are positive which means APP has a positive impact on profitability of companies. However, correlation matrix also shows that correlation is not significant. So, there is no significant relation between APP and companies' performance. Thus, it's not appropriate to find optimum level of ACP because it has no significant impact on firms' performance.

Relation of CCC with ROA and ROE

Table:7 Correlations

		CCC	ROA	ROE
CCC	Pearson Correlation	1	-.316**	-.421**
	Sig. (2-tailed)		.006	.000
	N	75	75	75
ROA	Pearson Correlation	-.316**	1	.838**
	Sig. (2-tailed)	.006		.000
	N	75	75	75
ROE	Pearson Correlation	-.421**	.838**	1
	Sig. (2-tailed)	.000	.000	
	N	75	75	75

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

Table:7 shows the correlation between CCC and performance indicators. The correlation values are negative which indicates negative relation between CCC and performance of companies. As CCC increase, performance of companies will be decrease. The correlation between CCC and performance indicators are significant at 1% level of significance. Thus, there is significant negative relation between CCC and companies' performance.

Table:8 Days of ACP with Average ROA and Average ROE

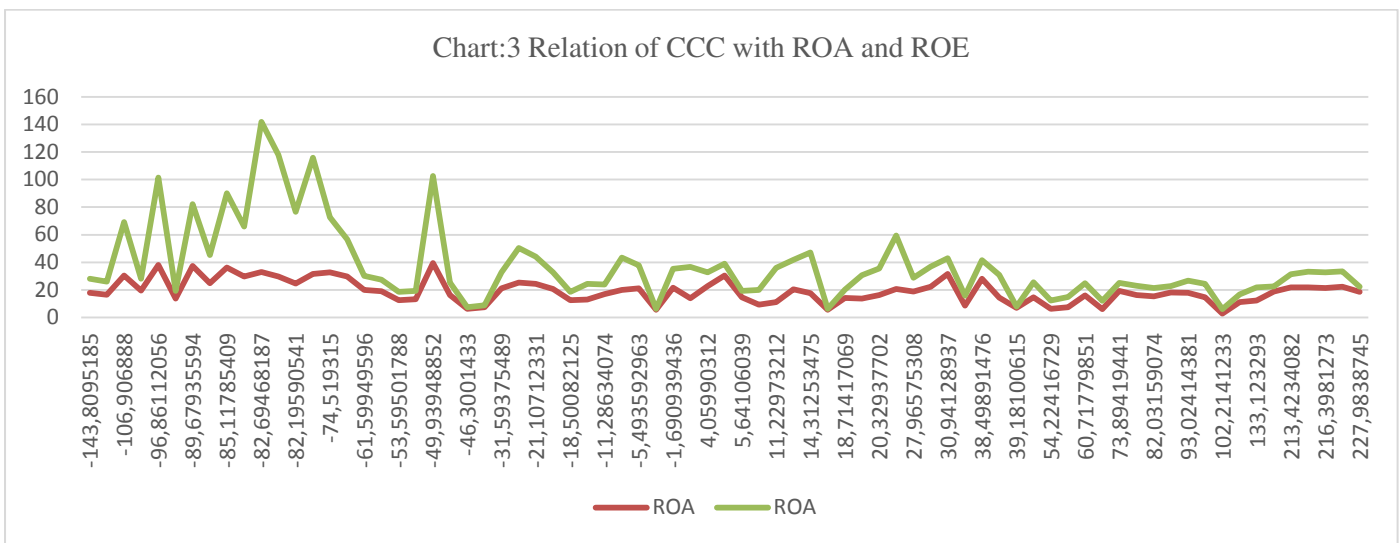| Days of CCC	Average ROA (%)	Average ROE (%)
Less than (-100)	21.57	41.12
(-100) to (-50)	28.00	71.41
(-50) to 0	18.10	32.88
0 to 50	16.93	31.18
50 to 100	13.68	20.72
100 to 150	8.74	14.85
150 to 200	18.82	22.49
More than 200	21.17	30.64

Chart:3 Relation of CCC with ROA and ROE

Table: 8 and Chart: 3 shows the relation between CCC and indicators of companies' performance. When CCC is less than (-100) days, average value of ROA is 21.57% and average value of ROE is 41.12%. As CCC moves upward from level of less than (-100) days, average ROA and average ROE also increase. When CCC is between (-100) days and (-50) days, average value of ROA is 28% and average value of ROE is 71.41% which shows the optimum level of companies' performance. After this level of CCC, increase in CCC has a negative impact on companies' performance because when CCC cross this level of CCC, companies' performances start diminishing. So, FMCG companies have to maintain their CCC between (-100) days to (-50) days.

Relation of CR with ROA and ROE

Table:9 Correlations

		CR	ROA	ROE
CR	Pearson Correlation	1	-.271[*]	-.393[**]
	Sig. (2-tailed)		.019	.000
	N	75	75	75
ROA	Pearson Correlation	-.271[*]	1	.838[**]
	Sig. (2-tailed)	.019		.000
	N	75	75	75
ROE	Pearson Correlation	-.393[**]	.838[**]	1
	Sig. (2-tailed)	.000	.000	
	N	75	75	75

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table:9 shows correlation of CR with ROA and ROE. The correlation value of CR with ROA and ROE both are negative which means CR is negatively related with companies' performance. As CR increase, companies' performance will decrease and vice a versa. Correlation between CR and ROA is significant at 5% level of

significance and correlation between CR and ROA is significant at 1% level of significance. Thus, there is significant negative relation between CR and companies' performance and therefor it's appropriate to find optimum level of CR for companies' good performance.

Table:10 Days of ACP with Average ROA and Average ROE

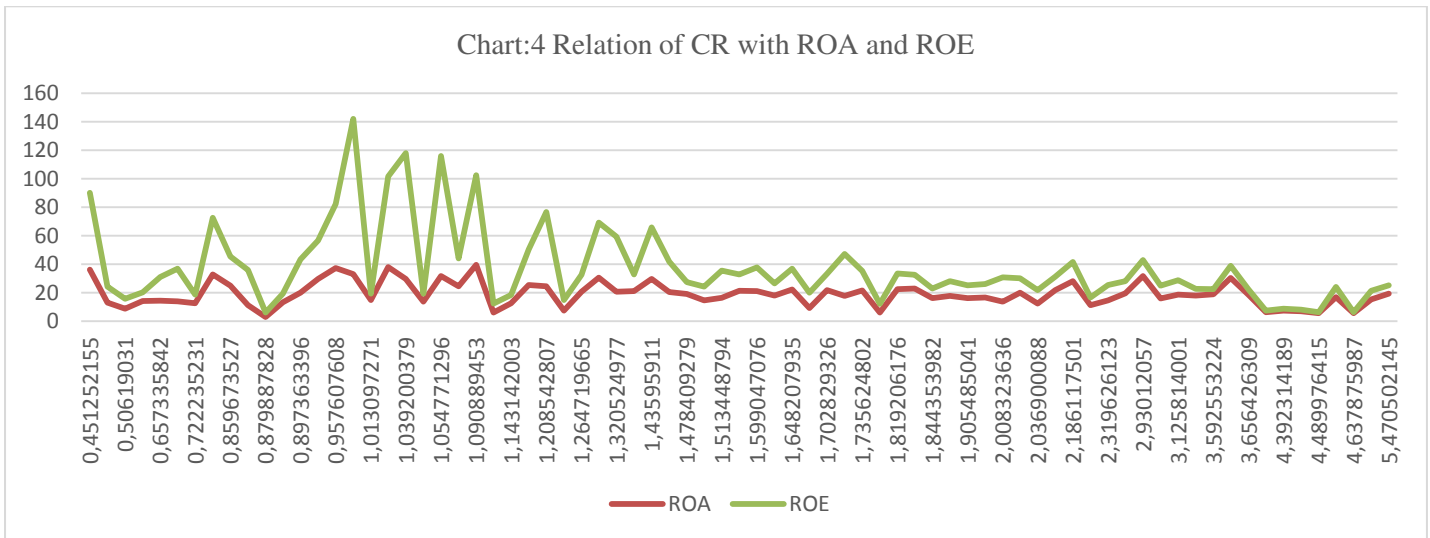| Level of CR	Average ROA (%)	Average ROE (%)
Less than 0.5	24.67	57.13
0.5 to 1	19.19	44.68
1 to 1.5	22.62	53.79
1.5 to 2	17.73	30.00
2 to 2.5	17.35	28.24
2.5 to 3	22.36	31.91
3 to 3.5	18.35	25.74
3.5 to 4	18.51	22.81
More than 4	11.01	14.26

Chart:4 Relation of CR with ROA and ROE

Table:10 and chart:4 shows the relation of CR with ROA and ROE. When CR is less than 0.5 companies' performance is on optimum level because on this level of CR average ROA and average ROE is on optimum level. But, as chart shows that when CR is fallen between 0.95 to 1.09, companies' performance is on optimum level. When CR value more than 1.09, it starts to make companies' performance demising. So, FMCG companies have to maintain is level of CR between 0.95 to 1.09 to improve their performance.

7. CONCLUSION:
Relation of ACP with Companies' performance
This research paper found significant negative relation between ACP and FMCG companies' performance which means as ACP increase, financial performance decrease and vice a versa. The present study also found that FMCG companies have to collect their credit sales amount in 9 to 12 days for good financial performance which means FMCG companies can give 9 to 12 days credit to their customers.
Relation of ICP with Companies' performance
The present research found significant negative relation between ICP and FMCG companies' performance. This research also found that 50 to 75 days are optimum level of ICP for FMCG companies to get optimum financial performance.
Relation of APP with Companies' performance
This research found that there is no significant relation between APP and FMGC companies financial performance.
Relation of CCC with Companies' performance
There is significant negative relation between CCC and FMCG companies' performance. When CCC is between (-100) days and (-50) days, firm performance is on optimum level. So, FMCG companies have to maintain their CCC between (-100) days to (-50) days to get optimum performance.
Relation of Liquidity with Companies' performance
Current ratio is negatively related with FMCG companies' performance which means as CR increase, companies' performance will decrease and vice a versa. It's appropriate for FMCG companies to maintain their CR between 0.95 to 1.09 for better financial performance.

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