

LIQUIDITY AND ITS EFFECT ON PROFITABILITY IN SELECTED FAST MOVING CONSUMER GOODS COMPANIES IN INDIA: A STUDY

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Abstract

The present study is an attempt to examine the effect of liquidity on profitability in FMCG companies in India. 20 FMCG companies have been selected from those listed in NSE and BSE, of which 10 companies are the highest profit earning companies and 10 companies are running at loss for the period 1999-2000 to 2013-2014. The study indicates that the overall liquidity position of the FMCG companies is good and there is a close and statistically significant association among the selected indicators of liquidity performance and the overall liquidity of FMCG companies in the first half of the study period is better than that in the second half. The present paper uses two alternative models for measuring the profitability viz. Return on Assets (ROA) and Return on Investment (ROI). The study shows that if current assets decreases then profitability increases and shorter the cash conversion cycle, higher is the profitability. The study observes that the companies with smaller size experience wide fluctuations in profitability and vice versa. The study also confirms that variation in profitability does not differ significantly across the companies in respect of their inventories.

Key Words: Liquidity, Profitability, FMCG Companies, Current ratio, cash conversion cycle and Market size.

Introduction:

Liquidity management is necessary for all businesses, because it means collecting cash from customers in time so that having no difficulty in paying short-term debts. Therefore, when a business does not manage its liquidity well, it will have cash shortages and will result in difficulty in paying obligations. As a result, in addition to profitability, liquidity management is vital for on-going concerns. No return is obtained from cash in hand. So, if more amount of cash is kept in hand, the rate of profit decreases. Thus, in order to increase in profitability, cash in hand should be reduced as far as possible. But if cash balance reduces, problem arises

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to meet the day to day transactions in one hand and on the other hand, it is difficult to meet the claims to the creditor's *i.e.* the liquidity of the firm is affected adversely. So, in order to maintain desired level of profitability liquidity of the firm, a smooth consistency is required between these two principals. A firm is required to maintain a balance between liquidity and profitability while conducting its day to day operations. Liquidity is a precondition to ensure that firms are able to meet its short-term obligations and its continued flow can be guaranteed from a profitable venture. On the other hand, too much focus on liquidity will be at the expense of profitability (Padachi, 2006). Thus efficient liquidity management is an integral part of the overall corporate strategy to create shareholders value.

A comprehensive measure of liquidity is the cash conversion cycle, *i.e.* the time lag between the expenditure for the purchases of raw materials and the collection of sales of finished goods. The longer this time lag, the larger the investment in working capital (Deloof 2003). A longer cash conversion cycle might increase profitability because it leads to higher sales (Gill, Biger & Mathur, 2010; Ali, 2011; Charitou, Lois, Santoso, 2012). On the other hand, a shorter cash conversion cycle increase profitability because liquid cash is not maintained in the business for too long and that it is use to generate profits for the firm (Shin and Soenen, 1998; Teruel & Solano, 2007; Nobanee & Al Hajjar, 2009; Vijayakumar, 2011; Alipour, 2011; Makori & Jagongo, 2013; Lingesiya & Nalini, 2013; Gulia, 2014; Jayarathne, 2014).

A great deal of controversy has always been persisting over whether the liquidity of a firm affects its profitability. On this issue, academicians are sharply divided into two schools of thought. One school of thought argues that working capital which helps in maintaining liquidity is not a factor of enhancing profitability. Only fixed capital plays a vital role in profit generating process. Moreover, they also opine that there may be a negative influence of liquidity on profitability. The other school of thought considers the liquidity as relevant to the profitability. They suggest that unless there is a minimum level of working capital, which provides a promising vehicle for improving profitability, output and sales cannot be maintained. The inadequacy of liquidity makes business wheel inoperative which results in reduction in profitability.

FMCG stands for fast moving consumer goods, *i.e.*, the daily items that we need to use in our everyday life. India has a very strong base for producing FMCG goods. The FMCG industry of India is the fourth largest industry in the country. It plays a significant role in shaping a country's economy and development. This sector can drive growth, enhance quality of life, create jobs and support penetration of technology. In this context, it makes sense to look at how liquidity impact on profitability of FMCG companies.

2. Review of literature:

The results from the notable studies that have been carried out are briefly mentioned below:

Shin & Soenen (1998), in his article "Efficiency of working capital and corporate profitability"

found a strong negative relation between the length of the firm's net-trade cycle and its profitability. The study also found that individual firms' stock returns are also significantly negatively correlated with the length of the firm's net trade cycle.

Padachi (2006), in his article "Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms" for a sample of 58 manufacturing firms for the period 1998-2003 indicated that high investment in inventories and receivables was associated with lower profitability. The study also showed an increasing trend in the short-term component of working capital financing.

Raheman & Nasr (2007), in their article "Working Capital Management and Profitability – Case of Pakistani Firms" showed that there was a strong negative relationship between variables of the working capital management and Profitability and significant negative relationship between liquidity and profitability. The study also showed that there was a positive relationship between size of the firm and its profitability and a significant negative relationship between debt used by the firm and its profitability.

Nobanee & Al Hajjar (2009), in their article "A Note on Working Capital Management and Corporate Profitability of Japanese Firms" suggested that managers could increase profitability of their firms by shortening the cash conversion cycle, the receivable collection period and the inventory conversion period. The study also showed that the managers could increase profitability by lengthening the payable deferral period.

Raheman, Afza, Qayyum & Bodla (2010), in their study "Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan" for a sample of 204 manufacturing firm for the period 1998 to 2007 indicated that the cash conversion cycle, net trade cycle and inventory turnover in days were significantly affecting the performance of the firms and also financial leverage, sales growth and firm size have significant effect on the firm's profitability.

Ali (2011), in his article "Working Capital Management and the Profitability of the Manufacturing Sector: A Case Study of Pakistan's Textile Industry" for a sample of 160 textile firms for the period 2000 to 2005 showed that Return on assets was significantly and negatively related to average days receivable and average day payable, significantly and positively related to average days in inventory and cash conversion cycle.

Charitou, Lois, Santoso (2012), in their article "The Relationship between Working Capital Management and Firm's Profitability: An Empirical Investigation for an Emerging Asian Country" for a sample of 728 listed firm in Indonesian Stock Exchange for the period 1998 to 2010 indicated that the Cash Conversion Cycle and Net Trade Cycle were positively related with the firm's profitability.

Lingesiya & Nalini (2013), in their article "Working Capital Management and Firms'

Performance: An Analysis of Sri Lankan Manufacturing Companies” for a sample of 30 listed company for the period 2006 to 2010 emphasized that high investment in inventories and receivables were lead to lower profitability and current assets to total assets was lead to higher profitability. The study also conclude a that the working capital management had very much influence on profitability of manufacturing companies and increase of the cash conversion cycle was lead to less profitability. Current ratio and Quick ratio were positively related to the profitability.

Jayarathne (2014), in his article “Impact of Working Capital Management on Profitability: Evidence from Listed Companies in Sri Lanka” for a sample of 20 listed company from Colombo Stock Exchange for the period 2008-2012 indicated that the profitability was negatively associated with the account receivable period, inventory turnover period, and cash conversion cycle and positively associated with account payable period.

Maheswari (2015), in his article “Financial Performance of Hero Honda Motors Limited, New Delhi” for the period 2002-03 to 2009-10 showed that the liquidity, profitability and solvency position of the company were highly satisfactory financial performance. The study also recommended reducing the creditors and other short term loans to the maximum possible extent so as to help keep a good amount of liquidity in the future periods.

3. Research gap:

On the basis of the above literatures, it is found that earlier literature did not focused on detail liquidity analysis (aggregate as well as component wise) of Indian FMCG companies and also liquidity and profitability relationship is a controversial issue; it is difficult to generalize the results because each industry has its own rules and regulations. In this context, it makes sense to look at how liquidity affect on profitability of selected Indian FMCG companies.

4. Objectives:

On the basis of the above research gaps the following objectives are set up:

- i) To analyze the liquidity position of some selected companies.
- ii) To examine the relationship of different components of liquidity of the selected companies during the study period.
- iii) To examine the relationship between liquidity and profitability of some selected FMCG companies.

5. Hypothesis:

The following hypotheses have been formulated to find out the relationship between the attitudes towards

- i) **H₀**: No association of various components of liquidity of selected FMCG companies

during the study period.

H1: There is association of various components of liquidity of selected FMCG companies during the study period.

ii) Ho: There is no relationship between liquidity and profitability of selected FMCG companies during the study period.

H1: There is relationship between liquidity and profitability of selected FMCG companies during the study period.

6. Database and Methodology:

Sources of data:

The study is mainly based on secondary data. Data are collected from the published annual reports of the selected companies and Ace Equity database.

Sample Design:

There are 20 FMCG companies selected from listed in NSE and BSE (Appendix 1). I have taken top 10 profit making companies and bottom 10 loss making companies of which data are available from published report. The companies are selected on the basis of their last (2000-2014) fifteen years average net profit.

Period of the study:

The study have been covered a period of fifteen years, 1999-2000 to 2013-2014.

Methodology:

In data analysis I have used relative measurement tool i.e. ratio analysis. In Liquidity analysis, Current Ratio (CR), Quick Ratio (QR) and Cash Conversion Cycle (CCC) have been considered. The Natural Logarithm of Sales (LOS) represents the Market Size of the firm. Profitability has been analyzed with the help of Return On Assets (ROA) and Return on Investment (ROI). The basic difference between ROA and ROI lies on the treatment of denominator against which EBIT ratio is calculated. In ROA denominator is total assets, whereas in ROI denominator is total assets excluding current liabilities i.e. in ROI return percentage is calculated on long term assets employed. ROA measures the efficiency with which the company is managing its investment in assets and using them to generate profit. ROI shows whether the amount of capital employed has been effectively used or not. It is an index to the operational efficiency of the business as well as an indicator of profitability.

Current ratio (CR):

Current Ratio is the relation of the amount of current assets to the amount of current liabilities.

It is the indicator of short term liquidity position of a firm and it measures the margin of safety of current assets over current liabilities. It is calculated using the formula

$$\text{Current ratio (CR)} = \text{Current Assets} / \text{Current Liabilities}$$

Liquid Ratio (LR):

The liquid ratio is the relationship between liquid assets and liquid liabilities. Liquid assets are current assets less stock and prepaid expenses. Liquid liabilities are current liabilities less bank overdraft. It is calculated using the formula

$$\text{Liquid Ratio (LR)} = \text{liquid assets} / \text{liquid liabilities}$$

Cash conversion cycle (CCC):

Cash conversion cycle is the length of time between the firm's actual cash expenditure and its own cash received. It is computed by adding inventory holding period and receivable collection period and subtracting Accounts payable period.

It is calculated using the formula

$$\text{Cash conversion cycle (CCC)} = \text{Receivable collection period} + \text{Inventory conversion period} - \text{Accounts payable period}$$

Return on total assets (ROA):

It is the relationship between earnings before interest and taxes and Total assets. It is an important profitability ratio. It is calculated using the formula

$$\text{Return on total assets (ROA)} = \text{EBIT} / \text{Total Assets}$$

Return on investment (ROI):

It is the relationship between Earnings before interest and taxes and capital employed. Capital employed is defined as total assets minus current liabilities.

It is calculated using the formula

$$\text{Return on investment (ROI)} = \text{EBIT} / \text{Capital Employed}$$

Trend growth rate analysis:

The trend equations are used to estimate the growth rates of different variable. The growth rates are expressed in percentage. The growth rate of different different variable have been estimated for the period 1999-2000 to 2013-14, from the estimated coefficient of the straight line trend equation $Y_t = a + b.t$

Where, Y_t = the variable whose over time growth is measured; t = time variable; a= intercept; b =coefficient of the time variable which measures the annual trend growth rate;

The growth rates of variables = b/\bar{y}

Where, \bar{y} = the average of the value of dependent variable;

MOTAAL's test which is measured by Working Capital to Current Asset Ratio, Stock to Current Asset Ratio and Liquid Resources to Current Asset Ratio on liquidity position judgment of the selected companies has been done. Kendall's coefficient of concordance (W) is computed to determine the degree of uniformity among the three sets of rankings and Chi-square test has been applied for testing the significance of such coefficient.

To check the presence of multicollinearity, construct a correlation matrix where, both the dependent variable and the independent variable are included. Pearson correlation coefficients for the variables are used to assess the relation between liquidity and profitability.

Panel data analysis:

The relation between liquidity and profitability of FMCG companies is tested by panel data methodology. There are 20 FMCG companies selected from listed in NSE and BSE for the period of 15 years starting from the financial year 1999-2000 to 2013-14. The data for each company over the period 1999-2000 to 2013-14 constitute time series data, with 15 observations; data for all 20 companies for a given year is a panel data with a total of 300 observations. In our study the panel data are balanced. In panel data estimation three models namely the Pooled OLS regression model, Fixed effects model (FEM) and Random effect model (REM) are estimated for each analysis. In Pooled OLS regression model, neglect the cross section and time series nature of data. FEM allows for heterogeneity or individuality among 20 companies by allowing its own intercept value and in REM have a common mean value for the intercept. The choice amongst the three model three statistical test, viz, the Restricted F Test, Breusch-Pagan Lagrange Multiplier Test and Hausman Test are carried out. The Restricted F Test is applied to make a choice between Pooled OLS regression model and FEM. On the other hand, Breusch-Pagan Lagrange Multiplier Test is applied to make a choice between Pooled OLS regression model and REM. The test is based on the null hypothesis that Pooled OLS regression model is appropriate. Rejection of null hypothesis suggests that there are random effects in the relationship. The Hausman Test (1978) is applied to make choice between the FEM and REM the test is based on the null hypothesis that REM is appropriate. If probability of Chi² is significant then use FEM. If probability of Chi² is insignificant I use REM. Robust standard error is used to remove the problem of heteroskedasticity in the models.

7. Findings:

In order to study the effect of liquidity on profitability of FMCG companies, I have calculated the liquidity ratio, profitability ratio and other related ratios which are depicted in the following

Table 1: Descriptive statistics of selected FMCG companies

Year	Liquidity Ratio						Profitability Ratio		Market size
	Current Ratio	Quick Ratio	Cash Conversion Cycle	Working Capital to Current Assets	Inventories to Current Assets	Quick Assets to Current Assets	ROI	ROA	LOS
2000	3.35	2.07	-12	0.51	0.37	0.63	20.40	14.37	7.19
2001	3.86	2.24	26	0.49	0.38	0.62	18.17	11.96	7.26
2002	3.19	2.01	13	0.49	0.35	0.65	24.35	16.53	7.32
2003	3.06	1.77	378	0.49	0.37	0.63	23.07	14.98	7.35
2004	3.38	2.07	173	0.49	0.34	0.66	26.17	14.71	7.39
2005	2.74	1.74	38	0.43	0.35	0.65	31.13	18.06	7.46
2006	3.15	2.22	-66	0.43	0.32	0.68	36.28	21.16	7.60
2007	2.61	1.79	-47	0.42	0.34	0.66	39.29	20.34	7.75
2008	2.96	1.90	-26	0.44	0.36	0.64	55.19	20.92	7.88
2009	2.90	1.84	-10	0.47	0.37	0.63	47.62	17.59	8.07
2010	2.72	1.71	-20	0.45	0.35	0.65	44.23	17.80	8.11
2011	1.61	1.15	-9	0.14	0.39	0.61	36.32	17.22	8.27
2012	1.68	1.22	7	0.14	0.36	0.64	30.57	18.11	8.41
2013	1.49	1.09	46	-0.26	0.36	0.64	36.95	17.13	8.56
2014	1.52	1.11	-53	-0.37	0.36	0.64	32.85	19.21	8.66
MAX	3.86	2.24	378	0.51	0.39	0.68	55.19	21.16	8.66
MIN	1.49	1.09	-66	-0.37	0.32	0.61	18.17	11.96	7.19
AVG	2.68	1.73	29	0.32	0.36	0.64	33.51	17.34	7.82
SD	0.76	0.40	112	0.28	0.02	0.02	10.40	2.57	0.50
Coeff. of var. (CV)	28.20	23.22	383	88.98	4.83	2.69	31.04	14.80	6.39
Trend Growth (%)	-5.63	-4.40	-29.12	-15.61	0.06	-0.03	4.16	1.85	11.01

Source: Computed by the author

table:

From the above table it is found that the average current ratio of the selected FMCG Companies is 2.68, which is more than the FMCG industry average i.e. 1.87; implies a satisfactory liquidity position of the companies during the study period and CV percentage is 28.20. The negative growth ratio i.e. -5.63 % indicates that the liquidity position of the companies have been degraded over the years.

The average quick ratio of the selected FMCG Company is 1.73 which is more than the FMCG industry average i.e. 1.26; implies a satisfactory liquidity position of the companies during the study period. The CV percentage is 23.22. The negative growth ratio i.e. -4.40 %

indicates that the liquidity position of the companies have been degraded over the years.

CCC is used as a comprehensive measure of liquidity and is measured by adding receivable collection period and inventory conversion period and then subtracting accounts payable period. It measures how fast a company convert cash in hand into more cash in hand. A shorter CCC is favorable and it is entirely possible to have a negative CCC. It indicates that the company manages its working capital so well that it is, on average, able to purchase inventory, sell inventory and collect the resulting receivable before the corresponding payable for the inventory becomes due. During the study period the average Cash Conversion Cycle of selected companies is 29 days. The standard deviation is 112 and the coefficient of variation percentage is 383, an indication of instability in Cash Conversion Cycle of the company. The negative growth ratio i.e. -29.12 %, indicates the later year the companies manage their cash flow efficiently.

To find out the overall liquidity position of the selected FMCG companies by applying Motaal's Comprehensive Test of Liquidity, it is found that the average working capital to current assets is 0.32 during the study period. Moreover, a higher CV percentage i.e. 88.98 is an indication of instability in the liquidity position of the company. The negative growth rate i.e. - 15.61% indicates that the growth rate of current liabilities is more as compared to the growth rate of current assets and hence the working capital is decreasing slowly and slowly. This aggressive approach in the working capital might be the policy of the companies to enhance the profitability but no doubt it endangers the liquidity position.

The average inventory to current assets is 0.36 during the study period and CV percentage is 4.83. The positive growth ratio i.e. 0.06 % can be treated as bad sign for the companies yet the rate is very low.

The average quick asset to current ratio is 0.64 during the study period and CV percentage is 2.69. It has also negative growth of -0.03 % which indicates that liquid assets have also deteriorated subsequently during the study period, but it is very low.

After analyzing all aspects of liquidity it can be said that the overall liquidity position of the selected FMCG companies are good, but the companies should take steps to decrease the cash conversion cycle.

The profitability of the selected FMCG companies is measured by Return on Assets and Return on Investment. The average Return on Investment (ROI) of the selected FMCG Company is 33.51% during the study period and CV percentage is 31.04. The positive growth ratio i.e. 4.16 % indicates that the profitability of the companies have been increased over the years.

The average Return on assets (ROA) of the selected FMCG Company is 17.34% during the

study period and CV percentage is 14.8. The positive growth ratio i.e. 1.85 % indicates that the profitability of the companies have been increased over the years.

The Market Size is measure by Natural Logarithm of Sale (LOS). A greater volume is more favourable. The average LOS is 7.82 during the study period and CV percentage is 6.39. The positive growth ratio 11.01 % indicates that the overall sales of the companies have been increased over the years.

Motaal's comprehensive liquidity test:

Motaal prescribes a comprehensive test for determining the soundness of a firm as regards liquidity position. According to him, a process of ranking is used to arrive at a more comprehensive measure of liquidity in which the following three ratios are combined in a point score:

- i) Working Capital to Current Asset Ratio
- ii) Inventories to Current Asset Ratio
- iii) Liquid Resources to Current Asset Ratio

The higher the value of both working capitals to current asset ratio and liquid resources to current asset ratio, relatively the more favorable will be the liquidity position of a firm and vice-versa. On the other hand, lower the value of stock to current assets ratio, relatively the more favorable will be the liquidity position of the firm. The ranking of the above three ratios

Table 2: Motaal's Comprehensive Test of Liquidity

Year	Working Capital to Current Assets (1)	Inventories to Current Assets (2)	Quick Assets to current assets (3)	Rank of(1)	Rank of(2)	Rank of(3)	Total Rank	Ultimate Rank
2000	0.511	0.367	0.633	1	12	12	25	8.0
2001	0.494	0.384	0.616	2	14	14	30	11.5
2002	0.493	0.354	0.646	3	6	6	15	3.0
2003	0.488	0.366	0.634	5	11	11	27	9.0
2004	0.492	0.336	0.664	4	2	2	8	1.0
2005	0.433	0.348	0.652	9	4	4	17	5.0
2006	0.432	0.322	0.678	10	1	1	12	2.0
2007	0.415	0.339	0.661	11	3	3	17	5.0
2008	0.437	0.357	0.643	8	8	8	24	7.0
2009	0.468	0.374	0.626	6	13	13	32	13.0
2010	0.449	0.353	0.647	7	5	5	17	5.0
2011	0.138	0.385	0.615	13	15	15	43	15.0
2012	0.145	0.363	0.637	12	9	9	30	11.5
2013	-0.260	0.365	0.635	14	10	10	34	14.0
2014	-0.370	0.355	0.645	15	7	7	29	10.0

Kendall coefficient of concordance among three sets of liquidity rank (W) is 0.50 and Chi-square value of W is 21 being significant at 10% level.

Source: Computed by the author

of a firm over a period of time is done in their order of preferences. Finally, the ultimate ranking is done on the basis of the principle that the lower the points score, the more favorable will be the liquidity position and vice-versa.

Kendall's coefficient of concordance (W) is computed to determine the degree of uniformity among the three sets of rankings and Chi-square test has been applied for testing the significance of such coefficient. Table shows that the computed value of W, which is 0.50, is found to be statistically significant at 10% level. It indicates that there is a close as well as significant association among the selected indicators of liquidity performance of the FMCG Companies during the study period. The table discloses that the year 2004 is recorded the most sound liquidity position of the selected FMCG companies, is followed by 2006, 2002, 2005, 2007, 2010, 2008, 2000, 2003, 2014, 2001, 2012, 2009, 2013 and 2011 respectively in that order. It indicates that the overall liquidity of FMCG companies in the first half of the study period is better than the second half.

Correlation Analysis:

Table 3: Pearson Correlation coefficients between variables of selected 20 FMCG companies

	ROA	ROI	CR	INCA	CCC	OS
ROA	1.0000 300					
ROI	0.9533 300	1.0000 300				
CR	-0.4453 300	0.5706 300	1.0000 300			
INCA	-0.1088 300	-0.1519 300	-0.0271 300	1.0000 300		
CCC	-0.6844 300	-0.7071 300	0.4486 300	0.2986 300	1.0000 300	
OS	0.8074 300	0.7804 300	-0.4914 300	0.0930 300	-0.6333 300	1.0000 300

Source: Computed by the author

Pearson correlation coefficients for the variables are used to assess the relation between liquidity and profitability. Profitability is measured by Return on assets (ROA) and Return on investments (ROI).

From the table it is found that ROA and ROI are significantly negatively related to current ratio (CR), inventory to current assets (INCA) and cash conversion cycle (CCC). The negative relationship between profitability and CR indicates that the greater investment in current assets than current liabilities, decrease the profitability. The negative relationship between profitability and INCA indicates greater investments in stock decrease the profitability. The negative relationship between profitability and CCC is consistent that time lag between the expenditure for the purchases raw materials and the collection of sales of finished goods can be too short that increase the profitability. ROA and ROI are significantly positively related to size of the firm (LOS), is measured by natural logarithm of sales. It implies that the larger firms report higher profits compared to smaller firms.

Regression Analysis:

In order to select the appropriate model Pooled OLS regression model, fixed effects model (FEM) and Random effect model (REM) are carried out. It is found that test statistics in Restricted F Test, Breusch-Pagan Lagrange Multiplier Test are statistically significant, whereas Hausman Test is not statistically significant both these two models. Hence the regression results of the REM are used for statistical inference and further analysis of the individual coefficients both these two models. Because in my study n i.e. 20 FMCG companies is large and t i.e. 15 years is small so, REM estimators are more efficient than FEM. A scrutiny of VIF shows that the estimated model does not suffer from severe multi-collinearity problem. Robust standard error is used to remove the problem of heteroskedasticity in the models.

Random Effect Model (REM):

In REM the (Common) intercept represents the mean value of all the (cross sectional) intercepts and the error component represents the (Random) deviation of individual intercept from this mean value.

$$ROA_{it} = \beta_1 + \beta_2 CR_{it} + \beta_3 INCA_{it} + \beta_4 CCC_{it} + \beta_5 LOS_{it} + \dots_i + u_{it} \quad [\text{model 1}]$$

$$ROI_{it} = \beta_1 + \beta_2 CR_{it} + \beta_3 INCA_{it} + \beta_4 CCC_{it} + \beta_5 LOS_{it} + \dots_i + u_{it} \quad [\text{model 2}]$$

Where, $i = 1, 2, \dots, 20$ FMCG companies; $t = 1, 2, \dots, 15$ years;

..... = the cross section or individual specific error component

u_{it} = the combined time series and cross section error component.

Table 4: Regression Results of the effect of liquidity on Return on Assets under Random effect model

Regression Results of the effect of liquidity on Return on Assets			Regression Results of the effect of liquidity on Return on Investment		
Variable	Coefficient	z-Stat	Variable	Coefficient	z-Stat
Intercept	-1.17299	-0.15	Intercept	-14.39174	-0.87
CR	-0.42255	-1.44	CR	-2.41771	-3.11*
INCA	-7.53629	-0.9	INCA	-2.17756	-0.09
CCC	-0.00192	-4.05*	CCC	-0.00114	-1.35
LOS	3.72433	2.74*	LOS	9.13126	3.44*
Wald χ^2	116.81*		Wald χ^2	114.46*	
R ² -Within	0.1048		R ² -Within	0.0405	
R ² -Between	0.5296		R ² -Between	0.5714	
R ² -Overall	0.4392		R ² -Overall	0.3409	
No. of Obs.	300		No. of Obs.	300	

Note: * 1% Significance level;

Source: Computed by the author

In Random effect model, the individual error components are not correlated with each other and are not auto correlated across both cross section and time series unit. η_i and u_{it} are not correlated with any of the explanatory variables.

The effect of liquidity on Return on assets (ROA):

$$ROA_{it} = (-1.17299) + (-0.42255) CR_{it} + (-7.53629) INCA_{it} + (-0.00192)^* CCC_{it} + (3.72433)^* LOS_{it} + \eta_i + u_{it}$$

The study is observed that when return on assets (ROA) is used as the dependent variable, the Z statics of the variable, current ratio (CR) and inventory to current assets (INCA) are negatively but not significant effect under random effect model. It implies that return on assets do not differ significantly across the selected FMCG companies depending on their current ratio and inventory to current ratio. The variable, cash conversion cycle (CCC) has negatively and statistically significant on return on assets. This means that the profitability is negatively and statistically significantly influenced by the cash conversion cycle. The time lag between the expenditure for the purchases raw materials and the collection of sales of finished goods can

be too short that increase the profitability. The variable, size (LOS) has positively and statistically significant on return on assets. This means that the profitability is positively and statistically significantly influenced by the volume of sales.

The effect of liquidity on Return on investment (ROI):

$$ROI_{it} = (-14.39174) + (-2.41771) * CR_{it} + (-2.17756) INCA_{it} + (-0.00114) CCC_{it} + (9.13126) * LOS_{it} + \epsilon_{it} + u_{it}$$

The study is observed that when return on investment (ROA) is used as the dependent variable, the Z statics of the variable, inventory to current assets (INCA) and cash conversion cycle (CCC) are negatively but not significant effect under random effect model, which implies decreasing the cash conversion cycle and inventory will generate more profit for the firm. It implies that return on assets do not differ significantly across the selected FMCG companies depending on their inventory to current ratio and cash conversion cycle. The variable, current ratio (CR) has negatively and statistically significant on return on assets. This means that the profitability is negatively and statistically significantly influenced by the current ratio. This means that if current assets are increased than profitability is decreased. The variable, Market size (LOS) has positively and statistically significant on return on assets. Market Size is positive highly significant with profitability, which implies that larger Market Sizes seem to favor the profitability, therefore larger firms more profitable.

8. Conclusion:

The present study is an attempt to examine the effect of liquidity on profitability in selected FMCG companies. The liquidity positions of the companies are measured by current ratio, quick ratio and cash conversion cycle and also applying Motaal's Comprehensive Test of Liquidity which is measured by Working Capital to Current Asset Ratio, Stock to Current Asset Ratio and Liquid Resources to Current Asset Ratio. The profitability of the companies is measured by Return on assets and Return on investment and the market size measured by Natural logarithm of sales. From the study it is found that the average current and quick ratio of the selected FMCG Company is more than the FMCG industry average indicates a satisfactory liquidity position of the companies during the study period and they have been degraded over the years. The later year the companies manage their cash flow efficiently. The companies follow aggressive approach in case of working capital and the investments in inventory are increasing. The investment in inventory should be decreased. The profitability and the overall sales of the companies have been increased over the years.

Motaal' Comprehensive Test of Liquidity is applying to find out the overall liquidity position of the selected FMCG companies. The study indicates that there is a close as well as significant association among the selected indicators of liquidity performance and the year 2004 recorded the most sound liquidity position of the selected FMCG companies during the study period

and also shows that the overall liquidity of selected FMCG companies in the first half of the study period is better than the second half.

Pearson correlation coefficients for the variables are used to assess the relation between liquidity and profitability. From the study it is found that ROA and ROI are significantly negatively related to current ratio (CR), inventory to current assets (INCA) and cash conversion cycle (CCC) and positively related to size of the firm (LOS).

The present paper uses two alternative models for measuring the profitability viz. Return on Assets (ROA) and Return on Investment (ROI). The study has been covered a period of fifteen years starting from the financial year 1999-2000 to 2013-2014. In this study balanced panel data consist of 300 observations for 20 companies for fifteen year. The study shows that when Return on Assets is used as independent variable, the fluctuation in profitability is negatively and statistically significant by current ratio. This means that if current assets are increased than profitability is decreased. But when Return on Investment is used, the variation of profitability does not differ significantly across the companies depending on current ratio. The inventory to current assets under Return on Assets as well as under Return on Investment has a negative but not statistically significant impact on fluctuation in profitability. It implies that variation in profitability do not differ significantly across the companies depending on their inventory to current assets. When Return on Investment is used as independent variable; the fluctuation in profitability is negatively and statistically significant by cash conversion cycle. This means that if cash conversion cycle is decreased than profitability is increased. But when Return on assets is used, the variation of profitability does not differ significantly across the companies depending on cash conversion cycle. The variable, Market size has positively and statistically significant on Return on assets and Return on Investment. Market Size is positive highly significant with profitability, which implies that larger Market Sizes seem to favor the profitability, therefore larger firms more profitable.

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Liquidity and Its Effect on Profitability is Selected Fast Moving...

Appendix 1: List of Selected FMCG companies

Profitmaking companies	Lossmaking companies
Britania Industry Ltd	Agro Dutch Industries Ltd
Colgate – Palmolive (India) Ltd	Golden Tobacco Ltd
Dabur India Ltd	Gopala Polyplast Ltd
Emami Ltd	Indian Extractions Ltd
Hindustan Unilever Ltd	Modern Dairies Ltd
ITC Ltd	Mount Everest Mineral Water Ltd
Marico Ltd	Murli Industries Ltd
Nestle India Ltd	Phoenix International Ltd
Procter & Gamble Hygiene Health Care Ltd	Venlon Enterprises Ltd
Reckitt Benckiser (India) Ltd	Yashraj Containers Ltd.