

## EFFECT OF WORKING CAPITAL MANAGEMENT POLICY ON FMCG FIRMS' PROFITABILITY

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**Abstract:** In today's compelling environment business houses encounter ever proliferating strain on costs and burgeoning financing needs, due to heightened competition in globalised world. Firms are pressing hard and deliberating measures of making themselves more competent. For this reason it is not copious to focus absolutely on the gains and losses or incomes and expenses items, it is equally important to consider balance sheet items also. The study evaluates the impact of working capital management on FMCG firm's profitability in India for the period 2007-2016. For the said purpose the study has taken into account balanced panel data of 48 FMCG firms Listed on BSE -500 (based on market capitalization). The results of the study point towards the fact that most of the variables significantly modify the profitability of FMCG firms. The FMCG firms are in general facing issues with their payment and collection practices. The other control variables used on the study also significantly influence profitability.

**Keywords:** Working Capital, Fast Moving Consumer Goods (FMCG), Inventory Conversion Period, Receivables Collection Period, Payment Deferral Period, Cash Conversion Cycle.

**Introduction:** Indian FMCG firms are expected to double to \$104 billion by 2020 from the present level of \$49 billion, due to enduring economic growth, increasing share of organized retail, growing consumer awareness, easier access, favourable demographic conditions, and rise in disposable incomes along with changing lifestyles. Furthermore, measures including Goods & Services Tax bill, Food Security bill and increased FDI are likely to have decisive influence on the FMCG industry. The sector is expected to grow at a compounded annual growth rate (CAGR) of 20.6 per cent by 2020.

Optimising working capital results in a prompt release of liquid resources and contributes to an improvement in free cash flow and to a permanent reduction in inventory and capital costs. On the operational side, the working capital is predominantly influenced through the administration of three core areas; namely, Inventory, payables and receivables. These are the areas through which firms can control working capital without depending on external sources of financing.

**Review of Literature and Derivation of hypothesis:** Many studies have been conducted earlier to comprehend the association between working capital and profitability of a firm. The purpose of this review is to throw light on literature relating to the working capital management. The studies relating to working capital and its impact on profitability (Jose et al. 1996; Shin and Soenen 1998; Wang 2002; Deloof 2003; Garcia-Teruel and Martinez-Solano 2007; among others) have analyzed linear relationship between the two. Furthermore, a scrutiny of 1009 Belgian firms for a period of 1992-1996 by Deloof (2003) revealed that there is a significant impact on the profitability due to working capital and also the gross operating profit

had significant negative relation with the number of days in receivables, inventories and payables. The findings were accordant to those of Shin and Soenen (1998) who also detected a strong negative relationship between the cash conversion cycle and the profitability of Listed American firms for 1975-1994 periods. In like manner, the study conducted on non-financial firms in USA for the period of 19 years (1975-1994) by Filbeck and Krueger brought out the fact that firms were profitable if they effectively managed their receivables, inventory and payables.

Lazaridis and Tryfonidis (2006), cross-sectional study on the listed firms of the Athens Stock exchange covering a period of 5 years (2001-04) ascertained that there existed a statistically significant relationship between profitability and working capital components. They observed that all things considered, profitability was negatively affected with increase in the payment deferral period. Furthermore, Lazaridis and Lyroudi (2000) have highlighted in their study a positive association among the return on assets a measure of profitability and cash conversion efficiency in a sample of 82 listed companies on Greek stock exchange. Raheman & Nasr (2007) observed, existence of negative relationship between the profitability and deployment of working capital in listed Pakistani firms on Karachi stock exchange for a period of 5 years (1999-2004), in the same way, firms' performance was significantly affected by the inventory turnover, net trade cycle and cash conversion cycle as diagnosed by the study conducted by Raheman & Nasr (2007) of a sample of 204 manufacturing firms of Karachi stock exchange covering a period of 10 years (1998-2007).

In like manner, study of Afza & Nazir (2009), using regression technique on firms listed in Karachi stock

exchange for a period of 8 years (1998-2005) signaled towards existence of negative association between profitability and amount invested in working capital. Likewise, using Multiple regression analysis, on a sample of manufacturing firms listed on Istanbul stock exchange covering a period of 10 years (1998-2007), observed the firms profitability if higher is lower accounts receivable cycle and inventory conversion period is maintained by them. A similar study by **Sen and Oruc (2009)**, led to a conclusion that the relationship with profitability of companies listed on Istanbul stock exchange over a period of 15 years (1993-2007) and the working capital management pointed towards aggressive working capital leading to increased profitability. The situation of aggressive working capital was sustained by shortening the cash conversion period and lower it current ratio.

Closer scrutiny of the available literature leads to a comprehensive view that shortening cash conversion period lead to increased profitability. Hence, it makes it pertinent and intriguing to explore the nature of working capital management and profitability of 48 Indian FMCG firms listed on Bombay stock exchange (BSE 500) covering a period of 10 years (2007-2016).

#### **Derivation of Hypothesis:**

##### **Hypothesis 1:**

**(H<sub>0</sub>):** There is no significant relationship between the components of working capital and profitability.

**(H<sub>1</sub>):** There is a significant relationship between the components of working Capital and profitability.

**Hypothesis 2: (H<sub>0</sub>):** There is no significant influence of working capital on profitability. **(H<sub>1</sub>):** There is a significant influence of working capital on profitability.

##### **Objectives of the Study:**

1. To understand the relationship between different components of working capital and profitability.
2. To study the impact of components of working capital on firm's profitability.

**Research Methodology:** The companies included in the sample, the variables used and the statistical techniques applied in the study are discussed in this section.

**Data Set And Sample:** The scope of the study is limited to 48 Indian FMCG firms comprising the BSE-500 index in the Bombay stock exchange as on 31<sup>st</sup> March 2016, these companies are studied over a 10 year period. (2007-2016). the resources for the data were consolidated balance sheet and profit and loss accounts of the 48 Indian FMCG firms. The data was extracted from Capitaline Database for 2007-2016 and manually entered and analysed in Microsoft Excel, SPSS and Eviews7 software. The final sample

comprised of a total of 480 firm-year observations, which considered data from 48 firms over a period of 10 years. The primary objective of this study was to understand the association between working capital and firm profitability of Indian FMCG sector. The data analysis was done using the Software's like SPSS 21 and Eviews7.

**Variables Used In The Analysis:** In line with the objective to understand the influence of working capital on the profitability of Indian FMCG firms, below mentioned are the dependent, independent and control variables. The dependent variable is **Return on Assets (ROA)**. Return on Assets is a determinant-indicator of how profitable a company is relative to its total assets. Following are the independent variables, **Average collection period (ACP)**, Average collection period refers to the time taken to collect cash from its customer, **Inventory collection period (ICP)**, Inventory collection period refers to time taken to convert inventory into sales. Relevant data was also available on Raw-Material Conversion Period (**RMCP**), Work-in-Progress Conversion period (**WIPCP**) & finished goods conversion period (**FGCP**). Therefore, in this study Inventory Conversion period (ICP) is further categorized into RMCP, WIPCP & FGCP. **Average payment period (APP)** Average payment period is the time taken to pay the firm's suppliers. **Cash conversion cycle (CCC)**, Cash conversion cycle is used as a comprehensive measure of working capital as it shows the time-lag between the payment for the purchase of raw material and the collection of sales of finished goods.

The Studies of Eljelly (2004), Deloof and Jeggers (1996), Deloof (2003), Shin and Soenen (1998) Lazaridis and Tryfonidis (2006) have advocated the categorization of Cash Conversion Cycle into RCP ICP and PDP. Apart from these variables, the size of the firm, the growth in its sales, firm leverage (DR) and current ratio and quick ratio are introduced as control variables. Current ratio (CR) and Quick ratio (QR) which is a traditional measure of liquidity is calculated by dividing current assets by current liabilities and liquid assets by current liabilities respectively. In addition, Size (Natural logarithm of total assets), leverage is used as a proxy variable for Debt ratio (DR), and is calculated by total liabilities by total assets. Sales growth is also used as a control variable and it is calculated by  $S_t/S_{t-1}$ , where  $S_t$  is the current year sale and  $S_{t-1}$  is the previous sales of the firm. All the above mentioned variables have relationships that ultimately impact of working capital on profitability of the Indian FMCG firms.

Table 1: Variables and their Notations			
I. No.	Ratio/ Variable	Explanation	Formula
1	ROA	Return on assets	Net profit/total assets
2	NOP	Net operating profits	EBIT /Net Sales
3	GOP	Gross operating profits	Net profit/Net sales
4	RCP	Receivables conversion period	Average receivables * 365/sales turnover
5	RMCP	Raw material conversion period	Average raw materials * 365/raw materials consumed
6	WIPCP	Work in progress conversion period	Average work-in-progress * 365/total cost of production
7	FGCP	Finished goods conversion period	Average stock of finished goods * 365/total cost of goods sold
8	ICP	Inventory conversion period	Average inventories * 365/COGS
9	PDP	Payment deferral period	Average payables * 365/COGS
10	CCC	Cash conversion cycle	ICP+RCP-PDP
11	SG <sub>t</sub>	Sales growth	(Sales <sub>t</sub> /Sales <sub>t-1</sub> ) - 1
12	FIRM SIZE	Size of firm represented by sales	ln(Sales turnover)
13	CR	Current ratio	Total current assets/total current liabilities
14	QR	Quick ratio	Total current assets - inventories/total current liabilities
15	DR	Debt Ratio	Total Debt/Total Assets

**Model Specification:** The principle endeavour of this study is to explore the impact of working capital management on 48 selected FMCG firm’s profitability. In order to pursue the same an empirical investigation followed by Gul et. al. (2013), Deloof (2003), Mathuva (2009), Shin and Soenen (1998), Sen and Oruc (2009), Lazaridis and Tryfonidis (2006), and Padachi (2006) was taken into account and implemented in five models mentioned below.

The study uses panel data regression analysis of cross-sectional and time series data and has also used the pooled regression type of panel data analysis. The pooled regression, also called the constant coefficient model is one where both intercepts and slopes are constant, where the cross section firm data and time series data are pooled together in a single column assuming that there is no significant cross section.

**MODEL 1:**  $ROA_{it} = \beta_0 + \beta_1 ICP_{it} + \beta_2 DR_{it} + \beta_3 CR_{it} + \beta_4 QR_{it} + \beta_5 SGT + \beta_6 LN SALESTURNOVER_{it} + \epsilon_{it}$   
**MODEL 2:**  $ROA_{it} = \beta_0 + \beta_1 RCP_{it} + \beta_2 DR_{it} + \beta_3 CR_{it} + \beta_4 QR_{it} + \beta_5 SGT + \beta_6 LN SALESTURNOVER_{it} + \epsilon_{it}$   
**MODEL 3:**  $ROA_{it} = \beta_0 + \beta_1 PDP_{it} + \beta_2 DR_{it} + \beta_3 CR_{it} + \beta_4 QR_{it} + \beta_5 SGT + \beta_6 LN SALESTURNOVER_{it} + \epsilon_{it}$   
**MODEL 4:**  $ROA_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 DR_{it} + \beta_3 CR_{it} + \beta_4 QR_{it} + \beta_5 SGT + \beta_6 LN SALESTURNOVER_{it} + \epsilon_{it}$   
**MODEL 5:**  $ROA_{it} = \beta_0 + \beta_1 ICP_{it} + \beta_2 RCP_{it} + \beta_3 PDP_{it} + \beta_4 DR_{it} + \beta_5 CR_{it} + \beta_6 QR_{it} + \beta_7 SGT + \beta_8 LN SALES TURNOVER_{it} + \epsilon_{it}$

**Where:**

ROA<sub>it</sub> = return on assets of firm i at time t,  
 β = intercept of the model  
 i = it represent total number of companies i.e. i = 1, 2, 3,...N  
 t = the period of the study i.e. t = 1, 2, 3...T  
 CR<sub>it</sub> = firm current ratio at time t  
 SG<sub>t</sub> = annual percentage increase in sales,  
 Ln (SALESTURNOVER)<sub>it</sub> = size of the company at time t,  
 RCP<sub>it</sub> = average collection period/ number of days accounts receivable,

ICP<sub>it</sub> = number of days inventory receivable,  
 PDP<sub>it</sub> = average payment period/number of days accounts payable,  
 CCC<sub>it</sub> = cash conversion cycle of company i at period t,  
 ε<sub>it</sub> = the disturbance term

**Empirical analysis: Test for Normality:** For testing normality of a series of data, the most commonly used normality tests are Shapiro-wilks’ test and Lilliefors test, of which, Shapiro-Wilks’ test has proved to be the better one in several statistical situations and is thus considered to be the most

compatible one for smaller samples Norusis (1993). The table 2 reveals that as per Shapiro Wilks' test, all variables are statistically significant at 5% level. Therefore, in the present situation the Null hypothesis (Data are not normally distributed) is eliminated as  $p$  value  $< 5\%$ .

**Results Of Hausman Test, Collinearity Diagnostics And Durbin Watson Statistics (Table 3):** To select appropriate fixed or random model Hausman test is used. The null hypothesis is random effect model is appropriate and the alternative hypothesis is fixed effect model is appropriate. If the  $p$ -value is below the alpha of 0.05, accept the alternative hypothesis and reject the null hypothesis. In this case Fixed Effect model is appropriate.

The guideline to check the presence of multicollinearity in the model is that, the value of Variance Inflation Factor (VIF) has to be more than 10 and tolerance value should be less than (0.2). In the table below, almost all the models have VIF less than 10 and tolerance value more than (0.2). It is clearly seen that there is no presence of multicollinearity in the estimated models. The Durbin Watsons statistics value was found to be 1.2348 in model 5; this was highest among the five models. The value of Durbin Watson ranges from 0 to 4 with an ideal value of 2 indicating that errors are not correlated. Furthermore, Durbin Watson value between 1.5 and 2.5 are acceptable level indicating no presence of collinearity (Makridakis & Wheelwright, 1978).

**Test For Heteroskedasticity Using Breusch Pagan And Koenkar Test:** In table 5 both Breusch pagan and Koenkar  $p$ -value is more than 0.05 which indicates that the null hypothesis can be accepted. The null hypothesis states that there is homoscedasticity which can be accepted because the  $p$ -value is more than 0.05. Descriptive and quantitative analysis is used in this research.

**Data Analysis And Discussion: Descriptive Statistics:** Descriptive analysis shows the minimum, maximum, average and standard deviation of the different variables in the study.

In order to understand the different aspects of working capital management a descriptive analysis is conducted. Table 6 reports the Mean, Standard Deviation, the Minimum and the Maximum Values of the variables in the study. The period of study ranges from 2007-2016 and for a total 480 firm-year observations. As mentioned earlier, the Return on assets variable represents the measure of profitability. The Average Value of Return on assets is 19%. For the sample used for study, the value of profit can deviate from its average by 25%. positive as well as negative profitability. Thus, it seems interesting to understand whether the positive and negative profits is due to industry specific or firm-specific characteristics or can be explained by the sound working capital

management practices. The cash conversion cycle is the most complete measure of working capital management; because it quantifies the time invested capital is tied up in business operations. This is measure of liquidity and risk that includes growth.

Taking into consideration cash conversion cycle, sometimes it appears to be positive and sometimes negative (the minimum CCC is -248 days and the maximum is 419 days). Firms in order to be efficient and profitable should maintain low levels of cash conversion cycle and preferably a negative one. This is possible if firms insist on shorter receivables period without disappointing the customers and longer payment period without hampering the credit standing in the market. The sampled firms received their money from receivables after an average of 33 days with a deviation of 30 days. Besides, they pay their dues after an average of 71 days with a deviation of 70 days.

The firms in the sample take on an average 105 days to convert inventory into sales with a deviation of 81 days and maximum of 679 days. It could also be inferred from the information below that due to the nature of industry; collections are faster, whereas, the payments are delayed in order to take advantage of current liability as a source of financing. The firms in the sample are able to postpone their payments to the suppliers due to their firm size. In fact, the mean value of the company size is 7.16% with a deviation of 1.35% and the maximum value is 10.85%. The average current ratio of FMCG firms in the sample is 2.59 with a deviation of 2.15%. The sales growth rate is on an average 20.17% with a deviation of 45.39%, the minimum sales growth is -46.08%, whereas, the maximum sales growth is 827.23%.

**Quantitative Analysis: Paired Sample T- Test:** The above table 8 represents results of one paired t test between independent variables (CCC, RCP, ICP, and PDP) and the dependent variable (ROA). In the above table the probability value of RCP, ICP and PDP is less than (0.05). Therefore, the study can conclude that RCP, ICP and PDP have significant relationship with the dependent variable ROA.

**Pearson's Correlation:** Pearson's correlation permits the identification of the possible association between working capital management and the firm's profitability. Table 9 presents the correlation analysis between the different components of working capital and profitability. The results reveal that a negative correlation was reported between receivables conversion period and return on assets (a measure of profitability) with coefficient (-.323), with  $p$ -value (0.000). It indicates that the result is highly significant at  $\alpha = 1\%$ , depicting that any increase in receivables conversion period will have a significant negative effect on profitability. Similar results were drawn between inventory conversion period and

return on assets with correlation coefficient (-0.139) and the  $p$ -value (0.002). This again indicates that the results are highly significant at  $\alpha = 1\%$ , signaling towards the fact that if firm takes more time in converting inventory into sales, this can have an adverse effect on its profitability.

Correlation results pertaining to payment deferral period and return on assets reveal that there existed a positive association between the two measures with correlation coefficient (0.134) and the  $p$ -value (0.003). This indicates that the results are highly significant at  $\alpha = 1\%$ , the positive association between PDP and ROA highlights the fact that the profitable firms do not wait longer to settle their dues. Additionally, firms often get discounts for prompt or early payments. This further reveals that, financing firms operations through current liabilities is more feasible when compared to external financing as the later comes with considerable costs. Firms pursue this by delaying payments to their suppliers and managing their working capital.

Cash conversion cycle is one of the comprehensive measures of working capital, the results of correlation analysis reveal that there is negative association between cash conversion and return on assets with coefficient (-0.338) with  $p$ -value (0.000). Thus, it indicates that the result is highly significant at  $\alpha = 1\%$ . This shows that firms try to increase their profitability by decreasing their cash conversion cycle.

With the above analysis we can conclude that, firms will prosper with increased profitability, if time involved in Inventory conversion and Receivables conversion is reduced, but the time involved in payment deferral period is increased. With low or negative cash conversion cycle, firm's dependency on external sources of finance could be minimized considerably by reducing cost on the other side.

In order to assess the liquidity of the firm, Current ratio and liquid ratio were used in the analysis, results of the same reveal that there existed a negative association between current ratio and return on assets with coefficients (-0.242) with  $p$ -value (0.000) this is highly significant at  $\alpha = 1\%$ . On the other hand, analysis reported a similar result between quick ratio and return on assets with coefficient (-0.182) with  $p$ -value (0.000) this is highly significant at  $\alpha = 1\%$ . This further indicates that the twin objective of any firm are liquidity as well as profitability, firms in order to remain profitable should often maintain a trade off or balance between profitability and liquidity and these measures have an inverse relationship.

The positive association between firm size (ln sales turnover) and profitability (ROA) reveals that as the size of the firm increases the profitability also increases, this is reported in the analysis with a

coefficient (0.203) with  $p$ -value (0.000) this is highly significant at  $\alpha = 1\%$ .

The correlation analysis also reveals that a significant positive association between the RCP and CCC with coefficient (0.468) and the related with  $p$ -value (0.000) and this result is highly significant at  $\alpha = 1\%$ . This marks the fact that the CCC of a firm decreases, if there is a delay in collections from customers. Similar results were seen between ICP and CCC with coefficient (0.600) and the related  $p$ -value (0.000) and this result is highly significant at  $\alpha = 1\%$ .

There also existed a negative association between firms' PDP and CCC with coefficient (-0.396) and the related with  $p$ -value (0.000) and this result is highly significant at  $\alpha = 1\%$ . This highlights the fact that, if firms delay their payments as against the time taken to collect receivables and converting inventory into sales, this will further result in decrease in CCC. Many studies have supported that any decrease in CCC will result in an increase in profitability. In other words, negative association between PDP and CCC and positive association with RCP, ICP and CCC in turn has a considerable positive effect on firms' profitability.

To conclude, the correlation analysis concerning Indian FMCG shows that the working capital management very significantly and strongly affects profitability.

**Regression Statistics: Model 1** tests the hypothesis that Indian FMCG firm's profitability is influenced by inventory conversion period (one of the components of working capital). The regression results indicate existence of statistically significant negative relationship between **Inventory conversion period and ROA** (with coefficient value at -0.3953 this is statistically significant at  $p$ -value = 0.0003, i.e.,  $p < 1\%$ ). This signifies that FMCG firms are more profitable if they maintain lower level of inventories. It also means that if inventory in finished goods takes more time to sell, then, that may negatively affect firm's profitability. The FMCG firms can improve their profitability by reducing days involved in inventory conversion or maintain lesser inventory. The results are consistent with studies conducted earlier by Raheman & Nasr (2007), Deloof (2003), Garcia-Teruel and Martinez-Solano (2007) and Lazaridis and Tryfonidis (2006). The firms are able to adopt this non-conservative WCM policy due to huge investments in ERP, JIT JIS and SCM. Inventory management should ultimately aim to strike a proper balance between maintaining sufficient balances to cater production requirements while not having extra inventory resulting in extra cost burden and also running risk of obsolescence. Companies are utilising all sorts of technology available in the market to manage their inventories at optimum levels. The coefficients of the other variables are mostly

insignificant, profitability (ROA) increases with Firm size (measured by the natural logarithm of Sales Turnover-as log transformation reduces the heteroscedasticity and influences of outliers in the regression model) and sales growth. Current ratio and Quick ratio being theoretical measure of liquidity have no significant impact on profitability in case of selected FMCG firms. Furthermore CR and QR have negative relationship with ROA. However, this relationship is statistically insignificant. In this case, Adjusted R<sup>2</sup> was 68.84%; this indicates independent variables explained the ROA very well. Overall model was significant with F- value 16.55 (p-value 0.0000).

**Model 2** tests the hypothesis that Indian FMCG firm's profitability is influenced by **Receivables Collection period** (one of the components of working capital). The regression results indicate that the coefficient of RCP is negative with (-0.4245), this is statistically significant with (P -value= 0.0000). It is evident from Table 10 that RCP has a statistically negative significant relationship with ROA (a determinant of profitability) this implies that firms' profitability is decreased if there is increase in receivables collection period. This could also imply that a decision on improving profitability by the FMCG firms is highly influenced by its receivable collection period and to add to it RCP is a good indicator for explaining financial strength of FMCG firms only in the short run. Companies offering payment discounts needs to analyse cost closely, as it should not result in moderate improvement in working capital by incurring huge expenditure. This result could also be explained by the high implicit cost of vendor financing to the firm, since the firm foregoes discounts for early payments. Incorrect invoices could result in delayed payments or disputes, this could be overcome by devising a mechanism to address customer inquiries. Furthermore, the coefficients of the other variables are mostly significant, profitability (ROA) increases with Firm size (measured by the natural logarithm of Sales Turnover-as log transformation reduces the heteroscedasticity and influences of outliers in the regression model) and sales growth. Current ratio and Quick ratio being theoretical measure of liquidity have no significant impact on profitability in case of selected FMCG firms. Furthermore CR and QR have negative relationship with ROA, an also, this relationship is statistically significant. The regression results are consistent with Sharma and Kumar (2011), Raheman, Afza, Qayyum and Bodla (2010). But significantly differs from the study conducted by Mathuva (2010), Filbeck, et. al., (2005), Shin & Soenen (1998), Deloof (2003). However, the overall model is statistically significant with F-value 17.79 (P=0.0000). The Adjusted R<sup>2</sup> of the model implies that 69.95 % of

the variation in the profitability of the firms has been explained by the model very well.

**Model 3** measures the hypothesis that Indian FMCG firm's profitability is influenced by **Average payment period**. The regression results point towards existence of negative relationship between the **Average payment period** and profitability; this further indicates that the less profitable firms wait longer to pay their bills. The regression results indicate that the coefficient of PDP is negative (-0.1937) and significant at (p-value =0.009, which is less than alpha 5%). This implies that any increase or decrease in the PDP significantly affects profitability of the firm. This indication points out the fact that managers can improve profitability by withholding their payments to suppliers so as to take advantage of the cash available to meet their working capital needs. The results obtained are not consistent with the other studies Deloof (2003) & Raheman & Nasr (2007). Quick ratio and sales growth and firm size are positively affecting profitability. Whereas, all other variables in the model to be specific current ratio are negatively affecting profitability the Adjusted R<sup>2</sup> of the model is 68.17%, this points at the share of dispersion of ROA that is explained by PDP factor amounts to 68% with an F-Value of 16.17 which is highly significant at (p=0.0000). The other variables in the model except for QR and Firm size are significant

**Model 4** tests the hypothesis that Indian FMCG firms **Cash Conversion Cycle** influences **return on assets**. The regression coefficient indicated a significant positive relation between CCC and ROA at (p-value>10%). This states that any change in CCC will insignificantly affect profitability. It is consistent with the view that decreasing the CCC will also decrease profits of the firm. It also implies that firms can create value for their shareholders by keeping the CCC to minimum. The rest of model variables are significantly affecting profitability. The increase in sales growth and firm size has a positive effect on profitability; Current ratio has a negative influence on profitability except for quick ratio and sales growth and firm size as these are positively affecting profitability. The Adjusted R<sup>2</sup> of the model is 66.03% indicating that all independent variables are explaining ROA significantly. The F-Value is 13.62 (p<1%).

**Model 5** is taken as control model; the purpose of this model was run to indicate the most influencing variable affecting the study. The model indicates that 5 out of 8 variables included in the study are highly significant at  $\alpha=1\%$ . ICP, RCP, DR and CR are negatively related to firm's profitability ( $p<1\%$ ), whereas, PDP is also negatively related to firm's profitability but the association is statistically insignificant. The other variables namely, QR, Firm

Size are positively related to firms profitability ( $p < 1\%$ ), whereas, Sales growth is also positively related to firms profitability but the association is statistically insignificant. The models adjusted  $R^2$  is 70.95% with an F value of 17.90 which is highly significant ( $p < 1\%$ ).

**Conclusion:** Majority of the FMCG firms have large amounts of the cash invested in working capital management. In this study, the effect of working capital management on 48 Indian FMCG firms' profitability was empirically investigated, using ROA as a measure of profitability and CCC as a principle indicator of working capital management. The relationship has been examined using Panel data regression analysis. The findings of the study revealed that ICP, RCP and PDP had statistically negative significant relationship with profitability; this could be due to company/industry specific characteristics as majority of FMCG sales is on cash basis, whereas, CCC has positive statistically insignificant relationship with profitability. The findings of study are consistent with Shin Seonen (1998), Deloof (2003)

& Raheman & Nasr (2007). The results of study also highlight that WCM is more of strategic that an operational concern for financial executives. Longer cash conversion cycle hamper firms profitability, and also low level of liquidity affects company's risk. The results further suggest that managers can increase profitability, considerably reduce costs and create value to their shareholders.

**Further research:** Much could be done about working capital management in India in future. I suggest further research could be done on the same topic covering more companies, many sectors, and also extending the time period of the study. The economic impact of government policies in recent times, namely, Make in India, Post- Demonitisation can be researched on. The scope of future research may be extended by adding more variables, like, Risk adjusted cash flows, Inflation adjusted cash flows, weighted cash conversion cycle and extending definition of working capital by including cash, marketable securities and bank overdraft.

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
ROA	.051	480	.004	.969	480	.000
ICP	.086	480	.000	.915	480	.000
RCP	.100	480	.000	.948	480	.000
PDP	.066	480	.000	.952	480	.000
CCC	.178	480	.000	.830	480	.000
DEBT RATIO	.192	480	.000	.758	480	.000
CURRENT RATIO	.072	480	.000	.981	480	.000
QUICK RATIO	.053	480	.003	.982	480	.000
SALESGROWTH	.136	480	.000	.923	480	.000
LN SalesTurnover	.073	480	.000	.957	480	.000

Results of Hausman Test (Fixed or Random Effect Model)			
Test for Normality	Chi-Sq. Statistics	Chi-Sq. d.f	Prob.(p-value)
Cross-section random	19.266506	9	0.0230

Model	LM	Sig
Breusch-Pagan	10.830	0.212
Koenkar	12.987	0.112

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
ROA	480	-.57	3.00	.19	.25
NOP	480	-125.56	2214.75	4.54	101.28
GOP	480	-193.39	259.20	.06	15.77
ICP	480	.00	679.85	105.75	81.00
RCP	480	.00	205.54	33.80	30.81
PDP	480	.00	691.83	71.69	70.52
CCC	480	-248.64	419.16	67.85	90.95
Debt Ratio	480	.00	.85	.27	.24
Current Ratio	480	.00	19.73	2.59	2.15
Quick Ratio	480	.00	13.50	1.40	1.23
Sales growth	480	-46.08	827.23	20.17	45.39
LNSalesTurnover	480	.00	10.85	7.16	1.35
Valid N (list wise)	480				

<b>Variables</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error</b>	<b>T</b>	<b>Df</b>	<b>p-value</b>
<b>ROA-ICP</b>	-105.55	81.03	3.69	-28.53	479	.000
<b>ROA-RCP</b>	-33.60	30.89	1.41	-23.83	479	.000
<b>ROA-PDP</b>	-71.50	70.49	3.21	-22.22	479	.000
<b>ROA-CCC</b>	-67.66	91.03	4.15	-16.28	479	.000

		ROA	NOP	GOP	ICP	RCP	PDP	CCC	Debt Ratio	Current Ratio	Quick Ratio	Sales growth	LNSales turnover
ROA	Pearson Correlation	1	-.029	.017	-.139**	-.323**	.134**	-.338**	-.487**	-.242**	-.182**	-.006	.203**
	Sig. (2-tailed)		.520	.710	.002	.000	.003	.000	.000	.000	.000	.890	.000
NOP	Pearson Correlation	-.029	1	.789**	.001	-.034	.078	-.071	.054	-.035	-.042	-.018	.051
	Sig. (2-tailed)	.520		.000	.976	.451	.087	.120	.237	.442	.363	.686	.262
GOP	Pearson Correlation	.017	.789**	1	.007	-.008	.047	-.033	-.016	-.002	.000	.000	-.002
	Sig. (2-tailed)	.710	.000		.878	.856	.308	.475	.723	.971	.998	.994	.958
ICP	Pearson Correlation	-.139**	.001	.007	1	.131**	.432**	.600**	-.038	.092*	-.079	-.099*	-.040
	Sig. (2-tailed)	.002	.976	.878		.004	.000	.000	.402	.044	.085	.030	.385
RCP	Pearson Correlation	-.323**	-.034	-.008	.131**	1	-.016	.468**	.341**	.399**	.305**	.167**	-.258**
	Sig. (2-tailed)	.000	.451	.856	.004		.720	.000	.000	.000	.000	.000	.000
PDP	Pearson Correlation	.134**	.078	.047	.432**	-.016	1	-.396**	-.185**	-.288**	-.200**	.117*	.012
	Sig. (2-tailed)	.003	.087	.308	.000	.720		.000	.000	.000	.000	.011	.800
CCC	Pearson Correlation	-.338**	-.071	-.033	.600**	.468**	-.396**	1	.225**	.441**	.188**	-.122**	-.132**
	Sig. (2-tailed)	.000	.120	.475	.000	.000	.000		.000	.000	.000	.007	.004



Debt Ratio	Pearson Correlation	-.487**	.054	-.016	-.038	.341**	-.185**	.225**	1	.281**	.038	.099*	-.021
	Sig. (2-tailed)	.000	.237	.723	.402	.000	.000	.000		.000	.404	.030	.651
Current Ratio	Pearson Correlation	-.242**	-.035	-.002	.092*	.399**	-.288**	.441**	.281**	1	.579**	-.040	-.228**
	Sig. (2-tailed)	.000	.442	.971	.044	.000	.000	.000	.000		.000	.385	.000
Quick Ratio	Pearson Correlation	-.182**	-.042	.000	-.079	.305**	-.200**	.188**	.038	.579**	1	-.077	-.357**
	Sig. (2-tailed)	.000	.363	.998	.085	.000	.000	.000	.404	.000		.092	.000
Sales growth	Pearson Correlation	-.006	-.018	.000	-.099*	.167**	.117*	-.122**	.099*	-.040	-.077	1	-.084
	Sig. (2-tailed)	.890	.686	.994	.030	.000	.011	.007	.030	.385	.092		.067
Ln Sales turnover	Pearson Correlation	.203**	.051	-.002	-.040	-.258**	.012	-.132**	-.021	-.228**	-.357**	-.084	1
	Sig. (2-tailed)	.000	.262	.958	.385	.000	.800	.004	.651	.000	.000	.067	
** . Correlation is significant at the 0.01 level (2-tailed).													
* . Correlation is significant at the 0.05 level (2-tailed).													

Table 10: Results of Regression Analysis															
FIXED EFFECT MODEL- DEPENDENT VARIABLE: Return on Assets (ROA)															
48 Indian FMCG Firms, 2007-2016, 480 firms-year observations															
	Model 1: ICP			Model 2: RCP			Model 3: PDP			Model 4: CCC			Model 5: ICP RCP PDP		
	Coefficient	T-Statistics	P – Value	Coefficient	T-Statistics	P – Value	Coefficient	T-Statistics	P – Value	Coefficient	T-Statistics	P – Value	Coefficient	T-Statistics	P – Value
<b>C</b>	-0.5146	-1.6166	0.107	-0.7490	-2.989	0.003	-0.877	-3.066	0.002	-1.676	-6.689	0.000	0.037	0.110	0.911
<b>ICP</b>	-0.3953	-3.6269	0.000	-	-	-	-	-	-	-	-	-	-0.291	-2.659	0.008
<b>RCP</b>	-	-	-	-0.4245	-5.022	0.000	-	-	-	-	-	-	-0.382	-4.520	0.000
<b>PDP</b>	-	-	-	-	-	-	-0.193	-2.618	0.009	-	-	-	-0.101	-1.364	0.173
<b>CCC</b>	-	-	-	-	-	-	-	-	-	0.039	0.730	0.465	-	-	-
<b>DR</b>	-0.1250	-4.3982	0.000	-0.1256	-4.521	0.000	-0.122	-4.280	0.000	-0.092	-2.842	0.004	-0.124	-4.548	0.000
<b>CR</b>	-0.2371	-1.4660	0.143	-0.4144	-2.677	0.007	-0.501	-2.985	0.003	-0.438	-2.678	0.007	-0.385	-2.292	0.022
<b>QR</b>	-0.0393	-0.2582	0.796	0.2739	1.890	0.059	0.132	0.903	0.367	0.270	1.739	0.083	0.133	0.881	0.378
<b>SGT</b>	0.0693	1.7894	0.074	0.1027	2.709	0.007	0.092	2.371	0.0184	0.040	0.961	0.337	0.101	2.668	0.008
<b>LNSALES TURNOVER</b>	0.0324	0.9979	0.319	0.0453	1.4410	0.1506	0.031	0.967	0.334	0.094	2.769	0.006	0.027	0.874	0.382
<b>R-squared</b>	0.7326			0.7411			0.7266			0.7127			0.7517		
<b>Adjusted R-squared</b>	0.6883			0.6994			0.6817			0.6603			0.7095		
<b>F-statistic</b>	16.554			17.787			16.172			13.616			17.797		
<b>Prob. (F-statistic)</b>	0.000			0.000			0.000			0.000			0.000		
<b>Durbin-Watson stat</b>	1.1235			1.1237			1.1090			1.1809			1.2348		

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