Impact of Working Capital Management on Profitability: A Case Study of FMCG Sector in India

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Abstract

Working capital management is considered to play a vital role in financial management decision as it affects both liquidity and profitability of the firm. The aim of this paper is to analyse the different components of cash conversion cycle (CCC) and its impact on the profitability of the firm in terms of return on assets (ROA). The three variables of cash conversion cycle (CCC) considered in the study are inventory conversion period (ICP), receivables collection period (RCP) and creditors payment period (CPP). The data has been analyzed with the help of panel data regression, fixed effect LSDV model and Hausman test. The result revealed that there has been a significant impact of inventory conversion period on the profitability of the firms for the period under study which demonstrates that the firms efficiency is directly related to the proper management of working capital.

Keywords: Working capital management, Cash conversion cycle, FMCG companies.

Introduction

The FMCG sector is one of the major contributors in the development of any economy. It is the fourth largest sector of Indian economy. The FMCG market is expected to reach US$ 20.6 billion by 2020. Major share of this comes from urban markets that account for 65 per cent of total revenues. In last decade average of 11% annual growth is observed in FMCG sector. The compounded annual growth rate for FMCG is expected to touch US$ 110.4 billion during 2012-2020. The pillars of growth for consumer durable market are awareness, easy access and trends of lifestyle. In the perspective of business, policies and regulations support both the existing players as well as new entrants in this sector.

Any firm requires two types of capital-fixed capital and working capital. The success of any business house is in the effective utilization of resources which, in turn, is dependent upon the effective circulation of working capital. The present cosmo has become competitive and constrained by the financial imbalance, so it is very important for any company to maintain sufficient level of working capital for smooth run. Moreover the economy has faced many challenges like recession and inflation during different phases of time but managing effective

working capital helps to overcome these challenges. However most of the time in financial decision making management of working capital has been ignored because it is related with the financing and investment in short time period.

The requirement of working capital is effected by the nature of the industry as well as the capacity of the firm. The service industry demands less amount of working capital compared manufacturing because in case of former ones they do not have to maintain inventory.

Manufacturing units have to keep a sufficient amount of working capital as it is needed for day to day operations, and at the same time to meet the costs. The companies that manage the working capital effectively will gain valuable investment opportunity which adds further profits in its bag.

After analysing the effectiveness of working capital management, its different components and their impact on profitability will helps us to the state problem which shall be analysed in this study.

Review of Literature

Many authors have analysed working capital management from different perspective in different economic arena, some of which are found very interesting and useful for our present study. The crux of those literatures is mentioned below:

Deloof (2003) is of the opinion that the majority of the firms had invested a large amount of cash in working capital and it is anticipated that the management of working capital of the firms would notably affect the profitability. He developed a negative relationship between gross operating income and the number of days involved in accounts receivable, inventories and accounts payable of Belgian companies with the help of statistical tool that is regression analysis. Padachi (2006) in his study analysed the components of cash conversion cycle and its effect on total assets. He also examined the tendency in working capital requisites of firms, for a sample of 58 small manufacturing firms in Mauritius for the period 1998 –2003. He used pooled OLS and fixed effect regression model, and concluded that higher investment in receivables and inventories is related to lower profitability Raheman and Nasr (2007) selected 94 Pakistani firms for a period of 6 years which are listed in Karachi Stock Exchange .To identify the effect of working capital management on the net operating profitability and liquidity. the selected independent variables were average collection period, inventory turnover in days, average payment period, CCC, current ratio, debt ratio, size of the firm, and financial assets to total assets ratio while net operating profit was the dependent variable used in the analysis. They found a strong negative relationship between profitability and independent variables. Ganesan (2007)

selected a sample of telecommunication equipments manufacturing companies to investigate the efficiency of firms' working capital management. The variables were sales outstanding days, inventory outstanding days, payable outstanding days, current ratio and working capital while, liquidity and profitability were represented by cash conversion cycle, income to total sales and income to total assest. He found a negative relationship between days of working capital with profitability. Mathuva (2009) analysed the effect of the factors of working capital management over profitability of the companies. The sample consisted of 30 listed companies on Nairobi Stock Exchange (NSE) and the duration of his study ranged from 1992-93 to 2007-08. Analysis was done using panel data regression such as pooled OLS and fixed effects models. The results concluded a negative relationship between the profitability and age of debtors while, a positive association was shown between the profitability and inventory conversion period and also between profitability and age of creditors. Bhunia, Khan (2010) studied a sample of 230 steel companies of India over a period of eight years from 2002-2010.The researchers analysed the association of working capital management and profitability. The dependent variable was profitability of the firms. Following were the independent variables Liquid Ratio, Current Ratio , Absolute Liquid Ratio , Debt-Equity Ratio , Inventory Turnover Ratio, Interest Coverage Ratio , Creditors Turnover Ratio and Debtors Turnover Ratio. Multiple regression, Correlation analysis and Descriptive statistics were used to conclude that liquidity and solvency in terms of debt is very satisfactory and efficient. Ching, Novazzi and Gerab (2011) conducted a study on Brazilian listed firms to identify the relationship between working capital management and profitability. Classification was done on the basis of working capital intensive and fixed capital intensive and three different criteria for evaluating the profitability viz return on sales (ROS), on asset (ROA) and return on equity (ROE). The independent variables taken in the study were cash conversion efficiency, debt ratio, days of working capital, days' of receivable and days' of inventory. They found a negative relationship between cash conversion cycle, debt ratio and profitability with the help of multiple linear regressions. Sharma and kumar (2011) revealed that working capital management and profitability is positively correlated in Indian companies. The number of days accounts payable was negatively correlated with a firm's profitability, whereas number of days accounts receivables and cash conversion period exhibit a positive relationship with corporate profitability.

The review of literature highlights the relationship between profitability and working capital management and how various components of cash conversion cycle are affecting the profitability of the firms. All the previous studies also lay

emphasis on how important for a firm is to conduct working capital analysis. Although most of the studies were carried in different environment across different countries but majority of them suggested similar trends.

Objectives of the Study

The main objective of the present study is to analyze the impact of working capital management on profitability of FMCG sector in India. This main objective is supported by the following specific objectives:

• To examine the relationship between inventory conversion period and profitability of the FMCG firms.

• To investigate the relationship of Receivable collection period and profitability of the FMCG firms.

• To investigate the relationship of creditors payment period with the profitability of the FMCG firms.

Hypotheses of the Study

• H01: There is no significant relationship between inventory conversion period and profitability of the FMCG firms.

• H02: There is no significant relationship between Receivable collection period and profitability of the FMCG firms.

• H03: There is no significant relationship between creditors' payment period and profitability of the FMCG firms.

Research Methodology

The framework selected for the of this present study has been developed with the help of previous literature and the FMCG firms selected for analysis . The present study is analytical and empirical in nature.

Data Collection

The present study is based on secondary data extracted from annual financial reports of selected FMCG firms in India which are listed on National Stock Exchange (NSE). The period covered by the study is five years from 2010-11 to 2014-15 and the selected FMCG companies are listed below.

Table-1 Selected FMCG Companies

S.No.	FMCG companies
1	Indian Tobacco Company Limited (ITC Ltd.)
2	Hindustan Unilever Limited (HUL)
3	Britannia Industries Limited
4	Dabur India Limited
5	Marico Industries Limited

Selection of variables

For the present study components of cash conversion cycle (CCC) have been taken as measure of working capital and their impact has been checked on return on asset (ROA) which has been taken as measure of profitability the cash conversion cycle is calculated as:

CCC = inventory conversion period + Debtor's collection period – creditor's payment period

Table-2 Selected Variables

S.NO	Independent variables		Dependent Variable
1.	Inventory Conversion Period	(ICP)	Return On Assets
2.	Receivables Collection period	(RCP)	(ROA)
3.	Creditors Payment Period	(CPP)	

the Random Effect Model is fit for panel data analysis.

E-views data package was used to conduct the Hausman test and fixed effect LSDV model.

Data Analysis

The collected data have been analyzed with the help of above mentioned tools & techniques and the results have been shown with the help of tables.

Tools & Techniques

The data have been analyzed with the help of fixed effect (LSDV) regression model. The Hausman test has also been conducted to check whether the Fixed effect model or random effect model is suitable for the data. Data have also been described with the help of tables.

To investigate the impact of the various variables of working capital management on profitability, we have taken the following model for regression analysis.

$$ROA = \beta 0 + \beta 1 \, (ICP) + \beta 2 \, (RCP) + \beta 3 \, (CPP) \quad \text{-----------} \quad \text{Equation}$$

Where $\beta 0$ is the intercept of the equation and $\beta 1$, $\beta 2$, $\beta 3$ are the coefficients of independent variables. i.e. ICP, RCP, CPP respectively.

Fixed effect LSDV model has been used for analysis instead of pooled least square method of regression as it ignores the heterogeneity between the selected firms. The Hausman specification test was conducted to test the hypothesis that

Table - 3 Descriptive Statistics.

	N	Minimum	Maximum	Mean	Std. Deviation
ICP	25	27.52	204.63	102.7444	55.24952
RCP	25	5.81	34.85	17.6836	8.86405
APP	25	31.17	137.29	75.9052	35.92437
CCC	25	-54.79	172.44	44.5240	73.37890
ROA	25	8.00	32.00	18.7200	6.16117
Valid N (listwise)	25				

The above table explains the descriptive statistics of the variables taken in the study with n=25 number of observations. The mean values for receivables collection period (RCP) and accounts payable period (APP) are 17.68 days and 75.91 days respectively, while inventory conversion period (ICP) shows the maximum value among the three variables which is approximately 103 days on an average. The average value for cash conversion cycle (CCC) is 44.52 and the return on asset (ROA) reflects a mean of 18.72%. The minimum value of ROA is 8.00% and maximum is 32.00% which shows a range of 24%. **Hausman Test**

Table - 4 Hausman Test

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.492663	3	0.0023

The table above shows that the Random Effect Model is not appropriate for the equation because the p value comes out to be 0.0023 which is less than 0.05, thus it reflects that the fixed effect LSDV model is suitable.

Regression Analysis

Test statistics of hausman test shows that the collected data is best suited to be analyzed by fixed effect LSDV model.

Table-5 Regression Analysis

Dependent Variable: ROA	
Method: Panel Least Squares	
Sample: 2010-11 to 2014-15	
Periods included: 5	
Cross-sections included: 5	
Total panel (balanced) observations: 25	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.423263	0.091913	4.605053	0.0003
ICP	-0.003111	0.000873	-3.563460	0.0024
RCP	-0.003033	0.002573	-1.178788	0.2547
CPP	0.001808	0.000867	2.086427	0.0523

Effects Specification	
Cross-section fixed (dummy variables)	
R-squared	0.828213
Adjusted R-squared	0.757477
Prob(F-statistic)	0.000021
Durbin-Watson stat	1.724796

Source: Results obtained using E-views software.

The above table depicts that adjusted R squared as 75.7 percent which inferred that the independent variables (ICP, RCP, CPP) explained 75.7 percent variation in the dependent variable (ROA) for the sample firm during the period under study. The P value of F-statistics is significant (P value < 0.05) which shows that the regression model is significant .Regression analysis shows the problem of auto correlation if the value of Durbin Watson statistics is less than 1.5 or more than 2.5. It can be seen from the table that there is no serious problem of auto correlation in the regression model as the Durbin Watson statistics is 1.72.

Hypothesis Testing

In this section of the study, the hypothesis that have been framed based on the objectives of the study have been tested.

H01: There is no significant relationship between inventory conversion period and profitability of the FMCG firms.

Inventory conversion period payable has a negative significant impact on profitability of the firms (ROA) as p-value is less than 0.05. Therefore Hypothesis 1: There is no

significant impact of ICP on ROA is rejected. It indicates inventory conversion period has negative relation with profitability of the firms.

H02: There is no significant relationship between Receivable collection period and profitability of the FMCG firms.

Receivable Collection period has not significantly impacted the profitability of the firms as p-value is more than 0.05. Therefore, Hypothesis 2: There is no significant impact of RCP on ROA is Accepted.

H03: There is no significant relationship between creditors' payment period and profitability of the FMCG firms.

Creditor's payment period has insignificant relationship with profitability of firms as p-value is more than 0.05 although CPP has a positive relation with ROA. Therefore, Hypothesis 3: There is no significant impact of CPP on ROA is Accepted.

Table-6 Summary of Hypothesis testing

HYPOTHESIS	RESULTS
$H_{01:}$ There is no significant relationship between inventory conversion period and profitability of the FMCG firms.	REJECTED
$H_{02:}$ There is no significant relationship between debtors' collection period and profitability of the FMCG firms.	ACCEPTED
$H_{03:}$ There is no significant relationship between creditors' payment period and profitability of the FMCG firms.	ACCEPTED

Findings & Conclusion

It was found that one component of CCC out of three which were taken as measure of working capital has significantly impacted profitability of selected FMCG firms in the study while other two components had insignificant impact on profitability.

• ICP has negative relation with ROA and has significantly impacted ROA of the firms.

• RCP too has negative relation with ROA though it didn't significantly impacted ROA of the firms.

• CPP has positive relation with ROA but it didn't significantly impacted ROA of the firms.

The findings conclude that the working capital management is very important for maintaining financial position of any firm which further signifies the success of the firm in all dimensions. It can be apprehended from the study that, especially in the context of FMCG sector it plays a significant role for managing the profitability of the firm. Inventory conversion period has inverse relation with profitability of the firms and thus the management should take proper steps to reduce its inventory conversion period. Although other variables RCP and APP have shown insignificant impact on ROA but management should manage these ratios too. If the firm is able to manage these ratios, then the firm is efficient in managing working capital. Efficient utilization of the firms resources leads to higher profitability and reduces the default risk and this will increase the firm value. The results of this study will be of great importance to the corporate managers as well as different stakeholders of the society.

References

Deloof M. (2003). Does working capital management affect profitability of Belgian firms? Journal of Business Finance & Accounting, 30: 573–587.

Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: an analysis of Mauritian small manufacturing firms. International Review of Business Research Papers, 2, 45-58.

Raheman A., Nasr M, (2007). Working capital management and profitability – case of Pakistani firms. International Review of Business Research Papers, 3: 279–300.

Ganesan, V.(2007). An analysis of working capital management efficiency in telecommunication equipment.Industry rivier Academic Journal, 3(2), Fall.

Mathuva, D. (2009). The influence of working capital management components on corporate profitability: a survey on Kenyan listed firms. Research Journal of Business Management, 3, 1-11.

Bhunia A. (2010). A study of managing liquidity. Journal of Management Research, 1(9), 21.http://dx.doi.org./1941899X/20110701

Ching, H. Y., Novazzi, A., & Gerab,F. (2011). Relationship between working capital management and profitability in Brazilian listed companies. Journal of Global Business and Economics, 3, 74-86.

Sharma, A. K. and Kumar, S. (2011). Effect of Working Capital Management on Firm Profitability. Global Business Review, 12(1), 159-173.

Websites

www.itcportal.com
www.hul.co.in
www.dabur.com
www.marico.com
www.britannia.co.in