



AN EMPIRICAL STUDY ON WORKING CAPITAL MANAGEMENT AND PROFITABILITY

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Abstract

Working capital refers to the firm's investment on current assets. The management of working capital is very important to financial manager for maintaining the financial health of business organizations as well as smooth running of the day to day operations. The amounts invested in working capital are often high in proportion to the total assets employed and so it is vital that these amounts are used in an efficient way. The management of working capital affects the liquidity and the profitability of the business firm and consequently it's net worth (Smith, 1980). Working capital management therefore aims at maintaining a balance between liquidity and profitability while conducting the day to day operations of business concern. The main aims of the study to provide empirical evidence about the effects of working capital management on profitability performance of CNX Automobile companies listed on National Stock Exchange of India. The study uses different working capital measurements for a sample population of Indian firms.

Keywords: Working capital management, liquidity and profitability, automobile industry.

INTRODUCTION

Management of working capital is an important component of corporate financial management because it directly affects the profitability and liquidity of the firms. Management of working capital refers to management of current assets and current liabilities. Researchers have approached working capital management in numerous ways. While some studied the impact of proper or optimal inventory management,

others studied the management of accounts receivables trying to postulate an optimal way policy that leads to profit maximization. The way that working capital is managed has a significant impact on profitability of firms. Such results indicate that there is a certain level of working capital requirement, which potentially maximizes returns. This paper investigates the relationship between the components of working capital and firms' profitability for a sample of automobile companies listed on the National Stock Exchange in India for the period of 5 years from 2010-2011 to 2014-2015 included in CNX automobile index.

RESEARCH METHODOLOGY

The primary aim of this paper is to investigate the impact of Working Capital Management on profitability and liquidity of automobiles firms. This is achieved by developing a similar empirical framework first used by ShinandSoenen (1998) and the subsequent work of Deloof (2003). The study focuses exclusively on the firms listed in CNX Auto. Index of National Stock Exchange of India. The data reported in this paper were collected for a period of 2010-11 to 2014-15 as a part of study designed to analyze profitability and working capital management from financial reports. Availability and comparison of data induce researcher to select Auto. index companies. Besides, Index consists ten companies that holding majority of shares in market, so result can be generalized to other automobile companies also.

REVIEW OF LITERATURE

Many researchers have studied working capital from different views and in different environments.

The following study were very interesting and useful for our research:

According to Eljelly, 2004, working capital management requires planning and controlling current assets and current liabilities in such a way that eradicate the threat of inability to meet short term liabilities and evade excessive investment in these assets.

The relation between profitability and liquidity was examined, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis. In a study, cash conversion cycle and size variable was found to be important than current ratio which affect profitability. The results were stable and had important implications for liquidity management in various Saudi companies. It was found that profitability and liquidity were negatively correlated. The study also revealed that there was great variation among industries with respect to the significant measure of liquidity.

According to Grablowsky (1976), a significant relationship between various success measures and the employment of formal working capital policies and procedures was found. Cash conversion cycle and cash flow management plays vital role for overall financial management of all firms, especially those which are capital constrained and more reliant on short-term sources of finance (Walker and Petty, 1978; Deakins et al, 2001).

Narasimhan and Murty (2001), focus on improving return on capital employed by targeting some critical areas such as cost containment, reducing investment in working capital and improving working capital efficiency. Shin & Soenen (1998) and Deloof (2003) have found a strong significant relationship between the measures of working capital management and corporate profitability. According to them profitability can be increased by reducing amount blocked in account receivables and inventories. Further, the study was found to be more significant in case of small growing firms.

(Deloof, 2003) discussed that the working capital was managed will have a significant impact on profitability of firms. Using correlation and

regression tests he found a significant negative relationship between operating income and the number of days accounts receivable, inventories and accounts payable of firms. He suggests that managers could create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. He also found negative correlation between accounts payable and profitability.

(Ghosh and Maji, 2003), studied working capital management in Indian cement companies during 1992 to 2002. He used performance, utilization, and overall efficiency indices were calculated instead of using some common working capital management ratios to measure the efficiency of working capital management. Findings of the study indicated that the Indian Cement Industry as a whole did not perform remarkably well during this period.

According to Shin and Soenen, 1998, to increase the value of the firm, profitability and liquidity, efficient working capital management plays vital role. In his study, the relationship between the length of Net Trading Cycle, corporate profitability and risk adjusted stock return was examined using correlation and regression analysis, by industry and capital intensity and it was found strong negative relationship between lengths of the firm's net trading Cycle and its profitability. In addition, shorter net trade cycles were associated with higher risk adjusted stock returns.

In a study by kamath (1989), for working capital management in retailing firms, it was found negative relationship between cash conversion cycle and profitability. According to Soenen (1993) in case of overlooking industrial differences, there does not exist any statistically constant relationship between cash conversion cycle and profitability. However, in case of considering industrial differences, the relationship between the mentioned variables has shown dissimilarities across industries as positive in some industries and negative in others.

All the above studies provide base and gives idea regarding working capital management and its components. They also give us the results and conclusions of those researches already

conducted on the same area for different countries and environment from different aspects. On basis of these researches done in different countries, researcher has developed own methodology for research.

Variables

Based on above discussion, it can be found that there are many variables i.e. Bills Receivables, Bills Payables, Size of the Firm, Return on Assets, Leverage, Inventory Management, Cash Conversion Cycle, etc. which influence profitability of company. This study undertakes to identify key variables that influence working capital management of Indian Automobiles firms. Choice of the variables is influenced by the previous studies on working capital management. All the variables stated below have been used to test the hypotheses of study. They include dependent and independent variables:

Operating Profitability which is a measure of Profitability of the firm is used as dependant variable. It is defined as Operating Income plus depreciation, and divided by total assets minus financial assets. The reason for using this variable instead of earnings before interest tax depreciation amortization (EBITDA) or profits before or after taxes is because researcher wants to associate operating 'success' or 'failure' with an operating ratio. Moreover researcher want to exclude the participation of any financial activity from operational activity that might affect overall profitability, thus financial assets are subtracted from total assets.

Average Collection Period used as proxy for the working capital Collection Policy is an independent variable. It is calculated by dividing account receivable by sales and multiplying the result by 365 (number of days in a year).

Accounts Payable used as proxy for the Payment Policy is also an independent variable. It is calculated by dividing accounts payable by purchases and multiplying the result by 365.

Inventory turnover in days used as proxy for the Inventory Policy is also an independent variable. It is calculated by dividing inventory by cost of goods sold and multiplying with 365 days.

The Cash Conversion Cycle used as a comprehensive measure of working capital management is another independent variable, and is measured by adding Average Collection Period with Inventory Turnover in Days and deducting Average Payment Period.

All the above variables have relationships that ultimately affect working capital management. It is expected that there is a negative relationship between operating profitability on the one hand and the components of Working Capital Management (number of days' accounts receivable, inventories and accounts payable and cash conversion cycle) on the other hand. This is consistent with the view that the time lag between expenditure for the purchases of raw materials and the collection of sales of finished goods can be too long, and that decreasing this time lag increases profitability.

DATA ANALYSIS:

Table 1 Descriptive Statistics

Descriptive Statistics (N = 10)				
Particulars	Minimum	Maximum	Mean	Std. Deviation
Accounts Receivable	11.00		136.00	66.7000
Accounts Payable	08.00	119.00	55.4000	35.47205
Inventory Period	14.00	71.00	44.7000	19.75432
Cash Conversion Cycle	06.00	143.00	56.0000	42.40283
Profit	10.00	26.70	17.5740	5.32292

Table 1 provides descriptive statistics of the collected variables. All variables were calculated using book values. The book value was used at the end of the years because market values

related to the variables are changing every day. In addition, the measurement of profitability could only be based on income statement values, not on market values. Furthermore, when market

values are considered, there is always a rather legitimate question of the date for which the 'market values' refer. This is rather arbitrary. Hence, we relied on 'book values' as of the date of the financial reports.

Below analysis reveals that the credit period granted by companies to their clients ranged at 66.70 days while they paid their creditors in 55.40 days on average. Inventory took on an average 44.70 days to be sold. Overall, the average cash conversion cycle ranged at 56.00 days.

Regression Analysis

In order to test which element of working capital contributes most in predicting profitability, a linear regression was performed. Moreover, the impact of these different components on profitability was evaluated through a multiple regression. In multiple regressions, various

dimensions of working capital were entered as independent variables and profitability was entered as dependent variable. Enter method (simultaneous method) was used where in researchers specifies the set of predictor variables and relative contribution of each predictor in dependent variable.

With the purpose of measuring the multicollinearity effect among independent variables with reference to dependent variable VIF (Variance Inflation factors) statistics was calculated. The value of VIF statistics 10 or less than 10 is found to be satisfied pertaining to multicollinearity and it was found that the value of VIF statistics was 3.671, 4.749, 5.763 and 4.129 in case accounts receivable, accounts payable, inventory period and cash conversion cycle respectively, which is found to be satisfied and shows that the independent variable is not a linear function of other independent variables

Table – II Data Analysis

Variables	Profitability		
	β^a	b^b	Sig.
Accounts Receivables	0.438	0.524	0.000*
Accounts Payables	0.301	0.311	0.027*
Inventory Period	0.171	0.193	0.068
Cash Conversion Cycle	0.061	0.068	0.190
R ²	0.620		
Adjusted R ²	0.3170		
F	2.042*		

Note:^aStandardised coefficients; ^bUnstandardised coefficients, *Significant at 0.001 level

In above table, it was found that out of four variables; only two were significant i.e. 'accounts receivables' and 'accounts payable', when they are used as proxy for working capital; as the coefficient of the variables is positive and significant (0.438 & 0.301 resp.), while variable 'cash conversion cycle' is not significant in explaining profitability (0.061). As far as inventory conversion period concern, is found to be least significant in predicting profitability compare to accounts receivables and accounts payables. In order to know which variable influence most in predicting profitability, their respective regression weights (β values) were considered. As depicted in the table, Bills

Receivable ($\beta=0.438$) contributed higher compared to Bills Payable ($\beta=0.301$).

DISCUSSION

Collected data were investigated using SPSS software package. Correlation was first applied to profitability to assess relationship among dependent and independent variable. After that multiple regressions was employed to test the density of relationships.

Regression results shows that density of variables were highest among accounts receivable and accounts payable. It was found that accounts receivable and accounts payable were significant in explaining profitability, while

inventory turnover and cash conversion cycle were found to be insignificant. We believe that the approach used in this study can help companies to gain useful insight regarding the relative contribution of each of the elements to manage the profitability. As is evident here, the working capital dimension of accounts receivable and accounts payable drives the profitability of sample population, whereas the other components remain insignificant.

One of the possible explanations for why inventory period and cash conversion cycle were found insignificant, because automobile industry is well equipped with latest technology of GFJMR Vol. 5 July-December, 2012 manufacturing medicines, so the time lag where medicines are work in progress is very low; that ultimately do not effect profitability of the company.

CONCLUSION

This paper observed a negative relationship between accounts receivables and corporate profitability and a positive relationship between accounts payable and profitability. Consequently, it appears that profitability dictates how managers act in terms of managing accounts receivables. Thus, the findings of this paper suggest that managers can create value for their shareholders by reducing the number of days for accounts receivables. In addition, the negative relationship between accounts receivables and firm's profitability suggest that less profitable firms should pursue a decrease of their accounts receivables in an attempt to reduce their cash gap in the cash conversion cycle. On the basis of findings of this paper, we conclude that profitability can be enhanced if firms manage their working capital in a more efficient way.

We may further conclude that these results can be further strengthened if the firms manage their working capital in more efficient ways. If these firms properly manage their cash, accounts receivables, accounts payable and inventories in proper way, this will ultimately increase profitability of these companies.

LIMITATIONS AND FURTHER RESEARCH

This study is limited to the sample of CNX Auto. Index Indian firms. The finding of this study can

only be generalized to automobile firms similar to those that were included in research. Future research should investigate generalization of the findings beyond the Indian automobile sector. Further research may extend to the working capital components including cash, marketable securities etc.

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