

# WORKING CAPITAL MANAGEMENT AND ITS IMPACT ON FINANCIAL PERFORMANCE: AN ANALYSIS OF TRADING FIRMS

## ABSTRACT

Rathiraneer Yogendrarajah  
Senior Lecturer,  
Department of Financial Management,  
Faculty of management Studies and commerce,  
University of Jaffna.

rathi.yogen@yahoo.com

Sankeetha Thanabalasingam  
Faculty of management Studies and commerce,  
University of Jaffna.

sankeetha15@gmail.com

A Working capital management ensures a company has sufficient cash flow in order to meet its short-term debt obligations and operating expenses. The needs of efficient working capital management must be considered in relation to other aspects of the firms' financial and non-financial performance. An efficient Working Capital Management is expected to contribute to the high financial performance. The main purpose of this study was to investigate the working capital management and its impact on firms' financial performance. The efficiency of working capital management was investigated through the cash conversion cycle. The research problem focused here "What extent the working capital management influences on financial performance of the trading firms?" A strong significant relationship between working capital management and profitability has been identified in previous research. It was assumed that "The efficient working capital management has strong impact on financial performance". The dependent variable Return on Assets is used as a measure of profitability of financial performance and its' relationship with working capital management was investigated to find out the results. Samples of 9 trading firms have been selected from the companies listed by the Colombo stock exchange using Statistical Package for Social Sciences (SPSS) for the period of 2004 to 2009 to find out the results. The regression analysis results show that the high investment in inventories and receivables is associated with lower financial performance (ROA). For this analysis the inventories days, accounts receivable days, accounts payable days and cash operating cycle have been used. The findings also revealed that some firms have efficient working capital management and some have inefficient working capital management in the trends of working capital according to the cash operating cycle.

**Key terms:** Working Capital management, financial performance, accounts receivable, accounts payable, cash operating cycle.

## 1 INTRODUCTION

Working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of a company. It deals with current assets and current liabilities and is important to due to many reasons. The current assets of a typical manufacturing company account for over half of its total assets. Excessive levels of current assets can easily result in a firm's realizing a substandard return on assets. However firms with too few current assets may incur shortages and difficulties in maintaining smooth operations (Horne and Wachowicz, 2000).

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. A managerial accounting strategy focusing on maintaining efficient levels of both components of working capital, current assets and current liabilities, in respect to each other. Working capital management ensures a company has sufficient cash flow in order to meet its short-term debt obligations and operating expenses.

Firms may have an optimal level of working capital that maximizes their value. Large inventory and a generous trade credit policy may lead to high sales. Larger inventory reduces the risk of a stock-out. Trade credit may stimulate sales because it allows customers to assess product quality before paying (Long, Maltiz & Ravid, 1993, and Deloof & Jegers, 1996). Another component of working capital is accounts payable. Delaying payments to suppliers allows a firm to assess the quality of bought products, and can be an inexpensive and flexible source of financing for the firm. On the other hand, late payment of invoices can be very costly if the firm is offered a discount for early payment. A popular measure of Working Capital

Management (WCM) 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. However, corporate profitability might also decrease with the cash conversion cycle, if the costs of higher investment in working capital rise faster than the benefits of holding more inventories and/or granting more trade credit to customer.

## 2 RESEARCH PROBLEM

Working capital is an important issue during financial decision making since it is being a part of investment in asset that requires appropriate financing investment. However, working capital is always being disregarded in financial decision making since it involves investment and financing in short term period. The crucial part in managing working capital is required maintaining its liquidity in day-to-day operation to ensure its smooth running and meets its obligation. Yet, this is not a simple task since managers must make sure that business operation is running in efficient and profitable manner. Furthermore, it also acts as a restraint in financial performance.

This discussion of the importance of working capital management, its different components and its effects on financial performance leads us to the problem statement. The problem statement to be analyzed in this study as the following research question:

**RQ: “What extent the working capital management influences on financial performance of the trading firms”?**

## 3 OBJECTIVES OF THE STUDY

The prime objective of the study is to examine the relationship between the Working Capital Management and Financial Performance of the trading firms listed in Colombo Stock Exchange (CSE). The following are the specific objectives:

1. To investigate the impact of Working Capital Management on financial performance of Sri Lanka trading Companies.
2. To examine the impact of accounts receivables days, inventories days, accounts payable days and cash conversion cycle on financial performance.

#### 4 HYPOTHESIS

Since the objective of this study is to examine the relationship between financial performance and working capital management, the study makes a set of testable hypothesis.

H<sub>1</sub>: There is a significance relationship between Working Capital Management and financial performance.

H<sub>2</sub>: Working capital management has strong impact on financial performance.

#### 5 THEORETICAL CONCEPT

Working capital management plays a significant role in better performance of trading firms. Working capital management (WCM) is of particular importance to the small business. With limited access to the long-term capital markets, these firms tend to rely more heavily on owner financing, trade credit and short-term bank loans to finance their needed investment in cash, accounts receivable and inventory. The management of working capital is important to the financial health of businesses of all sizes. 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 and effective way. However, there is evidence that small businesses are not very good at managing their working capital.

Shin and Soenen (1998) used a sample of 58,985 firm's years covering the period 1975-1994 in order to investigate the relation between net-trade cycle that was used to measure the efficiency of working capital management and corporate profitability. In all cases, they found a strong negative relation between the length of the firm's net-trade cycle and its profitability.

Deloof (2003) investigated the relation between working capital management and corporate profitability for a sample of 1,009 large Belgian non-financial firms for the period 1992-1996. The result from analysis showed that there was a negative gap between profitability that was measured by gross operating income and cash conversion cycle as well number of day's accounts receivable and inventories. He suggested that managers can increase corporate profitability by reducing the number of day's accounts receivable and inventories. Less profitable firms waited longer to pay their bills.

Lazaridis and Tryfonidis (2006) have investigated the relation between working capital management and corporate profitability of listed company in the Athens Stock Exchange. A sample of 131 listed companies for period of 2001-2004 was used to examine this relationship. The result from regression analysis indicated that there was a statistical significance between profitability, measured through gross operating profit, and the cash conversion cycle. From those results, they claimed that the managers could create value for shareholders by handling correctly the cash conversion cycle and keeping each different component to an optimum level.

Raheman and Nasr (2007) have selected a sample of 94 Pakistani firms listed on Karachi

Stock Exchange for a period of 6 years from 1999-2004 to study the effect of different variables of working capital management on the net operating profitability. From result of study, they showed that there was a negative relation between variables of working capital management including the average collection period, inventory turnover in days, average collection period, cash conversion cycle and profitability. Besides, they also indicated that size of the firm, measured by natural logarithm of sales, and profitability had a positive relationship.

Singh and Pandey (2008) had an attempt to study the working capital components and the impact of working capital management on profitability of Hindalco Industries Limited for period from 1990 to 2007. Results of the study showed that current ratio, liquid ratio, receivables turnover ratio and working capital to total assets ratio had statistically significant impact on the profitability of Hindalco Industries Limited.

Padachi (2006) has examined the trends in working capital management and its impact on firm's performance for 58 Mauritian small manufacturing firms during 1998 to 2003. He explained that a well designed and implemented working capital management is expected to contribute positively to the

creation of firm's value. The results indicated that high investment in inventories and receivables is associated with low profitability and also showed an increasing trend in the short term component of working capital financing.

## 6 METHOD

### 6.1 SAMPLE

The trading firms listed in CSE are selected to the study during the period of 2005-2009. The Working Capital is represented by the firms' Average collection period, Average payment period, Inventory Turnover, Cash Conversion Cycle and the Organizational Performance expressed by ROC of these firms. In this study, nine (09) trading firms are included from the trading sector listed in CSE which includes Brown & company limited (brwn), C. W. mackie plc (cwm) Ceylon & Foreign trades limited (cft), Eastern merchants limited (emer), Environmental resources investment plc (greg), Office equipment limited (ofeq), Radiant gems international limited (rgem), Singer (sri lanka) limited (sins), and Tess agro limited (tess). The Data are extracted from the annual reports of these firms.

### 6.2 MODE OF ANALYSIS:

The formula and abbreviations used for the measurement of all the variables are presented in the following table.

**Table 1: Measurement of Variables and Abbreviation**

Variable	Measurement	Abbreviation
Average Collection Period	Accounts Receivable / Net Sales*365	AR
Average Payment Period	Accounts Payable / Cost of goods sold *365	AP
Inventory Turnover in Days	Inventory / Cost of goods Sold*365	INVEN
Cash Conversion Cycle	ACP +ITID – APP	CCC

Return on Assets	Profit after interest and tax/Total Assets	ROA
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Data were analyzed using descriptive and inferential statistics. Also regression analysis was performed to investigate the impact of dependent variable on independent variable which the model used for the study is given below.

$$\text{Financial Performance} = f(\text{AR}, \text{AP}, \text{INVEN}, \text{CCC})$$

It is important to note that the Financial Performance depend upon Average Collection Period (AR); Average Payment Period (AP); Inventory Turnover in Days (INVEN) and Cash Conversion Cycle (CCC). The following models are formulated to measure the impact of Average Collection Period; Average Payment Period, Inventory Turnover in Days and Cash Conversion Cycle on Return on Assets (ROA).

$$\text{ROA} = \beta_0 + \beta_1(\text{AR}) + \beta_2(\text{AP}) + \beta_3(\text{INVEN}) + \beta_4(\text{CCC}) + e$$

Where

$$\text{AR} : \text{Accounts Receivable} / \text{Net Sales} * 365$$

$$\text{AP} : \text{Accounts Payable} / \text{Cost of goods sold} * 365$$

$$\text{INVEN} : \text{Inventory} / \text{Cost of Goods Sold} * 365$$

$$\text{CCC} : \text{ACP} + \text{ITID} - \text{APP}$$

$$e : \text{error term}$$

Based on the above regression model ROA is considered as the dependent variables where as AR, AP, INVEN and CCC are the independent variables. The detail analysis is carried out with the help of above indicators.

## 7 RESULTS AND DISCUSSIONS

To find out the rank that which factor has more influence on capital structure the descriptive statistics analysis has been made as follows:

**Table 2**

### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AR	9	18.46	167.41	83.1244	55.37932
AP	9	4.16	134.34	50.6744	37.22498
INVEN	9	6.13	111.95	59.7700	36.50553
CCC	9	32.81	156.78	83.4219	40.33647
ROA	9	.04	.26	.1244	.08156
Valid N (listwise)	9				

Source: Calculations Based on Annual reports of firms from 2005-2009

Table 2 presents descriptive statistics for 9 trading firms for a period of five years from 2005 to 2009 and for total 45 firm-year observations. The cash conversion cycle used as a proxy to check the efficiency in managing working capital is on average 83 days and standard deviation is 40 days. Firm's receivable days against sales an average of 83 days and standard deviation is 55 days. Minimum time taken by a firm to collect cash from receivables is 18 days while the maximum time is 167 days. It takes an average 60 days to sell inventory with standard deviation of 36 days. The maximum time

taken by a company to sell inventory is 112 days, which is a very large time period to convert inventory into sales. Firms have to wait to make payment on average 50 days for their purchases with standard deviation of 37 days. The minimum time taken by a company is 4 days which is unusual, and maximum time taken for this purpose is 134 days.

The correlation analysis was carried out to find out the relationship between working capital and Financial Performance.

**Table 3: Correlation Analysis**

Variables	AR	AP	INVEN	CCC	ROA
AR	1	.643	.208	.595	.181
AP	.643	1	.628	.481	.130
INVEN	.208	.628	1	.722*	-.005
CCC	.595	.481	.722*	1	-.237
ROA	.181	.130	-.005	-.237	1

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

Correlation analysis is used to measure the degree of association between different variables under consideration. Pearson Bivariate correlation is calculated for all variables used in the study. Correlation matrix of all variables included in the analysis is presented in Table 3 which is calculated based on data for 9 firms with 45 years observations. The table shows that financial performance (ROA) is negatively associated with measures of working capital management (inventory

turnover in days, Cash Conversion Cycle) and positively correlated with Average Collection Period, Average Payment Period.

The regression analysis is used to identify the impact of independent variables on the dependent variable.

**Table 4: Regression Analysis  
Model Summary**

Model	R	R Square	Adjusted R Square	Error of the Estimate
1	.825(a)	.681	.362	.06515

a Predictors: (Constant), CCC, AP, AR, INVEN

The table 4 illustrates the Multi Regression Analysis for all factors which strongly impact on Financial Performance. From this table we can observe that the Working capital management represented by CCC, AP, AR, and INVEN is influenced on financial performance by 68% and 32% is affected by other factors.

## 8 CONCLUSION

Most of the trading firms have large amounts of cash invested in working capital. It can therefore be expected that the way in which working capital is managed will have a strong impact on financial performance of those firms. We have found a negative relationship between Return on Assets and Inventory turnover and Cash conversion cycle for the trading firms listed on CSE. These results suggest that managers can create value for their shareholders by reducing the number of days accounts receivable, increasing the number of days accounts payable and inventories to a reasonable minimum.

Regarding our hypothesis, we conclude that our hypothesis ( $H_1$ ) is rejected and there is no significance relationship between working capital management and financial performance which have negative association between the variables of Return on Assets and Inventory turnover and cash conversion cycle and there is low relationship between Return on assets and Accounts receivable days and Accounts payable days. We can conclude that the Working capital management has strong

impact on financial performance and the hypothesis ( $H_2$ ) is accepted.

On the basis of the above analysis we may further conclude that these results can be further strengthened if the firms manage their working capital in more efficient ways. Management of Working capital means “management of current assets and current liabilities and financing these current assets”. If these firms properly manage their cash, accounts receivables, accounts payables, and inventories in a proper way, this will ultimately increase profitability of these companies.

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