

# THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

## Working Capital Management (WCM) And Corporate profitability (CP): A Study Of Selected Listed Companies In Sri Lanka

Ajanthan A

### **Abstract:**

Working capital is needed for day-to-day operations of a firm. The purpose of this study is to investigate the relationship between working capital management and corporate profitability and to identify the variables that most affect corporate profitability. Working capital management is considered to be a vital issue in financial management decision and it has its effect on liquidity as well as on profitability of the firm. Moreover, an optimal working capital management positively contributes in creating firm value. In this study, three sectors are selected as a sample size: Manufacturing (MFG), Beverage Foods and Tobacco (BFT) and Chemical and Pharmaceuticals (CP) sector. The time period is from 2007 - 2011. The Profitability has been measured in terms of net profit margin (NPM); return on assets (ROA) and return on equity (ROE). Cash conversion cycle (CCC), age of inventory (AI), age of creditors (AC), age of debtors (AD) have been used as explanatory variables whereas liquidity ratio (LR) and current ratio (CR) and interest coverage ratio (ICR) have been used as control variables. Descriptive statistics, Pearson's correlation and regression analysis are used in the study. The relationship between working capital management and corporate profitability was confirmed. The results which are robust to the presence of endogeneity, demonstrate that managers can create value by increasing their firm's number of day's accounts payable than increasing number of day's accounts receivable and inventories. Equally, shortening the cash conversion cycle also improves the firm's corporate profitability.

**Keywords:** Working Capital Management; Corporate Profitability & Cash Conversion Cycle.

### **1. Introduction**

Working Capital is the total of the amounts invested in current assets of the company. Net working capital results from the deduction of current liabilities from current assets; Working Capital Management consists of determining the volume and composition of sources and uses of working capital in such a way that would increase the wealth of stockholders. Working capital management is the management of current assets and current liabilities such that would result in the most desirable level of working capital and maximum company profitability. Working capital management is one of the most important areas in financial management of a firm. Managers spend much time on day-to-day problems that involve working capital decisions. Management of working capital generally means managing current assets and current liabilities (Garcia-Teruel PJ, Martinez-Solano PM, 2007). Inadequate working capital leads the company to bankruptcy. On the other hand, too much working capital results in wasting cash and ultimately the decrease in profitability (Chakraborty, 2008).

It is important for manufacturing firms because current assets of these manufacturing firms account for almost half of the total assets (Raheman A, Nasr, 2007). Efficient working capital management involves planning and controlling of current assets and current liabilities in such a way that eliminates the risk of inability to meet short term obligations on the one hand and avoid too much investment in these assets on the other hand.

A good number of firms have put sufficient cash in working capital. Working capital management (WCM) is an important factor of financial management (FM). Debtor, creditor and inventory are the major components of working capital (WC). Large stock and trade credit policy can increase the sales volume. Inventory is the main part of the working capital. Increase in the inventory will give decrease in the risk of stock out. Inventory is done for fulfilling the demand of the public. Inventory is the liability of the company to sell it. The other element of working capital (WC) is accounts payable (AP). Firms can check the quality of the products provided by the producer by giving them late payment, whether it is suitable for the firm or not. Late payments create very bad impression of the firm in the market. Accounts receivable is also the major part of the working capital. Delay in the days of receivable creates more complication for the company. Working capital management is still taken lightly by some companies. It works as a key to free the cash from stock, accounts payable (AP) and accounts receivable (AR). To deal with the less important aspects of efficient and effective Working Capital (WC), firms can sharply reduce the outsourcing and they can save the money for future investment or opportunities. This can create more financial flexibility and increase the worth of the firm by reducing capital employed (Buchmann and Jung, 2008).

According to Joshi PV (1995) working capital management is a very sensitive area in the field of financial management and it involves the decision of the amount and composition of current assets and the financing of these assets. The working capital management of a firm partly affects its profitability.

Working capital strategies result from the combination of current assets and liabilities that play a significant role in the existence and growth of the entity. Working capital management includes the selection of an appropriate strategy in coordination with the entity's financial needs and in lieu with increasing the company yield (Nazir and Afza, 2007).

Companies must retain an appropriate level of working capital to maximize their value. In other words retention of high inventory levels and too much utilization of credit policies increase sales. High levels of inventories, reduces risk of depletion while credit policies initiate sales; mainly due to the fact that they allow the customer to evaluate the quality of the product prior to purchase (Petersen and Rajan, 1997).

In the present study, therefore, an attempt to examine and evaluate the management of working capital and its effects on corporate profitability of selected companies in Sri Lanka. Specific objectives are to examine a relationship between working capital management and profitability over a 5 years period.

## 2. Research Problem

The ultimate objective of any firm is to maximize the profit. But, preserving liquidity of the firm is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a trade-off between these two objectives of the firms. One objective should not be at cost of the other because both have their importance. If we do not care about profit, we cannot survive for a longer period. On the other hand, if we do not care about liquidity, we may face the problem of insolvency or bankruptcy. For these reasons working capital management should be given proper consideration and will ultimately affect the profitability of the firm. Many firms suffer from how can manage its working capital in order to reach to the optimum, then to enhance their corporate profitability. The study tries to ask the following questions:

- What are the components of working capital for Sri Lankan companies?
- How can working capital enhance the corporate profitability of the companies?
- What are the techniques can the companies use to achieve the optimal working capital in order to maximize the corporate profitability?

## 3. Research Questions

In order to gain an insight and understand the link, if any, between working capital management and corporate profitability in a profit-oriented business, the following questions below are addressed in the course of the study:

- Is there any relationship between working capital management and corporate profitability?
- What is the nature and extent of the relationship between working capital management and corporate profitability?

## 4. Objectives Of The Study

The main objective of this study is to investigate the relationship between working capital management and the corporate profitability of Sri Lankan listed companies. However, the secondary objectives of the study are:

- To investigate the relationship between working capital management and the net profit margin.
- To investigate the relationship between working capital management and return on equity.
- To analyze the relationship between working capital management and return on assets.

## 5. Literature Review

According to Deloof (2003) the way that working capital is managed has a significant impact on profitability of Belgian firms. This result indicates that there is a certain level of working capital requirements which potentially maximizes returns. It has been showed that by minimizing the amount of funds tied up in current assets; firms can reduce financing costs and/or increase the funds available for expansion. But most firms may not realize that instantly.

Eljelly (2004) identified the relation between profitability and liquidity who was examined, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock firms in Saudi Arabia. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio that affects profitability. The size variable was found to have significant effect on profitability at the industry level. The results were stable and had important implications for liquidity management in various Saudi firms. First, it was clear that there was a negative relationship between profitability and liquidity indicators such as current ratio and cash gap in the Saudi sample examined. Second, the study also revealed that there was great variation among industries with respect to the significant measure of liquidity.

Raheman and Nasr (2006) discussed working capital management and its effect on liquidity as well on profitability of the firm. They have studied the effect of different variables of working capital management including the Average collection period, Inventory turnover in days, Average payment period, Cash conversion cycle and Current ratio on the net operating profitability of Pakistani firms. Debt ratio, size of the firm (measured in terms of natural logarithm of sales) and financial assets to total assets ratio have been used as control variables. The results found that there is a strong negative relationship between variables of the working capital management and profitability of the firm. It means that the cash conversion cycle increases it will lead to decreasing profitability of the firm, and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. They found that there is a significant negative relationship between liquidity and profitability.

They also found that there is a positive relationship between size of the firm and its profitability. There is also a significant negative relationship between debt used by the firm and profitability.

Cote and Latham (1999) argued that management of receivables; inventory and accounts payable have tremendous impact on cash flows, which in turn affect the profitability of firms.

According to Long, Malitz and Ravid (1993) it is seen that liberal credit terms to the customers increase the sales level of the firm, though having a continuous troubleshooting with managing short term financing in the finance department. The decision lays with the firm which one to put more importance on.

Kamath (1989) investigated the study on retailing firms and concluded that there was inverse association between cash conversion cycle and profitability. It means profitability enhanced by decreasing the cash conversion cycle.

Lazardidis and Tryfonidis (2006) have investigated the relationship between profitability and working capital management in the Stock Exchange Market of Athens throughout 2001-2004. The objective of this research is to study the relationship between profitability and the cycle of cash transformation and its components. Results indicate that a significant relationship exists between gross operational profit and the cash transformation cycle. Moreover managers can generate a good profit for the company using the right management techniques for the cash transformation cycle and its components.

Wang (2002) examined the relationship between working capital management and firm profitability and found that lesser the investment in working capital which leads to increase the profitability of the firm.

Smith (1980) said, Short term assets and liabilities are managed carefully by working capital management (WCM) for the growth of the firm's profitability. For creating good worth of the share in front of shareholders, firms have to manage working capital efficiently and effectively.

Shin and Soenen (1998) revealed, Working capital management process starts from the purchase of raw material up to the sales of the goods. It creates significant impact on the profitability and liquidity of the firms.

All the above studies provide us a solid base and give us 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, we have developed our own methodology for research.

## 6. Conceptualization

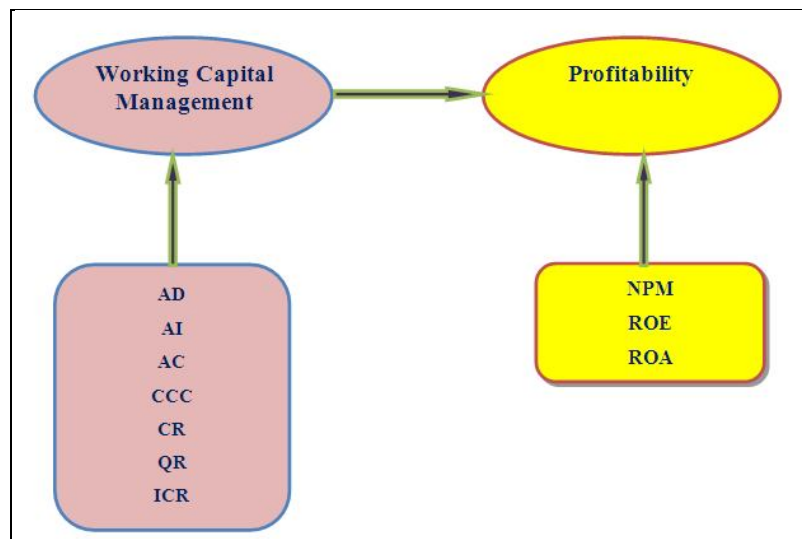


Figure 1: Author constructed

## 7. Hypotheses Of The Study

The hypotheses below are operationalized as a basis for analysis and conclusion on the relationship between working capital management and corporate profitability.

- $H_0$ : There is no negative relationship between cash conversion cycle and net profit margin.
- $H_1$ : There is negative relationship between cash conversion cycle and net profit margin.
- $H_0$ : There is no negative relationship between cash conversion cycle and return on equity.
- $H_2$ : There is negative relationship between cash conversion cycle and return on equity.
- $H_0$ : There is no negative relationship between cash conversion cycle and return on assets.
- $H_3$ : There is negative relationship between cash conversion cycle and return on assets.
- $H_0$ : There is no significance impact of working capital on NPM.
- $H_4$ : There is significance impact of working capital on NPM.
- $H_0$ : There is no significance impact of working capital on ROE.
- $H_5$ : There is significance impact of working capital on ROE.

- H<sub>0</sub>: There is no significance impact of working capital on ROA.
- H<sub>6</sub>: There is significance impact of working capital on ROA.

**8.Methodology**

This research is to analyze the impact of working capital management (WCM) on the corporate profitability (CP) of selected MFG; BFT and CP companies with reference to Sri Lankan context. Different statistical tools are applied to analyze the significance of the variables. So, the method of coefficient of correlation has been selected. Regression analysis is applied for testing the model reliability and significant relationship between variables.

*8.1.Data Set And Sample*

Threesectors are selected from Colombo Stock Exchange (CSE). The first is Manufacturing; second is Beverage Food & Tobacco and third is Chemical & Pharmeuticals sectors. A total of 10 companies are taken as sample for the data collection, which are collected from different sources. They are taken from 2007 - 2011 from the comprehensive income statement and financial position of the selected companies which were listed in CSE.

*8.2.Mode Of Analysis*

In the present study, we analyze our data by employing correlation; multiple regressions & descriptive statistics. For the study, entire analysis is done by personal computer. A well-known statistical package like ‘Statistical Package for Social Sciences’ (SPSS) 16.0 Version was used in order to analyze the data. The following working capital management and profitability ratios are taken into accounts which are given below.

<b>Working Capital Management</b>	
Cash Conversion Cycle (CCC)	= Age of Inventory (AI) +Age of Debtors (AD) - Age of Creditors (AC) [AI + AD – AC].
Age of Inventory (AI)	= 365 × (Inventory/Cost of goodssold).
Age of Debtors (AD)	= 365 × (Accountsreceivables/Sales).
Age of Creditors (AC)	= 365 × (Accounts payable/Costof goods sold).
Current Ratio (CR)	= Current Assets / Current Liability
Quick Ratio (QR)	= [Current Assets- Inventory]/ Current Liability
Interest Coverage Ratio (ICR)	= Profit Before Interest and Tax(PBIT) / Amount of Interest
<b>Corporate Profitability</b>	
Net Profit Margin (NPM)	= [Net Profit / Total Sales] X 100
Return on Equity (ROE)	= Profit after Interest and Tax / Equity Capital X100
Return on Assets (ROA)	= Profit after Interest and Tax / Total Assets X100

*Table : Calculations Of Working Capital Management And Corporate Profitability*

Multipleregressionanalysiswasperformedtoinvestigatetheimpactofworking capital management oncorporate performance whichthemodel used for the study is given below.

Corporate Profitability = f (CCC; AI; AD; AC; CR; QR; and ICR)

It is important to note that the Corporate Profitability depend upon CCC; AI; AD; AC; CR; QR; and ICR. The following three models are formulated to measure the impact of working capital management oncorporate performance.

$$NPM = \beta_0 + \beta_1CCC + \beta_2AI + \beta_3AD + \beta_4AC + \beta_5CR + \beta_6QR + \beta_7ICR + e \text{ ----- (1)}$$

$$ROE = \beta_0 + \beta_1CCC + \beta_2AI + \beta_3AD + \beta_4AC + \beta_5CR + \beta_6QR + \beta_7ICR + e \text{ ----- (2)}$$

$$ROA = \beta_0 + \beta_1CCC + \beta_2AI + \beta_3AD + \beta_4AC + \beta_5CR + \beta_6QR + \beta_7ICR + e \text{ ----- (3)}$$

Where,

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$  are the regression co-efficient;

- NPM → Net Profit Margin
- ROE → Return on Equity
- ROA → Return on Assets
- CCC → Cash Conversion Cycle
- AI → Age of Inventory
- AD → Age of Debtors
- AC → Age of Creditors
- CR → Current Ratio
- QR → Quick Ratio
- ICR → Interest Coverage Ratio

## 9.Results & Analysis

### 9.1.Descriptive Statistics

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
NET PROFIT MARGIN	10	-8.50	31.15	8.0499	12.19977
RETURN ON EQUITY	10	5.17	83.00	24.4466	22.59038
RETURN ON ASSETS	10	3.51	126.56	30.1663	41.49271
AGE OF INVENTORY	10	-19.79	434.46	1.1766E2	127.63768
AGE OF DEBTORS	10	38.54	416.93	1.0869E2	114.80065
AGE OF CREDITORS	10	1.16	95.13	26.3278	31.12323
CASH CONVERSION CYCLE	10	5.10	149.02	48.3206	52.03360
CURRENT RATIO	10	.61	5.80	2.1612	1.49623
QUICK RATIO	10	.33	3.25	1.3346	.86970
INTEREST COVERAGE RATIO	10	-3.48	2421.11	2.8354E2	759.25293
Valid N (listwise)	10				

Table 1: Descriptive Statistics Of The Variables

Table 1 presents descriptive statistics for 10 Sri Lankan listed companies for a period of five years from 2007 to 2011. The mean value of net operating margin is 8.049% and standard deviation is 12.19%. It means that value of the profitability can deviate from mean to both sides by 12.19%. The maximum value for the net operating margin is 31.15% for a company in a year while the minimum is -8.5%.

The cash conversion cycle used as a proxy to check the efficiency in managing working capital is on average 48 days and standard deviation is 52 days. Firms receive payment against sales after an average of 1 day and standard deviation is 114 days. Minimum time taken by a company to collect cash from receivables is 38 day while the maximum time for this purpose is 417 days. It takes an average 1 day to sell inventory with standard deviation of 127 days. Here, maximum time taken by a company is 434 days, which is a very large time period to convert inventory into sales. Firms wait an average 26 days to pay their purchases with standard deviation of 31 days. Here, minimum time taken by a company is 1 day which is unusual, and maximum time taken for this purpose is 95 days. In the same way to check the liquidity of the companies, traditional measures of liquidity (current ratio, quick ratio and interest coverage ratio) are used. The average of this current, quick and interest coverage ratio are 2.2, 1.3 and 2.8 respectively. The highest and lowest value of this ratio are 5.8; 3.52; 2421.11 and 0.61; 0.33; -3.48 respectively.

### 9.2. Correlation; Regression And Reliability Analysis

Model	Dependent	Independent	R	P – value	R <sup>2</sup>	F-Value	Durbin-Watson
1	NPM	CCC	-0.227	0.528	0.931	18.299 (0.53)	2.870
		AI	0.598	0.068			
		AD	0.547	0.102			
		AC	0.360	0.307			
		CR	-0.083	0.819			
		QR	-0.122	0.737			
		ICR	0.675*	0.032			
2	ROE	CCC	-0.454	0.188	0.808	6.402 (0.142)	2.635
		AI	0.869**	0.001			
		AD	0.921**	0.000			
		AC	0.194	0.592			
		CR	-0.224	0.534			
		QR	-0.184	0.610			
		ICR	0.934	0.000			

3	ROA	CCC	-0.289	0.417	0.505	2.303 (0.335)	2.811
		AI	0.629	0.051			
		AD	0.744*	0.014			
		AC	0.004	0.990			
		CR	-0.369	0.294			
		QR	-0.360	0.307			
		ICR	0.890**	0.001			

Table 2: Correlation, Regression & Reliability Values  
Correlation Is Significant At The 0.05 Level (2-Tailed)  
\*\*, Correlation Is Significant At The 0.01 Level (2-Tailed).

The above mentioned table indicates the relationship between the various independent and dependent variables used in the study. As it is observed in the table, the correlation values were found to be mixed (positive and negative) between the variables. The R values were found to be positive between AI; AD; AC; ICR; NPM; ROA & ROE whereas rest of the variables show negative relationship with dependent variables. Only the variables, ICR; AD; AI reveal significant relationship (significance at 5 percent level of significance) with dependent variables. ICR reveals significant relationship with NPM and ROE whereas AD shows significant relation with ROE and ROA and AI shows significant relation only with ROE. In addition CCC has negative relation with all three independent variables which is not significant.

### 10. Regression

Regression analysis is used to test the impact of working capital management on corporate profitability of the listed companies in CSE. As we mentioned in mode of analysis, three models were formulated and the results are summarized in the above Table-2.

The specification of the seven variables such as CCC; AI; AD; AC; CR; QR and ICR in the above model revealed the ability to predict profitability ( $R^2 = 0.931; 0.808 \& 0.505$ ). In this model  $R^2$  value of above three profitability measures denote that 93.1%; 80.8% & 50.5% to the observed variability can be explained by the differences in seven independent variability namely CCC; AI; AD; AC; CR; QR and ICR. The remaining 6.9%; 19.2% and 49.5% are not explained, because the remaining part of the variance in corporate profitability is related to other variables which are not depicted in the model.

An examination of the model summary in conjunction with ANOVA (F-value) indicates that the model explains the weak possible combination of predictor variables that could contribute to the relationship with the dependent variables. All three models are statistically insignificant. Value of three models greater than 0.05. However, it should be noted here that there may be some other variables which can have an impact on corporate profitability, which need to be studied. In addition to the above analysis Durbin-Watson test also carried out to check the auto correlation among the independent variables. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non-autocorrelation. Model 1; 2 and 3 have the value of 2.87; 2.635 and 2.811 respectively. This indicates that there is no auto correlation.

No	Hypotheses	Results	Tools
H <sub>0</sub>	There is no negative relationship between cash conversion cycle and net profit margin	Rejected	Correlation
H <sub>1</sub>	There is negative relationship between cash conversion cycle and net profit margin	Accepted	Correlation
H <sub>0</sub>	There is no negative relationship between cash conversion cycle and return on equity.	Rejected	Correlation
H <sub>2</sub>	There is a negative relationship between cash conversion cycle and return on equity.	Accepted	Correlation
H <sub>0</sub>	There is no negative relationship between cash conversion cycle and return on assets.	Rejected	Correlation
H <sub>3</sub>	There is a negative relationship between cash conversion cycle and return on assets.	Accepted	Correlation
H <sub>0</sub>	There is no significance impact of working capital on NPM.	Accepted	Regression
H <sub>8</sub>	There is significance impact of working capital on NPM.	Rejected	Regression
H <sub>0</sub>	There is no significance impact of working capital on ROE.	Accepted	Regression
H <sub>9</sub>	There is significance impact of working capital on ROE.	Rejected	Regression
H <sub>0</sub>	There is no significance impact of working capital on ROA.	Accepted	Regression
H <sub>10</sub>	There is significance impact of working capital on ROA.	Rejected	Regression

Table 3: Testing Of Hypotheses

### 11. Conclusion & Recommendation

The results of the study show that in the sampled companies, there is relation between working capital management and profitability, which is not significance. There is also a negative relation between cash conversion cycle; NPM; ROE and ROA. In addition multiple regression tests confirm an insignificance degree of association between the working capital management and profitability. Thus, company manager should concern on working capital management, especially unexplained variables in purpose of creation shareholder wealth. We can conclude that working capital management has an impact on the corporate profitability of the companies and the managers can create value for the stockholders by decreasing receivable accounts and Inventory as well as increasing payables and the managers must look for the methods that by means of them and correct management be effective on the profitability of the companies. Considering the results, research suggestions are in this way; one of the company aims must be decreasing cash conversion cycle, it will improve the performance. Since longer the cash conversion cycle, more need the company will have to be provided financially out of the company. It causes expenses increase and value decrease in the company. In general, the following cases decrease cash conversion cycle;

- Reduce inventory conversion cycle by processing them and quick sale of the products.
- Decreasing average collection period by speeding receivables reception.
- By delaying or making debts payment period longer by slowing company's payments, this operation continues up to the time that doesn't cause expense increase and sale. Lazaridis, I. and D. Tryfonidis, 2006. "The relationship between working capital management and profitability of listed companies in the Athens Stock", *Journal of Financial Management and Analysis*, 19(1): 26-35.
- The results of a survey show that decrease for 10 days in cash conversion cycle of American companies leads to 12.76% to 13.02% in their profitability. It was specified in the research that the companies whose cash conversion cycle is 10 days less than the companies average, their stock return is 1.7% more than the companies average. Cotis, L., 2004. "Lean Working Capital Management" *Business credit*; 106, 1; Accounting and Tax Periodicals, pp: 56.
- The results of other researches show that one day cash conversion cycle decrease cause 1.3 million euro increase in market value. Poiters, P., 2004. "Working capital management and company value at Heinz", *treasury affairs*, 1: 11.

### 12. Limitations & Scope For Further Research

The study suffers from certain limitations which are mentioned below.

- As the study is purely based on listed trading companies, so the results of the study are only indicative and not conclusive.
- Furthermore, data representing the period of 5 years were used for the study.

This study can be a base to extend the research for other industries of the market as well. While doing this study the necessity of observing the cash position was also realized. As holding enough cash has been explained as a probable reason by Lazaridis and Tryfonidis (2006) for companies to enjoy better pricing with their suppliers and also a reason to affect the profitability of the firm. So this can be a scope for further research regarding the area of working capital in Bangladesh.

### 13. References

- 1) Besley, Scott & Meyer, R.L. (1987). An Empirical Investigation of Factors Affecting the Cash Conversion Cycle. Annual Meeting of the Financial Management Association, Las Vegas Nevada.
- 2) Buchmann P, Jung U (2008). Best-practice working capital management: Techniques for optimizing inventories, receivables, and payables. *Q. Finance.*, pp. 1-7.
- 3) Chakraborty, K., 2008. Working Capital and Profitability: An Empirical Analysis of Their relationship with Reference to Selected Companies in the Indian Pharmaceutical Industry, *The Icfai Journal of Management Research*.
- 4) Cote, J. M., & Latham, C. K. (1999). The Merchandising Ratio: A Comprehensive Measure of Working Capital Strategy. *Issues in Accounting Education*, 14(2), 255-267. <http://dx.doi.org/10.2308/iace.1999.14.2.255>.
- 5) Cotis, L., 2004. "Lean Working Capital Management" *Business credit*; 106, 1; Accounting and Tax Periodicals, pp.: 56.
- 6) Deloof, 2003. "Does Working Capital Management Affects Profitability of Belgian Firms?" *Journal of Business Finance & Accounting*, Vol 30 No 3 & 4 pp. 573 – 587.
- 7) Eljelly, A., 2004. "Liquidity-profitability tradeoff: An empirical investigation in an emerging market *Intl. J. Commerce and Management*, 14(2): 48-61.
- 8) Joshi, P. V. 1995. *Working Capital Management under Inflation*, 1st Ed. Anmol Publishers, pp. 20 – 93.
- 9) Lazaridis, I., & Tryfonidis, D. (2005). The relationship between working capital management and profitability of listed companies in the Athens Stock Exchange. SSRN.com. [Online] Available: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=931591](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=931591).
- 10) Lazaridis, Ioannis. Tryfonidis, Dimitris. 2006. "Relationship Between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange" [www.ssrn.com](http://www.ssrn.com).
- 11) Long, M.S., Malitz, I.B., & Ravid, S.A. (1993). Trade Credit, Quality Guarantees, and Product Marketability. *Financial Management*, 22(4), 117-127. <http://dx.doi.org/10.2307/3665582>.

- 12) Montgomery, D.C. and E.A. Peck, 1982. Introduction to Linear Regression Analysis.
- 13) P. J. Garcia-Teruel and P. Martínez-Solono, "Effects of Working Capital Management on SME Profitability," International Journal of Managerial Finance, vol. 3, no. 2, pp. 174-177, 2007.
- 14) Poirters, P., 2004. "working capital management and company value at Heinz", treasury affairs, 1: 11.
- 15) Raheman, A., & Nasr, M. (2007). Working Capital Management And Profitability – Case Of Pakistani Firms. International Review of Business Research papers, 3(1), 279 – 300.
- 16) Shin, H., H., Soenen, L. 1998. Efficiency of working capital management in the profitability of Hindalco Industries Limited, Icfai University; Journal of Financial Economics, 6(4), 62-72.
- 17) Smith. (1980). Profitability versus liquidity tradeoffs in working capital management, in readings on the management of working capital. New York. St. Paul: West Publishing Company.
- 18) Wang, W., 2002. "Liquidity management, operating performance and corporate value: evidence from Japan and Taiwan" Journal of Multinational Financial Management, 12: 159-169.