ORIGINAL RESEARCH PAPER | Management | Volume : 6 | Issue : 11 | November 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

The Relationship Between Working Capital Management And Profitability: Evidence from Sugar Industry of Telangana State

KEYWORDS: Working capital management, cash conversion cycle, Return On Total Asset

G.L.Meena	I. Lokanandha Reddy
Associate Professor, MBA Dept., Golden Valley Integrated Campus, Madanapalle	Professor & Director, KKC Group of Institutions, Puttur

ABSTRACT *This research was undertaken to achieve three main objectives. The first objective was to To examine the nature and extent of relationship between different working capital components and profitability of select private sector sugar factories in Telangana State. The second objective was To study the impact of working capital components on corporate profitability. These objectives were met by the use of a mixed research method approach. The study employed two research methods by collecting both quantitative and qualitative data. The financial data analysis is based on the annual reports of nine private sugar factories of Andhra Pradesh and Telangana States for the period 2006 to 20115. The study found that The study depicts that the Telangana state sugar manufacturing units are having low positive and insignificant relation between number of day's accounts payable and ROTA. Hence this analysis reveals that when profitability deteriorates, low cash is generated from the operations and firms are able to survive by postponing the payments to suppliers. The regression analysis results indicates the negative relation with cash conversion cycle to ROTA, which means that management of the firm can increase the profitability by decreasing the cash conversion cycle period.*

INTRODUCTION
WORKING CAPITAL:
Working capital is a financial metric which represents operating liquidity available to a business, organization or other entity. It refers to the cash available for day-to-day operations of an organization. It is also called as current capital.

WORKING CAPITAL MANAGEMENT:
Working capital management involves the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcoming operational expenses. It includes monitoring cash flow, assets and liabilities through ratio analysis **of key elements of operating expenses, including the working capital ratio, collection ratio and the** inventory turnover ratio. Efficient working capital management helps with a company's smooth financial operations, and can also help to improve the company's earnings and profitability. Management of working capital includes inventory management and management of accounts receivables and accounts payables.

Current Assets
Current assets are items that can be turned into cash quickly. Current Assets includes cash on hand, short-term investments, inventory and accounts receivable.

Current Liabilities
A company normally incurs liabilities during the operating period to meet its operations budget. Current liabilities includes inventory purchases, employee wages, taxes and accounts payable.

Components of Working Capital:
There are three main components associated with working capital management: Inventory, Accounts Receivable, and Accounts Payable.

Inventory: Inventory is a company's primary asset that it converts into sales revenues. The rate at which a company sells and replenishes its inventory is an important measure of its success. Investors consider the inventory turnover rate to be an indication of the strength of sales and as a measure of how efficient the company is in its purchasing and manufacturing process. Inventory that is too low puts the company in danger of losing out on sales, but excessively high inventory levels represent wasteful, inefficient use of working capital.

Accounts receivable: Accounts receivable are revenues due – what is owed to a company by its customers for sales made. Timely, efficient collection of accounts receivable is essential to a company's smooth financial operation. Accounts receivable are listed as assets on a company's balance sheet, but they are not actually assets until they are collected. A common metric analysts use to assess a company's handling of accounts receivable is days sales outstanding, which reveals the average number of days a company takes to collect sales revenues.

Accounts payable: The money that a company is obligated to pay out over the short term, is also a key component of working capital management. Companies seek to strike a balance between maintaining maximum cash flow by delaying payments as long as is reasonably possible and the need to maintain positive credit ratings and good relationships with suppliers and creditors. Ideally, a company's average time to collect receivables is significantly shorter than its average time to settle payables.

Working Capital Operating Cycle: This implies that the operating cycle i.e. the cycle starting from the acquisition of raw materials to its conversion to cash. The working capital cycle (WCC) is the amount of time it takes to turn the net current assets and current liabilities into cash. (Chakraborty,1973) The longer the cycle is, the longer a business is tying up capital in its working capital without earning a return on it. Therefore, companies strive to reduce its working capital cycle by collecting receivables quicker or sometimes stretching accounts payable.

Volume : 6 | Issue : 11 | November 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

Industry Profile:

Sugar is a sector of significant importance to the national economy. While consumption has been growing historically, the production has been cyclical. At present, the sugar industry is regulated across the value chain. Investments in by-products are at a nascent stage, and the sector has struggled to generate a return on invested capital in excess of its cost of capital in most years, primarily due to a high mandated fixed cane price and a volatile sugar price. Sugarcane is primarily grown in nine states of India: Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Maharashtra, Punjab, Uttar Pradesh and Tamil Nadu. More than 50 million farmers and their families are dependent on sugarcane for their livelihood. The sugar industry caters to an estimated 12 percent of rural population in these nine states through direct and indirect employment. Effectively, each farmer contributes to the production of 2.9 MT of sugar every year . In addition to farmers, an estimated 0.5 million workers are directly employed as agricultural labour involved in cultivation and harvesting. The sugar industry also supports diversified ancillary activities and skills that support the local economy. The dependent population creates substantial demand for local goods and services. In addition to the sugar industry's contribution to the rural economy, it has significant social and economic impact for the nation as well. The sugar industry is a green industry and is largely self sufficient in energy needs through utilization of bags' for generating electricity and steam. In fact, the sugar industry generates surplus exportable energy through cogeneration and contributes in reducing the energy deficit that India is currently facing. The sugar industry is also the primary source of raw material for the alcohol industry in India. The annual economic contribution of the sugar industry to the exchequer through principal indirect taxes amounts to more than INR 2800 crores .

Literature Survey:

Viqar Ali Baig(2010) conducted a research to give relevant policy recommendations helpful to enhance the firm's value. In this research, the concepts of managing working capital internally and externally are taken. The objective of this research is to analyze and interpret the working capital management practices of Dairy Co-operative, private and MNCs manufacturing firms in India. He used the data to analyses the practice of managing working capital internally and externally are 1. Managing working capital internally-first dimension 2. Overall Working Capital management policy. **Melita Stephanou Charitou et al.,(2010)** Present study is investigation on the effect of working capital management on firm's financial performance. They assumed that efficient management of working capital will enhance the profitability and considered firms listed on Cyprus Stock Exchange for the period from 1998 to 2007. They have undertaken multivariate regression analysis, and found that the outcomes which supports their hypothesis. Finally , the results indicate that the cash conversion cycle and all its components like, inventory turnover in days, credit sales outstanding in days and creditors payment period – are associated with firm's profitability. And also menctioned that their results of the present study should be of great importance to managers and major stakeholders, such as investors, creditors, and financial analysts and so on., especially after the recent global financial crisis and the latest collapses of giant organizations worldwide. **André Luiz de Souza Guimarães, Valcemiro Nossa(2010)** the study reiterates the importance of efficient management of working capital to the performance and survival of healthcare insurance companies. The study aims to analyze the adequacy of a working capital management normative model, in terms of profitability, liquidity and solvency. An empirical and analytical research have conducted by considering ANOVA of a sample containing financial information from 621 healthcare insurance companies for the year 2006. The study shows that there are different working capital structures are associated with different levels of profitability, liquidity and solvency. The results indicate that a certain structure – where financial current assets exceed onerous current liabilities, and cyclical current assets exceed cyclical current liabilities – is associated with higher levels of profitability, liquidity and solvency. **Asha Sharma(2011)** has stated that Working Capital Management has its impact on liquidity as well profitability. She considered data of 2009 and 2010 of three companies Mahindra & Mahindra, Tata Motors, Maruti Suzuki of Automobile industries of India and three companies Ranbaxy, Dr. Reddy's and Cipla to understand co-relevency between liquidity, effectiveness and profitability. They found that there is a significant negative relationship between liquidity and profitability. **Mahdi Salehi(2011)** in his study aimed to examine the relationship between change in working capital and fixed assets with return on assets by considering 120 manufacturing listed companies in Tehran Stock Exchange for the period 2006–2010. They employed Pearson correlation and Regression test to determine the relationship between dependent and independent variables, hypotheses test and evaluating normality of data respectively. Finally the results of the study stated that there is a significant relationship between working capital changes and fixed assets with return on assets. **Chisti Khalid Ashraf(2012)** Have stated that the Working Capital Management has its impact on liquidity as well on profitability of the firm. Present paper they took sample of the 16 Indian firms, which are listed on Bombay Stock Exchange during the period from 2006 to 2011. They have examined working capital variables like Debt ratio, Average collection period, Inventory turnover in days, Average payment period, Cash conversion cycle and Current ratio and analysed its impact on the Net operating profitability of selected firms. They have undertaken Descriptive and Regression analysis. And finally the results showed that there is a strong negative relationship between working capital variables and profitability of the firm except the sales. And also there is a positive relationship between size of the firm and its profitability. And a significant negative relationship between debt used by the firm and its profitability. **Biswajit Bose(2013)** have determine the effect of working capital on firm's profitability. For measuring the profitability they used return on total assets. They have considered 30 manufacturing firms using panel data analysis for the period 2004-2012. They calculated WCTR, CATNS, CATTA, ITR, CPR, CR, and found only CPR has positive impact on ROTA and the remaining has negative impact on ROTA. **Sumaira Tufail, Bilal Sidra and Amjad(2013)** in present study aims to find out the effects of policies of working capital on profitability. They used Return on assets as a measure of profitability. To determine investment policy Current assets to total assets ratio is used and to determine financing policy of current liabilities to total assets ratio is used. Other variables that are used. More over, they measured quick ratio, debt to equity ratio and size of the firms. Secondary data of 117 textile firms listed on Karachi stock exchange is considered from 2005 to 2010 to calculate the above variables. The regression analysis shows that aggressive working capital management policies have negative association with profitability. Moreover liquidity and size of the firm have positive association with profitability, whereas debt to equity ratio is negatively correlated with profitability. **Shagufta Nasreen, Farida Khanam, Syed Shahzaib Pirzada(2014**) aims

Volume : 6 | Issue : 11 | November 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

to inquire the impact of working capital management on firm's profitability. As working capital management measure (inventory conversion period, debtor's conversion period, creditor's conversion period, cash conversion cycle, and cash conversion efficiency) are taken as independent variables. For measuring profitability (net profit margin, return on assets, return on equity, and return on capital employed) are taken as dependent variables. Regression analysis is used to discover the impact of working capital management on firm's profitability by using secondary data. They concluded working capital management has significant impact on firm's net profit margin, return on assets, and returns on capital employed and insignificant impact is find out on return on equity of firms. **Asif Iqbal & Wang Zhuquan(2015)** stated that Efficient working capital management is an essential component of overall corporate strategy to boost shareholders value. They examined the relationship between working capital management and profitability of Pakistani firms listed on Karachi Stock Exchange for a period of 6 years 2008-2013. They undertaken Correlation analysis using panel data and panel least square was considered to check the impact of working capital management on profitability. They found negative relationship between the measure of profitability and Average Payment Period, Average Collection period, Inventory turnover in days, Cash conversion cycle and Debt while positive relationship between ROA and Size, GDPGR and Sales growth of Pakistani firms. **Dinesh Sharma, Jayalaxmi Sharma, Mohd Arif(2015)** in this sudy they considered the profitability ratio such as gross profit ratio, net profit ratio, return on capital employed, return on total assets, return on equity etc. working capital they assessed through current ratio, liquid ratio, debtor turnover ratio, working turnover ratio and inventory turnover ratio. They analyzes the profitability and working capital management of SAIL. And also studied the relationship between these variable using correlation and regression analysis. They concluded that there is a significant relationship between corporate profitability and working capital management.

RESEARCH METHODOLOGY

Objectives Of The Study:

1. To examine the nature and extent of relationship between different working capital components and profitability of select private sector sugar factories in Telangana Region
2. To study the impact of working capital components(Inventory in days, Accounts Receivables period average payments period and Cash Conversion Cycle) on corporate profitability (Return on Total Assets)

Secondary Data:

The secondary data is collected from business periodicals, business journals, magazines, publications, reports, research articles, websites, manuals and booklets.

Sample:

The study of impact of working capital components on profitability had been conducted in 9 selected private sugar factories out of 18 private sugar factories in Telangana. For this purpose the data collected will be from financial reports for past 10 years from 2006 to 2015. The financial data will be edited, classified, and tabulated as per the requirement of the study. The ratio analysis technique is used to determine the working capital components of the companies.

Data Analysis & Interpretations:

Calculation of working capital components and profitability

Company Name	**Current ratio**	**Inventory in days**	Accounts receivables in days	Average payables in days	Cash conversion cycle	Return on Total Assets
Delta Sugars Limited	1.36	93.5	32.3	20.5	105.3	0.055
Gayatri Sugars Limited	1.69	99.7	30.1	21.9	107.9	0.116
G M R Vasavi Indts Limited	1.95	78.9	25.3	21.2	83	0.103
Kakatiya Cement Sugar And Industries Limited	2.18	70.6	22.1	19.7	73	0.141
Madhucon Sugar And Power Industries Limited	1.30	79.2	24.9	21.7	82.4	0.130
Nijam Deccan Sugars Limited	1.45	73.1	30.7	22.6	81.2	0.045
Nsl Krishnaveni Sugars Limited	0.81	93.5	26.5	20.2	99.8	0.134
Shiv Shakti Sugar Mill India Private Limited	1.58	98.9	29.6	18.3	110.2	0.300
Trident Sugars Ltd	1.26	93.5	28.8	15.3	113.9	0.071

Table-4.1.3 As evident from the table, over the period of analysis the values of current ratio of the all selected manufacturing units (except Kakatiya Sugars) not crossing the norm 2:1. the selected factories were not stable in maintaining their current ratio. Further, a look at the table shows that, with the exception of Kakatiya sugars with 2.18 rest of the units' recorded unsatisfactory current ratio over the years under reference except in few years. It is further observed that the average current ratio of the selected units under study also stood at below the standard norm (2:1).The analysis brings out the observation that the selected sugar factories particularly with respect to current ratio were showing unsatisfactory performance.

Over the period of analysis, out of the selected sugar manufacturing units the number of days of Inventory of four companies (GMR sugars, Madhucon Sugars, Ndsl Sugars And Kakatiya sugars) were taking less than 90 days to convert inventory in to cash. The remaining five companies (Trident sugars, Shivshakti sugars, Gayathri sugars, NSL sugars and Delta sugars) average ratio values during the study period were observed more than 90 days; The highest number of days (i.e., 99.7) was found in shivshakti sugars concerned about the ratio, these five companies (Trident sugars, Shivashakti sugars, Gayathri sugars, NSL sugars and Delta sugars) because of low conversion time period has been depicted by these companies, which are in-effectively managing its Inventory and can able to convert its inventory with a long period of time. The analysis brings out the observation that, the Inventory days of the selected sugar manufacturing the four companies (GMR sugars, Madhucon sugars, NDSL sugars and Kakatiya sugars) were efficient at converting its inventory into cash sooner.

Accounts Receivables of Three companies (Kakatiya sugars, GMR sugars and Madhucon sugars) were having low ratio of accounts receivables days and the remaining six

Volume : 6 | Issue : 11 | November 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

companies (Gayathri sugars, Delta sugars, NDSL sugars, Shivashakti sugars, Trident sugars and NSL sugars) values during the study period were having slightly better averaged ratio values. Concerned about the ratio, the three companies (Kakatiya sugars, GMR sugars and Madhucon sugars) because of increasing ratio values will effectively can turn its accounts receivable into cash during a period. The highest average number of days (i.e., 32.3 days) was found in Delta sugars. The analysis brings out the observation that, the Accounts Receivables of the selected sugar manufacturing Companies were at efficient in accounts receivables.

The Accounts payable of all the sugar companies were between 15 to 22 days. The highest average to number of days (i.e., 22.6 days) was found in Madhucon sugars. The analysis brings out the observation that, the Accounts payable of the nine sugar manufacturing units of Telangana region is found to be inefficient. Overall the study period of accounts payable in coastal region, out of the nine sugar manufacturing units sugars Madhucon sugars stood at first followed by GMR sugars, NDSL sugars NSL sugars, GMR sugars, Delta sugars, Shivashakti sugars, Kakatiya sugars and Trident sugars with respect to Accounts payable during the study period of 10 years i.e., 2005-06 to 2014-15.

Over the period of analysis, out of the nine selected sugar manufacturing units Kakatiya sugars is showing least (73) and trident sugars limited showing highest (113.9) Cash Conversion cycle The analysis brings out the observation that, the Cash Conversion of the selected sugar manufacturing Companies was at efficient in converting their inputs into cash. The analysis brings out the observation that, the Return on total assets ratio of the selected sugar manufacturing companies were not at safest maintenance of their Assets. Shiv Shakti Sugar Mill India Private Limited, Kakatiya Cement Sugar And Industries Limited, Nsl Krishnaveni Sugars Limited, Madhucon Sugar And Power Industries Limited , Gayatri Sugars Limited, G M R Vasavi Indts Limited, , Trident Sugars Ltd, Delta Sugars Limited, Nijam Deccan Sugars Limited

Co-efficient of Correlation between Profitability and Working Capital Components of select sugar manufacturing units during the study period 2005-06 to 2014-15.

	CR	CCC	ID	AR	AP	ROTA
CR	1					
CCC	0.264	1				
ID	0.062	0.006	1			
AR	0.303	0.031	0.274	1		
AP	0.281	-0.303	0.054	0.001	1	
ROTA	0.165	0.065	0.316	0.432	0.382	1

The above table shows the relationship between profitability (ROTA) and components of working capital. The table shows that Return on Total Assets (ROTA) is positively correlated with average payment period (APP). On the other hand, inventory turnover in days (ID), cash conversion cycle (CCC) are negatively correlated with ROTA which shows that any increase in any of these factors will reduce profits of the selected firms. However, the correlations between ARP, CCC and ROTA are statistically insignificant. The correlations with Average Receivables Period (ARP) and ROTA are statistically insignificant this means if firms delay their payments they will earn less profits.

Results & Discussion: In general many sugar manufacturing units' especially small companies tend to have lower fixed assets and depend on the turnover of the current assets to generate high profits. This phenomenon is observed in coastal region with this study. This kind of accounting activity will lead to liquidity crunch and leads to bankruptcy. Sugar manufacturing units are agro based industries are most vulnerable to the monsoon. The government should treat this sector in different angle and should not treat under uniform tax policy along with other industries. Agriculture formers are associated with these industries directly, so special provision is required to encourage the industry which in turn benefits the formers. Incentives inform of tax reduction and Further, corporate tax should be abolished gradually to encourage the capital market for the sugar industries. There is the policy conflict between central and state government on byproduct of the sugar industries. Apart from these policy imperatives the existing Indian regulatory framework which is composed of five regulations and also there is a need to be evaluated for developing the regulatory system. The regulations are banking loans to this industry should be treated on par with agriculture sector. International markets have a high strategic value for India for managing the surplus and deficits that cannot be managed in the domestic market. The regulatory framework is needed to enable and incentivize greater participation in international trade by the South Indian private sector Sugar Industry.

Practical Utility of the study: It is hoped that the study will be useful to the corporate sector in India in general, and entrepreneurs, financial managers, financial institutions, investors, policy makers and researchers in particular, for evaluating the profitability of any industry. The sick unit in the corporate sector can use of these findings for improving the financial as well as operational efficiency in future. The government can also use the findings of the study while formulating the industrial and investment policies for better industrial climate in newly formed state Telangana in south Indian Sugar Industry in particular and for the country in general.

References:

1. V.Appavadhanulu; Working Capital and Choice of Techniques, Indian Economic Journal, Vol. XIX ,**1971**, 34 - 41.
2. S.K. Chakraborty; Use of Operating Cycle Concept for Better Management of Working Capital, The Economic and Political Weekly, 8(1), **1973**, 69-76.
3. Agarwal, N. K; Management of Working Capital, Sterling Publishers Pvt. Ltd., **1983**, New Delhi.
4. Lamberson, M; Changes in working capital of small firms in relation to changes in economic activity. American Journal of Business, 10(2), **1995**, 45-50.
5. Vijayakumar, A; The Transactions Demand for Working Capital in Indian PSUs: some theoretical and Empirical Results, IPE Journal, **1996**, 92-100.
6. Kothari C. R., “Research methodology – methods and techniques”, new age international publishers, **2004**.
7. Filbeck, G., & Krueger, T. M; An analysis of working capital management results across industries, Mid-American Journal of Business, 20(2), **2005**, 10-17.
8. Chiou, J. R., Cheng, L., & Wu, H. W; The determinants of working capital management. Journal of American Academy of Business Cambridge, 10(1), **2006**, 149-156.
9. Amarjit Gill , Nahum Biger, Neil Mathur; The Relationship Between Working Capital Management And Profitability: Evidence From The United States, Business and Economics Journal, 10(1), **2010**, 1-9.
10. Huynh Phuong Dong, Jyh-tay Su; The Relationship between Working Capital Management and Profitability: A Vietnam Case, International Research Journal of Finance and Economics ISSN 1450-2887 Issue 49,

2010, 59-67

11. Anupam Jain; Effect of Working Capital Management on Profitability Of Firms: A study of The Indian Oil Drilling and Exploration Industry, Global Journal of Business Management, 4(1), **2010**, 42-47.
12. Mamoun M. Al-Debi'e; Working Capital Management and Profitability: The Case of Industrial Firms in Jordan, European Journal of Economics, Finance and Administrative Sciences, **2010**, 75-86.
13. Sayed Tahmina Quayyum; Effects of Working Capital Management and Liquidity: Evidence from the Cement Industry of Bangladesh Journal of Business and Technology, 4(1), **2011**, 37-47.
14. Sarbapriya Ray; Evaluating the Impact of Working Capital Management Components on Corporate Profitability: Evidence from Indian Manufacturing Firms, International Journal of Economic Practices and Theories, 2(3) **2012**, 127-136
15. Kulkanya Napompech; Effects of Working Capital Management on the Profitability of Thai Listed Firms International Journal of Trade, Economics and Finance, 3(3), **2012**, 227-232.
16. Ibrahim Awad, Fahema Jayyar; Working Capital Management, Liquidity and Profitability of the Manufacturing Sector in Palestine: Panel Co-Integration and Causality,Modern Economy,4(1), **2013**, 662-671.
17. Neeraj Gogia and Devesh Kumar Gupta; Impact Of Working Capital Investment Policy On Firm's Profitability : With Special Reference To Indian Private Sector Steel Units VSRD International Journal of Business and Management Research, 3(10) **2013**, 411-417.
18. Paul Aondona Angahar, Agbo Alematu; Impact Of Working Capital On The Profitability Of The Nigerian Cement Industry , European Journal of Accounting Auditing and Finance Research, 2(7), **2014**, 17-30.
19. Snober Javid, Velontrasina Prudence Marie Zita; Impact of Working Capital Policy on Firm's Profitability: A Case of Pakistan Cement Industry , Research Journal of Finance and Accounting, 5(5), **2014**, 182 -191.
20. Titto Varghese, Kamal Kishore Dhote; Impact of Working Capital Management on Firm Profitability: A Case Study of HUL Ltd, IQGL, International Journal of Financial Management. 4(4) **2014** ,56-66.
21. Shagufta Nasreen, Farida Khanam, Syed Shahzaib Pirzada; Impact of Working Capital Management on Firm'S Profitability, Research Journal of Finance and Accounting, 5(11), **2014**, PP-210-222.
22. Paul Aondona Angahar, Agbo Alematu; Impact Of Working Capital On The Profitability Of The Nigerian Cement Industry , European Journal of Accounting Auditing and Finance Research 2(7), **2014**, 17-30
23. Asif Iqbal & Wang Zhuquan; Working Capital Management and Profitability Evidence from Firms Listed on Karachi Stock Exchange, International Journal of Business and Management; 10(2), **2015**, 231-235.
24. Dinesh Sharma, Jayalaxmi Sharma, Mohd Arif; Corporate Profitability And Working Capital Management: A Case Study Of Steel Authority Of India Limited (Sail) Indian Journal of Accounting, Vol XLVII (1), **2015**, 98-107.