Impact of Working Capital Management on the Profitability of Burdwan Jute Industry in West Bengal: A Case Study

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Abstract

There is a traditional conflict between profitability and liquidity in managing the working capital of a firm. If a firm tries to increase its profitability, more working capital is to be invested in circulating current assets and hence the firm may face the risk of illiquidity for repayment of its current debts. On the contrary, if a firm tries to increase its liquidity position, a reasonable portion of working capital is to be kept idle by maintaining cash and cash equivalent assets. Hence, the investment in productive current assets will be lesser and it may reduce the profitability. So there is an inverse relationship between profitability and liquidity in working capital management.

However, by reviewing empirical literature it has seen that some of the researchers have found a positive impact of working capital management on firms' profitability. At the same time some other researchers found a little impact, where as other researchers found a negative impact of working capital management on firms' profitability. So the positive impact of working capital management on firms' profitability can not be generalised and universally accepted. However, the present article deals with this debating issue in the context of Burdwan Jute Industry during the years 2001 to 2010.

Key Words: Small Scale Industries, Profitability, Working Capital, Return on Capital Employed, Inventory Turnover, Debtors Turnover and Cash Turnover

Introduction

The Small Scale Industries (SSIs) contribute significantly to social and economic development of a country such as labour absorption, income distribution, poverty eradication and promotion of entrepreneurship. In fact SSIs can play an important role in the process of industrial development of a country. In India, SSIs have received more importance from the Government because of their salient features like small amount of investment is required, potentiality to generate employment opportunity, contribution to regional development and effective utilisation of local resources. The SSIs in India covers a wide spectrum of industries categorised under small, tiny and cottage segments ranging from small artisans or handicraft units to modern production units with significant investments. This sector has acquired a prominent place in the socio-economic development of India because it promoted the entrepreneurial talent and produces a wide range of 7,500 products (Desai, 2001).

The Burdwan Jute Industry of West Bengal in India is a manufacturer of jute bags, started its operation in the year 1999. It is one of the largest jute conglomerates in the District of Burdwan of West Bengal. The Burdwan Jute Industry is well-equipped with the state-of-the-art technology to meet the current market demand. The industry is not only targeted the markets of West Bengal but also it has targeted the markets of Assam, Tripura and Rajasthan. The industry has already introduced capital of Rs. 16, 58, 102 (as on 31st December, 2010). Beside, the industry has acquired the required land, building, machinery and furniture costing Rs. 17, 10,000, Rs. 5, 44,563, Rs. 2, 67,280 and Rs. 13,173 respectively (as on 31st December, 2010).

The two vital aspects in working capital management of a firm are profitability and liquidity. A well accepted objective of working capital management is to maintain a sound liquidity position without ignoring the profitability aspect. But there is a traditional conflict between profitability and liquidity in managing the working capital of a firm. If a firm tries to increase its profitability, more working capital is to be invested in circulating current assets and hence the firm may face the risk of illiquidity for repayment of its current debts. On the contrary, if a firm tries to increase its liquidity position, a reasonable portion of working capital is to be kept idle by maintaining cash and cash equivalent assets. Hence, the investment in productive current assets will be lesser and it may reduce the profitability. So there is an inverse relationship between profitability and liquidity in working capital management ((Banerjee, 2005 et. al). However a well accepted strategy is to maintain a balance between these two aspects. The finance manager will give neither too much concentration on profitability nor too much on liquidity.

In this backdrop a case study has been made to assess the impact of working capital management on the profitability of small scale industries with particular reference to Burdwan Jute Industry of West Bengal in India during the years 2001 to 2010.

Specific Objectives

1. To find out the relationship between profitability and working capital management of Burdwan Jute Industry and
2. To evaluate the efficiency of working capital management of Burdwan Jute Industry.

Hypotheses

H_0^1: There is no relationship between Return on Capital Employed and Inventory Turnover;

H_0^2: There is no relationship between Return on Capital Employed and Debtors Turnover;

H_0^3: There is no relationship between Return on Capital Employed and Cash Turnover;

H_0^4: There is no partial influence of Debtors Turnover on Return on Capital Employed, assuming Inventory Turnover as a constant;

H_0^5: There is no partial influence of Cash Turnover on Return on Capital Employed, assuming Inventory Turnover as a constant;

H_0^6: There is no partial influence of Inventory Turnover on Return on Capital Employed, assuming Debtors Turnover as a constant;

H_0^7: There is no partial influence of Cash Turnover on Return on Capital Employed, assuming Debtors Turnover as a constant;

H_0^8: There is no partial influence of Inventory Turnover on Return on Capital Employed, assuming Cash Turnover as a constant;

H_0^9: There is no partial influence of Debtors Turnover on Return on Capital Employed, assuming Cash Turnover as a constant;

H_0^{10}: There is no joint influence of Inventory Turnover, Debtors Turnover and Cash Turnover on the Return on Capital Employed;

Literature Survey

The relationship between working capital and profitability has been focused through a case study on H.G. Pharma Ltd. of Hyderabad, India and found that working capital has moderate degree of correlation with the profitability which confirms the excess investment in working capital results in low profitability (Charry; Kasturi and Sampth, 2011). A case study explores the association between working capital management and the profitability of textile firms in Pakistan and found that return on total assets has a significant positive correlation with the cash conversion cycle. The regression analysis also reveals that average days in inventory, average days receivable and average days payable have a significant economic impact on return on total assets of the firms (Ali, 2011). An attempt has been made to investigate whether any difference exists between corporate profitability and working capital management in two separate groups of companies in Brazil. The investigation results observed that days inventory has a negative relationship with Return on Sales and Return on Assets, but no statistical evidence has been found in favour of Return on Equity in working capital intensive group. It has also identified that days of working capital influences Return on Sales positively in the second group while debt ratio is the only variable that affects Return on Assets negatively (Ching; Novazzi and Gerab, 2011). A study has been made in Iran to find out the relationship between working capital management and corporate profitability and found that a negative significant relationship between number of days accounts receivable and profitability, cash conversion cycle and profitability and inventory turnover in days and profitability, while a positive significant relationship has been found between number of day’s accounts payables and profitability.. The results of the analysis also reveal that a significant relationship between working capital management and profitability and hence working capital management has a great impact on the profitability of the companies (Alipour, 2011). A study has made an attempt to evaluate the efficiency of working capital management of companies from Alba County and found a negative linear correlation between the efficiency of the working capital management and profitability (Danuletiu, 2010). An investigation has made to find out the relationship between profitability and working capital management of textile companies listed at Karachi Stock Exchange in Pakistan. The investigation results observed that there is statistically negative significant relation between profitability and cash conversion cycle and also there are a negative relationship between accounts receivables and firms' profitability and number of days in inventory and corporate profitability (Saghir; Hashmi and Hussain, 2011). A statistically significant relationship has also found between cash conversion cycle and profitability from the American manufacturing companies listed on New York Stock Exchange (Gill ; Biger and Mathur, 2010). An attempt has also been made to investigate the relationship between profitability and cash conversion cycle for listed firms on Vietnam Stock Market. The finding shows that there is a strong negative relationship between profitability and cash conversion cycle (Dong and Su, 2010). A case study has been conducted to find out the relationship between working capital management and corporate profitability of listed companies on Tehran Stock Exchange. The findings show a negative significant relationship between cash conversion cycle, number of days of accounts payables, number of days of accounts receivable and corporate profitability. Although, the relationship between the average period of inventory retention and profitability was not significant, but other three subsidiary hypotheses which are independent of each other have confirmed that there is an existence of a significant relationship between corporate profitability and working capital management (Vida ; Tabari and Mosayebi, 2011). An empirical study examines the trends in working capital management and its impact on Mauritian Small Manufacturing firms performance. The analysis of findings observed that there is a strong significant relationship between working capital management and profitability and also an increasing trend in the short-term components of working capital financing (Padachi, 2006). A case study has been conducted to find out the relationship between working capital management profitability of the Pakistani firms listed on Karachi Stock Exchange. The analysis of results shows that there is a strong negative relationship between working capital management and profitability**.** The study has also found that there are a significant negative relationship between liquidity and profitability and debt of the firm and profitability, while a positive relationship has been found between the size of the firm and profitability (Raheman and Nasr, 2007). However, some of the researchers have concluded that there is a positive impact of working capital management on firms' profitability. At the same time some other researchers found that the working capital management has little impact, where as other researchers found out a negative impact of working capital management on profitability. So the positive impact of working capital management on firms' profitability can not be generalised and universally accepted. The present study deals with this debating issue in the context of Burdwan Jute Industry during the years 2001 to 2010.

Data Collection and Methodology

The present study is mainly based on the secondary data. The secondary data have been collected from the audited financial statements (Balance Sheet and Profit and Loss Account) of Burdwan Jute Industry over the period 2001 to 2010. The annual reports of the industry have also been used extensively. Few information have also been collected from books, journals and internet. The collected data have been analysed with the help of both financial and statistical tools to find out the relationship between profitability and working capital management of the said industry. Some of these tools are Computation of Accounting Ratios, Linear Correlation, Partial Correlation, Multiple Correlation and Multiple Regression, F-Test, t-Test etc. The statistical softwares (SPSS 19.0 and STATISTICA 8.0) have been used for the purpose of data analysis.

Analysis

Linear Relationship of various Accounting Ratios

Table – 1

Linear Correlation between	r_{xy}	Sig.	t (Computed Value)	d.f (n – 2)	Critical Value @ 5 % Significance Level	Critical Value @ 1 % Significance Level
ROCE & ITO	0.921	.000	6.686939	8	1.86	2.90
ROCE & DTO	0.758	.011	8.859288			
ROCE & CTO	0.959	.000	9.570936			

1. A strong positive correlation has been found between the Return on Capital Employed (ROCE) and Inventory Turnover (ITO), since r_{xy} = 0.921 with significant level .000. Again the computed value of t (6.686939) is greater than the critical value (1.86) at 0.05 significance level with d.f 8. Similarly the computed value of t (6.686939) is greater than the critical value (2.90) at 0.01 significance level with d.f 8. So in both cases the linear relationship between return on capital employed and inventory turnover is statistically significant. Therefore, it can be said that the inventory management of Burdwan Jute Industry is efficient.

2. A high positive correlation has been found between the Return on Capital Employed (ROCE) and Debtors Turnover (DTO), since r_{xy} = 0.758 with significant level .011. Again the computed value of t (8.859288) is greater than the critical value (1.86) at 0.05 significance level with d.f 8. Similarly the computed value of t (8.859288) is greater than the critical value (2.90) at 0.01 significance level with d.f 8. So in both cases the linear

relationship between return on capital employed and debtors' turnover is statistically significant. Therefore, it can be said that the debtors' management of Burdwan Jute Industry is efficient.

3. A strong positive correlation has been found between the Return on Capital Employed (ROCE) and Cash Turnover (CTO), since r_{xy} = 0.959 with significant level .000. Again the computed value of t (9.570936) is greater than the critical value (1.86) at 0.05 significance level with d.f 8. Similarly the computed value of t (9.570936) is greater than the critical value (2.90) at 0.01 significance level with d.f 8. So in both cases the linear relationship between return on capital employed and cash turnover is statistically significant. Therefore, it can be said that the cash management of Burdwan Jute Industry is efficient.

Partial Relationship of Various Accounting Ratios

Table – 2

<table>
<tr><th>Partial Correlation</th><th>r_p</th><th>Sig.</th><th>t (Computed Value)</th><th>d.f (n – k)</th><th>Critical Value @ 5 % Significance Level</th></tr>
<tr><td>DTO on ROCE and ITO</td><td>.808</td><td>.008</td><td>3.35921</td><td rowspan="6">6</td><td rowspan="6">1.943</td></tr>
<tr><td>CTO on ROCE and ITO</td><td>.009</td><td>.981</td><td>0.02204</td></tr>
<tr><td>ITO on ROCE and DTO</td><td>(-) .159</td><td>.683</td><td>(-) 0.39448</td></tr>
<tr><td>CTO on ROCE and DTO</td><td>(-) .865</td><td>.003</td><td>(-) 4.22265</td></tr>
<tr><td>ITO on ROCE and CTO</td><td>.688</td><td>.041</td><td>2.32220</td></tr>
<tr><td>DTO on ROCE and CTO</td><td>.976</td><td>.000</td><td>10.97807</td></tr>
</table>

4. A strong direct influence of debtors turnover is found on return on capital employed, assuming inventory turnover as a constant (r_p = 0.808 with significant level .008). Again, the computed value of t (3.35921) is greater than the critical value (1.943) at 0.05 significance level with d.f 6. So the partial correlation of debtors' turnover and return on capital employed is statistically significant.

5. A very weak direct influence of cash turnover is found on return on capital employed, assuming inventory turnover as a constant (since r_p = 0.009 with significant level .981). Again, the computed value of t (0.02204) is lower than the critical value (1.943) at 0.05 significance level with d.f 6. So the partial correlation of cash turnover and return on capital employed is statistically insignificant.

6. A reverse partial influence of inventory turnover is found on return on capital employed, assuming debtors turnover as a constant (since r_p = - 0.159 with significant level .683). Again, the computed value of t (- 0.39448) is lower than the critical value (1.943) at 0.05 significance level with d.f 6. So the partial correlation of inventory turnover and return on capital employed is statistically insignificant.

7. A reverse partial influence of cash turnover is found on return on capital employed, assuming debtors turnover as a constant (since r_p = - 0.865 with significant level .003). Again, the computed value of t (- 4.22265) is lower than the critical value (1.943) at 0.05 significance level with d.f 6. So the partial correlation of cash turnover and return on capital employed is statistically insignificant.

8. A strong direct partial influence of inventory turnover is found on return on capital employed, assuming cash turnover as a constant (since r_p = 0.688 with significant level .041). Again, the computed value of t (2.32220) is greater than the critical value (1.943) at 0.05 significance level with d.f 6. So the partial correlation of inventory turnover and return on capital employed is statistically significant.

9. A strong direct partial influence of debtors turnover is found on return on capital employed, assuming cash turnover as a constant (since r_p = 0.976 with significant level .000). Again the computed value of t (10.97807) is greater than the critical value (1.943) at 0.05 significance level with d.f 6. So the partial correlation of debtors turnover and return on capital employed is statistically significant.

<u>Multivariate Relationship of Various Accounting Ratios</u>

<u>Table – 3</u>

Dependent Variable: ROCE					
Explanatory Variables	β	α	Standard Error	t	Significance Level
ITR	(-) 0.04	0.356	0.2678	1.3293	5 %
DTR	(-) 0.56				
CTR	1.51				
Multiple R = 0.9899					
R^2 = 0.9801			d.f (k, n-k-1) = 3,6		
F = 98.321			Critical value @ 1 % significance Level = 9.78		

10. A strong positive multivariate relationship has been found between the inventory turnover, debtors turnover, cash turnover and return on capital employed, since Multiple R = 0.9899. Again the computed value of F (98.32143) is greater than the critical value (9.78) at 0.01 significance level with (3, 6) d.f. So multivariate relationship between inventory turnover, debtors' turnover, cash turnover and return on capital employed is statistically significant.

11. The Multiple Regression Coefficients of inventory turnover (β_1= - 0.04) and debtors turnover ($\beta_{2=}$ - 0.56) are showing the inverse relationship with return on capital employed, where as cash turnover ($\beta_3 = 1.51$) has positive relationship and hence Multiple Regression Coefficients are overall statistically significant at 0.05 significance level. However inventory, debtors and cash turnovers have joint influence on the return on capital employed.

Findings

1. The linear relationship between return on capital employed and inventory turnover is statistically significant. So inventory management of Burdwan Jute Industry is efficient.

2. The linear relationship between return on capital employed and debtors turnover is statistically significant. So debtors management of Burdwan Jute Industry is efficient.

3. The linear relationship between return on capital employed and cash turnover is statistically significant. So cash management of Burdwan Jute Industries is efficient.

4. The partial correlation of debtors' turnover and return on capital employed is statistically significant. So the debtors turnover has a direct partial influence on return on capital employed, assuming inventory turnover as a constant.

5. The partial correlation of cash turnover and return on capital employed is statistically insignificant. So the cash turnover has no direct partial influence on capital employed, assuming inventory turnover as a constant.

6. The partial correlation of inventory turnover and return on capital employed is statistically insignificant. So the inventory turnover has no direct partial influence on return on capital employed, assuming debtors turnover as a constant.

7. The partial correlation of cash turnover and return on capital employed is statistically insignificant. So the cash turnover has no direct partial influence on capital employed, assuming debtors turnover as a constant.

8. The partial correlation of inventory turnover and return on capital employed is statistically significant. So the inventory turnover has a direct partial influence on return on capital employed, assuming cash turnover as a constant.

9. The partial correlation of debtors turnover and return on capital employed is statistically significant. So the debtors turnover has a direct partial influence on return on capital employed, assuming cash turnover as a constant.

10. There is a strong multiple correlation between inventory turnover, debtors turnover, cash turnover and return on capital employed and which is statistically significant.

11. The multiple regression coefficients indicates that inventory, debtors and cash turnovers have joint influence on the return on capital employed which is statistically significant.

Conclusion

The study has found a strong linear relationship between profitability and working capital management of the Burdwan Jute Industry and which is statistically significant. So it can be said that the inventory, debtors and cash management of the industry are efficient. The results of the analysis reveal that debtors turnover has a strong direct partial influence on the return on capital employed, assuming inventory turnover as a constant and which is statistically significant. Similarly inventory and debtors turnovers have strong direct partial influence on the return on capital employed, assuming cash turnover as a constant and which are also statistically significant. The multiple correlation and regression results also reveals that there is joint influence of inventory, debtors and cash turnovers on the return on capital employed which is statistically significant. However, in conclusion it can be said that working capital management of the Burdwan Jute Industry is efficient and it has a positive impact on the profitability of the industry. The finance manager has well been able to maintain a balance between liquidity and profitability in managing working capital of this industry over the years.

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