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Working Capital Management and Profitability: An Empirical Analysis of Textile Companies in India Using Panel Data

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Abstract

The Working capital management is an important aspect in the financial decisions of any firm, as it is an indicator for efficient management of current assets and liabilities .This paper is an empirical analysis about the relation between the components of the working capital and the profitability and liquidity positions of the textile companies in India. Five textile companies were chosen and analyzed for a period of 5 years from 2013 to 2017 with the secondary data from annual reports of the firms chosen. The tests employed were used to examine the trends in the variables considered through graphs .Correlation and regression was also employed to determine the strength of the relationship between the net working capital and its components with the profitability of the firms. As a result, the correlation between the net working capital and profitability was indirectly related to the correlation of net working capital and liquidity .Similarly regression was done using pooled OLS Regression method with the return on assets as the dependent variable with the cash conversion cycle and its components using 5 models. The profitability is not directly related with the working capital of the firms on the whole while the liquidity position was directly related. The trends in the working capital were also varying over the period of years with negative trend in two firms which is an indicator of poor management of current assets incurring losses if remains unchecked .

Keywords: - *Working capital management, financial decisions, profitability and liquidity positions*

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INTRODUCTION

Working capital is one of the factors which determine the current position of the firm. Working capital mainly denotes the liquidity of the firm. The current assets are half the total assets and form the working capital. The main goal of working capital management is to ensure that the firm is able to continue its operations and also it has sufficient cash flow to satisfy both maturing short term debt and upcoming operations. In working capital management there are two concepts Gross working capital and Net working capital. The textile industry has two broad segments. First, the unorganised sector consists of handloom, handicrafts and sericulture, which are operated on a small scale and through traditional tools and methods. The second is the organised sector consisting of spinning, apparel and garments segment which apply modern machinery and techniques such as economies of scale. In this paper the trends and fluctuations in the working capital management of five textile companies are examined.

The main objective of the paper is to examine the relationship between working capital management and profitability of the five textile firms chosen.

The five companies chosen for analysis are

- Shiva Tex Yarn Ltd
- Nitin Spinners
- Bannari Amman Spinning Mills
- RSWN
- Sangam Ltd

REVIEW OF LITERATURE

Padachi, (2006) is explaining about the analysis of trends in working capital management among the Mauritian firms for a period of 6 years. The research was done for 58 companies which are small manufacturing firms, using panel data from 1998 – 2003. Regression test was used to measure the relation between the working capital management and the profitability. Return on assets was used as a measure for the profitability. Makori, D. M., & Jagongo, A. (2013) analyses the result of working capital management on firm's profit in Kenya for the amount 2003 to 2012.Pearson's correlation and ordinary method of least squares regression models were wont to establish the link between capital management and firm's profit. The study finds a negative relationship between profit and variety of day's assets and money conversion cycle; however a positive relationship between profit and variety of days of inventory and variety of day's collectable. The management may

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produce price for his or her shareholders by increasing their inventories to an inexpensive level. Companies may take long to pay their creditors in as so much as they are doing not strain their relationships with these creditors. Company's area unit capable of gaining property competitive advantage by suggests that of effective and economical utilization of the resources of the organization through a careful reduction of the money conversion cycle to its minimum. In therefore doing, the profit of the companies is predicted to extend

OBJECTIVE

To achieve the general objective the following specific objectives are framed:

1. To examine if there is a significant relationship between the Average Collection Period (ACP) and the Profitability of the firm

2. To examine if there is a significant relationship between the Inventory Conversion Period (ICP) and the Profitability of the firm

3. To examine if there is a significant relationship between the Average Payment Period (APP) and the Profitability of the firm

4. To examine if there is a significant relationship between the Cash Conversion Cycle (CCC) and the Profitability of the firm

RESEARCH METHODOLOGY

The type of research based on this study is quantitative in nature. It takes into consideration the data and numbers given by the annual reports of all the companies. This study is done using secondary data collected from the annual reports and other statement reports for a period of 5 years from 2013 to 2017. The companies taken for comparison are similar in the products and also with more years of experience in the textile industry. These 5 companies were mainly selected due to the market capital which is within a similar range.

Research Hypotheses

i. **Ho1:** There is no significant relationship between Average Collection Period (ACP) and Profitability of the firm.
ii. **Ho2:** There is no significant relationship between Inventory Conversion Period (ICP) and Profitability of the firm
iii. **Ho3:** There is no significant relationship between Average Payment Period (APP) and Profitability of the firm.

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iv. **Ho4:** There is no significant relationship between Cash Conversion Cycle (CCC) and Profitability of the firm.

Model Specification

The Firms' profitability is fit in a model as the function of four core working capital components in addition to other firm characteristics. The effects of the working capital management on the firm's profitability are modeled using the following OLS regression equations to obtain the estimates

ROA = f (ACP, ICP, APP, CCC, GROWTH, LEV, CR, SIZE)

Model 1: ROA_{it} = β0+ β1 GROWTH it + β2 DR it + β3 CR it + β4 SIZE it + β5 ACP it + error it

Model 2: ROA_{it} = β0+ β1 GROWTH it + β2 DR it + β3 CR it + β4 SIZE it + β5 ICP it + error it

Model 3: ROA_{it} = β0+ β1 GROWTH it + β2 DR it + β3 CR it + β4 SIZE it + β5 APP it + error it

Model 4: ROA_{it} = β0+ β1 GROWTH it + β2 DR it + β3 CR it + β4 SIZE it + β5 CCC it + error it

Model 5: ROA_{it} = β0+ β1 ACP it + β1 ICP it + β1 APP it +β2 GROWTH it + β3 DR it + β4 CR it + β5 SIZE it + error it

Where, ROA denotes the return on assets, GROWTH is the sales growth, DR is the debt ratio, SIZE is the company size as measured by natural logarithm of total assets, CR is the current ratio, ACP is the average collection period, ICP is the inventory conversion period, APP is the average payment period and CCC is the cash conversion cycle. Subscripts denote firms (cross-section dimensions) ranging from 1 to 5, t denotes years (time-series dimensions) ranging from 1 to 5, ε is the error term of the model and β0, β1, β2, β3, β4, β5=Regression model coefficients.

In the first regression model, the ACP has been regressed against the ROA. In the second regression model, the ICP has been regressed against the ROA. The third regression model involves a regression of the APP against the ROA. In the fourth regression model, the CCC is regressed against the ROA. Finally, the three working capital measures (ACP, ICP and AP) have been regressed together against the ROA.

The CCC was not included in the last regression model because its inclusion

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results to a high degree of multi collinearity among the working capital management variables as shown by the variance inflation factors (VIFs)

Data Analysis

All the components and ratios of working capital are calculated year wise along with cash conversion cycle.

Table 1: Average cash conversion days

(Days)	STY	SANGAM	NS	RSWM	BSM
CCC	**104**	**137**	**108**	**114**	**123**
Average age of inventory	**117**	**112**	**97**	**95**	**126**
Average collection period	**35**	**56**	**21**	**32**	**37**
Average payment period	**48**	**32**	**10**	**13**	**40**

Table 2 Correlation between the Net Working capital with Profitability and Liquidity

	Profitability		Liquidity	
STY	0.159	Weakly positive	0.966	Strongly positive
SANGAM	-0.117	Weakly negative	0.993	Strongly positive
NS	0.942	Strongly Positive	-0.154	Weakly negative
RSWM	-0.983	Strongly Negative	0.982	Strongly positive
BSM	-0.975	Strongly Negative	0.988	Strongly positive

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Based on this table there exists a opposite relationship between the correlation of net working capital and the Profitability and the correlation of net working capital and the Liquidity . This implies that a firm's working capital is influenced by the liquidity position more than the profitability which is obvious according to the research carried out in the early years.

OLS Regression results

OLS Regression results					
Dependent Variable : Return On Assets					
Parameters	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	0.162(0.042)*	0.304(.004)*	0.246(0.02)*	0.223(.080)	0.202(0.086)*
ACP	0.002(0.062)*				0.003
ICP		-0.001(.407)*			-0.001
APP			0(.876)*		-0.001
CCC				0(.800)	
GROWTH	0.05(.628)*	-0.005(.962)*	-0.013(.914)*	-0.008(.939)	0.047(.659)*
CR	-0.01(.686)*	0.026(.317)*	-0.018(.545)*	-0.015(.632)	0.002
SIZE	-0.006(0.052)	-0.006(.110)*	-0.006(.162)	-0.006(.093)	-0.003
Adj R Square	0.155	0.025	-0.009	-0.006	0.296
F Value	2.104	1.155	0.949	0.961	2.682
D-W statistics	1.06	0.843	0.801	0.815	1.456

Model 1

Test the hypothesis that there is no significant relationship between the Average Collection Period and the profitability of the firm .the results are positive co-efficient of ACP 0.002 but very minimal in nature and not significantly different from 0, thus rejecting the null hypothesis. However, the overall model is statistically significant, as it is indicated by the F-value of 2.104 ($p<0.05$). The model's adjusted R2 implies that 15.5 % of the variation in the profitability of the firms can be explained by the model. The coefficients of the other variables included in the model are also

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not highly significant. Return on Assets decreases with Firm Size (measured by the natural logarithm of Total Assets) and increases with Sales Growth .The Current Ratio which is a theoretical measure of liquidity has no significant impact on profitability in case of textile firms chosen

Model 2

Tests the hypothesis that there is a significant relationship between Inventory Conversion Period and ROA this model is similar except ACP is being replaced by ICP. Since the p-value is more than 0.05 the null hypothesis is rejected, but there is correlation between the ICP and ROA which is weak and negatively correlated. . However, the overall model is statistically significant, as it is indicated by the F-value of 1.155 ($p<0.05$). The model's adjusted R2 implies that 2.5 % of the variation in the profitability of the firms can be explained by the model. The other variables in model 2 are also significant.

Model 3

Tests the hypothesis that there is a significant relationship between Average Payment Period and Profitability. The coefficient of APP shows neutral relation between ROA and APP. Null hypothesis is rejected and is concluded that APP is statistically significant ($p<0.05$). This suggests that there is no cause and effect between the APP and ROA. The other variables in the model are significant. The model's adjusted R2 is -.9% with an F-value of 0.949 which is not that significant. Therefore this model is not considered to determine the relation between average collection period and the return on assets as it does not follow the general trend like the other equation

Model 4

Tests the hypothesis that there is a significant relationship between Cash Conversion Cycle and profitability. The regression coefficient indicates a neutral (0) relation between CCC and ROA Ho3 hypothesis is rejected and is concluded that CCC is not statistically significant ($p<0.1$). The model's adjusted R2 is negative and so indicating that the equation is not in trend with other model thus not considered.

Model 5

acts as a control model for the variables under study. The model was run so as to provide an indicator as to the most significant variables affecting the study. The model shows that all the variables included are highly significant at 5% level and ACP, ICP and CR which are not significant. In this model, the ACP, ICP

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and the size of the firm are negatively related with the firm's profitability while all the other variables exhibit a positive relationship. The model's adjusted R2 is 29.8% with an F-value of 2.682 which is highly significant ($p<0.05$).

The equations formed are as follows

Model 1: $ROA_{it} = 0.162 + 0.05\ GROWTH_{it} - 0.01\ CR\ it - 0.006\ SIZE_{it} + 0.002\ ACP_{it} + error_{it}$

Model 2: $ROA_{it} = 0.304 - 0.005\ GROWTH_{it} + 0.026\ CR\ it - 0.006\ SIZE_{it} - 0.001\ ICP_{it} + error_{it}$

Model 3: $ROA_{it} = 0.246 - 0.013\ GROWTH_{it} - 0.018\ CR\ it - 0.006\ SIZE_{it} + 0\ APP_{it} + error_{it}$

Model 4: $ROA_{it} = 0.223 - 0.008\ GROWTH_{it} - 0.015\ CR_{it} - 0.006\ SIZE_{it} + 0\ CCC_{it} + error_{it}$

Model 5: $ROA_{it} = 0.202 + 0.003\ ACP_{it} - 0.001\ ICP_{it} - 0.001\ APP_{it} + 0.047\ GROWTH_{it} + 0.002\ CR_{it} - 0.003\ SIZE_{it} + error_{it}$

Based on this model the regression; effect of the components of the working capital on the profit is calculated using a pooled data of the 5 chosen companies

FINDINGS AND SUGGESTIONS

The variables taken into consideration showed varied results each year for each company. The suggestions are given company wise;

Shiva TexYarn: The ratios calculated for the company are varying for each year, influencing the working capital management and the turnover of the company. The company has shown a decrease in the 2016 which might be due to investments in the fixed asset or other operational activities like expansions. The company has a net working capital which is managed well through the five years. The negative relation between the net working capital and the Net profit is slight implying that profit is not affected much by the working capital, although it is a major part for the financial management of the firm.

Sangam Pvt Ltd: The working capital has shown a growth during the past five years with steady growth. Having more current assets from the year 2015 to 2016 gives a secure position to meet sudden expenses and also high liquidity after paying for the current liabilities. The amount of money attached to the daily operations is little above than the less, so it may be not so

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aggressive with its financial system. The liquidity position has also improved over the period of years forming a strong position to meet its expenses apart from the profit

Nitin Spinners: The ratios and the variables used for calculating the position of working capital management are in good range. The relation between the net working capital and the net profit is positive and strong while the relation between the net working capital and current ratio is negative. Thus the company is not relating its liquidity to the working capital management. The cash conversion cycle is on which is managed well compared to other firms with minimum payable period which denoted the capability to meet its expenses

RSWM: The working capital is having a negative trend which is further decreasing from year to year implying that the current liabilities were more than the current assets. When the management of working capital components is referred the cash equivalents were minimum. The liquidity position also affects the working capital strongly and positively. It would be better to take measure to improve the working capital by decreasing the trade receivables and increasing the cash holding

Bannari Amman Spinning Mills: The firm has a huge transactions, thus the working capital is also high showing a decreasing trend from positive to negative. The cash conversion cycle is also long comparatively .the relation between profitability and working capital is strong but highly negative. Irrespective of the net profit, for a successful management of capital, working capital is an important element.

CONCLUSIONS

The examination on the working capital administration of five comparative material firms has given a comprehension on the part of every segment of the working capital and how it impacts the general execution. The money transformation cycle is a vital apparatus to examine the working of an organization in meeting their costs and getting pay from different sources.

The positioning of the organization is done in view of its connection between the working capital and the net benefit. Every turnover proportion plays an essential in choosing the designation of assets for every segment of the working capital. This exploration in spite of the fact that from the auxiliary information, comprehends the situation of every material organization in

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dealing with their accounts and the significance of working capital

REFERENCES

I. Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: an analysis of Mauritian small manufacturing firms. International Review of business research papers, 2(2), 45-58.

II. Agha, H. (2014). Impact of working capital management on profitability. European Scientific Journal, ESJ, 10(1).

III. Ali, S. (2011). Working capital management and the profitability of the manufacturing sector: A case study of Pakistan's textile industry. The Lahore Journal of Economics, 16(2), 141.

IV. Falope, O. I., &Ajilore, O. T. (2009). Working capital management and corporate profitability: evidence from panel data analysis of selected quoted companies in Nigeria. Research journal of business management, 3(3), 73-84.

V. Muhammad, M., Jan, W. U., & Ullah, K. (2012). Working Capital Management and Profitability an Analysis of Firms of Textile Industry of Pakistan. Journal of Managerial Sciences, 6(2).

VI. Goel, S. (2013). Working capital management efficiency and firm profitability: A study of Indian retail industry. South Asian Journal of Management, 20(3), 104.

VII. Fahim, S. R. S., Kaviani, M., &Fashtali, M. P. (2015). Providing a new model for assessment of working capital management:

VIII. Evidence from Tehran Stock Exchange. International Journal of Accounting and Financial Reporting, 5(1), 108-122.

IX. Gill, A., Biger, N., &Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. Business and economics journal, 10(1), 1-9.

X. Makori, D. M., &Jagongo, A. (2013). Working capital management and firm profitability: Empirical evidence from manufacturing and construction firms listed on Nairobi securities exchange, Kenya. International Journal of Accounting and Taxation, 1(1), 1-14.

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