Working Capital Management and Profitability An Analysis of Firms of Textile Industry of Pakistan

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Abstract

Working capital management plays an important role in success and failure of firm in business because of its effect on firm's profitability as well as on liquidity. Working capital consists of investments in current assets, which includes short-term assets – cash and, inventories, receivable and marketable securities. The universe of the study is textile industry, which is one of the oldest and at one time the fast developing industry in the large scale sector of Pakistan. The study is based on secondary data collected from listed firms in Karachi stock exchange for the period of 2001-2006 with an attempt to investigate relationship between profitability, and working capital management components. The effect of working capital management on profitability is tested using the panel data methodology. Based on correlation and regression analysis our findings show that there is a strong positive relationship between profitability and cash, accounts receivable and, inventory while there is a negative relationship between profitability and accounts payable. This means that increase in cash, inventory and credit sales will lead to increase profitability of firm.

Keywords: Capital management, profitability, Textile industry, Correlation and regression

Introduction

Working capital is a financial metric which represents the amount of day to day operating liquidity available to a business. Along with fixed assets such as plant and equipment, working capital is considered a part of

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operating capital. Working capital in business is considered as life blood in human body (Reddy and Patkar, 2004). It is an important component of the corporate finance because it directly affects the liquidity and profitability of the firm (Rehman & Nasr, 2007).

Working capital management is a sensitive area in the field of financial management (Juan & Martinez, 2007). It involves the decision of the amount and composition of current assets and the financing of these assets. Current assets include all those assets that in normal course of business return to the form of cash within a short period of time, ordinarily within a year and such temporary investment as may be readily converted into cash upon need. The ultimate objective of any firm is to maximize the profit, but, preserving liquidity of the firm is also an important objective. The problem is that increasing profits at the cost of liquidity can invite serious problems to the firm. Therefore, there must be a trade off between these two objectives of the firms. Firms may have an optimal level of working capital that maximizes their value.

Current assets of a typical manufacturing firm accounts for over half of its total assets. Excessive levels of current assets can easily result in a firm realizing a substandard return on investment (Padachi, 2006). However firms with too few current assets may incur shortages and difficulties in maintaining smooth operations. Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand (Eljelly, 2004).

This study will contribute to the body of knowledge by identifying how Pakistani textile firms manage their working capital in order to multiply profitability and maximize wealth of shareholders. The study mainly focuses on the firms listed in Karachi stock exchange.

We selected 25 textile firms for this study, which is one of the oldest and at one time was the fast developing industry in the large scale sector of Pakistan. Pakistan's industrial sector accounts for about 24% of GDP. Cotton textile production and apparel manufacturing are Pakistan's largest industries, accounting for about 66% of the merchandise exports and almost 40% of the employed labour force. Cotton and cotton-based products account for 61% of export earnings of Pakistan. The consumption of cotton increased by 5.7% over the past five years whereas the economic growth rate increased by 7%.

This study will provide a general framework to readers, policy makers, professionals and managers to guide future research, reappraise current business practices, and provide basic guidelines for policy makers in rapid changing of business environment of Pakistan. The management of working capital is an integral part of overall management of industrial firms. For, without proper management of working capital, there will be no purchase of material, or production, or marketing, nor any fair profit, the later in its turn forming the foundation of finance itself. It is in this context that an attempt has been made in this research to study some aspects of working capital management.

The study has been undertaken with the prime objective of analyzing the effect of working capital management on the profitability of firms. Specific objectives of the paper are to find out the effects of different components of working capital management – cash, accounts receivable, inventory and accounts payable – on profitability. For analytical purpose we use correlation and regression analysis in this study.

Literature Review

Most recent study in the area focused that the ultimate objective of any firm is to maximize profit (Amarjit and Nahum, 2010), but preserving liquidity of the firm is an important objective too. Most of the businesses need short term working capital at some point in their operations (Dong, and Jyh, 2010). The fundamental principles of working capital management are to reduce the capital employed and to improve efficiency in the areas of receivables, inventories and payables. Working capital management initiatives release capital employed and increase profitability that can be used for strategic investments or the reduction of debt. Working capital management increases availability of liquid assets in a business (Zariyawati et al, 2009). Generally, businesses that have adequate working capital increase the likelihood of success because they can improve their operations and growth.

Mahmood and Qayyum, (2010) pointed out that to increase profitability of a company and ensuring sufficient liquidity to meet short-term obligations as they fall due are two main objectives of working capital management. Profitability is related to the goal of shareholders' wealth maximization, and investment in current assets is made only if an acceptable return is obtained. While liquidity is needed for a company to continue business, a company may choose to hold more cash than needed for operational or transactional needs i.e. for precautionary or speculative reasons.

According to Odi and Solomon, (2010) decisions relating to working capital and short term financing are referred to as working capital management. These involve managing the relationship between a firm's short term assets and its short term liabilities. The goal of working capital is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short term debt and forthcoming operational expenses. An important working capital decision is associated with the level of investment in current assets. Determining the most favorable level of investment in current assets involves an exchange between costs that increase with current assets and costs that go down with current assets.

Working capital has acquired a great significance and sound position in recent years with an objective of profitability and liquidity (Ranjith, 2008). Higher amount of working capital will increase the liquidity but at the same time will create impact on profitability. Lower amount of working capital will decrease the liquidity but day to day functioning of business will also be affected. Reason (2008), pointed that working capital decisions generally relating to the next year. These decisions are therefore not taken on the same basis as capital investment decisions rather they will be based on cash flows and on profitability. Management will use a combination of policies and techniques for the management of working capital.

Studies like Scherr (1989), Emery et al. (2004), Gitman (2006) focused that the purpose of cash management is to establish the optimal level of cash needed for business operations and invested in marketable securities, which appropriate for the nature of business operation cycle. Managers spend considerable time on day to day problems that involve working capital decision (Lazaridis and Tryfonidis, 2006).

Working capital management is an important factor of financial management. (Deloof, 2003). Large inventory and free trade credit policy make it possible to increase sales volume. Moreover large inventory stock reduces the risk of a stock out. Findings of this study show that firms having a large amount of cash invested in working capital also have extensive amounts of short term payables as a source of financing. Moreover delaying payments to suppliers allows a firm to evaluate the superiority of the products bought, and can be an economical and elastic source of financing for the firm.

Methodology and Results

Data on cash, accounts receivable, inventory, accounts payable and profitability is acquired from balance sheet analysis of joint stock companies listed on Karachi Stock Exchange (KSE) for a period of six years i.e. 2001-2006. The reason for restricting to this particular time period is that the latest and updated data is available for this period only. Moreover complete data on cash, accounts receivable, inventory, accounts payable and profitability is available for 25 textile firms. So our study is restricted to 25 textile firms only.

Summary statistics variables, cash, accounts receivable, inventory, accounts payable and profitability, for all 25 firms are given in following table:

Descriptive Statistics (Rupees in Million)

	N	Minimum	Maximum	Mean	Std. Deviation
Cash Management	150	0.10	1233.20	72.2473	14.7
Accounts receivable	150	7.30	3727.50	476.8627	25.07
Inventory	150	0.00	2904.00	345.6447	23.16
Accounts payable	150	25.70	9135.80	714.7407	31.7
Profitability	150	-335.60	1401.10	200.3833	16.11
Valid N (list wise)	150				

Source: Calculations Based on Annual reports of firms from 2001-2006

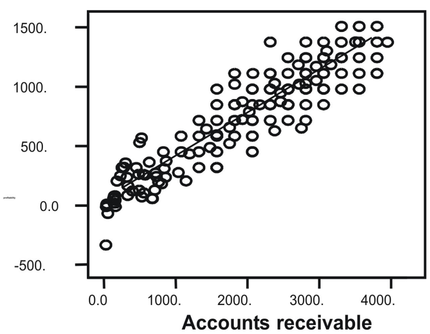
Above table gives the descriptive statistics for variables that are used in this study. The importance of working capital management cannot be denied in any firm. Their total profitability depends upon how efficiently they manage their resources particularly all those which are used for the daily operations of the firm. If they manage their current assets as well as current liabilities, then it is sure that they are going to get profit, can compete their competitors and can capture maximum market shares.

The mean value of cash is 72.25 million and standard deviation is 14.7 million. Maximum amount of cash used by firms is 1233 million while minimum amount of cash is 0.10 million. The mean value of accounts receivable is 476.86 million with standard deviation of 25.2 million. Likewise the maximum value of accounts receivable is 3727 million and minimum value is 7 million. Similarly the average value of inventory and accounts payable is 345.64 and 714.74 million and standard deviation 23.16 and 31.7 million respectively. The average profitability for the whole sample is 200 million and standard deviation is 16.11 million. Finally the minimum and maximum value of profitability is -335 and 1401.1 million.

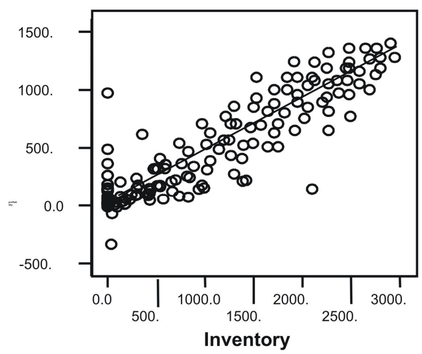
Two show how strongly cash, accounts receivable, inventory and accounts payable are correlated with profitability, we use scatter diagram and Pearson Coefficient of Correlation.

If a relationship between the variables exists, then the points in the scatter diagram will show a tendency to cluster around a straight line. Scatter diagrams are given below:

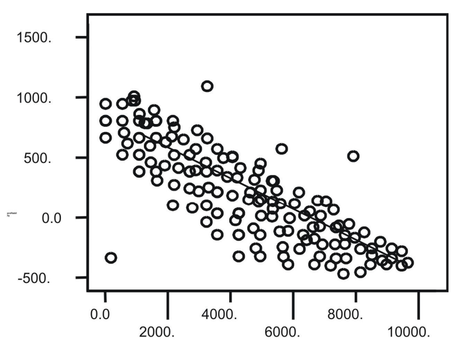
Relationship between Profitability and A/R



Relationships between profitability and inventory

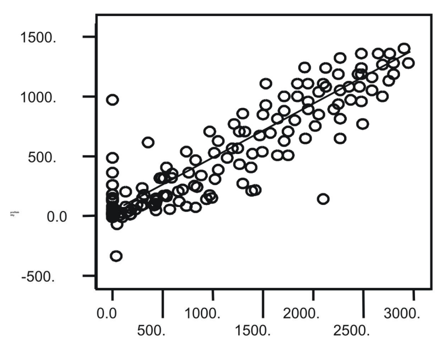


Relationship between Profitability and A/P



Accounts payable

Relationship between profitability and Cash



Cash Management

Above figures indicate strong linear association between profitability and accounts receivable, inventory, and cash while the relationship between profitability and accounts payable is strongly negative.

A numerical measure of strength in the linear relationship between any two variables is called the Pearson's correlation coefficient or simply coefficient of correlation. Higher the value of correlation coefficient stronger is the relationship between two variables. Results of correlation coefficient are given below:

Pearson Correlation Coefficients

		Profitability
Cash Management	Pearson Correlation	0.746

	P-value	0.000
Accounts receivable	Pearson Correlation	0.617
	P-value	0.000
Inventory	Pearson Correlation	0.484
	P-value	0.000
Accounts payable	Pearson Correlation	-0.601
	P-value	0.000

The correlation coefficient between Profitability and Cash Management is 0.746 with p-value of 0.000, which indicates a highly significant positive relationship between these two variables. Correlation coefficient between accounts receivable and profitability is 0.617 and between inventory and profitability is 0.484. Both are highly significant. Finally the results show that there is negative relationship between accounts payable and profitability and the negative coefficient is -0.601, with p-value of (0.000). These results are in line with (Eljelly 2004), (Shin and Soenan 1998), (Rehman & Nasr 2007).

Finally to quantify the effect of each independent variable (Cash Management, accounts receivable, inventory and accounts payable) on profitability we use regression analysis. The objective of regression analysis is to discover how the average value of Profitability varies with the predetermined value of cash management, accounts receivable, inventory and accounts payable. We use following regression equation

$$\text{Profitability} = \beta_1 (\text{Cash}) + \beta_2 (\text{Inventory}) + \beta_3 (\text{Accounts Receivable}) + \beta_4 (\text{Accounts Payable}) + \text{error}$$

The regression results are presented in table below:
Estimated Coefficients of Regression

Dependent variable: Profitability				
	β	Std. Error	t	Significant
Constant	47.317	12.663	3.737	0.000
Cash Management	0.835	0.052	16.006	0.000
Accounts Receivable	0.173	0.025	6.880	0.000
Inventory	0.197	0.036	5.483	0.000
Accounts Payable	-0.081	0.024	-3.312	0.001
R^2=0.79				

Coefficient of cash management is positive and highly significant. It implies that the increase or decrease in cash will significantly affect profitability of the textile firms. So the firms must keep optimal level of cash. In this way firm would carry out its operations without any interruption and can avail every opportunity.

The regression coefficient of accounts receivable is 0.173 with a p-value of (0.000). This means that accounts receivable have a highly significant positive impact on profitability. This is because of generous trade credit offer by firms to the customers for increasing sales volume, and cash flow can be significantly enhanced if the amounts owing to the customers are collected faster. As a result firms are able to generate a high profit on one hand, and if firm sells only on credit basis and hence increase accounts receivable but not collected properly then it is negative sign for the liquidity of the firm, on the other hand. So the firm must keep optimal level of accounts receivable and formulate a strong credit policy.

Inventory has a significant positive relation with profitability because large inventory and generous trade credit policy may lead to higher sales and reduces the risk of a stock out. As a result firms will be able to fulfill customers demand and to generate profitability by increasing sales volume. Therefore best possible level of inventory should be maintained. Furthermore, the above results indicate that if the firm neglects the management of inventories, will have to face serious problems relating to long term profitability and may fail to survive.

Finally accounts payable have also momentous, but negative relation with profitability. Accounts payable are a vital part of effective cash management and should be managed carefully to enhance the cash position. Purchasing initiates cash outflows and an overzealous purchasing function can create liquidity problems. It reflects that if accounts payable will boost then as a result profitability will drop off rather than increase, because late payments of invoices can be very costly if the firm is offered a discount for early payment. These are in line with (Deloof, 2003) who found the same result regarding account payable and profitability in his study.

Conclusion

Working capital management plays an important role in enhancing profitability of firms. We use data of 25 textile firms listed at Karachi Stock Exchange for a period of 2001-2006. Based on correlation and regression analysis, cash management, accounts receivable and inventory contribute positive to profitability while accounts payable has negative impact on profitability. Based on these results, we conclude, that if a firm can effectively manage its working capital, it can lead to increase profitability, because working capital management is important part in firm financial management decision. Previous research predicts positive relationship between accounts receivable, inventory, cash and profitability. This research results are in line with these findings. The findings indicate that fast collection of accounts receivable is correlated with high profitability. Managers can improve profitability by reducing the credit period granted to their customers.

The ability of the firm to continuously operate in longer period depends on how firms deal with investment in working capital management. The optimal working capital management could be achieved by firm that manages the trade off between profitability and liquidity. Similarly investment in current assets should be just adequate i.e., neither in excess nor deficit because excess investment increases liquidity but reduces profitability as idle investment earns nothing and inadequate amount of working capital threaten the solvency of the firm because of its inability to meet its obligation. It is taken into consideration that the working capital needs of the firm may be fluctuating with changing business activities which may cause excess or shortage of working capital frequently and prompt management can control the imbalances. This aspect points to the need of arranging funds to finance current assets. It means that whenever there is a need for working capital, financing arrangement should be made quickly. The financial manager should have the knowledge of sources of the working capital funds as well as investment avenues where idle funds can be temporarily invested. The firms enjoy a much greater choice of banking sources to fund its working capital needs than do domestic firms. Banking sources available to firms include in- house banks funded by un repatriated capital, international banks, and local banks where subsidiaries are located. If a company's current assets do not exceed its current liabilities, then it may run into trouble paying back creditors in the short term. The worst case scenario is bankruptcy. Working capital also gives investors an idea of the company's underlying operational efficiency. Money that is tied up in inventory or money that customers still owe to the company cannot be used to pay off any of the company's obligations. So, if a company is not operating in the most efficient manner (slow collection), it will show up as an increase in the working capital this can be seen by comparing the working capital from one period to another, slow collection may signal an underlying problem in the company's operations.

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