THE IMPACT OF WORKING CAPITAL MANAGEMENT ON CASH HOLDINGS (A QUANTITATIVE STUDY OF LISTED MANUFACTURING COMPANIES IN SRI LANKA)

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INTRODUCTION

Firms maintain a certain percentage of assets as cash but many firms have increased their cash holdings levels. Ferreira & Vilela (2004) investigated European Monetary union corporations' cash to assets ratio and showed that corporations holds 15% of their total assets in cash or cash equivalents. Bates et al (2006) report that the average cash to assets ratio for US industrial increased 129% from 1980 to 2004 and argue that change in cash holdings is not the result of recent build-up but a "secular trend". They used several variables to explore the motivation of US firms for corporate cash holdings and find that in order of importance, the change in net working capital of cash is the most important one. In Sri Lanka many companies still underestimate the importance of working capital management as a level for freeing up cash from inventory, accounts receivable and accounts payable. By effectively managing components, companies can sharply reduce their dependence on outside funding and can use the released cash for further investments or acquisitions. This will not only lead to more financial fertility but also create value and have a strong impact on a company's enterprise value by reducing capital employed and thus increasing asset productivity. The most important positions for effective working capital management are inventory, accounts receivable, and accounts payable. Depending on the industry and business, prepayments received from customers and prepayments paid to suppliers may also play an important role in the company's cash flow.

Problem Statement of the Study

Working capital is the most crucial factor for maintaining liquidity, survival, solvency and profitability of business. (Mukhopadhyay, 2004). Working Capital Management is one of the most important areas for making the liquidity and profitability comparison among firms, (Eljelly, 2004), involving the decision of the amount and composition of current assets and the financing of these assets. Shin and Soenen (1998) argued that efficient working capital management is very important to create value for the shareholders while Smith et al (2007) emphasized that profitability and liquidity are the salient goals of working capital management. Keeping in view the realistic importance of working capital management on cash holdings, an attempt is made to examine the impact of working capital management on cash holdings of the listed manufacturing companies in Sri Lanka. Despite the immense and increasing importance of listed manufacturing companies in Sri Lankan and their prevailing financial problems. Therefore the research question of the study is.

How does working Capital Management impact on cash holdings of the Sri Lankan Manufacturing Companies?

Objective of the study

To analyse the impact of working capital management on the level of cash held by Sri Lankan manufacturing listed companies.

Literature

Working Capital also known as net working capital is calculated as current assets minus current liabilities. The major components of working capital are accounts receivable, inventories, cash and cash equivalents and payable. Almeida et al (2004) states the working capital affects the cash holdings. Besides the changes in short-term debt could be a substitute for cash because firms may use short-term debt as financial resource. Shin & Soenen (1998) point out that the more efficient the firm is in managing its working capital, the less the requirements for external financing and better financial performance.

Previous and recent studies of corporate cash holdings have explained working capital management. However further researching on this topic and more supportive explanations are desirable. In this paper, the main objective is to explore the relationship between working capital management and corporate cash holdings, and to investigate the interaction between them, how working capital management and corporate cash holdings affect each other of the Sri Lankan manufacturing Organizations.

Hypothesis I

H_{01} : Cash holdings are negatively related to the presence of cash substitutes, i.e., negatively related to the level working capital, net of cash.

H_{01a} : Cash holdings are negatively related to the level of inventory (INV)

H_{01b} : Cash holdings are negatively related to the level of account receivable (A/R)

$H_{01c:}$ Cash holdings are positively related to the level of short-term liabilities (STL)

The sub hypotheses ought to give a more detailed insight into the issue in order to differentiate between the components of working capital. This will allow finding out which of these components has the strongest influence on cash level.

Hypothesis II

H_2: Cash holdings are positively related to working capital management efficiency, i.e is negatively related to the cash conversion cycle (CCC)

$H_{2a:}$ Cash holdings are negatively related to Days inventories outstanding (DSI)

H_2b: Cash holdings are negatively related to days sales outstanding (DSO)

H_2c: Cash holdings are positively related to days payables outstanding (DPO)

The three subordinate hypotheses which contain the components of the cash conversion cycle ought to provide a more detailed insight into the effect of the cash conversion cycle on cash holdings. Once again a differentiation will allow detecting the impact of the individual components of cash conversion cycle.

METHODOLOGY

In the Colombo Stock Exchange there are 288 Companies are listed from that in the Manufacturing sector all 37 companies are considered for this research for the period of 2008 to 2012. The researcher used quantitative descriptive methods. In this study, the cash to assets ratio is the dependent variable. The aim of the empirical part of this paper is to analyze the independent variables. i.e. working Capital net of cash ratio and the cash conversion cycle, including their subordinate components, on the dependent variable. The empirical results have been achieved by two kinds of statistical methods, namely univariate and bivariate analysis. This decision is based on the fact that the methods that have been employed present simple but significant tools in order to describe and analyze statistical relationships between the independent variables and the dependent variable.

RESULTS AND DISCUSSION

Univariate results

The following table1 illustrates the results of a univariate analysis, namely the comparison of means. The independent variables' means have been calculated for each quartile of the dependent variables' mean. The 1st quartile therefore features companies which hold very low cash levels with cash to assets ratios spanning from 0 to 0.0123 and a mean of 0.0036 while the 4th quartile exhibits manufacturing companies with very considerable cash holdings with an average of 0.4025 and a range of 0.2313 to 0.9370. The independent variables including subordinate components are listed below.

Table 1 Comparison of Means

	1st quartile	2nd quartile	3rd quartile	4th quartile
Cash	**0.0036**	**0.0433**	**0.1512**	**0.4025**
Minimum	0.0000	0.0123	0.0853	0.2313
Maximum	0.0123	0.0852	0.2313	0.9370
NWC	**0.0734**	**0.0640**	**0.0352**	**-0.0346**
INV	0.2791	0.2462	0.1937	0.1357
A/R	0.2626	0.2621	0.2503	0.2021
ATL	0.4684	0.4442	0.4088	0.3724
CCC	**74.83**	**68.14**	**61.05**	**53.13**
DSI	59.56	51.7	41.55	34.14
DSO	49.54	48.05	46.44	40.72
DPO	34.27	31.62	26.93	21.73

Source: Survey Data

It can be observed that manufacturing companies with rather low cash holdings exhibit a considerable amount of inventory and accounts receivable but also rather significant short-term liabilities. The 4th quartile which contains manufacturing companies with very high cash levels features a negative net working capital, i.e. the short-term liabilities out balance the sum of inventory and accounts receivable. While an apparent steady negative relation exists between all three components of net working capital, the impact of inventory seems to be the most significant one, decreasing by nearly 50% from the 1st to the 4th quartile. The decrease in accounts receivable is clearly weaker with only roughly 23% from the 1st to the 4th quartile. Short-term liabilities also show a constant negative development with increasing cash levels. However, since they only decrease by ca. 20%, the impact on Net Working Capital (NWC) is not strong enough to hinder the overall negative relationship between net working capital and cash level which amounts to a total decrease of 0.108 points.

Bivariate results

The following illustration depicts a correlation table 2 which includes all variables. The Pearson correlation coefficient has been calculated for any possible pair of variables and a two-tailed test

of significance has been applied. The results indicate that all but two results are significant at the 0.01 level. The statistically significant correlation coefficients are highlighted with an asterisk.

Table 2 Correlation table (*=significant at the 0.01 level)

	Cash	**NWC**	INV	A/R	STL	CCC	DSI	DSO	DPO
Cash	1								
NWC	(-0.208*)	1							
INV	-0.327*	0.499*	1						
A/R	-0.205*	0.221*	-0.042	1					
STL	-0.180*	-0.501*	0.225*	0.436*	1				
CCC	(-0.212*)	0.541*	0.507*	0.062*	-0.127*	1			
DSI	-0.235*	0.409*	0.747*	-0.282*	-0.044*	0.754*	1		
DSO	-0.152*	0.188*	-0.198*	0.632*	0.093*	0.393*	0.074*	1	
DPO	-0.218*	-0.009	0.196*	0.125*	0.249*	0.015	0.368*	0.336*	1

Source: Survey Data

The correlation of -0.208 indicates that there is a negative correlation between cash holdings and net working capital. However, due to the relatively low absolute value, it has to be assumed that this correlation is rather weak. The components of net working capital are all negatively related to cash holding as the correlation coefficients suggest. Among the subordinate variables, the correlation between inventory and cash is the strongest with a coefficient of -0.327 although it is also a rather low absolute value. The relationship between cash conversion cycle and cash holdings is negative as the correlation coefficient of -0.235. The variable 'DSO' presents a rather weak correlation while 'DPO' is a bit stronger negatively related to cash holdings. First of all, there is a considerable positive correlation between 'NWC' and 'CCC' with a value of 0.541. Also, a significant positive correlation exists between 'INV' and 'DSI' as well as 'A/R' and 'DSO'.

Hypothesis 1

Hypothesis 1 predicted that cash holdings are negatively affected by the presence of cash substitutes, i.e. negatively related to the variable 'NWC'. The univariate analysis of this study's sample clearly indicates that a firm's 'NWC' decreases with increasing cash level since a clear negative development of 'NWC' can be observed in the four quartiles. The bivariate analysis confirms this observation as the correlation coefficient for the variables 'Cash' and 'NWC' is negative. Therefore, the first major hypothesis can be confirmed. There is a negative relationship between cash holdings and the presence of cash substitutes.

The subordinate hypotheses were developed in order to give a more detailed insight into the issue. In this respect, Hypothesis $_{1a}$ can be confirmed as the level of inventory has an unambiguously negative impact on cash levels, according to both the univariate and bivariate analyses. Hypothesis $_{1b}$ can also be confirmed because there is statistically significant evidence that cash holdings are negatively related to accounts receivable. Hypothesis 1c however needs to be rejected because the univariate as well as the bivariate analysis suggest that there is not a positive but a negative correlation between cash level and short-term liabilities.

Hypothesis 2

Hypothesis 2 stated that cash holdings should be positively related to working capital management efficiency which again is measured by the cash conversion cycle. The variable 'CCC' thus was assumed to be negatively related to the variable 'Cash'. The comparison of means reveals that there is a steady negative development of the cash conversion cycle from the first to the fourth quartile. The bivariate analysis substantiates this finding by measuring a negative correlation coefficient. These results imply that cash level is positively related to working capital management efficiency and therefore the second major hypothesis can be confirmed.

Hypothesis $_{2a}$ which ought to measure the impact of days sales of inventory can be confirmed since there is an apparent negative relationship between 'DSI' and 'Cash' which is backed by both the univariate and bivariate analyses. A negative correlation has also been calculated between days sales outstanding and cash holdings. Therefore, Hypothesis $_{2b}$ can be confirmed, as well. Hypothesis $_{2c}$ needs to be rejected as there is a clear negative relationship between cash level and days payable outstanding.

Recapitulation of hypothesis results

The following table3 recapitulates the hypotheses, their proposition and their result, i.e. whether empirical evidence led to their confirmation or rejection.

Table 3

Hypothesis	Proposition	Result
H01	Cash holdings are negatively related to the presence of cash substitutes, i.e. negatively related to the level of working capital net cash	confirmed
H01a	Cash holdings are negatively related to the level of inventory	confirmed
H01b	Cash holdings are negatively related to the level of accounts receivable	confirmed
H01c	Cash holdings are positively related to the level of short-term liabilities	rejected
H2	Cash holdings are positively related to working capital management efficiency, i.e. negatively related to the cash conversion cycle.	confirmed
H2 a	Cash holdings are negatively related to DSI	confirmed
H2b	Cash holdings are negatively related to DSO	confirmed
H2c	Cash holdings are positively related to DPO	rejected

There is explicit empirical evidence which supports the decisions on the above described confirmations and rejections of hypotheses. All in all, the two major hypotheses can be confirmed although one hypothesis subordinate to each of these respectively has been rejected. The two hypotheses which have been rejected both deal with the liabilities side of working capital but their impact is apparently not strong enough to obviate the confirmation of the two major hypotheses.

CONCLUSION /RECOMMENDATIONS

There is Negative relationship between cash holding and both net Working Capital and the cash conversion Cycle. Accounts receivable also seen to bear an overall negative relationship with

cash holdings. There are substitutes, i.e. inventory, accounts receivable and short-term liabilities, as well as the way in which working capital is managed, represented by the cash conversion cycle.

Therefore, the researcher has given strong recommendations once the target cash level has been determined, the management of working capital ought to be adjusted in order to adhere to the predetermined level of cash holdings and it is important to monitor both aspects in order to detect the combined policy which leads to optimal results for the achievement and maintenance of the target cash level.

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