BUSINESS PERSPECTIVES

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THE IMPACT OF WORKING CAPITAL MANAGEMENT ON SHAREHOLDERS' WEALTH AND PROFITABILITY: EVIDENCE FROM COLOMBO STOCK EXCHANGE

Abstract

The Working Capital Management (WCM) has an important role for the firm's success or failure, because it directly affects the overall business health of the firm. This study examined the impact of WCM on profitability and shareholders' wealth using 50 companies listed in different sectors on the Colombo Stock Exchange (CSE) for the period from 2010 to 2015. This sample represents 47% of the selected sectors of CSE. The profitability of the company is measured using gross operating profit (GOP) and shareholders wealth measured by Tobin's Q (TQ) ratio. The WCM is measured using five independent variables namely stock holding period (SHP), debtors' collection period (DCP), creditors' settlement period (CSP), cash conversion circle (CCC) and current assets ratio (CAR). Further, three additional variables such as firm size (SIZE), leverage (LEV) and earning yield (EY) are employed as controlling variables to capture the impact of other performance of the companies.

The data were analyzed using ordinary least square (OLS) and panel data regression models. These regression models reveal that there is a significant negative relationship between CCC and dependent variables (GOP & TQ). Further, this relationship has been confirmed by the major components of CCC such as SHP, DCP. Firm size also positively and significantly affects the firm GOP, while negatively affects the TQ. Further, they revealed that there is a significant positive relationship between LEV and TQ. The study finds that the shareholders' wealth and profitability can be increased through the efficiency of WCM.

Keywords	Working Capital Management, Tobin's Q, leverage, panel data, cash conversion circle
JEL Classification	G30, G31, G32

INTRODUCTION

At present, the short-term finance is considered as the most important aspect in managing financial resources of all business. This is also known as working capital (WC), which is defined as the balance between current assets (CA) and current liabilities (CL) (Parks & Pike, 1984). Working capital is customarily divided into two categories, gross working capital and net working capital. Gross working capital is the sum of all current assets, while net working capital is the difference between current assets and current liabilities. Current assets include all those assets that in the normal course of business return to the form of cash within a short period of the time, normally within one year. Current liabilities include all liabilities settle within short period of time (Rahman & Nasr, 2007). Singh and Kumar (2013) also found that the short-term finance is being successfully employed in the industrial practice.

Management of working capital (MWC) is another important aspect in finance, which plays an important role in every business entity. MWC is concerned with the problem that arises attempting to manage CA and CL and interrelationship between them. MWC is a very important component of corporate finance, because it directly affects the company's performance (Deloof, 2003). The need for maintaining an adequate working capital can hardly be questioned. Just as circulation of blood is very necessary in the human body to maintain life, the flow of fund is very necessary to maintain business. If it becomes weak, the business can hardly prosper and survive (Refuse, 1996). This statement emphasizes the importance of WCM to a business for their survival. The ultimate objective of any firm is to maximize the profit. But preserving liquidity of the firm is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to firm. Therefore, there must be a tradeoff between these two objectives of the firm. One objective should not be at cost of the other, because both have their importance.

According to the literature, WCM has a direct impact on firm and market performance of the companies. Most research studies emphasize that efficient management of working capital leads to maximizing the profit and shareholders' wealth of the company. Since WCM is best described by CCC, it is very important to identify the impact on CCC and each component in CCC (SHP, DCP & CSP) to profitability and shareholders' wealth (Bana Abuzayed, 2013). CCC means the decision about how much to invest in customers and inventory accounts and how much credit is accepted from the suppliers. Most researchers employed CCC and its components (SHP, DCP & CSP) as main proxies in WCM (Abuzayed, 2010; Viural & Shockman, 2012; Raheman & Nasr, 2007; Teruel & Solano, 2007; Lazaridis & Tryfonidis, 2005; Dellof, 2003; Kodithuwakku, 2015). In addition to that, investment in current assets (CA) from total assets (TA) also has influence on working capital management. This is called working capital policies employed by the companies. Theoretically company can adopt such three working capital policies as aggressive, moderate and conservative policies based on financial and investment strategies (Bandara & Weerakoon, 2015). Bana Abuzayed (2013) emphasized that selection of best working capital policy is a good implication to increase not only profitability, but also the shareholders' wealth of the companies. As it is significant in selecting this working capital policy, this is going to be tested as an explanatory variable in this study. According to the literature, other market indicators also have influence on the profitability and shareholders' wealth of the companies. For identify, these effects most studies examine the firm size (SIZE), Leverage (LEV), Sales growth, CAR employ as proxies to represent the other indicators.

Based on their findings, most researchers found the significant negative relationship between CCC and profitability (Deloof, 2003; Rahuman & Nazr, 2007, Garcia-Teruel & Solana, 2007; Kodithuwakku, 2015). But some researchers found contradicting result that there exists a positive relationship between CCC and profitability (Bana Abuzayed, 2010; Don & SU, 2012). Each component in CCC behaves in a different way (positively or negatively) with the profitability. Bana Abuzayed (2010) found that there is a significant negative relationship between CCC and market performance, while Vural and Shokmen (2012) state that there is no relationship between main component in CCC and market performance. Shin and Sonen (1998), Dellof (2003), Raheman and Nazr (2007) reveal that aggressive working capital policy enhances the performance of the companies. But Nazir and Afza (2009) found that conservative working capital practice enhances the performance of the businesses. The studies of WCM and its impact on firm performance and market performance do not provide consistent result. Other market indicators also significantly affect firm and market performance. Most studies show that size of the firm positively affects the performance (Gracia-Teruel & Martinez-Solano, 2007; Paris & Gama, 2015). LEV of the company also significantly affects the performance of the companies, However, the findings are not in line with the previous studies, because some studies found that increasing the leverage leads to higher profitability (Teruel & Solano, 2007; Paris & Gama, 2015), while some studies reveal that low leverage causes higher profitability (Fama & French, 2002).

After reviewing the literature, this study examines whether WCM of listed companies in Colombo Stock Exchange (CSE) in different sectors has impact on profitability and shareholders' wealth. This is the first study investigating the impact of WCM on both shareholders' wealth and profitability of multi-sectors in Sri Lanka. To analyze the problem, the following objectives were developed in this study:

- to identify the impact on different components of WCM on profitability of the companies;
- to identify the impact on different components of WCM on shareholders' wealth of the companies.

Section one reviews the literature on WCM and its impact on profitability and shareholders' wealth. Section two presents the sample, variables and research methodology used for the study. Section three highlights the data analysis, discussion and results. Finally, last section draws the conclusion.

1. LITERATURE REVIEW

The literature has identified the impact of WCM on firm profitability, shareholders' wealth and working capital policies employed by the companies. Most researchers examined WCM and its impact on firm profitability. Very limited studies examined the impact of WCM on profitability and shareholders' wealth. Main working capital components such as CCC, DCP, SHP and CSP were used as independent variables in most studies, and different relationships were found as their major findings.

Dellof (2003) examined the impact of WCM on firm profitability using large sample of 1009 large Belgium non-financial companies during the period of 5 years from 1992 to 1996. He found a significant negative relationship between GOP and components the CCC. Based on his findings, he suggested that managers can make value for their shareholders by decreasing the number of days of receivables and inventories. He also found the negative relationship between profitability and accounts payable, which shows that less profitable companies take more period to settle their payments.

In Pakistan context, Rahman and Nasr (2007) selected a sample of 94 Pakistani companies listed on the Karachi Stock Exchange for a period of 6 years from 1999 to 2004 to examine the relationship between WCM and profitability. The results of this study showed that there was a strong negative relationship between WCM and profitability of the companies. Besides, they also showed a positive relationship between the size of the company and profitability. Further, they revealed that there is a significant negative relationship between debt used by the firm and its profitability.

Padachi (2006) discussed the trends of WCM and its impact of performance of the firms using 58 small manufacturing firms in India from 1998 to 2003. According to result of this study, he found the significant relationship between WCM and profitability of the business. Further, study found that high investment in inventories and receivables is related with lower profitability.

In Sri Lankan context, Kodithuwakku (2015) examined the relationship between working capital management and profitability of manufacturing companies in Sri Lanka from 2008 to 2012 using 20 manufacturing companies listed on CSE. The study found a strong negative relationship between the profitability and CCC, a positive but relationship between profitability and CSP. Moreover, this study reveals that the financial leverage, sales growth, firm size also have a significant impact on profitability of the manufacturing companies in Sri Lanka.

Bana Abuzayed (2010) investigated the WCM in both accounting and market value of 98 companies of Amman Stock exchange from 2003 to 2008. Firm value has been calculated using gross GOP & market value expressed by TQ. The study found that profitability is positively affected by the CCC. In addition to that, he found a significant negative relationship between shareholders' wealth and CCC. Finally, the study found that more profitable firms have less inspiration to manage their working capital.

Vural and Shokmen (2012) studied the impact of WCM on firm's performance using 75 manufacturing companies listed on Istanbul Stock Exchange for 2002 to 2009. Firm performance was measured using profitability and shareholders' wealth of the firm. They revealed that there is a

significant negative relationship between average DCP and CCC. Leverage as a control variable has a significant negative relationship with firm value and profitability of the firms. According to their analysis, they found that there is a positive relationship between CCC and firm value, while there is a negative relationship between leverage and firm value.

Perera and Wickremasighe (2010) surveyed the WCM practices of manufacturing sector companies in Sri Lanka and they observed that there is a lack of survey based investigation in WCM practices, particularly in Sri Lanka. It is observed that most of the manufacturing companies in Sri Lanka do not have formal policy in managing WC and WCM practices are affected by growth and profitability of the manufacturing companies.

Afza and Nazir (2007) examined the relationship between the working capital policies and profitability and shareholders' wealth using seventeen industrial companies listed on Karachi Stock Exchange from 1998 to 2003. The study showed that profitability and shareholders' wealth are increased by aggressive working capital policy.

Studying the previous literature, the showed study that there are a very few studies available to examine the impact of WCM on shareholders' wealth in both international and local context. In the local context, all studies relating to WCM are focused on manufacturing sector companies. Companies in other sectors are neglected and this study is focused on fulfilling these research gaps.

2. SAMPLE AND METHOD

2.1. Sample and sampling procedure

Table 1 represent the selected sample for the study with their percentage. The sample was selected from different sectors in the economy avoiding finance sector, real Estate, hotel and travelling and service rendering businesses from the sample due to the specific nature of their activities. Even though 108 companies were registered in the selected sample at the end of year 2016, only 50 companies were selected based on the data availability for all variables for the period 2010–2015. Since 8 firms are outliers

for more than one period, they have dropped from the sample. This sample represents 47% of the listed companies in the selected sectors. The following table shows respective percentage representation of selected companies of these sectors.

Table 1. Composition of sample

Industry	Listed companies	Selected companies	Percentage, %
Manufacturing	37	17	46
Food and beverage	21	10	48
Chemical and pharma	10	6	60
Motors	8	5	62
Plantations	19	7	37
Trading	10	3	30
Footwear and garments	3	2	66
Total	108	50	47

2.2. Variables

According to the literature on working capital management, the studies have recognized different variables in order to determine the impact on firm profitability and shareholders' wealth of the companies. The study aims at discussing these variables under three categories such as dependent variable, explanatory variables and control variables.

Dependent variable is the variable being tested and its value is determined by the other variables in the relationship. This study includes two dependent variables, which are gross operating profit and Tobin's Q ratio.

Explanatory variables can be identified as variable, the change does not depend on another variable and it is considered to have an effect on dependent variable. In this study, there can be identified five independent variables. Cash Conversion Circle (CCC), Stock Holding Period (SHP), Debtors Collection Period (DCP), Creditors Settlement Period (CSP) and Current Assets Ratio (CAR) are considered as independent variables.

Control variable is a variable that would cause an interference to the dependent variable. This variables are used to measure the other market effect influence on the dependent variables. This study contains three control variables, which are firm size, leverage and earning yield.

2.3. Operationalization of variables

Table 2. Summary of operationalization

Variable	Definition	Measurement	Variable into model	Expected relationship with independent variable
		Dependent variables		
GOP	Gross Operating Profit	(Sales-Cost of sales) / (Total Assets-Financial Assets)	SQRT GOP	
TQ	Tobin's Q	(market value of equity+book valu of liability)/ book value of total asset	Inverse TQ	
		Independent variables		
		Explanatory variables		
CCC	Cash conversion cycle	Stock Holding Period + Debtors Collection Period+ Creditors Settlement Period	CCC in days	Negative relationship with dependent variables
SHP	Stock Holding Period	(Inventories / cost of sales) x 365	SHP in days	Negative relationship with dependent variables
DCP	Debtors Collection Period	(Accounts Receivables / sales) x 365	DCP in days	Negative relationship with dependent variables
CSP	Creditors Settlement period	(Accounts payables / Cost of Sales) x 365	CSP in days	Positive relationship with dependent variable
CAR	Current Assets Ratio	Current Assets / Total Assets	CA ratio	Negative relationship
		Control variables		
SIZE	Firm Size	Ln sales	Ln Sales	Positive relationship with dependent variables
LEV	Leverage	Total non-current liabilities / total equity	Leverage Ratio	Negative relationship with dependent variables
EY	Earnings Yield	EPS / share price	EY Ratio	Positive relationship with dependent variables

2.4. Regression models and analysis of data

The models are going to be developed using econometrics' models. Two dependent variables are going to be tested using five explanatory variables and three control variables. In this study, models are developed to test the explanatory variables independently (one by one) with control variables in order to avoid multicollinearity effect influence on the regression. Based on the hypothesis developed, the following regression models were derived to analyze the data.

The following five models are constructed to analyze the effect of working capital management on firm profitability:

model 1
$$GOP = \beta_0 + \beta_1 SHP + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 2
$$GOP = \beta_0 + \beta_1 DCP + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 3
$$GOP = \beta_0 + \beta_1 CSP + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 4
$$GOP = \beta_0 + \beta_1 CCC + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 5
$$GOP = \beta_0 + \beta_1 CAR + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon.$$

The above five models examine the hypotheses in alternative forms:

H_0:   There is no relationship between GOP and major component in WCM.

The effect of shareholders' wealth of the company is analyzed usin the following models:

model 6
$$TQ = \beta_0 + \beta_1 SHP + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 7
$$TQ = \beta_0 + \beta_1 DCP + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 8

$$TQ = \beta_0 + \beta_1 CSP + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 9

$$TQ = \beta_0 + \beta_1 CCC + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon,$$

model 10

$$TQ = \beta_0 + \beta_1 CAR + \beta_2 SIZE + \beta_3 LEV + \beta_4 EY + \varepsilon.$$

The above five models examine the hypotheses in alternative forms:

H_0:   There is no relationship between TQ and major component in WCM.

Note: GOP: Gross Operating Profit; *TQ*: Tobin's Q; *SHP*: Stock Holding Period; *DCP*: Debtors Collection Period; *CSP*: Creditors Settlement Period; *CCC*: Cash Conversion Circle; *CAR*: Current Assets Ratio; *LEV*: Leverage; *SIZE*: ln Sales; *LEV*: Leverage, β_0 intercept, ε; error term.

First normality tests were performed to ensure these data are suitable for analysis using regression model. Generally, OLS method is used to analyze the regressions. The most common panel data models are the fixed effects model and random effects model. This study uses both OLS method and panel data method (fixed effect or random effect) to analyze the data.

In OLS method, panel data method is also employed to analyze the data. Panel are a type of longitudinal data or data collected at different points in time. Panel data methodology is applied to analyze the panel data. The balance panel data allows for the equal observation for every unit of observation for each time period. On using panel data, one must de-

cide whether to employ a fixed effect model or random effect model. The Hausman test helps to determine, which model would result in better premises.

3. RESULTS AND DISCUSSION

3.1. Descriptive statistics

As per above mentioned descriptive analysis (Table 3), average gross profit indicates 24.35%, while median remains 21.39%. Maximum and minimum value of profitability would be 72.69% and minimum 0.0007%, respectively, while volatility indicates 15.21%. Higher variations can be observed between minimum value and maximum value. This type of variations can be expected due to different sector companies are employed and 7 year period are considered for the study. It means that the value of the profitability can deviate moderately to both side of the mean at the rate of 15.21%. Most companies earn average profit around 25%, since the mean value indicates 24.35%.

The average value of TQ is 1.7940 since maximum is 11.766 and minimum indicates value of 0.9878. This implies higher variation between minimum and maximum. But very few companies indicate higher value, since the average value indicates 1.79 and deviation indicates 80.49%. According to the sample, Sri Lankan companies are overvalued, because mean value indicates 1.6095 (higher than 1). Even though higher variation can be expected in the market value of firms since standard deviation reflects 80.46% deviation from the median.

Table 3. Descriptive statistics

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
GOP	0.24359	0.213913	0.726971	0.000706	0.182196	−0.8519	3.594812
TQ	1.794071	1.609532	11.7664	0.987851	0.804683	6.68394	80.1377
SHP	59.42016	47.40341	223.8528	2.459176	44.10392	1.468887	4.858109
DCP	51.09405	43.68339	160.5253	1.09979	34.70863	0.697679	2.73145
CSP	23.96467	18.88958	139.406	0.136909	21.12605	1.767008	7.260215
CCC	86.54291	68.09632	289.909	1.080003	57.77319	0.926124	3.21726
CAR	0.450691	0.454537	0.947871	0.069024	0.204737	0.219664	2.242351
SIZE	6.439874	6.410043	7.874615	5.625134	0.434608	0.619811	3.745966
LEV	0.24478	0.120044	2.456586	0.003038	0.313441	2.810182	14.09536
EY	0.078327	0.06614	1.242175	−0.825	0.146084	1.20005	25.65678

Notes: GOP: Gross Operating Profit; *TQ*: Inverse Tobin's Q; *SHP*: Stock Holding Period; *DCP*: Debtors Collection Period; *CSP*: Creditors Settlement Period; *CCC*: Cash Conversion Circle; *CAR*: Current Assets to Total Assets; *SIZE*: ln Sales; *LEV*: Leverage; *EY*: Earning Yield.

The CCC represents all other main variables affect to working capital management namely stock holding period, Debtors collection period and creditors settlement period. The CCC used as a proxy to check the efficiency management of working capital. The average number of CCC is 86 days and deviation is 57 days. Maximum period of conversion circle is 290 days, while minimum is 2 days. But CCC of most companies exists 86 days, since mean value reflects 86.54. The median indicates 68 days. The other component consists in CCC behaves in different ways. According to the statistics summary, some companies held their stocks only 2 days, while other companies held 224 days. This is not a surprise to spread wide range of this SHP, since our sample consists of different sectors of businesses. Even though the SHP varies between wide ranges, the Average Holding Period is 59 days and volatility is 44 days. This implies few companies exist in both ends, while most companies are at average level. Minimum time taken to collect cash from debtors is 1 day, while the maximum time is in 160 days. Average period of collection is 51 days and standard deviation is 34 days. The average time period taken to settle their suppliers is 23 days and deviation is 21 days. The maximum time period to settle the suppliers is 139 days and minimum only one day. According to these statistics, these companies suffer in cash flow problems, since they pay their creditors in less time than the time given to debtors to settle their balances. Current asset ratio indicates 45% average figure and it volatility is 20%. This implies that nearly half of total assets is represented by current assets. The maximum amount is 95%, while minimum represents only 6%. This ratio re-

veals that the companies included in the sample use both aggressive policy and conservative policy, most companies tend to use moderate working capital policy.

3.2. Correlation matrix

Pearson correlation coefficient is a measure used to calculate the degree of association between two variables. But this measurement can be used only when there is a linear relationship between two variables under consideration. Table 4 provides the Pearson correlation coefficient for the pairs of variables in the study. This correlation matrix helps the researcher to identify the multicollinearity effect between two variables. Field (2005) suggested that multicollinearity becomes a problem only when the correlation coefficient exceeds 0.8. The result in Table 3 shows the none of the correlation between independent variables exceeds these threshold values. The result of analysis shows only two highest value correlations between CCC with SHP and DCP. The coefficient value is 0.7787 and 0.6569, respectively, but less than 0.80. According to the result of regression analysis, the coefficient has positive value.

There is a relationship between all independent variables with both dependent variables, except creditors' settlement period and leverage of the company, even though the result of correlation matrix is not in line with the result deriving from regression analysis. This contradictory situation was observed not only in this study, but also in other studies. Some study indicates this situation in one or two variables and the study done by

Table 4. Correlation matrix

Variables	GOP	TOBINS_Q	SHP	DCP	CSP	CCC	CA_TA	SIZE	LEVERAGE	EY
GOP	1.000000	–	–	–	–	–	–	–	–	–
TOBINS_Q	0.327078	1.000000	–	–	–	–	–	–	–	–
SHP	0.068425	0.091220	1.000000	–	–	–	–	–	–	–
DCP	0.000532	0.067692	0.183763	1.000000	–	–	–	–	–	–
CSP	–0.108121	–0.062940	0.259589	0.230045	1.000000	–	–	–	–	–
CCC	0.092005	0.133245	0.778756	0.656965	–0.029527	1.000000	–	–	–	–
CA_TA	0.350185	0.250298	0.113771	0.392990	–0.022436	0.331136	1.000000	–	–	–
SIZE	0.178590	0.129340	0.181638	–0.045659	–0.187898	0.180015	0.004532	1.000000	–	–
LEVERAGE	–0.313416	–0.207577	–0.149814	–0.363110	–0.022464	–0.324312	–0.414666	0.030813	1.000000	–
EY	0.136034	–0.048391	–0.008030	–0.064700	–0.036094	–0.031743	0.076160	0.094775	–0.078522	1.00000

Notes: GOP: Gross Operating Profit; *TQ*: Tobin's Q; *SHP*: Stock Holding Period; *DCP*: Debtors Collection Period; *CSP*: Creditors Settlement Period; *CCC*: Cash Conversion Circle; *CAR*: Current Assets to Total Assets; *SIZE*: ln Sales; *LEV*: Leverage; *EY*: Earning Yield.

Vural and Shockmen (2012) indicates completely different relationship in result obtained from correlation matrix and regression analysis.

This is a questionable situation that completely different result is given in the same study in different evaluation methods. This is not a surprise, because the limitations in the correlation matrix were already identified by the researchers. One limitation of Pearson correlation matrix is that it does not provide assistance in identifying causes from the consequences (Deloof 2003). He further emphasize that care must be exercised while interpreting the Pearson correlation coefficients, because they cannot provide a reliable indicator of association in a manner, which controls for additional variables. In other words, correlation analysis does not consider each variables correlation with all other independent variables, since simple correlation analysis does not provide reliable indicator of association between the variables, thus, researcher develops regression model. As in this situation, our main analysis will be derived from regression models, estimated using fixed or random effect framework and OLS method.

3.3. Regression analysis

3.3.1. WCM and its impact on profitability

Table 5 provides the result of OLS method and panel data analysis. Based on the result of OLS method, it does not provide any significant result for main variables except current assets ratio. In addition to that, the explanatory power of the variables is very poor. *R*-square represents the explanatory power of the model. Therefore, the result of OLS analysis is not going to be interpreted. But the result derived from panel data analysis shows the powerful significant relationship between dependent variables and explanatory variables.

The regression result of model 1 indicates the negative coefficient of *SHP* $\left(\beta = 0.0005, \ P = 0.028 \right)$. This implies that when the number of SHP increases by one day, *GOP* of the firms decline by 0.0005 percent. The overall model is significant because the $P < 0.05$. This result emphasizes that increase or decrease in inventory turnover days significantly affects the profitability. If the inventory is converted into sales in less time period

(reduce the stock holding period), it leads to higher profitability.

The second regression result shows significant negative relationship with *DCP* and the profitability. The result indicates $\beta = 0.0012, \ P = 0.009$. This emphasizes that when the number of *DCP* increases by one day, the *GOP* of the company decreases by 0.0012 percent. The model is highly significant, since $p < 0.01$. This implies that the company can increase its profitability by shortening the debtors collection period.

The relationship between *CSP* and *GOP* indicates negative insignificant relationship $\left(P = 0.7743 \right)$. It implies that *CSP* does not significantly affect the profitability.

Significant negative relationship can be identified between *CCC* and profitability. The result represent $\beta = 0.0007, \ P = 0.0018$ values in the regression. That means when the *CCC* increases by one day, *GOP* of the company decreases by 0.0007 percent. Since $P < 0.01$, the model is highly significant. This implies that companies can increase their profitability by shortening the *CCC*.

Since *CCC* is the comprehensive measure of checking the efficiency, this can emphasize that increased efficiency of the firm leads to higher profitability of the business.

The significant positive relationship indicates the current asset ratio. The relationship is highly significant, since $P < 0.01$. This emphasizes that increase in the current assets of the businesses to total assets ultimately creates higher profit. It means conservative working capital policy is more preferred in Sri Lankan companies.

Firm size and earning yield as the control variables indicate a significant positive relationship with profitability of the company. The *P*-value of firm size and earning yield indicate probability less than 0.05 percent. It is interpreted that when the size of the firm increases (represented by natural logarithm of sales), it will lead to increased profit of the firm. Though the leverage negatively affects the profitability, the relationship is not significant in all five models. The first four models imply high explanatory power (R^2) under panel data analysis around 70%.

Table 5. The impact of WCM on profitability

	Gross Operating Profit (GOP) as dependent variable									
	OLS method					Panel data method				
Independent variables	1	2	3	4	5	1	2	3	4	5
Constant	0.0187	0.0476	0.0608	0.0144	−0.0814	−0.2287	−0.1717	−0.2517	−0.2654	−0.1849
	0.8823	0.7074	0.6396	0.911	0.5077	0.4218	0.5474	0.3942	0.3455	0.3381
SHP	2.12					−0.0005**				
	0.9145					0.028				
DCP		−0.0004					−0.0012***			
		0.1302					0.009			
CSP			−0.0005					−0.0001		
			0.1969					0.7743		
CCC				−5.16					−0.0007**	
				0.7446					0.0018	
CAR					0.2097***					0.1999***
					0					0.0007
SIZE	0.07405***	0.0736***	0.0698***	0.07582***	0.07316***	0.1122**	0.1078**	0.1113**	0.1223***	0.08747***
	0.0002	0.0002	0.0005	0.0002	0.0001	0.0113	0.0146	0.0148	0.0054	0.0033
LEV	−0.1646***	−0.1813***	−0.1658***	−0.1683***	−0.1087***	−0.0093	−0.0098	−0.0107	−0.01011	−0.03385
	0	0	0	0	0.0002	0.7538	0.7386	0.7195	0.7298	0.2154
EY	0.1361**	0.1273**	0.1344**	0.1343**	0.1234**	0.1098***	0.103***	0.1056***	0.1066***	0.0901**
	0.0203	0.0299	0.0215	0.0223	0.0289	0.0061	0.0096	0.009	0.0071	0.0227
R^2	0.1695	0.1759	0.1742	0.1698	0.2295	0.751	0.753	0.7462	0.7559	0.1044
Adjusted R^2	0.1583	0.1648	0.163	0.1586	0.2191	0.6973	0.6998	0.6914	0.7034	0.0901
F-statistics	15.05	15.74	15.56	15.09	21.97	14	14.15	13.64	14.38	8.6
Prob (F-statistics)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Durbin-Watson Stat	0.4889	0.4892	0.4922	0.4877	0.5144	1.5001	1.4642	1.468	1.5043	1.2051
Estimation	−	−	−	−		FE	FE	FE	FE	RE

Notes: *** Statistically significant at 1%; ** statistically significant at 5%; ** statistically significant at 10%. *SHP:* Stock Holding period; *DCP:* Debtors Collection Period; *CSP:* Creditors Settlement Period; *CCC:* Cash Conversion Circle; *CAR:* Current Assets Ratio; *LEV:* Leverage; *SIZE:* Ln Sales; *LEV:* Leverage.

3.3.2. WCM and its impact on shareholders' wealth

Table 6 provides the result of OLS and panel data analysis. Based on the result of OLS method, it does not provide any significant result for main variables except current assets ratio. But firm size indicates a significant negative relationship with the shareholders' wealth, while leverage indicates significant positive relationship with the shareholders' wealth. The explanatory power of the regressions is very poor and less than 10%. Therefore, the result of OLS analysis is not going to be interpreted. But the result of panel data analysis shows the significant relationship between dependent variable and independent variables except earning yield.

This regression analysis is run using a transformation employed into dependent variable. Inverse value of Tobin's Q is used to run the regression. Inverse means the relevant figure divided by one (1/ Tobin's Q). The result of that figure gives an inverse relationship with the independent variable. Therefore, in the time when interpreting the result, the researcher has to pay more attention to the sign of the coefficient. This sign of the coefficient should be reversed to get the actual result.

In order to get the result of analysing the impact of WCM on shareholders' wealth of the firm, five regression models were employed. Four regression models give a significant result except *CSP*. The model 1 indicates that the coefficient of *SHP* is 0.0008 and *P*-value is 0.0182. This is significant, because $P < 0.05$ level. It implies that if *SHP* increases in one day, value of the firm will be decreased by 0.0008 percent. This means the efficiency management of stock (reduce the stock holding period) leads to increased value of the firms.

Table 6. The impact of WCM on shareholders' wealth

Independent variables	Tobin's Q (TQ) ratio as dependent variable									
	OLS method					Panel data method				
	1	2	3	4	5	1	2	3	4	5
Constant	0.9531***	0.9788***	0.9605***	0.9501***	1.0071***	–0.8167**	–0.8607**	–0.82**	–0.7633**	–0.6801*
	0	0	0	0	0	0.03	0.0235	0.0357	0.041	0.0731
SHP	–0.0001					0.0008**				
	0.5261					0.0182				
DCP		–0.0002					0.0012**			
		0.4659					0.038			
CSP			1.45					0.0004		
			0.9757					0.4874		
CCC				–0.0001					0.0008***	
				0.337					0.0051	
CAR					–0.0961*					–0.1749*
					0.0696					0.0879
SIZE	–0.0573**	–0.0605*	–0.06	–0.0554**	–0.0595***	0.2192***	0.2232***	0.2253***	0.2069***	0.2173***
	0.0144	0.0084	0.0104	0.0181	0.0093	0.0002	0.0002	0.0002	0.0004	0.0002
LEV	0.1625***	0.1566***	0.1658***	0.1547***	0.1399***	–0.0857**	–0.0844**	–0.0843**	–0.0842**	–0.0876**
	0	0	0	0	0.0001	0.0284	0.0312	0.0329	0.0303	0.0261
EY	0.0477	0.0445	0.0494	0.0439	0.0551	–0.0264	–0.0174	–0.0215	–0.0214	–0.0055
	0.4851	0.516	0.4693	0.5204	0.4175	0.6132	0.7382	0.6831	0.68	0.9166
R2	0.1028	0.1032	0.1015	0.1043	0.1115	0.6591	0.6573	0.6519	0.6623	0.6554
Adjusted R2	0.0906	0.091	0.089	0.0922	0.0994	0.5857	0.5835	0.5769	0.5895	0.5811
F-statistics	8.446	8.4832	8.3331	8.5921	9.2578	8.9747	8.9045	8.6953	9.1015	8.8277
Prob (F-statistics)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Durbin-Watson Stat	0.5756	0.5748	0.5729	0.5759	0.5698	1.3704	1.3447	1.3566	1.3731	1.369
Estimation	–	–	–	–	–	FE	FE	FE	FE	FE

Notes: *** Statistically significant at 1%; ** statistically significant at 5%; ** statistically significant at 10%. *SHP*: stock holding period; *DCP*: debtors collection period; *CSP*: creditors settlement period; *CCC*: cash conversion circle; *CAR*: current assets ratio; *LEV*: leverage; *SIZE*: ln sales; *LEV*: leverage.

Model 2 is tested to identify whether there is a relationship between *DCP* and firm value. The regression result shows negative significant relationship $(\beta = 0.0012,\ P = 0.038)$. This implies that, when the number of *DCP* increases by one day, value of the firm increases by 0.0012%. This shows that efficiency collection procedures (reduce the debtor's collection period) ultimately leads to increased value of the firms.

CSP indicates positive relationship with *TQ* but it is not significant $(P = 0.4874)$. It implies that CSP does not significantly affect the decision about the value of the firm.

Model 4 indicates negative and highly significant negative relationship between *CCC* and *TQ* $(\beta = 0.0008,\ P = 0.0051)$. It implies that the increase or decrease in *CCC* significantly affects

the firm value. This means that when the *CCC* increases by one day, value of the company decreases by 0.0007 percent. Since $P < 0.01$, the model is highly significant. This implies that companies can increase their market value by shortening the *CCC*. Since *CCC* is the comprehensive measure of checking the efficiency, this can emphasize that increased efficiency of the firm ultimately leads to enhanced value of the businesses.

Current assets ratio used as an independent explanatory variable in this study. This ratio indicates a significance positive relationship with *TQ* $(\beta = 0.175,\ P = 0.0879)$. This means that investing more in the current assets compared to total assets increases the value of the firm. This emphasizes that if a company follows the conservative working capital policy, it leads to increased market value of the business.

Firm size and leverage as the control variables indicate a significant relationship with market value of the company. Considering the control variables (firm size and leverage), P-value of all five models indicate that firm size, $P < .01$ is highly significant and leverage < 0.05 is significant. It is interpreted that small firms can enhance their value more than large firms controlling the working capital component. Considering the leverage, there is a significant positive relationship. It implies that firm can increase the value of the business by increasing the leverage of the firm (employing more debt capital compare to equity capital). The regression models represent strong explanatory power, because adjusted R^2 of all 5 models indicates around 60% of explanatory power.

CONCLUSION

This study is going to test the impact of *WCM* on profitability and shareholders wealth of different sector companies using five years (2010–2015) data set with 50 companies. To achieve this objective, hypotheses were created for all variables and were built up for ten regression models analysis. Data the were analyzed using both *OLS* method and panel data method. Since *OLS* model does not provide strong result, *OLS* results were not interpreted. The results received from panel data analysis were employed to get the conclusion.

Based on the findings of panel data analysis, we observed that there is a significant negative relationship of SHP, DCP and CCC with both firm profitability measured by GOP and shareholders' wealth measured by TQ. This implies that company can increase both profitability and shareholders' wealth by increasing the efficiency of the businesses. It was further revealed that the most suitable working capital policy for Sri Lanka is conservative policy. Company size also significantly affects both profitability and shareholders wealth of the companies. Company size which is measured using firm size positively affects the company, while negatively affects the shareholders' wealth. This implies that small scale businesses have high value of share compared with large scale of businesses. The study shows that companies can increase both shareholders' wealth and profitability by improving the efficiency of working capital management.

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