IMPACT OF WORKING CAPITAL MANAGEMENT AND ITS POLICIES ON THE CORPORATE PROFITABILITY: ACROSS THE MANUFACTURING SECTORS

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ABSTRACT

The purpose of the study is to analyze the impact of working capital management and its policies on the corporate profitability of manufacturing company's across different sectors. Three manufacturing sectors are randomly selected from all KSE manufacturing sectors, which are cement, textile and chemical. The study uses five years data ranging from 2006-2010. The ANOVA and regression analysis were used to test the developed hypotheses. The results reveal that cash conversion cycle adversely affects the corporate profitability. Opposite to traditional belief we find that aggressive investment and financing policies have significant negative impact on the corporate profitability and we also find that investment and financing policies significantly differ across the industries. Based on the results it is recommended that finance manger can improve the firm profitability by reducing the cash conversion cycle. Moreover in Pakistan managers can improve the firm performance by adopting the conservative investment and financing policies.

Keywords: *Working capital management, Firms profitability, Cash conversion cycle, Aggressive investment and financing policies.*

Introduction

Working capital management is the management of current assets and current liabilities. It plays important role in the profitability of the firm and has direct impact on the corporate profitability and liquidity (Raheman and Nasr, 2007). Shin and Soenen (1998) has given good example that divulges the importance of working capital management. They point out that in 1994 Wal-Mart and Kmart have similar capital structure but cash conversion cycle of both companies was different. The cash conversion cycle of Wal-Mart was roughly forty days while cash conversion cycle for Kmart was sixty one days. Probably for larger cash conversion cycle of Kmart it requires additional $198.3 million in financing expenses. Such evidence demonstrates that, Kmart's poor management of its working capital which contributed to its bankruptcy (Moussawi *et al.*, 2006).

Working capital management can be examined from two different dimensions or views which are static view or dynamic view (see Moss and Stine, 1993; Lancaster *et al.*, 1999 and Farris and Hutchison, 2002). The static view uses traditional liquidity ratios such as current ratio and quick ratio as measure of working capital management. These ratios are calculated

from the data provided in the balance sheet of the companies. These traditional ratios provide the firms liquidity at certain time point while dynamic view focuses on the firm's ongoing liquidity. Dynamic view uses cash conversion cycle as measure of working capital management which was firstly introduced by Richardes and Laughlin (1980). Then cash conversion cycle has gained the researchers and practitioners attention and it has become more popular and studied measure of working capital management. The cash conversion cycle focuses on the length of time for which company has to wait for receiving cash from its customers and the time it takes to pay its suppliers. According to O¨zbayrak and Akgün (2006) through cash conversion cycle finance manager can decide why and when company requires more cash to sustain its activities and when and how it will repay the cash. The cash conversion cycle is calculated as; collection period of account receivables plus inventory conversion period minus payment period of accouts payables. Generally literature shows negative impact of cash conversion cycle on the firm profitability (see; Ebben and Johnson, 2011; Mojtahedzadeh et al., 2011; Chatterjee, 2012 and Khan et al., 2012). It means if the finance manager is managing working capital components efficiently then cash conversion cycle will be lower and probably firm profitability will be higher. The finance manger can do better job in managing working capital efficiently by reducing the cash conversion period. He can reduce the cash conversion cycle by fastening accounts receivables period, reducing the inventory conversion period and also by delaying the accounts payables up to reasonable extent.

The company can adopt from two of working capital policies which are aggressive or conservative working capital policy. The company may adopt aggressive investment policy by minimizing investment in working capital. This can be done by reducing the investment in current assets as percentage of total assets. More over it can adopt the aggressive financing policy by increasing the higher level of current liabilities as part of equity and liabilities side of balance sheet. The conservative investment policy will be adopted by investing too much in current assets. The decision on which working capital policy is adopted involves the issue of trade of between risk and return. The company can increase the level of current assets (conservative investment policy) and that reduces the risk of short term insolvency but it involves the opportunity cost of investing. If firm maintains lower level of current assets than it will enjoy improved profitability but on the same time it has to face the higher level of short term insolvency risk. According to traditional believe aggressive investment and financing policy (minimum level of current assets and maximum level of current liabilities) is directly linked with profitability and risk. But some recent studies finding indicate significant negative impact of aggressive investment and financing policies on the corporate profitability (Nazir and Afza, 2009). So this study investigates how aggressive investment and financing policies affects the profitability of the Pakistani companies.

The rest of the paper is structured as; next section provides the review of the literature. Third section explain the methodology used in the study. Fourth section provides results and discussion. Final section concludes the findings.

Literature Review

Working capital management plays a vital role in the corporate profitability. Companies can improve their profitability by managing the working capital efficiently (Deloof, 2003). Due to its importance working capital management has gained the attention of the researchers as well as the practitioners. Different researchers have analyzed the impact of working capital management and its approaches on the

company profitability. This study analyzes the impact of working capital management on the corporate profitability. It also analyzes the impact of working capital approaches (Aggressive and Conservative) on corporate profitability. So the literature review is divided into three sections. First section reviews those studies who have analyzed the impact of working capital management on the firm profitability. Second section reviews those studies who have analyzed the impact of working capital policies on corporate profitability. In third section authors conclude the existing literature and develop the hypotheses.

Working Capital Management and Corporate Returns

Cash Conversion Cycle (Dynamic View of WCM) and Corporate Profitability

One of the objectives of the study is to analyze the impact of working capital management on the corporate returns of Pakistani manufacturing firms. The study examines the working capital management from both views; static and dynamic. Different researchers have studied this relationship in different context. The current studies which are related to this study are;

The results of the study by Usman *et al.* (2012) show that cash conversion cycle has significant negative impact on the firm profitability of Pakistani manufacturing firms. Nobanee *et al.* (2011) also reported significant negative relationship between the length of cash conversion cycle and firm profitability (measured through return on investment) of Japanese firms. Karaduman *et al.* (2011) has analyzed the impact of cash conversion cycle on the firm profitability. They have used five years data collected from 127 firms listed at Istanbul Stock Exchange and reported significant negative relationship between cash conversion cycle and firm profitability measured through return on assets. Hayajneh and Yassine (2011) also reported negative relationship between cash conversion cycle and corporate profitability of 53 Jordanian manufacturing firms. Among the recent studies who also reported significant negative relationship between cash conversion cycle and corporate profitability are (Shine and Soenen, 1998; Eljelly, 2004; Padachi, 2006; Rehman and Nasr, 2007; Vishnani and Shah, 2007; Garcia-Teruel and Martinez-Solano, 2007: Uyar, 2009; Talha *et al.*, 2010 and Raheman *et al.*, 2010; Ebben and Johnson, 2011; Mojtahedzadeh et al., 2011; Chatterjee, 2012 and Khan et al., 2012)

In contrast, some researchers have reported contradicting results like Gill *et al.* (2010). They used a sample of 88 American firms listed at New York Stock Exchange for the period of three years ranging from 2005-2007. Based on the multiple regression results they reported significant positive impact of cash conversion cycle on the firm's profitability. Bana, (2012) also reported positive association between cash conversion cycle and firm profitability of Amman Stock Exchange listed companies. Bana, (2012) argued that the positive relationship shows that good performing companies are less concerned to the working capital management. While Nobanee *et al*, (2011) studied the same relationship for Japanese firms and reported insignificant relationship between cash conversion cycle and firm profitability of consumer goods and services companies.

So the literature show mixed results some studies have concluded significant negative relationship between cash conversion cycle and corporate profitability like (Ebben and Johnson, 2011; Mojtahedzadeh *et al.*, 2011; Khan et al., 2012 and Usman *et al.* 2012). While some of the researchers have found this relationship significant and positive like Gill *et al*, 2010 and Abuzayed, 2012). But Nobanee *et al.* (2011) found this relationship insignificant for consumer goods companies and services companies and found the same relationship significant and negative within other industries. Thus it is reasonable to reinvestigate this important relationship.

Traditional Liquidity Ratio (Static View of WCM) and Corporate Profitability

The study also uses traditional liquidity ratios as measure of working capital management. The study uses two liquidity ratios current ratio and quick ratio. Due to their importance many researchers have analyzed the impact of these liquidity ratios on corporate profitability like;

Khan et al, (2012) studied the relationship between the current ratio and corporate profitability of Pakistani manufacturing firms. Their results show that current ratio has positive and significant relationship with corporate profitability. Hayajneh and Yassine (2011) and Sayuddzaman (2006) also reported positive impact of current ratio on corporate profitability. In the same way Usman *et al.* (2012) also reported positive and significant impact of current ratio on the firm profitability measured through operating profit. While some of the researchers have reported negative impact of current ratio on corporate profitability (Shine and Soenen, 1998; Raheman and Nasr, 2007; Talha *et al.*, 2010 and Mohamad and Saad, 2010). Comprehensive review of literature reveals that the literature has not reached on consensus and documented mixed results, so it is interesting to reinvestigate this relationship. Fewer studies have analyzed the relationship between the quick ratio and firm profitability like Chatterjee (2012) analyzed the impact of quick ratio on the corporate profitability. The sample used in the study was 100 Indian companies listed at Bombay Stock Exchange. Based on the multiple regression results author concludes that quick ratio has negative relationship with corporate profitability.

Working Capital Policies and Corporate Profitability

There are two working capital polices which are aggressive and conservative policy. So companies can adopt any of them. The purpose of the study is also to analyze the impact of these polices on the firm profitability. Different researchers have studied the impact of working capital policies on corporate profitability across the industries and reported mixed results. The studies which are relevant to this study are;

Weinraub and Visscher (1998) studied the issue of working capital management policies. Based on the results they reported that working capital management policies are distinctive and significantly differ across the industries. Afza and Nazir (2008) also reported that working capital polices differ across the industries. Nazir and Afza (2009) studied the impact of working capital policies on the firm profitability. Based on the results they concluded that conservative policies are positively linked with the firm profitability. Afza and Nazir 2007 also reported that current assets to total assets ratio has positive and significant impact on the firm profitability while current liability to total assets has significant negative impact on the firm profitability. It means aggressive working capital policy has significant negative impact on the corporate profitability. So the companies who are adopting conservative working capital policy have higher profitability. But contradicting to the above studies some of the researchers have reported that companies with aggressive working capital policy have higher profitability and higher risk and companies with conservative working capital policies have lower returns and lower risk see (Carpenter and Johnson, 1983; Gardner *et al.*, 1986 and Weinraub & Visscher 1998). So the review of the literature shows that researchers have not reached consensus which means there is still room for the researchers to further explore this relationship.

Concluding Literature and Developing Hypothesis

General literature shows that companies can improve their profitability by managing working capital efficiently. The literature supports that companies can improve their profitability by reducing cash conversion cycle (see Mojtahedzadeh *et al.*, 2011;

Khan et al., 2012 and Usman *et al*. 2012). So following hypothesis is developed;

H_1: Cash conversion cycle has significant negative impact on the corporate profitability

Regarding the traditional liquidity measures of working capital management literature provides mixed results some researchers have found positive impact of current ratio on the firm profitability (see Sayuddzaman, 2006; Hayajneh and Yassine, 2011; Usman *et al.*, 2012; Khan *et al.*, 2012) and some researchers have reported negative impact of current ratio on the corporate profitability (see Shine and Soenen, 1998; Raheman and Nasr, 2007; Talha *et al.*, 2010; and Mohamad and Saad, 2010). Fewer researchers have analyzed the impact of quick ratio on the corporate profitability. Based on the literature review, following non directional hypotheses are developed;

H_2: Current ratio has significant relationship with the corporate profitability

H_3: Quick ratio has significant impact on the corporate profitability

The literature also provides mixed results on the working capital approaches and corporate profitability. Some researchers who supports the traditional belief and reported that companies with aggressive working capital policy have improved firm profitability (Carpenter and Johnson, 1983; Gardner *et al.*, 1986 and Weinraub & Visscher 1998) and some reported that companies having aggressive working capital policy have lower corporate profitability (Afza & Nazir, 2007 and Afza & Nazir 2009). According to (Weinraub and Visscher, 1998 and Afza and Nazir, 2007) these working capital policies differ across industries. So aligning with the traditional belief following hypotheses are developed:

H_4: Companies with aggressive investment policy have improved profitability

H_5: Companies with aggressive financing policy have improved profitability

H_6: Working capital investment policies of companies differ across the industries

H_7: Working capital Financing policies of companies differ across the industries

Methodology

Sample

The study analyzes the impact of working capital management and its policies on the corporate profitability across the different industries. The population of the study is all companies listed at Karachi Stock Exchange (KSE) relating to different industries. Aligning with the Deloof, (2003); Raheman and Nasar (2007) and Usman *et al*, (2012) the non manufacturing industries are eliminated from the population because of their different nature of business. Three manufacturing sectors are randomly selected from all KSE manufacturing industries which are cement unit, Textile and chemical. Among these three manufacturing industries 32 firms are selected randomly including at least 10 firms from each sector. The study uses five years data ranging from 2006-2010. Data regarding the variables used in the study was extracted from the publically available annual reports of the companies. There is no problem of validity of the data because the data used in the study is extracted from the annual reports of the companies which are audited by the professional charted accountants. These annual reports of the companies are collected from the companies head offices, Karachi stock exchange and also from the companies' websites.

Variables

Existing literature that analyzes the impact of working capital management and its approaches on the corporate profitability has used different measures of corporate profitability. The studies that have used return on assets (ROA) as measure of firm profitability as used in this study are; Samiloglu and Demirgunes (2008); Mohamad and Saad (2010) Karaduman *et al.* (2011) have used (ROA) as a measure of firm profitability to analyze the impact of

working capital efficiency on the firm profitability. Hussain *et al.* (2012) have used return on investment calculated as operating profit divided by total assets as measure of firm profitability for analyzing the impact of working capital approaches on the firm profitability. Afza and Nazir (2008) have also used ROA as a measure of firm profitability for analyzing the impact of working capital approaches on the firm profitability. The ROA used in this studied is calculated as earnings before interest and taxes divided by total assets.

The study examines the working capital management from both dimensions i.e. dynamic view (Cash conversion cycle) and static view (liquidity ratios). The study uses cash conversion cycle (CCC) as dynamic measure of firm profitability as used by (Raheman et al., 2010; Ebben and Johnson, 2011; Mojtahedzadeh et al., 2011; Chatterjee, 2012 and Khan et al, 2012). The CCC is calculated as;

Inventory conversion period = [inventory/cost of goods sold]*365 ------(A)

Average collection period = [Account receivables/sales]*365----------(B)

Average payment period = [Account payables/cost of goods sold]*365-------- (C)

CCC = A + B – C

The study also uses traditional liquidly ratios (static view) as a measure of working capital management. The current ratio (CR) and quick ratios (QR) are used in this context. The study uses current ratios as used by the (Shine and Soenen, 1998; Sayuddzaman, 2006; Raheman and Nasr, 2007; Talha *et al.*, 2010; Mohamad and Saad, 2010; Hayajneh and Yassine, 2011; Khan *et al.*, 2012 and Usman *et al.*, 2012). Chatterjee (2012) has analyzed the impact of QR on the firm profitability. The current ratio is calculated by dividing the current asset by current liabilities and quick ratio is calculated by subtracting inventory from current assets and then dividing it by current liabilities.

The study analyzes the impact of aggressive investment policy (AIP) and aggressive financing policy (AFP) on the firm profitability. Among other studies that have used these variables are (Afza and Nazir, 2008 and Hussain *et al.*, 2012). To measure the degree of aggressiveness and conservativeness following ratios are used.

Aggressive Investment Policy (AIP) = Current assets/Total assets

If this ratio (AIP) is larger it means company has adopted conservative investment policy by investing more in current assets as compared to total assets with opportunity cost of lower firm returns. While lower value indicates that company has adopted aggressive investment policy by maintaining fewer liquid assets as proportion of fixed assets. So the positive beta coefficient of this ratio will indicate that Aggressive investment policy has negative impact on the corporate profitability. While negative beta coefficient will represent that aggressive policy has positive impact on the firm profitability.

Aggressive Financing Policy (AFP) = Current liability/Total assets

The higher ratio (AFP) indicates that firm has adopted aggressive financing policy (using higher level of current liabilities as compared to long term debts) and lower ratio indicates that company has adopted conservative financing policy (using lower level of short term liabilities as compared to long term debts). The positive beta coefficient of AFP shows that aggressive policy has positively impact on the firm profitability. On the other hand negative beta coefficient indicates that aggressive policy has negative impact on firm profitability. So by using AFP and AIP ratios we can analyze the impact of aggressive investment and financing policies on the corporate profitability across different industries.

The study uses firm size as control variable. The most commonly used measures of firm size are size of total assets and size of sale.

This study uses both measures of firm size. The total assets size (TAS) is calculated as taking log of total assets (Usman *et al.*, 2012 and Hussain *et al.*, 2012) and sale size is (TSS) calculated by taking log of total sale. (Gill *et al*., 2010); Usman *et al.* (2012) and Hussain *et al.* (2012) reported positive impact of firm size on the corporate profitability.

Statistical Model

The study uses regression analysis to examine the impact of working capital management and its policies on the corporate profitability as used by (Gracia-Teruel and Martinez-Solano, 2007; Gill *et al.*, 2010; Hussain et al., 2012 and Usman *et al.*, 2012). The study develops the regression model which is run separately on each industry data;

$ROA_{it} = \beta_0 + \beta_1 (CCC)_{it} + \beta_2 (CR)_{it} + \beta_3 (QR)_{it} + \beta_4 (AIP)_{it} + \beta_5 (AFP)_{it} + \beta_4 (TAS)_{it} + \beta_5 (TSS)_{it} + e_{it}$

Where ROA is return on assets, CCC is cash conversion cycle, CR is current ratio, QR is quick ratio, AIP is aggressive investment policy, AFP is aggressive financing policy, TAS is total assets size and TSS is total sale size.

Results and Discussion

Descriptive Statistics

The descriptive statistics provide the mean and standard deviation of the variables used in the study. The textile industry has highest mean values for the CCC of 115 days while cement industry has lowest mean value of 23.37 days with highest value of standard deviation of 83.52 days. It means among three industries cement industry mangers are more efficient in managing CCC. The chemical industry firms have the highest mean value of CR with 1.6 but the textile industry has lowest mean value of 0.98. The difference between the current ratio and quick ratio is highest in textile industry with having mean value of .98 for CR and .44 for QR. It means textile industry firms have inventory as major part of its current assets. That is reason for having larger value of CCC as compared to other industries. The current assets to total assets ratio (AIP) and current liabilities to total assets ratio (AFP) have smaller mean value for the cement industry as compared to other industries. The highest mean value of ROA is 0.144 for firms in chemical industry. The mean value of ROA is 0.085 for the cement industry which is lowest as compared to other industries used in the sample but the standard deviation of ROA for the cement industry is high. The descriptive statistic clearly reveals that working capital policies are different across the industries.

Results of One-Way ANOVA

One-way ANOVA test is used to analyze the difference in the relative degree of aggressive investment/financing policies across the industries. To further examine the strength of results of ANOVA, a post hoc Least Significance Difference is applied and the results of the tests are given in the table 2 and 3. The F statics of AIP is 20.855 at 1% of level of significance. It means aggressive investment policies significantly differ across the industries. Similarly F statistics of AFP is 25.978 at 1% level of significance. It represents that aggressive financing policies also significantly differ across the industries. These results support our two hypotheses (H_6 and H_7) which predict that aggressive investment and financing policies differ across the industries so H_6 and H_7 are accepted.

Regression analysis

Panel data regression analysis is run to analyze the impact of working capital management and its policies on the corporate profitability. The regression model is run on each industry data separately to analyze the impact of independent variables on the dependent variable across different industry. According to Berry (1993) it is necessary to meet the certain assumption before running the regression analysis. So in this study the several regression assumptions were

checked before running regression models. Linearity assumption is confirmed through scatter diagram. Normality of data is checked through normal probability plots. Durbin Watson (D-W) is applied to diagnose first order auto correlation problem. The values of D-W test range from 1.21 to 1.99 which is near to 2 across the industries. These values of D-W support that there is no problem of autocorrelation and regression model applied to all industries is appropriate. The problem of multicollinearity is checked through variance inflationary factor VIF. The value of VIF remains below 10. It means all the independent variables are sufficiently independent. So after confirming the regression assumptions, the regression model is applied on each sector data and results are given in table 4.

Table 1: Descriptive Statistics

Industries		CCC	CR	QR	AIP	AFP	TAS	TSS	ROA
Cement Industry	Mean	23.373	0.998	0.795	0.269	0.285	9.878	9.463	0.085
	Standard Deviation	83.523	0.571	0.544	0.211	0.164	0.472	0.489	0.118
Textile Industry	Mean	115.216	0.984	0.449	0.445	0.466	9.445	9.511	0.097
	Standard Deviation	33.287	0.251	0.132	0.084	0.090	0.446	0.386	0.044
Chemical Industry	Mean	47.472	1.603	1.208	0.458	0.333	9.871	9.840	0.144
	Standard Deviation	59.710	1.090	1.034	0.183	0.129	0.776	0.714	0.098

Table 2: Results of ANOVA (F-test) and Least Significance Difference for AIP

F Statistics = 20.855***		
Industries		**Mean Difference**
Cement	Chemical	-0.1896***
	Textile	-0.1766***
Chemical	Cement	0.1896***
	Textile	0.0130
Textile	Cement	0.1766***
	Chemical	-0.0130

* Significant at 10% level
** Significant at 5% level
*** Significant at 1% level

Table3: Results of ANOVA (F-test) and Least Significance Difference for AFP

F Statistics = 25.978***		
Industries		**Mean Difference**
Cement	Chemical	-0.0479*
	Textile	-0.1807***
Chemical	Cement	0.0479*
	Textile	-0.1328**
Textile	Cement	0.1807**
	Chemical	0.1328**

* Significant at 10% level
** Significant at 5% level
*** Significant at 1% level

Cement Industry

The value of R^2 is 0.717. It means 71.7% variation in ROA is defined by the independent variables which show that the model is good fit. The value of beta coefficient of CCC is negative and significant at p value of less than 0.01. It means CCC has significant negative impact on the ROA which confirm the hypothesis H_1. It can be concluded that companies in the cement industry can improve their profitability by shortening CCC. The traditional liquidity measures remain insignificant which means H_2 and H_3 are rejected. The beta coefficient of AIP is positive and highly significant at 99% level of confidence. It means aggressive investment policy has negative impact on the corporate profitability so H_4 is not confirmed. The sign of beta coefficient for AFP is negative and highly significant at p value of less than .01. This indicates that aggressive financing policy has negative impact on the corporate profitability so H_5 is rejected. The coefficient of total assets size is negative and significant because the firm profitability is ROA and assets is denominator in measuring ROA. That's why it is showing negative impact on ROA. TSS coefficient is positive and significant at p value of 0.000. That means firm size has positive impact on the corporate profitability.

Textile Industry

Regression results are nearly similar to the results of the cement industry. The coefficient of CCC is negative and significant at 90% level of confidence. That reveals that companies with lower CCC have improved profitability so H_1 is confirmed. The traditional liquidity measures remain in significant so H_2 and H_3 are not confirmed. The beta coefficient of AIP is positive and significant at p value of less than 0.1. It means aggressive investment policy has negative impact on the firm profitability. The coefficient of AFP is negative and significant at p value of less than 0.1. It indicates that aggressive financing policy has negative impact on the ROA. Based on the regression results for AFP and AIP hypothesis H_4 and H_5 are rejected. The total sale size coefficient is positive but insignificant.

Chemical Industry

The results of the chemical industry little bit different from the other industries used as sample in this study. The coefficient of CCC is positive and insignificant. It means CCC has no significant impact on the corporate returns so H_1 is not confirmed. As the static view of working capital management the study uses traditional liquidity ratios which have insignificant impact in corporate profitability of cement and textile industries. But the in chemical industries they have significant impact on the ROA so H_2 and H_3 are confirmed. The coefficient of CR is negative and significant at p value of less than 0.05. it means CR has significant negative impact on the ROA while coefficient of QR has positive at p value of less than 0.05. The sign of CR is negative while the sign of QR coefficient is positive this difference of sign shows that inventory is turning the direction of impact. It means other current assets to current liabilities ratio has positive impact on the ROA. The coefficient of AIP is positive and significant at p value of less than 0.05. It means aggressive investment policy has negative impact on the corporate profitability so H_4 is rejected. The coefficient of AFP is negative and insignificant. It means aggressive financing policy has negative but insignificant impact on the corporate returns which means H_5 is rejected. The coefficient of TSS is positive at 90% level of confidence. It means firms with larger size enjoy more profitability.

Table 4: Results of Regression

Industries		Constant	CCC	CR	QR	AIP	AFP	TAS	TSS
Cement Industry	Beta Coefficient	0.608	-0.001	-0.09	0.059	0.508	-0.529	-0.275	0.24
	t- Value	2.158	-3.864	-0.951	0.665	3.417	-3.314	-7.419	7.752
	Significance	p< 0.05	p< 0.01	P> 0.1	P> 0.1	p< 0.01	p< 0.01	p< 0.01	p< 0.01
	Hypothesis Conformance	-	H_1= yes	H_2= no	H_3= no	H_4= no	H_5= no	-	-
	Model Summary	R=0.846	R^2=0.717	Adjusted R^2=0.677	D.W=1.354	F=18.05***	-	-	-
Textile Industry	Beta Coefficient	0.103	-0.001	-0.259	0.002	0.777	-0.602	0.012	0.016
	t- Value	0.423	-1.73	-1.608	0.033	1.914	-1.719	0.265	0.362
	Significance	P> 0.1	p< 0.1	P> 0.1	P> 0.1	p< 0.1	p< 0.1	P> 0.1	P> 0.1
	Hypothesis Conformance	-	H_1=yes	H_2= no	H_3= no	H_4= no	H_5= no	-	-
	Model Summary	R=0.530	R^2=0.281	Adjusted R^2=0.161	D.W=1.213	F=2.345**	-		
Chemical Industry	Beta Coefficient	-0.231	0.0001	-0.156	0.159	0.327	-0.117	-0.086	0.119
	t- Value	-0.558	0.155	-2.651	2.589	2.257	-0.671	-1.113	1.792
	Significance	P> 0.1	P> 0.1	p< 0.05	p< 0.05	p< 0.05	P> 0.1	P> 0.1	p< 0.1
	Hypothesis Conformance		H_1= no	H_2= yes	H_3= yes	H_4= no	H_5= no	-	-
	Model Summary	R=0.645	R^2=0.416	Adjusted R^2=0.314	D.W=1.995	F=4.071***	-	-	-

Discussion

The results show that CCC has significant negative impact on the ROA for all industries except for chemical industry. The coefficient of CCC was positive and insignificant for chemical industry. So these results of all industries except chemical industry reveals that companies which are efficient in managing CCC has improved profitability. So the finance mangers can improve the corporate profitability by shortening cash conversion cycle. These results are similar to the findings of (Karaduman *et al.*, 2011; Nobanee *et al.*, 2011; Usman *et al.*, 2012; Mojtahedzadeh et al., 2011; Chatterjee, 2012 and Khan et al, 2012) who also found significant negative impact of CCC on the corporate profitability. The study results are contrary to the findings of (Gill *et al.*, 2010 and Bana, 2012) who have found significant positive impact of CCC on the firm profitability.

The traditional liquidity ratios remain in significant in textile and cement industries. It means if working capital management is examined through static view for textile and cement industries it will not provide any significant results. So the traditional liquidity ratios have no any significant impact on ROA for textile and cement industries firms. whilebTraditional liquidly ratios have significant impact on the corporate profitability of firms in chemical industry. The current ratio has significant negative impact on the ROA while QR has significant positive impact on the corporate profitability. it means finance manager in chemical industry can improve corporate profitability by reducing CR and increasing QR. Shine and Soenen (1998); Raheman and Nasr (2007); Talha *et al.* (2010) and Mohamad and Saad (2010) also reported significant negative impact of current ratio on the corporate profitability. Our results are contradicting to the findings of (Sayuddzaman, 2006; Hayajneh and

Yassine, 2011; Usman *et al.*, 2012 and Khan *et al.*, 2012) who reported positive impact of CR on the firm profitability.

The coefficient of AIP is positive it means as current assets to total assets ratio increases than level of aggressiveness decreases and firms ROA increase for all industries. These results reveal that aggressive investment policy has significant negative impact on the corporate profitability for all industries used as a sample. It means in Pakistan those firms have improved profitability that have higher level of current assets as a proportion of total assets. Our results are consistent with findings of (Afza & Nazir, 2007 and Afza & Nazir 2009) and contrary to the findings of (Carpenter and Johnson, 1983; Gardner *et al.*, 1986; Weinraub & Visscher 1998 and Hussail *et al.*, 2012). The coefficient of AFP is insignificant in chemical industry but it is significant in other two industries. The coefficient of AFP is negative and significant in cement and textile industries. It means as current liabilities to total assets ratio decreases than level of aggressiveness decreases and firms ROA increases. So it shows that aggressive financing policy has significant negative impact on the firm profitability. These results are consistent with findings of (Afza & Nazir, 2007 and Afza & Nazir 2009) and oppose the findings of (Carpenter and Johnson, 1983; Gardner *et al.*, 1986 and Weinraub & Visscher 1998). The results also show that firm size has positive and significant impact on the corporate profitability.

Conclusion

The aim of the study was to empirically examine the impact of working capital management and its policies on the corporate performance. For this purpose three sectors from Karachi Stock Exchange are randomly selected for five years period 2006-2010. The results of the ANOVA show that working capital policies i.e. aggressive investment and financing policies significantly differ across the industries. The results show that cash conversion cycle adversely affects the firm profitability. But in case of chemical industry we haven't found any significant support. So based on the results and literature it can be concluded that companies can improve their profitability by reducing the cash conversion cycle. The static measure (CR and QR) exert insignificant impact on the corporate profitability in all sectors except chemical. For the chemical sector CR has significant negative impact on the firm profitability while QR has significant positive impact on the profitability. These results show an interesting fact that, if we eliminate the inventory from current assets and check its ratio with current liability than the effect changes. It means it is the inventory due to which CR has significant negative impact on the profitability. So basically among the current assets the value of inventory adversely affects the corporate performance. Otherwise increase in current assets (without inventory) to current liability will positively affect the corporate profitability.

The study also examines the impact of aggressive investment and financing policies on the corporate profitability and the results are contradicting with the traditional belief. The regression results of all industries support that aggressive investment and financing policies adversely affect the corporate performance. While traditionally aggressive working capital policies should have positive impact on the corporate performance. So the results of this study contradict the findings of (Carpenter and Johnson, 1983; Gardner *et al.*, 1986 and Weinraub & Visscher 1998). Like several studies we also found firm size has positive impact on the corporate performance. So from the results it can be concluded that companies in Pakistan can improve the firm performance by reducing the cash conversion cycle and by adopting conservative investment and financing policies.

References

Nazir, M.S. and Afza, T. (2009). "Working Capital Requirements and the Determining Factors in Pakistan", ICFAI University Journal Applied Finance, Vol. 15 No. 4. pp. 29-38.

Afza, T. and Nazir, M.S. (2008). "Working Capital approaches and Firm's Return", Pakistan Journal of Commerce and Social Sciences, Vol. 1 No.1, pp. 25-35.

Afza, T. and Nazir, M.S. (2007). "Is it Better to be Aggressive or Conservative in Managing Working Capital?", *Journal of Quality and Technology Management*, Vol. 3 No. 2, pp. 11-21.

Bana A. (2012). "Working capital management and firms' performance in emerging markets: the case of Jordan", International Journal of Managerial Finance, Vol. 8 No. 2, pp.155 – 179

Berry, W.D. (1993). Understanding Regression Assumptions, Sage Publications, Inc, Series: Quantitative Applications in the Social Sciences, California, CA.

Carpenter, M.D. and Johnson, K.H. (1983). The Association between Working Capital Policy and Operating Risk. The Financial Review, Vol. 18 No, 3, pp. 106-106.

Chatterjee, S. (2012). "The Impact of Working Capital on the Profitability: Evidence from the Indian Firms", Online available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2125228

Deloof, M. (2003). "Does Working Capital Management Affects Profitability of Belgian Firms?", Journal of Business Finance & Accounting, Vol. 30 No. 3 & 4, pp. 573-587.

Eljelly, A. (2004). "Liquidity-profitability tradeoff: an empirical investigation in an emerging market", International Journal of Commerce and Management, Vol. 14 No. 2, pp. 48- 61.

Ebben, J.J. and Johnson, A.C. (2011). "Cash conversion cycle management in small firms: relationships with liquidity, invested capital and firm performance", Journal of Small Business and Entrepreneurship, Vol. 24 No. 3, pp. 381-416.

Garcia-Teruel, P.J. and Martinez-Solano, P. (2007). "Effects of working capital management on SME profitability", International Journal of Managerial Finance, Vol. 3 No. 2, pp. 164-177.

Gardner, M.J., Mills, D.L. and Pope, R.A. (1986). Working Capital Policy and Operating Risk: An Empirical Analysis. The Financial Review, Vol. 21 No. 3, pp. 31-31.

Gill, A., Biger, N. and Mathur, N. (2010). "The relationship between working capital management and profitability: evidence from the United States", Business and Economics Journal, Vol.10, pp 1-9.

Hayajneh, O.S. and Yassine, F.L. (2011). "The impact of working capital efficiency on profitability - an empirical analysis on Jordanian manufacturing firms", International Research Journal of Finance and Economics**,** Issue. 66, pp. 67-77.

Hussain, A., Farooq, S.U. and Khan, K.U. (2012). "Aggressiveness and Conservativeness of Working Capital: A Case of Pakistani Manufacturing Sector", European Journal of Scientific Research, Vol.73 No.2, pp. 171-182.

Karaduman, H.A., Akbas, H.E., Caliskan, A.O. and Durer, S. (2011). "The Relationship between Working Capital Management and Profitability: Evidence from an Emerging Market", International Research Journal of Finance and Economics, Issue 62, pp. 61-67.

Khan, Z., Jawaid, S.T., Arif, I. and Khan, M.N. (2012). "Working capital management and firm's profitability in Pakistan: A disaggregated analysis", African Journal of Business Management, Vol. 6 No. 9, pp. 3253-3261,

Moussawi, R., LaPlante, M., Kieschnick, R. and Baranchuk, N. (2006). "Corporate working capital management: determinants and consequences", working paper, University of Pennsylvania, Philadelphia

Mojtahedzadeh, V., Tabari, S.H.A. and Mosayebi, R. (2011). "The Relationship between Working Capital Management and Profitability of the Companies (Case Study: Listed Companies on TSE)", International Research Journal of Finance and Economics, Issue 76, pp. 158-166.

Mohamad, N.E. and Saad, N.B. (2010). "Working capital management: the effect of market valuation and profitability in Malaysia", International Journal of Business and Management, Vol. 5 No. 11, pp. 140-147.

Nazir, M.S. and Afza, T. (2009). "Impact of aggressive working capital management policy on firms' profitability", The IUP Journal of Applied Finance, Vol. 15 No. 8, pp. 19-30.

Nobanee, H., Abdullatif, M. and AlHajjar, M. (2011). "Cash conversion cycle and firm's performance of Japanese firms", Asian Review of Accounting, Vol. 19 No. 2, pp. 147-156.

O¨zbayrak,M. and Akgün,M.(2006). "The Effects of Manufacturing Control Strategies on The Cash Conversion Cycle in Manufacturing Systems", International Journal Production Management, Vol. 103, pp. 535-550.

Padachi, K. (2006). "Trends in Working Capital Management and its Impact on Firms Performance", International Review of Business Research Paper, Vol. 2 No. 2, pp. 45-58.

Raheman, A., Afza, T., Qayyum, A. and Bodla, M.A. (2010). "Working capital management and corporate performance of Manufacturing sector in Pakistan", International Research Journal of Finance and Economics, Issue. 47, pp. 151-163.

Raheman, A. and Nasr, M. (2007)."Working capital management and profitability- case of Pakistani firms", International Review of Business Research Paper, Vol. 3 No. 1, pp.279-300.

Richards, V.D. and Laughlin, E.J. (1980). "A cash conversion cycle approach to liquidity analysis", Financial Management, Vol. 9 No. 1, pp. 32-38.

Sayuddzaman, M.D. (2006). "Working capital management: A study on British American Tobacco Bangladesh Company Ltd", The Journal of Nepalese Business Studies, Vol. 3 No. 1, pp. 78-84.

Samiloglu, F. and Demirgunes, K. (2008). "The effect of working capital management on firm profitability: evidence from Turkey", The International Journal of Applied Economics and Finance, Vol. 2 No. 1, pp. 44-50.

Shin, H.H and Soenen, L. (1998). "Efficiency of Working Capital Management and Corporate Profitability", Financial Practice and Education, Vol. 8 No. 2, pp 37-45.

Talha, M., Christopher, S.B. and Kamalavalli, A.L. (2010). "Sensitivity of profitability to working capital management: a study of Indian corporate hospitals", International Journal of Managerial and Financial Accounting, Vol. 2 No. 3, pp. 213-227.

Usman. M., Saleem, H.M.N. and Aziz, T. (2012). "Impact of Working Capital Management on Pakistani Firm's Performance", 9th International Conference on Statistical Sciences held at National College of Business Administration and Economics, Lahore, Pakistan.

Uyar, A. (2009). "The relationship of cash conversion cycle with firm size and profitability: an empirical investigation in Turkey", International Research Journal of Finance and Economics, Issue. 24**,** pp. 186-193.

Vishnani, S. and Shah, B. (2007). "Impact of Working Capital Management Policies on Corporate Performance an Empirical Study", Global Business Review, Vol. 8, pp. 267-281.

Weinraub, H.J. and Visscher, S. (1998). Industry Practice Relating To Aggressive Conservative Working Capital Policies. Journal of Financial and Strategic Decision, Vol. 11 No. 2, pp. 11-18.