

# Firm Size: As a Moderator Between Working Capital Management and Firm Profitability

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## Abstract

The study investigates whether firm size moderates the relation between working capital management (measured by cash conversion cycle) and firm profitability using the time period of 5 years (2013- 2018) for 60 non-financial firms. The findings of OLS regression reveals that firm size moderates the negative relationship between working capital management and firm profitability. The study suggests reducing cash conversion cycle to increase firm profitability and the managers should consider the firm size while making decisions regarding working capital management.

**Keywords:** Cash Conversion Cycle, Working Capital Management, Profitability, Net Profit Margin, Firm Size

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## 1. Introduction

Working capital (WC) is short-term assets of an organization that can be change from one sort to other, among everyday activities of the firm (Gitman, 1991). It is as important in business as the blood in human body (Reddy and Patkar, 2004) and there is strong relation between WCM and profitability (Azhar and Noriza, 2010; Mathuva, 2010; Alipour, 2011). Firm can maximize their profit through the effective management of working capital (Ruback and Sesia, 2003), therefore the Performance of any firm is affected by the decisions of Working capital (Schiff and Lieber, 1974; Smith, 1980; Kim and Chung, 1990).

Management of working capital is essential as it has its effects on the profitability, risk and value of the firm. (Smith, 1980). Better performance of firm is stimulated by the effective management of working capital (Christopher & Kamalavalli, 2009). Furthermore, the Profitability and liquidity of the firm is directly affected by the WCM (Rehman & Nasar, 2007). Specifically, firm faces high risk and return when it has the policy of aggressive working capital which means less investment in working capital, while firm faces low risk and return when it has the policy of conservative Working capital which means when firm invest a large amount of money in the WC (Caballero, Teruel and Solano, 2011).

We found different studies on the WCM and profitability of different firms in different parts of the world (Jose et al., 1996; Shin and Soenen, 1998; Wang, 2002; Deloof, 2003; Garcia-Teruel and Martinez-Solano, 2007; Lan Le et al., 2018; Shubita et al, 2011; Quayyum, 2011; among others); even in Pakistan (Khalid et al.,2018; Shah and Khan, 2018; Muhammad, Jan and Ullah, 2012; Raheman and Nasar, 2007; Among others) such studies empirically investigated linear relations between investment in WC and the performance of the firm, some studies (Caballero, Garcia-Teruel, and; Caballero, Garcia-Teruel and Martinez-Solano, 2013) empirically investigate the relation of non-linearity, also we found such studies (Afeef, 2011; Garcia-Teruel and Martinez-Solano, 2007; Javid & Dalian, 2014; Stephen and Elvis, 2011; Tauringina & Afrifa, 2013) that test the relation between WCM and the profitability on small and medium enterprises (SMEs). Finding of such studies indicated that WCM that effects the profitability of firm has greatly influenced by FS (Mumtaz et al.,2011; Raheman and Nasar, 2007) and the profit performance of the firm to the adequate management of WC is sensitive to its size (Afeef, 2011). Also, the literature exposes one study that test the moderate relation of FS between WCM and the profitability of non-financial firms of German (Dalci et al., 2019) but this study uses only one proxy for profitability that is return on asset (ROA) besides some control variables.

However, this paper empirically investigates that either the relation between WCM and firm performance become stronger due to FS and here we take FS as a moderate variable (Dalci et al., 2019). Specifically, unlike the previous studies the purpose of our study is to empirically investigate that “does the FS moderates the relation between WCM and the firm’s performance” by using two proxies of profitability that is return on asset (ROA) and net profit margin (NPM) besides some control variables in context to Pakistani firms.

This study devotes to the literature of WCM in such way that no any existing literature use FS as a moderator variable in Pakistan Though, we know that the profitability of firm is greatly influenced by FS but here we will test that either the FS strong the relation between WCM and firm’s profitability or not by using the 5 year’s data (2013-2018) of 60 non-financial firms are used that are listed in PSX (KSE-100) index.

The objective of the study is:

- i. To empirically investigate the relation between WCM and firm performance.
- ii. To investigate whether the FS moderates the affiliation between WCM and firm performance.

The remaining paper has following structure: In section 2, brief review of literature, hypotheses are presented. Section 3 provides research methodology, section 4 is about empirical results an, section 5 presents discussions and conclusions.

## 2. Literature Review

This section explains the review of related literature and construction of hypotheses:

### 2.1 Return on Asset and Cash Conversion Cycle

Deloof (2003) used the sample of 1009 firms from (1992-1996) and explored the relationship between different measures of WCM and the profitability of Belgium firms, by using the ROA as a proxy of profitability and found the inverse relationship between these different measures of WCM with the profitability of firm and suggested that adequate management of WCM is possible by reducing receivable collection period and inventory turnover. Qayyum (2011) used the data of four manufacturing corporations of Bangladesh and found the significant affiliation between WCM and profitability by using ROA as a measure of profitability. Yonus et al. (2018) empirically investigated the impact of CCC on the profitability that is measured by ROA of the firm listed in Bursa Malaysia by using the sample of panel data of 803 companies from (2010-2014) and found the inverse relation between the CCC and ROA. He suggested that if firm wants to be more profitable than it should sell its inventory quickly, and accelerate in collecting debt from customers. Similarly, Khalid et al. (2018) also found the inverse relationship between CCC and the profitability of Pakistani electrical firms that has been measured by ROA by using the data over the time period of 2007-2012. Mumtaz et al. (2011) inspected the consequences of WCM on the performance of progressing market's firm of Pakistan by using the sample of 22 chemical sector firms listed in KSE from (2005-2010) and indicated the inverse relationship between WCM and the performance of progressing firms. He also indicated that FS is directly affected by the profitability of firm which states that the relation between FS the profitability is positive. Javid & Dalian (2014) empirically investigated the relation between WCM and the ROA in the perspective of accounting and market by using the sample of panel data of 54 SME's from (2006-2010) that were listed in KSE and found that different indicators of WCM that used in this study had an apparent effect on the ROA of firms. Smith (1973) demonstrated that various organization failures arise when the manager is inadequate to control current assets and current liability ratios effectively. Smith (1980) further demonstrate that WCM is crucial after all it is an aspect on the profitability of firm and the value of its stock. Rahman, and Nasar. (2007) examined the effect of different measures of WCM on the profitability of 94 firm that were listed in KSE by using ROA as a measure of profitability and showed an is an inverse relation of different variables of WCM on the performance of firm whereas FS and the profitability of firm are directly associated with each other. Similarly, Akoto, Awuyno-vitor and angor (2013) empirically investigated the dependence of the different measures of WCM on the ROA of 13 firms of manufacturing sector that were listed in Ghana from (2005-2009) and revealed that except the accounts receivable days, the other measures of WC have direct effect on NPM of firms. This study suggests that firm's manager can produce worth for its shareholder by encouraging them to reduce their accounts receivable to 30 days.

Alternatively, Caballero, García-Teruel and Martínez-Solano (2014) found that there is convex relation between the investment in WC and ROA and concluded that the optimal level of WC is lower for the firms which are expected to be financially constrained.

*H<sub>1a</sub>: There is inverse relation between WCM and ROA.*

*H<sub>2a</sub>: FS moderates the relation between WCM and firm's performance.*

### 2.2 Net Profit Margin and Cash Conversion Cycle

Afza and Nazir (2007) checked out conservative and aggressive policies of WCM by using the sample of those 205 firms that were listed in Karachi Stock from (1998-2005) and finalize that aggressive policy of managing WC had inversely related with the profitability of firm that had been measured by NPM. Lan le et al (2018) inspected the impact of CCC on financial performance of public firms by using the panel data of 69 firms indexed in Ho Chi Minh Stock Exchange (HOSE) from (2014-2016) by using NPM as a proxy of financial performance and found that the CCC has negative influence on NPM. Garcia-teruel and Martínez-Solano (2007) empirically tested the effect of WCM on the ROA of small and medium-sized Spanish firms by using the panel data of 8,872 SMEs from (1996-2002) and found that that the profitability of firm was inversely affiliated with CCC, firms' number of days' accounts receivable and inventories. Afza and Nazir (2007) check out conservative and aggressive policies of WCM by using the sample of 205 firms that are indexed in Karachi Stock from (1998-2005) and concluded that aggressive policy of managing WC has inversely associated with the profitability of firm. Khalid et al. (2018) empirically investigated the dependence of WCM on the profitability of Pakistani electrical equipment firms and

found that there is direct significant consequence of WC on the NPM of the firm. Makori & jagongo (2013) empirically investigated the outcome of WCM on the performance of 5 Kenya manufacturing firms and found that all the variables have directly and significantly associated with the profitability of firm although CCC and number of day's receivable had inversely related with the profitability of firm. Raheman et al. (2010) investigated the association between WCM and the profitability of the 204-manufacturing firm that were listed in Karachi stock exchange (KSE) from (1998-2007) and found that the CCC, NTC, ITP had inverse relation with the performance of firm per. This study suggests that firm will be more profitable if it manage its WC effectively. Similarly, Afeef (2011) empirically investigated the effect of WCM on NPM of 40 SME's that are indexed in KSE and found that WCM and NPM are inversely related with each other.

*H<sub>1b</sub>: There Is Inverse Relation Between WCM and NPM.*

*H<sub>2b</sub>: FS Moderates the Relation Between WCM And Firm's Performance.*

### 2.3 Conceptual Framework

Figure 1 shows the conceptual framework of our study, in this study, first we investigate the relation between WCM and the profitability of firm, then we examine that either the FS has a moderating effect on the relation between WCM and the profitability of firm or not. For measuring the WCM, we use cash conversion cycle (CCC), whereas we use return on asset (ROA) and net profit margin (NPM) for the measurement the profitability of firm, also we use some control variables that is leverage (LEV), sales growth (SG) and firm age (FA).

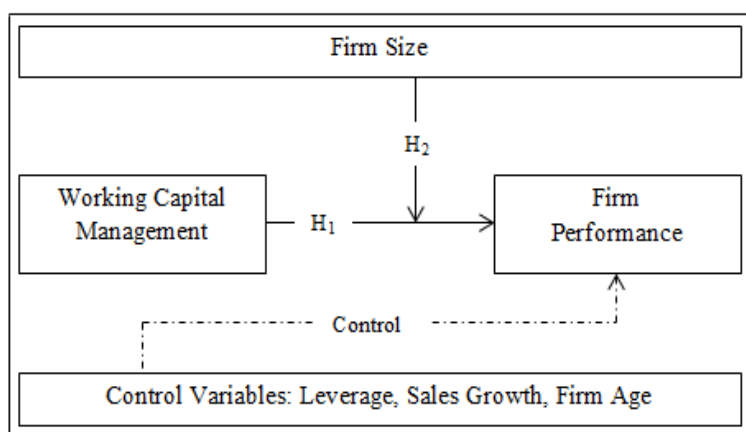


Figure 1: Conceptual Framework

### 3. Data and Methodology

#### 3.1 Sample and Data

The study empirically investigates the moderating effect of FS on the relation between WCM and firm performance. 60 non-financial firms that are indexed in Pakistan Stock Exchange (PSX) are selected as study sample. The data from the period of 2013 to 2018 are collected from annual published financial reports of selected firms. The firms with missing data are excluded from the sample. The study considers all non-financial firms that are recorded in PSX (KSE-100 index).

### 3.2 Study Variables

**Table 1: Variables Description**

Name of Variable	Explanation / Measurement
<b>DEPENDENT VARIABLES</b>	
Firm Performance (FP)	i. Return on Assets (ROA) = Net Profit / Total Assets ii. Net Profit Margin (NPM) = Net Profit / Sales
<b>INDEPENDENT VARIABLES</b>	
Working Capital Management (WCM)	Cash Conversion Cycle (CCC) = Average Collection Period (ACP) + Inventory Turnover in Days (ITD) – Average Payment Period (APP) Where; $ACP = [\{(AR1/1 + AR31/12)/2\}/Sales] * 360$ $ITD = [\{(INV1/1 + INV31/12)/2\}/CGS] * 360$ $APP = [\{(AP1/1 + AP31/12)/2\}/CGS] * 360$ Where; AR: Account Receivables AP: Account Payables INV: Inventory CGS: Cost of Goods Sold
<b>CONTROL VARIABLES</b>	
i. Leverage (LEV) ii. Current Ratio (CR) iii. Quick Ratio (QR) iv. Firm Size (FS)	i. Total Debts / Total Assets ii. Current Liabilities / Current Assets iii. (Current Assets – Inventory) / Current Liabilities iv. Logarithm Natural of Total Assets

Table 1 shows the description of variables used in this study, performance of firm is dependent variable, which is measured by ROA (Jose et al., 1996; Khalid et al., 2018; Shubita, 2013; Samiloglu and Demirgunes, 2008; Afeef, 2011; Shah and Khan, 2018; Garcia-Teruel and Marinez-Solano, 2007; Falope and Ajilore 2009) and NPM (Quayyum, 2011), consistent with previous studies.

WCM is used as independent variable, measured by CCC (Caballero, Teruel, and Solano, 2011; Khalid et al., 2018; Shubita, 2013; Afeef, 2011; Lan Le et al., 2018; Quayyum, 2011; Gill, Bigar and matthur., 2010; Deloof, 2003; Among others) as it is most common measure of WCM. This study also uses some control variables that is LEV, SG, (Makori and Jagongo, 2013) and FA. Besides some control variables, this study used a moderate variable that is FS (Dalci et al., 2019).

### 3.3 Data Analysis

To investigate the relation between WCM and the profitability of firm we calculate the descriptive statistics first. Correlation analysis are used to check the correlation between dependent and explanatory variables. OLS regression is used to check the moderating effect of FS on the relation between CCC and ROA, and CCC and NPM, also we check the problem of multicollinearity through VIF and the findings reveals that there is no problem of multicollinearity in our models.

Hence, following econometric models are used in the study to empirically investigate the effect among our variables.

$$ROA_{it} = \beta_0 + \beta_1(CCC)_{it} + \beta_2(LEV)_{it} + \beta_3(SG)_{it} + \beta_4(FA)_{it} + \mu_{it} \text{ ----- (1)}$$

$$ROA_{it} = \beta_0 + \beta_1(CCC)_{it} + \beta_2(FS)_{it} + \beta_3(LEV)_{it} + \beta_4(SG)_{it} + \beta_5(FA)_{it} + \mu_{it} \text{ ----- (2)}$$

$$ROA_{it} = \beta_0 + \beta_1(CCC)_{it} + \beta_2(FS)_{it} + \beta_3(CCC \times FS)_{it} + \beta_4(LEV)_{it} + \beta_5(SG)_{it} + \beta_6(FA)_{it} + \mu_{it} \text{ ----- (3)}$$

$$NPM_{it} = \beta_0 + \beta_1(CCC)_{it} + \beta_2(LEV)_{it} + \beta_3(SG)_{it} + \beta_4(FA)_{it} + \mu_{it} \text{ ----- (4)}$$

$$NPM_{it} = \beta_0 + \beta_1(CCC)_{it} + \beta_2(FS)_{it} + \beta_3(LEV)_{it} + \beta_4(SG)_{it} + \beta_5(FA)_{it} + \mu_{it} \text{ ----- (5)}$$

$$NPM_{it} = \beta_0 + \beta_1(CCC)_{it} + \beta_2(FS)_{it} + \beta_3(CCC \times FS)_{it} + \beta_4(LEV)_{it} + \beta_5(SG)_{it} + \beta_6(FA)_{it} + \mu_{it} \text{ ----- (6)}$$

Where; ROA is return on assets, CCC is cash conversion cycle, LEV is leverage, SG is sales growth, FA is firm age, FS is firm size and NPM is net profit margin.  $\beta_0$  is intercept and  $\beta_1 - \beta_7$  are coefficients of variables of the firm *i* for time *t*, while  $\mu$  is the residual error term.

## 4. Results and Discussions

Table 2 presents descriptive statistics (mean and standard errors) of our variables that are used in this study. Table 3 represents Variance inflated factor (VIF), that is computed to check the multicollinearity between independent variables of our models. As we know that we use 6 models in our study, so here we test the problem of multicollinearity in each model. According to (studenmund, 1997), if the variance of independent variables that are

included in our model exceeds 5, then there is the problem of multicollinearity in our model, therefore this tables represents the problem of multicollinearity in model 3 and 6, as the variances of independent variables of these models exceeds 5. Table 4 presents correlations analysis of our variables. By considering the correlation between the variables it observes that ROA is positively correlated with FS, SG and CCC\*FS whereas negatively correlated with CCC and LEV and no any correlation is found between ROA and FA. NPM is positively correlated with FS and SG and CCC\*FS but negatively correlated with CCC and we found no any correlation of NPM with LEV and FA. CCC is positively correlated with SG and CCC\*FS, also we found a positive correlation between SG and CCC\*SG. No any correlation of CCC is found with FS, LEV and FA. Whereas FA and LEV are also not correlated.

**Table 2: Descriptive Statistics**

Variables	Means	SD
ROA	0.006229	0.317855
NPM	-0.064622	0.785773
CCC	62.022626	44.678020
FS	14.890780	1.541157
LEV	0.667310	0.215562
SG	0.212013	1.391635
FA	32.250000	13.450585
CCC*FS	920.66420	658.08918

**Table 3: Variance Inflation Factor**

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
CCC	1.0311	1.035	68.019	1.0311	1.035	68.019
LEV	1.0111	1.014	1.075	1.0111	1.014	1.075
SG	1.0331	1.033	1.039	1.0331	1.033	1.039
FS	-	1.016	3.435	-	1.016	3.435
FA	1.0101	1.018	1.021	1.0101	1.018	1.021
CCC*FS	-	-	68.394	-	-	68.394

**Table 4: Pearson Correlation Matrix**

Variables	ROA	NPM	CCC	FS	LEV	SG	FA	CCC*SG
ROA	1.0000							
NPM	0.6951**	1.000						
CCC	-0.1323**	-0.1761**	1.000					
FS	0.1832**	0.2240**	-0.0604	1.000				
LEV	-0.1240*	0.0504	-0.0783	-0.0581	1.000			
SG	0.3470**	0.2083**	0.1451**	-0.0276	0.0463	1.000		
FA	0.0184	0.0460	-0.0340	0.0931	-0.0254	0.0801	1.000	
CCC*SG	0.0853*	0.1221*	0.9741***	0.1281**	-0.0581	0.1311**	-0.0120	1.000

Table 5 consists of three models, that is model 1,2 and 3. In model 1 we empirically investigate the relation between WCM and the profitability of firm, in model 2 we include an additional variable that is FS to test the moderating effect of FS on the relation between WCM and the profitability of the firms and to empirically investigates the relation between WCM and the profitability of firm, in model 3, we add another variable that is (CCC\*FS) and again check the moderating effect of FS on the relation between WCM and the profitability of the firms and to check the relation between WCM the profitability of firm by using ROA as a measure of profitability and CCC as a measure of WC with some control variables. In model 1, we empirically investigate the effect of CCC on ROA besides some control variables and the findings reveals that CCC has negative significant impact on ROA. In addition to CCC, some control variables also have statistically significant impact on ROA. From the control variables LEV has negative significant whereas SG has direct significant effect on ROA and FA doesn't have any statistical impact. The coefficient of CCC (-0.0011) and LEV (-0.0169) are statistically significant at 5% and the coefficient of SG (0.076) is statistically significant at 1%.

**Table 5: Regression Analysis (Model 1-3)**

Variables	Dependent Variable: ROA					
	Model-1		Model-2		Model-3	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Constant	0.1462	0.0240**	-0.3491	0.0230**	0.1292	0.6341
CCC	-0.0011	0.0491**	-0.0012	0.0731*	-0.0061	0.0190**
LEV	-0.0169	0.0122**	-0.1561	0.0200**	-0.1900	0.0061***
SG	0.0761	0.0000***	0.0752	0.0000***	0.0731	0.0000***
FA	0.0012	0.3942	0.0011	0.5931	0.0004	0.6712
FS	-	-	0.0332	0.0000***	0.0023	0.0888*
CCC*FS	-	-	-	-	0.0003	0.0333**
F-Statistic	17.1741	0.0000***	16.6391	0.0000***	14.7501	0.0000***
R <sup>2</sup>	0.142		0.167		0.176	
Adj. R <sup>2</sup>	0.134		0.157		0.165	

NOTE: NPM is net profit margin, CCC is cash conversion cycle, LEV is firm leverage, SG is sales growth, FA is age of the firm, FS is firm size. \*, \*\*, \*\*\* denotes statistical significance at 1%, 5% and 10% respectively.

After approving the fit of model 1, we include an additional variable in the model that is FS to check its moderate effect between WCM and the profitability of firm and to test the relation between WCM the profitability of firm and the findings reveals that CCC has negative significant impact on ROA, from the control variables LEV has negative significant, whereas SG has direct significant impact on ROA whereas FA doesn't have any statistical impact. And the moderate variable that is FS also shown highly Significant and direct Impact on ROA. The coefficient of CCC (-0.0012) is statistically significant at 10%, The coefficient of LEV (-0.156) is statistically significant at 5% and the coefficient of SG (0.075) and FS (0.033) are highly statistically significant at 1%.

After approving the fit of model 2, we include another additional variable by multiplying the firm size (FS) with cash conversion cycle (CCC) that is (CCC\*FS) to check the moderate effect of firm size, and the relation between WCM and the profitability of firm. The result indicates that the CCC has negative significant impact on ROA, whereas from the control variables; LEV shows negative significant, SG shows positive significant and FA doesn't show any statistical impact on ROA. On the other hand, moderate variable that is FS become insignificant due to the inclusion of CCC\*FS which shows statistically significant and positive impact on ROA and this significance of CCC\*FS with ROA shows the moderating effect of FS on the relation between WCM the profitability of the firm. The coefficient of LEV (-0.190) and SG (0.073) are highly statistically significant at 1%, The coefficient of CCC (-0.006) and CCC\*FS (0.0003) is statistically significant at 5%.

Consequently, the computed F values of all models are highly Significant and showing that selected control variables are applicable and all the models are non-zero.

Table 6 consists of three models that is 4,5 and 6. In model 4 we empirically investigate the relation between WCM and the profitability of firm, in model 2 we include an additional variable that is FS to check the moderating impact of FS on the relation between WCM and the profitability of the firms and to empirically investigates the relation between WCM and the profitability of firm, in model 3, we add another variable that is (CCC\*FS) and again check the moderating impact of FS on the relation between WCM and the profitability of the firms and to check the relation between WCM the profitability of firm by using NPM as a measure of profitability and CCC as a measure of WC with some control variables.

**Table 6: Regression Analysis (Model 4-6)**

Variables	Dependent Variable: NPM					
	Model-4		Model-5		Model-6	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
Constant	-0.1152	0.4891	-1.7260	0.0000***	-1.055	0.128
CCC	-0.0021	0.0033***	-0.0022	0.0066***	-0.0023	0.099*
LEV	-0.1791	0.3030	0.2242	0.1880	-0.1751	0.318
SG	0.1100	0.0000***	0.1071	0.0000***	0.1052	0.000***
FA	0.0033	0.2241	0.0021	0.4090	-0.0212	0.4455
FS	-	-	0.1082	0.0000***	0.6512	0.1401
CCC*FS	-	-	-	-	0.0011	0.0978*
F statistic	7.882	0.000***	10.707	0.000***	14.750	0.000***
R <sup>2</sup>	0.071		0.115		0.117	
Adj. R <sup>2</sup>	0.062		0.104		0.105	

NOTE: NPM is net profit margin, CCC is cash conversion cycle, LEV is firm leverage, SG is sales growth, FA is age of the firm, FS is firm size. \*, \*\*, \*\*\* denotes statistical significance at 1%, 5% and 10% respectively

In model 1, we empirically investigate the impact of CCC on NPM besides some control variables and the

findings demonstrate that CCC has negative significant impact on NPM. In addition to CCC, SG (from the control variable) have positive significant impact on NPM. Whereas LEV and FA don't have any statistical impact. The coefficients of CCC (-0.0021) and SG (0.110) are statistically significant at 1%

After approving the fit of model 1, we include an additional variable in the model that is FS to check its moderate effect between WCM and the profitability of firm and to test the relation between WCM the profitability of firm and the findings reveals that CCC has negative significant impact on NPM and from the control variables SG has positive significant impact on NPM whereas FA and LEV doesn't show any statistical impact. And the moderate variable that is FS also shown highly positive significant Impact on NPM. The coefficient of CCC (-0.0022), SG (0.107) and FS (0.108) are highly statistically significant at 1%.

After approving the fit of model 2, we include another additional variable by multiplying the firm size (FS) with cash conversion cycle (CCC) that is (CCC\*FS) to check the moderate effect of FS, and the relation between WCM and the profitability of firm and the result shows that there is significant and inverse relation between CCC and NPM. From the control variables SG shows positive significant whereas FA and LEV doesn't show any statistical impact on NPM, whereas, the moderate variable that is FS become insignificant due to the inclusion of CCC\*FS which shows positive significant impact on NPM and this significance of CCC\*FS with NPM shows the moderating effect of FS on the relation between WCM the profitability of the firm. The coefficient of SG (0.1052) is statistically significant at 1% and the coefficient of CCC (-0.0023), and CCC\*FS (0.0011) are statistically significant at 10%.

Consequently, the computed F values of all models are highly significant and showing that selected control variables are applicable and all the models are non-zero.

## 5. Discussions and Conclusions

Mostly firms devoted a huge amount of cash in WC therefore it is presumed that management of WC has remarkable consequences on the profitability of firms. WC means the current assets of the organization that can be change from one sort to other kind among everyday activities of the firm (Gitman, 1991). The better performance of firm is stimulated by the effective management of WC (Christopher & Kamalavalli, 2009) furthermore, the Profitability and liquidity of the firm is directly affected by the WCM (Rehman & Nasr, 2007). Moreover, WCM that effects the profitability of firm has greatly influenced by FS (Mumtaz et al.,2011; Raheman and Nasar, 2007).

The present study empirically investigates the moderating impact of FS and the relation between the WCM the profitability of 60 non-financial firms listed in KSE-100 index over the period of (2013-2018). For this, 6 different models are used for testing the hypotheses. CCC is use for the measurement of WCM, whereas ROA, and NPM are used for the measurement of the profitability of firm. Also we used some control variables in our models that are LEV, FA, SG. And we use FS and CCC\*FS as a moderate variable for investigating the moderate impact of FS.

Findings of this study are similar with previous studies and shows that WCM, measure by CCC has negative significant impact on profitability measures that is ROA (Jose et al. 1996; Shin and Soenen 1998; Wang2002; Deloof 2003; Garcia-Teruel and Martinez-Solano 2007; Among others) and NPM (Quayyum, 2011) .These findings suggest that the profitability of will increase by decreasing the CCC which states that firm should invest low amount in WC which means that firm should adapt aggressive WC policy, also the firm should reduce its CCC to its minimum for enhancing the profitability and firm's performance

Findings also shows that the FS moderates the relation between WCM (CCC) and the profitability (ROA, NPM), because the FS has significant and positive relation with both profitability measures (ROA, and NPM). These findings are consistent with (Mumtaz et al.,2011; Raheman and Nasar, 2007; Afeef, 2011; Dalci et al., 2019; Among others). These finding suggests that the profitability of the firm will increase by increasing the FS and the large firms are more profitable, furthermore, the FS strong the relation between WCM and the profitability of the firm.

### 5.1 Theoretical Implications

There are some implications derived from this study: first of all, the manager of the firm should consider the FS while making critical or strategic decisions for the firm, especially regarding WCM, because some strategies that are appropriate and efficient for the small or medium size firms that may be inappropriate and inefficient for large sizes firms so the decision makers of the firms must consider FS while making decisions. Secondly, the firm should reduce the size of its CCC and invest less money in WC for enhancing its performance

### 5.2 Limitations

This study has some limitations. Firstly, this study is conducted in Pakistan by taking the sample of 60 non-financial firms that are listed in KSE-100 index. Secondly, the firm which have missing data are excluded from this sample. Thirdly, as we know that there is problem of multicollinearity in 2 models of our study but we use

only OLS analysis for checking the moderating impact of the FS and the relation between WCM and the profitability of firm. Lastly, we didn't test the problem of autocorrelation, and heteroscedasticity that might be present in our data.

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