Global Social Sciences Review (GSSR)
Vol. IV, **No.** I (Winter 2019) | **Page:** 75 – 83

Effect of Working Capital Management on Firm Performance: The Role of Ownership Structure

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Abstract *Current study investigates the effect of working capital management on firm performance with the moderating role of ownership structure. A random sample of 77 firms for the period 2011-2015 was selected. By using fixed effect model the study demonstrated statistically significant negative relationship of leverage, average collection period and quick ratio on firm performance, while current ratio, account payable and inventory turnover found with positive significant effect on Firm Performance. Further, the effect of working capital on firm performance was positively affected by Institutional ownership and negatively affected by Managerial ownership. Thus, the results suggest that the owner/manager needs to manage their limited resources efficiently for the improvement of profitability. It is also advised that investor and shareholder pay attention to the level of institutional and managerial ownership at the time of investment..*

Key Words
Working Capital Management, Firm Performance, Ownership Structure

Introduction

Background of the Study

The importance of Working Capital Management is a key in corporate financial management strategies to earn maximum wealth for the shareholders. Working capital management is the short-term resources management, which is associated to investment decision and short-term financing of firms. Efficient working capital management function is to generate maximum return by managing current assets and current liabilities (Filbeck & Krueger, 2005; Van James, 2004). Recently, most of the firm across various sector realized the efficient working capital management is important for firm sustainability and growth (Şen, Köksal, & Oruç, 2009; Tsagem, Aripin, & Ishak, 2014). Similarly, (Yusoff, Khan, Mubeen, & Azam, 2013) recommend that firm profitability is efficiently influenced by working capital management.

Policies regarding working capital Management is important to small firm because of their inability and constrain in obtaining funds from capital market as compared to large size firms (Baños-Caballero, García-Teruel, & Martínez-Solano, 2012; Fazzari & Petersen, 1993; Shezad, Jan, Gulzar, & Ansari, 2014; Walker, 1989; Whited, 1992). The objective of WCM is to utilize each component of working capital at an optimum level. Thus, working capital management is related with management strategies of inventory, account payable, account receivable, marketable securities and cash and their interrelationship (Abuzayed, 2012). Insufficient short-term assets result to liquidity risk, conversely excessive investment in current assets can reduced the firm's profitability. A firm balance working capital to pay operational expenses and short-term obligation to ensure firm sustainability and growth. In addition, another important factor to efficient working capital management of firm may consider ownership structure and corporate governance. According to (A. S. Gill & Biger, 2013) poor working capital management and weak ownership structure have an inverse effect on firm value and profitability.

Good working capital management is essential priority for board of director and corporation management because it can positive effect on firm's performance. The various studies empirical evidence (Afza & Nazir, 2007; Deloof, 2003; Howorth & Westhead, 2003; Juan García-Teruel & Martinez-Solano, 2007; Lamberson, 1995) have explained that measuring working capital is not easy due to business models' differences and changing risk level in dissimilar economic condition.

p-ISSN 2520-0348 | e-ISSN 2616-793X | L-ISSN 2616-793X | DOI: 10.31703/gssr.2019(IV-I).10 | URL: http://dx.doi.org/10.31703/gssr.2019(IV-I).10

Additionally, working capital is different across firm by size and nature of the business, operating cycle, credit policy, production level and other factor (Mandal & Goswami).Acutely, working capital decision have a direct impact on the trade-off between firm's profitability's and risk (Hill, Kelly, & Highfield, 2010).

There are numerous relatively studies (Kieschnick, Laplante, & Moussawi, 2006; Noreen, Khan, & Abbas, 2009; Padachi, 2006) determine that working capital management problem exists in many firms'. However, there is still lack of consideration the function working capital management as a firm effective life blood and nerve center(Paul, Devi, & Teh, 2012; Şen et al., 2009; Yusuf & Idowu, 2012). Additionally Price waterhouse Coopers (2003) shows that working capital level trends had declined almost 2% globally years by years with Asian and American companies' as the poorest performance. Working capital management is dynamic portions of firm investment and each firm need efficient working capital for its continuous operation and company's existence. A firm should have upheld its solvency, profitability and liquidity (Lazaridis & Tryfonidis, 2006). Working capital management clearly constrain or distress estimated liquidity or profitability or can both. Hence, firm performance is both positively and negatively affected by working capital, which can affect the shareholder wealth maximization (Raheman & Nasr, 2007).

Problem Statement

Several studies identified how working capital management effect firm performance with different angles in different scenario. Earlier studies shows that specific factors of working capital management of firms such as size, leverage, growth have significantly effect on firm performance. Mismanagement and inappropriate use of working capital management negatively affect firm performance (Hill et al., 2010). (Bagh, Nazir, Khan, Khan, & Razzaq, 2016) studied relationship between firm performance and working capital management targeting manufacturing sector and found that inventory turnover, conversion cycle and average payment period has inverse effect on firm performance. However firm performance was found to be positively and significantly affected by average collection period.

Although rich studies are available on the working capital management but these studies ignored the moderating role of Ownership structure on relationship between working and firm performance. Therefore, this study fills the gap by examining the managerial and institutional ownership moderation roles on the effect of working capital management on firm performance in textile sector listed in Pakistan stock exchange (PSX).

Research Objective

1. To identify the effect of working capital management on performance of textile sector listed on Pakistan Stock Exchange.
2. To identify the effect of working capital management on firm performance of textile sector with moderating role of managerial ownership.
3. To identify the effect of working capital management on firm performance of textile sector with moderating role of institutional ownership.

Hypothesis

Following hypothesis are developed to achieve the above objectives.

H_1: Working capital management has a significant effect on firm performance.

H_2: Managerial ownership has a moderating role in the relationship between working capital management and firm performance.

H_3: Institutional ownership has a moderating role in the relationship between working capital management and firm performance.

Significance of the Study

Managing working capital is critical decision for firm manager to run business operation, while keeping in mind that either liquidity or run business on credit. Mismanagement of resource can result in failure of business profit. So, the outcome of this study is helpful for policy maker, manager and government. Additionally, this study provides rich information and valuable guideline regarding managerial and institutional ownership. Most importantly this study also add value to literature regarding management of working capital relationship with firm performance with moderating role of managerial and institutional ownership on relationship between them.

Literature Review

A rich literature is available on working capital management and firm performance relationship. This section

included some of previous scholar efforts in relevant study.

(Deloof, 2003) explored that how working capital management can effect firm performance by taking a large sample from 1992-1996. Results shows that account receivable, inventory days and account payable was found negative and significant effect on firm performance. Finding also suggested that some profitable firms take more time to pay their debts, where shareholder value is enhanced by minimizing inventory days and account receivable days.

(Filbeck & Krueger, 2005) examine the five years data from 1996 to 1999 of 26 industries of 970 firms. The author argues that a firm can increased the fund availability for project development or decreased their financial cost by decreasing investment of funds in working capital. Furthermore, (Azam & Haider, 2011) conduct a study on UL firms and found a negative effect of liquidity on performance of firm while debts ratio shows positive effect on performance of firm. (Lazaridis & Tryfonidis, 2006)investigate the firm performance and working capital management on Athens stock Exchange firm, the sample size of this study was 131 over four years data from 2001-2004. Outcomes of this indicated that leverage and cash conversion cycle is significantly negatively effecting firm performance. Likewise, relationship between fixed financial assets and firm performance are positively correlated with each other and accounts receivable days and inventory turnover days are in negative relationship with firm performance (Khan, 2014). The studies concluded that the efficient management of cash conversion cycle and its component can be improved the firm performance.

Juan García-Teruel and Martinez-Solano (2007) examine Spanish small medium enterprises by taking a sample of 8872 firms for the period 1996-2002. The output results indicate that account payable, inventory days and account receivable is highly negative and significant effect on firm profitability. Additionally significantly negative relationship was found between cash conversion cycle and firm performance. Hence, by reducing the cash conversion cycle length can be improve the firm performance.

A. Gill, Biger, and Mathur (2010) studied US manufacturing firm by considering working capital management on performance over a period of 2005 to 2007. The study finding show that cash conversion cycle (CCC) positively affect firm performance and receivable collection periods have found a negatively affect firm performance, while account payable. The study concluded that the efficient management of cash conversion cycle (CCC) and reducing the account receivable can be improve the firm profitability.

Kaur and Singh (2013) conducted a study on Bombay Stock Exchange to investigate efficient management of working capital by using 200 firms as sample from 2000 to 2010. The score of working capital of each firm was calculate via three parameters i.e. normalized days working capital, operating cycle and cash conversion efficiency (CCE). The finding of the study indicated that firm performance is directly and significantly affected by efficient capital management.

Ownership structure is one of the major mechanisms in the corporate governance which directly affect the firm performance (Yusoff et al., 2013). (James, 1999) stated ownership structure provides special corporate governance system that improve firm performance and reduce the agency cost.(Wilson, Plumley, & Ramchandani, 2013)found that the ownership structure is key success factor of firm which less likely to fail. (Ararat, Black, & Yurtoglu, 2017)stated that ownership structure significantly effects firm performance. Firm manager can improve their firm profitability by decreasing the account payable, inventory account and no of days account receivable to an optimum level .(Shah, Gujar, & Sohu, 2018) found that Cash conversation cycle, inventory turnover and account payable is negatively significant effect on firm performance, while operating cycle is insignificant effect on firm performance in chemical and pharmaceutical companies in Pakistan.(Sharif & Islam, 2018) studied working capital management effect on firm profitability and found that account receivable, account payable, cash conversation cycle is positively significant effect on firm performance.

Research Methodology

The current study aims to investigate effect of working capital management and firm performance with the moderating role of ownership structure. A sample of 77 firms for the period 2011-2015 was selected through random sampling technique Data were collected from the data base of annual reports, Pakistan Stock Exchange, State Bank of Pakistan and Bureau of statistics.

Measurement of Variable

Firm performance is dependent variable and is measured by return on assets. Independent variable is leverage and average collection period, while managerial, institutional ownership is moderating variable. Quick ratio, current ratio, account payable, inventory turnover, cash conversion cycle and size incorporated is a control variable of the study. The proxy and formula used entire variables are listed in table 1.

Table 1. Variables Measurement

Variable	Measurement	Expected Relationship	Type
Return on Assets(ROA)	Net Income/Total Assets	+/-	Dependent
Leverage	Total Debit/Total Assets	-	Independent
Average Collection Period (ACP)	(Account Receivable / Credit Sale) *Days	-	
Quick Ratio	(C.L- Inventory)/ C. L	-	Control Variable
Current Ratio (CR)	Current Assets / Current Liabilities	+	
Account Payable (AP)	(A.P / CGS) * 365	+	
Inventory Turn Over (IT)	(CGS / Average Inventory) *365	+	
Cash Conversion Cycle (CCC)	ACP+IT-AP	+/-	
Firm size (Size)	Ln (Total Assets)	-	
Managerial Ownership (M.O)	Share Percent Held via Manager	+/-	Moderating Variable
Institutional Ownership (I.O)	share Percent Held via Institution	+/-	

Model Specification

Multiple regression model is used for data analysis.

ROA= $\alpha + \beta_1 Lev_{it} + \beta_2 ACP_{it} + \beta_3 QR_{it} + \beta_4 CR_{it} + \beta_5 AP_{it} + \beta_6 IT_{it} + \beta_7 CCC_{it} + \beta_8 Firm\ Size_{it} + \varepsilon$……..(01)

To examine the moderating role of ownership structure on relationship between WCM and firm performance, following model 02 and 03 are used.

ROA= $\alpha + \beta_1 Lev_{it} + \beta_2 Lev * M.O_{it} + \beta_3 ACP_{it} + \beta_4 ACP * M.O_{it} + \beta_5 M.O_{it} + \beta_6 QR_{it} + \beta_7 CR_{it} + \beta_8 AP_{it} + \beta_9 IT_{it} + \beta_{10} CCC_{it} + \beta_{11} Firm\ size_{it} + \varepsilon$……..(02)

ROA= $\alpha + \beta_1 Lev_{it} + \beta_2 Lev * I.O_{it} + \beta_3 ACP_{it} + \beta_4 ACP * I.O_{it} + \beta_5 I.O_{it} + \beta_6 QR_{it} + \beta_7 CR_{it} + \beta_8 AP_{it} + \beta_9 IT_{it} + \beta_{10} CCC_{it} + \beta_{11} Firm\ size_{it} + \varepsilon$……..(03)

Where lev is leverage, ACP is Average Collection Periods, QR is Quick Ratio, CR is Current Ratio, AP is Account Payable periods, IT stands for Inventory Turnover. CCC stands for cash conversion cycle, size is total size of firm. While, in model 02 and 03 i.e β_2 and β_4 are the interactive term.

Results and Discussion

Descriptive Statistics

Table 2 shows that the mean return on assets is .04551 with standard deviation 0.1252. Furthermore, mean value of leverage is .6310 while deviating with a value .2877. ACP means is 41.3812 deviating with a value of 86.59. The mean for Quick ratio is .5808 with showing variation of 1.3113. The means and standard deviation value of CR is 1.2875 and 1.2010. AP means value is 81.83 and standard deviation value is 313.02. Maximum and minimum days of AP is 5924 and .52222 days respectively. Furthermore, to convert inventory into sales, firm will take 37.11 days with standard deviation of 594.83. The means value for CCC is 94.89 which is deviating with a value 434.28. The range shows that maximum days for CCC is 6132.80 and minimum days for CCC is -1819. The mean value 14.75 for firm size deviating with a value 1.2764. The means value of managerial ownership is 48.13. Institutional ownership means value is 14.3572 with standard deviation of 19.5808. Table 4.2 shows detail descriptions of variables.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
ROA	462	0.0455156	0.125233	-0.7324249	1.22441
Lev	462	0.6310708	0.287758	0.0072852	2.709904
ACP	462	41.38123	86.59031	0.0225777	1195.507

QR	462	0.5808886	1.311382	-14.29908	9.317722
CR	462	1.287509	1.201087	0.0647492	11.81151
AP	462	81.83588	313.0291	0.5222926	5924.423
IT	462	37.11923	594.8342	0.0324741	12789.68
CCC	462	94.89364	434.2866	-1819.901	6132.804
Size	462	14.75143	1.276466	10.8778	18.39072
M.O	462	48.13448	26.85413	0.0269	96.13
I.O	462	14.35729	19.58086	0.0000	78.97

Correlation

Correlation analysis results are present in table 3, which indicated that ROA is negatively correlated with leverage, average collection period, account payable, inventory turnover, cash-conversation cycle. However, the return on assets is positive correlated with quick ratio, current assets, firm size, managerial and intuitional ownership. Due to limited excess to external financing, textile sector tends to hold more liquid assets to finance their working capital. The negative correlation factor means that as these factors increased the return on assets decreased, in conversely the positive correlation factor means that as these variable increased, the firm performance (ROA) would increase.

Table 3. Correlation Analysis

Variable	ROA	Lev	ACP	QR	CR	AP	IT	CCC	Size	M.O	I.O
ROA	1.0000										
Lev	-0.2630	1.0000									
ACP	-0.2684	-0.0048	1.0000								
QR	0.0309	-0.3368	0.1629	1.0000							
CR	0.0694	-0.2972	0.2160	0.6428	1.0000						
AP	-0.1118	-0.0020	0.6151	-0.0091	0.0459	1.0000					
IT	-0.0197	0.0300	-0.0137	0.0217	-0.0072	-0.0097	1.0000				
CCC	-0.1122	0.2295	0.1528	-0.5533	0.1429	-0.0759	-0.0130	1.0000			
Size	0.2396	-0.3175	-0.0979	0.0972	-0.0126	-0.0517	-0.0788	-0.1544	1.0000		
M.O	0.1275	0.0826	-0.1775	-0.0797	-0.0610	-0.1091	0.0243	-0.0055	-0.0702	1.0000	
I.O	0.0901	-0.2063	0.1516	0.1460	0.1951	0.0996	-0.0374	-0.0129	0.0910	-0.5683	1.0000

Model Diagnostic Test

Table 4 represent the results of diagnostic tests to check the problem of multicollinearity, hetroscadasticity and to trace appropriate model for analysis of panel data. Thus, these diagnostic tests recommended that fixed effect model is most appropriate for the study. Furthermore, VIF value indicated that there is no multicollinearity problem exist in the variables. And heteroskedasticity test is used for hetro problem in variable. The results indicate that there is heteroskedasticity problem, these hetro problem was further removed with the help of run a fixed effect model with robust test.

Table 4. Model Diagnostic Tests

Model	Chow Test	Brush-Pegan LM Test	Hausman Test	VIF Mean	Heteroskedastic
Model 01	F= 4.14304 P-Value= 0.002	χ^2 = 121.258 P-value= 0.000	χ^2 = 15.39 P-value= 0.050	3.82	χ^2 = 84.5180 P-value= 0.0002
Model 02	F= 4.1721 P-Value= 0.015	χ^2 = 108.021 P-value= 0.000	χ^2 = 24.7027 P-value= 0.010	6.12	χ^2 = 173.004 P-value= 0.0000
Model 03	F= 4.2313 P-Value= 0.000	χ^2 = 113.741 P-value=0.001	χ^2 = 23.6522 P-value=0.014	6.86	χ^2 = 166.8657 P-value= 0.0000

Empirical Results

In table 5 (given on next page) represent the fixed effect model with robust test result of all three model, in which model 1 indicates working capital management relationship with firm performance. Model 2 and 3 includes moderating effect managerial ownership and institutional ownership in relationship between working capital management and performance of firm respectively.

F value= 8.2711 with P value= 0.000 in model 1 shows highly significant fitness of the overall model. The value of R square indicates that 55.8% variation has been explained by working capital in performance of firm giving an idea that all independent variables (Leverage and Average collection period) including control variables (QR, CR, AP,IT,CCC and firm size) bring 55.8% variation in the performance of the textile sector. The outcome of model 1 indicates that firm performance is negatively and significantly affected by leverage, ACP, QR. Moreover, CR, AP and IT positively and significantly effects firm performance. These results support earlier work of (Bagh et al., 2016; Deloof, 2003; Karim, Al-Mamun, & Miah, 2017; Khalid, Saif, Gondal, & Sarfraz; Mazlan & Leng, 2018; Raheman & Nasr, 2007; Şen et al., 2009; Shah et al., 2018; Sharif & Islam, 2018; Tran, Abbott, & Jin Yap, 2017; Wasiuzzaman & Arumugam, 2013).

F value= 7.3686 with P value= 0.000 in model 2 shows that the overall model is significantly fit. The increase in R square value from 0.5587 to 0.5736 give a deep understanding about the moderating role of managerial ownership in the association between dependent and independent variable. Furthermore, interactive term of managerial ownership has changed the coefficient and significant level of leverage, ACP and QR. Managerial ownership is inversely related to firm performance. Additionally, leverage with interactive term of managerial ownership shows positive significant effect performance of firm, while ACP with interactive term of managerial ownership has negative but insignificant effect on firm performance. Moreover interactive term of managerial ownership, CCC has negative significant effect on the performance of firm.

F value= 6.98109 with P value= 0.000 in model 3 shows that the overall model is significantly fit. The increase in R square value from .5587 to .569647 give a deep understanding about the moderating effect of institutional ownership in working capital and firm performance relationship. Furthermore, an interactive term of institutional ownership has changed the coefficient and significance level of leverage, ACP and QR. Institutional ownership has positive significant relationship with firm performance. Additionally, leverage with interactive term of institutional ownership has inverse and significant effect on firm performance, while ACP with interactive term of institutional ownership has negative but insignificant effect on firm performance found. Furthermore, taking the interactive term of institutional ownership, CCC didn't show any effect. Hence, the results strongly support the hypotheses that there is a moderating role of institutional ownership on the relation between firm performance and working capital management.

Table 5. Fixed Effect Model Result with Robust Test

Variable	Model 01	Model 02	Model 03
Constant	0.4016 (1.7349) *	0.571688 (2.4167) **	0.440235 (1.8446) *
Lev	−0.132469 (−2.2679) **	−0.399044 (−4.1679) ***	−0.106407 (−2.0365
ACP	−0.0005321 (−4.4889) ***	−0.0003874(−2.1094) **	−0.000494(−2.1305)
QR	−0.024006 (−2.0664) **	−0.029630 (−3.0036) ***	−0.018328 (−1.6915
CR	0.0235618 (2.3607) **	0.0301819 (2.8262) ***	0.0194178 (1.9944)
AP	5.80101e-05 (1.8085) *	3.3726e-05 (0.9343)	6.53321e-05 (1.2892
IT	3.48912e-06 (5.5821) ***	3.52961e-06 (8.9062) ***	2.9703e-06(4.8094)
CCC	3.46862e-05 (−1.1112)	−5.5044e-05(−2.1814) **	−2.3306e-05 (−0.814
Size of Firm	−0.0181977 (−1.3319)	−0.0198615 (−1.4490)	−0.0234044 (−1.610
M.O	-	−0.002407(−3.5349) ***	-
Lev*M. O	-	0.00431039(4.3523) ***	-
ACP*M. O	-	−1.53324e-06 (−0.3027)	-
I.O	-	-	0.0044849 (4.1298)
Lev*I. O	-	-	−0.005482 (−2.0154
ACP*I. O	-	-	−6.06905e-07 (−0.07
R-Square	0.558733	0.573679	0.569647
F Statistics	8.27112	7.36865	6.98109
P-value	0	0	0

Note: Figures in the parentheses are *t*-statistics while, ***, ** and * shows significance at the1%, 5% and 10% levels, respectively.

Conclusion and Recommendation

Conclusion

To ensure the existence of firm and performance of the firm, it is necessary for a firm to maintain properly working capital level. Current study aims to identify effect of working capital on the performance of the firm with the moderating role of ownership structure in textile sector. Fixed effect model is found the most suitable model to achieve the objectives of the study. Initially the model identified that firm performance is effected by working capital management, followed by identifying the moderating role of ownership structure in the relationship. The results of the study indicated that firm performance is affected negatively and significantly by Leverage, Average collection period, Quick ratio. However, it is also found that firm performance is positively and significantly affected by Current ratio, Account payable and Inventory turnover. Furthermore, working capital and firm performance is significantly affected by managerial and institutional ownership. Finding of the study suggested that firm performance and shareholders wealth maximization can be enhanced by reduction in collection period, efficient conversion of cash, maintaining low level of current ratio. The findings of the study are highly consistent to earlier studies of (Bagh et al., 2016; Deloof, 2003; Karim et al., 2017; Khalid et al.; Mazlan & Leng, 2018; Raheman & Nasr, 2007; Şen et al., 2009; Shah et al., 2018; Sharif & Islam, 2018; Tran et al., 2017; Wasiuzzaman & Arumugam, 2013) identified that profitability is negatively affected by working capital management. In short the empirical results of current work gives an understanding about the significance of efficient management of working capital to ensure firm performance.

Recommendation

1. The finding of the study suggests that positive working capital can provide a platform to firms in bringing improvement in cash conversion cycle through investment in inventories and early pay-off.
2. Managers can bring improvement in their firm's profitability by reduction in collection period.
3. Those Firms generating more cash from their operations can maintain their account receivable and inventories and they don't need to hold more cash. However, firms need to reduce expenses and getting loan to secure its assets and cash short falls. This can be achieved by managing working capital properly.
4. Managerial and institutional ownership can leads significant effect on firm performance, thus creditors need to pay special attention while investing in companies.

Future Direction

The relationship between working capital management can further be deeply understand by examining some additional variables of working capital. Future study can also be undertaken by taking exploring such relationship in financial sector or services sector.

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