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Working Capital Management and Corporate Performance in Shariah Compliant firms

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Abstract:

Current study investigates the effects of working capital management on performance of Pakistani firms that observe the guidelines of Shariah supervisory board of Karachi Meezan Index-30. The data of firms that constitute Karachi Meezan Index-30 was analysed for the period 2006-2013 to examine the proposed relationship. Cash Conversion cycle and its components are used to

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measure the firms' working capital management efficiency. Moreover, the square of net trade cycle is used to proxy the impact of excessive holdings of working capital on performance. The panel fixed effects and random effects estimation techniques are used and diagnostics are applied to ensure the robustness of results. The finding of this paper reveals that Shariah complaint firms adopt more ethical practices in management of working capital. Furthermore, we confirms the existence of concave relationship between working capital and firm performance proposed by (Baños-Caballero, García-Teruel, and Martínez-Solano 2014) as Cash Conversion cycle and its square are positively and negatively related to firm performance respectively. This indicates that Karachi Meezan Indexed firms can increase investment in working capital up to the level that maximizes firm performance. The study is first of its kind that accounts for the impact of Shariah regulations on working capital management and firm performance relationship.

Key words: Working capital management, Karachi Meezan Index-30, Cash Conversion Cycle, Firm performance, Pakistan

1 INTRODUCTION

Islamic ideology of socio-economic justice is centred on eradicating interest and all its elements from the economy. Islamic financial system facilitates the investment and financing activities of corporations based on the risk sharing principle. (Honohan 2008) reported that approximately 72% of the population living in Muslim-majority countries does not use conventional financial services.

Karachi Meezan Index-30 is a stock index on the Karachi stock Exchange (KSE) of Pakistan. The index was originated by the joint efforts of KSE and Al-Meezan Investment Bank in 2009 in order to promote the Islamic corporations in the country. Considering the fact that one could rarely find listed firms that fully adhere to the Shariah principles, the criteria designed by Shariah supervisory board

of the Karachi Meezan Index do not fully comply with Islamic law and provide some room to the firms that are quite closer to the Shariah benchmarks. A company has to satisfy the following minimum criteria to be part of the Karachi Meezan Index;

1. The core business of the company should not violate any principle of Shariah. Therefore, it is not permissible to acquire the shares of the companies providing financial services on interest like conventional banks, insurance companies, leasing companies or the companies involved in some other business not approved by the Shariah e.g. Companies making or selling liquor, pork, Haram meat, or involved in gambling, operating night clubs, disseminating pornographic content, prostitution etc.
2. The Interest Bearing Debt to Total Assets ratio should be less than 37%. To understand the rationale behind this condition, it should be kept in mind that such companies are mostly based on interest. Here again, the aforementioned principle applies i.e. if the shareholder is not personally agreeable to such borrowings, but has been overruled by the majority, these borrowing transactions cannot be attributed to him / her. Debt, in this case, is classified as any interest bearing debt including Bonds, TFCs, Commercial Paper, Conventional Bank Loans, Finance Lease, Hire Purchase, issuing preference shares etc.
3. The ratio of Non-Compliant Investments to Total Assets should be less than 33%. Non-Shariah Compliant Investments include investments in conventional mutual funds, conventional money market instruments, Commercial Paper, interest bearing bank deposits, Bonds, PIBs, FIB, T-Bills, TFCs, DSCs, NSS, derivatives etc.
4. The ratio of Non-Compliant Income to Total Revenue should be less than 5%. Total Revenue includes Gross

Revenue plus any other income earned by the company. Non-Compliant Income includes income from gambling, income from interest based transactions, income from Gharar-based transactions i.e. derivatives, insurance claim reimbursement from a conventional insurance company, any penalty charged on late payment in credit sale, income from casinos, addictive drugs, alcohol, dividend income from above mentioned businesses or companies which have been declared Shariah Non-Compliant due to non-compliance to any of the mentioned criteria for Shariah Compliance etc.

5. The ratio of Illiquid Assets to Total Assets should be at least 25%. In terms of Shariah, illiquid assets are all those assets that are not cash or cash equivalents. Therefore, inventory of raw material, work in process, among all other fixed assets are considered as illiquid whereas long term investments in interest based institutions are considered to be liquid in terms of Shariah.
6. Market Price per share should be at least equal to or greater than net liquid assets per share. Net liquid assets per share is calculated by using the following formula:

Net Liquid Assets per Share = (Total Assets - Illiquid Assets - Long Term Liabilities - Current Liabilities) / Number of Shares Outstanding

Working capital is considered as life blood for any corporation and its management is perceived as one of the most important task in corporate finance literature. Every organization has to maintain a certain amount of working capital regardless of its nature of business, sales volume, and areas of operations. The purpose of working capital management is to maintain an optimal level for every individual component of working capital e.g. receivables, payables and inventory. Business success is heavily dependent on how financial executives manage all these

components. Therefore, managers have to spend a considerable amount of time and efforts to achieve an optimal level of working capital that creates a balance between risk and efficiency (Filbeck and Krueger 2005). Firms should strike an optimum level of working capital by keeping the liquidity and profitability trade-off in perspective (Raheman et al. 2010). A firm can implement an aggressive working capital management policy by keeping a smaller amount of current assets in proportion to total assets or by keeping higher current liabilities. On the contrary, by adopting conservative policy of working capital management a firm will keep higher amount of current assets or a lower amount of current liabilities. Keeping excessive stock of inventory affects the profitability of a firm negatively by freezing its investment. While, lower inventory levels can increase firm's risk of stock outs which will create problems in smooth functioning of its operations (Van Horne and Wachowicz 2004).

This paper investigates the relationship between working capital management and its possible effects on profitability for firms constituting an islamic market index named as Karachi Meezan Index-30. The motive behind selecting this Index is, firms operating within the jurisdiction of Islamic Shariah are entirely different from conventional businesses as they have to follow different strategies in the short term and long term management of financial affairs. Return on equity is used as a measure of profitability of the firm.Cash Conversion cycle and its components are used to observe the working capital management practices of firms, while the square of Cash conversion cycle is used to check whether excessive investment in working capital harms the performance of firms. Cash to asset ratio, cash conversion efficiency, current ratio, size and variability of net operating income are the control variables in both regression models. To the best of our knowledge it is the first study that portrays working capital management and firm performance relationship in companies converging to the

jurisdiction of Islamic Shariah. Rest of the paper is organized as follows. Section 2 summarizes the past empirical work relevant to our area at home and abroad. Data and emperical framework is elaborated in section 3. Section 4 discusses the results and section 5 concludes the study.

2 REVIEW OF LITERATURE

As one of the key areas in corporate finance, besides long term financing and capital budgeting decisions, working capital management is a very important component of corporate financial decision making. For the first time (Smith 1980) pointed out the trade-off between liquidity and profitability. He claimed that approaches that maximize firm liquidity do not maximize firm profitability. Conversely, sole focus on liquidity will harm the profit motive of firms. Efficient management of working capital helps organizations to adjust quickly to variations in the market fundamentals such as fluctuation in interest rate and change in prices of raw material (Appuhami 2008).

2.1 Studies in the context of Pakistan

(Afza and Nazir 2008) found that aggressive working capital policies tend to decrease profitability. Results reported significant differences between working capital investment and financing policies across different industrial segments. In another study, (Nazir and Afza 2009) argues that investors prefer the stocks of the firms that implement an aggressive policy for the management of their current-liabilities. However, conservatie working capital management policies were reported more appropriate to increase profitability.

(Raheman et al. 2010) revealed that working capital management plays a leading role in profitability of Pakistani manufacturng firms. They proposes that companies are adopting conservative working capital management policies

and there is a substantial room for improving the receivables and payment policies. Findings suggest that manufacturing firms should hire specialized finance managers to ensure efficient working capital management. However, (Ali 2011) witnessed contrasting results while reporting the relationship between working capital management and profitability for textile sector of Pakistan. Using return on equity, return on asset, economic value added and profit margin as profitability measures study reported a positive association between working capital management and profitability proxies, revealing that profitability increases with an increase in the length of net trade cycle for sampled firms. (Chhapra and Naqvi 2010) also observed a positive and statistically significant relationship between working capital and profitability in listed textile firms of Pakistan. Using panel data estimation technique on 100 listed firms, (Sial and Chaudhry 2012) found a significant negative association between all the working capital measures and return on assets, a profitability measure. Moreover, findings depicted that the more days a firm takes to make payment to the creditors the less will be the operating returns.

2.2 Overseas studies

Among overseas studies, (Lazaridis and Tryfonidis 2006) shows that a shorter net trade cycle increase profitability of the firms listed on Athens stock exchange. Building on the empirical results, they proposes that financial experts should develop and implement policies for achieving an optimal level of working capital to increase the profitability. (Zariyawati et al. 2009) explored the link between length of net trade cycle and profitability using six diverse economic sectors of Malaysian economy. Emperical evidence supports significant negative relationship between duration of net trade cycle and firm profitability. From the perspective of Jordan, (Abuzayed 2012) inspected the effects of working capital management on

accounting and market performance of the firms listed on Amman stock exchange for 2000 to 2008. Study revealed that that cash conversion cycle has a positive link with the accounting performance measure, deducing that more profitable firms were less motivated to manage their working capital efficiently. However, a negative and insignificant relationship between cash conversion cycle and market performance shows that Jordanian stock investors did not accounted for firm's working capital efficiency in their investment decisions.

(Baños-Caballero, García-Teruel, and Martínez-Solano 2014) used a quadratic regression model to explore working capital management and corporate performance trade-off in non-financial firms of United Kingdom. Results reported an inverted U-shaped association between net trade cycle and performance, referring that each firm has a particular optimal working capital level and investment in working capital, lower than that optimal level enhances firm performance. However, investment in excess of that optimal point negatively affects corporate performance. Implication is that firms shall try to strike the optimum point in order to maximize firm performance. In the context of China, (Akbar 2014) revealed a significant negative relationship between cash conversion efficiency and profitability in an unbalanced panel of 77 listed textile firms. Findings suggest that marketing efforts should be focused upon increasing the inventory turnover in order to ensure that funds are not tied up in the stock of goods. Furthermore, recovery department should design such policies that enhance the speed of collecting account receivables.

3 DATA AND EMPIRICAL FRAMEWORK

The data for the study was collected from OSIRIS database for the period 2006-2013. Karachi Meezan index is composed of 30 companies that satisfy the criteria of Shariah supervisory

board. Every company must have at least consecutive five years published data to be included into the sample. 26 companies satisfied this criterion and 4 were excluded from the final sample because of non-availability of data. This resulted in an un-balanced panel of 207 firms and year observations. Stata 13 is the econometric package used for empirical analysis. Considering the panel structure of data, fixed-effects and random effects models were employed. These regression specifications offer several benefits. First, companies are heterogeneous in nature so their specific characteristics can influence the values which are hard to measure. Hence, panel data models control the effects of unobservable heterogeneity and provide unbiased results (Himmelberg, Hubbard, and Palia 1999). Second, panel data models also helps to control the effects of possible endogeneity that could be present in the model and can seriously affect the estimation outcomes.

Pearson correlation and fixed-effects and random-effects models were calculated to measure the working capital and performance relationship. Hausman post estimation technique was used to choose the model which provides more consistent estimates between fixed-effects model and random effects model. Fixed-effects is the preferred model as indicated by the Hausman statistic.

3.1 Variables and methodology

To understand the impact of working capital management efficiency on corporate profitability in Karachi Meezan Index-30 firms, we employed the similar research framework introduced by (Shin and Soenen 1998), and subsequently adopted by (Afza and Nazir 2008, Nazir and Afza 2009, Raheman et al. 2010). Return on equity (ROE) is the measures of profitability. ROE provides an indication that how wisely shareholder's money is been used to generate profits. Moreover, Cash conversion cycle and its components are used to measure the working capital management efficiency of firms. Square of CCC is also included

in the quadratic equation to test whether excessive levels of working capital negatively affect firm's performance indicators as proposed by (Baños-Caballero, García-Teruel, and Martínez-Solano 2014). This variable also provides a deeper insight about the existence of an optimal level of working capital in an Islamic market index of Pakistan. Additionally, following previous literature several firm specific variables like cash to asset ratio, cash conversion efficiency, current ratio, size, and variability of net operating income are incorporated as control variables in our regression models see e.g., (Abuzayed 2012)

3.2 Models specification

Following model is employed to probe the performance effects of working capital management.

$$ROE_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 CCCSQ_{it} + \beta_3 CTA_{it} + \beta_4 CCE_{it} + \beta_5 CR_{it} + \beta_6 FSIZE_{it} + \beta_7 VAROP_{it} + e_i \quad (1)$$

$$ROE_{it} = \beta_0 + \beta_1 DAR_{it} + \beta_2 DI_{it} + \beta_3 DAP_{it} + \beta_4 CTA_{it} + \beta_5 CCE_{it} + \beta_6 CR_{it} + \beta_7 FSIZE_{it} + \beta_8 VAROP + e_i \quad (2)$$

These two models test our hypothesis in its alternative form:

H_0 = Optimal working capital management improves firm's profitability.

In the above mentioned models ROE is return on equity calculated as net income scaled by shareholder's equity. CCC, Cash Conversion Cycle is a measure of firm working capital management which is obtained by using following formula;

CCC=Days account receivable + Days inventory – Days account payables.

CCCSQ is square of Cash Conversion Cycle. DAR, DI and DAP are days account receivable (Account receivable /sales *365), days account payables (Inventory / Sales * 365) and days inventory (Account payable / sales *365) correspondingly. Among control variables, CTA is cash to assets ratio calculated as, Cash scaled by total assets of the firm. CCE stands for, cash

conversion efficiency measured as, Cash flow / operating revenues (%). CR is current ratio of the sampled firms. FSIZE is the size of a firm in reference to its sales volume, it is calculated by taking natural log of the sales. VAROP is variability in net operating income measured by taking Standard deviation of operating profit of each firm for a period of 2006 to 2013. While, (i) and (t) are used to denote firms and time period.

4 RESULTS AND DISCUSSION

This section provides a brief account of empirical analysis conducted to observe the working capital management efficiency and firm performance of Karachi Meezan Index-30 firms. Table 1 provides the descriptive statistics of all the variables employed in this paper.

Table 1 Descriptive statistics

Variables	Mean	Standard Deviation	Minimum	Maximum
ROE	20.20034	29.11178	-232.27	90.64
CCC	61.11161	61.71428	-126.1	274.50
CCCSQ	7524.88	11487.82	.193187	75352.9
DAR	47.93285	60.60556	.17	323.5
DI	48.33767	38.03366	.425215	232.48
DAP	35.16222	48.98005	.01	327.4
CTA	.139104	.132413	.00283	.4751
CCE	16.72087	15.24016	.44	66.69
CRATIO	1.56657	1.171347	.26	8.74
FSIZE	17.49711	1.280678	14.13	20.8187
VAROP	.0700374	.1771412	.00005	1.6883

Mean of ROE is 20% while minimum and maximum values are -232% and 91% respectively. A possible explanation for this variation is that all the companies came from diverse industrial groups. Mean value of Cash Conversion Cycle is 61 days. On average, sample firms take 48 days to sell the stock of inventory. Karachi Meezan indexed firms collect payment from creditors in 47.93 days, yet firms took only 35.16 days to make

payment for the purchases of raw material and these are in line with the principles of Islamic Shariah. As Islamic law emphasizes that terms of repayment should be made convenient for the debtor. On the contrary, one should try to return the debt obligation as early as possible. These statistics suggest that firms following the guidelines of Islamic Shariah are more ethical in the management of account receivables and payables. Mean of cash to assets ratio indicates that on average firms retain 13.91% of their assets in the form of cash with a standard deviation of 13.24%. Cash conversion efficiency is 16.72%. But a volatility rate of 66% provides evidence of significant differences in the cash conversion efficiency of sampled firms. Current ratio has an average of 1.56 which shows that firms have sufficient current assets to repay their current obligations.

Table 2 Pearson product moment coefficient of correlation

	ROE	CCC	CCCSQ	DAR	DI	DAP	CTA	CCE	CR	FSIZE
CCC	0.17** (0.01)									
CCCSQ	-0.01 (0.85)	0.83*** (0.00)								
DAR	0.01 (0.79)	0.35*** (0.00)	0.51*** (0.00)							
DI	-0.19** (0.004)	0.47*** (0.00)	0.37*** (0.00)	-0.36*** (0.00)						
DAP	-0.34*** (0.00)	-0.45*** (0.00)	-0.13* (0.05)	0.50*** (0.00)	-0.26*** (0.00)					
CTA	0.42*** (0.00)	-0.14** (0.03)	-0.17** (0.01)	-0.21*** (0.00)	-0.23*** (0.00)	-0.27*** (0.00)				
CCE	0.33*** (0.00)	0.46*** (0.00)	0.38*** (0.00)	0.18*** (0.00)	-0.01 (0.78)	-0.37*** (0.00)	0.14** (0.03)			
CR	0.23*** (0.00)	0.48*** (0.00)	0.49*** (0.00)	0.31*** (0.00)	-0.12* (0.07)	-0.31*** (0.00)	0.25*** (0.00)	0.66*** (0.00)		
FSize	0.12* (0.07)	-0.25*** (0.00)	-0.10 (0.13)	0.39*** (0.00)	-0.63*** (0.00)	0.32*** (0.00)	0.03 (0.66)	-0.17** (0.01)	0.11* (0.09)	
VARNI	0.12* (0.06)	-0.10 (0.12)	-0.08 (0.23)	-0.08 (0.21)	-0.10 (0.14)	-0.04 (0.53)	0.10 (0.12)	0.05 (0.41)	0.03 (0.61)	-0.12* (0.07)

Note: ***, ** and * presents significant level at 1%, 5% and 10% correspondingly

Table 2 presents the results of Pearson product moment coefficient of correlation. This correlation coefficient indicates the degree of linear relationship between two or more variables. CCC has significant positive correlation with both ROE which demonstrate that Karachi Meezan Indexed firms have further room for investment in working capital. One possible reason for

this under investment could be that firms have to use lesser interest bearing debt in order to comply with the guidelines of Shariah supervisory board. A Positive and statistically significant correlation coefficient is found between ROE and all the control variables (CTA, CCE, CR, FSIZE and VARNI). However, DI is negatively correlated with both ROE indicating that Karachi Meezan Indexed firms can enhance their performance by increasing the inventory turnover.

Regression results could be biased if multi-collinearity exists amongst explanatory variables. Although, few independent variables posted significant correlations with each other, yet it's hard to predict multi-collinearity just by looking at the correlation matrix. In order to obtain more robust results, we applied variance inflation factors technique to measure the level of collinearity among the independent variables in our regression models.

Table 3 Variance inflation factor analysis

	Model 1		**Model 2**	
Variables	**VIF**	**Tolerance**	**VIF**	**Tolerance**
CCC	7.12	0.140467		
CCCSQ	5.23	0.191131		
DAR			4.02	0.248581
DI			3.05	0.327776
DAP			3.40	0.293686
CTA	2.57	0.389045	2.87	0.348970
CCE	4.24	0.235710	4.24	0.236038
CR	6.51	0.153573	6.78	0.147560
FSIZE	3.89	0.257400	10.28	0.097305
VARNI	1.18	0.843949	2.87	0.348970

Table 3 presents the results of variance inflation factor analysis. A variation inflation factor up to 10 depict that variables have no multi-collinearity (Kennedy 2008). Furhtermore, tolerance level of 0.1 or more is also an indication that multicollinearity will not harm the results of regression estimates (Hair et al. 1995). VIF analysis disclosed that explanatory variables of both regression models satisfy this

criterion as VIF value is far below 10 in all instances except the variable 'FSIZE' in second model which have VIF value slightly over 10. But this small increase in value is negligible. So, we can proceed with further analysis as there is no problem of multi-collinearity between explanatory variables. Additionally, Pesaran CD test was applied to identify that whether there is any serial correlation among residuals of our regression models. We apply the test on model 1 (p=1.22) and model 2 (p=1.08) separately. Insignificant P-Values illustrated that there is no serial correlation among the residuals of these regression estimates.

Finally, we have applied panel fixed-effects and random-effects models to ensure the robustness of results. Hausman post estimation technique was used to choose the model which provides more consistent estimates between fixed-effects model and random-effects model. Null hypothesis that random effect model is appropriate is strongly rejected by a Chi-square statistic of 28.36 therefore fixed effects model is calculated in both cases for more robust estimates.

Results are presented in table 4.

Table 4 Fixed-effects model

ROE as dependent variable		
Variables	**Model 1**	**Model 2**
Constant	-192.1 (0.001) ***	-2.70 (0.008)***
CCC	.2487 (0.001)***	
CCCSQ	-.0008 (0.006) ***	
DAR		.13289 (0.034) **
DI		.03908 (0.561)
DAP		-.15507 (0.028) **
CTA	53.61 (0.024)**	52.26 (0.032)**
CCE	1.128 (0.000)***	1.107 (0.000)***
CR	-2.640 (0.276)	-3.557 (0.150)

FSIZE	10.27 (0.001)***	9.496 (0.007)***
VARNI	16.56 (0.042)**	15.67 (0.064)*
R^2	Within : 0.2692 Between : 0.3803 Overall : 0.3173	Within : 0.2434 Between : 0.3283 Overall : 0.2743
F-statistics	4.93 (0.0000)***	8.27 (0.0000)***

*, **, and *** specifies significance level at 10%, 5% and 1% respectively.

Table 4 presents the results of fixed-effects model. ROE is a better measure to proxy the profitability because it reflects that how efficiently the company has used the owner's investment to generate earnings. CCC has a significant positive coefficient with ROE suggesting that Karachi meezan Index-30 firms have scope of further investment in working capital. One possible reason for this positive relationship could be that in an interest based economy, Shariah complaint businesses have fewer options to finance different heads of working capital. However, CCCSQ has a negative relationship with ROE. These results confirm the existence of an optimal level of working capital for each firm up till which profitability has a positive relationship with CCC. However, if firms go beyond that optimal level then this relationship becomes negative. Consistent with the work of (Baños-Caballero, García-Teruel, and Martínez-Solano 2014) these results verify the existence of concave relationship and provide strong support to our hypothesis that optimal working capital management improves the profitability of an organization. Days accounts receivable have significant positive coefficient with ROE, inferring that firm earning higher profits have more funds to advance their customers thus have higher account receivables and these findings are in line with the work of (Deloof and Jegers 1996). Similarly, days inventory also have a positive coefficient with profitability. This is because higher inventory illustrate higher sales volume and that leads to higher profits. Similar to (Deloof 2003), days account payables have a significant negative relationship with profitability

disclosing that less profitable firms spend more time to pay their short term obligations. Other control variables like cash to asset ratio also carries positive and significant coefficient, reveals that profitable firms have more cash available to pay for current liabilities. Likewise, higher cash conversion efficiency ratio was found positively related with profitability. However, Current ratio has negative coefficient with firm profitability suggesting that excessive investment in current assets like (cash, accounts receivable and inventories) can harm profitability as the investment will lock up in current assets and firm will not be able to take profitable investment projects. Size and variability of net operating income also have a positive relationship with profitability. Contrary to the results of (Abuzayed 2012) VARNI is found positively linked to profitability. The most plausible explanation for this result is that firms with high variability of net operating income takes more risky investment options thus have higher profit performance.

5 CONCLUSION

After the financial and liquidity crises of 2008 the importance of short-term financial management has increased across the globe. Working capital management has gained more attention in the emerging and developing economies as firms working in these economies have less access to short-term funds. Short-term assets and liability management is a precondition to attain long-term profitability. Owing to the fact that Shariah complaint businesses have to follow a different set of guidelines to manage their operations. This study inspects the possible effects of working capital management efficiency on profitability of firms listed on Karachi Meezan Index-30. The results of descriptive statistic shows that firms take more days in collection of receivables while makes payment to creditors in fewer days which is quite opposite to the conventional short

term financial management theory. This reflects that companies following the Islamic Shariah are more ethical in their short term financial management. The study confirms the finding of (Baños-Caballero, García-Teruel, and Martínez-Solano 2014) as a concave relationship is found between working capital and firm performance in Shariah compliant firms of Pakistan. The results of regression models suggest that there exist an optimal working capital level and the relationship between investment in working capital and firm performance stays positive until that optimal level is reached. But beyond that inflection point excessive investment in working capital negatively affects firm performance. Moreover, a positive relationship between CCC and performance measures also depict that Karachi Meezan Indexed firms have room for further investment in working capital to optimize performance. One possible reason for this underinvestment could be that in developing countries firms have limited access to short term finances. In addition, Karachi Meezan Indexed firms are even more constrained and have fewer financing options as these firms have to keep their interest bearing debt below the limit defined by Shariah supervisory board. The supplementary findings demonstrate that size of the firm is negatively linked to performance proxies because of lesser potential for further growth. Cash to total assets and cash conversion efficiency have positive coefficient with performance measures indicating that more liquid firms have sound financial standing. Based on the empirical findings it is recommended that financial managers shall strive to achieve the optimal working capital level that maximizes firm performance. Summing up, building on the work of (Baños-Caballero, García-Teruel, and Martínez-Solano 2014) the study also provides a perspective for optimal working capital in the developing economy of Pakistan.

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REFERENCES

1. Abuzayed, Bana. 2012. "Working capital management and firms' performance in emerging markets: the case of Jordan." *International Journal of Managerial Finance* 8 (2):155-179.
2. Afza, Talat, and Mian Sajid Nazir. 2008. "Working capital approaches and firm's returns." *Pakistan Journal of Commerce and Social Sciences* 1 (1):25-36.
3. Akbar, Ahsan. 2014. "Working Capital Management and Corporate Performance: Evidences from Textile Sector of China.". *European academic research* 2 (9):11440-11456.
4. Ali, Shahid. 2011. "Working Capital Management and the Profitability of the Manufacturing Sector: A Case Study of Pakistan's Textile Industry Shahid Ali." *Lahore Journal of Economics* 16 (2):141-178.
5. Appuhami, BA Ranjith. 2008. "The impact of firms' capital expenditure on working capital management: An empirical study across industries in Thailand." *International Management Review* 4 (1):8.
6. Baños-Caballero, Sonia, Pedro J García-Teruel, and Pedro Martínez-Solano. 2014. "Working capital management, corporate performance, and financial constraints." *Journal of Business Research* 67 (3):332-338.
7. Chhapra, Imran Omer, and Nousheen Abbas Naqvi. 2010. "Relationship between efficiency level of working capital management and profitability of firms in the textile sector of Pakistan." *Indus Journal of Management and Social Sciences* 4 (1):30-42.

8. Deloof, Marc. 2003. "Does working capital management affect profitability of Belgian firms?" *Journal of business finance & accounting* 30 (3-4):573-588.
9. Deloof, Marc, and Marc Jegers. 1996. "Trade credit, product quality, and intragroup trade: some European evidence." *Financial management*:33-43.
10. Filbeck, Greg, and Thomas M Krueger. 2005. "An analysis of working capital management results across industries." *American Journal of Business* 20 (2):11-20.
11. Hair, j, R E Anderson, R L Tatham, and W Black. 1995. *Multivariate Data Analysis*. New York: Prentice Hall.
12. Himmelberg, Charles P, R Glenn Hubbard, and Darius Palia. 1999. "Understanding the determinants of managerial ownership and the link between ownership and performance." *Journal of financial economics* 53 (3):353-384.
13. Honohan, Patrick. 2008. "Cross-country variation in household access to financial services." *Journal of Banking & Finance* 32 (11):2493-2500.
14. Kennedy, P. 2008. *A Guide to Econometrics*. Oxford: Wiley-Blackw.
15. Lazaridis, Ioannis, and Dimitrios Tryfonidis. 2006. "Relationship between working capital management and profitability of listed companies in the Athens stock exchange." *Journal of financial management and analysis* 19 (1).
16. Nazir, Mian Sajid, and Talat Afza. 2009. "Impact of aggressive working capital management policy on firms' profitability." *IUP Journal of Applied Finance* 15 (8):19.
17. Raheman, Abdul, Talat Afza, Abdul Qayyum, and Mahmood Ahmed Bodla. 2010. "Working capital management and corporate performance of manufacturing sector in Pakistan." *International Research Journal of Finance and Economics* 47 (1):156-169.

18. Shin, Hyun-Han, and Luc Soenen. 1998. "Efficiency of working capital management and corporate profitability." *Financial practice and education* 8:37-45.
19. Sial, Muhammad Safdar, and Aqsa Chaudhry. 2012. "Relationship between Working Capital Management and Firm Profitability: Manufacturing Sector of Pakistan." *Available at SSRN 2105638*.
20. Smith, Keith. 1980. "Profitability versus liquidity tradeoffs in working capital management." *Readings on the management of working capital*:549-562.
21. Van Horne, JC, and JM Wachowicz. 2004. "Fundamentals of Financial Management, Prentice Hall Publishers, New York."
22. Zariyawati, MA, MN Annuar, H Taufiq, and AS Abdul Rahim. 2009. "Working capital management and corporate performance: Case of Malaysia." *Journal of Modern Accounting and Auditing* 5 (11):47.