

Impact of Working Capital Management on the Profitability of Firms: Case of Pakistan's Cement Sector

Salman Sarwat
BBSUL, Karachi, Pakistan
Email: salmansarwat@hotmail.com

Danish Iqbal, Baseer A. Durrani, Khalid H. Shaikh, and Farhana Liaquat
Bahria University, Karachi Campus, Pakistan
Email: danish.iqbal@bimcs.edu.pk, {baseer.durrani, dr.khalid}@bimcs.edu.pk, farhanaliaquat2013@yahoo.com

Abstract—Working capital is the life blood for an organization; no business can be run successfully without it. Since there is an inverse relationship between liquidity and profitability therefore a firm should maintain a delicate balance of working capital so that smooth operations can be conducted without disturbing the profitability. There are studies proving both, relevancy and irrelevancy of working capital management with profitability. Recently, researchers have analyzed working capital management component wise. The aim of this study is also to find out the component wise connection between the effective management of working capital and productivity in the context of Pakistan's cement sector. Panel data of 18 companies listed in KSE from cement sector from 2007 to 2011 is collected. Profitability of Companies, being dependent variable, is gauged through Return on assets (ROA). Efficiency of working capital management is calculated through six accounting ratios. Panel Least square method of regression is applied for analysis. Results suggest that assets turnover ratio (ATO), current ratio (CR) and size of the firm (SLS) have positive and significant affiliation with the return on assets (ROA). Inventory, account receivable and payable, the most important elements of working capital, found insignificant. Thus, it can be inferred from this research that in cement sector of Pakistan, efficiency of working capital management does not play any significant role in enhancing the profitability of firms.

Index Terms—efficient working capital management, components of working capital, profitability

I. INTRODUCTION

Efficient management or utilizing the organizational resources is an essential for the success of any organization. These resources can be bifurcated into long term assets and short term assets. Long term assets represent installed capacity of the firm whereas short term assets represent the nature and requirement of the daily operations of the firms. Therefore, short term assets

are referred as working capital. Working capital is conceptually defined as “the investment used to meet the requirement of day to day operations”. The role of short term liabilities is also very important in day to day working of firms. Therefore, the term net working capital is used for the difference between short term assets and short liabilities. This concept is also very important for gauging the efficiency of the firms.

For any organization, working capital is as important as the blood and nervous system for the life and no business can be run successfully without working capital management. Those firms, which manage their working capital properly and time to time, can maintain liquidity by continuous flow of production without facing any financial problem related to short-term liabilities like wages, payment of salaries, purchasing of raw material, overhead and so on. Working capital serves as lubricant in the operations of any business.

It is also a fact that too many liquid assets reduce the profitability of the firms. It means that there is an inverse relationship between liquidity and profitability. For instance, If the firm is invest in bulk in working capital i.e. excess than its requirement, then the revenue, which could be generated from investing those funds in fixed assets, will be shrunk. Besides this, firm will have to bear the cost of handling excessive amount of inventory as well as the cost of storage of inventory for longer periods. This situation demands that a firm should maintain a delicate balance of working capital so that smooth operation can be achieved without disturbing the profitability. This delicate balance has always been the area of investigation for researchers in the field of finance and accounting. Working capital gives us a good parameter to find out the delicate balance. The desired purpose of working capital management is to enhance profitability while maintaining adequate liquidity.

A. Background of Study

Various researches have been conducted on working capital to find out the importance, nature and relationship of working capital management and its components with

profitability of firms. For instance, Smith [1] (1980) highlighted the importance of working capital management in case firm's profitability and risk value. According to Filbeck and Krueger [2] (2005), the significance of management of WC is indisputable. Kargar and Blumenthal [3], (1994) also discussed that the tradeoff between the profitability and liquidity is the major competent in management of WC. They concluded that proper management of working capital reduces the chances of bankruptcy. Some researchers like Smith et.al [4] (1997) are of the opinion that profitability and liquidity is a salient roll of management of working capital.

Recent researches on working capital management are more inclined to investigate the relationship of working capital management with profitability. These researches divide working capital into its components like account receivable, inventory, cash and account payable etc. to know impact of each component on profitability of firm separately. Such researches further go to know the impact of working capital on various industrial sectors; because the dynamics of different sectors are different. Some industries have to maintain high levels inventories whereas others work with large credit sale and credit purchases. Author is using same approach on the cement sector of Pakistan.

B. Cement Sector

Cement sector is highly important sector for any economy. It is argued that 20 other industries are interconnected with cement and construction sector. In Pakistan, cement sector is a vibrant, growing and employment generating sector. With the production capacity of 20 million tons out of that production, 11 million tons cement exported from Pakistan which contributes excellently in the growth of Pakistani economy. Pakistan is ranked 5th in the cement exports. Most of cement producing firms are listed in KSE.

C. Objectives of Study

This study is aimed to find out the connection between the effective management of working capital and productivity in the context of Pakistan's cement sector. This query will be determined by studying the effect of different components of working capital management on the profitability of the cement sector companies.

II. LITERATURE REVIEW

Every business requires working capital for its day to day business operations. Working capital is an important parts of business strategy, which is fundamental for continuous operations of the business. The task of financial management cannot be completed without proper working capital management. A number of studies have been conducted on the topic of working capital management. These studies can be divided into following three categories:

A. Studies Explaining Concept & Importance

These studies deal with the understanding of working capital management, explanation of its components and

importance of working capital in business decisions. For instance, Lamberson [5] (1995) highlighted the importance of working capital. According to him, one of the most significant issues in the business is the management of the working capital; he took the sample of 50 small firms of United States for 12 years time period from 1980 to 1991. Similarly, According to Padachi [6] (2006), efficiency of management of WC is important for the survival, success and achievements of organization to boost the performance and input to economic growth.

Few authors have also discussed the strategies of working capital management. For example, Afza and Nazir [7] (2007) discussed that the policies of working capital management may either be conservative or aggressive. In conservative policy, firms use more capital as current but in aggressive policy, firms place less amount of capital in current assets. For determining the degree of aggressiveness, they studied 208 public limited companies in Karachi stocks exchange (KSE) from 1998 to 2005. Their analysis also suggests that there is an inverse link between profitability and the degree of aggressiveness of those policies.

B. Studies Explaining the Relevancy with Profitability

Such studies investigated the role of working capital management and its components in the profitability of firms. According to the views of Viskari, Pirttila and Karri [8] (2011), working capital has a necessary part in term of short-term investment and cash flow. For their research they studied various components of management of WC including, inventories, accounts receivable and account payables. These all components of management of WC have positive relation with the productivity of the firms.

From Eljelly [9] (2009) point of view, the effective management of WC are engaged with arrangement, controlling and planning of short term assets and short term liabilities in such a way that elimination of lack of ability of risk, and fulfill short-term obligations with the avoidance of excessive savings in short term assets, and to pay back the short term debts of the firms, effective management of working capital de motivates the needs of lending funds. Afza and Nazir [7] (2007) states that firm's growth opportunities and return to shareholder increases when free cash flow is increases and free cash flow only increases when the use of working capital become efficient. Gill, Biger and Mathur [10] (2010) studied 88 companies of New York for the period from 2005 to 2007; they found that if the period of collection of an account receivable is longer than profitability of the firm will low.

C. Studies Explaining the Negative Impact on Profitability

These studies, though explaining relationship, argued the adverse results on profitability. Siddiquee and Khan [11] (2009) highlighted that in efficiency of management of working capital not only decreases productivity but also lead the firm toward financial crises. Thus each organization requires mandatory amount of WC. In the

views of Danuletiu [12] (2010), profitability has inverse relationship with the components of working capital management. He studied the 20 companies of Alba countries. Gamesman [13] (2007) studied telecom sector and has the same conclusion.

D. Studies Explaining the Mixed Views on Profitability: Component Wise

More detailed analyses are conducted in such researches; and various components are separate regressed and analyzed in the context of profitability of the firms. Tauringana and Afrifa [14] (2013) analyzed on the basis of 133 companies' panel data that accounts receivable and accounts payable management is important for profitability but inventory and cash conversion cycle are not so important. David [15] (2010) performed regression analysis on 30 listed companies in Nairobi stocks exchange (NSE) taking data from 1993 to 2008; and come up with the results that (1) there is highly inverse affiliation between average collection period and profitability, (2) there is highly direct affiliation between the inventory conversion period and profitability, and (3) there is highly direct relation between profitability and average payment period. Few researchers are carried out the study of cash conversion cycle and liquidity relationship of Greece's food sector. They concluded that there is positive relationship among short term ratio (CR), average age of inventory (AAOI), average collection period (ACP) and cash conversion cycle (CCC) and negative relationship among cash conversion cycle (CCC) and average payment period (APP).

E. Regional Studies

Kaur and Singh [16] (2013) conducted research on 164 manufacturing companies from 19 different industries listed in Bombay stock exchange (BSE), from 2000 to 2010 data and found significant effect of working capital management on profitability. In, another study of India, researcher took a sample of 263 nonfinancial companies listed in Bombay stocks exchange covering duration from 2000 to 2008. They observed that management of WC has direct relation with the productivity of the firm, whereas in day's inventory and in days accounts payable are negatively correlated with each other. Their result further shows that in day's accounts receivable and cash conversion has positive relationship with each other.

F. Studies Related to Pakistan

Rehman, Afza, Qayyum and Bodla [17] (2010) studied the impact of working capital on the profitability. They researched on manufacturing sector of Pakistan with 10 years panel data. They concluded that the performance of the firm is significantly related to the cash conversion cycle and average age of inventory. It suggested that conservative policy is a better choice in Pakistan. Shakoor, Khan and Nawab [18] (2012) studied the connection between profitability and management of Working Capital on 25 manufacturing companies listed in Karachi stocks exchange (KSE) covering a period from 2001 to 2010. Their results indicate that days inventories outstanding (DIO), quick ratio (QR), debt

equity ratio (DER), and return on equity (ROE) have positive association with the profitability whereas days sales outstanding (DSO) and short term asset ratio (CR) have negative association with the profitability.

Zubairi [19] (2010) worked on impact of management of Working Capital and Capital Structure on productivity in the automobiles sector of Pakistan. According to him, the profits figures like net profits, investment, financing and operating activities, are subjective by management choice and also the environmental issue either they are internal or external. Short term ratio, size of the firm and leverage ratio was taken as variables of this research. Supplementary analysis is used for the variability of the variables. After the analysis they concluded that those major elements have positive correlation between them and in the end they also suggested that how firm's managers of automobiles sector should take action to enhance the profitability by using efficient management of WC. Ahmed [20] (n.d.) made an investigation to found the impact of management of WC and the productivity of the firm for nonfinancial companies listed in Karachi Stock. The sample size was 253 companies. Pearson correlation and OLS regression techniques are used for analyses. Results indicated that there is negative relationship of both, return on assets (ROA), and return on equity (ROE) with working capital management.

G. Variables Used in the Studies

There are number of components of working capital like cash, cash equivalent, marketable securities, account receivables, account payables, inventories, running finance, prepaid, short term accruals etc. All these components are then used in various accounting ratios to portray the clear picture of working capital position and management. Different studies used different accounting ratios not only for working capital management but also for company's financial performance. For instance, Sohail, Zaman and Alam [21] (2011) studied panel data of 14 Pakistani companies from 2004 to 2009. They used Short Term Asset To Total Asset Ratio (CATTA), Current Ratio (CR), Liquidity Ratio (LR), Inventory Turnover Ratio (ITO), Age Of Debtors (AOD), Short Term Asset To Total Sales Ratio (CATTS) And Age Of Creditor (AOC) as Predictor Elements and they used only one Dependent Variable of Return On Investment.

Mukhopadhyay [22] (2004) stated that working capital is necessary for the firms to keep up its liquidity and productivity. In another study by Afza and Nazir [7] (2007), they used short term liabilities to short term assets ratio (CLTAR) and short term assets to total assets ratio (CATAR) and for the measurement of the impact of those policies on the presentation of the firm's productivity they used return on equity (ROE) and return on assets (ROA). While study conducted by Rehman, Afza, Qayyum and Bodla [17] (2010) uses inventory age, average payment period (APP), average collection period (ACP), short term ratio (CR), short term liability to total assets ratio (CLTAR), gross WC turnover ratio (GWCTR), short term assets to total assets ratio (CATAR) sales growth (SG), size of the firm as logarithm of sales (LOS) and debt ratio (DR) as independent variables and

net operating profitability (NOP) as an dependent variable.

Danuletiu [3] (2010), in his research he used net working capital (NWC) to find the financial position, working capital necessities (WCN) as a measure of short term financial balance and net treasury (NT) as a difference of both, net WC and working capital necessities. Return on assets (ROA), return on sales (ROS) and return on equity (ROE) were applying to measures the effectiveness of the firms. According to the Gamesman [13] (2007) optimization of WC balance is minimizing the WC requirement and realizing maximum achievable revenue. He conducted his study on the sector of telecommunication and equipment industry by taking 349 firms for seven years. He used various variables for his research as days of sales outstanding (DSO) inventory turnover in term of days of inventory outstanding (DIO), days of payable outstanding (DPO), days of working capital (DWC), cash conversion efficiency (CCE), income to total assets ratio (IA), income to sales ratio (IS) and short term ratio (CR). He concluded his study as; in this industry there is an inverse connection between management of WC and prosperity of the firm.

H. Most Commonly Used Variables for Working Capital

In the abovementioned studies, there are some accounting ratios, which are used frequently by the researchers to represent working capital management. Different nomenclatures are also used for the same ratios like inventory age and days inventory outstanding are same. Similarly, there are few ratios that calculate same components but with different angle such as, Debtor age and Account receivable turnover, both calculate receivable management efficiency but one ratio define it in days while other ratio in times. These ratios with single nomenclature are listed below:

- Working Capital Cash Conversion Cycle (CCC)
- Net Working Capital To Total Assets (NWCTA),
- Net Working Capital Turnover (WCTO),
- Inventory Turnover (ITO),
- Debtor Turnover (DTO),
- Short Term Assets Turnover (CATO),
- Inventory Age (AOI),
- Debtor Age (AOD),
- Creditor Age (AOC)

III. RESEARCH METHODOLOGY

A. Research Objective

The objective of this study is to identify the variables of working capital management that affect the profitability of firms operating in construction and material sector (cement) in Pakistan.

B. Data Sampling

For this study, authors have selected 18 companies from cement sector listed in stock exchange; 5 year secondary data from 2007 to 2011 is collected from

Karachi stocks exchange (KSE) and firm's official websites. Data validation is done through website of State Bank of Pakistan (SBP). "EViews 7" software is used in this research paper. Local as well as international literatures are used to develop the foundation of this research paper. Following variables for measurement of working capital and profitability of the companies:

C. Variables

The variables are identified from literature review.

- Dependent variables
 - 1) Return on assets (ROA)
- Independent variables
 - 1) Days inventory outstanding (DIO)
 - 2) Days sales outstanding (DSO)
 - 3) Days payable outstanding (DPO)
 - 4) Current liabilities to total assets ratio (CLTA)
 - 5) Assets turnover ratio (ATO)
 - 6) Inventory turnover ratio (ITO)
 - 7) Current ratio (CR)
 - 8) Size of the firms (SLS)

D. Variables Description

- Return On Assets (ROA)

Return on assets (ROA), benchmarking profitability, is the ratio of net income to total assets of the business. It measures the efficiency of the business in using the assets to generate net income.

- Days Inventory Outstanding (DIO)

Days Inventory Outstanding (DIO) is an efficiency ratio, showing how long it takes on average to sale inventory once raw material is purchased. This is an important component of working capital.

- Days Sales Outstanding (DSO)

Days Sales Outstanding (DSO) is a determinant of average number of days that a firm takes to collect its revenue in cash after a sale has been made. Smaller DSO indicates that a firm collects its accounts receivable in fewer days, whereas longer DSO indicates slower collection.

- Days Payable Outstanding (DPO)

Days Payable Outstanding (DPO) is a firm's to be paid period which indicates that how long it takes a firm to pay its payables invoiced by creditors. Lower DPO is considered effective.

- Short Term Liabilities To Total Assets Ratio (CLTA)

Short term liabilities to total assets ratio (CLTA) is a liquidity ratio which indicates that short term liabilities as a ratio of total assets.

- Assets Turnover Ratio (ATO)

Assets turnover ratio (ATO) is the long term efficiency ratio, showing the relationship between sales and total assets. It indicates that how successfully the firm is using its all assets to generate possible revenue.

- Inventory Turnover Ratio (ITO)

This is another measure to show efficiency of the firm in selling its inventory. It gives number of times per

period on average the sale is made and replaced it all inventory.

E. Controlled Variables

- Current Ratio (CR)

Current ratio (CR) is a liquidity ratio depicting current asset position as compared to its short term liabilities.

- Size Of The Firms

Size of the firms is controlled through volume of net sales of the companies.

F. Hypotheses

For making the research on “effects of management of WC on firm’s performances on the cement sector of Pakistan”, hypotheses are following;

H1= Profitability has positive relationship with days inventory outstanding (DIO).

H2= Profitability has significant relationship with Days sales outstanding (DSO).

H3= Profitability has significant relationship with Days payable outstanding (DPO).

H4= Profitability has negative relationship with Short term liabilities to total assets ratio (CLTA).

H5= Profitability has positive connection with Assets turnover ratio (ATO).

H6= Profitability has positive relationship with Inventory turnover ratio (ITO).

H7= Profitability has positive relationship with current ratio (CR).

H8= Profitability has positive relationship with size of the firm (SLS).

G. Model

Following model is used in this research paper to stumble on the relationship between dependent variable and independent variables.

$$ROA = \alpha + \beta_1 (DIO) + \beta_2 (DSO) + \beta_3 (DPO) + \beta_4 (CLTA) + \beta_5 (ATO) + \beta_6 (ITO) + \beta_7 (CR) + \beta_8 (SLS) \quad (1)$$

IV. ANALYSIS

According to the results, R- square is 0.4486 and adjusted R-square is 0.3941, which shows the prediction power of model. The F statistics of the model is 8.24, which shows that the overall model is significant. After incorporating resultant coefficient values, model can be rewritten as follows:

$$ROA = -1.5978 + 0.0947 (DIO) + 0.0003 (DSO) + 0.0594 (DPO) - 20.8788 (CLTA) + 0.5867 (ATO) - 0.1136 (ITO) + 3.5832 (CR) + 35.2580 (SLS) \quad (2)$$

TABLE I. MAIN REGRESSION MODEL WITH MODEL STATISTICS

Dependent Variable: ROA
 Method: Panel Least Squares
 Date: 05/24/14 Time: 14:40
 Sample: 2007 2011

Periods included: 5

Cross-sections included: 18

Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.597804	2.799223	-0.570803	0.5697
DIO	0.094712	0.179307	0.528211	0.5988
DSO	0.000390	0.000775	0.503498	0.6160
DPO	0.059455	0.227242	0.261637	0.7943
CLTA	-20.87882	4.885184	-4.273906	0.0001
ATO	5.586787	2.572756	2.171519	0.0328
ITO	-0.113698	0.179592	-0.633094	0.5285
CR	3.583239	1.593981	2.247981	0.0273
SLS	35.25807	1.506807	2.360419	0.0207
R-squared	0.448646	Mean dependent var	-1.362889	
Adjusted R-squared	0.394191	S.D. dependent var	9.677740	
S.E. of regression	7.532547	F-statistic	8.238870	
Sum squared resid	4595.881	Prob(F-statistic)	0.000000	
Log likelihood	-304.6942			

To check the multicollinearity among variables, correlation matrix is drawn:

TABLE II. CORRELATION MATRIX

	ROA	Sales	C.R	AT O	IT O	DI O	DS O	DP O	CLT A
ROA	1.0								
Sales	0.4	1.0							
C.R	0.4	0.2	1.0						
AT O	0.2	0.1	0.3	1.0					
IT O	0.0	0.2	0.0	0.3	1.0				
DI O	0.0	0.0	0.1	0.1	0.9	1.0			
DS O	0.0	0.0	0.1	0.0	0.0	0.0	1.0		
DP O	0.2	0.3	0.1	0.3	0.0	0.0	0.0	1.0	
CLT A	0.5	0.2	0.3	0.0	0.0	0.0	0.0	0.0	1.0

The above table found no significant correlation among independent variables as well as correlation between dependent and independent variable except Days inventory outstanding (DIO) and Inventory turnover ratio (ITO), which seems logical.

V. RESULTS

Assets turnover ratio (ATO), current ratio (CR) and size of the firm (SLS) have positive and significant affiliation with the return on assets (ROA). Their coefficient values are 5.587, 3.583 and 35.258 respectively having t values greater than 2. These variables are found positive and significant most of times in previous studies like asset turnover is reported positive and significant by Kaur and Singh [16] (2013), Rehman, Afza, Qayyum and Bodla [17] (2010), whereas current ratio and size of firm are reported positive and significant by Ahmed [20] (n.d.). Short term liabilities to total assets ratio (CLTA) got the probability less than 5% with t value of 4.274, which indicates that CLTA has significant relationship with the return on assets (ROA). This relationship is negative with a very high coefficient value of -20.879. This result confirms the third hypothesis this study. Padachi [6] (2006), and Afza and Nazir [7] (2007) have also got the same results.

Days sales outstanding (DSO) which represents collection period of account receivable and Days payable outstanding (DPO) which represents payment period of account payable, the contribution of both the variables is found insignificant in the profitability of firm according to results; as their t values are 0.503 and 0.262 respectively. Beside significance, the coefficient values, though positive, are too low to consider. Thus, null hypotheses 2 and 3 are also rejected. Similar results are also obtained by Viskari, Pirttila and Karri [8] (2011).

Days Inventory Outstanding (DIO) has positive relationship with profitability of the firm with 0.095 coefficient but this variable is not significant as t value is 0.528. This finding is supported by some previous studies like Faisal, Qayyum and Samina (2012), Abuzayad (2012), Viskari, Pirttila and Karri [8] (2011), Osundina J.A (2014), and Kesseven Padachi [6] (2006). This result can also be crossed checked by Inventory Turnover ratio, which is another variable used in this model. ITO is also insignificant with negative sign of coefficient. Theoretically speaking, DIO and ITO should have same level of significance because both are related to inventory; and their influences on profitability should be in opposite directions because they are reciprocal to each other. Both the conditions are present in our finds.

VI. CONCLUSION

It can be concluded from the results that asset turnover, current ratio and volume of sale contribute positively in the profitability of cement sector companies of Pakistan. Asset turnover represents how efficiently all the assets are being utilized in the operations to generate sales and it is intuitively understandable that efficient utilization of asset will enhance the production, this will provide an opportunity to increase sales without additional assets, increase in sale will consequently increase profit and this scenario definitely results in higher return on asset ratio. As far as current assets are concerned, result indicates that keeping larger current assets vis-à-vis current liability will enhance the profitability for the firm. Higher

current ratio gives an organization more freedom to use its current asset more efficiently. In other words, it can also be said that keeping current liabilities at lower level not only in relation to current asset but fixed asset as well. There is an endorsement of this argument from another result; that is the ratio of current liability with total asset highly influential in the profitability of companies; mere 1% increase in this ratio can reduce the return on assets (ROA) by almost 21%.

The efficiency of account receivable and account payable in working capital management does not affect the profitability of the firm as far as cement sector of Pakistan is concerned. It can also be concluded from results that inventory component of working capital does not have significant association with profitability of the firms. Inventory, account receivable and account payable are the most important elements of working capital and all are found insignificant. Thus, finally it can be inferred from this research that in cement sector of Pakistan, efficiency of working capital management does not play any significant role in enhancing the profitability of firms. Basically, it is the overall efficiency of fixed assets like machinery or plant as well as of current assets from cash to inventory, which is critical in the profitability of firm. This study will be helpful for the Pakistani firms to make effective decision of the management of the working capital to make their firms profitable.

REFERENCES

- [1] K. Smith, "Profitability versus liquidity tradeoffs in working capital management," *Reading on the Management of Working Capital*, USA: West Publishing Firm, pp. 549-562, 1980.
- [2] G. Filbeck, T. Krueger, and D. Preece, "Working capital survey," *Do Selected Firms Work for Shareholders? CFO Magazine*, University of Nebraska-Lincoln, 2007.
- [3] J. Kargar and R. Blumenthal, "Leverage impact of working capital in small businesses," *TMA Journal*, vol. 14, no. 6, pp. 46-53, 1994.
- [4] M. Smith, Beaumont, and E. Begemann, "Measuring association between working capital and return on investment," *South African Journal of Business Management*, vol. 28, no. 1, 1997.
- [5] M. Lamberson, "Changes in working capital of small firms in relation to changes in economic activity," *Mid-American Journal of Business*, vol. 10, no. 2, pp. 45-50, 1995.
- [6] Padachi, "Trends in management of WC and its impact on firms' performance: An analysis of Mauritian small manufacturing firms," *International Review of Business Research Papers*, vol. 2, no. 2, pp. 45-58, 2006.
- [7] T. Afza and M. S. Nazir, "Is it better to be aggressive or conservative in managing working capital?" presented at Singapore Economic Review Conference, August 02-04, Singapore, 2007.
- [8] S. Viskari, M. Pirttila, and T. Karri, "Improving profitability by managing working capital in the value chain of pulp and paper industry," *Inder Science Publishers*, vol. 3, no. 4/2011, pp. 348-366, 2011.
- [9] A. Eljelly, "Liquidity-profitability tradeoff: An empirical investigation in an emerging market," *International Journal of Commerce and Management*, vol. 14, no. 2, pp. 48- 61, 2004.
- [10] A. Gill, N. Biger, and N. Mathur, "The relationship between management of WC and profitability: Evidence from the United States," *Business and Economics Journal*, pp. 1-9, 2010.
- [11] Siddiquee and Khan, "Analyzing working capital performance: Evidence from Dhaka stock exchange (DSE),"
- [12] A. E. Danuletiu, "Management of WC and profitability: A case of Alba county companies," *Annales Universitatis Apulensis Series Oeconomica*, vol. 1, no. 12, 2010.

- [13] V. Gamesman, "An analysis of management of WC efficiency in telecommunication equipment," *Industry Rivier Academic Journal*, vol. 3, no. 2, 2007.
- [14] V. Tauringana and G. A. Afrifa, "The relative importance of management of WC and its components to SMEs' profitability," *Journal of Small Business and Enterprise Development*, vol. 20, no. 3, pp. 453 – 469, 2013.
- [15] M. David, "The influence of management of WC components on corporate profitability: A survey on Kenyan listed firms," *Research Journal of Business Management*, vol. 4, no. 1, pp. 1-11, 2010.
- [16] H. V. Kaur and S. Singh, "Managing efficiency and profitability through working capital: An empirical analysis of BSE 200 companies," *Asian Journal of Business Management*, vol. 5, no. 2, pp. 197-207, 2013.
- [17] A. Rehman, T. Afza, A. Qayyum, and M. A. Bodla, "Management of WC and corporate performance of manufacturing sector in Pakistan," *International Research Journal of Finance and Economics*, vol. 47, pp. 151-163, 2010.
- [18] F. Shakoor, A. Q. Khan, and S. Nawab, "The inter-linkages of working capital and profitability in Pakistan," *International Research Journal of Finance and Economics*, vol. 3, no. 2, 2012.
- [19] H. J. Zubairi, "Impact of working management and capital structure on profitability of automobile firms in Pakistan," in *Proc. Finance and Corporate Governance Conference*, 2011.
- [20] I. Ahmed, "Impact of management of WC on performance of listed non-financial companies of Pakistan: Application of OLS and LOGIT models," in *Proc. 2nd International Conference on Business Management*, vol. 5, no. 11.
- [21] I. Sohail, K. Zaman, and Z. Alam, "The relationship between management of WC and profitability: A case study of cement industry in Pakistan," *Mediterranean Journal of Social Sciences*, vol. 2, 2011.
- [22] D. Mukhopadhyay, "Management of WC in heavy engineering firms-A case study," *Management Accountant-Calcutta*, vol. 39, pp. 317-323, 2004.

Salman Sarwat born in 1977 in Karachi, Pakistan. He secured Gold medal from Karachi University for the faculty of Business Administration and Commerce in 2000. He has also done MS in Management Science from PAF KIET in 2011. He is also associate member of ICMAP and IBP. Currently, he is serving at Benazir Bhutto Shaheed University as Assistant Professor. He has also served Mohammad Ali Jinnah University for seven years, National Bank of Pakistan for five years, ENAR Petrotech Services Pvt. Ltd. and Prime Management Services. He has published several papers in national as well as international journals.

Danish Iqbal born in 1976 in Karachi, Pakistan. He has done M-Phil in Management Science from Bahria University in 2014. He is also an associate member of ICMAP and ICSP. Currently, he is serving at Bahria University as Senior Lecturer. He has also served Mohammad Ali Jinnah University and several other companies which includes (Al Abbas group, Fine Foods Ltd and Worldwide group). He has published several papers in international journals.

Baseer A Durrani: The Author was born in Quetta on 30/07/1985. Author has completed his MSc in Consumer Marketing from University of Liverpool, UK in 2010 and also holds MBA (Masters in Business Administration) in Marketing from Bahria University Karachi, Pakistan. He is currently employed as Senior Lecturer at Bahria University Karachi Campus since 2012 where he teaches courses on Brand Management, Advertising and Marketing Management. Before joining Bahria University, he was working with Toyota (Indus Motor Company) in the capacity of Assistant Manager. The author has also teaching as a visiting faculty in various Universities in Karachi.

Khalid H. Shaikh was born at Hyderabad (Sindh) Pakistan on 11th March, 1960. Earned PhD (Business Administration) from University of Karachi, Karachi, (Sindh) Pakistan in 2004, M.Com, from University of Sindh, Jamshoro, (Sindh) Pakistan in 1983 and B. Com, from University of Sindh, Jamshoro, (Sindh) Pakistan in 1979. He worked as Lecturer, Assistant Professor, Associate Professor and PROFESSOR at the Institute of Commerce, Faculty of Commerce & Business Administration, University of Sindh, Jamshoro, (Sindh) Pakistan from 1984 – 2013. He also worked as DIRECTOR FINANCE, RESIDENT AUDITOR AND FINANCIAL CONSULTANT at University of Sindh, Jamshoro, (Sindh), Pakistan during 1984 – 2013. In addition to this, he worked as SENIOR FACULTY MEMBER, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST) Karachi, Pakistan, from December 16, 2005 – May 23, 2007. At present he is working as PROFESSOR at the Department of Management Sciences, Bahria University Karachi Campus Karachi (Sindh) Pakistan from 19 – 08 – 2013 to date. There are Twenty Five Published Research Articles on his credit.

Farhana Liaquat born in 1977 in Karachi, Pakistan. She had done her bachelors in finance in 2013 from Bahria University Karachi campus. And also Master in finance from the same university. She has also secured a certificate in BSPC presentation at Bahria University. She also had an experience of working in overseas oil trading company limited (OOTCL) for six weeks.