Impact of Working Capital Management on Firm Performance in different Organizational Life Cycles
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Abstract
The purpose of this study is to examine the impact of working capital management on firm performance in the stages of organizational life cycle. The sample of study includes 45 non-financial firms listed on Pakistan Stock Exchange from the period 2006-2015. Independent variables include working capital management which is measured by cash conversion cycle while the return on assets is used to measure the firm performance. The sample firms are divided into four stages of life cycle; initial stage, rapid growth, maturity and revival stage. Panel data regression models have been utilized to predict the noteworthy relationship. The findings suggest that cash conversion cycle have significant negative association with performance in initial, rapid growth stages and significant positive association in maturity and revival phases of life cycle. So, to increase the performance, firm should not have same policy to manage its working capital throughout the stages of organizational life cycle.


Introduction
Working capital is a common estimate of liquidity, effectiveness and wellbeing of firm. Since it contains cash, stock, receivables, payables, debt, and short term accounts. Working capital represents the liquidity position of a firm. Agha (2014) claims that proper working capital management (WCM) is vital as it directly affects the liquidity position of a firm. Management of working capital is highly relevant to the success of companies (Deloof, 2003).

According to Johnson and Soenen (2003), for a company to achieve value creation for its shareholders, effective working capital management must be a basic component of its business approach. In order to allow WCM to create value, it is necessary to keep an adequate stability between both the liquidity and performance (Deloof, 2003). Positive working capital generally shows that a firm can pay its...
liabilities promptly and working capital which are negative usually show that a company is not having a power to pay its liabilities. Management of inventory is quite essential to the fortune and development of corporations.

Performance is the key concerns for all the stakeholders of a firm and for the economy of any country as well. A well performing business entity has significant importance for managers, owners, current, and potential investors, creditors, employees, customers, and state of company as well. Owners of the firm are always concerned about their wealth maximization. Investors want the firm profitability so it can have enough amounts of cash to be distributed as dividend. Creditors keenly observe the solvency and ability of a company to create cash flows for repayment of interest expenses as well as the principal. Managers pay special intention to stable firm performance to secure their own benefits in terms of appreciations, promotions, job security, bonuses etc. whereas employees are concerned with well performing firm for stability of their jobs. Moreover, a profitable firm can contribute towards the economy in different ways e.g. it can offer high quality and environment friendly products to consumers, contribute to corporate social responsibilities more efficiently and create more job opportunities. Therefore, concept of firm performance has a significant importance for all stakeholders. The significant element of study is to consider effect of WCM on firm performance in various stages of organizational life cycle. Existing literature on Pakistan does not specify the impact of management of WCM on the performance of firms in the phases of organizational life cycle. We believe that a firm cannot succeed while having same policy to manage working capital throughout the different stages of its life cycle. This paper includes five sections starting from introduction to conclusion of study. Section 01 tells about brief introduction of research, section 02 reviews the past studies on the concept of management of working capital, firm performance, and organizational life cycle perspective. Section 03 presents the methodology used in this research. Section 04 contains results and finally, section 05 concludes the study.

Review of Literature

According to Batra (1999) firm performance is a primary concern of all stakeholders of business and key component to organizational survival and growth. Firm performance can be broadly estimated in the form of profits, investment and market performance of firm. Firm performance has been measured in terms of productivity, efficiency, effectiveness, employment, growth etc. It is generally categorized as accounting based and market based performance. Measures of accounting based
performance generally include profitability and investment. Most frequently used estimate of accounting based performance includes ROE, ROA, ROCE (Khan, 2012 and Muritala, 2012).

Measures of market based performance indicate about market worth of any firm. Market worth of firm is generally investigated in terms of stock prices (McConnell and Servaes, 1990; Cho, 1998; Claessens and Djankov, 1997). Market worth is measured as market to book value, price earnings proportion and Tobin's Q (Fama & French, 2007).

Deloof (2003) used profitability as dependent variable and found significant negative relationship with working capital for the Belgium firms. While, (Owolabi and Obida, 2012) observed significant positive relationship of liquidity measures on performance.

Nadiri (1969) was the first person to study WCM. Since 1969, many researchers have developed theories about maintaining an optimal level of cash balance using the Nadiri model. Effectively managing working capital can lead to success and while weak or passive management can lead to failure (Padachi, Narasimhan, Durbarrly and Howorth, 2008).

Management of stock is a science-based skill to ensure that an organization meets only adequate amount of inventory to encounter demand (Coleman, 2000; Jay and Barry, 2006). Having a large amount of stock over a long period and possession of too little inventory both are not good for a firm.

The conservative approach is a hazard free system for working capital. An organization that embraces this procedure keeps up a more elevated amount of current resources and, in this way, a more prominent working capital too. Most working capital is financed from long term sources of funds, for example, value financing, bonds, term advances, and so forth. In this approach, working capital is financed from long term sources of funds and the rest are just financed from short-term sources of finance. Dodge, Fullerton, and Robbins (1994) observed that initial phase of organization life cycle more focus on survival and to evolve their goods and market the goods or products. Thus, the initial phase of life cycle mainly focuses on to sustain in market and revival phase of life cycle remake their products.

The aggressive approach is a risky working capital financing strategy in which short-term funds are used to finance working capital. In rapid growth phase, corporations choose a risk averse strategy and mostly focus on firm’s inner working (Jawahar and McLaughlin, 2001). Jawahar and McLaughlin (2001) and Rink and Fox (1999) found
that in the maturity phase not only development in organizations continues to increase but at a lower rate compared with rapid phase. Thus, rapid phase of life cycle mainly focuses on to achieve growth in market. These stages lie in aggressive approach.

Aregbeyen (2013) explored the impact of WCM on the profitability. The results showed that the companies have been inefficient with managing the working capital and caused a significant depletion in performance. Onodje (2014) demonstrated the relationship between WCM and performance and found a negative relationship between CCC and debt capital.

Wasiuzzaman (2015) investigated the association between the efficiency of working capital and the value of company. The results revealed that the efficiency of working capital significantly increases the value of the enterprise. Afrifa, Tauringana and Tjingbani (2014) explored the impact of WCM on profitability of SMEs. The outcome indicates that WCM components have concave association with performance. Altaband Shah (2017) found inverted U-shape association in the WCM and performance of Indian firms.

According to Ionescu and Negrusa (2007), Kenneth Boulding was the first author in 1950 who gave the idea of life cycle of organization. Organizational life cycle tells about administration, public administration, education, humanism, brain research and advertising. A developing number of creators focus their enthusiasm for hierarchical life cycle for example crafted by (Chandler, 1962; Greiner, 1972; Galbraith, 1982; Quinn and Cameron, 1983; Miller and Friesen, 1980, 1984; Smith, Mitchell and Summer, 1985; Kazanjian, 1988; Hanks, Watson, Jensen and Chandler, 1993).

Theory of corporate life cycle gets its underlying foundations from organizational science writing. The model of firm life cycle recommends that organizations tend to advance straightly through predictable phases of consecutive improvement from birth to decrease and their techniques, structures and exercises relate to their formative stages (Miller & Friesen, 1980, 1984). Each phase of life cycle of the organization focus highlights, authoritative structures, work force, administration styles, and procedures to settle on suitable choices to meet the prerequisites (Kazanjian, 1988).

Cadbury (1992) observed that governance of corporation affects corporate performance, a relationship that has been verified by (Bhagat and Bolton, 2008; Claessens, 1997; Gompers, Ishii and Metrick, 2003). The patterns of ownership are described by the dispersion of shareholders’ equity with respect to votes and capital.
Corporations are form of business, where ownership and control are in separate hands. The pioneer of study on ownership structure was Berle and Means (1932) who gave idea of owners controlled and managerial controlled firms.

Smith, Mitchell and Summer (1985) claimed that companies with scatter holding, have more agency issues. Jensen and Meckling (1976) evolve a more complete picture suggests that concentrating a company's property in terms large shareholders can decrease the corporate transaction costs by arranging and executing agreements with various concerned parties. It is consistent with the explanation of (Shleifer and Vishny, 1986). Shleifer and Vishny (1986) recommend that shareholders having large shares have the potential to control executives which impact to raise the worth of the company. Ownership structure is measured in many terms like family or non-family business, managerial ownership, institutional ownership, external ownership, state and private ownership, foreign or domestic ownership. Institutional owners with the expertise and professional knowledge can force manager to work for shareholder’s wealth maximization (Moshe, 2006 and Khan, 2012).


Leverage is seen as a component to adjust the enthusiasm of executives and investors. Byrd (2010) inspected the impact of leverage (obligation) on performance and contended that expansion or reduction in debt expands or reduces firm performance.

A few Pakistani scientist, Raheman et. al, (2010) and Rehman and Anjum, (2013) have likewise investigated the relationship between performance and WCM by taking the information of Pakistani firms recorded at Pakistan Stock Exchange. However, every one of these endeavors made to investigate this connection between WCM and firm performance ignored a vital certainty that this relationship can fluctuate in the different phases of organizational life cycle. Since each association has its own highlights and special qualities. Consequently all investigations analyzed a general connection between WCM and performance. To investigate this reality, this study attempts to find out the connection between working capital management and firm performance.
performance in the phases of hierarchical life cycle. Along these lines, this work will significantly add to the literature.

Hypothesis:
On the basis of reviewed literature, following hypothesis are formulated:
H1: The effect of working capital management on firm performance is different in various stages of organizational life cycle.

Methodology
Academic research is based on two basic approaches; quantitative approach which focuses on quantification of data as well as analysis and qualitative approach emphasis on theory building through exploration. This study is focused on quantitative approach which includes data collection then application of different statistical tests and make conclusion on the basis of data analysis.
The sample has been drawn from the firms included in PSX 100 index. Firms form financial sector are excluded from sample. There are 75 non-financial firms on PSX 100 Index. Firms which have not used inventories are also excluded from this study. Finally, data is collected from remaining firms which are 45 covering a time period from 2006-2015. Data is gathered from annual reports published by relevant firms.
This effort is to examine the impact of WCM on firm performance in the stages of organizational life cycle in Pakistan. For the purpose the following panel regression model is used.

\[ ROA_{i,t} = \alpha + \beta_1(\text{CCC}_{i,t}) + \beta_2(\text{CCC} \times \text{OLC}_{i,t}) + \beta_3(\text{OLC}_{i,t}) + \beta_4(\text{MAN}_{i,t}) + \beta_5(\text{INT}_{i,t}) + \beta_6(\text{SIZ}_{i,t}) + \beta_7(\text{LVG}_{i,t}) + \epsilon_{i,t} \]

Where, \( \alpha \) is a constant; \( i \) denotes the organization number; \( t \) denotes the period of time; and \( \epsilon_{i,t} \) is the effect of the variables that are not included in the equation.

The key variables selected to determine the effect of WCM on firm performance in the stages of organizational life cycle include Cash conversion cycle, organizational life cycle and firm performance. The remaining (SIZ, LVG, INT, MAN) are control variables in this research.
ROA is the dependent variable, which is an accounting measure of performance (Xu and Wang, 1999; Sun and Tong, 2003). Cash conversion cycle is used as proxy of WCM, as used by (Deloof, 2003; Padachi 2006). Organizational life cycle is used as moderating variable in this study. Following Elsayed and Wahba (2016), Cluster analysis is used to find the OLC classification on the basis of four key variables i.e. dividend payout, sales growth ratio, capital intensity and organization age. In each model of OLC classification, a dummy variable is included that takes the value of one if firm belongs to relevant stage of life cycle and zero otherwise. MANOVA is utilized to affirm how much the subsequent cluster varies (Hanks et al. 1993).
When examining the link between management of working capital and firm performance, it is important to control for different components that may likewise affect firm performance. In this investigation, the accompanying factors are controlled so as to come up with legitimate information. The control variables are Organization size (SIZ), leverage (LVG) and managerial ownership (MAN) and institutional ownership (INT). Size is measured by natural log of total assets, leverage is estimated by the ratio of total debt to total assets. Managerial ownership is measured as percentage of shares held by members of board, managers, CEOs over the total shares (Shah, and Hussain, 2012). Institutional ownership represents the portion of shares held by institutional investors over the total shares as disclosed in annual financial reports (Fazlzadeh, Hendi and Mahboubi, 2011).

### Results and Discussion

#### Descriptive Statistics

Description of all the variables which are used in the study is given in the table below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.105</td>
<td>0.089</td>
</tr>
<tr>
<td>CCC</td>
<td>-201.35</td>
<td>477.05</td>
</tr>
<tr>
<td>OLC</td>
<td>2.41</td>
<td>1.064</td>
</tr>
<tr>
<td>OLC1</td>
<td>0.25</td>
<td>0.433</td>
</tr>
<tr>
<td>OLC2</td>
<td>0.29</td>
<td>0.454</td>
</tr>
<tr>
<td>OLC3</td>
<td>0.27</td>
<td>0.443</td>
</tr>
<tr>
<td>OLC4</td>
<td>0.20</td>
<td>0.397</td>
</tr>
<tr>
<td>MAN</td>
<td>0.127</td>
<td>0.215</td>
</tr>
<tr>
<td>INT</td>
<td>0.112</td>
<td>0.114</td>
</tr>
<tr>
<td>SIZ</td>
<td>7.254</td>
<td>0.534</td>
</tr>
<tr>
<td>LVG</td>
<td>0.511</td>
<td>0.277</td>
</tr>
</tbody>
</table>

The descriptive statistics contain the averages and standard deviations. From table 1, it is analyzed that the mean value of OLC 2.41 which shows that on the average the firms lie in between second and third stage of life cycle. While the average value of OLC1 is 0.25 with the deviation of 0.433 which indicates that 25% of firms are in initial phase of life cycle, the mean value of OLC2 is 0.29 which shows that 29% firms lie in growth phase. The average value of OLC3 and OLC4 are 0.27 and 0.20 respectively which shows that 27% of firms are in maturity phase of life and 20% firms lie in revival phase of life cycle. The mean value of cash...
conversion cycle is -201.359 with standard deviation 477.052 which indicates that inventory conversion period is low, collection period is also low while payment period is too high. The control variables are also given accordingly.

The below table presents descriptive statistics of variables used for classifying organizational life cycle.

### Table 02 Descriptive Statistics of OLC Variables

<table>
<thead>
<tr>
<th>Life cycle stage clusters</th>
<th>DIV</th>
<th>SGR</th>
<th>AGE</th>
<th>FIX</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Sd</td>
<td>Mean</td>
<td>Sd</td>
<td>Mean</td>
</tr>
<tr>
<td>1</td>
<td>0.4707</td>
<td>0.3750</td>
<td>0.3662</td>
<td>1.5314</td>
<td>17.53</td>
</tr>
<tr>
<td>2</td>
<td>0.4662</td>
<td>1.5381</td>
<td>1.0246</td>
<td>9.4764</td>
<td>26.98</td>
</tr>
<tr>
<td>3</td>
<td>0.4475</td>
<td>0.4457</td>
<td>0.1531</td>
<td>0.2309</td>
<td>57.33</td>
</tr>
<tr>
<td>4</td>
<td>0.3241</td>
<td>0.3873</td>
<td>0.1837</td>
<td>0.4207</td>
<td>39.49</td>
</tr>
</tbody>
</table>

Hierarchical Cluster Analysis (Hair, Black, Babin, Anderson and Tatham, 1998) is utilized to decide the proper number of authoritative stages of the life cycle. In HCA the observation are grouped together on the basis of their mutual distances. Algorithm creates a number of cluster initially which is equal to number of cases and then it goes on grouping them on the basis of similarities. HCA involves creating clusters that have a predetermined ordering from top to bottom. A HCA is usually visualized through a hierarchical tree, called the dendogram tree.

Cluster analysis is usually a form of exploratory data analysis. It is considered to be a step before going to the other types of statistical analysis. First look at homogenous patches or cases in the data and then apply further statistical analysis.

As a result of cluster analysis, out of total 450 number of observations, 112 fall into initial stage of life cycle, 130 are grouped into growth stage, 120 in the maturity stage and 88 cases are found to be in the revival stage of life cycle.

### Model Estimation

The results of panel regression model are given in table 3. In the first column, results of overall sample are given, the second, third, fourth and fifth column contain the results of WCM and performance of firm in the stages of organizational life cycle.

The table 3 indicates the association between dependent variable ROA, independent variable CCC. It is clear from the outcome that there exists a negative relationship between CCC and ROA whereas the OLC and ROA have also negative association. The results show that the interaction term of CCC and OLC have exerted a significant positive coefficient on ROA. It means that management of working capital plays a significant role in various stages of organizational life cycle.
Table 03 Impact of WCM on ROA in the Organizational Life Cycle

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>GLS</th>
<th>Initial growth</th>
<th>Rapid growth</th>
<th>Maturity</th>
<th>Revival</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>-4.8200***</td>
<td>-2.0700</td>
<td>1.9800*</td>
<td>-2.0200</td>
<td>8.7600</td>
</tr>
<tr>
<td>(1.630)</td>
<td>(5.880)</td>
<td>(7.870)</td>
<td>(5.470)</td>
<td>(5.610)</td>
<td></td>
</tr>
<tr>
<td>CCC</td>
<td>2.4200***</td>
<td>-1.2500*</td>
<td>-3.5200**</td>
<td>2.6200**</td>
<td>0.0018***</td>
</tr>
<tr>
<td>(7.260)</td>
<td>(1.6700)</td>
<td>(1.140)</td>
<td>(1.000)</td>
<td>(0.000)</td>
<td></td>
</tr>
<tr>
<td>CCC*OLC</td>
<td>-0.0095***</td>
<td>0.0299***</td>
<td>-0.0251***</td>
<td>-0.0207**</td>
<td>-0.0031</td>
</tr>
<tr>
<td>(0.002)</td>
<td>(0.005)</td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>OLC</td>
<td>-0.0777***</td>
<td>-0.0751***</td>
<td>-0.0493***</td>
<td>-0.0665***</td>
<td>-0.0561***</td>
</tr>
<tr>
<td>(0.012)</td>
<td>(0.013)</td>
<td>(0.011)</td>
<td>(0.012)</td>
<td>(0.012)</td>
<td></td>
</tr>
<tr>
<td>MAN</td>
<td>-0.1203***</td>
<td>-0.1123***</td>
<td>-0.1212***</td>
<td>-0.1242***</td>
<td>-0.1273***</td>
</tr>
<tr>
<td>(0.021)</td>
<td>(0.021)</td>
<td>(0.021)</td>
<td>(0.021)</td>
<td>(0.021)</td>
<td></td>
</tr>
<tr>
<td>INT</td>
<td>-0.0166**</td>
<td>-0.0194***</td>
<td>-0.0108*</td>
<td>-0.0128*</td>
<td>-0.0041</td>
</tr>
<tr>
<td>(0.005)</td>
<td>(0.005)</td>
<td>(0.005)</td>
<td>(0.005)</td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>SIZ</td>
<td>-0.1336***</td>
<td>-0.1381***</td>
<td>-0.1421***</td>
<td>-0.1516***</td>
<td>-0.1535***</td>
</tr>
<tr>
<td>(0.012)</td>
<td>(0.011)</td>
<td>(0.011)</td>
<td>(0.011)</td>
<td>(0.011)</td>
<td></td>
</tr>
</tbody>
</table>

R-squared 0.439863 0.443639 0.437412 0.445426 0.450370

Adjusted R-squared 0.430992 0.434827 0.428503 0.436643 0.441666

F-statistic 49.58462 50.34967 49.09364 50.71537 51.73967

Prob(F-statistic) 0.0000 0.0000 0.0000 0.0000

i. *** p < 0.001; ** p < 0.01; * p < 0.05; * p < 0.10.
ii. Figures in braces are standard errors.
iii. ROA: return on assets; CCC: cash conversion cycle; CCC*OLC: cash conversion cycle* organizational life cycle; OLC: organizational life cycle; MAN: managerial ownership; INT: institutional ownership; SIZ: organization size; LVG: leverage.

In overall model of organizational life cycle showsthat there exists a significantly negative association between ROA and CCC which signify that shorter the CCC higher will be firm performance and vice versa. It is consistent with the view that reducing the Cash Conversion Cycle will produce more benefits for the organization. This outcome is consistent with the findings of (Uyar, 2009; Raheman et. al, 2010 and Alipour, 2011). The possible explanation is that the organizations that can free funds from the cycle at the earliest will have the capacity to use this money to fund the future deals.
There exist a significant positive association between CCC and ROA in rapid growth and revival stage. This association is consistent with
The possible reason of positive connection is that the cost of tying up funds in operations is significantly less than the cost of losing deals.

The results further reveal that interaction term of CCC and OLC have negative association in initial phase of life cycle. The meaning of negative sign is that the firms will not be able to manage the working capital efficiently in starting phase of business. It implies that organizations in the underlying development phase of their life have a tendency to be concerned more with survival rather than aggressive management of working capital (Dodge et al., 1994). The results show that the interaction term between the CCC and OLC have negative association in rapid growth phase of life cycle. However the results stated that the interaction term between the CCC and OLC have positive association in maturity phase of life cycle. The interaction term between CCC and OLC have negative relationship in revival phase of life cycle. It shows that firms cannot adopt a sustainable policy to manage working capital. It requires different approaches to managing working capital in initial stage and growth stage whereas a different approach is required in maturity and revival stage of life cycle.

Ownership structure is measured by institutional and managerial holdings. Institutional investors indicating the negatively influence on ROA. These results also support the findings of (Kochhar and David, 1996; Seifert, Gonenc, and Wright, 2005; Mura, 2007 and Yuan and Xiao, 2008). The studies suggested that institutional shareholders are interested in earning the profits rapidly instead of investing the retained earnings of the firm in new projects which is not better for long term development of organization. Therefore, the institutional investors not only would like to gain the short term benefits but also like to pursue the board to take such decisions which improve the short term revenues to increase their dividends.

A statistically negative relationship of MAN has found with ROA which indicates that increase in managerial ownership reduces the firm performance. These results are supported by (Shah and Hussain, 2012 and Din and Javid, 2011). It indicates that higher managerial ownership can influence the adjustment of interest between managers and owners which can finally affect performance of firms. The firm performance reduces when managers start expropriation by increasing their ownership or using firm's resources for their own interests at the cost of owners (Classens and Djankov, 1997 and Frydman, Gray, Hesseland Rapaczynski, 1999).

Size is used as control variables in and shows significantly negative relationship with ROA. It indicates that performance of firms decreases
with the size of firm increases. A statistically negative relationship of leverage has found with ROA which indicates that increase in leverage reduces the firm performance.

The outcome of this research indicate that the notion of organizational life cycle has inference for working capital management, as organizational life cycle may affect the connection between working capital management and firm performance. Greater investment in working capital (conservative policy) may likewise increase firm's performance though reducing working capital investment (aggressive policy) would positively influence the performance of firms (Raheman et al., 2010).

Conclusion
Management of working capital implies is to guarantee that a company can proceed with its activities and that it has adequate capacity to fulfill both maturing debts and forthcoming operational costs. A huge bulk of literature is available on impact of management of working capital on performance of firms but the perspective of organizational life cycle is rarely focused. In Pakistan, particularly there is no study which shows influence of management of working capital on firm's performance in the stages of organizational life cycle. Panel data models are applied to investigate the relationship on a sample of 45 firms, covering a time period from 2005 to 2016. CCC is used as independent variable whereas ROA is used as dependent variable in this study. Organizational life cycle is used as moderating variable. Cluster analysis is performed to segregate the sample firms into various stages of life cycle. The results demonstrate that CCC has significantly negative association in initial and rapid growth and significant positive association in maturity and revival phase of life cycle with ROA. It is contended here that the relationship is different with authoritative life cycle stages. This is on the ground that the choice of working capital management depends, similar to some other choices, not just on the apparent expenses and advantages of the choice yet in addition on the institutional environment that the firm is standing up to.
References


