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Does Working Capital Management Affect the Operational Liquidity Position of Firms? A Case of Pakistani Manufacturing Firms

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1. Introduction

Working capital management (WCM) is concerned with efficient utilization of current assets to generate sufficient profits and funds necessary to pay current liabilities. In case of manufacturing firms, the current assets constitute almost half of their total assets and in case of trading and distribution firms, more than fifty percent of total funds are invested in current assets (Chandra, 2007). Excessive investment in current assets can result lower profits. But companies having too little investment in current assets may suffer from liquidity problems (Gitman, 2009) and may face difficulties in managing business operations smoothly due to shortage of stock-in-trade and cash balance (Horne and Wachowicz, 2008).

Business operational liquidity position is directly affected by the overall efficiency of WCM, working capital policies and working capital strategies (Mthuva, 2009). Operational liquidity position is defined as the ability of a firm to pay its current liabilities by using cash generated through operating activities (Stickney, 1996). Ability of a firm to pay its current liabilities on due date, depends on operating cash flows generated by managing working capital effectively (Soenen, 1993).

Above discussion on the relationship between WCM efficiency and operational liquidity position reveals that firms can improve their operational liquidity position by giving due consideration to WCM. Profitability and operational liquidity position both are equally important for the survival of firms. If liquidity position is ignored, then

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firms may face the problem of insolvency or bankruptcy (Nwankwo and Osho, 2010). In spite of the fact that most of the time business failure has been associated with poor WCMt (Smith, 1980), little research work has been done as regard to WCM and its impact on profitability and liquidity in emerging capital markets (Zariyawati *et al*. 2009).

Previous studies on WCM conducted by Smith, Beaumont, and Begemann (1997), Shin and Soenen (1998), Lazaridis & Tryfonidis (2006), Padachi (2006), Teruel and Solano (2007), Vishnani and Shah (2007), Samiloglu and Demirgunes (2008), Uyar, (2009), Raheman, Afza, Qayyum and Bodla. (2010), Gill, Nahume and Mathur (2010), Ahmad, Azim and Rehman (2012) and many other have emphasized only on the relationship between WCM and profitability of firms. The relationship between WCM and operational liquidity position need to be investigated. Therefore, this study is aimed to analyze the effect of WCM efficiency and working capital policies on operational liquidity position of Pakistani manufacturing firms listed on Karachi Stock Exchange and would be an addition into the WCM literature in general and particularly for Pakistan.

Rest of the paper is organized as follows: After describing justification for this study in the introductory section, a brief review of prior studies along with their findings is given in section 2. Section 3 describes the data sources, sampling, variables and methodology used in this study. Data analysis results along with explanation are described in section 4. Section 5 concludes this study by highlighting its empirical findings along with policy suggestions and by proposing further research direction.

2. Literature Review

A brief review of previous studies documented on WCM and firms' liquidity position is given in this section. For instance John (1993) examined that the cost of selling distressed assets, loss of going concern value in liquidations, Tobin's q, R&D expenditures, advertising expenditures, an index of probability of bankruptcy costs due to illiquidity of its assets have shown positive relationship with the optimal liquidity maintained by a firm. Gilmer (1985) stated that relatively increase in the value of liquid assets, first causes increase in profitability due to reduction in shortage cost, but when the value of liquid assets goes beyond the optimal level, holding cost starts to increase which causes reduction in profitability of firms.

Kim et al. (1998) identified that cost of external financing, variance of future cash flows and return on future investment opportunities are positively related to liquidity position but volatility in earnings, economic conditions are negatively related to the liquidity position of a firm. Dittmar et al. (2002) found that agency problem is a significant determinant of corporate liquidity. Furthermore, they highlighted that development of capital market and opportunities to access capital market, size of a firm and cash flow to net assets ratio are negatively affecting the firms' liquidity.

Gentry et al. (1990) introduced a new concept of weighted operating cycle and weighted cash conversion cycle as aggregate measure of WCM performance. These measures cause the management to pay more consideration on the actual funds frozen in the form of various components of working capital and the time of release of these funds from the working capital process. Lyroudi and Lazaridis (2000) specified a significant positive relationship of cash conversion cycle with current ratio and quick ratio. They stated that cash conversion cycle can be used as a measure of liquidity instead of current ratio and quick ratio which are traditional and static measures of liquidity. Eljelly (2004) found that cash conversion cycle is a better measure of liquidity than current ratio which negatively affects the profitability of firms. He described that efficient management of liquidity eliminates the risk of a firm's inability to meet its short-term obligations and avoids excessive investment in liquid assets. Similarly, Sayaduzzaman (2006) stated that any improvement in the efficiency of WCM has positive effect on liquidity position, profitability and growth of firms.

Smith and Begemann (1997) described that in working capital theory, profitability and liquidity are promoted as the main goals of WCM. Shin and Soenen (1998) found that WCM significantly affects the profitability and liquidity of firms. Mueller (1953) stated that the main function of revolving working capital is to meet the liquidity needs of an entity. He pointed out that liquidity is more a problem of marketing (salebility of an asset) rather than of accounting and finance.

Nwankwo and Osho (2010) described that efficient WCM has positive effect on both profitability and liquidity of firms which enables the firms to continue their operations efficiently. Poor management of working capital may cause inability of a firm to expand, to stand with technological changes, to bear financial losses and to meet liquidity requirements. Consequently, it may result in vulnerability to liquidation and insolvency of firms. They emphasized that efficient management of working capital is inevitable for the firms' survival.

Raheman et al. (2010) emphasized the importance WCM for the firms belonging to manufacturing sector of Pakistan. Their study revealed that manufacturing firms are facing problems regarding their collection and payment policies. Dearth of empirical studies on the relationship between WCM and manufacturing firms' performance particularly in the context of Pakistan (Raheman et al. 2010) is the main motivation for this study. Therefore, present study will contribute to the existing literature on WCM by investigating the impact of WCM policies and strategies on operational liquidity position of manufacturing firms which seemed to be less emphasized by previous studies. After the brief review of literature, we now focus on methodology of the study in the next section.

3. Methodology

In order to investigate the effect of WCM on operational liquidity position of manufacturing firms listed on KSE Pakistan, an empirical frame work consistent with previous studies conducted by Padachi (2006), Raheman and Nasr (2007), Mathuva (2008) and Gill et al. (2010) is developed. This study is extended by investigating the effect of WCM on firm's operational liquidity position.

3.1 Data and Sample

This study uses the firm level panel data to check the effect of WCM on operational liquidity position of manufacturing firms. Consistent with the study conducted by Samiloglu and Demirgunes (2008) and subsequent work of SEN and ORUC (2009) data for this study has been taken from quarterly financial reports of 148 manufacturing firms listed on KSE, Pakistan for the period of 2006-2011; hence there are 20 quarters with total number of observations 2368.

Quarterly reports for this study were obtained from KSE and from the respective firms. Sample of firms for this study was developed consistent with the sampling technique used by Zariyawati *et al.* (2009). Firms belonging to financial sector, trading sector and service sector were excluded due to specific nature of their operating activities. In order to develop a balanced panel data set, only those listed manufacturing firms were considered which provided quarterly financial reports for 20 quarters.

Furthermore, in order to keep reasonable representation of each manufacturing sector in the sample, those manufacturing sectors where less than four firms provided published quarterly reports for 20 quarters were also excluded. Only 148 manufacturing firms listed on KSE are part of this study, which include eighteen engineering firms, twenty five chemical firms, fifty four textile firms, twenty cement firms, sixteen sugar firms and fifteen firms from fuel and energy sector. Next is the discussion on the variables used in the study and relationship between operational liquidity positions and working capital management.

3.2 Dependent Variable

Operational liquidity position of a firm is used as dependent variable in the study and is defined as the ability of a firm to pay its current liabilities by using cash generated through operating activities. It is measured by taking the ratio of operating cash flows to current liabilities. Traditional measures of liquidity such as current ratio and quick ratios depict the liquidity position of a firm at a certain point of time so called as static measures of liquidity (Soenen, 1993). Cash conversion cycle is a dynamic measure of liquidity which explains the efficiency of working capital in terms of days needed to get back cash invested in operating activities (Soenen, 1993).

But it fails to explain how much cash is generated by performing operating activities efficiently during specific time period.

In case of going concern, liquidity position of a firm depends more on the net operating cash flows generated during certain period rather than the value of current assets owned by a firm at a specific point of time (Soenen, 1993). Generally, all stakeholders are paid value in the form of cash. So they are more interested to know either the cash generated by a firm through operating activities is sufficient to pay their claims or not. Further the ratio of operating cash flows to current liabilities describes more correctly the liquidity position of a firm (Stickney, 1996). Therefore, this ratio is used in the study as a measure of operational liquidity position of firms.

3.3 Independent variables

One of the major objectives of WCM is to prevent liquidity crises by maintaining appropriate liquidity position of a firm (Zariyawati et al. 2009). Operational liquidity position of a firm is affected by efficient utilization of firm's working capital elements such as cash, marketable securities, trade receivables and stock in trade (Rao, 1998 and Mathuva, 2009). By managing working capital effectively, firms can control the risk of failure to pay short term obligations. While managing working capital, managers make various decisions regarding selection of strategy for investment in current assets, strategy for short term financing, credit policy, inventory management efficiency, payment policy and the level of overall efficiency of working capital management (Padachi, 2006). Therefore, WCM can be best described in terms of following decisions variables.

Firm's credit policy: This policy is one of the most important elements of working capital management. The goal of this policy is to maintain stronger liquidity position of a firm (Brealey and Meyers, 2008). Gill et al. (2010) used trade receivable turnover in days to describe firm's credit policy. Lower value of this ratio shows tight credit policy and higher value of this ratio indicates liberal credit policy (Chandra, 2007). Tight credit policy may cause increases in the operational liquidity due to earlier collection of cash from trade receivables. But liberal credit policy may cause decrease in the operational liquidity position due to delayed collection from trade receivables. Therefore, it is hypothesized, that firm's credit policy has significant impact on its operational liquidity position.

Inventory Management Efficiency: Stock turnover in days is commonly used by managers and researchers as a measure of firm' inventory management efficiency (Tewold, 2002 and SEN and ORUC, 2009). This measure indicates the time period a firm needs to produce finished goods from raw material and then to make sale of these finished goods (Ross et al. 2008). Small value of stock turnover in days indicates that firm's inventory management is less efficient. While large value indicates that firm's inventory management is less efficient (Brealey et al. 2008). Firms can improve the

quantity and quality of their liquidity position by managing inventory efficiently (Chandra, 2007). Therefore, the expected relationship between efficiency of inventory management and operational liquidity position of a firm is positive.

Firm's payment policy: This policy describes the time period by which payments to creditors can be delayed by a firm. Mathuva (2009) and Gill et al. (2010) used trade and other payable turnover in days (APTD) to describe firm's payment policy. Small value of this measure indicates that firm is making early payment to its creditors (Raheman and Nasr, 2007). Early payment policy may cause reduction in net cash inflows generated from operating activities. Large value of this accounting ratio indicates that firm is using delayed payment policy and tries to avoid the payment of cash. Delaying payments to suppliers can be a cheaper and more flexible source of financing (Gitman, 2009). Hence, the hypothesis is that firm's payment policy has significant impact on its operational liquidity position.

Overall Efficiency of Working capital Management: Padachi (2006), Ganesan (2007), SEN and ORUC (2009) Mathuva (2009) and Gill *et al*. (2010) used cash conversion cycle (CCC) as a measure of overall efficiency of working capital management. According to these studies, small value of CCC indicates higher level of (WCM) efficiency. Reduction in cash conversion cycle causes increase in the net inflows of cash from operating activities and consequently, operational liquidity position of manufacturing firms is improved. Therefore, it is hypothesized that overall efficiency of working capital management has significant effect on firm's operational liquidity position.

Firms' Strategy of Investment in Current Assets: Padachi (2006), Chowdhury and Amin (2007) and Afza and Nazir (2008) used **c**urrent assets to total assets ratio (CA/TA Ratio) to describe the firm's strategy of investment in current assets. Higher value of this ratio indicates that firm has invested relatively more in current assets and is following a conservative strategy of investment in current assets and lower value of this ratio indicates that firm has invested comparatively less in current assets and is following an aggressive strategy of investment in current assets (Chandra, 2007).

Expected relationship between this strategy and firms' operational liquidity position depends upon the turnover of firms' current assets and the structure of investment in these current assets. Hence, the hypothesis is that firm's strategy of investment in current assets has significant impact on its operational liquidity position.

Firms' Strategy of Short Term Financing: Padachi (2006) and Afza and Nazir (2008) used current liabilities to total assets ratio **(**CL / TA Ratio) to describe the short term financing strategy of firms. Higher value of this ratio indicates that a firm is following relatively more aggressive strategy to finance its operating activities (Chandra, 2007). This strategy is expected to have negative impact on short term liquidity position of firms (VAN Horne and Wachowicz, 2008). In order to examine

the impact of short term financing strategy on operational liquidity position of a firm, it is hypothesized that firm's short term financing strategy has significant impact on its operational liquidity position.

***Control Variables*:** In addition to above stated WCM decision variables, financial leverage (Mathuva, 2009), firm size (Samiloglu and Demirgunes, 2008), efficiency in operating assets utilization (Martani. et al. 2009) and ability of firm to generate cash from operations (Martani. et al. 2009) may affect the operational liquidity position of firms. In line with previous studies these variables are used as control variables in this study.

The above discussion on the relationship between independent variables and dependent variable is expressed in the form of following mathematical model.

Operational Liquidity Position = *f* (credit policy, inventory management efficiency, payment policy, overall efficiency of WCM, strategy of investment in current assets, strategy of short term financing, financial leverage, firm's size, efficiency in operating assets utilization and the ability of a firm to generate cash from operating activities).

3.4 Panel Estimation Techniques

In this empirical study, panel estimation techniques are used to investigate the impact of working capital management on operational liquidity position of manufacturing firms. The complete quantitative analysis was done by using Eviews-7. To study the general behavior of variables, descriptive analysis (mean value, standard deviation, minimum and maximum values) is performed. As the variables used in the study have values in the form of ratios, therefore, Pearson's correlation test is used to measure the degree of association and multicollinearity between independent variables. Like previous studies (Raheman and Nasr, 2007; Mathuva, 2009 and Gill et al. 2010) Pooled Ordinary Least Squares (OLS) regression with and without weighted residuals is applied to investigate the impact of working capital management on operational liquidity position of manufacturing firms listed on KSE Pakistan.

Following Pooled (OLS) model is used.

$$Y_{it} = \alpha_0 + \beta_i X_{it} + \mu_{it} \qquad 1$$

where

Y_{it} : Dependent variable.

α_0 : Stands for intercept

β_i : $M \times 1$ Vector of parameters to be estimated on the independent variables.

X_{it} : $1 \times M$ Vectors of observations on the independent variables.

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Temporal dimension *t* varies from *t* = 1,…….,*T;* and spatial dimension *i* varies from *i=1,* ….,*N.*

M is used for the number of slope parameters to be estimated.

μ_{it} : Residual term.

The following is the detailed statistical model used for analysis:

$$OCFACL_{it} = \alpha_0 + \beta_1 ATDTD_{it} + \beta_2\ ASTTD_{it} + \beta_3 APTD_{it} + \beta_4\ ACCC_{it} + \beta_5\ ACATA_{it} +$$

$$\beta_6\ ACLATC_{it} + \beta_7 ADR_{it} + \beta_8 AOATO_{it} + \beta_9 NLTA_{it} + \beta_{10} CFOSL_{it} + \mu_{it} \qquad 2$$

3.5 Measurement of Variables and their Expected Signs

Table 1 describes the measurement and expected sign of variables used in the study.

Table 1. Variables used in Operational Liquidity Position Analysis

Variables and their Measurement	Expected Signs for Hypotheses
Dependent Variables	
Operating Cash Flows to Average Current Liabilities (OCFACL) is used as a proxy for operational liquidity position. =Net operating cash flows during the quarter / Average current liabilities remained outstanding during the quarter	
Independent variables	
Average Trade Debtors Turnover in Days (ATDTD) is used as a proxy for firm's credit policy. = Average trade debtors / Average per day sales during the quarter	**(-)**
Average Stock-in-Trade Turnover in Days (ASTTD) is used as a proxy for firm's inventory management efficiency = Average stock-in-trade / Average per day cost of goods sold during the quarter	**(-)**
Average Payment Turnover in Days (APTD) is used as a proxy for firm's payment policy. = Average trade and other payables / Average per day cost of goods sold during the quarter	**?**
Average Cash Conversion Cycle (ACCC) is used as a proxy for overall efficiency of working capital management. = (Average trade debtors turnover in days + Average stock turnover in days) – Average payment turnover in days	**(-)**
Average Current Assets to Average Total Assets (ACATA) is used as a proxy for firm's strategy of investment in current assets. = Average current assets during the quarter / Average total assets during the quarter	**?**
Average Current Liabilities Average Total Capital (ACLATC) is used as a proxy for firm's strategy of short term financing. =Average current liabilities remained outstanding during the quarter / Average total capital remained outstanding during the quarter	**(-)**
Average Debt Ratio (ADR) is used as a proxy for degree of financial leverage. = Average total liabilities remained outstanding during the quarter / Average total assets	**(-)**
Average Operating Assets Turnover (AOATO) is used as a proxy for overall operating efficiency of a firm in utilizing its operating assets. = Net Sales for a quarter / Average operating assets	**?**
Natural Log of Total Assets (NLTA) is used as a proxy for firm's size.	**?**
Cash Flows from Operations to Sales Ratio (CFOSL) is used as a proxy for net cash generated from current period operations per unit sales revenue	**+**

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4. Results and their Explanation

4.1 Results of Descriptive Analysis

Descriptive analysis revealed that the variables used in this study behaved differently in terms of their mean value and standard deviation, both across time and across firms. Table 2 depicts descriptive statistics for totals 2368 quarterly observations. Cash flows from operations to sales (CFOSL) ratio has mean value 0.465 with standard deviation 0.195. These values show that on average firms are generating cash inflows from operations, but the ability of firms to generate cash from operations varies significantly from its mean value and may assume negative or positive value.

Table 2. Descriptive Analysis of Variables

Variables	Descriptive Statistics					
	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
CFOSL	0.465	0.404	0.796	-0.152	0.195	2368
OCFACL	0.060	0.032	1.968	-1.635	0.274	2368
ATDTD	52.999	24.175	1965.753	0	107.122	2368
ASTTD	93.183	63.847	1731.459	0	1116.311	2368
APTD	138.918	65.585	3415.581	0	272.726	2368
ACCC	7.264	24.097	1781.514	-2982.820	260.159	2368
ACATA	0.507	0.505	0.957	0.072	0.212	2368
ACLATC	0.443	0.425	1.366	0.049	0.209	2368
ADR	0.615	0.610	2.086	0.184	0.230	2368
NLTA	17.359	16.135	24.747	10.759	3.634	2368
AOATO	0.992	0.281	24.820	-0.561	2.546	2368

Cash flows from operating activities to average current liabilities (OCFACL) ratio indicate that the firms on average are generating very less money in a quarter to pay current liabilities, remained outstanding in that quarter. If a firm is not generating cash from its operating activities then it needs to rely more on long term financing and disposal of its investments. In such situation, if supply of cash from long term financing and from disposal of investment impedes, then sooner or later it will cause the firm to die. Average trade debtors' turnover in days (ATDTD) ratio is used as a proxy variable for credit policy of firms. On average firms are allowing credits to their customers for about 53 days. Standard deviation indicates management of such firms is continuously reviewing the credit policy and making marginal adjustments in it. Average stock-in-trade turnover in days (ASTTD) is used as a proxy variable for inventory management efficiency. This ratio indicates that on average firms are able to

sell their stock within 93 days. Average payables turnover in days (APTD) is used as a proxy variable for firm's payment policy. The mean value and standard deviation of firms, payment policy shows that on average firms are making payments to their creditors after 138 days but their payment policy is not stable as it is varying across time and firms. Average cash conversion cycle (ACCC) is used as a comprehensive measure of overall efficiency of working capital management. Average value of cash conversion cycle shows that firms on average are efficient. Average current asset to average total assets (ACATA) ratio is used as a proxy variable for firms' strategy of investment in current assets. Its mean value indicates that on average firms' investment in current assets is about 50 percent of the value of all assets owned by firms. It shows that firms' investment policy can be more or less conservative.

Average current liability to average total capital (ACLATC) ratio is used to describe short term financing strategy of firms. Mean value shows that overall firms are using relatively less aggressive strategy. Standard deviation value shows that firm' financing strategy can be relatively more or less aggressive. Average debt ratio explains the degree of financial leverage used by a firm. This ratio also shows the level of financial risk. Results show that on average firms are using more funds with fixed financial charges but their financing structure are varying over a relatively large spectrum as indicated by standard deviation and range. Sum of assets value is used as a proxy variable for firm's size. Average operating assets turnover ratio indicates that on average firms are operating efficiently.

4.2 Results of Correlation Analysis

Pearson's correlation test was performed to measure the level of association between working capital management decision variables and operational liquidity position. Results of Pearson's correlation are given in Table 3. Results show that CFOSL has positive association with operational liquidity position (OCFACL) ratio. Negative association between the firms' credit policy (ATDTD) and OCFACL ratio shows that firms using tight credit policy are likely to have stronger operational liquidity position. Negative coefficient of association between inventory management efficiency and operational liquidity position shows that firms which are managing their inventory more efficiently likely to have better operational liquidity position.

Coefficient of correlation between payment policy (APTD) and operational liquidity indicates that firms having stronger operational liquidity position are following earlier payment policy. Further firms managing their working capital efficiently have stronger operational liquidity position. Coefficient of association between firms' strategy of investment and operational liquidity position shows that firms following the conservative strategy of investment in current assets are likely to have weaker operational liquidity position. Coefficient of correlation of Firms' strategy of short term financing (ACLATC) with operational liquidity position shows that firms using aggressive strategy of financing are likely to have weaker operational

liquidity position. There is significant negative association between financial leverage used by firms and their operational liquidity position. It means that firms using more long term debt funds with fixed financial charges are expected to have weaker operational liquidity position. Average total asset (NLTA) has positive connection with firm's operational liquidity position. It means on average larger firms have relatively stronger operational liquidity position. Average operating assets turnover (AOATO) has positive and significant coefficient of correlation with OCFACL. It means firms utilizing their operating assets more efficiently are likely to have stronger operational liquidity position.

TABLE 3. Pearson's Correlation Matrix

	CFOSL	OCFACL	ATDTD	ASTTD	APTD	ACCC	ACATA	ACLATC	ADR	NLTA	AOATO
CFOSL	1 (----)										
OCFACL	0.852 (0.000)*	1 (----)									
ATDTD	-0.083 (0.001)*	-0.024 (0.011)**	1 (----)								
ASTTD	-0.416 (0.008)*	-0.145 (0.012)**	0.270 (0.010)*	1 (----)							
APTD	-0.128 (0.034)**	-0.012 (0.047)**	0.111 (0.002)*	0.385 (0.000)*	1 (----)						
ACCC	-0.121 (0.095***)	-0.134 (0.079)***	0.025 (0.086)**	0.259 (0.000)*	-0.422 (0.000)*	1 (----)					
ACATA	-0.072 (0.043)**	-0.098 (0.006)*	0.098 (0.006)**	0.041 (0.052)***	0.027 (0.045)**	0.047 (0.192)	1 (----)				
ACLATA	-0.081 (0.024)**	-0.018 (0.000)*	0.114 (0.001)*	0.029 (0.414)	0.016 (0.648)	0.050 (0.158)	0.479 (0.000)*	1 (----)			
ADR	-0.065 (0.071)***	-0.157 (0.000)*	0.113 (0.001)*	0.016 (0.642)	0.013 (0.709)	0.010 (0.763)	0.085 (0.017)**	0.808 (0.000)*	1 (----)		
NLTA	0.145 (0.212)	0.139 (0.009)*	-0.132 (0.000)*	0.065 (0.068)**	-0.061 (0.088)***	0.000 (0.081)***	-0.051 (0.000)*	-0.443 (0.000)*	-0.243 (0.000)*	1 (----)	
AOATO	0.0318 (0.078)***	0.046 (0.000)*	0.241 (0.000)*	0.030 (0.396)	0.061 (0.089)***	-0.190 (0.000)*	-0.102 (0.004)*	-0.029 (0.409)	0.044 (0.215)	-0.121 (0.000)*	1 (----)

Note: Values in parentheses are t-values while Asterisk *, **, *** show level of significance at 1%, 5% and 10% respectively.

4.3 Results of Regression Analysis and their Explanation

Panel estimation techniques Pooled (OLS) regression both with and without cross sections' weights, is used to investigate the effect of WCM on the operational liquidity position of 148 manufacturing firms listed on Karachi Stock Exchange. Pooled (OLS) regression with cross sections' weights has improved the overall fitness of the model. Hence its results are elucidated in this section. Results of the regression equation (2) are given in Table 4.

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Table 4. Pooled (OLS) Regression Analysis of Operational Liquidity Position and WCM

Dependent Variable: Operational liquidity position of firms, measured as accounting ratio of operating cash flows to average current liabilities (OCFACL).						
Independent Variables	**Estimation Methods**					
	Pooled Least Square			**Pooled (OLS) With Cross Sections' Weights**		
	Coefficient	**t- statistics**	**p-value**	**Coefficient**	**t- statistics**	**p-value**
Intercept π_0	2.44756	4.163	0.001*	2.26050	3.895	0.000*
ATDTD	-0.00034	-6.967	0.000*	-0.00038	-7.493	0.000*
ASTTD	-0.00039	-6.554	0.000*	-0.00036	-6.749	0.000*
APTD	0.00009	4.995	0.000*	0.00007	5.142	0.000*
ACCC	-0.00007	-4.439	0.000*	-0.00006	-4.984	0.000*
ACATA	-2.66626	-3.116	0.004*	-2.38214	-4.141	0.000*
ACLATC	-0.13880	-3.142	0.001*	-0.06519	-2.639	0.000*
ADR	-0.10206	-2.008	0.045**	-0.09273	-1.928	0.013**
AOATO	0.00084	0.674	0.471	-0.00054	-2.816	0.005*
NLTA	0.00013	1.603	0.114	-0.00015	-0.344	0.730
CFOSL	2.56984	30.818	0.000*	2.43160	46.282	0.000*
Adjusted R^2	**0.870**			**0.914**		
***F*- Statistics**	**474.961**			**821.263**		
Durbin Watson Statistics	**1.880**			**1.906**		

Note: Asterisk *, **, *** show level of significance at 1%, 5% and 10% respectively.

Effect of each independent variable on operational liquidity position as depicted in Table 4 is explained in following paragraphs, subject to condition that other factors are constant. Coefficient of credit policy (ATDTD) is negative and significant. It means that any change in credit policy has significant impact on firms' operational liquidity. Hence firms can increase their operational liquidity position by tightening their credit policy. If a firm tights its credit policy by one day, it will cause increase in operational liquidity position on average by 0.0385 %. The effect of firms' credit policy is found consistent with the findings of (Brealey and Meyers, 2008). Coefficient of inventory management efficiency (ASTTD) is negative and significant. It shows that efficiency of inventory management has significant positive impact on operational liquidity position. If ASTTD is decreased by one day, it will cause increase in operational liquidity position of a firm on average by 0.036 percent. The results support (Chandra, 2007) that by managing inventory efficiently firms can improve their liquidity position. Inventory is normally sold at a price higher than its acquisition cost. Therefore, manufacturing firms can improve both the quality and quantity of their liquidity by improving the efficiency of stock in trade management.

Firms' payment policy (APTD) has positive and significant effect on OCFACL ratio. It specifies that any change in firms' payment policy has considerable effect on operational liquidity position. Delay in payment period by one day is expected to increase OCFACL ratio by 0.0075 percent. The findings of this study validate (Gitman, 2009) delaying payments to suppliers can be a cheaper and more flexible source of financing. It means that by using delayed payment policy firms can control the outflows of cash and consequently it reduces the firms' need to borrow funds from lenders. Average cash conversion cycle (ACCC) is used to describe the overall efficiency of working capital management.

Efficiency of WCM is inversely related with ACCC. This study revealed a negative and significant coefficient of ACCC with OCFACL. This indicates any change in cash conversion cycle significantly affects the operational liquidity position of manufacturing firms. If a firm reduces its cash conversion cycle by one day it will cause increase in its operational liquidity position on average by 0.006 percent. This is consistent with the findings of Shin and Soenen (1998) and Sayaduzzaman (2006). Further results strengthen the suggestion of Raheman, *et al.* (2010) that firms can improve their operational liquidity position by improving overall efficiency of working capital management.

Coefficient of Firms' strategy of investment in current assets (ACATA) indicates that any change in this strategy significantly and negatively affects the OCFACL ratio. Increase in ACATA by 1 unit will cause reduction in the operational liquidity position on average by 2.382 times. The findings are in line with Padachi, (2006) blocking more funds in the form of trade receivables, stock-in-trade, and as prepayments may

create liquidity problem. In such situations, firms need to depend more on trade debt and short term borrowing which further aggravate the operational liquidity position.

Similarly coefficient of firms' strategy of short term financing (ACLATC) is negative and significant at 1 percent. Increase in firm's short term financing by1 percent will cause decrease in operational liquidity position on average by 6.519 percent. This is consistent with Chowdhury and Amin (2007) that any change in firms' short term financing strategy considerably affects the liquidity position of firms. All control variables except size of firms are found to significantly affect the operational liquidity position. Overall findings of this study reveal that efficiency of working capital management and working capital policies significantly affect operational liquidity position of manufacturing firms which is consistent with Eljelly (2004), and Nwankwo and Osho (2010).

5. Conclusion

The study is conducted to investigate the effect of working capital management on operational liquidity position of manufacturing firms listed on KSE Pakistan. Conservative strategy of investment in current assets, aggressive strategy of short term financing and degree of financial leverage are found to have significant negative effect on operational liquidity position of manufacturing firms. But tight credit policy, inventory management efficiency, delayed payment policy and overall efficiency of working capital management were found to have significant positive effect on the operational liquidity position. Furthermore, it was found that lager firms with higher turnover of operating assets are likely to have stronger operational liquidity position.

The findings of this study suggest that working capital management does matter. Management of manufacturing firms can improve their operational liquidity position by implementing tight credit policy and by following delayed payment policy. Furthermore, managers should use such techniques and procedures which are cost effective and are helpful in improving the efficiency of inventory management and overall working capital management. A few studies have investigated the differences in working capital management policies and practices across industries. Future research can be conducted to look into the differences in working capital management policies and practices across industries and their effect on various liquidity measures.

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