

Impact of Working Capital on the Profitability a Case of Pakistan State Oil

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Abstract: Working capital is required for daily operations of the firm. The primary aim of the study is to assess the impact of working capital management on the PSO's profitability. For such assessment, Pearson correlation and simple linear regression methods are applied in which the data of 10 years (2005-2014) has been taken to analyze the relationship between working capital and profitability of PSO. The results unveiled the negative relationship of debt ratio and positive relationship of current ratio with the profitability. However, cash conversion cycle has insignificant relationship with the firm's profitability. Thus, PSO should work on the reduction of debt ratio and maintenance of the current assets to the optimal level.

KEYWORDS: working capital, optimal level, debt ratio, profitability



1. Introduction

1.1 Background

Money is the one of the factors that is crucial to handle because this is the one that plays a vital role in the success or failure of any firm. 60% of the business enterprises undergo from cash flow problems (*De Chazal Du Mee, 1998*). Thus, money or capital management has significance in all firms either small or large which is termed as financial management. Financial management determines the framework of the relationship between firm and capital. Generally, a large portion of organizations' operation specifically of small sized organizations, are heavily based on working capital.

Working capital is the amount of current assets that are used to meet the day to day activities. It is a regular measure of any company's efficiency, liquidity and overall health because it comprises of cash, accounts receivable, inventory and accounts payable. The management of Working capital refers to the identification of volume, the combination of resources and the utilization of working capital that results in increase of shareholder's wealth (*Neveu, 2001*).

The right management of invested funds in any business leads to effective financial management. Every business requires funds for two reasons 1) for development and 2) to run its daily operations e.g., for the procurement of raw materials, meeting everyday expenses, payment of wages etc. Efficient liquidity management engages planning and controlling of current liabilities and current assets to

eradicate the risk of inability to meet short-term obligations and evade excessive investment in such assets (*Eljelly, 2004*).

1.2 Problem Statement

Financial management is significant in all kinds of firms whether small, medium or large because it plays a major role in success or failure of the firm. That is the reason, it is very important to find out the relationship of working capital with the profitability in order to take necessary measures for its management. "Is there any relationship between working capital management and profitability?"

1.3 Research Questions

- Is there any relationship between working capital management and profitability of PSO?
- Do the various factors affect the working capital practices of PSO?

1.4 Significance of the study

The difficulty in working capital's management is one of the factors that are responsible for the low profitability. Thus, better planning, organization and controlling of working capital must be taken into account because the right utilization of optimum amount of working capital increases the net operating margin to the greater extent.

1.5 Research Objectives

Main Objective

- To determine the relationship between working capital management and profitability.

Secondary Objectives

- To determine the relationship between working capital management and return on assets.
- To determine the relationship between working capital management and return on equity.
- To determine the various factors affecting working capital practices in PSO.

1.6 Research Gap

Working capital contains greater significance in order to run the operations efficiently. Various researches on working capital management on different sectors have been done in Pakistan but such study isn't conducted on PSO ever.

1.7 Limitations

This study is limited to the Pakistan State Oil specifically so that the findings of the study would only be generalized to the PSO.

2.0 Literature Review

Several researchers studied working capital from different perspectives and in different environments. *Pedro Juan García Teruel, (2007)* studied to present the empirical evidence on the impacts of working capital management practices on the profitability of

Spanish SMEs. The panel data methodology is based on 8,872 SMEs covering the duration of 1996-2002. The results demonstrated a negative relationship between working capital and performance of SMEs in Spain. It is suggested that managers must shrink the inventories and span of accounts receivables to create the value.

Amarjit Gill, Nahum Biger, Neil Mathur, (2010) analyzed the relationship between working capital management and profitability by taking the sample of 88 American firms, listed on NYSE, for a period of 3 years from ranging 2005 to 2007. The correlation method was used to test the relationship, measured by gross operating profit. The study followed that profits for the companies can simply be created by their managers if cash conversion cycle is handled properly and accounts receivables keep optimally.

DR.S.S.Saravanan, (2011) assessed the relationship between working capital management and the firm's profitability with the reference to Pricot Meridian Ltd. for the period of 2001-2010. The correlation method is used to examine such relationship. From the analysis, it is found that liquidity/WC and profitability are closely related to each other. In addition, managing working capital is very useful for the firm to ensure the accomplishment of desired goals.

Abbasali Pouraghajan, Milad Eamgholipourarchi, (2012) studied to provide the empirical evidence about the impact of working capital management on the "profitability" and "Market assessment" of all the companies that are listed in Tehran Stock Exchange. For this purpose, all the companies, listed in TSE, were taken as a sample during the years of 2006 to 2010 by using regression analysis and correlation method. The findings indicate a significant relationship between the working capital management and profitability. Further, each component of working capital should be focused separately by managers for noteworthy management.

Kulkanya Napompech, (2012) investigated the impacts of working capital management on the company's profitability. The panel sample of 255 companies that were listed on the Stock Exchange of Thailand, from 2007 to 2009, was analyzed with the help of regression and correlation method. The results showed a negative relationship among the gross operating profits, the receivables collection period and inventory conversion period. As a result, the profitability of the firms can be raised by shrinking the cash conversion cycle, receivables collection period and inventory conversion period.

On the other hand, profitability cannot be increased by enlarging the payables deferral period.

Ghilzar Ahmed Khan, Inaam Ullah Ghazi, (2013) determined the impact of working capital management on firm's performance in mounting markets, such as KSE, by using different variables. The sample was based on 22 firms that were taken from chemical sector for the period of 6 years ranging 2005-2010 by using correlation method. Results indicated that cash conversion cycle was positively influenced by the firm's profitability. The findings suggested that there is negative relationship between the firm's performance and working capital.

Seyed Mohammad Alvinasab & Esmail Davoudi (2013) examined the relationship between working capital management and profitability for the listed companies on Tehran stock exchange in which 147 companies were selected for the period of 2005-2009. To test the hypothesis, the regression and Pearson correlation methods are applied. The statistical results showed a negative relationship between return on assets, cash conversion cycle (CCC) and return on equity. Though, the relationship between return on equity and current ratio is irrelevant.

Sumaira Tufail aimed to discover the impact of working capital policies on the firm's profitability by taking 117 textile firms that were listed in KSE for a period of six years i.e. 2005-2010 with the help of regression and correlation methods. Results show that aggressiveness of working capital policies is negatively allied with profitability. In addition, liquidity and size of the firm have positive relationship with the profitability whereas debt to equity ratio is inversely correlated with profitability. The study suggested that the conservative investment policy and conservative financing policy of working capital management should be followed and invested more in current assets by the financial managers of textile sectors.

Dr. Ashok Kumar Panigrahi, (2013) studied to find out the inventory management practices of cement companies of India as well as its impact on working capital efficiency. The regression analysis is based on a sample of five top cement companies of India during ten years ranging from 2001-2010. The fallout of this study is lined up with the preceding findings that Inventory conversion period has a negative relationship with profitability, measured by gross operating profit. Moreover, the GOP and firm size have a positive relationship which represents that profitability rises with the increase in size of firm.

Zubair Arshad, Muhammad Yasir Gondal, (2013) focused on the impacts of working capital management on the profitability of Pakistan's cement sector. The sample was based on 21 cement companies listed in KSE during the phase of 2004–2010. The regression method is used to analyze the impacts. The results indicated that there is a considerable negative relationship between working capital management on profitability of the Pakistani cement firms. With the help of findings, it is suggested that profitability can be raised by lessening the inventory periods.

G. Sekeroglu, M. Altan, (2014) examined the impact of inventory management on the profitability of Turkish enterprises that were operated in weaving industry, wholesale and retail industry and eatables industry, during the years of 2003-2012. The relationship between inventory management and profitability is evaluated by using SPSS-20 software with regression and correlation analysis. According to the results, no relationship is found between inventory management and profitability in the weaving, wholesale and retail industry. However, in the eatables industry, a positive relationship is intensely observed. So, if the firms in the eatables industry uphold their inventory management policies effectively, the profit can easily be enlarged.

Imran Omer Chhapra, Nousheen Abbas Naqvi, (2010) intended to study the relationship between working capital management and firm's profitability in the Pakistan's textile sector by taking 55 companies for duration of six years, since 2003 to 2008. Analysis of Variance (ANOVA) test, correlation and regression analyses are used to examine the relationship between working capital efficiency and profitability. The findings showed a strong positive relationship between Working Capital Management and firm's profitability in the Pakistan's textile sector but a negative relationship between profitability and debt used by the firm.

Richard Kofi Akoto, Dadson Awunyo-Vitor & Peter Lawer Angmor, (2013) aimed to analyze the relationship between management practices of working capital and firm's profitability in Ghana. For this purpose, 13 listed Ghanaian manufacturing firms were opted covering the years from 2005-2009 by using panel data methodology. The study found a negative relationship between profitability and accounts receivable periods. Though, the firms' cash conversion cycle, size, current asset turnover and current asset ratio positively impact over profitability. As per results, it is suggested that managers can be

able to generate value for their shareholders by giving them incentives to lessen the accounts receivable to 30 days.

Teodor Hada, Teodora Maria Avram, (2014) conducted a study to find out the detailed practical and theoretical elements of working capital in financial management. The Current asset indicators (the speed of rotation, working capital limits, the intensity indicators of using current assets; the relative, absolute and total release of current assets) are used to analyze the significance of working capital over the duration of five years for Albalact JS. The results showed that performance and current assets are strongly related. However, it is recommended that all investors and managers must calculate the situation of current assets while measuring in order to reduce the chances of insolvency or other possible unfavorable circumstances.

Prof. Dr. Abdul Ghafoor Awan, Jhanzaib Hassan & Waqas Ahmed, (2014) aimed to find the affect of financial ratios on the performance of the companies in the cement industry of Pakistan. The study empirically observed the relationship between working capital management and profitability by using data of 10 Pakistani cement companies that were listed in Karachi Stock Exchange with the help of panel data method. All the findings and results were examined at the level of 0.01 and 0.05 of significance that found the negative correlation among return on equity (ROE), Cash Conversion Cycle (CCC), current ratio (CR), and inventory turnover in days (ITD).

3.0 Methodology

3.1 Approach and philosophy of Research

The deductive approach is used in the study whereas the philosophy of research is based on positivism in which the time horizon is longitudinal.

3.2 Type and Source of data

The type of data is secondary because the annual reports of 10 years (2004-2014) from the official websites of Pakistan State Oil are used as financial statements provide the reliable data.

3.3 Statistical Techniques

- Descriptive Analysis

Firstly, Descriptive analysis is done in the research that helped in describing relevant aspects and

provided detailed information about the variables that have been used in the study.

- Quantitative Analysis

Two methods are applied in the quantitative analysis. Firstly, Pearson correlation model is used to determine the level of relationship between the variables undertaken in consideration. Secondly, Simple linear regression method is applied to provide additional information on the correlation structure and facilitate in hypothesis testing.

3.4 Selected Variables

Dependent Variables	Formula	Independent Variables	Formula
Return on Assets	Net Income/Total Assets	Cash Conversion Cycle	Receivable Turnover in Days + Inventory Turnover in Days – Payable Turn over in Days
Return on Equity	Net Income/Total Equity	Current Ratio	Current Assets/Current liabilities
		Current Liabilities to total assets	Current liabilities/Total assets

3.5 Hypothesis

1) **H0:** There is no relationship between working capital management and return on assets.

H1: There is a relationship between working capital management and return on assets.

1-1 There is a relationship between current ratio and return on assets.

1-2 There is a relationship between cash conversion cycle and return on assets.

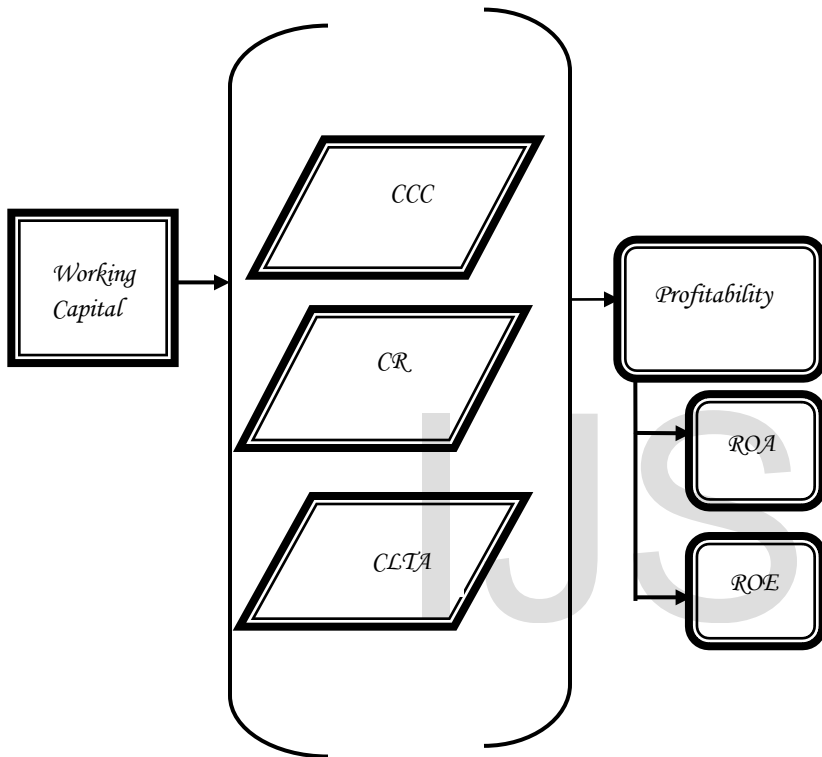
1-3 There is a relationship between current liabilities to total asset ratio and return on assets.

2) **H0:** There is no relationship between working capital management and return on equity.

H1: There is a relationship between working capital management and return on equity.

- 2-1 There is a relationship between current ratio and return on equity.
- 2-2 There is a relationship between cash conversion cycle and return on equity.
- 2-3 There is a relationship between current liabilities to total asset ratio and return on equity.

3.6 Theoretical Framework



4.0 Research Findings

4.1 Descriptive analysis

Table I comprises of the descriptive statistics of the selected variables. The total of observations sums to n = 10. On average, 5.80 percent and 23.60 percent are the return on assets and return on equity respectively. Whereas, Current ratio has the mean of 1.1590 and median of 1.1550 which is showing that PSO has sufficient current assets to meet its short term obligations. Meanwhile, Cash conversion cycle has an average of 6.5 days (median 7 days) which means PSO takes almost 7 days to convert its operations into cash flows. However, the average of current liabilities to total assets is 76.4 percent

Table I: Descriptive statistics of the selected variables

Descriptive Analysis						
		Return on Asset	Return on Equity	Current Ratio	Cash Conversion Cycle	Current liabilities to total assets
N	Valid	10	10	10	10	10
	Missing	0	0	0	0	0
Mean		.0580	.2360	1.1590	6.5000	.7640
Median		.0600	.2950	1.1550	7.0000	.7700
Mode		.06 ^a	-.32 ^a	1.24	13.00	.77 ^a
Std. Deviation		.04614	.21193	.07505	6.43342	.08017
Minimum		-.04	-.32	1.04	-3.00	.63
Maximum		.11	.45	1.24	16.00	.85
Skewness		-.782	-.229	-.297	-.033	-.447

a. Multiple modes exist. The smallest value is shown

(median 77 percent) which means that PSO has acquired most of the assets through debt.

4.2 Correlation Analysis

According to skewness statistics, all the values lie in between +1 and -1. So that Pearson correlation is applied as the values do not exceed from 1.

Table II: Simple Pearson correlation analysis between

Independent variables	Dependent variables	
	ROA	ROE
CR	.773	.587
CCC	-.026	-.270
CLTA	-.764	-.442

Correlation is significant at the 0.05 level (2-tailed)

ROA is positively strongly correlated with CR having the value of .773 whereas, it has a poorly negative correlation with CCC and strongly negative correlation with CLTA having the values of (-) .026 and .764. On the other hand, ROE is positively correlated with CR having the value .587 which indicated that there is a moderate degree of positive

association between such variables. Meanwhile, the value of correlation of ROE with CCC and CLTA is (-) .270 and .442 respectively which showed the lower degree of negative correlation between ROE and CCC and moderate degree of negative association between ROE and CLTA. Conclusively, current ratio is positively correlated with the PSO's profitability whereas cash conversion cycle and debt ratio are negatively correlated with the profitability of PSO.

4.3 Regression Analysis

To more enlighten the relationship of working capital with the profitability of PSO, regression analysis is employed. The independent variables are current ratio, cash conversion cycle and current liabilities to total assets. However, return on assets and return on equity are the dependent variables.

Equation: $y = b + mx$

Where,

- y = dependent variable
- b = intercept
- m = slope
- x = independent variable

Regression 1

$ROA = -.493 + .475CR$

This equation demonstrates the positive relationship between return on assets and current ratio which authenticates a notion that an increase of 1% in current ratio will produce 47.5% profit for a firm. The coefficient of current ratio is positive which depicts that an increase in the current ratio of one day is associated with a decline in return on assets by 0.493.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.493	.160		-3.074	.015
	Current Ratio	.475	.138	.773	3.443	.009

a. Dependent Variable: Return on Asset

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.773 ^a	.597	.547		.03107

a. Predictors: (Constant), Current Ratio

According to table III, P-value is .009 which is less than .05 so that the null hypothesis (H0₁) is rejected which means that current ratio has a significant positive relationship with the profitability of PSO.

Regression 2

$ROA = .059 + .000CCC$

This equation reveals insignificant relationship between return on assets and cash conversion cycle which depicts that an increase or decrease in cash conversion cycle will not have any impact over the profit generation of PSO. The coefficient of cash conversion cycle is insignificant which shows that return on assets will increase by 0.059 whether cash conversion cycle increases or decreases.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.059	.023		2.620	.031
	Cash Conversion Cycle	.000	.003	-.026	-.074	.943

a. Dependent Variable: Return on Asset

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.026 ^a	.001	-.124		.04892

a. Predictors: (Constant), Cash Conversion Cycle

According to table V, P-value is .943 which is more than .05 so that the null hypothesis (H0₂) is failed to be rejected which means that cash conversion cycle has insignificant relationship with the profitability of PSO.

Regression 3

ROA = .394-.439CLTA

This equation discloses a negative relationship between return on assets and current liabilities to total assets which depicts that a decrease of 1% in the debt ratio will help the PSO to produce the profit of 43.9%. The coefficient of current liabilities to total assets is positive which depicts the increase in return on assets of one day by 0.394.

Model	Unstandardized Coefficients			T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.394	.101		3.903	.005
1 Current liabilities to total assets	-.439	.131	-.764	-3.345	.010

a. Dependent Variable: Return on Asset

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.764 ^a	.583	.531	.03160

a. Predictors: (Constant), Current liabilities to total assets

According to table VII, P-value is .01 which is less than .05 so that the null hypothesis (H0₃) is rejected which means that current liabilities to total assets has a significant negative relationship with the profitability of PSO.

Regression 4

ROE = .684+.656CR

The equation unveils a positive relationship between return on equity and current ratio which describes that an increase of 1% in the current ratio will generate return by 65.6%. The positive coefficient of current ratio shows that return on equity of one day will increase by 0.684 as current ratio increases.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error			
1	(Constant)	.684	.939		-1.793	.111
	Current Ratio	.656	.809	.587	2.048	.075

a. Dependent Variable: Return on Equity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.587 ^a	.344	.262	.18206

a. Predictors: (Constant), Current Ratio

According to table IX, P-value is .075 which is more than .05 so that the null hypothesis (H0₄) is failed to be rejected which means that current ratio has insignificant relationship with the return on equity.

Regression 5

ROE = -.178-.009CCC

The equation uncovers a negative relationship between return on equity and cash conversion cycle which tells that profit will grow by 0.9% by decrease in the cash conversion cycle of 1%. The coefficient of cash conversion cycle is negative which depicts that an increase in the cash conversion cycle of one day is associated with a decrease in return on equity by 0.178.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error			
1	(Constant)	-.178	.100		1.782	.113
	Cash Conversion Cycle	-.009	.011	-.270	-.792	.451

a. Dependent Variable: Return on Equity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.270 ^a	.073	-.043	.21646

a. Predictors: (Constant), Cash Conversion Cycle

According to table XI, P-value is .451 which is more than .05 so that the null hypothesis (H₀₅) is failed to be rejected which means that cash conversion cycle has insignificant relationship with the profitability of PSO.

Regression 6

$$ROE = -.129-.169CLTA$$

The equation states a negative relationship between return on equity and current liabilities to total assets which show that profit will rise to 16.9% by decrease in the debt ratio of 1%. The coefficient of current liabilities to total assets is negative which depicts that decrease in the debt ratio of one day is associated with an increase in return on equity by 0.129.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.129	.644		1.755	.117
	Current liabilities to total assets	-.169	.838	-.442	-1.395	.020

a. Dependent Variable: Return on Equity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.442 ^a	.196	.095	.20160

a. Predictors: (Constant), Current liabilities to total assets

According to table XIII, P-value is .02 which is less than .05 so that the null hypothesis (H₀₆) is rejected which means that debt ratio has a significant negative relationship with the profitability of PSO.

5.0 Conclusion

The findings of the study are much similar to the results that were found in the previous studies (Kalkanya Nepomech, 2012, Alvinasab & Davoudi, 2013, Dr. Awan, 2014,). Thus, the results of this research proved that the profitability of a firm can be increased by efficient management of working capital. The study showed that current ratio has a significant positive relationship with return on assets but insignificant relationship with the return on equity. However, cash conversion cycle has insignificant relationships with both indicators (ROA & ROE) of the profitability of PSO. Meanwhile, debt ratio has a negative relationship with the PSO's profitability.

6.0 Recommendations

In order to increase the profitability, PSO has to focus on the following suggestions

- PSO has acquired most of its assets through debt so it needs to lower down its debt ratio as it is negatively correlated with the profit.
- PSO has to continuously work over the liquidity management by keeping its current assets in a sufficient amount as its profit is somehow directly related with the current ratio.

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