Macrothink Institute™
International Journal of Accounting and Financial Reporting
ISSN 2162-3082
2015, Vol. 5, No. 1

Association between Working Capital Management Strategies and Profitability

Sana N. Maswadeh

Associate Professor, Department of Accounting, Jadara University

Email: Sanaam@jadara.edu.jo

Accepted: January 05, 2015

DOI: 10.5296/ijafr.v5i1.6069 URL: http://dx.doi.org/10.5296/ ijafr.v5i1.6069

Abstract

This study aims to examine the relationship between working capital management strategies (aggressive, moderate, conservative) and profitability. The study relied on the financial statements published by industrial pharmaceutical corporations in the last five years, namely 2009-2013, using the Pearson correlation coefficient between classifications according to corporate working capital management strategies, as well as profitability classification (high, medium and low) to determine whether a statistically significant relationship between the strategies followed for working capital management and profitability of the corporation. The study's results revealed a stronger relationship between working capital management strategy and profitability of Jordanian industrial pharmaceutical corporations that followed a moderate strategy compared with those that followed an aggressive strategy. Furthermore, Jordanian pharmaceutical corporations didn’t follow a conservative working capital management strategy.

Keywords: Working Capital, Management Strategies, Profitability

1. Introduction

Working capital management is a crucial component of financial management, accompanied by a crucial effect on profitability and liquidity of firms. Moreover, the relevant literature has identified that optimal working capital management positively contributes to the firm's value (Jayarathnea, 2014). The two most important terms when discussing working capital are gross working capital and Net Working Capital. Gross Working Capital can be defined by the investment needed in current assets; in contrast, the difference between current assets and current liabilities is the Net Working Capital (NWC), which indicates how much of its long-term capital a company has to invest to finance its working capital. There is, however, support for the theory that most financial managers try to match the maturities of their liabilities and assets(Graham & Harvey, 2001).This means that long-term assets , such as machines or buildings, are financed with long-term financing, while working capital is financed (as much as possible) by short-term financing. Of course, Net Working Capital usually is positive, which implies a permanent investment in working capital. The part of Net Working Capital that exceeds current liabilities is thus financed with long term financing, such as equity, loans or bonds, which is more costly than short-term financing (Brealey, et al,.2006).Working capital management involves a tradeoff between profitability and risk. According to the theory of risk and return, investment with a higher risk may create a higher return. Thus a firm with a high liquidity in working capital will have a low risk of failing to meet its obligations, and low profitability at the same time (Zariyawati, et al., 2009).So we can discuss working capital in terms of risk and return tradeoffs in alternate working capital management strategies. They classify three different categories of working capital management strategies: aggressive, moderate (or matching) and conservative. Aggressive management is when the working capital investment and financing is characterized by high risk and high return. Moderate, or matching, policy entails lower risk and returns, and finally conservative strategies have the lowest risk and returns.

2. Literature Review

Different methods of research in the field of working capital management have been tried. Zawaira & Mutenheri (2014), studied the effect of working capital management on the profitability of non-financial companies listed on the Zimbabwe stock exchange. The data analysis was conducted on32companiesduring the2010-2012 period. The study findings showed a lack of statistically significant relationship between the profitability of the company and itscollocation period, inventory period, cash conversion cycle, quick ratio, the ratio of current asset to total assets, the ratio of current liability to total assets, and its debt ratio. Moreover, there was a positive correlation between the profitability of the company and its payment period. Jayarathnea (2014), studied the impact of working capital management on profitability based on data collected from 2008-2012 on manufacturing companies in the Colombo Stock Exchange. The findings suggest that profitability is negatively associated with the company's collection period, inventory turnover period, and its cash conversion cycle. Furthermore, it was found that the profitability is positively associated with a company's payment period. Darabi & Yousef (2012), examined the effect of working capital management and financial factors (such as company size, sales growth, profitability indicators, financial leverage, and the ratio of fixed assets to total assets) on the competitiveness of 96 accepted companies on the Tehran Stock Market between 2006 and 2010. In this study, the cash conversion cycle was been used to measure the working capital management. The findings of this research show that reducing the cash conversion cycle is a desirable objective for every company to aim to achieve. Napompech (2012), examined the effects of working capital management on profitability. The regression analysis was based on a panel sample of 255 companies listed on the Thailand Stock Exchange from 2007 to 2009. The results revealed a negative relationship between the gross operating profits and the inventory conversion period and the receivables collection period. Therefore, managers can increase the profitability of their firms by shortening the cash conversion cycle, inventory conversion period, and receivables collection period. However, they cannot increase profitability by lengthening the payables deferral period. The findings also demonstrated that industry characteristics have an impact on gross operating profits. Amalendu & Amit(2012), examined the relationship between the working capital management and profitability of small to medium private sector Indian steel companies obtained from the CMIE database. Working capital management indicators and profitability indicators during the period from 2003 to 2010 were molded as a linear regression system in multiple correlation and regression analysis. The study shows a small relationship between WCM, including working capital cycle and profitability. Multiple regression tests confirmed a lower degree of association between working capital management and profitability. Kaddumi & Ramadan(2012), aimed to assess the effect of Working Capital Management (WCM) on performance, utilizing unbalanced data for a sample of 49 Jordanian industrial corporations listed on the Amman Stock Exchange from2005 to 2009. The findings of the study were significantly consistent with the view of the traditional working capital theory. The results suggest that working capital management and performance are positively correlated. The regression results also concluded that the Jordanian industrial firms follow a conservative investing policy and less aggressive financing policy regarding working capital, and that well-managed working capital can increase returns for shareholders. Al-Debi'(2011), examined the relationship between profitability and working capital management measures for industrial companies listed in Amman Stock Exchange in Jordan during the period of 2001-2010. Industrial companies in Jordan invest significantly in working capital. Therefore, efficient working capital management is expected to enhance the profitability of these companies. The results show that less profitable companies wait longer to sell their products, to collect credit sales, and to pay their supplies of goods. Moreover, the results show that regardless of the level of profitability, industrial companies in Jordan pay their suppliers before collecting credit sales. The control variables (Size, Leverage, and GDP growth) included in all regression models were significant and have the expected signs. Profitability increases with size and GDP growth and decreases with leverage. Nazir & Afza (2009), investigated the traditional relationship between working capital management policies and a firm’s profitability. Using a panel data set from the period 1998-2005 in Pakistan, the impact of aggressive working capital investment and financing policies was evaluated using return on assets. The results show managers can create value if they adopt a conservative approach towards working capital investment and working capital financing policies. The study also finds that investors give weight to the stocks of firms that adopt an aggressive approach to managing their short-term liabilities.

3. Objectives of the study

The purpose of this study is to investigate the effect of working capital management strategies (aggressive, moderate, conservative) on profitability of Jordanian industrial pharmaceutical corporations, and how corporations can perform better by managing their working capital.

4. Hypotheses of the study

This study has three hypotheses as follows:

H1: There is no effect between aggressive working capital management strategy and the profitability of Jordanian industrial pharmaceutical corporations.

H2: There is no effect between moderate (or matching) working capital management strategy and the profitability of Jordanian industrial pharmaceutical corporations.

H3: There is no effect between conservative working capital management strategy and the profitability of Jordanian industrial pharmaceutical corporations.

5. Research Methodology

This section deliberated the research methods that conducted such as data collection, statistical methods to achieve the objectives of this study.

5.1 Population of the Study

The study population consistsof8 Jordanian industrial pharmaceutical corporations listed in Amman Stock Exchange (ASE), relying on the financial statements published by industrial pharmaceutical corporations in the last five years(2009-2013).

5.2 Statistical Method

The study tested hypotheses using one - Sample T Test, by comparing the values of the dependent variable with the test value calculated as the industrial standard of the pharmaceutical corporations sector for all variables of the study, which were: collection period, payment period, Inventory period, cash conversion cycle, and the rate of investment as an indicator of Profitability Corporation.

To judge the strategy followed by the corporation in the management of working capital while relying on the comparative value of the cash conversion cycle with the test value, which was classified into three different statistical categories as follows:

-The values of the cash conversion cycle exceeded the test value (industrial standard of the pharmaceutical corporations sector for cash conversion cycle)to a statistically significant degree. These corporations were classified as having a conservative strategy.

-The value of the cash conversion cycle was close to the test value (industrial standard of the pharmaceutical corporations sector for cash conversion cycle) and the difference was not statistically significant; such corporations were classified as having a moderate strategy.

-The values of the cash conversion cycle was less than the test value (industrial standard of the pharmaceutical corporations sector for cash conversion cycle), with a statistically significant difference. These corporations were classified as having an aggressive strategy.

The test value of industrial standard of the pharmaceutical corporations sector for return on assets was calculated as an indicator of profitability, and compared with the rate of return on assets achieved by these corporations during the period of study; therefore corporations were classified as high, moderate or low profitability depending on a statistically significant difference as was previously established when determining the strategy followed in working capital management.

A relationship was found using the Pearson correlation coefficient between classifications according to corporate working capital management strategies, and profitability classification, to determine whether there is a statistically significant relationship between the strategy followed for working capital management, and the corporation's profitability.

5.3 Research Findings

Financial statements published in Amman Stock Exchange, industrial standard of the pharmaceutical corporations sector were calculated for the variables of the study in particle, and used the One - Sample T Test. The results of the study are shown in Table (1) below.

Table 1. One - Sample T Test for variables of the study

	AAP		AAR		AAI		CCC		**ROA**	
Corporation No.	Test value =61.3		Test value =86.32		Test value =56.28		Test value =81.31		**Test value = 9%**	
	T	SIG	T	SIG	T	SIG	T	SIG	**T**	**SIG**
1	-3.49	0.03	2.49	0.067	-0.06	0.97	1.79	0.15	**1.09**	**0.34**
2	-0.95	0.93	-6.09	0.004	1.59	0.19	-2.12	0.10	**-1.90**	**0.13**
3	1.28	0.27	-6.22	0.003	-3.69	0.02	-11.9	0.00	**2.95**	**0.04**
4	1.29	0.27	-2.24	0.089	1.63	0.18	-.816	0.46	**1.82**	**0.14**
5	-1.97	0.11	-2.09	0.104	-1.92	0.13	-.413	0.70	**1.26**	**0.28**
6	7.68	0.00	-9.33	0.001	1.28	0.27	-7.22	.002	**4.39**	**0.01**
7	-2.91	0.02	1.45	0.35	1.34	0.42	2.03	0.22	**-1.41**	**0.11**
8	1.31	0.28	-2.31	0,076	7.15	0.01	-1,98	0.12	**-0.53**	**0.63**

Using One - Sample T Test as described above, the classification variables of the study according to working capital management strategies are shown in Table (2) below.

Table 2. Classification variables of the study according of working capital management strategies

Corporation	AAP	AAR	AAI	CCC	**ROA**
1	aggressive	moderate	moderate	moderate	**moderate**
2	moderate	aggressive	moderate	moderate	**moderate**
3	moderate	aggressive	aggressive	aggressive	**High**
4	moderate	moderate	moderate	moderate	**moderate**
5	moderate	moderate	moderate	moderate	**moderate**
6	conservative	aggressive	moderate	aggressive	**High**
7	aggressive	moderate	moderate	moderate	**moderate**
8	moderate	moderate	conservative	moderate	**moderate**

Table 2 above shows that corporations can follow an aggressive strategy in respect to payment periods and at the same time follow a conservative or moderate strategy with respect to collection periods and inventory periods, if the payment period is determined and imposed on the corporation by external parties, which means that the corporation may follow an aggressive, moderate or conservative strategy on different working capital management variables, in order to achieve the interests of the corporation, such as increasing sales or decreasing the cost of inventory, in accordance with the situations of corporations.

The Jordanian pharmaceutical corporations were classified below depending on their cash conversion cycle, in accordance with the working capital management strategies followed.

As shown in table (2), Jordanian pharmaceutical corporations didn't follow conservative working capital management strategies, but rather, followed moderate and aggressive strategies.

In addition, table (2) shows that when comparing pharmaceutical corporations according to working capital management strategies, pharmaceutical corporations that followed moderate working capital management strategies realized a moderate return on their assets (profits), and corporations that followed an aggressive working capital management strategy realized a high return on their assets (profits).

The relationship between the strategies of working capital management was examined, which were classified in accordance with their cash conversion cycle and the profitability of the

International Journal of Accounting and Financial Reporting
ISSN 2162-3082
2015, Vol. 5, No. 1

corporation represented in the rate of return on assets. The results are shown in table (3) below:

Table 3. Correlation coefficient between the strategy of working capital management and profitability of the corporation

variables		ROA
CCC (Aggressive strategy)	Pearson Correlation Sig	0.613 0.042
CCC (Moderate strategy)	Pearson Correlation Sig	0.732 0.022
CCC (All strategies)	Pearson Correlation Sig	0. 671 0.000

Table (3) shows the relationship between the cash conversion cycle and Return on Investment.

For corporations that were classified as following an aggressive strategy, the correlation coefficientwas0.61at a significance level of0.042, which means there is a statistically significant relationship at the level of significance of 5%between an aggressive working capital management strategy and the profitability of the corporation.

The results showed that the correlation coefficient between corporations that followed a moderate working capital management strategy and Return on Investment was0.73ata significance level of0.022, which means there is a statistically significant relationship at the level of significance of 5%between a moderate working capital management strategy and the profitability of the corporation.

Finally, the correlation coefficient between the cash conversion cycle of all corporations and Return on Investment was0.67ata significance level of0.000, which means there is a statistically significant relationship at the level of significance of 5%between working capital management strategies and a corporation's profitability.

6. Conclusion and Recommendation

The study concludes with the following observations:

1- There is a significant effect between aggressive working capital management strategy and the profitability of Jordanian industrial pharmaceutical corporations.

2-There is a significant effect between moderate (or matching) working capital management strategy and the profitability of Jordanian industrial pharmaceutical corporations.

3- There is a stronger relationship between working capital management strategy and the profitability of Jordanian industrial pharmaceutical corporations that followed a moderate strategy compared with those that followed aggressive strategy.

4- Jordanian Pharmaceutical Corporations did not follow a conservative working capital management strategy, therefore the study could not test the hypothesis related to the effect of this strategy on the profitability of the corporation.

The study also presents several results. Most importantly, it recommends emphasizing the trade-off between risk and profitability in the working capital management, since the corporations that maintain moderate working capital management strategy, making them able to achieve steady profits over the long term, and consequently maintaining the value of the corporation and its value to shareholders.

References:

Al-Debi'e, Mamoun (2011). Working Capital Management and Profitability, *European Journal of Economics*, 36, 21-32

Amalendu,Bhunia,& Amit, Das (2012).Affiliation between Working Capital Management and Profitability, *Contemporary Research in Business*, 3, no 9.

Brealy, Myers, & Allen (2006).*Working Capital Management, Corporate Finance*, New York, McGraw-Hill.

Darabi, Roya & Toomari ,Yousef (2012). The Effect of Working Capital Management and Financial Factors on the Competitiveness of the Company.*Journal of Basic and Applied Scientific Research*, 10No. 3.

Graham & Harvey (2001). The Theory and Practice of Finance: Evidence from the Field, *Journal of Financial Economics*, 9, No. 5.

Jayarathnea, Tanr (2014). Impact of Working Capital Management on Profitability, Reshaping Management and Economic Thinking through Integrating Eco-Friendly and Ethical Practices, *Proceedings of the 3rd International Conference on Management and Economics, 26-27 February 2014. Chengdu, China.*

Kaddumi, Thair & Ramadan, Imad (2012). Profitability and Working Capital Management, International.*Journal of Economics and Finance*. 4, No 4.

Napompech, Kulkanya (2012). Effects of Working Capital Management on the Profitability of Thai Listed Firms, *International Journal of Trade, Economics and Finance*. 3, No. 3.

Nazir & Afza (2009). Impact of Aggressive Working Capital management Policy on Firms' Profitability, *The IUP Journal of Applied Finance*. 15, No. 8.

Zariyawati, Annuar, & Abdul ,Rahim(2010). Effect of Working Capital Management on Profitability of Firms in Malaysia, online Available:http://www.studymode.com/essays/Working-Capital-Management-426995.html.

Zawaira & Mutenheri (2014). The Association between Working Capital Management and Profitability of non- Financial Companies listed on the Zimbabwe Stock Exchanged, International Journal of Research in Social Sciences. 3, No. 8.