

The Study of the Relationship between Working Capital Management and Profitability in Capital –Intensive Firms and Work - Intensive Firms

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ABSTRACT

In this study, the relationship between working capital management and profitability in capital –intensive firms and work - intensive firms Accepted in Tehran Stock Exchange is being investigated. The study sample consisted of 76 companies that were surveyed between 2007 to 2012. In this study, the variable ratio of gross profit to Total assets as a measure of Companies profitability and of variables Average Collection Period, Inventory Turnover in Days, Average Payment Period and Cash Conversion Cycle is used as criteria for the working capital management. And of variables firm size, debt ratio and Current ratio is used as control variables. The results suggest that the profitability of work - intensive firms with Average Payment Period and the profitability of capital –intensive firms with Average Payment Period of Average Collection Period there was a significant inverse relationship. In other words, managers are able to reduce the extent of the Average Collection Period companies increase their profitability. The results of this study may be Average Collection Period in respect of the period that it indicates that profitable firms are shorter Average Collection Period.

KEYWORD: working capital management, profitability, Cash Conversion Cycle, Average Collection Period, Inventory Turnover in Days, Average Payment Period.

1. INTRODUCTION

Working capital management is an important area of financial management and enterprise management considered, because it directly affects the liquidity and profitability. Even with the possibility of bankruptcy for profit companies who are at risk of mismanagement. Working capital management deals with assets and current liabilities .Current assets of a company constitutes a significant part of its assets. Excessive levels of current assets to achieve the investment returns may be less than normal. However, companies that have little current assets in the ordinary course of operations deficiencies and problems will be (Rahman and Nasr, 2007)

One of the ultimate goals of any company is to maximize profit in the long run, The company is also an important goal is to maintain liquidity. The problem is that to make a profit at the expense of losing liquidity could cause serious problems for a company. So we must establish a balance between the two objectives and one objective should be achieved at the expense of another goal because they both have their own importance If a company does not pay attention to profitability Unable to sustain the long-term And on the other hand, Do not worry if liquidity May be faced with debt problems, bankruptcy or failure to pay on time (Rahman and Nasr, 2007). Infrastructure assets comprise financial management issues it can be argued that all businesses need capital, considering the importance of investment in organizational processes, management is of utmost importance. Working capital is the amount of a company's current assets such as cash, short-term securities, accounts receivable and inventory investment is. And working capital management is to determine the size and composition of the sources and uses of working capital so as to increase shareholder wealth. (Rahman and Nasr, 2007). Maintain an optimal level of cash to pay off debt maturity, and sudden opportunities for investment that is a sign of the resilience of the business unit and access to raw materials for production, so that the company can meet customer demand in a timely manner evidencing the importance of working capital is. On the other hand, may keep too much inventory, or giving credit to customers to make large amounts of cash in the capital blocked (Deloof, 2003).

2. LITERATURE REVIEW

Particularly in relation to the importance of working capital management, including research studies carried out by (Taghizadeh, et al, 2012), (Safdar Sial, 2012), (Saghir, et al, 2011), (Mojtahedzadeh, et al, 2011),

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(Yqvbznhad, et al, 2010), (Rezazadeh and Heydariyan, 2010), (Mohamad and Saad, 2010), (Mohammadi, 2009), (Falope and Ajilore, 2009), (Rahman and Nasr, 2007), (Solano, et al, 2007), (Lazaridis and Tryfonidi 2006), (Deloof, 2003), That there is a negative correlation between the solvency and profitability of companies have reported. This variable is correlated with the profitability of the company implies that the profitability of the companies they own bills to pay less later. And furthermore found a significant correlation with the profitability of the collection period. This means that the longer average collection period, reduces profitability. As well as findings from studies conducted by (Yqvbznhad, et al, 2010), (Mohammadi, 2009), (Rahman and Nasr, 2007), (Deloof, 2003) Shows that the company's profitability and cash conversion cycle and inventory turnover in days there is a negative relationship.

3. RESEARCH METHODOLOGY

This research is based on the objective. In this study, the data collection method includes a library of Printed Books, Theses, articles Online, internet sites, etc. are used. And all financial information required documents, financial statements and explanatory notes accompanying the companies listed in Tehran Stock Exchange was created. Wide screen and processing data from Excel and Eviews software was used for data analysis. Also, the t-statistics test the hypothesis of and f statistic for assessing the adequacy of the model and for data normalization is used to test Jarkko –Bra. Determined by using the coefficient of variation of the dependent variable to the independent variables assessed.

3.1. The sample

The population of listed companies in Tehran Stock Exchange.(In two groups in capital –intensive firms and work - intensive firms), for a period of 6 years from 2007 to 2012.

Systematic elimination of sample selection and sample size of 76 firms,

The criteria for selection are as follows:

- (1) In order to increase the contrast or matching conditions of the selected companies, financial year shall lead to the end of March each year.
- (2) Due to the specific nature of operations in financial companies (holding companies, investment companies, broker-financial, etc.), these firms are removed from the sample.

In the next step, the selected companies in the first stage capital –intensive firms and work - intensive firms into two groups. The ratio of gross assets to net sales revenue as capital –intensive firms rules and the ratio of the number of employees, net sales revenue being used as a standard work - intensive firms. Ratios have been calculated for the companies selected in the first stage. Then each of them individually in ascending order and the median ratios for each ratio is calculated. Each of the companies that are larger than the median is calculated for the desired features (capital –intensive or work – intensive) is. The ratios calculated above, firms are grouped into four categories (Radhakrishnan and Tsang, 2006).

1 Companies that both of them more than the median ratios capital –intensive and work – intensive, most work – intensive are more capital –intensive.

2 companies, both of which are less than the median ratios capital –intensive and work – intensive, it means less capital –intensive are less work – intensive.

3 Companies with capital –intensive ratios exceeding the median ratios capital –intensive and work – intensive ratios are less than the work – intensive ratio, More companies capital –intensive - fewer work – intensive.

4 companies that are less capital intensive than the median ratios capital –intensive and work – intensive ratios is greater than the work – intensive ratio, These firms are less capital –intensive - most work – intensive.

After calculating the above ratios of the two groups, respectively, as companies are capital-intensive firms and the work – intensive selected.

4. Models to test hypotheses and variables

To study the working capital management and profitability, return on assets (ROA) was considered as the dependent variable. This variable is equal to earnings before interest and taxes (EBIT) Divided by total assets (TA) and working capital management as the independent variable is equal to the average collection period (ACP), inventory turnover in days (ITID), average payment period (APP), And cash conversion cycle (CCC). Other variables entered as a control variable in the model. The natural logarithm of sale (SIZE) as the logarithm of the

total assets of the Company is calculated, Debt Ratio (DR) dividing the total of liabilities over assets acquired and Current ratio (CR) Current assets divided by current liabilities comes from. Models were used to test hypotheses 1 to 4:

$$\begin{aligned} \text{ROA it} &= \beta_0 + \beta_1 (\text{CCC it}) + \beta_2 (\text{Size it}) + \beta_3 (\text{DR it}) + \beta_4 (\text{CR it}) + \varepsilon \text{ H1:} \\ \text{ROA it} &= \beta_0 + \beta_1 (\text{APP it}) + \beta_2 (\text{Size it}) + \beta_3 (\text{DR it}) + \beta_4 (\text{CR it}) + \varepsilon \text{ H2:} \\ \text{ROA it} &= \beta_0 + \beta_1 (\text{ACP it}) + \beta_2 (\text{Size it}) + \beta_3 (\text{DR it}) + \beta_4 (\text{CR it}) + \varepsilon \text{ H3:} \\ \text{ROA it} &= \beta_0 + \beta_1 (\text{ITID it}) + \beta_2 (\text{Size it}) + \beta_3 (\text{DR it}) + \beta_4 (\text{CR it}) + \varepsilon \text{ H4:} \end{aligned}$$

Cash conversion cycle

The main components of working capital management is considered Cash available for purchase and the time interval used in the production process when the cash through the sale of the finished product back to the company, including. The sum of the average collection period is deducted from the pay period. The complete index is an index measure of working capital management (Yqvbznhad, et al, 2010).

Average collection period

The average number of days that a company takes to collect receivables from customers Credit transactions and credit sales tool to attract new customers. Many companies are trying to attract new customers to its credit standards change. Further concessions to customers will stimulate sales because it allows customers who are evaluating the product quality before paying (Long et.al, 1993).

Average payment period

Time payment payable represents the average time that the debt is treated with his suppliers. Policies towards suppliers also will impact on the profitability of the organization (Lazaridis and Tryfonidi 2006).

Inventory turnover in days

Inventory holding period represents the average number of days inventory is held by the company. Optimal level of inventory will have a direct impact on profitability because the sources of capital for investment in the business cycle will be commercial-free (Lazaridis and Tryfonidi 2006).

5. TEST THE RESEARCH HYPOTHESIS

5-1 first hypothesis: between cash conversion cycle and profitability is negative and significant relationship of work - intensive firms.

Table 1 Results of hypothesis testing

	Coefficient	t-Statistic	Prob.
CCC	0/01	0/351	0/725
SIZE	0/132	1/104	0/270
DR	-3/117	-8/31	0/001**
CR	0/117	0/52	0/602
C	3/75	5/15	0/001**
Adjusted R-squared	0/383		
F-statistic	35/33		
Prob.(F-statistic)	0/001**		
D.W	1/95		

** , * Significant at the 1% and 5% error

In the above table it is evident that a significant level of t-test for variable cash conversion period of more than 5% (P> 0/05) in conclusion we can say that the cash conversion cycle and corporate profitability work - intensive firms there is no significant relationship.

5-2 second hypothesis: the solvency and profitability of the work - intensive firms find a significant negative relationship exists.

Table 2 summarizes the results of the second hypothesis

	Coefficient	t-Statistic	Prob.
CCC	-0/166	-3/43	0/001**
SIZE	0/11	1/09	0/273
DR	-2/54	-6/85	0/001**
CR	0/320	1/56	0/119
C	4/2	5/83	0/001**
Adjusted R-squared		0/413	
F-statistic		40/08	
Prob.(F-statistic)		0/001**	
D.W		1/92	

** , * Significant at the 1% and 5% error

In the above table it is evident that significant t test for the variable pay of less than 1% ($P < 0/01$) In conclusion we can say that the solvency and profitability of the work - intensive firms find a negative and significant relationship exists.

5.3 The third hypothesis: the collection of work - intensive firms and profitability in a negative and significant relationship exists.

Table (3) the third hypothesis test results

	Coefficient	t-Statistic	Prob.
CCC	-0/062	-1/24	0/212
SIZE	0/172	1/67	0/094
DR	-2/87	-7/63	0/001**
CR	0/244	1/128	0/260
C	3/76	5/199	0/001**
Adjusted R-squared		0/387	
F-statistic		35/92	
Prob.(F-statistic)		0/001**	
D.W		1/98	

** , * Significant at the 1% and 5% error

In the above table it is evident that a significant level of t-test for variable collection of more than 5% ($P > 0/05$) In conclusion we can say that the period between collection and find no significant relationship profitability of work - intensive firms

5-4 fourth hypothesis: between inventory turnover and profitability in work - intensive firms, there is a significant negative relationship.

Table (4) the fourth hypothesis test results

	Coefficient	t-Statistic	Prob.
CCC	0/115	1/46	0/145
SIZE	0/156	1/53	0/127
DR	-3/01	-8/7	0/001**
CR	0/186	0/914	0/361
C	3/41	4/52	0/100**
Adjusted R-squared		0/389	
F-statistic		36/15	
Prob.(F-statistic)		0/001**	
D.W		1/97	

** , * Significant at the 1% and 5% error

In the above table it is evident that significant t test for the variable inventory turnover is more than 5% ($P > 0/05$) The variable inventory turnover and profitability as a result we can say that a significant relationship does not exist in the work - intensive firms.

5-5 fifth hypothesis: Between cash conversion cycle and profitability of capital –intensive firms and the relationship is negative and significant.

Table (5) the fifth hypothesis test results

	Coefficient	t-Statistic	Prob.
CCC	0/0011	0/046	0/963
SIZE	0/220	2/15	0/032*
DR	-3/51	-9/42	0/001**
CR	0/067	0/514	0/607
C	3/65	6/27	0/001**
Adjusted R-squared		0/412	
F-statistic		39/91	
Prob.(F-statistic)		0/001**	
D.W		1/86	

** , * Significant at the 1% and 5% error

In the above table it is evident that a significant level of t-test for variable cash conversion period of more than 5% ($P > 0/05$) In conclusion we can say that the cash conversion cycle and profitability of the capital –intensive firms and there is no significant relationship.

5-6 sixth hypothesis: Between solvency and profitability of capital –intensive firms and the relationship is negative and significant.

Table (6) the sixth hypothesis testing results

	Coefficient	t-Statistic	Prob.
CCC	-0/074	-1/74	0/042*
SIZE	0/209	2/60	0/009**
DR	-3/3	-8/64	0/001**
CR	0/122	0/945	0/345
C	3/85	6/54	0/001**
Adjusted R-squared		0/420	
F-statistic		41/12	
Prob.(F-statistic)		0/001**	
D.W		1/85	

** , * Significant at the 1% and 5% error

In the above table it is evident that significant t test for the variable pay of less than 5% ($P < 0/05$) In conclusion we can say that the solvency and profitability of the capital –intensive firms and the relationship is negative and significant.

5-7 the seventh hypothesis: Between the collection of receivables and profitability of capital –intensive firms and the significant negative relationship exists.

Table (7) the seventh hypothesis test results

	Coefficient	t-Statistic	Prob.
CCC	-0/085	-1/75	0/049**
SIZE	0/222	2/77	0/006**
DR	-3/25	-8/3	0/001**
CR	0/152	1/12	0/261
C	3/84	6/55	0/001**
Adjusted R-squared		0/419	
F-statistic		41/00	
Prob.(F-statistic)		0/001**	
D.W		1/87	

** , * Significant at the 1% and 5% error

In the above table it is evident that significant collections of t-test for variable periods of less than 5% ($P < 0/05$) In conclusion we can say that the collection of receivables and profitability of the capital –intensive firms and the negative and significant relationship exists.

5-8 eighth hypothesis: Between inventory turnover and profitability of the capital –intensive firms and the relationship is negative and significant.

Table (8) the eighth hypothesis test results

	Coefficient	t-Statistic	Prob.
CCC	0/055	0/943	0/346
SIZE	0/215	2/68	0/007*
DR	-3/5	-9/65	0/001**
CR	0/069	0/549	0/853
C	3/57	6/03	0/001**
Adjusted R-squared		0/413	
F-statistic		39/99	
Prob.(F-statistic)		0/001**	
D.W		1/87	

**, * Significant at the 1% and 5% error

In the above table it is evident that significant t test for the variable inventory turnover is more than 5% ($P > 0/05$) In conclusion it can be said inventory turnover and profitability between capital –intensive firms and the relationship is not significant.

6. DISCUSSION AND CONCLUSIONS

Research results in prevailing hypotheses regarding working capital management and profitability of capital –intensive firms and work - intensive firms suggests The inverse relationship between receipt of demand and profitability of companies and there, Could be because customers have more time to evaluate the characteristics of Purchased inventories are now demanding that leads to lower profitability. Also, sales of goods and authenticating the users, leading to measures such as raising the debt collection period, Also doubtful receivables and increasing storage demands and consequently reduce profits and thus reduce the return on assets, On the other hand, when the customers as quickly as possible to settle their accounts Will cause shares of stock to raise more cash available, This leads to more sales as a result will lead to increased profitability. The inverse relationship between solvency and profitability of capital –intensive firms and work - intensive firms Managers can reduce the debt as much as possible to create a positive value and profitability for their shareholders this requires good governance and creditor payments and credit terms will be used.

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