THE RELATIONSHIP BETWEEN WORKING CAPITAL WITH PROFITIBILITY, LIQUIDITY AND SOLVENCY

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Abstract:
This study examines the relationship between working capital, liquidity, profitability & solvency of listed companies in Tehran Stock Exchange's. For this purpose, 107 companies were selected in the period 1393-1383.
Often been observed that when financial analysis is done, the profitability of the business is emphasized more than its liquidity. Of course, it is quite evident, Because the most important financial goal of any business is profit. So managers focus more on profitability. But another important variable is liquidity. The company's ability to do short-term financial obligations.
If a company does not have the ability to meet short-term financial obligations, a step toward bankruptcy proceeding. Therefore, liquidity management, including the amount or value of the investments in liquid assets to meet short term obligations to creditors and others.
The relationship between working capital and profitability in financial management has been an interesting debate. High levels of investment in working capital resulted in low profitability and lower investment returns caused the low liquidity. . management To maximize shareholder wealth needs to replacment relationship between liquidity and profitability.
Every organization, whether for-profit or nonprofit, regardless of the size and type of business ,needs to necessary amount of working capital. The most important factor to maintain liquidity, survival, financial strength and profitability of the business is working capital.
Usually observed that , If the company is willing to adopt greater risk for bumper profits and losses,so minimizes Working capital relative to revenue generated . If you wish to upgrade and increase liquidity, working capital level increases. This technique aims to lower sales volume and consequently affect profitability.
Working capital management involves planning and control on current assets and liabilities in a way that resolve The risk of inability to meet short-term commitments on the one hand and avoid excessive investment in these assets on the other.
Many studies have emphasized this that Managers spend considerable time for their daily problems and one the most important of them is related to working capital decisions. (Raymond New, 1391 -Rhman and Nasr, 2014 – Nazir & Afra, 2011 -)

Keywords : *working capital , profitability , cash conversion cycle*

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LITERATURE:

Financial management issues will form capital and It can be argued that all businesses need capital. Capital is: All funds that are used by companies and financial management defines framework of the relationship between investors and companies. With regard to the status and importance of capital in the organizational process, Management is of the utmost importance .Generally the working capital in all organizations allocated a large part of the organization funds & It is also important to management. Efficient management of working capital will yield significant results and its absence can have many risks for each company.

More insolvency of companies related to the inability of financial managers in planning and managing current assets and current liabilities of companies. A common standard for measuring working capital management is cash conversion cycle , that consider all Financial flows related to inventory, receipts and payables. The traditional link between the cash conversion cycle with the profitability and value of the company is to reducing the cash conversion cycle, by reducing the amount of time that cash is locked up in working capital, increases Market value and profitability. This can shorten the conversion period of inventory by selling goods to customers and shorten the collection period of receivable to expedite the receipt and prolong the deferral period of payable by delays in payments to suppliers, come true. Whatever the time is longer more investment in working capital is done. Long cash cycle, may increase profitability. Working capital divided in current assets and current liabilities groups.

Value of the companies. Decision about amount of investment in accounts receivable and inventory and receiving credit from suppliers of goods and services, constitute the main components of working capital management & it's called cash conversion cycle (My Jet 1974) [1].

The method for evaluating the company's liquidity is cash conversion cycle that is calculated the time between Payment for order inventories or raw materials to and collect receivables due from Sales to customers.

Now the company's liquidity situation is in uncomfortable conditions, and the majority of Iranian companies due to the inflationary situation in the country, prefer to convert their cash into other assets. And this makes the companies are helpless in maturity debt and hurt the reputation of the organization. Policy of working capital each period is measured relative to the previous period. To determine what has been the policy of working capital, In this study, the policy of working capital

of each period compared to the previous period And determined that the policy of working capital in each period What has changed compared to the previous period. Does the policy is more conservative or more daring? To measure the working capital policy, we use two equations 1 and 2 as a basis to determine the type of policy and its changes compared to the previous period.(nikoomaram & others 1386) [1].

1-(Securities + Cash) / Current assets

2-(Securities + Cash) / Current liabilities

These two ratios show the speed of ability to pay short-term obligations.

At the same time these two ratios increased in comparison with the previous period indicate that the policy of working capital relative to the previous period was more conservative. When these two ratios, reduced at the same time, this means that, working capital policy, has been more daring. In this case, if the sum of changes in these two ratios is positive, it means that the policy is more conservative and if the sum of changes in these two ratios is negative, meaning more aggressive policy of working capital. Managers by choosing the different strategies affect the company's liquidity [2-5].

Criterion that distinguishes these strategies is risk and return, it means for current assets can use conservative or aggressive strategies and for current debt can be either conservative or bold strategy selected.

The strategy of working capital divided into two parts:

A) Current asset strategy:

1) Conservative strategy (in current asset management):

The features of this strategy are the high maintenance in current assets (cash and inventory). The result is that, because cash and inventory, kept high, more cost imposed on the company and its ooutput is reduced but on the other hand, the risk of customer loss or lack of cash is also minimized.

2) Aggressive strategy (in current asset management):

The features of this strategy are the less maintenance in current assets. The result of this strategy is that, because inventory and cash, kept less, related costs are low and ooutput is increased but the risk of customer loss or disruption of production and lack of timely payment of debt increases.

B) Current debt strategies:

1) Conservative strategy (in current debt management):

The features of this strategy are that, in the company's capital structure try to use lower short-term loans and long-term loans used more. And if they want to do very conservatively, they use of financial resources "equity". The result of this strategy is that, because of the long-term strategy is used; the risk of timely payment of debt or bankruptcy risk is minimized. On the other hand, because of long-term debt and equity is used, the average cost of company's capital increases and return on shareholders' reduced [6-10].

2) Aggressive strategy (in current debt management):

The features of this strategy is using more of short-term loans, and tries to use of short-term loans to provide fixed assets. The result of this strategy is that because of the heavy use of short-term loans, the risk of timely payment of debt wills increase.on the other hand, lower costs has paid, and increase returns.

Experience has shown that most of the companies that faced with financial distress and finally the fate of some of them are gone to bankruptcy, one of the main reasons it is working capital management. When the managers of a company elect a bold policy on working capital, this policy makes that the company has a low level of assets with high liquidity .as a result, the risk of non-payment of current obligations increase and consequently the level of risk increases [1]. On the other hand it should not be neglected that maintaining a high level of working capital can provide an advantage of profitable opportunities for Company executives within a short period of time. The reason for the failure of many bankrupt companies is Undesirable situation and improper management of working capital. While these companies have good long-term financial situation but due to lack of sufficient working capital, lost their ability to compete and come out.

Nature expected companies that took a bold policy, have a higher risk, by contrast, corporate executives with knowledge of the matter could achieve a balance between risk and return of your company, the effects of working capital policies on the risk estimate, and manage it.

Financial performance evaluation is determined by two power indicator liquidity and profitability. Cash conversion cycle was evaluated for the first time by Hauger. Researchers believe that short cash conversion cycle indirectly linked to the value of the company, because it determines that the company how fast, way to collect accounts receivable, and at what time, accounts payable pays, therefore, cash conversion cycle has a great importance in assessment of liquidity.

The cash conversion cycle index:

Hitman has learned, the cash conversion cycle as a critical component of working capital management the cash conversion cycle, is the specific time period between the payments and getting cash from the collection of receivables, the shorter the period the company has better liquidity.

In this index to show the company's liquidity position attention to cash balances and securities. The figure shows, the real liquidity supply of company, in relation to unforeseen needs.

How to calculate net cash balances is as follows:

$$Nlb = (cash + MKT - AP) / TA$$

NLB = net cash balances

MKT = Marketable securities

AP = Payables

TA = Total assets

Research shows that shortening the cash conversion cycle will be increased the profitability of companies; On the other hand long cash conversion cycle has hurt the company's operations and reduces profitability. This event occurs when reduced frequency of inventory turnover, decreased accounts receivable conversion cycle, or remains outstanding accounts payable [1].

Cash for a company such as nutrition for the human body a company without enough cash proceeding to the death, or in other words, to the bankruptcy. Analysis of cash flows is greatly used to assess the financial performance of companies by investors, creditors and managers.

Hytam Nvbany has concluded that the relationship between the cash conversion cycle and profitability of the company is that by reducing the cash conversion cycle, increase the profitability of the company on the other hand reduce the cash conversion cycle could harm the company's operations and reduces profitability.

The relationship between working capital and liquidity were examined in listed companies in Tehran Stock Exchange in 1393 & explanation about Working capital management strategy in companies listed in Tehran Stock Exchange by Dr. Fereydoon , Rahnamay Roodposhti and Ali Kiai , that the result of study shows that there is a poor communication between productivity and working

capital management strategy that is statistically significant , between solvency and working capital management strategy there is a significant relationship & it is statistically significant.

Background research:

Safari (1389), to investigate the relationship between business profitability and working capital management has used a sample of 99 companies listed on the Tehran Stock Exchange during the years 1388-1382, the results of this study shows that there is a negative relationship between profitability and cash conversion cycle and its components.

Lazarydys and Tryfnydys Check out the relationship between profitability and working capital management in Greek companies. Their aim is to establish a significant relationship between profitability, cash conversion cycle and its components in companies listed on the Athens Stock Exchange. The results of their study show that there is a statistically significant relationship between profitability and cash conversion cycle.

Abdur Rehman and Mohammad Nasr (2015)[1] were examined the relationship between working capital management and profitability for Pakistani companies. The results of their study showed that there is a significant negative relationship between the components of working capital management and profitability; this means that by increasing the cash conversion cycle, reduced profitability of the company. And also found that there is a positive relationship between size and profitability of the company and a significant negative relationship between liquidity and profitability.

A recent study by Uyar shows a significant negative relationship between the cash conversion cycle with the profitability that measured by return on assets.

Results Zyryavat show that the size, debt ratio and growth of the company have a negative relationship with cash conversion cycle, in the other words, companies with more debt, less working capital and cost of external financing is more for these companies.

Research methodology:

The kind of this research is exploratory that Interprets the information widely. In this study the correlation method is used to analyze the data collected. After collecting data and performing calculations, the results of the sample can be generalized to the entire community, the method used is a posteriori. Information on literature and theoretical foundations will be extracted from the library and scientific databases and internal and external articles, also the data after the initial processing by using software spss23, will be statistically analyzed.

Hypothesis:
The research hypothesis is as follows:

1. There is a significant relationship between profitability and liquidity
2. There is a significant relationship between working capital and profitability
3. There is a significant relationship between working capital and liquidity

Community sample:

Statistical Society is all companies listed on the Tehran Stock Exchange.

Sampling & determine population size:

For exampling, the screening method is used , first, all companies listed on the stock exchange are considered, then companies will be removed from the study that the following conditions have :

1-For increasing comparability between them, its fiscal year ended in March.

2-All information about the selected variables in this study should be available for years.

3-During the fiscal year shall not be altered or changed activity.

4-for Homogenization samples in the years studied, are listed on the stock exchange prior to 1383, and during the years 1383 to 1393 have not been outside the Stock Exchange.

Field of study:

Local territory is all companies listed on the Tehran Stock Exchange.

The time domain is all companies listed on the Tehran Stock Exchange during the years 1383 to 1393.

Subject domain is relationship between working capital with liquidity and profitability.

Test models:

In this study, the regression models used for hypotheses 1 to 3:

The model used for hypothesis 1, 2 and 3 :

$$O_{it} = [\ \beta_1(\ Ebit\ /\ CE\ )] +\ \beta_2\ (CA\ /\ TA\ ) +\ \beta_3\ ((Ej+Lj) - Aj)/Cj$$

$$RK = ((Ej+Lj) – Aj)/Cj$$

RK = risk

E_j = Equity + retained earnings

L_j = Long-term loan

A_j = Fixed assets

C_j = Current assets

Q_{it} = Working capital (independent variable)

Test hypotheses:

As more were expressed, the main aim of this study is to investigate the relationship between working capital management with liquidity and profitability. The information about 107 companies in the stock market during the years 1383 to 1393, were collected.

by inferential statistics methods hypotheses are tested. It is noteworthy that for testing hypothesis in this study is used SPSS 23 software

Descriptive analysis of variables:

As mentioned above, descriptive statistics including a set of methods that is used for collecting, summarizing, categorizing and describing numerical facts. In fact, this type of analysis describes the data and research information and Scheme or overall pattern of data are created for quick use and better of them. In conclusion, by using of descriptive statistics can be stated characteristics of a bunch of information. Descriptive statistics variables are presented in the next sections.

In this study, working capital, liquidity, profitability and solvency are as variable in research.

At the next table, descriptive statistics of these variables include minimum, maximum, mean and standard deviation is provided.

Table 1: Descriptive data variables

standard deviation	mean	Minimum	Maximum	Number	Variables
0/51	0/65	0/00	16/84	1177	Liquidity
53/43	2/54	-571/85	1,349/49	1177	Profitability
1/01	0/51	-4/44	11/68	1177	Solvency
2,051,894/69	-107,738/27	-26,111,525/00	13,358,969/00	1177	working capital

Kolmogorov-Smirnov test for normalization values of the variables is shown.

Table 2 : The result of Kolmogorov-Smirnov test

P-value	amount of Statistics	Number	Variables
0/000	0/286	1177	Liquidity
0/000	0/455	1177	Profitability
0/000	0/177	1177	Solvency
0/000	0/382	1177	working capital

According to the above table for all variables P-value=0.000<=0.05 resulted none of these variables were not normally distributed. In order to test hypotheses will be using non-parametric methods.

Inferential

In this section, we test hypotheses and evaluate its results. As mentioned in previous seasons, this research consists of five hypotheses. The following these assumptions are examined.

The first hypothesis test:
"There is a significant relationship between profitability and working capital."
Hypothesis, Spearman correlation test will be used.

As mentioned, profitability and working capital variables are not normally distributed, so for this

As seen in the above table, the correlation between the profitability and working capital P-value =0/000<=0/05, so this factor is significant at 95%.On the other hand, the value of this parameter is equal to 0/175 and this indicates a positive relationship between profitability and working capital. The result of the first hypothesis at 95% confidence level is expressed as follows:

"There is a significant relationship between working capital and profitability."

The results of this test are presented in the following table. The first hypothesis test results:

p-value	Spearman correlation	numbers	Variables
0/000	0/175	1177	Working capital-profitability

The results Spearman correlation coefficient for each of the years studied in this research is presented.

The Spearman correlation between working capital and profitability

P-value	Spearman correlation	Number	Year
0/796	0/025	1177	1383
0/588	-0/053	1177	1384
0/145	-0/142	1177	1385
0/837	-0/020	1177	1386
0/029	0/211	1177	1387
0/001	0/313	1177	1388
0/000	0/339	1177	1389
0/003	0/289	1177	1390
0/002	0/295	1177	1391
0/000	0/369	1177	1392
0/000	0/402	1177	1393

The correlation between working capital and profitability during the years 1387 to 1393 result is P-value <0/05

So, over the years there have been significant correlations between these two variables that given the positivity correlation coefficients over the years, this relationship is positive.

The second hypothesis test

According to last season, the second hypothesis is as follows:

"There is a significant relationship between working capital and liquidity."

As noted above, working capital and liquidity variables are not normally distributed, therefore, for the above hypothesis, Spearman correlation test will be used. The results of this test are presented in the following table.

The second hypothesis test results:

P-value	Spearman correlation	numbers	Variables
0/000	*0/004*	1177	Working Capital– liquidity

As seen in the above table for the correlation between working capital and liquidity P-value =0/000<=0/05

so this factor is significant at 95%. On the other hand, the value of this parameter is equal to 0/400 and this indicates a positive relationship between working capital and liquidity. So the fourth hypothesis result in a 95% confidence level is expressed as follows:

"There is a significant relationship between working capital and liquidity."

The results Spearman correlation coefficient for each of the years studied in this research is presented.

P-value	Spearman correlation	Number	Year
0/000	*0/512*	1177	1383
0/000	*0/358*	1177	1384
0/000	*0/437*	1177	1385
0/000	*0/362*	1177	1386
0/000	*0/349*	1177	1387
0/000	*0/346*	1177	1388
0/000	*0/475*	1177	1389
0/000	*0/381*	1177	1390
0/000	*0/426*	1177	1391
0/000	*0/422*	1177	1392
0/000	*0/333*	1177	1393

The correlation coefficient between working capital and liquidity during 1383 to 1393 resulted P-value =0/000<=0/05, So, over the years there have been significant correlation between these two variables that given the positivity correlation coefficients over the years, this relationship is positive.

Third hypothesis test

The first hypothesis is as follows:

"There is a significant relationship between working capital and solvency."

As noted above, working capital and solvency variables are not normally distributed, therefore, for the above hypothesis, Spearman correlation test will be used. The results of this test are presented in the following table.

The third hypothesise test result

P-value	Spearman correlation	Number	Variables
0/000	0/517	1177	Working capital–solvency

As can be seen the correlation between working capital and solvency P-value =0/000<=0/05, so this coefficient is significant at 95%. on the other hand, the value of this parameter is equal to 0/517 and this indicates a positive relationship between working capital and solvency. The result of third hypothesis is the 95% confidence level is expressed as follows:

"There is a significant relationship between working capital and solvency."

The results of Spearman correlation coefficient for each of the years studied in this research are presented:

P-value	Spearman correlation	Number	Year
0/000	0/418	1177	1383
0/000	0/566	1177	1384
0/000	0/489	1177	1385
0/000	0/511	1177	1386
0/000	0/521	1177	1387
0/000	0/444	1177	1388
0/000	0/409	1177	1389
0/000	0/509	1177	1390
0/000	0/520	1177	1391
0/000	0/535	1177	1392
0/000	0/562	1177	1393

According to the table for the correlation between working capital and the solvency during 1383 to 1393 resulted P-value =0/000<=0/05. So, over the years there has been significant correlation between these two variables that given the positivity correlation coefficients over the years, this relationship is positive.

Summary of results

In this chapter, analyzed the results of the collected information on 107 companies in the stock market during the years 1383 to 1393. Statistical analysis was performed using Spearman correlation that SPSS 23 software was used.

The results can be briefly stated as follows.

Result	Hypothesis	Number of hypothesis
Accepted	There is a significant relationship between working capital and profitability	1
Accepted	There is a significant relationship between working capital and liquidity	2
Accepted	There is a significant relationship between working capital and solveny	3

CONCLUSION:

In this study, 3 hypotheses have been proposed and tested. The hypotheses of research were tested by using regression analysis. The results show that there is a significant relationship between working capital with profitability, liquidity and solvency that is consistent with the results of Panygrahy [4] and Asramy[5] research based on the significant relationship between these variables.

Practical suggestions:

Use bold policy on working capital management, because of maintaining a low level of current assets, reduces solvency and increase efficiency and profitability of the company. Using a conservative policy in working capital management because of maintaining a high level of current assets increase solvency and reduces efficiency and profitability of the company using a conservative policy in managing current liabilities have this feature that In the company's capital structure use less of short-term loans and more long-term loans and equity and so the risk of solvency and bankruptcy are minimized. Given the above, and

considering the inflationary situation our country is suggested that for working capital management use of bold policy and for current liabilities management use of conservative policy.

Future suggestion:

1-Investigate the affection of other Profitability ratios with working capital

2- Investigate the affection of other liquidity ratios with working capital

3- because of the several factors affect the Company's liquidity thus it is suggested that Companies, financial analysis and auditors, use a modern and dynamic ratios such as cash conversion cycle analysis, since the amount of liquidity related with the company's profitability , so investigate the cash conversion cycle seems useful with Profitability , by analyzing the cash conversion cycle and some debt ratios tested the ability of companies to repay their debts.

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