Policies and procedures for financial management policy are based on the assumption that the company will be taking and apply some major decisions. These decisions include choosing the type of goods, offering services and financing for fixed assets of the company. These decisions are playing the main and determinant role on long-term firm’s profitability and have two important applications on the management of working capital. First, offered predicting sales or production of goods or services, allow the working capital management to estimate the current assets and liabilities levels. Second, managers are seeking to increase the wealth of company’s shareholder by increasing common stock price and this primarily will be done through increasing the company liquidity power and maintaining the power. Thus, working capital is not assessing primarily aimed at increasing the share and profit. Also, managers are seeking to reach the desired liquidity and providing profitability targets by them. In the study, the method of factors affecting working capital of pharmaceutical companies accepted in Tehran stock exchange had been applied. The method of this study is inductive and then event (using the past data) and its statistical method is combined Regression method (multi variable) which empirically examines the factors affecting working capital and the territory of the study is 2006 to 2011. The results showed that financial leverage variables, quick ratio, percentage of asset growth ratio (age ratio) and growth of total assets have a significant effect on the company working capital and the return on assets variables and earnings before and interest tax to turnover had no effect on working capital.

**KEYWORDS:** Working capital, Working capital management, Current assets, Current liabilities.
The Study of Factors Affecting Working Capital By Kaveh Azinfar et. Al.

1. Introduction

More than one hundred years ago, financial management had a major transformation as a scientific field and every day becoming more extended and become more specialized in different areas and continues to its role in the organization. In the past centuries, industrial manufacturing companies produce a large amount of goods and gave huge profits. This was cause to consideration of planning issues and control particularly liquidity power, gradually on the financial management and working capital management becoming as a specialized business unit and a large number of managers spend their time and energy to manage working capital every day.

The importance of cash in a business unit is the most fundamental events that the accounting measurement is performing according to them. The aims to provide information related to cash is the assessment of the entity’s liquidity and ability to pay its obligations. The maintaining desired level of cash to pay the mature liability and using the appropriate sudden opportunities for investment is a sign of business entity flexibility and the access to raw materials for production as the company is able to timely respond to the customer demand express the importance of working capital. Therefore, according to working capital of the current study aimed to managers considering to business entity situation and the factors that affect the working capital, use methods that increase and maximize the business entity’s interests and follow that, the interests of shareholders and so this attract the investment and the other will be a guide to business entity for facing the challenges.

1.1. Problem Statement

Definition of working capital on the accounting texts, is the current assets minus current liabilities and it show the company’s investment in cash, marketable securities, received trade accounts and inventories minus liabilities. In other words, net working capital represents the part of current assets that is more than current liabilities and was supported through long-term borrowing owners’ equity (Shabahang, 2008).

Working capital management is considered one of the most important areas on the financial management and organization management, because it directly affects the company liquidity and profitability. In all companies, the main object is the management accounting performance, managing the main limitations, monitoring and improving the company performance. Large and small companies are required to monitor their working capital. In the major companies, this is associated to the higher ratio of current assets, less liquidity, based on the short-term debt and cash flow changes. The empirical evidence had been suggested the limit performance of companies based on the working capital policy. If the company wants to adopt new policies, there are usually reluctances on more information obtaining about scales and nature of work capital policy. Therefore, the study intends to examine the companies problems in the field of working capital and is investigated the factors affecting working capital and pharmaceutical companies accepted in Tehran stock exchange in the period 2006 to 2011. Using the variable in the study investigate the company manner and their decision in related to working capital. So, I’m looking for the answer in this study, what are the factors affect a company’s working capital policies of pharmaceutical companies in Iran.

1.2. Topic Necessity and Importance

The issue of working capital has been more studied in other countries during the period 1995 to 2011. Based on the subject importance of working capital and less attention to the subject in our country, thus according to studies conducted in other countries and using the models and used variables in the research, the subject will be investigated in Tehran stock exchange.

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Now liquidity is the most important issues of companies and one of the needs of the country’s community and industry. Working capital management is one of the strategies for achieving the desired liquidity to companies, so that desired liquidity to companies is maintained to the extent that don’t facing to the unusual or less of unusual liquidity (Sander, 2000).

By the current research, it is needed to obtain the evidence to identify the factors affects the company’s working capital and the issues that mangers facing to them have been investigated. It also highlights the importance of subject by thinking about the following points.

1. Perhaps the changes that have been occurred in the current assets, managers are forced to reconsider the decisions that taken to finance, e.g. if the heavy short term loan was used to finance the current assets, the addition loans and extend of maturity loans will be required more times and energy from management of company (Nov, 2007).

2. Now the company’s liquidity status has an inappropriate situation and most of the Iranian companies prefer to convert the cash to other assets because of the inflationary situation is dominated in the country and this will be weak companies on the debt maturities and damage to organization credit (Ranamae Rodposhti and Kiyani, 2008).

3. Experience has shown that most companies are facing to financial distress and some of them has finally brought into bankruptcy. Working capital management is one of its main reasons (Ranamae Rodposhti and Kiyani, 2008).

1.3. Research objectives

The purpose of this study that is needed more research , is the study of factors affecting working capital of pharmaceutical companies accepted in Tehran stock exchange and another purpose of this study was to investigate the industry’s problems about working capital and whether the variables have a significant relation on working capital ?

2. Research Literature

2.1. Working Capital Nature

Working capital is provided the short-term financial requirements of business institutions. Working capital is a transaction capital that doesn’t remain more than a year in the company. The money that is invested in these items will be changed during the business operations. The need to maintain adequate working capital can strongly be questioned. As blood flow in the human body is very needed to maintain the life, cash flow is very essential and important for sustained commercial operation (Gisivan, 2006).

Working capital of company is an important factor to grant credit facilities for external creditors such as banks and credit institutions. Whatever the number is increase the company’s ability to repay the debt will be increased. On the other hand an increase in working capital can be show the adverse management for organization management, because he/she doesn’t use external resources and/or held more current assets (Hasanpour, 2009).

Overall, the working capital analysis shows that what cashes has been achieved during the 2 financial periods and used in which ways, but the most interesting points will be cleared for financial analysts during the work. The following issues can be noted:
1. What affect the increase of fixed assets on working capital?

2. To what extent the increase of fixed asset decreased the growth of working capital?

3. If the sales were increased, does the working capital also become higher on proportion?

4. Did the decrease of investment have undesired effect on the growth of working capital?

5. Did the increase of liquidity cause to enhance the working capital or spent for developing the fixed asset by receiving the new loan? (Pishkari, 1996)

2.2. Working Capital Objectives

The working capital must be in order to achieve certain objectives for the company. Generally the following objectives can be used for working capital management in the business agencies:

1. **Sufficient liquidity**: If an agency doesn’t have enough cash to pay their bills on the deadline, it will be deal with continues problems. So, one of the main objectives of the working capital management is the access to sufficient liquidity to conduct daily operations and to prevent disruption in commercial operation cycle of the company.

2. **Minimizing the level of risk**: On the choosing financing sources, paid accounts and other short-term debt would have be low costs relative to long-term sources. The company must be ensuring that the short-term liabilities don’t increase into current assets to pay them. The comparison of assets and liabilities into current accounts is the responsibility which aims to minimize the risk of inability to pay bills and other obligations.

3. **Maximizing the value of a company**: Companies maintain the working capital as other assets, i.e. the aim to maximize the shareholder value and therefore the company’s value, unused cash investment, minimizing the inventories, the quick receiving of the liabilities and eliminates the short-term costly and unnecessary financial funds, all will be caused to increase the company’s value.

2.3. Factors Affecting working capital

Several factors have an effect on working capital and working capital policies. Here we explain some of these factors:

1. **Cash Management**: firms are determined their cash management strategies based on two main objectives: 1) Financing by doing firms payments, 2) Minimizing the cashes that remain stagnant in the firm (Nov and Remound, 2001). Thus, according to these tasks for cash management can be argued that appropriate management and cash optimum will have an effect on working capital management, so these are affected on the liabilities collection period and debt payment and will be keep them at optimum level.

2. **Debt Ratio**: The ratio of total cash from debts is calculated and they are obtained from the dividing total debts to total assets. Chiou and Cheng (2006) in a study on the factors affecting working capital management have found a significant negative relation between the debt ratio and net liquidity balance and working capital requirements and so with working capital management and whatever the debt ratio is higher the required working capital for daily organization operations will be reduced.

3. **Operating cash flow**: Chiou and Cheng (2006) in a study on the affecting operating cash flow on the working capital have found that operating cash flow has a significant positive relation to net liquidity balance and a
significant negative relation to required working capital and therefore effect on the management of organization working capital.

4. Risk Control Tools: One of the most relevant risks to the organization’s working capital is liquidity risk. Liquidity risk is not a risk; it is a cash to repay an obligation. Firms generally are faced to liquidity problems when they cannot sell their products for several reasons (inventory increase) of fail to receive cash from the sale (debt collection) or their costs irregularly increase. Liquidity problems caused to deficiencies in the firm financial structure and subsequently buying materials and current obligations payment will be difficult. On this situation, risk management is considered as an effective factor in the liquidity of the companies to solve the problem.

Gundaveli (2006) is argued that risk management is an important part of the cash flow process and firms can be reduced the debt costs with measures such as appropriate credit policies and managed better their credit risk.

2.4. Research Background

John Marshal (2005) has done a research about determinant factors of liquidity (working capital) and found that the rate of any company’s working capital is influenced by certain factors. Obviously due to differences in the degree of the presence of these factors in the company, the need to appropriate working capital is different.

Chiou and Cheng (2005), in a study on the affecting operating cash flow on the working capital have found that operating cash flow has a significant positive relation to net liquidity balance and a significant negative relation to required working capital and therefore effect on the management of organization working capital. And also in a study on the factors affecting working capital management have found a significant negative relationship between the debt ratio and net liquidity balance and working capital requirements and so with working capital management and whatever the debt ratio is higher the required working capital for daily organization operations will be reduced.

Ramachandran and Janakraman (2009), were investigated the relation between the proficiency of working capital management and earning before and interest tax to turnover (EBIT) for India papermaking during 1997-1998 to 2005-2006. Cash conversion cycle was used as a scale of working capital management efficiency. Results show that working capital nicely is controlled and managed in this industry. Also debts collection period has significantly a negative relationship to operation interest. Low Profitability is forced the companies to later payment of their bills and this subsequently reduce the cash conversion cycle.

Enayati (2004) after the study of working capital situation of the studied firms during the years 1998 to 2002 in five hypotheses was reached to the following conclusions.

1. Cash management methods have affect the company’s liquidity and significant relationship exists between them.
2. There is a significant relation between debt and liquidity management methods of the companies.
3. Inventory management method has an effect on the inventory period, but has no effect on the inclusive liquidity index.
4. Financing method have an effect on companies liquidity and also type and size of firms are the determinant factors in cash management and its effectiveness.
5. When companies are classified and identified according to their size and industry type and we evaluate their nature effect on their liquidity indexes, observe a significant relation.

Taraghe (2009), was examined the relationship between working capital management and return on asset for small and medium companies in Tehran stock exchange and found that debt collection period, inventory turnover period and cash conversion cycle have inverse relationship to the
company’s profitability and debts payment period has a direct relationship to profitability.

Fathi and Tavakoli (2009) have studied the identifying of affecting factors on working capital on economic agencies and management affecting on working capital, including interaction with suppliers and buyers of goods in the supply chain, on profitability and liquidity as two important factors of financial operation in their research and found that many factors, such as cash management, risk control tools, debt ratio, operation cash flow effect on working capital, if well-organized and used by organizations, it could be useful in improving the performance of working capital.

3. Research Hypotheses

Hypothesis is as a logical relationship between two or more variables that can be expressed as a notice and testable sentence (Tayebi et al., 2011).

Hypotheses are:

H1: Working capital policy has a significant relationship with return on assets.

H2: Working capital policy has a significant relationship with financial leverage.

H3: Working capital has a significant relationship with earnings before and interest tax to turnover.

H4: Working capital has a significant relationship with age ratio.

H5: Working capital has a significant relationship with quick ratio.

4. Materials and Methods

The research method is an applied inductive research and its results can be used for a wide range of managers, firms, shareholders, investors, creditors, suppliers, researchers and standards developers. In terms of time aspect, researches can be retrospective or prospective. Since the study is considered as a retrospective research or after the event (using past information).

5. Statistical Population

The research statistical population is included pharmaceutical companies accepted in Tehran stock exchange that have the following conditions:

1. Have been participated in the exchange during the fiscal years 2006-2011.

2. March was the end of their fiscal year and shall not change the fiscal year during the period mentioned above.

3. The information and data shall be available at the end of the fiscal year in all years.

After reviewing all the pharmaceutical existed on the exchange, 37 companies had the above conditions and have been selected as a statistical sample.
The research period was six years and the company’s information (data) from 2006 to 2011 have been used for sampling.

6. Collecting research data tools

Library method was used for data and information collection on the research. Theoretical research information has been collected from Persian and Latin books and articles. The information relating to financial statements of companies have been collected using new results of information banks and electronic archives of Tehran stock exchange organization and CDs of financial information companies accepted in Tehran stock exchange.

7. Data analysis method

The research method is the combined regression (multi-variable) that is analyzed the research data according to statistical panel data research. In the study have been used Hausman, F-Limer and multi variable regression tests for testing hypotheses and EVEIWS software was used for statistical analysis and inference.

8. Research Model

Multi-variable regression method is used for testing the research hypotheses. Affecting model of the variables on the working capital is as follows:

$$WCP_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 LEV_{it} + \beta_3 EBIT_{it} + \beta_4 LnAge_{it} + \beta_5 QR_{it} + \varepsilon_{it}$$

Where:

- $WCP_{it}$ = Working capital of firm i in year t.
- $ROA_{it}$ = Return on assets of firm i in year t.
- $LEV_{it}$ = Leverage of firm i in year t.
- $EBIT_{it}$ = Earning before and interest tax to turnover of firm i in year t.
- $LnAge_{it}$ = Natural logarithm of firm i’s Age ratio in year t.
- $QR_{it}$ = The quick ratio of firm i in year t.

9. Research Variables

9.1. Dependent Variable

The dependent variable is the variable that independent variables affecting them. In the research the dependent variable is working capital (WCP) that is obtained the difference of current assets and current liabilities.
9.2. Independent Variables

In the research, the leverage, return on assets, quick ratio, age ratio, earning before and interest tax to turnover variables were investigated as independent variables. Those are concluded as follow:

**Return on assets (ROA):** is obtained from operations interest division on total assets.

**Leverage (LEV):** is obtained from total liabilities division on total value of assets.

**Earning before and interest tax to turnover (EBIT):** earning before and interest tax to turnover is equal to net sale minus cost of sold goods minus operation costs addition to other earnings and interests (except interest) minus other costs and losses (except interest).

**Age ratio (LnAge):** The ratio is calculated in terms of total assets growth percentage.

**Quick ratio (QR):** This ratio is obtained from the division of current assets minus the inventory on current liabilities.

10. Results of data analyze and hypotheses test

10.1. Test Hypotheses

**H₀:** There is no a significant relationship between balance macro variables and WCP index of accepted companies in Tehran stock exchange.

**H₁:** There is a significant relationship between balance macro variables and WCP index of accepted companies in Tehran stock exchange.

\[ H₀ : \rho = 0 \quad \text{prob} \geq 0.05 \]

\[ H₁ : \rho = 0 \quad \text{prob} \geq 0.05 \]

First the following analysis has been shown that the test is a random or fixed effects model.

The test statistic was calculated as below table:

<table>
<thead>
<tr>
<th>Exposition</th>
<th>Statistic value</th>
<th>Freedom degree</th>
<th>Possibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>7.7279</td>
<td>-35.171</td>
<td>0.0349</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
<td>204.868</td>
<td>35</td>
<td>0.0230</td>
</tr>
</tbody>
</table>

In table 1 according to F-Limer, because of prob < 0.05, the test is fixed or random. We use Hausman test for determining it.

The results from Hausman test:
Table (2): Hausman test

<table>
<thead>
<tr>
<th>Exposition</th>
<th>Statistic value</th>
<th>Freedom degree</th>
<th>Possibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section random</td>
<td>14.6785</td>
<td>5</td>
<td>0.8001</td>
</tr>
</tbody>
</table>

In table 2 as the Hausman test is prob>0.05, so random effects model is used.

The relation between balance variables and working capital on pharmaceutical companies

The study of balance variable effect (ROA, LEV, EBIT, LnAge, QR) and working capital (WCP) using panel data method and Eviews software is defined on below table:

Table (3): combined regression test results from model analysis with random effects

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-448750</td>
<td>-0.7466</td>
<td>0.4561</td>
</tr>
<tr>
<td>ROA</td>
<td>-170398</td>
<td>-0.8897</td>
<td>0.3747</td>
</tr>
<tr>
<td>LEV</td>
<td>8658.002</td>
<td>2.0079</td>
<td>0.0460</td>
</tr>
<tr>
<td>EBIT</td>
<td>-2889.33</td>
<td>-0.0315</td>
<td>0.9748</td>
</tr>
<tr>
<td>LnAge</td>
<td>0.3303</td>
<td>8.7619</td>
<td>0.0000</td>
</tr>
<tr>
<td>QR</td>
<td>226678.4</td>
<td>2.2484</td>
<td>0.0256</td>
</tr>
<tr>
<td>F-statistic</td>
<td></td>
<td>32.6556</td>
<td></td>
</tr>
<tr>
<td>Prob( F-statistic )</td>
<td></td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td></td>
<td>1.8852</td>
<td></td>
</tr>
</tbody>
</table>

10.2. Hypotheses test

First hypothesis results: There is a significant relationship between ROA and index WCP of accepted firms (companies) on Tehran stock exchange. According to table 3 there is no significant relationship between ROA and index WCP of accepted firms with t = -0.8897 and prob = 0.3747, because it is more than 5 percent.

Second hypothesis results: There is a significant relationship between LEV and index WCP of accepted firms (companies) on Tehran stock exchange. According to table 3 there is a significant relationship between LEV and index WCP of accepted firms with t = 2.0079 and prob = 0.0460, because it is under 5 percent. And show that LEV has a direct relationship to WCP index i.e. if the LEV is increased one percent, the WCP index value will be increased 8658.002 percent.

Third hypothesis results: There is a significant relationship between EBIT and index WCP of accepted firms (companies) on Tehran stock exchange. According to table 3 there is no significant relationship between EBIT and index WCP of accepted firms with t = -0.0315 and prob = 0.9748, because it is more than 5 percent.

Forth hypothesis results: There is a significant relationship between LnAge and index WCP of accepted firms (companies) on Tehran stock exchange. According to table 3 there is a significant relation between LnAge and index WCP of accepted firms with t = 8.7619 and prob = 0.0000, because it is under 5 percent. And the coefficient of this variable is 0.3303. And show that LnAge has a direct relationship to WCP index i.e. if the LnAge is increased one percent, the WCP index value will be increased 0.3303 percent.
Fifth hypothesis results: There is a significant relationship between QR and index WCP of accepted firms (companies) on Tehran stock exchange. According to table 3 there is a significant relation between QR and index WCP of accepted firms with t = 2.2484 and prob = 0.0256, because it is under 5 percent. And the coefficient of this variable is 226678.4. And show that QR has a direct relationship to WCP index i.e. if the QR is increased one percent, the WCP index value will be increased 226278.4 percent.

11. Conclusions

Working capital is an important issue in financing and if it is well managed, organizations are earning huge profits. Especially for smaller organizations with large amount of current assets and liabilities, working capital management and policies in this field have a great importance, because these policies, is managed financial transactions with suppliers and buyers in the financing chain. In order to investigate the factors affecting working capital, pharmaceutical companies accepted on stock were selected. The research results that are investigated five hypotheses of factors affecting working capital of pharmaceutical companies, suggest that factors such as assets growth ratio, quick ratio and leverage are affected working capital and are significantly related to working capital, if well-identified and used by organizations, can be useful in improving the performance of working capital. Working capital management in turn could affect the financial performance of the organization and increase the profitability of the organization and will be provided an optimize liquidity situation for it.

11.1. Recommendations based on Research Results

1. Organizations must be identified the factors affecting working capital such as (cash management, liability ratio, operating cash flow and risk control tools) and working capital policies and by enough attention to these factors increase the working capital performance.

2. According to positive effect and the significant of leverage on working capital of firms’ financial managers, it must be attend to this aggressive or conservative when determining the strategy’s type, because the attention to the relation between leverage and investment decisions, is important from the aspect that the number of asset structure theories is defined that the relation between the leverage and investment is maybe because the firms with high leverage wouldn’t use from their future growth opportunities. Also, the firms with less future growth opportunity must be avoided using cash on weak projects. As managers are selected leverage value based on the secret information, the leverage could be a value for growth opportunities.

3. If the assets growth ratio is larger than total assets growth in terms of percent, the company has more invested to pay the liabilities, but if this ratio is high and company hasn’t heavy and mature liabilities, having an aggressive strategy is recommended.

4. Organizations must be maintained the optimum liquidity cycle to achieve optimal working capital management.

11.2. Suggestions for Future Research

- It is proposed that the study will separately examine each industry and compare the results on different industries.
- It is proposed that the future research to examine the role of working capital management on continues work of unit.
The investigating lack of attention to working capital management on accepted companies in Tehran stock exchange.

According to change of affecting factors on growth opportunities, such as economic, political and social conditions, the research subject can be study by researchers and compare by the results on future periods.

It is proposed that future research on components of working capital management particularly cash management, marketable securities, receivable accounts and stock to be done independently.

According to the effect of macroeconomic variables on research results, is suggested that the effects of macroeconomic indicators such as inflation and etc, also be considered.

12. Research Limitations

This research like other studies have unclear and sometimes different characteristics because the effect of social and economic uncontrollable variables, the results are expressed respect to the precautionary principle. In addition, the following limitations are considered:

1. The results are only for listed firms and other firms are not included.

2. About the factors affecting the working capital hasn’t been done an independent research. And researches were related to working capital and other variables, therefore the lack of research and studies sources is evident in Iran.

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