ABSTRACT

This study aims to investigate the effect of ownership structure in terms of ownership type and ownership concentrate on cash conversion cycle (CCC) in 115 listed firms on Tehran stock exchange between 2008 and 2014. The theoretical basis and the data used in this study were obtained through library research. Also, the hypotheses formulated in the present research were tested using correlation analysis based on multivariate regression analysis. The results obtained by testing the hypotheses show that there is a significant and negative correlation between institutional ownership and CCC and a significant and positive correlation between firm ownership and CCC. The results of the study also indicate that there is not a significant correlation between major shareholder ownership and CCC.

Keywords: Cash Conversion Cycle, Ownership Structure, Institutional Ownership, Cash

JEL Classifications: C32, O13, O47

1. INTRODUCTION

Economic enterprises have effective presence in the economic area. The efficiency is financially determined by two indicators, including liquidity power and profitability. Profitability is the indication of enterprise and liquidity power is the indication of survival of economic enterprise. In other words, if a firm is not profitable, it is sick but if it has not any liquidity, its survival is in danger. Although both factors are important, however, liquidity has more importance (Bardia, 1988).

In recent years, many firms are encountered with inappropriate situation of liquidity that the investigation of the factors associated with this situation is important. Management of effective working capital is known as one of the important dimensions of practices of financial management in all organizational forms. Existence of extensive literature in this field suggests that management of effective working capital directly affects liquidity and profitability of firms (Raheman and Naser, 2007; Naser, 2010).

One of the broad criteria of management of working capital is cash conversion cycle (CCC) considering all financial streams dependent on inventory, receivables and payments (Nobanee, 2011).

After financial confusions at the end of 2000, management of working capital has been more addressed by the researchers and it also needs more investigation (Rehn, 2012).

Many researches have been carried out concerning the relationship between ownership structure and concepts in Iran such as firm guidance, firm performance and profit and its quality, firm value and cashable stock. However, one of the issues ignored in empirical research, not only about ownership structure but also in relation to other fields is the concept of CCC.

The importance of the research is that due to economic recession across the country in recent years as well as the crisis of liquidity of most firms, the research empirically indicates the shareholders and managers of firms that whether ownership structure(institutional, firm, major shareholder) of a firm has an impact on CCC or not.

The scientific added value of research is as follows:

Firstly, the results cause the extension of theoretical foundations of the previous research. Secondly, the research results show that what the relationship between ownership structure and CCC is. It can put beneficial information at the disposal of users of information of financial statements as
well as legislators of the stock exchange. Thirdly, the research results can provide suggestions for legislators and accounting researchers.

2. THEORETICAL FOUNDATIONS OF RESEARCH

2.1. Hypotheses Concerned with the Supervisory Role of Institutional Shareholders

Two hypotheses of effective monitoring and homogeneity of benefits have been proposed:

A. Hypothesis of effective monitoring

Hypothesis of effective monitoring suggests that through more investment of institutional shareholders, effective monitoring is applied by them and differences of believe and agency disputes are more likely removed (Hasas, 2008). According to the hypothesis, Graham et al. (2014) believes that institutional owners are professional investors having long-run focus. Therefore, given the volume of investment of skillfulness of these shareholders, their presence causes monitoring on management and it maximizes firm value in the long-run. Shleifer and Robert (1997) believe that in terms of theory, institutional shareholders may also have incentives for active monitoring on management and then the increase of shareholders. Bushee (1998) also suggests that institutional investors monitor the firm by data collection and pricing decisions implicitly and by managing the activities of firm explicitly. It is naturally expected that the relationship between institutional ownership and firm performance is desirable.

B. Hypothesis of homogeneity of benefits

Hypothesis of homogeneity of benefits suggests that great institutional shareholders have strategic unity and continuity with management (Hasas, 2008). According to the hypothesis, Porter (1992) believes that the frequent transaction and focus on short-run goals by the institutions cause incentive for the management in order to be avoided failure because the investment may be sold by institutional investors and reduction of the price of shares. Therefore, institutional investors mainly focus on current profits and they may also be along with managers in this way.

Pound (1988) believes that institutions do not still effectively monitor firm because they do not still have enough experience and they are unsatisfied with free riders or they may get along with manager by using a certain policy. Kim (1993) also believes that great institutional investors have access to confidential information extracted for commercial purposes. More focused ownership can be (focus of shares may be more at the disposal of institutional shareholders), more will be access of great shareholders to confidential information. In such situations, great shareholders may have less tendency to encourage manager to report profit with content. In this state, it is naturally expected that the relationship between institutional ownership and firm performance is not a desirable relationship.

2.2. Pressure - Sensitive and Pressure - Insensitive Institutional Investors

Researchers such as Elyasiani and Jia (2010) and Lina et al. (2015) divided institutional investors into pressure-sensitive and pressure-insensitive.

Consequently, pressure-sensitive institutional investors (non-observer) are those having less tendency for challenge with management. Therefore, it seems that this category of institutional shareholders have more compliance with the hypothesis of homogeneity of benefits. However, on the other hand, there are pressure-insensitive institutional investors (observer) having more incentives for monitoring and control of management. This group of institutional shareholders have more compliance with the hypothesis of effective monitoring (Elyasiani and Jia, 2010, p. 158).

In a research, Rabindra (2016) investigated the effect of CCC on measuring efficiency of management of cash in medical section. The results showed that CCC is dynamic measurement from continuous liquidity management due to the simultaneous use from financial statements of balance sheet and statement of profit and loss (data with the dimension of time).

In a research entitled “CCC and profitability of firm: Empirical analysis composed of 4226 Italian small and medium manufacturing enterprise,” Marco (2015) evaluated effect of CCC on profitability. The results showed that the average period of receivables have significant positive relationship with profitability indicating that it is not necessary that the moral conclusion of the story is not always as follows: Less the size of CCC is, more the profitability will be. The present study considers revenues before interest, tax, fall of price and depreciation about net sales as the criterion of profitability for presenting dependent variables.

In a research, Lina (2015) investigated the effect of CCC on profitability of firm and liquidity of Jordan service firms.” The results showed that there is not any considerable effect of CCC on liquidity of Jordan service companies and there is not any considerable effect of CCC on current ratio and the quick ratio of Jordan service firms.

In a research, Kazi and Somnath (2015) investigated the effect of CCC oncash maintenance.” The results showed that more CCC is, less cash maintenance will be.

In a research entitled “the effect of management of working capital on profitability of firm with the different business cycles,” Graham et al. (2014) studied procedures of management of working capital of a sample of listed firms in Finland stock exchange during 18-years period. They showed that the management of active working capital is important and they should be considered in the financial planning of firm.

In a research, Autukaite and Molay (2013) discussed the importance of short-run financial decisions on firm value. They showed that the investors of firms must consider the range of available liquidity and net working capital; because management of working capital maximizes their returns.
In a research, Nobanee et al. (2011) investigated the relationship between the CCC on profitability of Japanese firms. It was carried out during 1990-2004. The results showed that there is a significant relationship between CCC of firms and profitability and return of investment in all samples studied.

By investigating the determinant role of ownership structure in the policies of finance from the debts in a sample consisting of 833 Japanese year-firms during 1992-2000, Namazi and Kermani (2008) obtained the following conclusions.

There is a significant and positive relationship between debt and cash free streams that this relationship in the firms having low growth opportunity is more than the firms having high growth opportunity. In the firms having low growth opportunity, institutional investors prevent managers from excessive investments. In the firms having high growth opportunity, institutional investors support more borrowing.

In a research entitled “the effect of investment in the working capital given the finance limitations on sensitivity of cash stream” and according to a sample consisting of 70 firms during 2005-2011, Alinejad, Saroukalaei and Ayin concluded that among the criteria of management of working capital and considering the financial limitations on sensitivity of cash stream, the effect of period of receivables is only positive and significant; however, considering the financial limitations on sensitivity of cash stream, the effect of deposit period of creditors, inventory turnover period and CCC is not significant.

Izadinia and Rasaeian (2010) investigated the regulatory navigation tools of firm, level of cash maintenance and performance of listed firms in Tehran stock exchange. The results showed that there is a positive and significant relationship between the percentage of investors’ institutional ownership and the value of listed firms in Tehran stock exchange, however there is not any significant relationship between the percentage of non-obligatory members of the board of directors and value of listed firms in Tehran stock exchange. Level of cash maintenance also has a positive and significant relationship with the value of listed firms in Tehran stock exchange.

Setayesh and Kazemnejad (2010) investigated the effect of ownership structure and combination of the board of directors on the policy of dividing profit of listed firms in Tehran stock exchange. The results showed that firm ownership and the independence of board of directors positively affect the ratio of divided profit of listed firms in Tehran stock exchange and institutional ownership negatively affects the ratio of divided profit of listed firms in Tehran stock exchange. Nevertheless, it was observed no evidence suggesting the significant relationship between managerial ownership and the range of focus of ownership with the policy of profit division.

Namazi and Kermani (2008) investigated the effect of ownership structure on the performance of listed firms in Tehran stock exchange. To test the hypotheses, it was defined four models based on the dependent variables. The findings showed that there is a significant and negative relationship between “institutional ownership” and firm performance and there is a significant and positive relationship between “firm ownership” and firm performance. “Managerial ownership” significantly and negatively affects firm performance.

3. RESEARCH HYPOTHESES

In line with achievement to the research purposes and answering the research questions, the following hypotheses are presented based on the theoretical foundations of research:

• The first hypothesis: There is a significant relationship between level of institutional ownership and CCC.
• The second hypothesis: There is a significant relationship between level of firm ownership and CCC.
• The third hypothesis: There is a significant relationship between major shareholder ownership and CCC.

4. RESEARCH METHODOLOGY

The spatial domain of the present research is the listed firms in Tehran stock exchange. The time domain also is a 7-years period based on the financial statements from 1387 to 1393 of the sample firms.

To determine statistical sample, it was used from systematic deletion. For this purpose, firms of the population having the following conditions are selected as statistical sample and the remained firms are removed. The fiscal year of firms ended in the date of end of Esfand in every year. The firm should not do change of fiscal year during the period under review. The firm under review should not be investment firms, holding firms, firms of financial intermediation and insurance firms. Their information and data should be available. The transactions of firm stocks should be continuously done in Tehran stock exchange and the trading stop about the mentioned stock should not be occurred more than 3 months.

Considering the above conditions and limitations, among the listed firms in Tehran stock exchange, 115 firms were totally selected as the research statistical sample.

In terms of purpose, the research is functional and in terms of nature, it is a descriptive research emphasizing correlational relationships and the research method of argument also is inductive-deductive. To calculate and making data ready used for the required information of research and also their analyses, it was used from Excel and Eviews8 software’s.

4.1. Variables and Research Model

In this research, the level of institutional ownership, the level of firm ownership and the major shareholder ownership are independent variables. CCC was also considered as dependent variable. Furthermore, firm size, current ratio, leverage ratio and sale growth were considered as control variables. Then the operational definition of any these variables are considered:

• Level of institutional ownership (INSOWN): Is equal to the maintained stocks by the governmental and public firms from the whole capital.
Ownership concentration (OWNCON): A percentage from the published firm shares which is in the hands of the first great firm shareholders.

Cash conversion cycle (CCC): CCC is obtained by the sum of receivables cycle period (RCP) and inventory cycle period (ICP) minus payables deferral period (PDP).

\[ CCC = RCP + ICP - PDP. \]

RCP = It is a fraction that 360 is in its numerator and its denominator is the ratio of receivables cycle.

ICP = It is a fraction that 360 is in its numerator and its denominator is the ratio of inventory cycle.

PDP = It is a fraction that 360 is in its numerator and its denominator is the ratio of obligations (debts).

Ratio of receivables cycle: Sales of goods divided by the average receivables in the beginning and end of period.

Ratio of inventory cycle: The final price of sold goods divided by the average inventory in the beginning and end of period.

Ratio of obligations (debts) cycle: The final price of sold goods divided by the average payables deferral in the beginning and end of period.

Firm size (SIZE): Firm size is obtained by the total natural logarithm of firm assets.

Current ratio (CURR): This variable is obtained by the division of the whole current assets by the whole current debts.

Leverage ratio (LEV): Leverage ratio is obtained by the division of the whole current assets by the whole current debts.

Sales growth (GROWTH): Sales growth is obtained by the division of difference of sales of the current year and the sales of previous year by the sales of previous year.

To test research hypotheses, the following multivariate regression model is used:

\[ CCC_n = \beta_0 + \beta_1 \text{INSOWN}_n + \beta_2 \text{FIROWN}_n + \beta_3 \text{OWNCON}_n + \beta_4 \text{SIZE}_n + \beta_5 \text{CURR}_n + \beta_6 \text{LEV}_n + \beta_7 \text{GROWTH}_n + \varepsilon_n. \]

That in the above model: CCC represents cash conversion cycle; INSOWN represents level of institutional ownership; FIROWN represents level of firm ownership; OWNCON represents major shareholder ownership; SIZE represents current ratio; LEV represents leverage ratio and growth represents sales growth.

5. RESEARCH RESULTS

5.1. Research Descriptive Statistic

In Table 1, some concepts of descriptive statistics of variables have been presented such as average, median, minimum observations, maximum observations and standard deviation. The results showed that in the firms under review, on average 37% firm shares in the ownership of shareholders are institutional. In more than 50% sample firms, 27% minimum shares in the ownership of shareholders are institutional. The results showed that the current ratio of firms under review during the research period is almost 1.269 on average. On average, almost 62% their financial sources were financed by debt. The average cash conversion cycle is almost 90.5 days.

6. RESULTS OF TESTING HYPOTHESES

The first hypothesis: There is a significant relationship between level of institutional ownership and cash conversion cycle.

To test the hypothesis, it was used from the estimation results of the model presented in Table 2. Probability value (or significance level) \( F = 0.0000 \) and because the value is <0.05, the null hypothesis is rejected at 95% confidence level, that is, the model is significant. Durbin-Watson statistic value is 1.894 that the value suggests lack of autocorrelation. The results associated with the balanced determination coefficient show that almost 69.7% variations of dependent variable are explained by the independent and control variables of the model.

The results show that given t statistic, except the variable of major shareholder ownership, the rest of available variables in the model are significant at 95% confidence level. The results obtained from control variables showed that firm size, current ratio and leverage ratio have positive and significant relationship with cash conversion cycle while sales growth has negative and significant relationship with cash conversion cycle.

In general, the results showed that the variable coefficient of level of institutional ownership was \(-0.371802\) suggesting the negative effect of level of institutional ownership on cash conversion cycle. Considering t statistic of the variable coefficient of level of institutional ownership is significant, in other words, it can be said that there is a negative and significant relationship between level of institutional ownership and cash conversion cycle. According to the above cases, the first research hypothesis can be confirmed at 95% confidence level, in other words, it can be said that by increasing level of institutional ownership, cash conversion cycle decreases and vice versa.

Third hypothesis: There is a significant relationship between major shareholder ownership and cash conversion cycle.

To test the hypothesis, it was also used from the estimation results of the model presented in Table 2. In general, the results showed that the variable coefficient of major shareholder ownership was \(-0.051658\) suggesting the negative effect of major shareholder ownership on cash conversion cycle. However, given t statistic of the variable coefficient of major shareholder ownership are not significant in the model, in other words, it can be said that there is a negative and insignificant relationship between major shareholder ownership and cash conversion cycle. Considering the above cases, the third hypothesis cannot be confirmed at 95% confidence level, in other words, it can be said that there is not significant relationship between major shareholder ownership and cash conversion cycle.

7. SUMMARY AND CONCLUSION

7.1. First Hypothesis

According to the hypothesis, it is expected that there is a significant relationship between level of institutional ownership and cash conversion cycle. To test the hypothesis, regression model was
estimated by using the method of panel data (type of model is the fixed effects) that the results of estimation model were presented in Table 2. By using t-test, significance of estimated variable coefficient of level of institutional ownership was examined that the results suggest the significance of estimated variable coefficient of level of institutional ownership. F statistic also shows that the whole estimated model is valid. In general, at 95% confidence level, the results showed that there is a positive and significant relationship between level of firm ownership and cash conversion cycle. In other words, by increasing the level of firm ownership, cash conversion cycle also increases and vice versa. The results of the hypothesis are also in reverse order of the results suggested by Namazi and Kermani (2008).

7.2. Second Hypothesis
According to the hypothesis, it is expected that there is a significant relationship between level of firm ownership and cash conversion cycle. To test the hypothesis, regression model was estimated by using the method of panel data (type of model is the fixed effects) that the results of estimation model were presented in Table 2. By using t-test, significance of estimated variable coefficient of level of firm ownership was examined that the results suggest the significance of estimated variable coefficient of level of firm ownership. F statistic also shows that the whole estimated model is valid. In general, at 95% confidence level, the results showed that there is a negative and significant relationship between level of firm ownership and cash conversion cycle.

7.3. Third Hypothesis
According to the hypothesis, it is expected that there is a significant relationship between major shareholder ownership and cash conversion cycle. To test the hypothesis, regression model was estimated by using the method of panel data (type of model is the fixed effects) that the results of estimation model were presented in Table 2. By using t-test, significance of estimated variable coefficient of major shareholder ownership was examined that the results suggest the insignificance of estimated variable coefficient of major shareholder ownership. F statistic also shows that the whole estimated model is valid. In general, at 95% confidence level, the results showed that there is not significant relationship between major shareholder ownership and cash conversion cycle. The results of the hypothesis are also in accordance with the results suggested by Setayesh and Kazemnejad (2010).

8. RESEARCH SUGGESTIONS
A. The results of the first hypothesis show that there is a negative relationship between the level of institutional ownership and cash conversion cycle, in other words, by increasing the level of institutional ownership, cash conversion cycle decreases.

Table 1: Descriptive statistics of research variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Symbol</th>
<th>Frequency of observations</th>
<th>Average</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash conversion cycle</td>
<td>CCC</td>
<td>805</td>
<td>90.511</td>
<td>67.071</td>
<td>334.781</td>
<td>5.8771</td>
<td>76.543</td>
</tr>
<tr>
<td>Level of institutional ownership</td>
<td>INSOWN</td>
<td>805</td>
<td>37.026</td>
<td>27.1</td>
<td>93.25</td>
<td>3.11</td>
<td>29.288</td>
</tr>
<tr>
<td>Level of firm ownership</td>
<td>FIROWN</td>
<td>805</td>
<td>22.478</td>
<td>23.5</td>
<td>30.66</td>
<td>0.63</td>
<td>5.498</td>
</tr>
<tr>
<td>Major shareholder ownership</td>
<td>OWNCON</td>
<td>805</td>
<td>75.729</td>
<td>77.975</td>
<td>92.85</td>
<td>49.2</td>
<td>11.426</td>
</tr>
<tr>
<td>Firm size</td>
<td>SIZE</td>
<td>805</td>
<td>13.779</td>
<td>13.615</td>
<td>18.455</td>
<td>10.086</td>
<td>1.434</td>
</tr>
<tr>
<td>Current ratio</td>
<td>CURR</td>
<td>805</td>
<td>1.269</td>
<td>1.217</td>
<td>2.613</td>
<td>0.599</td>
<td>0.411</td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>LEV</td>
<td>805</td>
<td>0.621</td>
<td>0.637</td>
<td>0.929</td>
<td>0.313</td>
<td>0.154</td>
</tr>
<tr>
<td>Sales growth</td>
<td>GROWTH</td>
<td>805</td>
<td>0.189</td>
<td>0.168</td>
<td>0.839</td>
<td>−0.287</td>
<td>0.234</td>
</tr>
</tbody>
</table>

CCC: Cash conversion cycle

Table 2: Estimation results of research model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Symbol</th>
<th>Estimation coefficient</th>
<th>Standard error</th>
<th>t statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed value (intercept)</td>
<td>C</td>
<td>−219.2239</td>
<td>38.83420</td>
<td>−5.645125</td>
<td>0.0000</td>
</tr>
<tr>
<td>Level of institutional ownership</td>
<td>INSOWN</td>
<td>−0.371802</td>
<td>0.105466</td>
<td>−3.525322</td>
<td>0.0005</td>
</tr>
<tr>
<td>Level of firm ownership</td>
<td>FIROWN</td>
<td>0.629842</td>
<td>0.213715</td>
<td>2.947109</td>
<td>0.0033</td>
</tr>
<tr>
<td>Major shareholder ownership</td>
<td>OWNCON</td>
<td>−0.051658</td>
<td>0.123480</td>
<td>−0.418347</td>
<td>0.6758</td>
</tr>
<tr>
<td>Firm size</td>
<td>SIZE</td>
<td>17.05556</td>
<td>2.842749</td>
<td>5.999671</td>
<td>0.0000</td>
</tr>
<tr>
<td>Current ratio</td>
<td>CURR</td>
<td>14.70305</td>
<td>5.188603</td>
<td>2.833719</td>
<td>0.0047</td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>LEV</td>
<td>139.5661</td>
<td>17.28395</td>
<td>8.074897</td>
<td>0.0000</td>
</tr>
<tr>
<td>Sales growth</td>
<td>GROWTH</td>
<td>−31.45459</td>
<td>4.149082</td>
<td>−7.581096</td>
<td>0.0000</td>
</tr>
<tr>
<td>Determination coefficient</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balanced determination coefficient</td>
<td>0.697</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.894</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F statistic</td>
<td>16.3020</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probability (F statistic)</td>
<td>0.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
of institutional ownership, cash conversion cycle decreases. It can be argued that these findings has conformity with the hypothesis of homogeneity of benefits and pressure-sensitive in the field of ownership structure, that is, by increasing level of institutional ownership, the agency problems between firm and management decreases, in other words, the level of institutional ownership causes that the benefits of shareholders and those of managers become in line with each other. In this regard, it is recommended to users from the financial reports of firm that in the time of evaluation of efficiency of management of the working capital or cash conversion cycle, they should consider the positive role of level of shares of institutional owners in the firm efficiency.

B. The results of the second hypothesis show that there is a positive relationship between the level of firm ownership and cash conversion cycle. In other words, by increasing the level of firm ownership, cash conversion cycle increases. It can be argued that by increasing level of firm ownership, the length of cash conversion cycle also increases, in other words, by increasing the level of firm ownership, the efficiency of working capital and firm operational performance decreases. In this regard, it is recommended to users from the financial reports of firm that in the time of evaluation of efficiency of management of the working capital or cash conversion cycle, they should consider the negative role of level of shares of firm owners in the firm efficiency.

C. The results of the third hypothesis show that there is a significant relationship between major shareholder ownership and cash conversion cycle, in other words, by increasing or decreasing major shareholder ownership, cash conversion cycle does not change. It can be argued that change in the major shareholder ownership has no effect on the length of cash conversion cycle. In this regard, it is recommended to users from the financial reports of firm that in the time of evaluation of efficiency of management of the working capital or cash conversion cycle, they should not consider major shareholder ownership.

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