The Relationship Between Capital Structure, Cash Holdings and Firm Value in Companies Listed in Tehran Stock Exchange

Abolfazl Ghadiri Moghaddam
Accounting Associated Professor, Accounting Department, Mashhad Branch, Islamic Azad University, Mashhad, Iran

Mohammad Abbaspour
Accounting Department, Mashhad Branch, Islamic Azad University, Mashhad, Iran

Ali Roshandel
Accounting Department, Mashhad Branch, Islamic Azad University, Mashhad, Iran

Hasan Yousofi
Accounting Department, Mashhad Branch, Islamic Azad University, Mashhad, Iran

Mohammadjavad Sehhati Yazdi
Accounting Department, Mashhad Branch, Islamic Azad University, Mashhad, Iran

Amir Shahmohammadi
Accounting Department, Mashhad Branch, Islamic Azad University, Mashhad, Iran

Abstract
The present study was designed to gather evidence about the relationship between capital structure, cash holdings and value of companies listed in Tehran Stock Exchange. The multiple linear regressions were used to examine the relationship between capital structure, the Company's cash holdings and the firm value. 9 variables are used in this study. Also 3 hypotheses were provided for this study. The sample of the study consisted of 50 participate in a 5-year period from 2008 to 2012. The findings indicated that the first hypothesis is confirmed, so there is a significant relationship between the ratio of cash holdings and Debt-to-equity ratio. But about the second hypothesis (that show the relationship between the ratio of long-term and short-term debt and cash holdings) and the third hypothesis (regarding the relationship between Long-term and short-term debt and cash holdings to the market value of assets) no significant relationship is obtained.

Key words: Capital structure, cash holdings and firm value

1Corresponding Author
Introduction
Cash resources are critical in any economic unit. Make many financial decisions, cash flows have played a central role. Also historical information related to cash flow can be useful for monitoring the accuracy of past assessments and shows the relationship between the entity's activities and future payments and received. Financing decisions is one of the main tasks of the company to determine the best financial combination of financial and otherwise capital structure. The purpose of the financial manager about these takes is increasing the value of the company. Thus, an administrator in order to maximize the value of the company must determine where to invest, and in the other words the assets on the right side of the balance sheet are determined by the combination of the source. Decisions regarding capital structure and empirical analysis and the choice between debt and equity depend on the specific characteristics of the company and are very difficult. Understanding the theory of capital structure can allow managers to achieve optimal capital structure in order to maximize shareholder wealth. All companies are keeping cash transaction with the precautionary motive. Trading incentive for companies is that they maintain cash simply to their daily transactions (Opler, et al., 1999). Corporate cash is different depending on the type of activity, technology complexity and cost of lost opportunity. About safety motivation, in the period in which external financing is expensive, companies maintain cash to continue investing in projects with a net positive present value (NPV). This problem is more important when companies that have investment opportunities with a positive net present value are not able to generate sufficient internal funds to finance these investments. Therefore, maintaining the cash flow for companies with limited funding, are facing the positive value (Mulligan, 1997). According to theoretical expectations when the surface is optimized for cash holdings, deviation from the optimal level leads to imbalance between benefits and costs of holding cash, and the firm performance is weakened (Vakilifard and Soroushyar, 2012). Now the decision to determine company's cash reserves is a significant factor in the finance literature. The main advantage of keeping cash in the inefficient capital markets is increasing the company's ability to use in the value of investment opportunities and avoid costly external financing.

Theoretical Principles
Capital Structure
The company's capital structure is affected by several internal and external factors. The internal factors are the factors that affect the company's capital structure decisions and external factors are those factors that affect on capital structure decisions from the external environment (Sinai, 2007). The modern theory of capital structure started in 1958 by Franco Modigliani and Merton Miller's famous essay, which later became known as MM. The theories of capital structure can be divided into two main categories: The first group is related to the selection of the debt. The first group is related to the theories of choice between debt and equity, and the second theory deals with the selection of public and private debt. All these theories focus to the impact on the value of the company is financing sources. According to these researchers, if investors are able to obtain loans or savings available funds at the same time as companies and if the cash flows are not affected by financing decisions of firms, the selection of type and the method of financing between debt and equity, does not affect on the total firms market value.

Cash holdings
Three models are presented for decision at the level of cash holdings in the financial literature: trade-off model, pecking order model and free cash flow model. The optimal (optimal) level of corporate cash holdings are discussed using business model. This decision achieves using the cash holdings from comparing benefits and final costs. The amount of cash holdings reduce by
the financial turmoil, limited financial resources and lack of investment by minimizing the costs of collecting resources. However, the cost of cash holdings is the opportunity cost of investing in the Assets. The rank order model has been formulated by Myers and Majlof in 1984. In 1984 Myers arguments that companies have financing from investment opportunities in domestic sources and then low-risk debt and finally equity. So that reduces financial costs and expenses of information asymmetry. This model proposed the cash flow is as a buffer between retained earnings and the investment and the company does not target its cash levels.

The theoretical model of free cash flow was made by Jensen in 1986 and claims management has incentive to control cash maintain and make investment decisions that may not benefit shareholders. In this model, equity value is calculated using the present value of free cash flow. Although the administrators and stakeholders have different perspectives on the cash holdings but we can say that the level of cash holdings is like a double-edged sword and is involved in different motives. Incentives for cash holdings are the transaction motive, the precaution motive, the speculative motive, the agency motive and the taxation motive.

Determinants of cash holdings
Factors affecting cash holdings can be explained in various theories. For example, information asymmetry theory, agency theory, transaction cost theory, the theory of equilibrium, financing hierarchy theory, theory of free cash flow. For example, according to the hierarchical theory management has preference internal resources to external sources of financing (Salavati and Resayyan, 2007). Thus, there is a tendency to accumulate cash so he can finance from inside of company in the first stage, not from outside of company (Ferreira & Veilla, 2004). Also According to equilibrium theory the financial leverage increases the probability of bankruptcy and is expected that companies that have high leverage, hold more cash to reduce financial risk. On the other hand, since the ratio of financial leverage is as a factor in determining the Company's ability to issue new debt. If the reimbursement of the cost of financing in the company is high, provide greater financial flexibility (Resayian et al., 2010; Ferreira and Vyllei, 2004). As a result may hold less cash. According to the agency theory, it is expected that lower debt reduce monitoring capital markets over the management and increase his control and subsequently increase cash holdings (Dittmar et al., 2003). For this reason, the relationship between financial leverage and the amount of cash can’t be explained in detail.

The impact of cash holdings on the value of company
In the words of Stiglitz (1974), in a perfect market, corporate financial decisions have no impact on their value. In this situation, you can always have external financing without any problem, with reasonable prices. Accordingly, the maintenance of cash assets is irrelevant. Decisions about investments in cash and assets will not impact on shareholder value (Apler et al., 2001). However, this practice is not accepted and the available evidence suggests something else. The existence of shortcomings in the market indicates that there is an optimal level of cash that balance costs and benefits and maximize the value of the company (Martinez- Sola et al, 2009). The existence of cash can relieve insufficient investment. Moreover, the probability of financial distress costs are reduce when the act of firm does not provide sufficient cash flow to pay debt obligations (Faulkender and Wang, 2006).

On the other hand, according to previous literature, low cash returns can be considered as the cost of current assets (opportunity cost). In addition, large amounts of cash can lead to agency problems between managers and stakeholders. Because it is possible that the cash allow managers to invest in projects that are non-cash benefits, but destroys the value of the beneficiaries (Jensen-and Meckling, 1976). Thus, the existence of large amount of cash flow
causes arbitrary behavior for managers that can be harmful for the interests of stakeholders (Jensen 1976).

**Background of the study**

Lee in 2009 studied the effect of non-executive directors in the board of directors on cash holdings. He stated that if the Board play role of corporate governance, it is predicted that companies with strong management structures after controlling for other factors, have lower cash holdings.

Garcia, et al evaluated the Company the effect of accounting quality in cash holdings in 2009. The results show that firms with high quality accruals in compare to firms with low quality of accruals kept lower levels of cash.

Yuanto in 2011 studied the relationship between corporate governance mechanisms, cash holding and it the impact on the firm value in Singapore Exchange. The results show that firms with less effectiveness of corporate governance are more tended to preserve cash.

Jiyoung, K., Hyunjoon, K., David, W in a research entitled “the effective factors on cash holdings: an experimental study in the restaurant industry”examined the factors affecting the level of cash holding in 125 companies during the year 2008-1997. Their results indicated that the restaurant companies with more investment opportunities have more willing to hold cash. On the other hand, the firms that have higher level of liquidity, capital expenditures and dividend payments hold less cash.

Kashani pour et al (2008) investigated the effects of financial constraints on the changes in storage level due to changes in cash flow. They showed there is no relationship between cash flow levels using multiple criteria (size, age of firm, the ratio of dividends and commercial group) as indicators of financial constraints.

Fakhari et al (2009) examined the effect of financial reporting quality in form of accruals on the amount of cash holdings. Their findings show that the quality of financial reporting has negative and significant relationship with cash equivalents and cash index. These results also suggest that the variables of growth opportunities, cash flow and cash assets have positive effect on cash balances and size and maturity of the debt has a negative correlation with the remaining cash.

Aghayi et al (2008) studied the impact of ten factors in maintaining inventories of cash by companies. Their research evidence suggests that the receivables, net working capital, inventories and short-term debt are the most important factors with a negative impact on cash inventories.

Sharifi & Dastgir (2011) investigate the relationship between operating cash flow and free cash flows with stock returns of firms and the criteria presented in the description of future stock returns. The results of the research in cross level reveal that there is not significant relationship between operating cash flow and return on equity.

**Methods of data collection**

In this paper first the stage sampling method is used. Then data of exchange, information provided to the market, accounting information of firms and other related information resources are used to collect data.

**Research Methods**

Since the objective of this research is determine the relationship between capital structure, cash holdings and firm value in companies listed in Tehran Stock Exchange, therefore, this study was retrospective and practical and also is a quasi-experimental research because the data is collected research without researcher’s interference and based on the analysis of the relationships between variables is a correlation.
Spatial and temporal scope of research

Spatial scope
The Tehran Stock Exchange

Temporal scope
In this study the annual period of 2008 to 2012 will be used.

Research hypotheses
1. There is a significant relationship between the ratio of cash holdings and Debt-to-equity ratio.
2. There is a significant relationship between the ratio of long-term debt and short-term to capital and cash holdings.
3. There is a significant relationship between the ratio of long-term and short-term debt to equity and cash holdings to market value of assets.

Research models
The following models are used in this research:

\[ 1 \cdot \text{D/Cap}_{it} = \alpha_i + \beta_1 C/T A_{it} + \beta_2 \ln T A_{it} + \beta_3 \text{ROIC}_{it} + \beta_4 \text{EB/TA}_{it} + \beta_5 \text{NetCapex/TA}_{it} + \beta_6 \text{FE/EB}_{it} + \beta_7 \text{FE/EB}^2_{it} + \epsilon_{it} \]

\[ 2 \cdot \text{C/TA}_{it} = \alpha_i + \beta_1 \text{stD/Cap}_{it} + \beta_2 \text{ltD/Cap}_{it} + \beta_3 \text{sqrtMVE}_{it} + \beta_4 \text{NetCapex/TA}_{it} + \beta_5 \text{PPE/TA}_{it} + \beta_6 \text{SGA/NOR}_{it} + \beta_7 \text{NOR/TA}_{it} + \beta_8 \text{DivYld}_{it} + \epsilon_{it} \]

\[ 3 \cdot \text{MKB}_{it} = \alpha_i + \beta_1 \text{stD/Cap}_{it} + \beta_2 \text{ltD/Cap}_{it} + \beta_3 C/T A_{it} + \beta_4 C/T A^2_{it} + \beta_5 \text{lnNOR}_{it} + \beta_6 \text{NetCapex/TA}_{it} + \beta_7 \text{ROIC}_{it} + \epsilon_{it} \]

Research variables:

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<thead>
<tr>
<th>index</th>
<th>The methods of calculation</th>
<th>Place of extraction</th>
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<tbody>
<tr>
<td>$\alpha_i$</td>
<td>Representative of fixed component regression</td>
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</tr>
<tr>
<td>$\beta_i$</td>
<td>Regression coefficients that are equal to $i = 1, 2, 3 ... 8.$</td>
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</tr>
<tr>
<td>D/Cap</td>
<td>Total of book value of liabilities to total liabilities and equity</td>
<td>Balance sheet</td>
</tr>
<tr>
<td>C/TA</td>
<td>Cash divided by total book value of assets</td>
<td>Balance sheet</td>
</tr>
<tr>
<td>lnTA</td>
<td>Logarithm of total assets</td>
<td>Balance sheet</td>
</tr>
<tr>
<td>ROIC</td>
<td>Net income divided by total assets</td>
<td>Balance sheet and income statement</td>
</tr>
<tr>
<td>EB/TA</td>
<td>Earnings before interest and taxes EBIT divided by total assets</td>
<td>Balance sheet and income statement</td>
</tr>
<tr>
<td>NetCapex/TA</td>
<td>Fixed assets of this year minus the previous year divided by total assets</td>
<td>Balance sheet</td>
</tr>
<tr>
<td>FE/EB</td>
<td>Financial costs divided by earnings before interest and taxes EBIT</td>
<td>Income statement</td>
</tr>
<tr>
<td>stD/Cap</td>
<td>Short-term debt to equity ratio</td>
<td>Balance sheet</td>
</tr>
<tr>
<td>ltD/Cap</td>
<td>Long-term debt to equity</td>
<td>Balance sheet</td>
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Findings

1. There is significant relationship between Cash holdings and Debt-to-equity ratio

<table>
<thead>
<tr>
<th>Dependent Variable: DCAP</th>
<th>Method: Panel Least Squares</th>
<th>Date: 01/12/15 Time: 19:50</th>
<th>Sample: 1387 1391</th>
<th>Periods included: 5</th>
<th>Cross-sections included: 50</th>
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<td>Total panel (balanced) observations: 250</td>
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<table>
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<th>Prob.</th>
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<th>Std. Error</th>
<th>Coefficient Variable</th>
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<td>0.0039</td>
<td>2.922366</td>
<td>0.308591</td>
<td>0.901815 CTA</td>
</tr>
<tr>
<td>0.1030</td>
<td>-1.638060</td>
<td>0.031237</td>
<td>-0.051167 LNTA</td>
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<td>0.0122</td>
<td>-2.528980</td>
<td>0.088581</td>
<td>-0.224020 ROIC</td>
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<td>0.0000</td>
<td>-9.955302</td>
<td>0.137164</td>
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<td>0.0554</td>
<td>-1.927027</td>
<td>0.136589</td>
<td>-0.263211 NETCAPEXTA</td>
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<td>0.5586</td>
<td>0.585973</td>
<td>0.001511</td>
<td>0.000885 FEEB</td>
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<td>0.7082</td>
<td>0.374816</td>
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<td>5.21E-06 FEEB2</td>
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<td>0.0005</td>
<td>3.543276</td>
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Effects Specification

Cross-section fixed (dummy variables)

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<th>Prob.</th>
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<th>Coefficient Variable</th>
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<td>R-squared</td>
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<tr>
<td>0.268217</td>
<td>S.D. dependent var</td>
<td>0.801488</td>
<td>Adjusted R-squared</td>
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<tr>
<td>-1.213721</td>
<td>Akaike info criterion</td>
<td>0.119503</td>
<td>S.E. of regression</td>
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<td>-0.410828</td>
<td>Schwarz criterion</td>
<td>2.756228</td>
<td>Sum squared resid</td>
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<tr>
<td>-0.890580</td>
<td>Hannan-Quinn criterion</td>
<td>208.7151</td>
<td>Log likelihood</td>
</tr>
<tr>
<td>1.590951</td>
<td>Durbin-Watson stat</td>
<td>18.95236</td>
<td>F-statistic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.000000</td>
<td>Prob(F-statistic)</td>
</tr>
</tbody>
</table>
Table 2 shows the results of regression testing. As above table show, there is positive significant relationship between Cash holdings and Debt-to-equity ratio in level of 95% Significance. So the first hypothesis confirm in the level of 95%. Among control variables also the ratio of net income and gross profit has significant negative relationship to the Debt-to-equity ratio.

2. There is a significant relationship between the ratio of long-term debt and short-term to capital and cash holdings.

<table>
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<th>Dependent Variable: CTA</th>
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<th>t-Statistic</th>
<th>Std. Error</th>
<th>Coefficient</th>
<th>Variable</th>
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<tr>
<td>0.2391</td>
<td>1.180923</td>
<td>0.000775</td>
<td>0.000915</td>
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<tr>
<td>0.1135</td>
<td>-1.589776</td>
<td>0.004431</td>
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<td>0.3131</td>
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<td>0.0718</td>
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<td>0.0150</td>
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<td>0.7115</td>
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<td>0.1203</td>
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<td>0.2872</td>
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<td>0.2588</td>
<td>1.132536</td>
<td>0.023015</td>
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<td>C</td>
</tr>
</tbody>
</table>

Effects Specification

|  |  |  |  |  |
|---|---|---|---|
| 0.039920 | Mean dependent var | 0.561377 | R-squared |
| 0.037641 | S.D. dependent var | 0.431161 | Adjusted R-squared |
| -4.085558 | Akaike info criterion | 0.028390 | S.E. of regression |
| -3.268579 | Schwarz criterion | 0.154745 | Sum squared resid |
| -3.756748 | Hannan-Quinn cri. | 568.6948 | Log likelihood |
| 1.945632 | Durbin-Watson stat | 4.311121 | F-statistic |
| 0.000000 | Prob(F-statistic) |

The results of the partial regression coefficients related to second model of research is presented in Table 3. Due to the lack of significant coefficients obtained for short-term and long-term debt, they are not significant at a significance level of 95%. So, the second research hypothesis is rejected at a significance level of 95%. Among the control variables, only the ratio of non-current assets to total assets has a significant positive impact on the company's cash holdings.
3. There is a significant relationship between the ratio of long-term and short-term debt to equity and cash holdings to market value of assets.

```
Dependent Variable: MKB
Method: Panel Least Squares
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Sample: 1387 1391
Periods included: 5
Cross-sections included: 50
Total panel (balanced) observations: 250

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<th>Coefficient Variable</th>
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<td>0.007317</td>
<td>0.001968 STDCAP</td>
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<tr>
<td>0.3774</td>
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<td>0.042007</td>
<td>-0.037162 LTDCAP</td>
</tr>
<tr>
<td>0.5646</td>
<td>-0.577087</td>
<td>1.222543</td>
<td>-0.705513 CTA</td>
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<td>0.2354</td>
<td>1.190207</td>
<td>5.903017</td>
<td>7.025810 CTA2</td>
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<td>0.8350</td>
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<td>0.0303</td>
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Effects Specification

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Cross-section fixed (dummy variables)
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```
1.298520 Mean dependent var 0.735348 R-squared
0.463956 S.D. dependent var 0.658558 Adjusted R-squared
0.424599 Akaike info criterion 0.271104 S.E. of regression
1.227492 Schwarz criterion 14.18497 Sum squared resid
0.747740 Hannan-Quinn criter. 3.925093 Log likelihood
1.788326 Durbin-Watson stat 9.576056 F-statistic
0.000000 Prob(F-statistic)
```

The results of the partial regression coefficients related to second model of research is presented in Table 4. Due to the lack of significant coefficients obtained for short-term and long-term debt, they are not significant at a significance level of 95%. So, the third research hypothesis is rejected at a significance level of 95%. Among the control variables, significant relationship with cash holdings to market value to book value of assets was not observed.

**Limitations**

This study such other descriptive studies has time and place limitations. So, it should thus be generalized to other times and in other societies carefully. Accounting Research is often one of the following events and hence they are not permitted to be present at the time of the variables. Although it must be said in any investigation even science research is not possible control variables.
Recommendations
The population of this study consists of companies listed in Tehran Stock Exchange. So, the results of this study can’t generalize to other corporation. It is suggested that another study be provided that consists of all companies. Also with similar research we can compare the relationship between clients focus on maintaining cash and capital structure of the company in the stock exchange and the OTC companies.
References: