The Impact of the Global Financial Crisis on Cash Held
By the Companies Listed on Tehran Stock Exchange

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ABSTRACT: THE main purpose of this paper is to examine the impact of global financial crisis on funds held by companies listed on Tehran Stock Exchange. Three hypotheses were developed. In this study, independent variable is the held cash. Also, the variables of investment opportunities, conservative management, and the initial offering of stock are the moderating variables. The survey covers firms were the members of the Tehran Stock Exchange in the 9-year period since 2003 to 2011. The study was correlational-descriptive research. In terms of nature of the data, it is considered as quantitative research. It is a practical research, in terms of goals. To examine distribution of the data to be normal, Kolmogorov – Smirnov (K-S) test was used. On the other side, in order to examine every the research hypothesis, t-test with correlated/paired sample were used. Results demonstrate that cash held by companies having the opportunity of investment growth, conservative management for flow capital policy and by companies having initial public offering (IPO), differs significantly before and after crisis financial.

Keywords: Global financial crisis, The held cash, Initial offering stock.

INTRODUCTION

Now, decision-making to determine the amount of cash reserves of the company has become one of the significant factors in the finance literature (Ozkan & Ozkan, 2004). The major advantage of keeping cash in inefficient capital markets is to increase the company's ability to make use of valuable investment opportunities and avoid expensive external financing. However, it is also costs to maintain cash. For example, managers and controlling shareholders may have an incentive to hold cash in order to pursue their goals do not conform to firm’s goals (Guney, Ozkan & Ozkan 2007). Managers' personal interests require that they hold a lot of cash can be at the expense of shareholder loss (Drobetz & Grüninger, 2007). Of course, keeping cash could make companies needless which require costly external financing for investment opportunities ahead. If costs of the wrong choice of external financing or financial crisis costs are very difficult, companies will try to have high liquidity in order to deal with unexpected cash shortfalls and to finance investments that the company's net worth is positive (Ozkan et al., 2004). Literature on keeping cash highlights on two incentives to maintain liquidity (1) motivation of transaction costs (2) precautionary motive (Lotti & Marcucci, 2007). The item (1) implies that raising external funds causes fixed and variable costs. This section of cost implies that there is an optimal level of cash and leads to a firm does maintenance cash as cost shield (Harford, Mansi, & Maxwell, 2008). On the contrary, the precautionary motive focuses asymmetric information, agency costs of debt and investment opportunity costs ahead. If costs of wrong choice of external financing or financial problems costs are much, the company are going to accumulate cash to dealing with this unanticipated deficit in cash and funding projects with positive net present value (Wilcox, 1989). Therefore, Dittmar and Mahrt-Smith (2007) found that cash flow; profitability and growth opportunities are positively related to held cash the relation of the firm size, leverage and tangible fixed assets to held cash are negative. Researchers' results showed that net external financing, free cash flow, firm size and the balance in cash of previous period have the greatest impact to estimate cash, and deviation of the expected cash flows of real cash doesn’t impact on rate of return on assets. Faulkender and Wang (2006) examining the excess stock return volatility during the company's financial year found out that holding more cash causes increased financial leverage, better access to capital markets and decreases the final cash value. On the other hand, the researchers’ results showed that firms with greater local ownership and the greater percentage of institutional ownership are holding cash more, while companies with higher quality of corporate governance and larger and more independent board have less cash holdings (Harford et al., 2008). But in the end, Oler and Picconi (2009) found that firms with excess cash (unstable) obtain higher risk-adjusted returns than firms with excess cash (stable), abundantly.
METHODOLOGY

The research hypotheses

- Held cash is different significantly in companies with growth opportunities, before and after the financial crisis.
- Held cash is different significantly in companies with conservative management working in politics before and after the financial crisis.
- Held cash is different significantly in companies with the initial public offering (IPO) before and after the financial crisis.

The research method

The research design of the study is semi-empirical and is done based on post-event approach (via past information). On the other hand, the present study is descriptive-correlational research. This investigation is a kind of quantitative research based on data nature and is regarded as practical research based on the goals. And in order to examine the research hypothesis and given nature of information, the research data is based on past quantitative and real information.

Research statistical population and sample

The statistical population of the study is the companies listed on Tehran stock exchange during 2003 to 2011. Removal method is used to select the sample. The companies were selected which limited to the following conditions:
1. They have been listed on Tehran stock exchange before 2003.
2. Their end of financial year should be the March 20.
3. Not to change their financial year during the period.
4. They must not be or part of investment companies.
5. Information of the variable under examination of all periods under test is available.

In this paper, 69 companies were selected based on systematic removal method.

Measurement method of the research variables

<table>
<thead>
<tr>
<th>Variable name</th>
<th>The method of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Held cash</td>
<td>(Cash + short-term investments) / book value of total assets</td>
</tr>
<tr>
<td>Investment opportunities</td>
<td>(Capital expenditure + R &amp; D costs) / book value of total assets</td>
</tr>
<tr>
<td>Conservative management</td>
<td>Current assets to current liabilities</td>
</tr>
<tr>
<td>Initial public offering</td>
<td>Initial supply companies in the Stock Exchange</td>
</tr>
</tbody>
</table>

Data analysis methods

In this research, first, we deal with descriptive statistics of the research variables based on indices of dispersion and central ones and then, Kolmogorov–Smirnov test (K–S test) will be used to examine the normality of the data distribution. Finally, T-test with two paired/correlated sample is applied to examine each of the research hypotheses. If the data distribution is not normal, non-parametric Wilcoxon test is used.

RESULTS

Descriptive statistic

<table>
<thead>
<tr>
<th>Variables</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Held cash before financial crisis</td>
<td>0.075251</td>
<td>0.341548</td>
<td>0.152269</td>
<td>0.062185</td>
</tr>
<tr>
<td>Held cash after financial crisis</td>
<td>0.056632</td>
<td>0.275124</td>
<td>0.120655</td>
<td>0.099215</td>
</tr>
<tr>
<td>Investment opportunity</td>
<td>0.095166</td>
<td>0.263205</td>
<td>0.130299</td>
<td>0.066109</td>
</tr>
<tr>
<td>Conservative management</td>
<td>0.102549</td>
<td>0.623362</td>
<td>0.312960</td>
<td>0.196620</td>
</tr>
</tbody>
</table>
Normality

\( H_0 \): Data for the dependent variable follows a normal distribution.
\( H_1 \): Data for the dependent variable does not follow a normal distribution.

**Table 3.** Test Kolmogorov-Smirnov to check the normal distribution of variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Normal parameters</th>
<th>The most difference</th>
<th>Value Kolmogorov-Smirnov</th>
<th>Z</th>
<th>Probability value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Held cash before financial crisis</td>
<td>0.15</td>
<td>0.06 0.27 0.34 0.07</td>
<td>0.966</td>
<td>0.108</td>
<td></td>
</tr>
<tr>
<td>Held cash after financial crisis</td>
<td>0.12</td>
<td>0.9 0.22 0.27 0.05</td>
<td>1.033</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>Investment opportunity</td>
<td>0.13</td>
<td>0.06 0.17 0.26 0.09</td>
<td>1.221</td>
<td>0.077</td>
<td></td>
</tr>
<tr>
<td>Conservative management</td>
<td>0.31</td>
<td>0.19 0.52 0.62 0.1</td>
<td>1.109</td>
<td>0.081</td>
<td></td>
</tr>
</tbody>
</table>

Error level of 5%

According to Table 3, due to the significant level for the research variables is more than 0.05, therefore, the null hypothesis of being normal data distribution is approved for this variable in the period before and after the crisis.

**First hypothesis**

**Table 4.** Pearson correlation coefficient between two paired variables.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>N</th>
<th>r</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before and after financial crisis</td>
<td>68</td>
<td>0.521</td>
<td>0.024*</td>
</tr>
</tbody>
</table>

Error level of 5%

Table 4 shows the relative strong correlation between held cash in firms with investment growth opportunities before and after the financial crisis has a 95% confidence level and error level smaller than 0.05.

**Table 5.** t-test for two correlated samples.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Average</th>
<th>SD</th>
<th>Deviation of mean error</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before and after financial crisis</td>
<td>0.11</td>
<td>0.09</td>
<td>1.128</td>
<td>2.302</td>
<td>68</td>
<td>0.001**</td>
</tr>
</tbody>
</table>

*T 1% error level

According to Table 5, held cash in companies with investment growth opportunities is different significantly 99% confidence level before and after the financial crisis (Because of lower significance level of one percent error). So it can be said that held cash in companies with investment growth opportunities is different significantly before and after the financial crisis.

**Second hypothesis**

**Table 6.** Pearson correlation coefficient between two paired variables.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>N</th>
<th>r</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before and after financial crisis</td>
<td>68</td>
<td>0.799</td>
<td>0.033*</td>
</tr>
</tbody>
</table>

Error level of 5%

Table 6 shows relative strong correlation between held cash in companies which have conservative management of working capital policy has an error level smaller than 0.05 with a 95% confidence level.
According to Table 7, held cash in companies which have a policy of conservative management of working capital policy before and after the financial crisis is significantly different with 99% confidence level (Because of lower significance level of one percent error). So, it can be said held cash in the companies which have policy of conservative management of working capital is significantly different before and after the financial crisis.

**Third hypothesis**

Table 8 shows relative strong correlation between held cash in companies having the initial public offering before and after the financial crisis has error level smaller than 0.05 with a 95% confidence level.

According to Table 9, held cash in companies which have initial public offering (IPO) before and after the financial crisis is significantly different with 99% confidence level (Because of lower significance level of one percent error). Thus it can be said held cash in companies having initial public offering is significantly different before and after the financial crisis.

**DISCUSSION AND CONCLUSION**

The main goal of this research is the impact of the global financial crisis on the held cash by the companies listed on Tehran Stock Exchange. The results show that held cash in companies with investment growth opportunity is significantly different before and after the financial crisis. These findings are consistent with findings of Drobetz and Grüninger (2007); Sharifi and Aghaei (2010). Also results show that held cash in companies which have conservative management of working capital policy is different before and after the financial crisis. This finding is inconsistent with findings of Myers and Majluf (1984); Hejazi and Hoseini (2006) and Dittmar et al (2007). One reason for the lack of consistency between the results of this research can be stated by not similarity of temporal domain not. Finally, the results show that held cash in companies having the initial public offering (IPO) before and after the financial crisis is significantly different. This finding is consistent with Drobetz and Grüninger (2007); Arsalan, Florackis and Ozkan (2006) and Guney et al (2007). It can be recommended to the sample companies based on the results of this study that by adopting appropriate policies of cash when changing the time situation or occurrence of different crisis situations such as financial crisis in the face of these circumstances they should make themselves insurance and avoid paying costs.

**REFERENCES**


