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Investigating the Relationship between the amount of Cash Held by Companies and Future Cumulative Abnormal Returns

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Abstract

Stock companies decisions in relation with financial leverage are one of the most important decisions taken by corporate executives. Financial decisions not only affect the company's future performance, but also affect the country's macroeconomic performance. The current study was done to investigate the relationship between the amount of cash held by companies and future cumulative abnormal returns. In order to conduct the survey, 120 companies listed in Tehran Stock Exchange during 2004 to 2010 were analyzed. Analysis evidence based on panel data shows that the company's future performance which represents the cumulative abnormal returns in the future indicates decreased future stock returns due to Excessive cash which indicates that the market was not able to completely predict the effects of Excessive cash in the current returns.

Keywords: cash, future cumulative abnormal returns, market efficiency

Introduction

The amount of cash held by companies is a subject increasingly taken into the consideration of many researches. It is reasonable to expect that the strategic decisions about how to manage liquidity in the financial management of the company are also very important from the perspective of investors. Managers to avoid the restrictions on foreign funding including transaction costs and other financial constraints prefer the use of domestic financing, so try to keep more cash assets. But sometimes the Excessive ive liquidity and avoiding keeping them in the company's operations will result in poor performance of the company. In fact, it can be stated that according to the theory of exchange, managers maintain a level of cash - known as optimal level to balance costs and benefits of holding cash (Difond and Park, 1997). Nowadays, the stock market performance of developed countries is used as a measure to assess changes in their economy and trade policies. The amount of cash that companies need has been always regarded by finance researches. In cash theoretical literature, it is stated that the companies attempt to keep their cash based on financial, precautionary and speculative incentives. Financial decisions not only affect the company's future performance, but also affect the country's macroeconomic performance. This debate is directly related to the financial accelerator which means the role and impact of financial terms on economy shocks. Since productivity is an important criterion to evaluate companies, so it can be assumed that the productivity of active companies in the financial markets is important. Thus, according to this theory additional debt over optimal debt can be obtained and thereby the optimal level of leverage can be determined. Thus, the theory expresses the amount of debt associated with the assets (Korislily et al., 2010). With this approach, the effect of Excessive or lack of leverage on corporate performance will be measured. One of the most important assets and capital resources in the community is the society and the country's micro and macroeconomics liquidity. Undoubtedly, the liquidity absorption and its proper guidance require appropriate analysis of investment opportunities in different monetary and financial markets of the community. Identifying suitable opportunities to invest in the stock market requires detailed analysis of the company's financial forms and appropriate prediction of the future returns and earnings per share. Therefore, analyzing and

predicting factors affecting prices and stock returns are always considered by investors, brokers and other stakeholders in the stock market (Ashri et al, 1994).

Mikkelson and Partch (2003) found that companies that constantly maintains the high level of cash flow show better performance which confirms that keeping Excessive es cash has a negative impact on company performance and even basic performance is improved by increasing the amount of cash. In contrast, Dittmar and Mahart-Smith (2007) and Harford et al. (2008) indicated that future return of assets is decreased with an increase in cash. Dittmar and Mahart also confirmed that some of the corporate governance variables reduce these effects. Yet, the relationship between cash and company's future performance with regard to insufficient cash was not measured by any of the articles. The current study was done to investigate the relationship between Excessive and insufficient cash with fundamental performance of the company and the rate of investors' understanding. The reason of dividing cash deviations into two parts, Excessive and insufficient, is that their effects may be different.

Methodology

The method used in this research is descriptive and regression and its data are based on financial information of the companies listed in Tehran Stock Exchange. The research methodology is kind of ex post which means the research is based on the previous studies data. Also, in terms of considered developmental purpose and data collection and analysis, it is descriptive-regression based on panel data analysis. Statistical analysis is done with the help of computer software. To test the hypotheses, regression and correlation analysis is used. Models significance is measured by the use of determination coefficient (R2), correlation coefficients and t-statistics. Correlation analysis or consistent include all the methods in which it is tried to determine the relationship between different variables by applying regression model and correlation. The purpose of the correlation analysis is to compare changes in one or more variables with changes in one or more other variables.

Data analysis

Information about the theoretical principles of the study were collected through Persian and Latin books and articles and information needed to test the hypotheses was collected by the use of audited financial statements of companies studied and also compact discs of stock trading and if necessary, the site www.rdis.ir has been used. Eviews7 and Excel software were used to analyze the information and statistical analysis.

Research hypotheses

First hypothesis: there is a significant and inverse relationship between cash assets held by the company and the future cumulative abnormal returns more than the calculated optimal amount.

Second hypothesis: there is a significant and inverse relationship between cash assets held by the company and the future cumulative abnormal returns less than the calculated optimal amount.

Review of literature

Jones (2011) in his article studied the impact of income on cash held in English companies. By the use of data from 200 enterprises for the period 2000 to 2010, he concluded that there is a significant negative relationship between the qualities of earnings and cash or cash equivalents. The results also showed the growth opportunities variables and cash flows are negatively associated with cash balance. Elita (2011) in his article examined cash flow and NYSE firms' performance. He concluded that the amount of cash held has a positive and significant relationship with the company's performance and the more cash firms hold the efficiency and profitability of these companies will increase in subsequent periods.

Oler and Picconi (2007) studied the impact of insufficient cash on the company's future performance by the use of 17 years of financial data from 1989 to 2005. They found that lower cash balances have strong correlation with the optimum operational performance in the future. Future operational performance reduced when firms had higher amounts of cash to maintain which seems that it is due to incorrect investments by these companies. Based on these findings, investors correctly understood the result of Excessive cash. But they did not fully understand the concept of insufficient cash resources. Also it does not seem that investors consider the concepts levels of high cash. Other findings in this study are about the effect of situation in which the companies are young and their cash levels on their efficiency. Young firms tend to have negative future cumulative abnormal returns. At a time when companies hold Excessive Cashes, the future reduced stock price is lower.

Jensen's (1986) in a research studied the investors' perspectives by examining the investment returns to portfolios based on the strategy of exchange rate on cash and cash forecasting in the future. Analysis and exchange strategies used in their investigation are that the portfolio of companies with high liquidity and low liquidity has been compared with each other. The results showed that investors rewarded the companies that reported less cash on the balance sheets which are in contrast with the fact that more cash should be held when dealing with a range of financial restriction. The findings showed that management always do not properly use cash from operations, especially when the company is underperforming. On the other hand, if investors had used fundamental analysis of companies such as liquidity ratio analysis to choose stocks, they should have been able to earn Excessive returns in the margins. However, in this study to evaluate the performance the Price ratio to the stock earnings was applied.

The estimated results of optimal cash model

The first model presented in this study is the optimal cash model which is based on the assumption that companies need to maintain a certain level of cash, named optimal cash, based on their characteristics such as sales growth, dividend payments and the amount of cash flows.

Table 1: The estimated results of optimal cash model

Expected signs	(P-VALUE)	The estimated coefficient	Symbol	Independent Variables
؟	0.0000	0.029733	MTB	Market value to book value ***
+	0.6147	0.014871	Sales Growth	Growth in sales
-	0.0000	0.064807	Size	Company Size ***
+	0.0000	0.120766	CFO	Operational cash flows ***
+	0.0000	0.088797	NWC	Net working capital ***
+	0.0000	0.076146	Cap-Exp	Capital cost ***
+	0.0000	0.148713	leverage	Leverage ***
+	0.3245	0.014413	Div Dummy	Payment of dividends
+	0.0000	0.025487	Firm Age	Company Life***
			79.25%	determination coefficient
13.20		F statistics	78.24%	adjusted determination coefficient
0.000000		Probability (P-value)	1.99	Watson statistic camera

Signs ***, ** and * respectively indicate the model significance at the confidence level of 99, 95 and 90 percent.

It is expected that any positive or negative deviation from the estimated value have a negative effect on future performance and efficiency.

Actual cash deviations from the optimal level in are used in the cash-dimensional models and used to test independent variables and assumptions. First, results of the F test and Housman confirmed estimated model using fixed effects method which means the obtained F was greater than the table F, consequently, the hypothesis H0 , width equality from origin, is not be accepted. It means OLS method cannot be used to estimate the model. The calculated chi-square statistic also indicated disapproval of the random effects in the model. According to what was said the significance of the GLS method using fixed effects methods for the 120 companies in the sample for the period 2004 to 2010 covered evenly will be studied.

E-views software output of the cash model is presented in the appendix. The adjusted determination coefficient of the mode is %78 which is more than that obtained by previous research, the adjusted determination coefficient in table 4 of Opler et al. (1999) study was about %23. And the adjusted determination coefficient in table 2 of Derek and Pikni (2009) study was about %49. Watson statistic Cameras is 1.99, which indicates the absence of autocorrelation in the disturbance component of the model is estimated. Probability of F statistics presented below show the significance of the model in Confidence level of % 99. All variables except the pattern of growth in sales have Payment of dividends in Confidence level of % 99. Of course, the coefficients of the two non- significant variables are the minimal. Like Opler et al. the obtained ratio of market value to book value indicates that the market value to book value has positive effect on the optimal cash which are in contrast with Derek and Pikni's (2009) findings, because companies require cash when they run into opportunities for further growth. As it was expected the company's size has negative impact on the company's optimal cash because such companies can easily access the capital markets and do not need to maintain much cash. Net operational cash flows have a positive impact on cash held. It may be due to high liquidity and Excessive cash flow in the companies. Net working capital in contrast with the expectation has a positive effect on the amount of needed cash. It may be due to high liquidity in companies with more Net working capital which includes trading incentive to hold cash. These results also show that firms according to their need for cash and reduction of external finance keep more cash. The company's life has unexpectedly positive and significant effect on the amount of cash held. Most companies with older life are prolonging the high debt on their balance sheets report .The reason of the positive effect may be the companies' problems in providing additional financing from outside the company.

The results of Model of insufficient Excessive Cash impact on the future cumulative abnormal returns

Future returns which represent the cumulative abnormal return are a criterion used to assess the predictive power of investors. In fact, to the level at which the influence of deviations cash on performance is not predicted in this year, the effect will be presented in the future performance and at the same time with the performance influence (Kong et al, 2008). To test the second hypothesis it was tried to examine whether market would react to the changes in the cash according to the optimal level.

Research hypothesis in this case are as follow:

- There is a significant and inverse relationship between cash assets held by the company and the future cumulative abnormal returns more than the calculated optimal amount.
- There is a significant and inverse relationship between cash assets held by the company and the future cumulative abnormal returns less than the calculated optimal amount.

In this study, future returns are calculated as cumulative abnormal returns since the beginning of the fourth month following the end of the financial year and until 12 months after that. To analyze the effect of the independent variables, the market value was added to the book value and the variables of the cash flows were added to the model. The results of the F test and Hausman test confirms the use of fixed effects method.

Table 2 : The results of future cumulative abnormal returns model

Expected signs	(P-VALUE)	The estimated coefficient	Symbol	Independent Variables
-	-0.0009	-0.82551	Excess Cash	Excessive Cash ***
-	-0.6679	-0.033357	Insufficient Cash	Insufficient cash
؟	0.0001	0.019699	Young Dummy	Dummy Variables of young companies **
؟	0.0481	0.196707	Young* Excessiv Cash	Excessive cash in young company **
؟	-0.8783	-0.024017	Young* Insufficient Cash	Insufficient cash in young company
+	0.6191	0.010286	CFO	Net operational cash flows
+	0.0078	0.02754	CFI	Net investment cash flows ***
+	0.0008	0.023857	CFF	Net financing cash flows ***
4.21	F statistics		43.54%	determination coefficient
0.000000	Probability (P-value)		40.18%	adjusted determination coefficient

Significance level of the F statistics is 0.000000 that indicates the overall credibility of the model is %99. The adjusted determination coefficient of the mode is about %40 which indicates that 40 % of the cumulative abnormal returns following changes can be explained by this model. The adjusted determination coefficient of Oler and Pikni (2009) study was about %5.2. And the adjusted determination coefficient of Falkndr and Wang (2006) model was about %20. All variables except insufficient cash and Net operational cash flows in young companies are in the Significance level of %95. Coefficient of Excessive cash is -0.08 which means for every one percent change in excessive cash, its return is reduced 0.07 which suggests that the market does not fully understand the impact of the excessive cash in the current year. Coefficient of young companies that are keeping more cash is +0.19. This means that one percent increase in this variable lead to % 0.19 increase in the dependent variable, probably due to the companies' less access to capital markets and facing some financial constraints, they require keeping more cash. The coefficient of Net operational cash flows variable is not significant because of its effect reflection on the current output. The value of this coefficient is very small. Other cash flows at confidence level of %99, as expectation, have a significant positive correlation.

The results presented in Table 2 confirm the first hypothesis and indicate that the market did not match itself with the deviation of the company from the optimal level of cash in the same year, and also the negative effect of cash deviations on returns did not confirm the results of the model because the negative effect of cash deviations on performance in the returns was also clear. These results also showed that companies keeping very high or very low cash can increase Shareholder value through optimal adjusting the amount of their cash from low to optimal.

Conclusion

First hypothesis of the study, an adverse effect of excessive cash on the future performance was confirmed. However, a significant relationship was not found between insufficient cash and future returns, as a result, the second hypothesis of the research was not confirmed. The people

participating in the market do not react to the effect of their misunderstanding on the performance in the future and current year, while react to deviations of cash along with its functional effects in the future years. The results also showed that companies keeping very high or very low cash can increase Shareholder value through optimal adjusting the amount of their cash from low to optimal. Keeping excessive cash also increases the cumulative abnormal return of young companies which indicates the companies' need to the cash.

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