



DETERMINING THE RELATIONSHIP BETWEEN CHANGEABILITY OF CASH BALANCE AND ABNORMAL RETURN AS WELL AS COMMERCIAL CREDIT OF ACTIVE COMPANIES IN THE FIELD OF FOOD INDUSTRIES ADOPTED IN TEHRAN STOCK EXCHANGE

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Abstract:

Unexpected changes of abnormal return having to do with companies are the concept that has been considered several times by market activists and investors. In so doing, the market changes are taken into account as the important events in the field of science and practice. In general, fear of crisis is deemed as permanent source of stress and anxiety. The aim of the present study is to determine the relationship between cash balance changeability and abnormal return as well as commercial credit of active companies in the field of food industry in Tehran stocks center. The statistical sample comprises of 27 active companies and the study lasts for 7 years i.e. 2006 to 2010. Research hypotheses were studied using correlation method and making use of multivariate regression models. The findings indicated that there was a significant relationship between the liquidity level fluctuations due to economic shocks and abnormal return of companies. In other words, when it comes to the changes in economic shocks, the increase of changes in cash balance would lead to increase in capital market response and would result in more return of companies compared to capital market return. Also, liquidity did not have a determining role in commercial credit of companies.

Keywords: changeability of cash balance, abnormal return, commercial credit

Introduction

Market economic shocks are considered as one of the interesting events in the field of science and proactive. Generally, investors and managers of companies consider the fear of crisis as permanent source of stress and anxiety (Almedia et al., 2012). Unexpected changes of abnormal returns relevant to companies are the concept that has been considered repeatedly by market activists and investors. In general, two-digit negative index return in a couple of days and in short time duration as well as liquidity increase without any support are taken into account as the economic shock for companies, simply, economic shock is defined as a sudden decline in stocks index in a short time (Dochin et al. 2010). Several studies conducted in the field of liquidity have drawn their attention to experimental theories and their studies have shown the possible bond between companies' liquidity size and real fluctuations of economy (Flanrey & Lokhart, 2009).

Considering the development and depth of market in every financial market, it is claimed that there are a variety of instruments to invest. One of the fundamental issues in investment is considering the credit ranking of companies since it is feasible that a number of investors require the access to their financial resource. That is the fact they look for investing in companies whose liquidity size is high and one of the ways to identify higher levels of liquidity is considering their commercial ranking. The rate of fluctuations has to do with welcoming the transaction in stock exchange by investors. Investors are well aware that in case they tend to sell their capitals, they should have in mind whether there is an appropriate market for them or not. The issue is regarded as the risk appearance of liquidity size for the assumed company in the mind of buyer which can lead to the ignorance of investor (Almedia et al., 2012). Studying the effect of fluctuations pertinent o liquidity level derived from economic shocks on abnormal return and commercial credit of companies would be the fundamental solution in relation to answering the questions.

The focus of the current study is to investigate the effect of fluctuations having o do with liquidity level due to economic shocks on abnormal return and commercial credit of companies in adopted companies in Tehran stock exchange. So, the main research questions is if the proposed fluctuations of liquidity level derived from economic shocks have any effect on abnormal return and commercial credit of companies.

Research hypotheses

Hypothesis 1: There is a significant relationship between changeability of cash balance due to economic shocks and abnormal return of companies.

Hypothesis 2: There is a significant relationship between changeability of cash balance due to economic shocks and commercial credit of companies.

Related studies

Young and Kim (2009) investigated the relationship between abnormal return and the styles of financial support, company size and cash pays. The results indicated that only cash pay was correlated with abnormal return.

Emaima et al. (2009) studied the value and credit of obliged and voluntarily unleash in capital market and concluded that obliged unleashing had a negative relationship with institutions value after controlling the variables such as company's beneficiary and size. Also, they showed that voluntarily unleashing was not significant in relation to institutions' value.

Cameron Trong (2011) drew the attention on investigating the relationship between abnormal return and income of share with using company's criteria, expenses of transactions and P/E ratio. The results manifested that these criteria had an impact on companies' performance.

Zarei (2010) surveyed the liquidity effects on bubble behavior of housing expenses in civil districts of Iran for the years 1992-2007. The results showed that liquidity had a considerable effect in this duration. Such an effect was reported higher than the common Era.

Jabarzade et al., (2010) identified the affective factors on abnormal return of share in the initial distribution. The results manifested that the predicting error of each share, market common circumstances prior to distribution, the ratio of owing to shareholders, the ratio of pure interest and return of shareholders were in direct relationship with predicting variables of each share in a positive form and the reverse relationship was reported with the ratio of pure interest to abnormal return in 12 month duration. None of the variables was correlated with abnormal return.

Sajadi and Zarezade (2011) investigated the relationship between managers' encouragement and motivation plans and criteria for performance evaluation in adopted companies of stock exchange. They concluded that there was a relationship between paid wage to managers and economic-based criteria. Also, the findings

revealed that there was a significant relationship between the percent of managers' shareholding and market added value and that there was no significant relationship with other economic criteria.

Research variables and the quality of calculation

Research dependent variables

The method of evaluation has been taken from the one proposed by Apendini and Gariga (2014). The applied methods have been rooted in theoretical and experimental evidences which have been employed in line with testing the research hypotheses by the researcher.

Abnormal return ($AR_{i,t}$): the expected return of share equals to the difference between company return rate and market return. In order to determine the expected return of share, balanced model of market is used.

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

Commercial credit ($AP_{i,t}$): in order to calculate the commercial credit of companies based on the study of Garcia and Montriol (2014), the study has made use of the ratio of receivable accounts to company sale.

$$AP = \frac{\text{Receivable accounts}}{\text{Sale income}} \quad (2)$$

Research independent variables

The independent variable is the fluctuations of liquidity level derived from economic shocks where Ribelo (2005) report is used so as to calculate it:

$$CRISIS * LIQ_{i,t} = I_t + Y_t + N_t + K_t + D_t / N \quad (3)$$

$$CRISIS * LIQ_{i,t} = R * LIQ$$

CRISIS: reflects the economic shocks and to obtain it requires the use of internal GDP growth. So, the eras which have experienced negative GDP are taken into account as economic shock and the CRISSI variable would be equal to 1.

$LIQ_{i,t}$ = equals to company liquidity and the calculation is as follows:

$$LIQ_{i,t} = \frac{\text{Cash-based assets}}{\text{Book value of all assets}}$$

Statistical population

The research has made use of stratified financial data and audited cases of active companies in the field of food industries in Tehran stock exchange. Considering the research variable, one is able to define the following criteria in excluding sampling,

The financial period would lead to 29th of February in terms of the increase of comparability

There would be no fiscal year during the years of investigation (2006-2010). The required data are available in definition section.

Table 1: The quality of choosing and extracting the sample

The number of active companies in food industries to have participated in stock exchange during 2006-2010	35
The number of companies whose financial fiasco leads to late February	31
The number of companies which have not experienced change in financial fiasco	31
Active company transaction symbol and more than 4 months per year, no stop of transaction symbol	27
The number of companies whose data have been collected	27

The quality of hypotheses testing

In order to test the research hypotheses, the provided regression models is used i.e. Amepndini and Gariga (2014). These models have been taken from the study conducted by Tang and Wee (2008). In these regression models, abnormal return and commercial credit are considered as the dependent variables and as a function of independent and control variables, the aforesaid models are as follows:

First hypothesis testing model

$$AR_{i,t} = \alpha_0 + \beta_1 CRISIS * LIQ_{i,t} + \beta_2 M / B_{i,t} + \beta_3 Size_{i,t} + \beta_4 NWC_{i,t} + \beta_5 CF_{i,t} + \beta_6 CPAX_{i,t} + \beta_7 DEBT_{i,t} + \beta_8 CF_Volatility_{i,t} + \beta_9 DIV_Dummy_{i,t} + \varepsilon_{i,t}$$

Second hypothesis testing model

$$AP_{i,t} = \alpha_0 + \beta_1 CRISIS * LIQ_{i,t} + \beta_2 M / B_{i,t} + \beta_3 Size_{i,t} + \beta_4 NWC_{i,t} + \beta_5 CF_{i,t} + \beta_6 CPAX_{i,t} + \beta_7 DEBT_{i,t} + \beta_8 CF_Volatility_{i,t} + \beta_9 DIV_Dummy_{i,t} + \epsilon_{i,t}$$

Results

The results of the first hypothesis testing

Hypothesis 1: there is a significant relationship between changeability of cash balance due to economic shocks and abnormal return of companies

To test the hypothesis, regression model is used in which abnormal stock returns is considered as the dependent variable and as a function of independent and control variables. The results from analysing the regression model having to do with the first hypothesis are given in table 2.

Table 2: The results of statistical analysis for the first hypothesis

Balanced R ²	Watson statistic camera	F statistic	F level of significance
0.225	2.088	13.303	0.000

Variable	B coefficient value (standardized)	T statistic	Level of significance
CRISIS*LIQ	0.002	2.055	0.026
MB	0.113	3.198	0.001
Size	-0.006	-0.154	0.877
NWC	0.051	2.06	0.018
CF	0.014	0.393	0.695
CPAX	0.027	0.672	0.446
DEBT	-0.058	-2.226	0.02
Cf_Vol	0.027	0.768	0.443
DIV	0.08	2.214	0.027

The statistical analysis results having to do with the credit of regression model is provided in the first section of the above table. The determining coefficient of regression model is 0.255. This means that this model is able to predict 22.5% of the changes relevant to abnormal stock rerun of companies in statistical sample through

independent variables. Also, the results show that Watson statistic camera falls between 1.5 and 2.5, so there is no strong correlation between the regression sample errors. In addition, no self-correlation is found between the errors as one of the fundamental hypotheses of regression in relation to the studied model.

The results of regression variance analysis (ANOVA) which his decided based on the F statistic, is provided in the two last columns of table 2 for the studied model in the first secondary hypothesis testing. The statistical hypotheses relevant to the statistical analysis are as follows:

$H_0: \beta_i=0$ regression sample is not significant

$H_1: \beta_i \neq 0$ regression sample is not significant

The level of significance for F statistic for the model is less than the level of error for the test, so null hypothesis is rejected and the estimated regression is statistically significant and the relationship between the research variables is that of linear. The estimated coefficient for CRISIS*LIQ variable which shows the relationship between the fluctuations of liquidity level derived from economic shocks and abnormal return of companies is 0.002 and that of 0.06 level of significance. This finding shows a direct and significant relationship between the mentioned variables, in other words, the increase of companies' liquidity level in economic shock period leads to the increase in their abnormal return. The results having to do with the control variables indicate that there is a direct and strong relationship between the ratio of market value to book value, pure asset in balance and divided share by abnormal return of share. There is a reverse relationship between the abnormal return and financial leverage. In other words, companies categorized by higher levels of owing have experienced lower levels of return. Also, cash flow, capital expenses and fluctuations of cash flow were not correlated with abnormal return. These findings indicate that the aforesaid variables are not taken into account as the affective factors on response of asset market and they emphasize that the asset market activists are suggested not to consider them in their short-term decision-making process.

Generally, the results indicated that there was a significant and reverse relationship between the level of liquidity derived from economic shocks and abnormal return. These findings are in correspondence with the claim proposed in the first hypothesis which is accepted in 95% level of confidence.

Results for the second hypothesis testing

Hypothesis 2: there is a significant relationship between changeability of cash balance due to economic shocks and commercial credit of companies

To test the hypothesis, regression model is used in which commercial credit of companies is considered as the dependent variable and as a function of independent and control variables. The results from analyzing the regression model having to do with the first hypothesis are given in table 3.

Table 3: The results of statistical analysis for the second hypothesis

Balanced R ²	Watson statistic camera	F statistic	F level of significance
0.154	1.774	10.07	0.000

Variable	B coefficient value (standardized)	T statistic	Level of significance
CRISIS*LIQ	0.005	0.149	0.882
MB	0.037	2.062	0.029
Size	0.12	3.269	0.001
NWC	0.139	2.947	0.003
CF	-0.016	-0.46	0.646
CPAX	0.045	1.303	0.193
DEBT	0.277	5.902	0.000
Cf_Vol	0.026	0.76	0.448
DIV	0.014	0.391	0.696

The estimated coefficient for CRISIS*LIQ variable which shows the relationship between the fluctuations of liquidity level derived from economic shocks and commercial credit of companies is 0.005 and that of 0.882 level of significance. This finding shows that there is no significant relationship between the variables.

The results of the control variables indicate that there is a direct and strong relationship between the ratio of market value to book value, company size, pure asset in cash flow and financial leverage with companies commercial credit. In other words, companies categorized by larger size and higher levels of owing enjoy higher levels of commercial credit.

Also, there is no relationship between the commercial credit and cash flow variables, capital-based expenses, cash flow fluctuations and divided share. These findings manifest that the aforesaid variables have not determined the level of commercial credit for companies and one is not able to rely on them when it comes to

evaluating company's commercial credit. Generally, the results implied that there was no statistically significant relationship between the fluctuations of liquidity level derived from economic shocks and commercial credit return of companies. This finding does not support the claim proposed in second hypothesis and it is rejected in 95% level of confidence.

Discussion

Findings of the first hypothesis testing showed that there was a direct and strong relationship between the fluctuations of the liquidity level derived from the economic shocks and abnormal return. Based on the theoretical and experimental evidences, one can consider the following inferences about the findings of the first hypothesis. First, it is probable that the cash savings of studied companies were highly affected by the changes compared to other periods. These findings indicate that the mentioned companies were under the impact of major variables of economy and changes in major economic variables led to change in their resource management solutions. Second, it is probable that shareholders and capital market activists draw their attention to the cash savings of adopted companies in stock exchange during the economic shock period. This is feasible to be formed by perceiving the capital market on the part of the activists in relation to management solutions of companies' cash savings. They might deem cash savings changes as the optimum symptom of financial flexibility in companies.

Findings of the second hypothesis testing manifested that there was no significant relationship between the fluctuations of liquidity level derived from economic shock and companies' commercial credit. Theoretical principles clear out that in case companies enjoy consistent cash savings, it is more probable that they have more credit selling. However, findings of the present study indicated that the above-mentioned theoretical principles have not been true for the studied companies. One can attain two general inferences. First, it is probable that the fluctuations of cash flow of studied companies are not to the extent that might have impact on management solutions. In other words, the severity of companies' liquidity has been non-significant during the study period.

Second, it is feasible that the studied companies' managers have not considered the cash balance and its fluctuations when determining the solutions. That is to say that cash fluctuations might not be taken into account as a determining factor of commercial credit from managers' perspective.

Suggestions

Based on the obtained results, the study considers following as the efficient suggestions.

Applicable suggestions

Based on the first hypothesis result that there is a direct and strong relationship between the fluctuations of liquidity level derived from economic shocks and abnormal return of companies, it is suggested for managers that they consider potentials and investing opportunities as the main factor to determine the retain of cash and they take into account the macroeconomic variables and avoid any focus on cash flows.

Based on the results obtained from testing the second hypothesis saying that there was no relationship between fluctuations of liquidity level derived from economic shocks and commercial credit of companies, the present study recommends that managers draw their attention to company cash savings and its consistency when determining the financial solutions and make their efforts to adjust such solutions in a way that the probability of experiencing financial limitations reduces.

Suggestions or further researches

- Investigating the relationship between cash balance fluctuations and companies investing opportunities;
- Investigating the relationship between cash flow and investment efficiency of companies considering the financial limitations;
- Investigating the relationship between financial leverage and commercial credit of companies in different commercial cycles.

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