

The impact of diversification on the relationship between cash holding and abnormal stock returns

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Abstract: The purpose of the study was to determine the relationship between diversification strategy and cash holding with abnormal stock returns. This study is an applied-developmental one in terms of objective, and analytical descriptive research in terms of nature and method. The statistical population of this study included companies-listed in the Tehran Stock Exchange between 1388 and 1393. The findings of the study shows that there is variable changes in cash levels maintained significant positive impact on stock returns is unusual, So that a unit increase in the variable abnormal stock returns will increase by as much as 0.004 units. Variable diversification effect is positive and significant abnormal returns stock, So that a unit increase in the variable diversify abnormal stock returns will increase by about 0.003 units.

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Keywords: diversification, returns, cash holding, abnormal stock returns, Tehran Stock Exchange.

Introduction

Profitability increases and improves the incoming cash flow of the company which in the long term will increase the company's value in the capital market and increase of the value of the company leads to the increase of shareholder's wealth.

Cashes are important item of the current assets in the process of company's conducting operations and profit units. Cash information evolves particular importance in the history of the development of accounting in preparing and reporting useful financial information in decision-making, so that without applying cash management, the continuity of financial corporations activity will face problems and the implementation of their operations in favorable form will be impossible. What has been mentioned in the financial calculation, stock selection and investment portfolio up to now are such that prioritize investments in order in terms of risk and return, so that investors could form their ideal stock portfolio by considering their financial capabilities and risk-taking rate. Potential investors who incur the risk with their decisions must invest in different companies in order to increase their performance efficiency; so by diversifying their portfolios significantly reduce their risk rate, but part of risk is uncontrollable and irreducible even by diversifying portfolio. Systemic risk refers to that part of the volatility of an asset return that can be caused by simultaneous impact of different factors on the market price of the securities.

Due to the role and the impact of the diversification on cash holding and companies' stock return in this study the issue will be examined in Tehran Stock Exchange.

Statement of the Problem

Since the amount of cash is the main source of commercial unit, cost control and cash maintaining levels became important. This requires that companies to define the targets of cash for each business activity and also all business activities. When the target of the cash and control reports of cash flow from system are used to compare actual results with set goals, managers must be said that which role and function they are expected in this regard according to their responsibilities in the cash flow of business units and if certain targets are achieved or not. Cashes have always allocated substantial percentage of assets of the companies. Hence cash is important that allows firms to seek opportunities to increase shareholder value. Companies are looking for the optimal level of liquidity that do not cause major loss due to the lack of the liquidity and on the other hand do not lost opportunities due to the additional cash holdings. The stock exchange is the main mechanism ahead of the current world economic systems for fundraising and optimal allocation of investment of national economy to investment purposes. The importance of the stock exchange in today's economy is not ignorable at all. In this study the validity of the effects of diversification and the amount of held cash will be discussed in companies listed on the stock exchange. In other words, this study seeks to answer the following question: what is the relationship between the companies' diversification and the value of the amount of the held cash in Tehran Stock Exchange companies?

Review of the Literature

Wang et al (2013) talked about the inflation, operating cycle and cash source in a study. The results showed that there is a U-shaped relationship between operating cycle and cash source. And this relationship is affected by changes in the level of inflation.

Tang (2011) investigated the effect of diversifying in the companies' amount of held cash in the New York Stock Exchange for the period of 1998 to 2005. His findings showed that the value of cash held by the single parted companies is more than multiple parted companies.

Nazmi-Ardakani and Zareh Hossein-Abadi (2016) studied the effect of deviations from optimal cash over return of stock's abnormal future cumulative. Results of estimating research models indicate that the absolute value deviation of cash from the optimal level do not have negative effect on the return of stock's abnormal future cumulative.

Hemmati and Yousefi-Rad (2013) investigated the relationship between the diversification and the value of the held cash level with the abnormal returns of companies listed on the Tehran Stock Exchange. The findings showed that there is a negative and significant relationship between diversification strategy and abnormal returns of companies. While there is not significant association between the held cash level abnormal returns.

Research Hypotheses

First hypothesis: diversification is significantly effective in the relationship between cash holding and abnormal stock returns.

The second hypothesis: there is a meaningful relationship between cash holding and abnormal stock returns.

The third hypothesis: There is a significant relationship between diversification and abnormal stock returns.

Research Method

Since the results of the study will be used by the Tehran Stock Exchange, investors and companies, the type of research in this study is a functional research based on objective and is a descriptive-analytic research based on the nature and method.

Society and Statistical Population

The statistical population of this study is included of all companies listed on the Tehran Stock Exchange from 2009 to 2014. 253 companies were selected, compared and analyzed in this study.

Research Model

Theoretical model of Faulkner and Wang (2006) used the newest model to describe the marginal value of cash funds. In this study, we can use this model to represent a method to measure the amount of the final value of the cash holding. Finally, to answer the hypotheses of the model of Faulkner and Wang (2006) have been used of these formulas as follows:

$$R_{i,t} - R\beta_i = \alpha_i + \beta_1 \times (\Delta \text{cash} \frac{\text{Holding}}{MV_{i,t-1}}) + \beta_2 \times \text{FirmDiversification} \left(\frac{\Delta \text{CashHoldings}_{i,2}}{MV_{i,t-1}} \right) + \beta_3 \times (\text{firmdiversification}) + \beta_4 \times \left(\frac{\Delta \text{Earning}}{MV_{i,t-1}} \right) + \beta_5 \left(\frac{\Delta \text{NetAssets}}{MV_{i,t-1}} \right) + \beta_6 \left(\frac{\Delta \text{InterestExpenses}}{MV_{i,t-1}} \right) + \beta_7 \left(\frac{\Delta \text{Dividends}}{MV_{i,t-1}} \right) + \varepsilon_i$$

In the formula of the research model, Rit-RBi represents the difference between actual and expected returns (the dependent variable), *cash holding*: changes in the level of cash holding of company between the two periods of *t* and *t-1* (independent variable), *Firm diversification*: organizational diversity (independent variable), *MVi;t - 1*: Equity value of shareholders (variable control), *ΔNet Assets* (control variable), *Interest expense* (control variable), *Dividends* (control variable) and *Earning* is the changes in net income (control variable).

Regression Model Analysis

In this study, the following model is used:

Rit-RBi represents the difference between actual and expected returns (the dependent variable), *cash*

holding: changes in the level of cash holding of company between the two periods of *t* and *t-1*, *Firm diversification*: organizational diversity (independent variable), *MVi;t - 1*: Equity value of shareholders (variable control), *ΔNet Assets* (control variable), *Interest expense* (control variable), *Dividends* (control variable) and *Earning* is the changes in net income (control variable). The F Limer test was used before estimation to choose between cross-sectional or panel data method. Accepting the null hypothesis means picking cross-sectional data and rejecting that sort of data in panel method. The results of this test are presented in Table 3-4.

Table 3-4. Chow test (F Limer)

| Chow test (Limer) | Description | Statistics | Degrees of freedom | Possibility |
|-------------------|--------------|------------|--------------------|-------------|
| | F Statistics | | 1.731621 | (234.1079) |

So because of this reason that the possibility of Limer statistic has been less than 0.05, the null hypothesis of Limer test based on the use of cross-sectional data will be rejected, so it was used of panel

data regression model. That's why after confirming the estimation of research model by panel data method was used of Hausman test.

(Table 4-4) Limer and Hausman test

| Hausman test | Description | Statistics | Degrees of freedom | Possibility |
|--------------|-------------|------------|--------------------|-------------|
| | Hausman | | 0.00009 | 7 |

Hausman test estimation with statistic of 1.5 and with higher possibility of 0.05, the estimation of model was approved by random-effects method.

Estimation of panel data regression is presented in Table 5-4.

Table 5-4. Estimation of the regression model

| Variable | Coefficient | Standard deviation | T Statistics | Possibility |
|---|-------------|--------------------|--------------|-------------|
| Changes in Cash funds level of maintenance | 0.004 | 0.000 | 16.325 | 0 |
| Diversification | 0.003 | 0.001 | 3.930 | .0001 |
| The combination of diversification and cash | 0.198 | 0.087 | 2.268 | 0 |
| Net assets | 0.000 | 0.000 | 8.351 | 0 |
| Interest expense | 0.000 | 0.000 | -6.560 | 0 |
| Dividend | -0.085 | 0.012 | -7.011 | 0 |
| Changes in net income | 0.000 | 0.000 | 8.615 | 0 |
| Width from the source | 0.000 | 0.000 | -14.464 | 0 |
| The coefficient of determination | | 0.86 | | |
| The coefficient of adjusted determination | | 0.8 | | |
| Durbin Watson | | 2.17 | | |
| F Statistics | | 15.94 | | |
| The probability of F statistic | | 0 | | |
| Normality statistics | | 5.7 | | |
| The possibility of normality | | 0.058 | | |

Investigation of Research Hypotheses Associated with the Regression Model

The First Hypothesis

In this study, the relationships between diversification and cash flow have positive and significant effect on abnormal stock returns so that one unit increase in this variable increases abnormal stock returns by the rate of 0.19 units. According to the results of estimating regression model, the mentioned hypothesis is confirmed. As we have seen, the composition and the relationship between two variables of diversification and cash flow have more impact than using two variables independently.

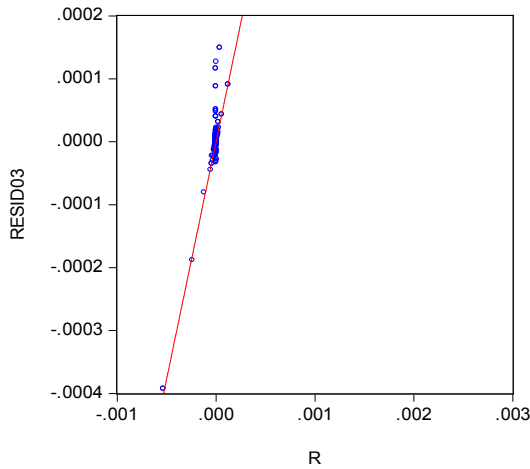
The Second Hypothesis:

As we have seen, cash funds have positive and significant effect on abnormal stock returns so that one unit increase in this variable, increases abnormal stock returns by the rate of 0.004 units. According to the results of estimating regression model, the mentioned hypothesis is confirmed.

The Third Hypothesis:

As we have seen, diversification had significant positive impact on the abnormal stock returns so that one unit increase in this variable increases abnormal stock returns by the rate of 0.003 units. According to the results of estimating regression model, the above hypothesis is confirmed.

Chart 4-7 regression line



Summary and Conclusion

Table 1.4 indicated the variables used in the research in terms of central tendency, measures of dispersion and deviation from symmetry by using quantitative methods included of available tools in descriptive statistics. By considering skewness coefficient of the variables, it gets clear that the distribution of variables indicates that the population distribution was not symmetric and in comparing with normal distribution of larger volumes of data which was observed for each variable was less than the average. Also according to the slenderness ratio indicates the degree of observed dispersion around the mean data. The slenderness ratio of research variables means that the mentioned dispersion data toward these variables are greater than the normal distribution. Slenderness ratio, which indicates the amount of

observed data dispersion around the mean data. Cash funds distribution changes, diversification, changes in net income, dividends, interest expense and net assets have been shown in charts 1-4, 2-4, 3-4, 4-4, 4-5 and 4-6.

To examine the linear relationship between research variables, correlation coefficient was used; the results indicated that there is a linear relationship between all the variables (Table 2-4).

The findings show that in 95% trust level, F Limer statistics implies the endorsement of estimation of panel data model. As a result, Hausman test is used to determine the fixed and random effects that the result of this test showed that the model estimation is done by panel data method with random effects (Table 4-4).

According to the research results of estimation of research model and according to F statistics (15.94), the error level is equal to (0.000) and is less than the error level of 0.05, that finally in 99% trust level we can state that in the entire research model, it had significant high level (table 4-5).

According to Table 4-4, in this study, at first, the Durbin-Watson statistic was equal to 2.17. So this statistic is indicative of their lack of autocorrelation. So in the remaining sentences of this regression model there is no autocorrelation. In this model, the coefficient of determination is almost 0.86, which means that the independent variable explains 86 percent of the changes of dependent variable. This model has the power to interpret the results.

Results obtained from the studying of research hypotheses are shown in Table 1-5 and detailed explanations are indicated as follows.

Table 1-5. Results obtained from the studying of research hypotheses are shown in and detailed explanations.

| The research hypothesis | Test result |
|--|-------------|
| Diversification was significantly effective in the relationship between cash holding and abnormal stock returns. | Approved. |
| Between cash holding and abnormal stock returns have a meaningful relationship. | Approved. |
| There is significant relationship between diversification and abnormal stock returns. | Approved. |

The research results indicate that the variable of maintenance level changes has positive and significant effect on abnormal stock returns so that one unit increase in this variable increases abnormal stock return by the rate of 0.004 units. Diversification Variable has significant positive impact on the abnormal stock returns so that one unit increase in this variable increases diversification of abnormal stock returns by the rate of 0.003 units. The combination variable of diversification and cash funds have positive and significant effect on abnormal stock returns so that one unit increase in this variable,

increases the diversification of abnormal return stock by the rate of 0.12 units. The net asset variable has positive and significant impact on abnormal stock returns so that a unit increase in this variable increases abnormal stocks returns by the rate of 0.000001. Interest expense variable has a significant negative impact on abnormal stock returns so that one unit increase in this variable reduces abnormal stock returns by the rate of 0.0000001 units. Cash dividend variable has a significant negative impact on abnormal stock returns so that one unit increase in this variable reduces abnormal stock returns by the rate of 0.08/0

units. Net profit variable has positive and significant effect on abnormal stock returns so that one unit increase in this variable increases abnormal stock returns by the rate of 0.000000001 units.

In this study, the relationship between diversification and cash funds has positive and significant effect on abnormal stock returns so that one unit increase in this variable increases abnormal stock returns by the rate of 0.19 units. According to the obtained results of estimation of regression model, the above hypothesis is confirmed. As we have seen, the combination and the relationship between two variables of diversification and cash funds have more impact than using two variables independently. Also, cash funds have positive and significant effect on abnormal stock returns so that one unit increase in this variable increases abnormal stock returns by the rate of 0.004 units. According to the obtained results of estimation of regression model, the above hypothesis is confirmed. Diversification has positive and significant effect on abnormal stock returns so that one unit increase in this variable increases abnormal stock returns by the rate of 0.003 units. According to the results obtained from the estimation of regression model, the above hypothesis is confirmed.

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