

## The relationship between diversification strategy and cash holding with abnormal stock returns in the Tehran Stock Exchange

Masumeh Hosein Ahmadi\*, Soghra Ghobadi (Ph.D)\*\*

\* Department of Accounting, Persian Gulf International Branch, Islamic Azad university, khorramshahr, iran

\*\* Department of Accounting, Ahvaz Branch, Islamic Azad university, Ahvaz, iran

**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 study sample was selected using a systematic removal method. Data were collected using library materials and statistical reports. The research data were analyzed by inferential statistics (regression analysis) Excel software and software Eviews. 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.

[Masumeh Hosein Ahmadi, Soghra Ghobadi. **The relationship between diversification strategy and cash holding with abnormal stock returns in the Tehran Stock Exchange.** *Academ Arena* 2017;9(1):1-5]. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia>. 1. doi:[10.7537/marsaaj090117.01](https://doi.org/10.7537/marsaaj090117.01).

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

### Introduction

Collecting and attracting savings and liquidity and creating investment field for the shareholders will be useful both for companies and the shareholders. In theoretical view, attracting shareholders liquidity through the capital market will lead to financing support and therefore the companies' investment in the projects will have proper efficiency and profitability. Cash funds are considered as the important items of current assets in the process of implementing the company's operations and profitable units. In the historical path of the development of accounting, cash funds information have been very important in order to prepare and report useful financial information in decision-making, so that with no management actions on cash funds, firms' continuation of activities will face with some problems and its implementation of operations get impossible in a favorable way.

What has been said up to now in financial calculations and in the field of stock selection and investment portfolio is in such a way that will prioritize current investments in terms of risk and return degree by order, so that in this way, investors could form their optimal portfolio by considering financial resources and their rate of risk. Due to role and impact of diversification on cash holding and stock return of companies in the current study, this issue is examined in the Tehran Stock Exchange.

### Statement of the Problem

Since the cash inventory is one of the main sources of commercial units, controlling of cost and maintaining levels of cash funds are important. This requires that companies define cash inventory targets

for each business activities and also for the total business activities. When it is used from the cash inventory target system and controlling reports of cash funds to compare actual results with certain targets, it should be said to managers that what is expected from their role and function in this regard according to their responsibilities in the cash flows of the commercial entity, and whether certain targets have been met or not. Cash inventory have always allocated significant percentage of assets of company to itself. In this regard, cash funds are important that allow firm to seek opportunities to increase shareholder value. Managers are usually looking for that level of cash inventory which has optimal mode due to the advantages and disadvantages of cash holdings. Cash funds must be kept at a level that there should be balance between funds of the cost maintenance and insufficient cost funds.

The Stock Exchange is the best mechanism for the current global economic system for collecting, attracting and optimal allocation of the investment resources of national economy for the savings consumption. Also, according to financial results, there is a dramatic improvement in performance after diversification. In this way, it seems that there is relationship between the diversification and the cash funds held by them. For this purpose, in this study, the true effects of diversification and its amount on the rate of cash funds held by companies listed on the stock exchange will be discussed.

### Research Background

Kumar and Lee (2016) in a research investigated the **capital investment, innovation capacity and**

**stock returns.** In this study, it was shown that innovative capacities will be effective in future stock returns and capital investment can increase stock returns and profitability on the innovative capacities.

Mokhtari <sup>2</sup> (2012), in a study examined the relationship between free cash flows, diversification and performance in companies listed on the Tehran Stock Exchange. The results showed that leverage variables, production capacity, stock dividends, debt structure, growth and financial crises have a significant impact on financial assets.

Fakhari and Tatary (2015) in a study investigated the mutual relationship between free cash flows, diversification and performance in companies listed on Tehran Stock Exchange. Results show that in the Iranian companies, there is no significant relationship between diversification (homogeneous and heterogeneous) and free cash flows and performance.

Samadi Largany and Imeni (2013), in a study "examined the relationship between working capital management and the amount of cash in companies listed on the Tehran Stock Exchange". The findings indicated that there is meaningful relationship between inventory conversion days and days (period) of collection of receivable accounts with the level of cash holdings.

Mehran and colleagues (2013), in an article investigated "the relationship between conservatism in financial reporting and the level of cash holdings".

Findings showed that during the study period, conservatism had no effect on cash holdings.

### 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.

### 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), MV<sub>i,t-1</sub>: 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:

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

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.

### 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.

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.

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.

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