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THE STUDY OF RELATIONSHIP BETWEEN UNEXPECTED PROFIT AND SHARES RETURN IN ACCEPTED COMPANIES LISTED IN TEHRAN STOCK EXCHANGE

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ABSTRACT

In this research, with regard to the importance of relationship between profit and return for investors, the relationship between unexpected profit and shares return has been investigated. In this purpose, it is used of two models which have been dealt with the study of the impact of unexpected profit on normal return of shares and abnormal return of shares. Also, for controlling the effects of other effective factors on model, controlling variables are also used in the model such as: size, company age, and the ratio of market value to book value. For testing assumptions, the number of 107 companies has been chosen during the years 2006 to 2012 among the accepted companies listed in Tehran Stock Exchange with screening method and the variables of the research are analyzed by panel data method. Multivariate linear regression model is used for testing assumptions. The statistical method has been used in this model is panel data method. The results show that unexpected profit shares variable has had negative and significant effect on normal return of shares. The results also indicate that unexpected profit shares variable has had positive and significant effect on abnormal return of shares. Unexpected profit share and somehow predicted profit fluctuations shares can cause to increase the fluctuation in shares return and consequently, it increases the abnormal return of shares.

Keywords: Unexpected profit, Normal return of shares, Abnormal return of shares

INTRODUCTION

Investors are looking for safety in investment, because investors, including individuals and invest companies have a lot of concern about investment in different fields and even companies' shares and this concern is more arising from high fluctuations of shares price and in some cases this concern causes the slump in investment and absence of optimal use of resources. Investment in shares that the price is higher than intrinsic value means lack of optimal allocating of resources and not gaining the expected return and even tolerating losses by investors.

The price of share in Stock Exchange is usually the function of current value of future profit. Now if these future profits do not have acceptable precision that means that there is an unexpected difference between real profit and predicted profit, the studies conducted until declaration of real profit will not be optimized. Consequently, it might be some investors become beneficiaries without any reason and at the expense of some others. Whatever the amount of unexpected profit is higher, the price fluctuation of shares will be higher and whatever the price fluctuation of share is higher, the investors concern will be higher and the security of investment in Stock Exchange will decrease and in some cases, it leads to the withdrawal of investors from Stock Exchange and finally it will follow the lack of optimal allocating and economic depression **(Sajadi, 1998)**.

Lack of using the suitable criteria for measuring the performance and the shares value of one company causes that company's shares price does not lead to its value and this phenomenon usually will cause losses in a group of buyers and huge benefit for another group **(Jahankhani and Zariffard, 1995)**.

Theoretical principles and background of the study

Describing the behavior of shares return is one of the most important conducted studies in the field of finance for investigating the effective factors on financial markets. Accounting profit is one of the figures of financial statements which that have useful and related information for investment. The primary focus point of financial reporting is presenting information about firm which is provided by profit and its components. Accounting profit considers as one of the most important information resources for evaluating ability of profitability and future cash flows. Therefore, it can be considered as one of the most effective factors on shares return. In this regard, it has dealt with the study of profit and shares return in most of the accounting researches in recent decades.

Base on the primary principles of financial literature, investors and stockholders are always looking for maximum profit according to the amount of their risk appetite. Hence, knowledge of the effective factors on profitability and predicting profit has major importance for this group. One of the factors that investors consider in their making decision for investment is predicting profit which is presented by companies' management. In order to make investors sure about this prediction, it is required to increase the accuracy of predictions.

Divided profit is an important component of investment return and since predicted profit is one of the important elements in calculating expected return of investment, therefore, the accuracy in predicting profit and recognizing effective factors on its deviation is very important. Perhaps, the most important effective factor on shares price can search in predicting profit in each share. The most important information resources of investors, creditors and other users of companies' information is predicting presented profit by them in specified intervals **(Alavi Tabari, Jalili, 2006)**.

Wei and Zhang (2006) showed that there is a positive relationship between return fluctuations and profit fluctuations. They posed that this issue is consistent with the idea that return fluctuations obtain by ambiguity about future profits.

Mairing (2006) had dealt with the study of relationship between return and unexpected income by accounting methods. This research investigated the market reaction on unexpected income that is determined by change in profit in each share and analyzer predicting errors. The results confirmed obtain of a relationship between income and return in all accounting methods.

The results of the conducted research by **Rahnamy Roodposhti and Valipoor (2010)** showed that short-term fluctuations of profit has positive relationship with shares return and with increasing short-term fluctuations of profit, the amount of shares return is increased. However, profit fluctuation in long-term has an inverse relationship with shares return and with increasing profit fluctuations in long-term, shares return is decreased.

Research hypotheses

Since the investors exchange their cash assets to normal shares, they should consider many factors during investment to gain good results of the investment. Researchers have demonstrated strong correlation among profit, profit changes and combination of these two with change in value of equity. With this regard, the main assumption of this research

is that profit has valuable relationship for investor which shows its information in shares return.

According to the texts in above, in this research, two main hypotheses are as follow:

1- Unexpected profit of shares is effective on normal return of shares in accepted companies in Tehran Stock Exchange.
2- Unexpected profit of shares is effective on abnormal return of shares in accepted companies in Tehran Stock Exchange.

Models and the way of calculating variables

In this research, two models are used which have been dealt with the study of the effect of unexpected profit of shares on normal return of shares and abnormal return of shares.

First model

Dependent variable: normal return of shares

Independent variables: unexpected profit of shares, there are 4 methods for calculating this variable that are as follow:

- Mean absolute value deviation
- Mean square error
- The second root of the mean squared error
- Mean absolute percentage error

The equations in below show the way of calculating each of indexes in above:

$$MAD = \frac{1}{n}\sum_{t=1}^{n}|at - ft| \quad (1)$$

$$MSE = \frac{1}{n}\sum_{t=1}^{n}(at - ft)^2 \quad (2)$$

$$RMSE = \sqrt{MSE} \quad (3)$$

$$MAPE = \frac{1}{n}\sum_{t=1}^{n}\left|\frac{at-ft}{ft}\right| * (\%100) \quad (4)$$

$a_{t=}$Real profit of company

$f_{t=}$Predicted profit of company

Second model

Dependent variable: abnormal return of shares

The calculating new abnormal return of shares

In order to calculate adjusted abnormal return of company shares during research period in each financial year, adjusted market model is used. It is assumed in this model that market return considers a result of expected process of company shares return in each period. Therefore, the difference real return of company i in period t with market return in that period show abnormal return of company shares i in period t. For calculating long-term adjusted return, collection of equation 1 to 5 is used:

$$(1)\ ar_{it} = r_{it} - r_{mt}$$

$$(2)\ r_{it} = \frac{P_{it} + D_{it} + P_{io}}{P_{io}}$$

$$(3)\ r_{mt} = \frac{I_{mt} - I_{mo}}{I_{mo}}$$

(4) $AR_T = \frac{1}{N}\sum_{t=1}^{n} ar_{it}$

(5) $CAR_{q-s} = \sum_{T-q}^{s} AR_T$

In equations 1 to 5, the variables are defined as follow:

r_{it} =The rate of shares returns i in year t

r_{mt} =The rate of shares market in year t

ar_{it} =The rate of abnormal return (adjusted to Stock return) of shares i in year t

P_{it} =The mean of shares price i at the end of year t

P_{io} =The mean of shares price i at the beginning of year t

D_{it} =Paid profit shares by company i in year t

I_{mo} =Stock index (total) at the beginning of year t

I_{mt} =Stock index (total) at the end of year t

AR_T =The average of the rate of abnormal return of n shares in year t

N= the number of shares in year t

CAR_{q-s} =The rate of cumulative abnormal returns (cumulative) new shares during year's q to s

Independent variable: unexpected return of shares

Controlling variables: company size (logarithm of assets amount)

Company size, the ratio of market value to book value

Test the normal distribution of the research dependent variable

In order to gain more knowledge about the population and the variables studied, the normality distribution of dependent variables is examined. This issue in this research is studied by statistical Kolmogorov-Smirnov (K_S). The zero hypotheses and against hypothesis are as follow:

$$\begin{cases} H_0 : Normal\ Distrbuton \\ H_1 : Not\ Normal\ Distribution \end{cases}$$

If level of statistical importance of this test is more than 0/05 (Prob>0/05), the H0 hypothesis based on normal distribution of variable is accepted. In table 1 the results of test K_S for variables of competitive indexes based on profit margin and competitive indexes based on expected abnormal return of Sample Company are presented.

Due to the fact that the level of statistical importance K_S is less than 0/05 for research dependent variables, therefore, H0hypothesis based on normal distribution of these variables in ensure level of 95 percent is rejected and it indicates that dependent variables of this research do not have normal distribution. Normality of dependent variables is the necessary condition for regression models; therefore, it is required to normalize

the variable before testing the hypotheses. In this research for normalizing data, Johnson Transformation is used and it is analyzed by Minitab software. The obtained results of test K_S after normalizing data are as follow **Table 2**:

According to the **Table 2**, since after normalizing data the level of importance (Sig.) statistical Kolmogorv-Smirnov for dependent variables is higher than 0/05, therefore, H0 hypothesis in ensure level of 95 percent is confirmed and it indicates that dependent variables after normalizing process has normal distribution.

First model estimation

The aim of research first hypothesis test is to study the impact of relationship between unexpected profit on shares of accepted companies in Tehran Stock Exchange and its statistical hypothesis is defined as follow:

H0: unexpected profit on shares return in accepted companies in Tehran Stock Exchange is not effective.

H1: unexpected profit on shares return in accepted companies in Tehran Stock Exchange is effective.

This hypothesis with using of model (1) is estimated as panel data and if β_1 coefficient is significant in ensure level of 95 percent, it will be confirmed.

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

For determining the issue that whether using of panel data method in estimating model is efficient or not, Flimer test and for determining the issue that which method (fix effect or accidental effect) is more suitable for estimating (detecting fix or accidental variation units of cross), the Hasman test will be used. The obtained results of this test are presented in **Table 3**.

According to the results of F Limer test and its P-value (0/0066), H0 hypothesis of test in ensure level of 95 percent is rejected and it indicates that panel data method can be used. Also, eith regard to the results of Hasman test and its P-value (0/0226) which is less than 0/05, the H0 hypothesis in ensure level of 95 percent is rejected and it indicates that H1 hypothesis is accepted. So, it is required to estimate the model with fix effect method.

According to the obtained results of F Limer and Hasman tests and also the results of Classic regression statistical hypotheses, model (1) of research is estimated with using of panel data method and as fix effect. The estimated results of the model are presented in **Table 5**.

In investigating the significance of the total model with regard to the issue that the amount

of statistical probability F is smaller than 0/05 (0/0001), the significance of the model is confirmed with ensure of 95 percent. Determine coefficient of the model is also mentioning that 73percent of normal return of company shares index is expressed by inserted variables in the model.

The results show that the impact of unexpected profit of shares variable has had negative and significant effect on normal return of shares.

The company age variable has positive and significant effect on normal return of shares.

Market value to book value has negative and significant effect on normal return of shares.

Company size variable has positive and significant effect on normal return of shares.

Second model estimation

The aim of research second hypothesis test is to study the issue that whether unexpected profit of shares on abnormal return of shares is effective or not? Its statistical hypothesis is as follow:

H0: unexpected profit of shares on abnormal return of shares in companies listed in Tehran Stock Exchange is not effective.

H1: unexpected profit of shares on abnormal return of shares in companies listed in Tehran Stock Exchange is effective.

This hypothesis with the use of model (2) is estimated by panel data method and if β_1 coefficient is significant in ensure level of 95 percent, it will be confirmed.

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

The results related to Chav test (to determine using panel data method or combination) and Hasman test (to determine using of fix effect or accidental in panel data method) for model 2 are presented in **Table 6**.

According to the results of F Limer test and its P-value (0/0000), the H_0 hypothesis of test in ensure level of 95 percent is rejected and it indicates that panel data method can be used. Also, with regard to the results of Hasman test and its P-value (0/0367) which is less than 0/05, the H0 hypothesis of test in ensure level of 95 percent is rejected and H1 hypothesis is accepted. So, the model is required to estimate with fix effect method. In study the classic regression hypotheses also the results of Jarque-Bera test indicate that obtained remaining of model estimating research model in ensure level of 95 percent has normal distribution, in a way that the possibility related to this test is bigger than 0/05. Also, with regard to the importance level of Breusch-Pagan which is less than 0/05 (0/0115), zero hypothesis based on obtaining homogeneity of variance is rejected and we can say the model has the problem of

homogeneity of variance. In this hypothesis, for solving this problem in estimating, Generalized Least Square (GLS) is used for estimation the model. In autocorrelation model remains test which is done by Durbin-Watson (DW), the amount of Durbin-Watson has been 2/48 and since it is between 1/5 and 2/5, we can conclude remains are independent from each other. In addition, according to the issue that importance level of Ramsey test is bigger than 0/05 (0/1383), therefore, zero hypothesis of this test based on the linear model, is confirmed and model does not have specification error. Summary results of above tests are presented in **Table 7**.

According to the obtained results of Chav and Hasman and also the results of classic regression hypotheses test, research model (2) is estimated by panel data method as fix effect. The results of model estimation are presented in **Table 8**.

In investigating the significance of total model based on the issue that the amount of possibility of F statistical is smaller than 0/05 (0/0000) in ensure level of 95 percent, the significance of the model is confirmed. The determine coefficient of the model also mentions that 71 percent of abnormal return of shares index is explained by inserted variables at the model.

Unexpected profit of shares has had positive and significant effect on abnormal return of shares.

Company age variable has negative and significant effect on abnormal return of shares.

Market value to book value has negative and significant effect on abnormal return of shares.

Company size variable has negative and significant effect on abnormal return of shares.

Table 1: The results of test the normal distribution of the research dependent variables

Level of importance (Sig)	Statistical (K-S)	Variable
0/000	**3/856**	**Normal return of shares index**
0/000	**2/325**	**Abnormal return of shares index**

Table 2: The results of normal distribution of research dependent variables test after normalizing process

Level of importance (Sig)	(K-S) Statistical	Variable
0/845	**0/751**	**Normal return of shares index**
0/854	**0/526**	**Abnormal return of shares index**

Source: research findings

Table 3: The results of F Limer and Hasman tests for model (1)

P-Value	Statistical amount	Statistics		Test
0/0066	1/4258	F		**F Limer**
0/0226	22/2388	χ^2		**Hasman**

Table 4: The results of related test to statistical hypotheses of model (1)

Statistic Ramsey		Statistic Durbin-Watson	Statistic Breusch-Pagan		Statistic Jarque-Bera	
$P-Value$	F	**D**	$P-Value$	F	$P-Value$	χ^2
0/7845	0/2427	2/29	0/0097	4/7606	0/3394	**1/4672**

Table 5: The results of research first hypothesis with using of fix effect method

Dependent variable: normal return of shares index The number of observations: 107 companies				
Effect	**P-Value**	**Statistical t**	**Coefficient**	**Variable**
Positive	0/0023	2/9453	0/3452	**Fix component**
Negative	0/0043	−3/3362	−0/1524	**Unexpected profit of shares**
Positive	0/0021	2/7345	0/3223	**Company size**
Negative	0/0000	−3/3122	−0/4326	**Market value to book value**
Positive	0/0032	3/0324	0/7032	**Company age**
0/7360	**Determine coefficient of the model**			
1/6560 (0/0001)	**Statistic** F ($P-Value$)			

Table 6: the results of F Limer test and Hasman test for model (2)

P-Value	Freedom degree	Statistical amount	Statistical	Test
0/0000	(631،106)	1/6713	F	**F Limer**
0/0367	11	19/4139	χ^2	**Hasman**

Table 7: the results related to statistical hypotheses of model (2)

Statistical Ramsey		Statistical Durbin-Watson	Statistical Breusch-Pagan		Statistical Jarque-Bera	
$P-Value$	F	**D**	$P-Value$	F	$P-Value$	χ^2
0/1383	3/2798	2/48	0/0115	6/6657	0/7212	**1/8343**

Table 8: the results research second hypothesis test by using of fix effect method

Dependent variable: abnormal return of shares index; The number of observations: 107 companies				
Effect	**P-Value**	**Statistical t**	**Coefficient**	**Variable**
Positive	0/0021	2/8592	0/4875	**Fix component**
Positive	0/0039	2/7341	0/1042	**Unexpected profit of shares**
Negative	0/0024	−3/0487	−0/2095	**Company size**
Negative	0/0342	−2/9752	−0/0627	**Market value to book value**
Negative	0/0001	−4/0549	−0/1934	**Company age**
0/7178	**Determine coefficient of the model**			
1/9261 (0/0000)	**F statistical** **(** $P-Value$ **)**			

CONCLUSION

The results show that unexpected profit of shares has had negative and significant effect on normal return of shares and unexpected profit of shares imposes a kind of risk to shares which can decrease the stockholders motivations for buying shares and consequently it reduces the shares return. Company size (logarithm amount of assets) on normal return of shares has positive and significant effect and it causes to increase the normal return of shares. Company age has had positive and significant effect on normal return of shares and it causes to increase the

normal return of shares. The effect of the ratio of market value to book value on shares return is negative and significant and it decreases shares return. The results indicate that unexpected return of shares has had positive and significant effect on abnormal return of shares and it shows that unexpected return of shares and somehow predicted profit of shares can cause to increase fluctuations in shares return and consequently, it increases abnormal return of shares. In fact, these two variables were made of fluctuation and they have had positive and significant effect on each other.

RESEARCH RECOMMENDATIONS

According to positive effect of company size on normal return of shares, it is recommended that financial management of Stock companies move toward the increasing assets and company size for increasing shares return. To increase shares return, we can apply policies based on reducing unexpected profit of shares.

The emphasis of Tehran Stock Exchange based on the issue that new comer companies predict the profit of each share accurately.

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