Investigating the Effect of Investors' Behavior and Management on the Stock Returns :Evidence from Iran

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ABSTRACT

The purpose of the present study is to investigate the effect of behavioral variables on overconfidence in management, herding behavior and investors' emotional tendency on stock return. To this end, by using the data of firms listed in the Iran's Stock Exchange during the seven-year period of 2010-2016, overconfidence index in management, the herding behavior of the investors and the emotional tendency of the investors were calculated and their impact on stock return was examined. The data of the research are of a panel type and for analyzing the data and testing the hypotheses; a multiple linear regression model has been used. Evidence from the experimental results of the research showed that the behavioral variables studied in the research has a significant and inverse effect on the stock return of the companies.

1 Introduction

It is important to determine the rate of return for investors. The determination of the stock return rate was initially proposed as the classic financial theory and attracted the attention of academic scholars based on the Miller and Modigliani Arbitrage Principles, the principles of Markowitz theory, the theory of pricing assets of Sharpe, Lintner, Black, Scholes, and Merton. Classical finance is based on a set of ideal assumptions, such as a completely rational behavior and full self-interest of investor, but the passage of time and the observation of some market abnormalities, such as the effect of January, led to behavioral and psychological issues in the financial field and the formation of behavioral financial knowledge. Contrary to classical financial knowledge, behavioral financial knowledge is based on realistic assumptions such as non-rational behavior and limited interests. On the other hand, because of the classical financial disability in explaining the anomalies observed in the capital market, studying and researching about the behavioral and financial issues of investors has been particularly important; According to experts and advisers in this area, the main reason for such anomalies in the capital market is the behavioral and psychological problems of investors. In other words, different behaviors of investors may in some way influence the functioning of the market and its efficiency,

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and thus have a significant impact on stock return. On the other hand, not only does the behavior of investors affect stock returns, but it is also expected that management behavior, like his overconfidence to have the effect on stock returns. They believe that managers who have overconfidence as a result of the belief that they have particular information (which others do not own), the accuracy of their information and, consequently, future earnings and cash flows, overestimate their business unit and have more positive outlook about risk and future returns of company. According to the mentioned matters, simultaneously, by investigating the impact of accounting and economic variables on stock returns, we should not overlook on the effect of behavioral variables of investors and management on stock returns. Therefore, the main goal of the present study is to identify the effect of two variables related to the behavior of investors including herding behavior and their emotional tendency along with the behavioral variable of overconfidence in management on stock returns of companies.

We use data of Iranian listed firms for several reasons. Iran's security market is at the developing stage, and the emotional behaviors of investors is higher than that in developed markets. In general, all the differences between Iran's market and other developed market make the research on the relation between investors' behavior and management with Stock Returns in Iranian firms have more implications for other emerging markets like Iran. Also, few studies have been conducted to examine the Effect of Investors' Behavior and Management on the Stock Returns in Stock exchange of Iran. The remainder of this research is structured as follows. Section 2 reviews the related literature and research hypothesis, and section 3 introduces our sample, data, major variables and models. Section 4 presents the empirical results and analyses, and section 5 provides our conclusions and recommendations.

2 Literatures and Research Hypothesis

The goal of investors in the stock market is to make a reasonable return that it is important for investors to determine their returns. The issue of determining the stock return has been the focus of attention of researchers and Capital market activists for years, which has led to the emergence of return measurement models such as CAPM, and Fama and French Three-Factor Model [9]. But the emergence of phenomena contrary to the calendar and non-calendar events like the effect of January, and the effect of the size that was incompatible with the Labor market hypothesis, caused that behavioral financial knowledge was attracted by professors and financial researchers. Though behavioral financial debates dating back to the world of investment and financial subject, this issue has been increasingly sought after by the explosion of stock price bubbles in the late 1990s, and in 2000, following the explosion of stock price bubbles, US technology companies became a matter of day (Pompian, [15]).

In fact, behavioral financial knowledge examines the behavior of investors and other users in the capital market and by challenging three assumptions of rationality, full personal interest and complete information, believes that investors, in addition to not always seeking their maximum desirability, they also do not require complete information in their decisions, so they do not behave completely rationally in their decisions, such as making more returns (Pompian, [15]). In other words, based on behavioral financial knowledge, it is no longer expected that only factors such as accounting information and macroeconomic variables will affect stock return but also a variety of behavioral variables can have an impact on prices and stock returns. Therefore, it is expected that behavioral variables such as the herding behavior of investors, investors' emotional tendencies, overconfidence between managers and investors and other behavioral biases of investors will affect the performance and the rate of return generated by them. Therefore, besides studying the effect of accounting, cultural and economic variables, we should not ignore the effect of behavioral factors on stock returns. Evidence suggests, for example, that there is a positive relationship between the emotional tendencies of inves-

tors with shareholder portfolios that have a higher mental evaluation (Baker, and Wurgler, [4]). Therefore, it is expected that the behavioral variables within the firm (overconfidence of managers) and out-of-company behavioral variables, such as the two variables of the emotional tendency of investors and the herding behavior of the investors will effect on the stock return. In the following, we consider the theoretical foundations related to the effect of each of the three factors; the herding behavior of investors; the emotional tendency of investors; and overconfidence in management on stock returns separately. A. Herding behavior: herding behavior is defined as a convergence of behavior, which means that investors follow the behavior of each other in the purchase and sale of shares (Choi and Skiba, [7]). In the emerging markets, the existence of factors such as lack of information, lack of timely and precise information about a particular company, and the impact of the political and macroeconomic factors on financial markets, have led investors to focus on the behavior of other investors and thus the formation of herding behavior of investors has led to a behavioral biases that it can be the source of emergence of various abnormalities such as bubbles and falling prices, the formation of fluctuations in the market and eventually inefficiencies in the market and affecting the stock return (Banerjee, [5]). Therefore, the first hypothesis of the research is expressed as follows:

Hypothesis 1. The herding behavior of investors has a significant effect on stock returns.

B. Emotional tendency: The emotional tendency has defined the "investors' tendencies to speculation" which can lead to a relative demand for Spectacular investments, which will result in cross-sectional implications in stock prices (Baker and Wurgler, [4]). The results of modern behavioral finance studies show that individual and structured emotions of investors have an impact on market and stock prices (Liston, [14]). Daily, a large number of good and bad news in the area of economic and political inform the investors in the capital market that it led to the arousal of investors' emotion, and consequently it will change stock prices and returns (Smales, [19]). On the other hand, the results of some studies (Kim and Ha, [13]) show that some stock price changes have no fundamental reason, and investors' feelings play an important role in determining prices. In fact, dynamic interaction between disruptive traders and arbitrageurs determine the prices. The effect of emotional behavior on the judgment of investors is intuitively inferred on the growth of future earnings. When the feelings are very high, investors tend to be more optimistic, and stock analysts tend to be more likely to issue trademarks (Baker and Wurgler, [3]); hence it is guessed that higher emotions will increase the expected earnings growth for investors. Sentiment can also affect the expected rate of return through its effects on expected risks and risk pricing (Zhu and Niu, [21]). During a period of high emotions, investors tend to be less likely to estimate potential risks (Wright and Bower, [20]), and led to a higher risk and eventually, it increases the expected their risk price. (Andrade, [2]). According to the above, the second hypothesis of the research is expressed as follows:

Hypothesis 2. The emotional tendency of investors to have a significant effect on stock returns.

Overconfidence of managers: Financial scholars believe that overconfidence in management is one of the reasons for managers to engage in more appropriate education and prepaying for target companies (Roll, [16]). Most managers think, the probability of success of their company is more than other companies. Overconfidence will make the manager over-estimates his knowledge and skills and underestimates the risk and feels that he controls on issues and events, while that may not actually be the case. The overconfidence of a manager can lead to false decisions in the future and imposes high costs on the company by distorting the appropriate investment policies, financing or accounting, but overconfidence in management can have benefits in some circumstances. For example, it is less costly to motivate risk-taking by overconfident managers than by other managers (Ahmed and Duellman, [1]). On the other hand, according to Scheinkman and Xiong [17] stock price fluctuations increase

with increasing overconfidence. Skala [18] showed that managerial behavioral characteristics, such as their overconfidence and gender play an important role in corporate decision-making in finance, profit sharing, and corporate governance. Given the impact of overconfidence in management on its decisions, it is expected that this behavioral bias will affect the stock price, the company's profitability and, consequently, the company's profit sharing. Given the influence that overconfidence in management has on its decisions, it is expected that this behavioral bias will affect the stock price, the company's profitability and, consequently, the dividend yield of the company. Given to the effect of the behavioral variable of overconfidence in management on the company's price and dividend, it is expected that this behavioral variable will ultimately affect stock returns; therefore, the third hypothesis of the research is as follows:

Hypothesis 3. Overconfidence in management has a significant impact on stock returns.

3 Methodology

3.1 Sample and Data

This research is applied- research in terms of purpose and is descriptive in terms of its nature. Due to the fact that the relationship between the variables studied at a given time point is considered, so it is a kind of correlation analysis. The statistical population of the present study is one of the companies listed in the Tehran Stock Exchange during the years 2010-2016 which has all of the following conditions. To be listed by March 2008 in the Tehran Stock Exchange and its financial year will end in March; financial information required by the companies will be available from 2010 to 2016; Due to their different nature, they are not part of financial institutions, investment, and banks; therefore, after collecting, 200 companies remained in the community, which totally included 1400 companies over a seven-year period. Data were collected from the database of the Stock Exchange (KODAL) and the Bourse.

3.2 Model and Variables

The regression model used to test the three hypotheses of the research is described in Eq. (1).

$$R_{i,t} = \beta_0 + \beta_1 H_{i,t} + \beta_2 SENT_{i,t} + \beta_3 OVER_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} \\ + \beta_6 MTB_{i,t} + \varepsilon_{i,t} \tag{1}$$

Where; $R_{i,t}$ is stock return of company; $H_{i,t}$ shows the behavior of herding investors; $SENT_{i,t}$ represents investors' emotional tendencies; $OVER_{i,t}$ represents overconfidence in management; $SIZE_{i,t}$ is the size of company; $LEV_{i,t}$ represents the financial leverage; $MTB_{i,t}$ is the ratio of market value to the book value of the stock.

The stock return variable is considered as the dependent variable. The real return of each share $(R_{i,t})$ is used to calculate the real return of the share of Eq. (2).

$$R_{i,t} = \frac{P_{i,t}(1 + a + \beta) + D_{i,t} - P_{i,t-1} - Ca}{P_{i,t-1} + Ca} \tag{2}$$

Where $r_{i,t}$ is the actual return of stock i in the period t; $P_{i,t}$ is the price of share i at the end of the period t; $P_{i,t-1}$ is the share price at the end of the period t-1; $D_{i,t}$ is the cash benefit paid in year t, α is the percentage of increasing capital from the place of claims and cash contribution from shareholders; β is the percentage of increasing capital from the reserve, and C is the nominal amount paid by the investor for increasing capital from cash contribution. Independent variables of research include the herding behavior of investors, the emotional tendency of investors, and overconfidence in management. Herding behavior of investors is shown by $H_{m,t}$.

Herding behavior ($H_{m,t}$): by using the Hwang model [12], Eq. (3) is used for measuring herding behavior:

$$H_{mt}^* = \frac{1}{N_t} \sum_{i=1}^{N_t} (\frac{b_{imt}^S - 1}{\sigma_{\varepsilon it}/\sigma_{mt}})^2 \tag{3}$$

Where H_{mt}^* the amount of herding behavior of investors at time t; N_t is the number of stocks at time t; b_{imt}^S are the observed estimates of betas for the market portfolio for stock i at time t, that is calculated through Eq. (4); $\sigma_{\varepsilon it}$ is the residual standard deviation of the OLS regression for the stock i; σ_{mt}, is the standard deviation of r_m or the standard deviation of the stock return obtained on a monthly basis. $\sigma_{\varepsilon it}$ And σ_{mt} are as defined in Eq. (4) and (5).

$$b_{imt}^S = \frac{\sigma_{imt}^2}{\sigma_{mt}^2} \tag{4}$$

$$var(b_{imt}^S) = \frac{\sigma_{\varepsilon it}^2}{\sigma_{mt}^2} \tag{5}$$

Where σ_{imt}^2 is the covariance between r_{it} and r_{mt}, that has been calculated by the Eq. (6); σ_{mt}^2 is the variance of r_{mt}; $\sigma_{\varepsilon it}^2$ is the variance of the OLS residuals that is calculated through Eq. (7). The variance of residue based on the regression model (7) is obtained for each share with four-year (t_t-t_{t-3}) rolling periods.

$$COV(r_{i,t}, r_{m,t}) = E[(r_i - E[r_i]) (r_m - E[r_m])] = E[r_i \times r_m] - E[r_i] E[r_m] \tag{6}$$

$$r_{i,t} = \beta r_{mt} + \varepsilon \tag{7}$$

Where r_{it} and r_{mt} are respectively stock return of i at time t and the market returns for the same period. In this study, emotional tendency indicator of the capital market (EMSI) has been used to measure the emotional tendency of investors. The emotional tendency of investors has been calculated by the Eq. (5).

$$SENT_{pt} = \frac{\sum(R_{it} - \bar{R}_r)(R_{iv} - \bar{R}_v)}{[\sum(R_{it} - \bar{R}_r)^2 \sum(R_{iv} - \bar{R}_v)^2]^{1.2}} \times 100 \quad , -100 \leq EMSI \leq +100 \tag{5}$$

In which: $R_{i,t}$ is the monthly rank of stock return of the company i in month t; $R_{i,v}$ is i company's historical volatility rank in month t that was used to calculate the historical volatility based on the average of stock return standard deviation during five months ago; $\overline{Rr}$ is the average of stock return rating monthly for portfolio companies; and, $\overline{Rv}$ is the average of the historical volatility of stock for portfolio companies. In this research, the overconfidence of managers is measured using the predicted profit benchmark. In this way, the overconfidence variable is calculated by calculating the predicted profit difference per share with its actual profit. If the predicted profit is greater than the actual profit, the manager will have overconfidence and he will receive one score. Otherwise, the manager has no overconfidence and a zero score is assigned to him. Here the control variables are stated as follows:

Size of the company: According to Fama and French [10] in the U S capital market, the size of the company has a great impact on stock return, so that the return on the small stock is more than the larger one. This issue has been confirmed in Iran by many. To calculate the size of the company, the natural logarithm of the company's stock market value (stock price multiplied by the number of stock) is used at the end of the year. Financial leverage: Given that one of the factors influencing stock returns is the risk. This risk variable is entered into the model and is obtained by dividing the sum of the debt into the sum of the assets. The ratio of the market value to the book value of equity: One of the issues associated with stock returns by financial researchers (Fama and French, [9]) is growth and value stocks that are usually classified according to P.B ratios. Growth stocks are shares whose price is higher than cash flow, earnings, dividends and their book value. In other words, their book value is lower than market value, and the value stock is a share whose prices are lower than the average for cash flow, earnings, dividends, and book value. The book value is based on historic cost and does not include any reflection of the expected prospects of the company, and, conversely, the stock market value reflects this outlook. If the outlook for the company reflects a higher growth rate than average growth, the book value will be smaller than the market value. In other words, if the market price of a stock is higher than its book value, then it is likely that it has no proper prospect in terms of investment. Conversely, if the ratio of the book value to the share market value is high, the reason is that there is no proper prospect for that share, and it is expected that it will not have much effect on stock returns. This variable is calculated by dividing the market value of the company's equity into its book value at the end of the fiscal year.

4 Results

4.1 Descriptive Statistics

The results of the descriptive statistics of the research variables are described in Table 1. As can be seen, the average overconfidence variable in management is more than 0.449, which indicates that about 45% of the companies surveyed have managers who have overconfidence. The average herding behavior is equal to 0.847. According to the formula for calculating herding behavior, the size of herding behavior can be between zero and 1, given the fact that when the amount of this number is higher, the herding behavior is lesser, therefore, it can be said that the amount of herding behavior in the capital market of Iran isn't high. (In the case where the mean is zero, the herding behavior is complete, and when the average is equal to one, there is no herding behavior at all). On the other hand, the more the emotional tendency of investor's variable is close to zero, it shows that the amount of emotional tendency of investors in the market is less. Given that the average of this variable is 0.895, it

can be concluded that about 9% of investors have an emotional tendency. The amount of financial leverage is 0.565, which shows that about 56% of the assets of companies are provided through debt.

Table 1: Descriptive Statistics

variables	Mean	Median	Max	Min	Std. Dev.
R	0.022	0.016	0.390	-0.217	0.053
H	0.847	0.720	1	0.120	0.236
SENT	0.895	0.919	0.992	0.466	0.079
OVER	0.449	0	1	0	0.497
SIZE	6.070	6.039	8.442	4.308	0.673
LEV	0.565	0.585	.889	0.025	0.212
MTB	1.881	1.609	6.876	0.002	1.613

4.2 Diagnostic Tests

Due to the combined structure of the data, before showing estimation and statistical inference of regression, it was necessary to determine the method of estimation of consolidated data. According to Limer F test at Table 2 and with regard to P-value ≤0.05 so, null hypothesis for polling model has rejected. Therefor for each section in study (each firm) we consider a separate cross section and we can Panel model used. According to Hausman test result and for α=0.05, statistic value is 29.135 and P-value

Table 2: Results of Limer- F Test and Hausman Test

Limer-F test				Hausmantest	
F- Static	p-value	Kind of model	Static value	p-value	compilation data method
0.641	0.001	Panel	29.135	0.000	Fixed effects

4.3 Testing the Assumption of Linear Regression

In order to use the linear regression model, in the present study, to investigate the assumption of Homogeneity of variance, the White's test has been used. Also, Wooldridge test has been used to investigate the lack of autocorrelation between residuals. The results of the testing the assumption of linear regression are reflected in Table 3 and 4. The results of the White's test at a significant level of 0.05 indicate that the research pattern has a problem of heterogeneity of variance. So in this model, the White correction coefficient is used to solve the problem of heterogeneity of variance. Also, according to Table 3, Wooldridge statistics is 0.058, and given that p-value is more than 0.05. Therefore, there is no autocorrelation between the residuals. Collinearity is another assumption for the linear regression model. Collinearity means that an independent variable should not be a linear function of other variables so that the VIF index is used. The results of this test are presented in Table 4. As can be seen, the VIF-statistics of all variables is less than 4, and it could be argued that there is no serious collinearity problem.

Table 3: Results of Testing the Assumption of Linear Regression

White's test			Wooldridge test		
Chi2-statistics	p-value	Heterogeneity of variance	F-statistics	p-value	Autocorrelation
40.210	.037	Yes	0.058	0.810	No

Table 4: Results of the Collinearity Test

variables	VIF- statistics
H	1.01
SENT	1.04
OVER	1.05
SIZE	1.15
LEV	1.08
MTB	1.16

4.4 Results of Hypotheses Testing

The results of testing three research hypotheses using the regression model are shown in Table 5. As shown in Table 5, the value of the F test is 12.247 and the significance level is 0.000, which confirms the significance of the whole model. Also, the values of the R^2 and the Adj. R^2 are equal to 0.086 and 0.075, respectively, which shows that about 8% of stock return is explained by independent and controlling variables. According to the results of Table 5 since the significance level of the variable of the herding behavior of the investors (H) is equal to 0.000 and less than 0.05, the first hypothesis of the research is accepted, and given the negative coefficient of the angle of this variable, it can be said that the behavior of some investors has a significant straight effect on the stock return of the companies admitted to the Tehran Stock Exchange. (According to the model used to calculate herding behavior, the greater the number obtained by using the model means the reduction of herding behavior, therefore, the positive of the beta coefficient means the existence of an inverse relationship and the negative of the relationship means the existence of a direct relation to the interpretation). On the other hand, the level of significance of two variables of the emotional tendency of the investors and the overconfidence of the managers is equal to 0.030 and 0.000 and less than 0.05 respectively, therefore the second and third hypotheses of the research are also accepted. On the other hand, the coefficient of the two variables is negative, which indicates the negative effect of these behavioral biases on stock returns. In general, the results of the research indicate that the behavioral bias studied in this study has a negative effect on stock returns that is not favorable and is at the expense of investors. In other words, all three research hypotheses are accepted.

4.5 Test of the Strength of Results

In order to strengthen the results of this study, in addition to testing the research hypotheses as compilation data method, the research hypotheses were tested as cross-sectional for the years 2010 to 2016 (research period). The results are presented in Table 6. As shown in Table 6, the variable of the

herding behavior of investors in the years 2010, 2013, 2014 and 2015 have a significant negative relationship and there was a positive significant relationship between them in 2012, but no significant relationship was found between them in 2011 and 2016. In terms of the variable of the emotional tendency of investors in the years 2010, 2012, 2014, and 2015 there was a significant negative relationship and in the years 2016 and 2013, there was a significant positive relationship, but in 2011, no significant relationship was found.

Table 5: Results of Hypotheses Testing

Variables	Coefficient	Std. err	t-statistics	P-value
Constant	0.1296	0.321	4.04	0.000
H	-1.0333	0.287	-3.59	0.000
SENT	-0.0622	0.028	-2.17	0.030
OVER	-0.0198	0.004	-4.34	0.000
SIZE	-0.0089	0.003	-2.54	0.011
LEV	0.0210	0.010	1.94	0.052
MTB	-0.0002	0.001	-0.20	0.842
Observations	R^2	Adj. R^2	F-statistics	Prob(F-statistic)
1400	0.086	0.075	21.843	0.000

Also, there is a significant negative relationship between the variable of overconfidence and stock returns during 2010, 2011, 2012, 2015, and there is a significant positive relationship between them in 2014. But in 2016 no significant relationship was found. In general, the results of the hypothesis testing of cross-sectional research showed that there is a significant negative relationship between the behavioral variables studied and stock returns that are consistent with the findings of the research in the form of a compilation data method.

5 Conclusion and Future Direction

The results of this study showed that internal organizational behaviors (overconfidence in management) and extra organizational (herding behavior and the emotional tendency of investors) have an inverse and significant effect on the stock return of the company. In this way, the greater the levels of overconfidence of managers, the behavior of the investors, as well as the emotional tendencies of investors, the lower the stock return. In justifying the negative impact of investors' emotional tendency on stock return, it should be noted that according to a behavioral financial perspective, some stock price changes have no fundamental reason, and investor sentiment plays an important role in stock prices. In other words, the dynamic interaction between disruptive traders and logical arbitragers is pricing, and if a share of traders has more disruptions or if a share of logical traders has fewer disruptions, the price fluctuation is higher. Because these investors are not active in the field of the return of the level of prices to the fundamental level and incorrect pricing will not be corrected. The result of the hypothesis test of emotional tendency is consistent with the results of the study by Hengelbrock et

al. [11] in the American capital market, and is contradictory to the results of the research of Hengel-brock et al. in the capital market of Germany.

Table 6: Results of The Research Hypotheses as Cross-Sectional for The Years 2010 – 2016

variables	Year 2010	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016
Constant	0.246*	0.074	0.040	-0.013	0.331*	0.340*	-0.118*
	(2.607)	(1.477)	(0.533)	(-0.388)	(2.460)	(4.245)	(-2.166)
H	-0.038*	0.030	0.584	-0.120*	-0.253*	-0.034*	0.092
	(-2.771)	(1.248)	(3.234)	(-3.360)	(-4.286)	(-2.364)	(1.534)
SENT	-0.239*	-0.031	-0.241*	0.227*	-0.290*	-0.305*	0.312
	(-2.772)	(-0.762)	(-3.087)	(2.816)	(-2.303)	(-4.339)	(2.453)
OVER	-0.045*	-0.011*	-0.015*	0.024*	0.381*	-0.348*	0.020
	(-2.119)	(-2.393)	(-2.835)	(2.275)	(3.313)	(-2.745)	(1.925)
SIZE	-0.037*	0.007	0.531*	-0.004*	-0.101*	-.003	0.134*
	(-2.752)	(1.456)	(2.431)	(-2.295)	(-2.295)	(-0.299)	(3.792)
LEV	0.021	-0.015	0.007	-0.026	0.030	0.041	0.054*
	(-0.726)	(-0.996)	(0.031)	(-0.902)	(0.950)	(1.631)	(3.283)
MTB	0.059	-0.214	-0.992	-0.071	-0.012	-0.036	0.112
	(0.642)	(-0.329)	(-0.362)	(-0.792)	(-1.171)	(-0.635)	(0.904)
Observations	200	200	200	200	200	200	200
D.W	1.892	1.963	1.828	1.964	1.839	1.802	1.733
R^2	0.198	0.122	0.146	0.081	0.043	0.245	0.233
F-statistics	7.958	4.420	5.420	2.839	1.445	10.438	9.771
Prob(F-statistic)	0.001	0.000	0.009	0.000	0.000	0.000	0.000

Note: * indicate significance at, 5% levels

In justifying the contradictory relationship between investors' emotional tendency on stock returns, it should be noted that behavioral biases are not always bad and will not reduce stock returns and may well be in the interest of investors. This has been proven in Hengelbrock et al. [11] which was conducted in two markets in Germany and the United States. In such a way that they reported a negative relationship in the American capital market and a positive relationship between the returns and the investors' emotional tendencies in the German capital market. On the other hand, the research results showed that there is a negative relationship between the herding behavior of investors and stock returns. In justifying this relationship, it can be said that given to the excessive demand for stock purchase due to the herding behavior of the investors, it can be expected of rising prices. Since this rise in stock prices is due to investors' unreasonable behavior, so the risk of falling stock prices has increased and it is expected that stock return will be decreased by exploding of the price bubble. This is in accordance with the results of the study of Cipriani and Guarino [8].

The result of the third hypothesis test also showed that the variable of overconfidence in management has a significant negative effect on stock returns. In justifying this effect, it can be said that overconfidence usually causes the management show itself better than it is, and this behavioral bias sometimes makes no reasonable decisions. For example, managers often ignore the expectation of losses for a decision on investing in a particular company and then feel surprised or dissatisfied if they have poor performance (Pompian, [15]). In justifying the result of this research, it can be said that overconfidence in the management is always not bad. In other words, overconfidence can lead to false decisions and impose huge costs on the company. On the other hand, overconfidence can have benefits in some circumstances? For example, the motivation of managers who have overconfidence is more in accepting risk than other managers. According to the results of this research, investors are encouraged to consider the negative consequences of their behaviors on stock returns and refrain from emotional decisions and herding behavior and in the event that there are a lot of Private Equity buyers, they must consulate for buying stock. It is recommended to these managers that from now, they will pay more attention to the effect of their overconfidence on their decision making and the consequences that these decisions have on stock performance and returns to make rational decisions. It is also proposed for future researchers to examine the effects of other behavioral variables, such as overconfidence among investors on stock returns, and the relationship between the emotional tendencies of investors and stock return in the conditions of market boom and recession.

References

[1] Ahmed, A., Duellman, S., *Managerial overconfidence and accounting conservatism*. Journal of Accounting Research, 2013, **51 (1)**, P.1-30.

[2] Andrade, E., *Behavioral consequences of affect: Combining evaluation and regualatory mechanisms*. Journal of Consumer Research, 2005, **32 (3)**, 355-362.

[3] Baker, M., Wurgler, J., *Investor sentiment in the stock market.* Journal of Economic Perspectives2007, **21(2)**, P.129-151.

[4] Baker, M., Wurgler, J., *Investor sentiment and the cross-section of stock returns*. Journal of Finance.2006, **61(4)**, P.1645-1680.

[5] Banerjee, A., *A simple model of herd behavior*. Quarterly Journal of Economics.1992, **107(3)**, P.797-817.

[6] Bouwman, C., *Managerial optimism and earnings smoothing*. Journal of Banking Finance. 2014,**41(1)**, P.283-303.

[7] Choi, N., Skiba, H., *Institutional herding in international markets*. Journal of Banking and Finance, 2015, **55**, P.245-59.

[8] Cipriani, M., Guarino, A., *Herd behavior and contagion in financial markets*. The B.E. Journal of Theoretical Economics. 2008, **8(1)**, P.1-56.

[9] Fama, E. F., French, K. R., *Common risk factors in the returns on stocks and bonds*. Journal of financial economics, 1993, **33(1)**, P.3-56.

[10] Fama, E. F, French, K. R., *The cross-section of expected stock returns*. The Journal of Finance. 1992, **47(2)**, P.427-465.

[11] Hengelbrock, J., Theissen, E., Westheide, C., *Market response to investor sentiment.* Journal of Business Finance & Accounting. 2013,**47 (7-8),** P.901-917.

[12] Hwang, S., *Sentiment and beta herding*. SSRN Working paper. 2007. No. 228953705.

[13] Kim, T., Ha, A., *Investor sentiment and market anomalies*. SSRN Electronic Journal. 2010. No. 1663694.

[14] Liston, D., *Sin stock returns and investor sentiment*. The Quarterly Review of Economics and Finance. 2016, **59**, P.63-70.

[15] Pompian, M. M., *Behavioral financial and wealth management*. John Wiley & Sons, Inc, Hoboken, New Jersey, 2006.

[16] Roll, R., *The Hubris Hypothesis of Corporate Takeovers.* The Journal of Business. 1986, **59(2)**, P.197–216.

[17] Scheinkman, J. A., Xiong, W., *Overconfidence and speculative bubbles*. Journal of Political Economy, 2003, **111(6)**, P.1183-1219.

[18] Skala, D., *Overconfidence in Psychology and Finance – an Interdisciplinary Literature Review*. Bank i Kredyt Kwiecień, 2008, **39(4)**, P.33-50.

[19] Smales L.A., *News sentiment and the investor fear gauge*. Finance Research Letters, 2014, **11 (2),** P.122-130.

[20] Wright, W., Bower, G., *Mood effects on subjective probability assessment*. Organizational Behavior and Human Decision Processes.1992, **52(2)**, P.276-291.

[21] Zhu, B., Niu, F., *Investor sentiment, accounting information and stock price: Evidence from China*. Pacific-Basin Finance Journal, 2016, **38(3)**, P.125-134.