Impact of Speculative Bubble on Stock Returns in Companies Listed on Tehran Stock Exchange

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ABSTRACT

Recent studies show that individual investors tend to speculate on stock markets and hold shares with a lottery-like return. For this speculation of people have a significant impact on stock returns, individual investors must trade the same shares with the same time. The purpose of this study was to investigate the effect of the speculative bubble on the stock returns of companies in Iran. Following the design of the speculative bubble specification indexes, the transaction information was collected from the stock market in the five-year period from 2011 to 2015 and a sample of 106 companies was selected by systematic elimination method, which totaled 530 year-company. In this research, linear regression and correlation analysis were used to analyze the hypotheses of the research. To analyze the data and test the hypotheses, Eviews software was used. What can be said in the summing-up and conclusion of the general test of research hypotheses is that there is a speculative bubble in the Tehran Stock Exchange index. In addition, the speculative bubble has an impact on stock returns, and this effect has been confirmed in conditions of market boom and downswing. The results obtained in this study are consistent with the documents referred to in the theoretical framework of the research and financial literature.

1 Introduction

The speculators are trying to gain more profit from the fluctuation of prices in the short-term. These organized investors are sometimes called institutional investors [7].Bubbles are mainly due to irrational decisions of individuals, and the formation of their bubbles is a kind of price deviation of the stock inherent value; the fall and cash of it also creates a kind of pessimism about the bubble stock or the bubble market, which itself causing an outflow of capital from the capital market and falling prices due to declining demand, and this price deviation eventually affects all economic activity. According to theoretical considerations, markets can deviate from the basic and fundamental values, even if most of the agents behave rationally, that is, by assuming expectations and rational behavior, rational bubbles arise in the market. The speculative bubble is a bubble formed by unrealistic expectations, market sentiment, and so on. In this type of bubble, investor knowingly or without knowing the true value of the share, and only because it is confident that if at any price to buy a share, there are other investors who buy that share at a higher price, is willing to pay a unreal money to buy a share. In

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this type of bubble, there is no proper estimate of future earnings, or these estimates are ignored. In this type of bubble, there is no rational backing (except for rumors), for the price increase [18].Therefore, in this research we have investigated the speculative bubble and its effect on stock returns. Since one of the factors influencing price fluctuations is the existence of bubbles on the price level, the formation, expansion and burst of price bubbles will lead to a significant fluctuation in the level of goods and services prices [4].

2 Theoretical literatures, Background and Research Hypotheses

If the total demand of individual investors is coincidental, they should be without any anticipation or constant impact on stock prices. However, when their misguided claims are unpredictable and systematic, investors risk limits the process of arbitrage and the effects of stock returns. Arbitrage restrictions like short selling restrictions can prevent investors from making mistakes in pricing. Baker & Wurgler and Lemmon & Portniaguina showed that small stocks are likely to be more affected by feelings. [1]. Barber et al showed that retail sales in the market are moving. Kumar has shown that the diverse options of individual investors affect stock returns[2]. Kaniel et al showed that the positive returns of surplus in the following month would exacerbate purchases by individuals. [8]. Recent studies have shown that limited attention is paid to the dynamics of asset prices, such as market fluctuations. Vlastakis& Markellos have shown that investors' attention is positively associated with fluctuations in stock markets, volumes of transactions, and the level of risk aversion[19]. Gwilym & Hasan investigated the effects of speculative demand on stock returns and showed that speculative demand grew after high market returns. In addition, speculative demand shows greater variation in stock returns. [7]. Nneji in a study entitled "Liquidity Shocks and Shares Bubble" showed that market and liquidity shock enabled the stock market to bubble, and liquidity of the market would have a positive effect on the bubble in the stock market, and liquidity shock has warning alarms to create the impending bubble in the stock market. [15]. Malpezzi & Wachter have focused on the role of speculation in creating fluctuations in the housing market. The results indicated that speculation in the real estate market is causing fluctuations in the market, and also speculation depends on the conditions of the supply. The general terms of demand, especially the demand for speculation, can lead to an explosion or a blast in the real estate market, which can be controlled by price elasticities in the supply chain[13]. Kim & Suh examined the possibility of speculation in the land and housing market in Korea and Japan. The analyzes of this study confirm the existence of a real and growing rhetorical bubble in Korea and the bubble of housing prices in Japan, but the bubble in the Korean and Japanese land market is not confirmed, and given the fact that the bubble of housing prices is in effect of entry of speculative demand in the market, verification of bubbles confirms the existence of demand for speculation in the market. [10].

Also, within the country, Etemadi et al. investigated the rational speculative bubble and showed that Tehran Stock Exchange and six industry returns from the selected industries follow the Markov regime's change process. [5]. It was also observed that the process of changing the regime of three industries from among selected industries was due to the existence of bubbles, in other words, the existence of a rational speculation bubble in the metal extraction industry, banks, and credit institutions and chemical products was confirmed. Khodadad Kashi & Razban, in a study titled "The role of

speculation on house price changes", found that the speculative motive is the result of price expectations and a trend-pricing analysis of past trends by investors, which was seen as a speculative demand in the market. [9]. Spectacular demand has a significant impact on price fluctuations in the housing market, triggering a period of boom and downturn in the market. Roghanian investigated a specific type of bubble, the proprietary bubble, in the Tehran Stock Exchange Index and the Indicator of the Five Industries of the Basic Metals, Cement, Metal Minerals, Automotive and Coke Production and Oil Filtration Products. The key factors in detecting this type of bubble are the relative size of the bubble and the abnormal volume of transactions. [13]. Shourvarzi et al. in a study entitled "Relationship Between Transparency of Capital Market Information and Price Bubble", investigated the relationship between the transparency of capital market information and the rise in price bubbles and found that there is a significant difference in the transparency of information in companies that are bubbled and transparency of information among these companies is moderate; and there is a significant difference in the transparency of information in non-bubbled companies and the transparency (distribution) of information among these companies is very high, as well as there is a relation between the information transparency situation and the occurrence of price bubbles; and information transparency in the bubbled companies is avereage and in non-bubbled companies is high. [17]. Mirashrafi in a research entitled "Study on the effect of non-disclosure on price bubble" showed that there is a significant relationship between the transparency of information and the occurrence of price fluctuations, and the transparency of information in firms that are bubbly is moderate and in non-bubbled companies, information transparency is very high. [14].

3 Proposed Methodology

According to theoretical foundations and in order to achieve the research objectives, the following hypotheses are presented:

Hypothesis 1: There is a speculative bubble in the Tehran Stock Exchange Index.

Hypothesis 2: The speculative bubble influences stock returns.

Hypothesis 3: The speculative bubble influences stock returns in a market boom.

Hypothesis 4: The speculative bubble has an effect on stock returns in a market downswing.

This research is correlation in nature and method and based on the purpose is an applied study. Data collection was carried out using library method and by referring to financial statements and explanatory notes and with the software of Raheed Novin and Tadbir Pardaz.

The statistical population of this study is all companies accepted in Tehran Stock Exchange in the period of 2011-2015 which 106 companies are selected for the purpose of testing the statistical hypotheses using a targeted sampling.

3.1 The Research Model

In this research, a model is presented to comment on each of the research hypotheses. In order to study the first hypothesis, we use Brooks and Katsaris [3] position changing model (switching regime), to investigate the speculative bubble in Tehran Stock Exchange index. To study the second

hypothesis, the regression model 1 is used:

$$\text{Returnit} = \alpha + \beta 1 \text{SVIit-1} + \beta 2 \text{Returnit-1} + \beta 3 \text{ Returnit-2} + \beta 4 \text{ PMit} + \beta 5 \text{ GMit} + \text{€it} \qquad (1)$$

Returnit: Return on stock at period t

SVIit-1: speculative bubble

Returnit-1: Return on equity in period t-1

Returnit-2: Stock returns in period t-2

PM: Management Ownership

GM: Corporate Ownership

To study the third hypothesis, the regression model (2) is used:

$$\text{Returnit} = \alpha + \beta 1 \text{SVIit-1 } * \text{BOOM it-1} + \beta 2 \text{Returnit-1} + \beta 3 \text{ Returnit-2} \qquad (2)$$

$$+ \beta 4 \text{ PMit} + \beta 5 \text{ GMit} + \text{€it}$$

BOOM: Market boom

To study the fourth hypothesis, the regression model (3) is used:

$$\text{Returnit} = \alpha + \beta 1 \text{SVIit-1 } * \text{ Downswing it-1} + \beta 2 \text{Returnit-1} + \beta 3 \text{ Returnit-2} + \beta 4 \text{ PMit} + \beta 5 \qquad (3)$$
$$\text{GMit} + \text{€it}$$

Downswing: Market downswing

3.2 The Research Variable

The method of measuring variables is presented below:

3.2.1 Dependent Variable

Stock return: is the rate of return that has been realized for a shareholder during a period. First, monthly real yield is calculated as model (4) (Shahalizadeh, 2016):

$$R_{it} = \frac{P_{it} + D_{it} + P_{i0}}{P_{i0}} \times 100 \qquad (4)$$

Pit: stock price i at the end of time t

Pio: stock price i at the beginning of time t

Dit: Dividends paid by firm i at time t

3.2.2 Independent Variable

Speculative bubble: The dummy variable that is one if there is a speculative bubble in the total stock index and otherwise equals to zero. The analysis carried out in this study includes the implementation of three regression equations on the total stock index and the study of the speculative con-

dition of the bubble on it, which is presented in model (5):

$$r_{t+1} = \beta_{s,0} + \beta_{s,b}B_t + \beta_{s,v}V_T + U_{t+1}^s$$

$$r_{t+1} = \beta_{c,0} + \beta_{c,b}B_t + U_{t+1}^c \tag{5}$$

$$r_{t+1} = \beta_{q,0} + \beta_{q,b}|B_t| + \gamma_{q,v}V_t$$

In the above equations, the abnormal volume of transactions and the relative size of the bubble are both variables that with their increase, the risk of asset holdings for investors has increased, thus requiring higher returns.

In the above equations:

r_{t+1} is the index gross in the t+1 range obtained from the relationship $\frac{P_{t+1}-P_t}{P_t}$.

Bt: is the bubble size calculated in this way as model (6):

$$B_t = \frac{b_t}{P_t} = \frac{P_t - P_t^f}{P_t} = 1 - \frac{\int d_t}{P_t} \tag{6}$$

In this regard we have $\int = \frac{1+r}{e^{\left(\alpha+\frac{\sigma^2}{2}\right)}-1}$ of course, is used to approximate the mean P/E of the samples.

Also, P_t^f is the fundamental price of index that is obtained from $\left(\frac{P}{E}\right) * d_t$ and P_t is the value of the index at time t. The fundamental price of index $\left(P_t^f\right)$ is the weighted average based on the capital of all the constituent companies.

Vt: is the abnormal volume of transactions, which abnormal amount of equations is characterized by the deviation of the volume of equations from its mean value plus its standard deviation ($\mu + \delta$).The feature of this model is that if the following conditions are met, the existence of speculative bubble can be confirmed. These conditions are derived from the expansion of the first Tylor series in the extended model presented in Table (1):

Table 1: Bubble speculation conditions

row	conditions
1	$\beta_{s,0} \neq \beta_{c,0}$
2	$\beta_{c,b} < 0$
3	$\beta_{s,b} > \beta_{c,b}$
4	$\beta_{q,b} < 0$
5	$\gamma_{q,v} < 0$
6	$\beta_{s,v} > 0$

In table (1), the terms are as follows:
The first condition implies that the average returns are in two different states, so we face two distinct probabilistic states, even if their exact correlation is not clear.

The second condition implies that, if there is cash, the rate of returns will be negative.

The third condition implies that in case of a positive (negative) bubble, more (less) rescue efficiency is observed in the case of cash.

The fourth condition indicates that the likelihood of bubble survival in the next period is reduced by increasing the relative size of the bubble. The terms of one to four are equivalent to the one stipulated in the Van Torden and Schlarn model.

The fifth condition indicates that the abnormal volume of transactions is a warning for quick bubble cash.

The sixth condition implies that, with an increase in the abnormal volume of transactions, investors face a higher risk on the market, which would result in higher returns.

3.2.3 Control Variables

A. Stock returns during the period t-1

B. Return on equity in period t-2, which describes the method for measuring returns in period t in the dependent variable, here, it is calculated with the same method, of course, with one and two delay periods (t-1, t-2) relative to the period t (Shahalizadeh, 2016).

C. Management Ownership: Indicates the percentage of shares held by members of the board.

D. Corporate Ownership: The percentage of shares held by the corporations from the total equity stock and includes the types of corporations.

3.2.4 Moderator Variable

A. Market Downswing: In the event of downswing of the market is equal to one and otherwise equal to zero.

B-Market boom: In the event of boom in market is equal to one and otherwise equal to zero.

These are determined based on the stock market returns, such that in the periods (during the 5-year period of the research, 2011 to 2015), the market with the highest returns (market), the period of economic is considered as boom, and in the market where the market has the lowest returns is considered as downswing. In this research, 2011 to 2012 are the years of boom and 2013, 2014 and 2015 are downswing periods; how to calculate market returns is in the form of model (7):

$$(IND_t - IND_{t-1})/IND_{t-1} = RM \tag{7}$$

IND_t: Index of market price in end of period

IND_{t-1}: Index of market price at the beginning of the period

RM: stock market return

4 Research Findings

4.1 Descriptive Statistics of Research Variables

Before testing the research hypotheses, the variables are summarized in Table 2.

Table 2: Descriptive statistics of research variables

	Stock return	Speculative bubble	Speculative bubble in boom conditions	Speculative bubble in downswing conditions	Stock return in period t-1	Stock return in period t-2	Management ownership	Corporation ownership
Average	1.534733	0.400000	0.198113	0.415094	2.400774	2.609472	0.614075	0.406453
Median	1.235000	0.000000	0.00000	0.00000	0.595000	0.545000	0.610000	0.42000
Maximum	12.37000	1.00000	1.00000	1.00000	55.85000	55.85000	0.93000	0.96000
Minimum	-7.89000	0.0000	0.00000	0.0000	-14.5000	-6.96000	0.03000	0.00000
Standard Deviation	3.526558	0.490361	0.398954	0.493204	5.552657	5.168287	0.158416	0.269014
Skewness	0.195583	0.408248	1.514819	0.344628	2.450412	3.146000	-0.28286	-0.038620
Kurtosis	2.778662	1.16667	3.294678	1.118768	19.36038	24.66913	2.791464	2.099394
Jack-Bera	4.460859	88.94676	204.6142	88.64484	6441.270	11243.52	8.027887	18.04333
Significance level	0.107482	0.0000	0.0000	0.00000	0.00000	0.0000	0.018062	0.000121
Observation	530	530	530	530	530	530	530	530

In Table1, the average that represents the equilibrium point and the distribution center, and is a good indicator of the centrality of the data which is 53/1 for the stock return variable. Median is another central indicator that shows that half of the data is less than this and the other half more than this value. Also, the uniformity of the average and median indicates that the variable of stock return is equal to 24/1. Scatter indicators are a measure of how much data are scattered from each other or scattered over the average. Standard deviation is one of the most important dispersion indices, with a stock return variable of 52/3. The rate of asymmetry of the curve is called skewness, and the value of the skewness coefficient for the stock return variable is positive and close to zero, which indicates that the distribution is normal and skewness is very low to the right. The dispersion index of stretch or buckling is the frequency curve compared to the standard normal curve as a Kurtosis, which in this study is positive for all variables. Also, since the values of the significance level of the Jarck-Bera test, the stock return variable is more than 5%, so the null hypothesis, that is, the normality of the variable is verified; therefore, the stock return variable has a normal distribution.

4.2 Reliability Test of Research Variables

In this study, we used the unit root test of the generalized Dickey Fuller is presented in Table 3. Based on the values presented in Table 3, the level of significance of the unit root test in all variables except speculative bubble variables in boom conditions and management ownership is less than 0.05 and shows that they are ranked zero and at reliable level and the speculative bubble variables will survive in boom conditions and management ownership, once they are differentiated. These variables

are accumulated at first order, and as a result, the use of these variables in the model does not result in false regression.

Table 3: Reliability test of research variables

Variables	Significance level	ADF-Fisher statics	First order difference
			Significance level
Stock return	0.0001	297.858	
Speculative bubble	0.0000	465.261	
Speculative bubble in boom conditions	0.2389	78.0260	0.0000
Speculative bubble in downswing conditions	0.0000	447.007	
Stock return in period t-1	0.0000	370.670	
Stock return in period t-2	0.0086	264.197	
Management ownership	0.8733	145.432	0.0000
Corporation ownership	0.0013	224.022	

4.3 F-Limer and Hausman Test

The results of the F-limer and Hausman tests for the research hypotheses are presented in Table 4.

Table 4: Results of F-Limer and Hausman tests

	Hausman test	Significance level	F-limer test	Significance level
Hypothesis 2	69.404603	0.0000	3.133881	0.0000
Hypothesis 3	84.711748	0.0000	2.677295	0.0000
Hypothesis 4	670716797	0.0000	3.050038	0.0000

In Table 4, according to the results, the panel data model is accepted for the second, third and fourth hypotheses. The panel data method itself can be used with two random effects and constant effects patterns, which can be used to select them using the Hausman test. According to the second, third, and fourth hypothesis, the probability of chi-square test is more than 5%. Therefore, constant effects are used to estimate and analyze the model of the second, third and fourth hypotheses.

4.4 Summary of Analyzes for Each Hypothesis

Hypothesis 1: There is speculative bubble in Tehran Stock Exchange index.

The results are as described in Table 5. Based on the values presented in Table5, the existence of a specific type of bubble, that is, bubble speculative, is confirmed in various indices in Tehran Stock Exchange and there is speculative bubble in the years 2010 and 2011.

Hypothesis 2: The speculative bubble influences stock returns. The results are as described in Table 6.

Table 5: Results from the First Hypothesis

Coefficient table	2010	2011	2012	2013	2014
$\beta S,0$	0.011254	0.130377	0.141463	0.080829	-0.052443
$\beta S,b$	-0.001888	-0.252765	-0.054297	0.027861	0.047656
$\beta S,v$	6.92E-07	8.87E0-17	-4.07E-06	4.18E-06	2.59E-06
$\beta c,0$	0.013192	0.148530	0.050126	0.002226	0.002226
$\beta c,b$	-0.002318	-0.275430	0.022446	-0.081613	0.081613
$\beta q,b$	-0.00688	-0.252765	0.168981	-0.047991	-0.042787
$\gamma q,v$	-6.92E-07	8.87E-07	-2.35E-06	-4.15E-06	2.34E-06
$\beta_{s,0} \neq \beta_{c,0}$	✓	✓	✓	✓	✓
$\beta_{s,b} > \beta_{c,b}$	✓	✓	×	✓	×
$\beta_{c,b} < 0$	✓	✓	×	✓	×
$\beta_{s,v} > 0$	✓	✓	×	✓	✓
$\gamma_{q,v} < 0$	✓	×	✓	✓	×
$\beta_{q,b} < 0$	✓	✓	×	✓	✓

Table 6: Results from the second hypothesis

Variables	Coefficient	Standard deviation	t-statics	Significance level
y-Interception	2.409124	2.232971	1.07887	0.2813
Speculative bubble	-2.586260	0.267138	-9.681363	0.0000
Stock return in period t-1	-0.109650	0.024755	-4.429474	0.0000
Stock return in period t-2	-0.217795	0.025847	-8.426231	0.0000
Management ownership	0.893043	2.949132	0.302816	0.7622
Corporation ownership	1.089651	3.228869	0.337472	0.7359
Deterministic coefficient		0.520375	F-probability	4.132723
Adjusted Deterministic coefficient		0.394459	F-probability level	0.0000
Durbin-Watson		2.416574		

Based on the values presented in Table 6, the probability of statistical t for the constant coefficient and the coefficients of the speculative bubble variables, stock return in period 1-t, and stock returns in the period of 2-t on stock returns is less than 5%; therefore, the relation in terms of statistic is significant and the coefficient of speculative bubble variable on stock returns is negative and significant. The probability of t for management and corporate ownership variables is greater than 5% for stock returns. Therefore, the estimated coefficient of these variables is not statistically significant; therefore, with 95% confidence, this variable is meaningless in the regression model. The adjusted adjustment coefficient shows the explanatory power of independent variables which can explain 39 percent of the variation of the dependent variable. The probability of the F statistic is that the whole model is statistically significant. Considering the hypothesis that the speculative bubble variables, stock returns in the period t-1 and stock returns in the period t-2 on stock returns in the meaningful model, so the zero-assumption is rejected, i.e., free cash-flow risk on stock returns has a significant effect has it.

Hypothesis 3: The speculative bubble influences stock returns in a market boom.

The results are as described in Table 7.

Table 7: Results from the third hypothesis

Variables	Coefficient	Standard deviation	t-statics	Significance level
y-Interception	0.592280	2.459243	0.240838	0.8098
Speculative bubble	0.769611	0.380667	2.021744	0.0438
Stock return in period t-1	-0.185139	0.025835	-7.166264	0.0000
Stock return in period t-2	-0.168278	0.027926	-6.025907	0.0000
Management ownership	1.348037	3.251128	0.414637	0.6786
Corporation ownership	2.079895	3.552666	0.585446	0.5586
Deterministic coefficient		0.418755	F-probability	2.744240
Adjusted Deterministic coefficient		0.266162	F-probability level	0/0000
Durbin-Watson		2.367605		

Based on the values presented in Table7, the probability of t statistics for constant coefficients and coefficients of speculative bubble variables in terms of boom, stock return in period t-1, and stock return in period t-2 on stock returns is less than 5%; hence The above relation is statistically significant; and the coefficient of speculative bubble variable in boom conditions is positive and significant on stock returns; the probability of t for management and corporate ownership variables is greater than 5% for stock returns. Therefore, the estimated coefficient of the above variables is not statistically significant; therefore, with 95% confidence, this variable is meaningless in the regression model. The adjusted adjustment coefficient shows the explanatory power of the independent variables, which explains 27 percent of the variations of the dependent variable.

Table 8: Results from the third hypothesis

Variables	Coefficient	Standard deviation	t-statics	Significance level
y-Interception	0.592280	2.459243	0.240838	0.8098
Speculative bubble	0.769611	0.380667	2.021744	0.0438
Stock return in period t-1	-0.185139	0.025835	-7.166264	0.0000
Stock return in period t-2	-0.168278	0.027926	-6.025907	0.0000
Management ownership	1.348037	3.251128	0.414637	0.6786
Corporation ownership	2.079895	3.552666	0.585446	0.5586
Deterministic coefficient		0.418755	F-probability	2.744240
Adjusted Deterministic coefficient		0.266162	F-probability level	0.0000
Durbin-Watson		2.416574		

The probability of the F statistic is that the whole model is statistically significant. Considering the hypothesis that speculative bubble variables in boom conditions, stock returns in period t-1 and stock returns in period t-2 on stock returns in a meaningful model, so the zero-assumption is rejected, that is, speculative bubble on stock return in boom conditions market is influential.

Hypothesis 4: The speculative bubble has an effect on stock returns in a market downswing.
The results are as described in Table8.

Based on the values presented in Table 8, the probability of t for the constant coefficient and the coefficients of the speculative bubble variables in terms of boom, stock return in period t-1, and stock return in period t-2on stock returns is less than 5%; hence The above relation is statistically significant, and the coefficient estimated by the software for speculative bubble variable in boom conditions is positive and significant for stock returns; and the probability of t for management and corporate ownership variables is higher than the stock returns 5%. Therefore, the estimated coefficient of the above variables is not statistically significant; therefore, with 95% confidence, this variable is meaningless in the regression model. The adjusted adjustment coefficient shows the explanatory power of independent variables, which explains 27 percent of the variations of the dependent variable. The probability of the F statistic is that the whole model is statistically significant. Considering the hypothesis that speculative bubble variables in boom conditions, stock returns in period t-1 and stock returns in the period of t-2 on stock returns in a meaningful model, so the zero-assumption is rejected, that is, the speculative bubble influences stock returns in conditions of market boom.

5 Discussion and Conclusion

This research seeks to investigate the effect of speculative bubbles on stock returns. Regarding the results of regression, there is a speculative bubble in Tehran Stock Exchange Index. In addition, the speculative bubble has an impact on stock returns, and this effect has been confirmed in conditions of market boom and downswing. The results obtained in this study are consistent with the documents referred to in the theoretical framework of research and financial literature. The results of this study are largely based on theoretical foundations and research background. If the total demand of individual investors is random, then there should be no continuous prediction or impact on stock prices, and individual investors have to move in the market. In confirmation of the results of this research, we can mention the researches of Etemadi and colleagues [5] which showed that the returns of Tehran Stock Exchange and 6 industries from selected industries follow the Markov regime change process. It was also observed that the process of changing the regime of industry 3 from selected industries was due to the existence of bubbles. In other words, there was a rational speculation bubble in the metal extraction industry, banks, and credit institutions and chemical products which is somewhat consistent with the results of the present study. Also, Gwilym and Hassan [7] have shown that speculative demand increases after high market returns. In addition, speculative demand shows greater variation in stock returns, which is consistent with the results of this research. Malpezzi and Wachter [13] also stated that speculation in the real estate market is causing a fluctuation in the market, as well as speculation depends on the conditions of supply. The general terms of demand, especially the demand for speculation, can lead to an explosion or a blast in the real estate market, which can be controlled by price elasticity in the supply chain which is somewhat consistent with the results of the present study.

According to the results of the first hypothesis, so much so that the training and the level of insight of shareholders rise, the probability of a bubble will be lower, therefore, it is suggested that the Tehran Stock Exchange organizes the necessary training through the media, holding classes Educational, conferences, international conferences, publication of a newspaper or monthly on the analysis and recognition of shares of companies, the creation of websites and information blogs by reducing the level of information and knowledge of investors from the price fluctuation of stocks of companies

accepted in the stock exchange Tehran's securities and huge losses of inexperienced investors, including those that conductor is prevented. Also, based on the results of the second hypothesis, it can be stated that by having the legal requirements and disclosing the financial information about the speculative bubble in the capital market, it could be used as effective mechanisms to expand the relationship between the business unit and its stakeholders. According to the results of the third hypothesis, it is appropriate that the audit organization and other regulatory and supervisory bodies, in the formulation of accounting standards and financial rules, pay more attention to the speculative bubble category and provide the necessary guidelines for users. Provide financial information for more efficient and informed decisions. Based on the results of the fourth hypothesis, investors are encouraged to pay attention to the incidence of speculative bubbles, along with other information. Especially when experts warn about price bubbles, avoid the stocks of companies that are likely to be bubbled up in price, and consider companies with no price bubbles to invest. Finally, the results of the present study provide useful and important information for economic managers, financial analysts, researchers and students, in which all the evaluations, decisions and financial analyzes, taking into account the speculative bubble phenomenon, can make decisions Take on existing facts and make the decision of the decision more desirable.

References

[1] Baker, M, Wurgler, J., *Investor sentiment and the cross-section of stock returns*, Journal of Finance, 2006,6(1), P.1645– 80. DOI:10.1111/j.1540-6261.2006.00885.x

[2] Barber, B, Odean, T., *All that glitters: The effect of attention and news on the buying behavior of individual and institutional investor*, Review of Financial Studies, 2008,2(1), P. 785–818. doi.org/10.1093/rfs/hhm079

[3] Brooks, C., Katsaris, A., *Forecasting the Collapse of Speculative Bubbles: An Empirical Investigation of the S&P 500 Composite Index ISMA*. Centre Discussion Paper No. 2002. DOI:10.1211/j.1540-6261.2008.01316.x

[4] Cordelui, H., Teimuri, F., *A Comparative Study of the Power of Gaussian Composition Models and Support Machines in Determining and Estimating the Bubble Pricing*, Journal of Financial Engineering and Management of Securities,2015, 2(3),P.79-104. article_510770.html

[5] Etemadi, Z., Abbasi, A., Yazdani, H.R., *Role-bubble speculation in Tehran Stock Exchange and selected industries using the Markov-Switching Model, Ministry of Science*, Research and Technology - Alzahra University - Faculty of Social and Economic Sciences.2015. DOI:10580851-67781

[6] Ghoorami, M., Ghavami, H., Hosseinpour, H., *The Relationship Between Transparency of Capital Market Information and the Rise of Price Bubbles*, Dual Financial Economics, 2013, 20(5), P. 27-58. DOI:10.22067/pm.v20i5.34034

[7] Gwilym O. A., Hasan, I., Wang, Q., Xie, R., *In Search of Concepts: The Effects of Speculative Demand on Stock Returns*,2016, 22(3), P. 427–449. DOI:10.1111/eufm.12067

[8] Kaniel, R., Saar, G., Titman, S., *Individual investor trading and stock returns* , Journal of Finance, 2008,20(3) P. 273– 310. DOI:10.1111/j.1540-6261.2008.01316.x

[9] Khodadad Kakshi, F., Razban N., *The role of speculation on changes in housing prices in Iran*, Quarterly Journal of Economic Research.2014, 22 (71),P.5-28. 337102

[10] Kim, K., Suh Seoum,H., *Speculation and Price Bubbles in the Korean and Japanes Real Estate Market*, Journal of Real Estate Finance and Economics,1993,6(6), P. 73-87. DOI:10.1007/BF01098429

[11] Kumar, A, *Do the diversification choices of individual investors in fluence stock returns?* , Journal of Financial Markets,2007, 10(3), P. 362–90. DOI:10.1016/j.finmar.2007.06.003

[12] Lemmon, M, Portniaguina, E, *Consumer confidence and asset prices: Some empirical evidence' Review of Financial Studies* , 2006,9(1), P. 1499. DOI:10.1093/rfs/hhj038

[13] Malpezzi, S., M. Wachter, S., *The Role of Speculation in Real Estate Cycles, The Center for Urban Land Economics Research*, University of Wisconsin.2002.DOI: 13.2.6140774m670017P.5

[14] Mire Sharfi, Z., *Investigation of the Effect of Disclosure of Information on the Incidence of Price Bubbles in the Capital Market, National Conference on Transparency of Accounting Information in Solving Current Financial Crises*, Islamic Azad University, Khomein Branch.2010. KHOMEINFINANCE01_017

[15] Nneji, O., *Liquidity shocks and stock bubbles*, Journal of International Financial Markets, Institutions and Money, DOI:10.1016/j.intfin.2014.12.010

 [16] Shariati Panahi, S. M., *Corporate Performance Evaluation and Managers' Managing Mechanisms:* The Viewpoint of Representative Theory, Accounting Studies,2011,1(1),P. 85-108. article_3975.html

[17] Vlastakis, N., Markellos, R., *Information demand and stock market volatility*, Journal of Banking & Finance, 2012,3(6), P.1808– 21. DOI:10.1016/j.jbankfin.2012.02.007