The Comparative Study of Investors’ Behavior in Tehran Stock Exchange

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Abstract

Economy is a vast network of human activity for preserving human lives. The economic life is not separated from other aspects of life; therefore, regardless of other social factors, it is not possible to perceive the economic state of society and predict its evolution. Economic evolution can cause the creation of new factors and reconstruction of society, and be the reason behind growth and prosperity in all of cultural, social and economic aspects.

Key words: Perceptual errors, herding behavior, Representativeness, halo effect, behavioral finance.
1. Introduction

Absorbing the savings and leading them to economic entities and developing facilities for public participation in development of productive actives, and their profits are of the main goals of stock exchange (investment message). Therefore, bourse can be a very important leverage in controlling inflation and growth rates. Identifying the effective factors of decision making can provide the required background for offering satisfactory service to investors, and be considered an appropriate measure in process of developing investment (Noor Bakhsh, 1992). The word ‘investment’ can contain a broad range of activities. This word is used as investment in certificate of deposit, bonds, common stock or mutual fund. However, those that practice investment as a professional, use other assets for doing an investment, such as certificate of purchase, option, convertible bonds, and tangible assets such as gold and jewelry. Investment can have various degrees of risk taking, and every person, whether with academic education or a normal citizen, with regards to his/her circumstances can utilize the investment decisions. In topics of investment, having a systematic perspective of capital market and its effective factor is of great importance. The rational assumption of investors as a simple model of human behavior is one of the basic grounds of classic financial knowledge; and almost all of classic financial theories such as portfolio theory, efficient market hypothesis and agency theory and adjunct theories which are derived from them are affected by this assumption. In terms of behavioral finance, this assumption is insubstantial, therefore, it cannot explain the investors’ behavior. The basic assumption in financial behavior is that the investors’ decisions are not only affected by economic indicators and rationality, but also by other factors, including behavioral characteristics of investors, which we will mention them as behavioral bias and perceptual errors in this study. This branch of financial science, which in fact psychology and partly sociology, is used for better analysis of market issues. It generally examines the process of investors’ decision – making and their response to different circumstances of financial markets, and its emphasis is more on the effect of social, cultural, economic, characteristic factors and investors’ views on their investment decisions. In a general classification, behavioral finance can be studied on two levels: micro and macro. On macro level, the financial markets and their features are discussed. On micro level, which is also relevant to the subject of this study, challenges the rational assumption of investors’ decisions, and its belief is that emotional investors are dealing in stock market, and their feeling, which is their belief concerning future stock cash flows and its risks are an integral part of their behavior. If it is proved that certain groups of investors are prone to divulging some behavioral biases, then market participants can identify behavioral biases before making investment decisions, and therefore are more likely to achieve better results and gains in investment. Therefore, in this study, we examine the behavior of two groups of investors which include portfolio managers of investing companies and common investors in capital market.
market, and we will compare the results of this examination. The behavioral biases, which we study their effect on investors’ decisions are: perceptual biases and errors, herding behavior, representativeness. In addition to limitation of human rationality, errors and biases occur that being aware of them is effective for managers and their employees. These errors occur because of a tendency towards taking shortcuts and excessive emphasis on experience, delusive feelings, illusions, rule of thumb principle, and in general having very little pragmatism. Although, in some cases these errors might have positive results, but the possibility of negative results is also high. These errors are cited as perceptual errors and biases. Perceptual error is an intuitive behavior or a false perception, namely, what we see or hear is not in accordance to an actual and specific situation (Iravani and Khada Panahi, 1992). Given that investors are affected by behavioral factors in investment decisions, in this study, it has been tried to identify some of behavioral factors in making decisions for purchasing stock, and we will study these factors in Tehran stock exchange.

Slovic’s article on individual behavioral finance of investors was a turning point in behavioral research in financial scope. One of the most important articles which caused the development in economy and finance was Kahneman and Tvesky article (1974) regarding the intuitive decisions, and in the article “Prospect theory: an analysis of decisions under risk” in 1979, they used cognitive psychology techniques to explain a number of unusual phenomena in a framework of decision making based on rational choice theory. In 1992, Kahneman and Tversky developed the prospect theory and presented “Collective prospect theory”, which many of the rivals’ studies offered it as a coherent theory. Jegadeesh and Titman’s article in 1993 showed another unusual phenomena, that the stock with higher returns in the past six months creates more returns in the next year than the stock with less returns.

In 1998, Daniel et al. introduced the psychology article “Investor and overreaction and under reaction of stock market”. In this article, the overconfidence phenomena and self-attribution were specified. Dennis Dietrich, Vernogoth, Boris Maciejovsky (2001) tested the overconfidence in investment decisions by providing a possibility for replacement of participants’ investment choices.

Welch and Donohe researched the forming of herding behavior in financial markets through focusing on investors’ psychological issues, regarding that category of investors’ behaviors which can lead to tendency in accordance with market consensus.

2. Internal research
Dr Ahmad Talangi’s article (1959), “the contrast between new financial theory and behavioral finance” and Reza Raee and Saeed Falahpoor’s article (1959), “Behavioral
finance, a different approach in finance” can be referred to as the most important articles in behavioral finance.
Mahdi Khoshnood’s research in 1959, in which efficient groups were identified and categorized based on individual and institutional investors’ decisions. Sara Shahryari’s research in 2006 studied and tested investors’ herding behavior by using stock returns deviation from total market efficiency in Tehran stock exchange. The findings of this research indicate that there is no herding behavior during market boom in Tehran stock exchange, but evidence of herding was found in time of depression by using daily data of returns. Ashraf Tehrani’s research in 2006, in which the overconfidence of individual investors and their trade volume was tested. The findings indicate that there is a significant relation between individual investors’ overconfidence and their trade volume.
Dr Saeedi’s research in 2008, “Specifying and providing behavioral reaction models of investors in Tehran stock exchange” (overreaction and under reaction), the findings indicate that investors conceive the market in two states, and they estimate next period’s returns accordingly, and make an assessment regarding the stock price, based on estimated returns.
Mahdi Karabi’s research in 2009, “Studying effective behavioral finance factors on investors’ decision making of admitted investing companies in Tehran stock exchange”, the findings of this study indicate that financial experts have behavioral biases such as «extreme caution» and «group think» during the process of investment decision making.

3. MAIN HYPOTHESIS

There is a difference between investors’ behavior in portfolio managers’ group and common investors.

3.1. Spillover hypothesis
1. The investors’ behavior in portfolio managers group and common investors’ behavior in Tehran stock exchange is affected by herding behavior.
2. The investors’ behavior in portfolio managers’ group and common investors’ behavior in Tehran stock exchange is affected by representativeness.
3. The investors’ behavior in portfolio managers’ group and common investors’ behavior in Tehran stock exchange is affected by perceptual and cognitive errors.

Statistical population, sample and course of study
The place of research is located in Tehran stock exchange.
The course of conducting this study was during June 2014 to October 2015. But the time of distributing the questionnaire was only during august-September of 2015.
Statistical population of this research included the investors in Tehran stock exchange, which their number is roughly 1500 in Tehran. Cochran’s formula for population of interest was used to determine the minimum required sample size. By using this formula,
the minimum required sample of 323 stock exchange buyers were determined. 411 questionnaires were distributed for assurance of returning sufficient questionnaires, which 351 were filled and returned, and based on this, 323 questionnaires were analyzed. It is worth mentioning that because of homogeneity of statistical population (only all of those that took the risk and purchased the stock) and also the normal data required to analyze the data; the sampling method is a simple random sampling which is conducted by various methods, such as attending Tehran stock exchange, agencies, sending questionnaires via email to investors and attending working breakfasts at investment institutions association (for portfolio managers).

4. METHOD

In terms of purpose, this is an applied research, with hopes that the current study results serves as an improvement for investors’ investment. In terms of collecting the data and analysis method, it is a descriptive research, in which the researcher attempts to identify an answer to a problem and the real question which in practice is there, because the goal is comparative study of two groups of investors’ behavior in Tehran stock exchange. Among all the factors in this research, we have studied the effect of herding behavior, representativeness, and perceptual errors and biases of investors on their investment decisions. The current study is performing survey research. Farsi and Latin library sources, articles, required books and also internet were used to collect information from theoretical principles and literature subject. Questionnaires were used to gather data and information for analysis, this tool was one of prevalent research tools and a direct method to acquire research data. The questionnaire is a collection of questions, which the replier thoughtfully answers, and these answers provide the required data for researcher. He can examine an individual’s knowledge, interest, and attitude through questionnaires (Bazargan et al.).

The first section of questionnaire includes a brief description of questionnaire and how to answer it to make more clarity for repliers. The second section contains the personal information, which has questions that include gender, age, education level, marital status, history of stock investment, and type of investor concerning all portfolio managers or common investors. The third section includes 23 questions related to subject of the thesis. This questionnaire is prepared and conducted with the professors, investment experts and academics’ opinions, and it includes three components of herding representativeness and perceptual errors and biases, which all of these have been assessed by a number of questions. Likert scale was used to answer the question of second and third section in a way that five items were used for each question. In this study, Cronbach’s alpha was applied to determine the reliability of test. This method is applied to compute the internal consistency of measuring instrument, which measures different characteristics. To
calculate Cronbach’s alpha coefficient, first we have to calculate scores variance of each subset of questions and total variance, and then, we will calculate alpha coefficient through formula. So, Cronbach’s alpha method and SPSS software were utilized to measure reliability.

The analysis of acquired data of research includes two parts, which are described below:

**4.1. Descriptive statistics**

Frequency tables and also bar chart were used to describe the findings. While for better description of findings, measure of central tendency such as mean and index of dispersion like standard deviation and variance were utilized.

**Inferential statistics**

The applied inferential statistics in this study are:

A) Kolmogorov – Smirnov test
B) t-test

The findings of research hypothesis test

Results of spillover hypothesis test

The hypothesis was represented in this way that the investors’ behavior in portfolio managers’ group and common investors in Tehran stock exchange are affected by herding behavior. Based on acquired results of table 11 in chapter 4, a significant level acquired from t-test for common investor is less than 1015. As a result, statistical null hypothesis is rejected, which means the first hypothesis of research is confirmed. It means that common investors’ behavior is affected by herding, and also a significant level, which was acquired from t-test for portfolio managers, is more than 1015. It can be concluded that statistical null hypothesis is not rejected, which means the managing investor’s behavior is not affected by herding. T-test was used to compare investors’ behavior in portfolio managers’ group with common investors for two independent populations, and the null hypothesis of test is equity of groups mean. First, variances of two groups were equalized to conduct two sample t-test, and given the result, that variance of two groups were equal, and that a significant level of t-test was more than 1051. We concluded that the mean of two groups don’t have significant difference.

**Table 1: one sample t-test for first hypothesis to separate the type of investor**

<table>
<thead>
<tr>
<th>result</th>
<th>Significant level</th>
<th>statistic</th>
<th>mean</th>
<th>behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proving hypothesis</td>
<td>0.000</td>
<td>5.18</td>
<td>.22</td>
<td>Common herding behavior</td>
</tr>
<tr>
<td>isproving hypothesis</td>
<td>0.073</td>
<td>1.84</td>
<td>.21</td>
<td>portfolio manager’s herding behavior</td>
</tr>
</tbody>
</table>
4.2. Results of spillover hypothesis test 2
The second hypothesis was expressed in a way that investors’ behavior in portfolio managers’ group and common investors in Tehran stock exchange is affected by representativeness. Based on table 12 results, the significant level acquired from one sample t-test for both groups of investors is more than 1015. As a result, the statistical null hypothesis is not rejected, which means that the second spillover hypothesis is disproved for investors, meaning that common investors’ behavior is not influenced by representativeness. Given that the significant level of t-test was also more than 1051, we concluded that mean of two groups didn’t have a significant difference.

Table 2: one sample t-test for spillover hypothesis to separate type of investor

<table>
<thead>
<tr>
<th>result</th>
<th>Significant level</th>
<th>statistic</th>
<th>mean</th>
<th>behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disproving hypothesis</td>
<td>710.</td>
<td>38.0</td>
<td>98.2</td>
<td>Common representativeness</td>
</tr>
<tr>
<td>Disproving hypothesis</td>
<td>750.</td>
<td>32.0</td>
<td>95.2</td>
<td>Portfolio manager’s representativeness</td>
</tr>
</tbody>
</table>

4.3. Results of spillover hypothesis test 3
The third hypothesis was expressed in a way that investors’ behavior in portfolio managers’ group and common investor in Tehran stock exchange is affected by perceptual errors and biases. Based on table 13 results in chapter 4, the acquired significant level of one sample t-test for both groups of investors is less than 1015. As a result, statistical null hypothesis is rejected, which means that the third spillover hypothesis of research is confirmed for both group of investors, meaning that common investors and portfolio managers are influenced by perceptual errors and biases. Given that the significant level of test was more than 1015, consequently, the two groups variances were equalized, and due to the fact that t-test significant level was more than 1051, we concluded that mean of two groups did not have a significant difference.

5. CONCLUSION
The most important conclusion regarding this study is that there was no significant difference between investors’ behavior in portfolio managers’ group and common investors. It means that perceptual errors and biases based on conducted study and analysis affected the majority, together with capital market participants, whether in common investors or portfolio managers’ group. Also, representativeness had no effect behavior of both groups of investors; these results are proof of growth and endorsing financial behavior and its increasing progress and reversing the optimized traditional
portfolio theories. What we can refer to in practice and through awareness is acquaintance (especially professional investors and portfolio managers) based on technical, classic and in some cases traditional knowledge. It removes the market from efficiency, even at a weak level (efficient market theory). The result is the price gap between bonds and their fundamental value.
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