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Full Length Research Paper

Operating profit, expenses and investors' herding behavior in Iran

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Based on the mental conceptions of investors, those shares with desirable operation in the past have more chance for purchasing, sailing and appearing of herding behavior. As a result of these conceptions, it is expected that the real price of these shares are priced more than its inherent one.

Key words: Herding behavior, expenses, investor decision, Iran.

INTRODUCTION

Many securities are transacted in the financial markets every day. Securities' Price determination is influenced by many different criteria that each one leaves an impression on securities with its own intensity and in different ways. As a result, the determination of effective factors on the price is very important. As a whole, one of the roles of financial markets is economical allocation of sources. On the other hand, industries efflorescence, creation of occupation and going out of crises and economic undesired situations require provision of desired conditions to invest in share markets, so recognizing and detecting present inadequacies and solving existent problems in order to avoid such downfalls which threaten shares market is essential and necessitous. Standard financial theories are based on two basic theories, namely investors being logical and efficient market hypothesis (EMH). Due to some malformations such as realization of higher yields from shares expectations of small firms, losing, having a high coefficient P/E or possessing market value ratio to low office value and also calendar malformations like yield unexpected changes in especial times of year or severe fluctuations of price and appearing bubble and downfall of prices, these theories, were challenged in the late 1980s (Golarzi, 2010). In fact, by appearing above mentioned malformations, standard financial models were replaced by behavioral financial theories. Herding behavior is also attempting to suggest outlined irregularities in standard financial models as one of the considered subjects in behavioral financial domain. In other words, herding behavior is trying to explain investors' behaviors which are sometimes not rational and sensational towards queues of shares buying and selling in the pursuit of following individuals whom by their opinions decide to bargain because of using information.

At the time of examining this kind of behaviors belonging to investors, one should take into account that these markets are emerging ones. Researches which have tried to detect herding behavior in capital market, assert that herding behavior is more apparent in emerging markets (Chang et al., 2000). Rooted observations in human societies show that individuals dealing continuously with each other think the same way (Soltani, 2007).

In order to examine the theories relating to interest based market fluctuations which attribute price variations to illogical and non-principled thoughts and behaviors one should be aware of roots and similar thoughts to it. Conversely, we should point out this issue that the distinction of intentional and unintentional herding behavior is also of interest.

Basically, intentional herding behavior occurs when investors ignore their information and analysis and follow the group because they imagine the group which always makes the best decision. While unintentional group behaviors indicate that participants in the capital market make the same decisions in regard to the same

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information and this results in capital market efficiency (Bikhchandani and Sharma, 2001). One of the most important reasons which resulting in the outbreak of herding behavior among investors is the subject of informational asymmetry in the shares market is that by itself it makes the imagination of more useful information by other investors. Such imagination tempts the investors to ignore their personal information and viewpoints and suppose the accuracy of other participants' decisions in the market and imitate them (Johnsson et al., 2003).

The purpose of this present research is to survey the presence of individual investors' herding behavior in Iran's shares market. Since Iran's shares market possess a short history compared with developed countries, and also is in the starting point of its development and efflorescence, studying the existing problems in this market prohibits the occurrence of problems which have been made in the developed countries' shares markets having more precedence. Since the subject of the investigated issue is to survey investors' herding behaviors in shares market, this research may be effective in reforming of officials decisions to accurate orientation of shares market. On the other hand, macro policy of a country comes with privatization and reducing government's charges and it is expected from the main volume of investments transferring to the shares market, thus its present weaknesses must be removed to encourage the investors to engage in this sector to invest. Therefore, the right realization of existing weaknesses in the market may plat reforming treatments in the market.

LITERATURE REVIEW

Herding behavior is a common subject between sciences such as psychology, sociology and economics so that researchers and theorists in these sciences have studied it from a special perspective. Societal psychologists like lebon (1895), is the first societal psychologists who surveyed and studied the reasons of herding behavior in human societies and its positive and negative results from the viewpoint of psychology and social sciences (Rook, 2006). Regardless of being rational or not, many researchers believe that herding behavior is the production of information asymmetry in the market.

Different groups of investors gain various information with diverse quality and the difference between each group traits and the rate of their accessibility to information makes each group have its especial investment behavior (Venezia et al., 2008). In the scope of economics, Veblen (1899) was the first economist who studied and scrutinized the herding behavior in the model of sudden changes in consumers' behaviors like temporary fashions and fads of consumers.

Bickchandani et al. (1992) suggest that the main reason of emergence and formation of herding behavior in the shares market is due to the informational cascades. In their opinion, the observation of others' behavior transfers information to the individual and thus those who lack necessary information or do not believe in their own individual information begin to imitate and follow them by supposing that others' analysis and information is more accurate and complete than their own information. Lakonishok et al. (1992) measured herding behavior amongst investments managers by presenting a model which titled "LSV". One objection to the model is that it is not measuring the severity of the posed herding behavior. To resolve this problem, Wermers (1995) presented a model titled as "portfolio change measure (PCM). By considering occurred changes in the weight of every one of existing shares in the portfolio of herding behavior severity he measured herding behavior severity occurring among investment managers (Wermers, 1999).

Like other scientific models, this model is subject to criticisms, one being the lack of herding behavior distinction between institutional investors and real ones. Nofsinger (1996) could remove this deficiency by presenting a criterion titled as "signed herding measure (SHM)". The second group includes the models, which attempts to identify and analyze investors' herding behavior in the market by documenting whole market information and using measurement economics methods, and regardless of private information of investors and happened changes in their portfolio.

Researchers consider herding behavior as a non-quantitative parameter in this approach which is measurable and identifiable from the relationships between quantitative variables. Since the whole market information is used in this approach, gained results may be readily generalized to the whole market including institutional or real investors. Christie and Huang (1995) perform the first empirical study with econometrics approach to identify investors' herding behavior in capital market.

By presenting regression model through cross sectional standard deviation yield, they start to measure investors' herding behavior in different market conditions. They claim in their model that if the market is in the natural condition and investors and activators of market make decisions based on their own individual analysis and information, one may expect high dispersal for shares yields on the market.

Conversely, when there are a lot of fluctuations in the conditions, individuals will tend to overleap from their individual beliefs and follow the whole market performance. By presenting a model, Chang et al. (2000) (CCK) used the cross sectional absolute deviation method (CSAD) to measure investors' herding group from the average yields. Using CSAD from the average 11 on the shares market of USA, England, Germany, Japan, Indonesia, Thailand, South Korea and Hong Kong, Chiang and Zheng (2008) found some evidence of herding behavior. They concluded that herding behavior

becomes apparent at time of crisis. Hwang and Salmon (2001, 2004) built a new approach name "herding obedience of Beta" to measure herding behavior. It is possible to distinguish between intentional and unintentional herding behavior in the mentioned approach by using temporary changes of sensitivity factors or betas instead of yield temporary changes, in addition to recognize and analyze herding behavior.

Basic supposition in the current approach is that Beta coefficient of variations essentially results from investors' behavioral bias on the capital market such as herding behavior in the obedience to especial factors. Demirera et al. (2010) use models CH, CCK and HS to perform the investors herding behavior test on Thailand shares market. They examine the daily data of 689 shares of Thailand firm from 1995 to 2006 and similar to Christie and Huang (1995) observed no herding behavior the obedience to the market. They also found some evidence of herding behavior on Thailand shares market like Chang et al. (2000) and Hwang and Salmon (2004).

According to Demirer and Kutan (2006) if the reason of emergence of herding behavior by investors is to maximize desirability, then there are three viewpoints relating to it: (1) The viewpoint which attributes herding behavior to psychological structure of individuals in accordance with the society (Devenow and Welch, 1996). (2) The viewpoint stating that there are individuals in the market who possess secret information and make decisions by considering this information and other investors, therefore, would gain higher yield through following them (Bernhardta et al., 2006). (3) The viewpoint which regards agency relations as the factor of out breaking of herding behavior and suggesting that managers reduce their intended risk by following others due to employment reasons, gaining reputation and maintaining well reputation (Scharfstein and Stein, 1990).

By examining the relationship between the outbreak of herding behavior and well reputation rate, Villatoro (2009) suggests the more managers have well reputation, the more they rely on their individual information and conversely, the less known managers divulge more herding behavior from themselves. Bernhardta et al. (2006) examine financial analyzers' behaviors on the market. They surveyed the financial analyzers' forecasts by using questionnaires. The results showed that in spite of the financial analyzers prepossessions, they do not have herding behaviors. Herding behavior may generally be expected to happen on the financial markets for three groups of market activators: (1) individual investment. (2) Investment managers. (3) Great investment institutions such as retirement funds and general insurances. Many investigations are conducted about the relation to herding behavior which implemented various methods, but most of these investigations have been from correlation type and there is utilization of shares yield dispersal method about the average for herding behavior test in the late years.

Gol (2010) conducts a study on investors' herding behavior in Tehran Stock Exchange (TSE). Research results suggest that investors in Tehran exchange obey the market factor and consider the whole market performance more instead of regarding radical variables affecting price. It is also suggested in this research that investors do not obey size and value factors and make their decisions based upon radical variables.

Shahriary (2007) conducts a study about the existence of mass behavior of participants in TSE by using shares yield variances from the whole market in TSE during 2001 to 2005. The findings of the research indicate that there is no herding behavior in the richness period in TSE, but some evidence of being mass has been observed through using the yield daily data. In other words, the firms' shares yield deviation from market yield means while the periods in which price index changes and cash yield are positive, it is infinite and more than the time when index changes are negative. The main reason of this phenomenon may be attributed to the similar and same determination of the market factors. The mentioned research results are consistent with Christie and Huang (1995) claim; in addition, the researchers in this research did not observe herding behavior instead of daily data by implementing monthly and weekly data which indicate the quality of this phenomenon being temporary in TSE. Hajian (2009) examines herding behavior in the selected industry. In this research, he starts to test herding behavior in different industries by using Christie and Huang's Model. By implementing CH Model on the portfolios from various industries, he found that the investors in TSE is performed in a logical way in critical market conditions, and that cross sectional standard deviation yield is increased in accordance with capital assets pricing model in critical market conditions.

RESEARCH PATTERN

The proposed methods are used to test herding behavior by Christie and Huang (1995) and Chang et al. (2000). The mentioned researchers implemented two CSSD's and cross sectional absolute deviation of shares yield for shares yield dispersal. This criterion may suggest firms' shares yield dispersal about the average market. One of the interpretations which are posed in regard to the variability of shares yield attributes shares price changes to the influence of shares investors group that is mentioned as the formation of irrational behavior. It is necessary to explain that using CSSD is due to the fact that shares prices do have fluctuation even during a day. In these models, the prices are considered just at the end of the day and in fact, continuous shares prices fluctuations in determining standard deviation are ignored.

The main idea of the current research method is based on the hypothesis that when there is herding behavior on

the market, shares yields of various firms do not vary from the whole market yields. Because individuals ignore their personal beliefs in the process of making decisions and doing just in terms of same decisions of other investors. On the other hand, from the viewpoint of rational capital assets pricing model, herding behavior describes an irrational reaction of investors to a special case instead of their decision making being logical.

Based upon capital assets pricing model, since every company has a different coefficient compared to average market, it is expectable that there should be more disperse towards average market yield. In other words, herding behavior and capital assets pricing model are supposed to be two sides of a coin. It has been proved by performing investigation on TSE that Iran's shares market is deficient.

But it is needed to mention that efficiency or deficiency of market has no influence on the formation of herding behavior and this behavior may possibly happen according to the market conditions in a rational or irrational way and its likelihood in the developed market is less than emerging ones.

Christie and Huang's (1995) model

Christie and Huang (1995) believe that the possibility of out breaking herding behavior is more in periods when prices have the highest variations, and this is mainly because people progress to reach a consensus with market in order to maximize their yields or reduce their investment losses more and more. Concerning individuals' behavior in groups, the empirical evidences in social psychology describe that persons obey group decisions even when they find the group to be making mistake. The groups, in fact, are known by individuals who suppress their personal beliefs on financial markets and obey the groups based upon group activities even when it disagrees with their anticipations. This kind of behavior, therefore, suggests that investors are attracted to reach a consensus with whole market, and because of this behavior, yield deviation of every share from market yield would not be much.

The first model is consistent with the methodology used by Christie and Huang (1990), meaning that has been focused on massy price concepts through surveying shares yields to manifest herding behavior. Christie and Hung (1995) pose a model to measure the potential effect of herding behavior on market prices, implying that herding behavior may make itself obvious in yield data. The most important effect of herding behavior on the market is stated as its influence upon CSSD of yields and this deviation determines the mean yield closeness of every share to the average. When yields move in accordance with the market, the deviations level is reduced and the more yields move away from the market yield, the more deviations level is increased. The aim is formation of herding behavior when the probability of herding behavior formation is much more.

So it is possible by using CSSD equation of shares yields to test herding behavior in periods when the market has the maximum of price variations. Since this probability that individuals ignore their personal beliefs in order to reach a consensus with market becomes more during unusual fluctuations periods of the market, the possibility of formation of herding behavior during these periods is increased. The hypothesis is that the existence of herding behavior during abundant changes periods of market causes lower meaningful deviations than the average level. Pricing rational models of assets also have made anticipations concerning deviations behavior during market stress. Since the sensitivity of every share is different toward market yield pricing, rational model anticipates that great market fluctuations will result in increase of deviations level during market stress.

Definition of shares yield deviations

Shares yield deviations or CSSD has been intended as a criterion to measure herding behavior which is calculated as following:

$$CSSD_t = \sqrt{\frac{\sum_{i-1}^{N}\left(R_{i,t} - Rm,t\right)^2}{N-1}} \quad (1)$$

$CSSD_t$: market cross sectional standard deviation on the day t; $R_{i,t}$: share yield of firm 1 on the day t; $R_{m,t}$: average N yield, in portfolio of whole market on the day t; N: the number of present firms of the selected portfolio which have been bargained on the day t. This standard deviation shows the average yield closeness of every share to the market yield. Christie and Huang (1990) have anticipated that when there is herding behavior, the deviations level is low.

Herding behavior during market stress period

This methodology suggests that herding behavior happens more probably meanwhile when unusual fluctuations occur in the market, namely during periods when very great or very little yields befall in the market portfolio. Therefore, a tendency to harmonized movement with the whole market is observed more within such periods. Investors are usually anxious and do worry in these periods. Christie and Huang (1990) named these periods "market stress periods" for this reason. The difference between anticipations of CAPM Models from herding behavior is very significant during market stress periods and there are great price fluctuations. Since rational models of pricing assets do expect more deviations due to considering the sensitivity of every

share being different to the market yield, it is expected in the herding behavior model to yield deviation level of every share from the whole market yield to be reduced. To distinguish between these two, Christie and Huang (1995) examined deviations level (CSSD) in two final extents in order to determine whether shares yield deviations are lower than the mean level during severe market fluctuations or not. In fact, they considered a linear relation between CSSD and market yield that related to slump period and market richness. In other words, they ascribed deviations level as an independent variable to stress period.

$$CSSD_t = \alpha + \beta_L D_t^l + \beta_U D_t^U + \varepsilon_t$$

$CSSD_t$: yield deviation of every share is from whole market on the day t. D^L_t: notional variable to attract reduced unusual fluctuations of market yield. D^V_t: notional variable to attract increased unusual fluctuations of market yield. D^l_t= 1, if market yield is in the down extent of yield normal distribution on the day t, otherwise equals to 0. D^V_t = 1, if market yield is in the up extent of yield normal distribution on the day t, otherwise equals to 0. Coefficient *a*: it suggests mean deviation from market yield and is in the extent where not covered by two notional variables. To calculate notional variables through the formula $Z_{\frac{a}{2}} = \frac{x-\mu}{\sigma}$, variable distribution x which is the very market yield converts into standard normal deviation.

$$x_1 = \mu + \left(Z_{\frac{a}{2}} \times \sigma \right)$$

$$x_2 = \mu - \left(Z_{\frac{\alpha}{2}} \times \sigma \right)$$

To determine notional variables D^l_t, D^V_t , values more than x_1 value 1, values less than number 0 and to less values than x_2 value 1, and more values than it number 0 is allocated, respectively, that numbers 1 suggesting the days on which the market has had unusual yield.

Christie and Huang (1995) considered the highest extent of market yield ($Z_{\frac{a}{2}}$ in *a*) one time 1% and another time 5% in the up extent or down of market yield distribution. Christie and Huang (1995) describe if regression estimation is positive for two coefficients $B_l$and B_u, meaning this subject that in periods with severe fluctuations in yield, then standard deviation has increased. This is because a fixed number has added to a value which is about average CSSD in regression equation, and thus anticipation of capital assets pricing model that states standard deviation is increased during market stress periods being true, and therefore the existence of herding behavior would not be confirmed. But if regression estimation is negative for two coefficients $B_l$and B_u, it describes this matter that standard deviation has been decreased during periods with severe fluctuations. Since in regression equation an amount about CSSD of a fixed number has been deducted from value *a,* the existence of herding behavior would be confirmed.

It is necessary to mention that in all these cases, gained values should be statically meaningful for coefficients. This is of great importance that herding behavior generally does not show investors' irrational behaviors. This is because in some condition investors are ignorant of the accuracy of their information, which divulges irrational herding behavior (Bikhchandani and Sharma, 2001). Besides, herding behavior does not necessarily suggest market activists as irrational ones and there is no way in notional informational conditions to avoid loss but to obey other investors. Christie and Huang (1995) used absolute deviation formula in some estimation to calculate yield deviation of firms' shares from market yield which would have been brought next, and of course the past results were also gained.

$$CASD_t = \frac{1}{N} \sum_{i=l}^{N} \left| R_{i,t} - R_{m,t} \right|$$

$CASD_t$: crossed-sectional absolute deviation of firms shares yield from market yield on the day t. $R_{i,t}$: i firm's eleven shares on the day t. $R_{m,t}$: the average eleven N shares in the whole market portfolio on the day t. N: the number of present firms in the selected portfolio which have been bargained on the day t.

Khorana, Cheng and Chang's (CCK) model

The actual idea, in fact, belongs to Chang et al. (2000) that point out the decrease of shares yield deviations from market and has been taken from Christie and Huang (1995). The difference between them is that Chang et al. (2000) utilized the expected shares yield and thus β_1 (systematic risk with firms fixed time) and β_u (systematic risk of market portfolio) to determine shares yield deviations from market yield. Their evaluation, of herding behavior relies on rational models of pricing assets. In their opinion, herding behavior may also happen in every place of yield length, but it appears more during market stress; while Christie and Huang (1995) model was in the quest of detecting this behavior

type during market stress periods. One of the traits of this model is that through it one may survey herding behavior in several markets.

Definition of shares yield deviation

It is also believed in this model that the existence of herding behavior will cause shares yield low deviation from the whole market yield.

According to Chang et al. (2000), shares yield standard deviation from market yield by CSAD (cross sectional absolute deviation) of firms shares yield is from the market yield:

$$CSAD_t = \frac{1}{N}\sum_{i=1}^{N}\left|R_{i,t} - R_{m,t}\right|$$

$CASD_t$: cross-sectional absolute of firms shares yield from the market on the day t. $R_{i,:}$ i firm share yield on the day t. $R_{m,t}$: the average eleven N shares in the whole market portfolio on the day t. N: the number of present firms in the selected portfolio which have been bargained on the day t.

Herding behavior during the whole market yield distribution

Chang et al. (2000) used a linear regression to detect herding behavior in the whole market yield distribution. Contrary to Christie and Huang, they do not think of herding behavior as one belonging to the market stress periods. In fact, they observed that the rational model of capital assets pricing refers to the linear relation between firms' shares yield deviations from the market. They believe that in the natural market conditions, when the market fluctuations aren't unusual, the existence of a linear relation between shares yield deviations, and the market fluctuations (the market yield) is anticipated to utilize independent variables $|R_{m,t}|$ in regression equation to realize this matter.

The reason of utilizing the market yield absolute is to facilitate comparing coefficients of linear expression on ball markets and bear markets. The presence of meaningful, positive value y_1 indicates the increase of firms' shares yield deviations from the market yield during the market's normal conditions.

On the other hand, Chang et al. (2000) claim that there is more likelihood of herding behavior during great fluctuations on the market. Therefore, they added the following relationship $(R_{m,t})^2$ to the regression equation for examination. Using the second grade for $R_{m,t}$ supposes the variations to be symmetric. So the existence of y_2 is negative and statically meaningful in the examination of describing herding behavior on the market during the market stress periods. Because it indicates a reverse and non-linear relationship being between yield deviations and market yield and meaning that the higher yield would decrease the deviations. They, therefore, present the criterion methodology based upon the second grade relationship between $R_{m,t}$ and $CASD_t$ of the following model:

$$CSAD_t = \alpha + \gamma_1\left|R_{m,t}\right| + \gamma_2 R_{m,t}^2 + \varepsilon_t \quad (4)$$

$|R_{m,t}|$: the market yield modulus on the day t. $(R_{m,t})^2$: the market square on the day t. *a*: the average shares yield deviations from the market yield, in an inactive market.

Relying on this methodology, the lower or less increase during the market action periods than proportionate extent in the absolute deviation (CASD) is a document based upon herding behavior. Consequently, if there is herding behavior, non-linear coefficient of y_2 is negative and statically being considerable; otherwise, y_2 is positive and statically showing no sign of herding behavior.

Model of test based on yield monthly data

By adding eleven daily data with monthly data, two investigated models would also be tested. In the opinions of Christie and Huang (1995), and Chang et al. (2000), herding behavior is a phenomenon with a short life. Daily data is used with the hypothesis that herding behavior is a phenomenon with a short life period. In these researchers' opinions, if groups have access to time horizon with the longer period to affect market prices, using the daily data limits herding behavior ability to expose itself in the shares yield deviations from the market yield. For this reason, Christie and Huang (1995) re-examined their model again with the yield monthly data. The results showed that the daily data making the higher level of firms shares yield deviation. Because the shares yield of firms has more opportunity to stray from the market yield. These researchers stated that the results from model estimations at the monthly intervals show that herding behavior is limited to the short period time horizon.

RESEARCH HYPOTHESIS

According to the objective of the study the following hypothesis is postulated in the study:

H1: Herding behavior occurs more in those firms that have better expense management.. This hypothesis indicates that herding behavior occurs more in those firms that are more successful in expense management. Falkenstein (1996), Del (1996), and Gumpers and Metrick (2001) all reach the similar result by doing separate studies, and it is that investors' synchronous attention to shares with the same feature such as the previous yields, size and degree of being criticized can be the source of existing investor' similar behavior. In other words, in order to choose appropriate

shares, the investors have common opinion on the special parameters that cause similar movement on the part of investors in the market (Sharma, 2004).

From another part, by use of LSV criteria and seasonal data of all presence shares in cashes from 1975 to 1994, Wermers (1999) concludes that herding behavior is observable for some of shares especially for those that have positive or negative yield in the past. This herding behavior is more for the purchase of benefit shares than the purchase of loses shares. Also, Wermers (1999) concludes that herding behavior inclined stronger toward buying for shares that had good operation in the past. On the other hand, herding behavior is confirmed with less intensity toward sailing for shares that had weak operation in the past. In addition, specific investment strategies cause the appearance of herding behavior among shareholders.

According to relative power strategies, it is recommended to buy shares that had good operation in the last period, and to sale shares that acquired weaker operation in the last period (Jegadeesh and Titman, 1993). On the other hand, according to reversed investment strategies, it is recommended to sale shares that had good operation in the past, and to purchase shares that had weaker operation (Dreman and Berry, 1995). With due attention to the research topic and hypothesis, it is expected that investors intervene relative power strategies in their order of decision making. As a result of these strategies, herding behavior occurs toward firms that had better operation and expense management in the past. For this object, the existing firms in the statistical society divides into low sale, average sale and high sale according to the sale. Then, according to above distributed list, the existing firms in each class are separated into two equal groups of firms with high profit operation and low profit operation. According to this distribution, six groups appear. Then, according to discussed model, the existing of herding behavior is surveyed in these six groups. These six groups consist of:

1. Companies with low sale and low operating profit.
2. Companies with average sale and low operating profit.
3. Companies with high sale and low operating profit.
4. Companies with low sale and high operating profit.
5. Companies with average sale and high operating profit.
6. Companies with high sale and high operating profit.

By paying attention to the previous explanation, 68 existing firms in the statistical society are divided into three classes according to the sale. The number of existing firms in the low and high sale class is classified into 22 in each one, and the number of existing firms in the average sale class is classified into 24 firms. In the next stage, the existing firms in each of above mentioned classes are classified into two equal groups of firms with low profit operation and firms with high profit operation.

Research variables

The used variables in this research and in both Christie and Huang (1995) model and Chang et al. (2000) are common. Data is classified through basing the reported information by exchange. To have access to the required information to debark the model, software data of Rahavarde Novin and also the reported information by exchange were used and compared. Among all the listed companies in TSE during 2006 to 2010 companies are selected. In order to survey herding behavior, the firm yield and the market yield were analyzed. The yield data of existing firms in the sample and index of price yield and cash yield include 1207 daily observations and 60 monthly observations. In calculating the yield deviations of every share from the market yield in both models, all the firms' shares are initially and historically corresponded with the market yield on the intended day. The used variables in this research are: the shares yield in a monthly and daily fashion, the daily and monthly market yield, sale, operating profit and notional variables, and the calculation method of their yields is shown subsequently.

Shares yield

The firms yield rate is computable both for the past performance and for the anticipation of future. The subject of goal analysis may be the expected yield rate of the firm supervisor for the future. The expected yield rate may also be supposed as a supervisor of the past performance of the firm. This method would also be useful both to survey the firm performance and investing or non-investing on the firm shares. Related data of the shares daily yield which are used in this research taken from the software RahavardNovin calculates payoff from the following formula:

$$\text{Yield formula by computing} = \frac{\text{stock } right + \text{stock dividend} + \text{DPS} + (\text{base price} - \text{daily price})}{\text{Percentage of capital increase from taken place} \times (\text{base price} + 1000)}$$

Market yield

In this research instead of the average share N yield in the portfolio of the whole market on the day t, cash yield index and price is used (TEDPIX). Since the index indicates the given portfolio of all accepted firms in exchange. Regarding significant effect of cash interests on the market yield in this research, we exploit also cash yield index and price in order to the market yield as follows:

$$R_{mt} = \left(\frac{TEDPIX_t}{TEDPIX_{t-1}} - 1\right) \times 100$$

To calculate the monthly market yield, the cash yield index and price on the final day of a month are used.

5 to 3 notional variables (D_t^U and D_t^1) are estimated in Christie and Huang equation using criterions 5 and 1% to define the great market fluctuations, because based upon these two famous researchers' viewpoint the definition of yield is optional.

Statistical society and sample appointment method

The statistical society of this research includes all accepted firms in Tehran exchange. The required sample in the research would be gained through filtering of statistical society members based on the following criterions:

1. The listed date of the existent firms in the sample must be on March, 2005 or before that time.
2. For doing above investigation and by paying attention to used models in this research, all investigating and financial firms are deleted from the sample.
3. All information such as association laws, financial lists, price and other needed information for doing the research should be available.
4. Those which the bargain on their shares hasn't been ceased for long times (more than three months).
5. The ending date of financial period is 26th March for them and there is no change in the financial year within research time periods. After the existing firms in the statistical society had been passed through the above filters, a sample was selected consisting

Table 1. Descriptive statistics of used model.

Class	Description	Number	Minimum	Maximum	S.D
Low sale and low operating profit	CSSD	1207	0.000	45.7543	2.8207559
	CSAD	1207	0.011	31.7037	2.0428598
Low sale and high operating profit	CSSD	1207	0.000	53.3437	2.7243367
	CSAD	1207	0.1026	21.1042	1.5329002
Average sale and low operating profit	CSSD	1207	0.000	31.9286	2.3084328
	CSAD	1207	0.0912	16.2485	1.3442642
Average sale and high operating profit	CSSD	1207	0.000	75.3964	3.6356804
	CSAD	1207	0.0585	43.8403	2.3011007
High sale and low operating profit	CSSD	1207	0.000	32.1322	2.1179063
	CSAD	1207	0.0317	19.2561	1.3182831
High sale and high operating profit	CSSD	1207	0.000	30.1547	1.9712865
	CSAD	1207	0.0291	12.191	1.0860655

Table 2. Regression coefficient $CSSD_t = \alpha + \beta_L D_t^l + \beta_U D_t^U + \varepsilon_t$ related to daily data.

Class	Criterion (1%)				Criterion (5%)				Result
	Appointment coefficient	α	βu	βl	Appointment coefficient	α	βu	βl	
Low sale and low operating profit	0.033	2.271	3.946	4.177	0.074	2.225	2.736	7.169	Reject
Low sale and high operating profit	0.017	2.001	2.859	2.700	0.012	1.998	1.920	1.831	Reject
Average sale and low operating profit	0.019	1.859	2.640	2.263	0.020	1.846	2.177	1.740	Reject
Average sale and high operating profit	0.031	1.753	3.193	7.243	0.022	1.746	2.195	4.870	Reject
High sale and low operating profit	0.041	1.736	3.527	2.961	0.032	1.729	2.469	2.078	Reject
High sale and high operating profit	0.054	1.590	3.548	3.664	0.082	1.558	2.834	4.528	Reject

of 68 firms.

THE RESULT OF THE STUDY

To test the research hypothesis based upon Christie and Huang's (1995) models and Chang et al. (2000), the following regressions are estimated, respectively:

$$CSSD_t = \alpha + \beta_L D_t^l + \beta_U D_t^U + \varepsilon_t$$

$$CSAD_t = \alpha + \gamma_1 \left| R_{m,t} \right| + \gamma_2 R_{m,t}^2 + \varepsilon_t$$

$$CSAD_t = \alpha + \gamma_1 \ R_{m,t}^2 + \varepsilon_t$$

Following the research, the gained results from regression estimation are expressed through the first and second models, respectively.

Descriptive statistics of every one of these two models are estimated in Table 1.

Christie and Huang (1995)

As mentioned earlier, the following regression is estimated based on Christie and Huang's (1995) model:

$$CSSD_t = \alpha + \beta_L D_t^l + \beta_U D_t^U + \varepsilon_t$$

The gained results from the above regression estimation in both two criterions based on the daily and monthly data are presented in Tables 2 and 3. Based on the daily data in both two criterions 1% and 5%, variables coefficient D_t^U and D_t^l indicating herding behavior in the unusual market fluctuations respectively are positive and meaningful at a confidence distance of 95%.

The acquired results from the research explain the absence of investors' herding behavior at monthly and daily intervals of all investigated firms in different classes in this research using the research method based on CSSD of shares yield during 2006 to 2010. The research results describe this point that firms yield have gone

Table 3. Regression coefficient $CSSD_t = \alpha + \beta_L D_t^l + \beta_U D_t^U + \varepsilon_t$ related to monthly data.

Class	Criterion (1%)				Criterion (5%)				Result
	Appointment coefficient	α	βu	βl	Appointment coefficient	α	βu	βl	
Low sale and low operating profit	-	-	-	-	-	-	-	-	
Low sale and high operating profit	-	-	-	-	0.388	9.644	11.768	12.979	Reject
Average sale and low operating profit	0.422	9.306	6.908	9.942	0.294	9.737	-	13.848	Reject
Average sale and high operating profit	0.086	9.894	8.850	-	-	-	-	-	-
High sale and low operating profit	-	-	-	-	0.075	10.283	5.823	-	Reject
High sale and high operating profit	-	-	-	-	0.213	10.521	6.949	3.455	Reject

away from the market yield during the low or high fluctuations, and yield deviations are abundant. So it could be stated that they present the result in accordance with forecasting of CAPM which is described at the time of market stress, deviations level is increased since the sensitivity of every asset in relation to the market is different, and concludes that herding group is not an important factor in determining exchange yield within periods on which the market is experiencing stress. In other words, no evidence was found indicating investors' backtracking to outbreak rational behavior in existing firms in the statistical society of this research. With due attention to different daily and monthly presented tests on the foregoing, no herding behavior is found. The results of this research are inconsistent with Wermers' (1999) findings based on the occurring of herding behavior in the benefit firms in compare with loses firms. Also, the result of this research is inconsistent with Jegadeesh and Titman (1993). As a result, the research's hypothesis is rejected.

Chang et al.'s (2000) model

As mentioned earlier, the following regression is estimated for examination of research hypothesis based on Chang et al. (2000) model:

$$CSAD_t = \alpha + \gamma_1 \left| R_{m,t} \right| + \gamma_2 R_{m,t}^2 + \varepsilon_t$$

The acquired results from the above regression in both criterions based on daily and monthly data are presented in Table 4.

The gained results from the research, explain the absence of investors' herding behavior at monthly and daily intervals of investigated firms in different classes except for low sale class and different profit operation at daily interval in this research using the research method based on CSSD of shares yields during 2006 to 2010.

The research results describe that firms' yields have gone away from the market yield during the low or high fluctuations, and yields deviations are abundant. So, it could be stated that they present the result in accordance with forecasting of CAMP which is described at a time of market stress, deviation level is increased since the sensitivity of every asset in relation to the market is different, and concludes that herding behavior is not an important factor in determining exchange yield within periods on which the market is experiencing stress. In other words, no evidence is found indicating investors' backtracking to outbreak rational behavior in existing firms in Iran. With due attention to different daily and monthly presented tests on the above, no herding behavior is found.

The results of this research are inconsistent with Wermers' (1999) findings based on the occurring of herding behavior in benefit firms in compare with loses firms. Also, the results of this research are inconsistent with Jegadeesh and Titman (1993). As a result, this research hypothesis is rejected.

The suggested model

To test the research hypothesis based on the suggested model, as mentioned before, the following regression is estimated:

$$CSAD = \propto + \gamma\ R + \varepsilon$$

The gained results from the above regression in both two criterions based on the daily and monthly data are presented in Table 5.

CONCLUSION AND RECOMMENDATIONS

No type of herding behavior is found in TSE based on the investigated models of this research in Tables 2, 3, 4 and 5. As it is observed in Table 4, no herding behavior is observed in low sale class and different profit operation. The results of this table confirm the existence of herding behavior toward firms in small size in comparism

Table 4. Regression coefficient $CSAD_t = \alpha + \gamma_1 \left| R_{m,t} \right| + \gamma_2 R_{m,t}^2 + \varepsilon_t$ related to daily and monthly data.

Class	Daily					Monthly				
	Appointment coefficient	α	γ_1	γ_2	Result	Appointment coefficient	α	γ_1	γ_2	Result
Low sale and low operating profit	0.385	1.309	1.924	0.144	Reject	0.431	6.190	0.518	0.016	Reject
Low sale and high operating profit	0.306	1.075	1.864	-0.027	Accept	0.140	7.360	0.063	0.053	Reject
Average sale and low operating profit	0.362	0.977	1.314	0.075	Reject	0.282	7.273	0.068	0.076	Reject
Average sale and high operating profit	0.389	1.151	0.591	0.419	Reject	0.289	5.587	0.103	0.132	Reject
High sale and low operating profit	0.443	0.834	1.710	0.020	Reject	0.434	4.310	1.173	0.996	Reject
High sale and high operating profit	0.397	0.725	1.480	0.985	Reject	0.290	7.511	0.026	0.055	Reject

Table 5. Regression coefficient $CSAD_t = \alpha + \gamma_1 R_{m,t}^2 + \varepsilon_t$ related to daily and monthly data.

Class	Daily				Monthly			
	Appointment coefficient	α	γ_1	Result	Appointment coefficient	α	γ_1	Result
Low sale and high Operating profit	0.321	1.821	0.422	Reject	0.406	7.145	0.055	Reject
Low sale and high Operating profit	0.199	1.571	0.261	Reject	0.136	6.923	0.035	Reject
Average sale and low Operating profit	0.293	1.346	0.278	Reject	0.271	6.624	0.050	Reject
Average sale and high Operating profit	0.382	1.310	0.497	Reject	0.285	5.953	0.048	Reject
High sale and low Operating profit	0.321	1.289	0.285	Reject	0.316	6.472	0.051	Reject
High sale and high Operating profit	0.262	1.119	0.212	Reject	0.281	7.113	0.039	Reject

to the bigger ones. The results of this research are inconsistent with Jedageesh and Titman (1993), and Wermers (1999) findings. In addition, these results show that investors do not pay attention to the operation of market and do their investment's decision making based on foundation variables.

The results of this research are consistent with Christie and Huwang's (1995) finding in USA shares market, Chang et al. (2000) findings in USA, Hong Kong and Japan shares market, Demirera and Kutan (2006) in China's shares market, and inconsistent with Chang et al. (2000) in south Korea and Taiwan's shares market, and Demirera et al. (2010) in Taiwan shares market based on the existing of herding behavior. The most important factors that can cause the appearance of herding behavior in Tehran exchange market are: lack of specified control organizations, the inconsistency of investors' needed information with existing information, and lack of enough transparency in exchange market.

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