# The Study of the Share Price Overreaction and the Profitability of the Contrarian Investment Strategy to Gain the Return in the Iran Stock Exchange

## Mahmoud MoeinAddin[1], ShahnazNayebzadeh[2], RasoolZareMehrjardy[1], Ali FazelYazdi[1]

[1]Department of Accounting, Yazd Branch, Islamic Azad University, Yazd, Iran
[2]Department of Management, Yazd Branch, Islamic Azad University, Yazd, Iran

## ABSTRACT

In the literature of the capital markets and behavioral finance, there has been various investment strategies introduced and recommended as for the different reactions of the investors and to increase the return resulted from the investment and gain the additional return over the prospected return. One of these strategies is the contrarian investment strategy which is based on the investors' Overreaction theory. The knowledge of how to use the contrarian investment strategy can help the investors choose a suitable share to gain the maximum return. Therefore, this survey studies the share price Overreaction and gaining the return in the Iran Stock Exchange by using the contrarian investment strategy. To perform the survey, the survey period was at first divided into 16 portfolio and test establishment periods; in the establishment period, the companies were divided into the winner and the loser portfolios according to seven research variables (the ratio of the operating profit to the investment, the ratio of the operating cash flow to the investment, return on assets, earnings per share, return on equity, operating cash flow and stock return) and then these portfolios have been calculated and compared in the test period. The study hypothesis test results shows that the additional return in the TSE could be gained by using the contrarian investment strategy and also in different establishment and test periods have raised the Overreactions to some particular variables.

**KEYWORDS:** contrarian investment strategy, winner and loser portfolios, establishment and test period, Overreaction.

## 1- INTRODUCTION

The investors' purpose of buying the shares is to receive the return and therefore one of the most important requirements of the stock exchange investors is having the scientific information about the desirable method of buying and selling the shares. In the last three decades, the theory of efficient market relying on the investors' logic use of all accessible information has been applied in the role of a reference theory for explanation of the investors' behavior. The prices may reflex all the available information correctly in an efficient stock exchange market and the price fluctuations in such markets are incalculable and random in the length of the time (William R.Scot, 2009). Once the efficiency of the stock exchange markets had been proved assuredly, their efficiency were seriously questioned again which its reason was the evidences that showed the share return was calculable. These facts which are always considered in the texts as the financial exceptions almost prove documentarily that some of the shares gain the high average return systematically than the others (Tripathi et al., 2009). If there are such exceptions in the market and the market lose its efficiency, the investment return could be increased by applying the suitable investment strategies such as the contrarian investment strategy.

In this research, the profitability of using the contrarian investment strategy in the Iran Stock Exchange would be studied in different establishment and test periods. As we are going to study the profitability of the contrarian investment strategy in different periods, the survey period is divided into 16 different establishment and test periods and all the research and test stages of the research theories will be performed in each of these periods. Seven financial variables including the ratio of the operating profit to the investment, the ratio of the operating cash flow to the investment, assets return, earnings per share, return on equity, operating cash flow and the stock return would be studied as the research variables in each period.

We, in section 2, study the theoretical structures and the research history; in section 3, introduce the research variables; in section 4, explain the applied research methodology; in section 5, study the research results and in the last section, bring up the brief, deduction and research suggestions.

**\*Corresponding Author:** ShahnazNayebzadeh, Department of Management, Yazd Branch, Islamic Azad University, Yazd, Iran**.**
Tel: (++98)351-8211391; Fax: (++98)351-8214810 Email: snayebzadeh@gmail.com

## 2- THEORETICAL FRAMEWORK

*2-1- The Contrarian Investment Strategy*

The contrarian investment strategy is based on the investors' Overreaction theory. This strategy also foresees the future return according to the past procedure. In this strategy, there is a belief that after the Overreaction to the data in a short time period, the share price will be decreased in the longtime period to remedy the Overreaction. In other words, the investors found in the longtime that they have been wrong about the price and accept the share with a lower price. The investors show an Overreaction to the successful companies' share data (share winner) and fix the share price of them higher than the real price through making high demands for their shares. Conversely, the investors do not show a suitable reaction to the unsuccessful companies' share data (looser companies) and evaluate the share price of such companies lower than the real price. If such a phenomenon occurs, the price recursion would be occurred in the longtime and there would be an opportunity for the profitability (D. Bondt&Thaler, 1985). Due to this strategy, it is recommended to sell the shares that have recorded a good performance in the past and to buy the shares that have recorded a weak performance in the past. That is to say, the investors must buy the shares that have not had a proper performance in the past and sell the past successful shares to make a considerable excessive return in the next periods when the return recursion phenomenon comes back (Dreman& Berry, 1995).

*2-2- The Research History*

In an inefficient market, the investors react excessively to the new data, and on the other hand if there is an Overreaction to the stock market, the considerable extra return could be reached by applying the contrarian investment strategy; or on the other words, a phenomenon of Overreaction to the stock market is the requisite to gain the return by applying the contrarian investment strategy. Therefore, the research history has been divided into two sections; the first section explains some evidences of the investors' Overreaction and the second section includes some evidences of the profitability of the contrarian investment strategy.

The Overreaction is one of the exceptions or abnormalities of the investment market and occurs when the share price overprices due to the new data. Several researches have been performed for the investors' reactions in the investment market which has mainly studied and evaluated the Overreaction of the investors. Ahmad and Hussain (2001) have studied the Overreaction of the investors during a three years establishment and test period in Kuala Lumpur. The results show that the average accumulated return for a winner portfolio during an establishment period is higher than the same amount during the test period. Also, average accumulated return for a loser portfolio during a test period is higher than the same amount during the establishment period. Dimitris and Nikolaos (2005) have studied the relationship of the Overreaction of the Britain Stock Exchange investors with the company size and the price with the earning per share, in 110 companies during 1989-2002. The research results show that there is Overreaction in the Britain Stock Exchange but it is not depended on the company size and the earning per share. Soares and serra (2005) have examined the Overreaction and the lesser reaction of the Portugal Stock Exchange investors during 1988-2003. According to the research results, the strategies which buy or keep the winner shares and sell the looser shares regarding the last 6 months periods of performance, gain the additional return up to 1.11. So, the results of the research did not support the theory of the investors' underestimated reaction but the Overreaction was confirmed. Elvitney (2006) has studied the investors' Overreaction and the relative increase (decrease) effect of the sale, return, cash flow and profit variables on the investors' expectations about the future performance of the sample companies during 1983-1999. The research results showed that the increase (decrease) of the companies past financial performance affects the investors' expectations and causes the increase (decrease) share price of the companies. Therefore, the Overreaction phenomenon was confirmed. Tripathi and Aggarwal (2009) have studied the Overreaction in the Indian Stock Market with a sample size of 500 companies through selective sampling during 1996-2007. The above-said research results show that the India Stock Exchange is under Overreaction effect by the good or bad behavior. Nassir et al. (2009) have made a research to study the Overreaction in the Malaysia Stock Exchange during 2006-2009. The results of this research show that the investors' behavior in short time period in the Malaysia Stock Exchange do not confirm the Overreaction. But once the establishment period is longtime (5 years), the investors' behavior confirms the Overreaction theory. Li et al. (2011) have studied the reverse performance of the low and medium share price in the London Stock Exchange during 2000-2009. Considering the Fama& French risk, the research results show that, the medium and low price winners definitely have a positive return. Then, the researcher decreases the return by the float and market risk and concludes that only the average share losers keep their positive return. Moradi et al. (2011) studied the investors' Overreaction to the past financial performance criteria for 150 companies in the TSE during 2000-2009. The research results show that the investors reacted excessively to the companies' past financial performance criteria.

If the Overreaction is confirmed, the returns more than the market return would be achievable with the contrarian investment strategy. There are many researches done to study the contrarian investment strategy in the capital market. Foster and Kharazi (2007) have studied the continuous and contrarian investment strategy in the TSE during 1993-2001. The research results show that the medium term continuous strategy (3-12 months) has caused an additional return on the average return but there has not been the additional return in the contrarian investment strategy. Kadoya et al. (2008) have studied the contrarian investment strategy by applying the data encryption algorithm in the Japan Stock Exchange. The research results show that the contrarian investment strategy using the newly introduced index (wrong pricing index) performs better than the contrarian investment strategy using the past data, such as the past return.

There are many studies done about the Overreaction and the profitability of the contrarian investment strategy, but all of them have only confirmed the profitability of the contrarian investment strategy and no one of them has showed the usage method of this strategy during different periods in the stock exchange. Helping the investors decide to transact the common shares in the stock exchange, the present research is a suitable guide to make the better investment decisions by studying the profitability of the contrarian investment strategy in different establishment and test periods.

### 3- The Research Variables

Due to the studies done, 7 financial indexes have been used as the research variables. Being familiar with these variables and their calculation method, shortly we have described hereunder.

• The Ratio of the Operating Profit to the Investment

The ratio of the operating profit to the investment determines the how long it will take to remunerate the financial investment in the market through the operating income of a concern. This ratio is obtained by the operating income divided into the average operating assets (Garrison et al., 2008).

• The Ratio of the Operating Cash Flow to the Investment

The ratio of the operating cash flow to the investment is used as the performance evaluation index for the investment in the production of one product. This ratio is also used for the stock market price evaluation as a financial index. This ratio is measured as the following (Nicoletti, 2004):

$$\frac{\text{Operating Income}}{\text{Tangible or Intangible Fixed Assets} + (\text{Current Liabilities} - \text{Current Assets})}$$

• Return on Assets

Return on assets is one of the financial ratios that is obtained by the sum of the net profit divided into the sum assets. Return on assets is related to the selling and buying skills of the company and is not affected by the company financial structure (Garrison et al., 2008).

• Earnings per Share

The earnings per share is one of the conventional and usual performance evaluation indexes that is applicable for the share price evaluation and is expressed in Rial. This ratio is obtained through the ordinary shareholders' net profit divided by the common shares (Horan & College, 2012).

• Return on Equity

The return on equity is one of the financial indexes that is obtained through earnings before taxes divided into the equity. The return on equity shows the profit rate of the investment used in the operation. Whatsoever this rate is higher; it is a sign of success in the investment attraction strategy and the equity value and is the major goal of an enterprise (Damodaran, 2007).

• Operating Cash Flow

The Operating Cash Flow is issued from the incoming and outgoing cash flow of the major and continuous activities of the enterprise operating income and also a category of cash flows that is not essentially communicable directly to other cash flow categories. The methodology to calculate the operating cash flow is as the following (Alwathainani, 2006):

Depreciation + Current Liabilities changes (-) + Current Assets changes (+) – Operating Income

• Stock Return

All the shareholders' revenue from buying a company share during a definite period is called the stock return. The return caused by the investment in the company's shares could be showed through the following formula (Alwathainani, 2006):

$$\text{Ri=} \frac{(1 + X - Y)P_t - P_{t-1} - YP_n + DPS_t}{P_{t-1} + YP_n}$$

Wherein:

$R_i$: rate of earning per share i in the year t, $P_t$: share price i at the end of the year t, $P_{t-1}$: share price i at the beginning of the year t, $DPS_t$: dividend per share i in the year t, $P_n$: the nominal value of the share i, X: the percent of capital increase by the reserves and Y: the percent of capital increase by cash investment and claims.

## 4- RESEARCH METHODOLOGY

The current research is categorized as operational researches. The Statistical population of the current research includes all of the accepted companies in Iran Stock Exchange.The reason of choosing this Statistical population is availability of the financial data of the accepted companies in Iran Stock Exchange and also all of financial data of the noted companies is harmonious because of special Exchange Stock regulations; so data analysis will be better performed. The sample in the current research has been chosen regarding thelocal and time territory of the research that thesample companies would not be the investing and trading companies and have the following specifications:

Their shares should have been transacted at least once a year during 1382 to1389.

The end of their fiscal year should be Esfand 29th and their fiscal year would not be changed during the research.

Accepted in Iran Stock Exchange from the beginning of 1382 and hasn't been deleted by the end of 1389.

Therefore,152 companies have been chosen based on the selective sampling procedure (systematic elimination) from all of the accepted companies in the stock exchange. The Research has been performed in several and various stages and a suitable research method is selected for each stage and the procedure is as the following:

First Stage:

In this stage during the establishment, companies' shares are categorized to winner and loser portfolios based on 7 study variables. Regarding that the determination procedure of the winner and loser portfolios based on the return variable is different from other variables; so this stage is performed in two procedures:

Specifying the winner and the loser portfolios based on the return variable

First of all, to specify the winner and the loser portfolios based on the return variable, the market additional return is calculated as the following for each one of the sample shares during the establishment period:

$$U_{Jt} = R_{jt} - R_{mt}$$

Wherein:

$U_{jt}$ : additional stock return in t[th] year, $R_{jt}$ : j[th] stock return in t[th] year and $R_{mt}$ : market shares return in t[th] year.

Then the market additional return will be calculated cumulatively for each one of the sample shares during the establishment period.

$$CU_j = \sum_{t=1}^{n} U_{jt}$$

Wherein:

$CU_j$ : Additional return for j[th] stock market cumulatively and n: number of the years during the establishment period.

Then based on $CU_j$ by using Minitab software, companies are categorized into 3 portfolios as the following in each time period. 40% of the companies with the highest $CU_j$ are categorized in the winner portfolio, 40% of the companies with the lowest $CU_j$ are categorized in the loser portfolio and the rest 20% are eliminated.

Determination of the winner and the loser portfolios based on the variables except the return variable:

For this, the geometric average of the growth rate is calculated for the noted variable during the establishment period. For example, if the establishment period is 4years; firstly,the geometric average of the growth rate of the variables during 1382 ~85 will be calculated. Then by Minitab software, the 40% and 60% categories whichdivide the companies into low 40%, average 20% and high 40% are acquired in which the low 40% category is specified as the loser group and the high 40% as the winner group.

The average growth rate of each variable is calculated as the followings:

$$VGit = \left[\pi(1+i)\right]^{\frac{1}{t}} - 1$$

Wherein:

VGIT: average growth rate for V variable and i: growth rate of the noted variable during the establishment period.

Second Stage:

In this stage,the Overreaction to 7 variables in 16 various test and establishment periods, regarding the Table 1, are studied separately in 112 theories:

Table (1): The Research Establishment and Test periods

| Test Period year | Establishment Period year | Test Period (year) | Establishment Period (year) | Period |
|---|---|---|---|---|
| 89 | 88 | 1 | 1 | First |
| 88-89 | 87 | 2 | 1 | Second |
| 87-88-89 | 86 | 3 | 1 | Third |
| 86-87-88-89 | 85 | 4 | 1 | Fourth |
| 89 | 87-88 | 1 | 2 | Fifth |
| 88-89 | 86-87 | 2 | 2 | Sixth |
| 87-88-89 | 85-86 | 3 | 2 | Seventh |
| 86-87-88-89 | 84-85 | 4 | 2 | Eighth |
| 89 | 86-87-88 | 1 | 3 | Ninth |
| 88-89 | 85-86-87 | 2 | 3 | Tenth |
| 87-88-89 | 84-85-86 | 3 | 3 | Eleventh |
| 86-87-88-89 | 83-84-85 | 4 | 3 | Twelfth |
| 89 | 85-86-87-88 | 1 | 4 | Thirteenth |
| 88-89 | 84-85-86-87 | 2 | 4 | Fourteenth |
| 87-88-89 | 83-84-85-86 | 3 | 4 | Fifteenth |
| 86-87-88-89 | 82-83-84-85 | 4 | 4 | Sixteenth |

Theories of this stage are as the following:

The cumulative average residual return of the loser portfolios, based on the ratio of operational profit to the investment during various test periods, is higher than the same amount of the winner portfolios.

The average additional accumulated return for the loser portfolios, based on the ratio of the operating cash flow to the investment during various test periods, is higher than the same amount of the winner portfolios.

The cumulative average residual return for the loser portfolios, based on the ratio of thereturn on assets to the investment during various test periods, is higher than the same amount of the winner portfolios.

The cumulative average residual return for the loser portfolios, based on the earnings per share during various test periods, is higher than the same amount of the winner portfolios.

The cumulative average residual return for the loser portfolios, based on the return on equity during various test periods, is higher than the same amount of the winner portfolios.

The cumulative average residual return for the loser portfolios, based on the operating cash flow during various test periods, is higher than the same amount of the winner portfolios.

The cumulative average residual return for the loser portfolios, based on the stock return during various test periods, is higher than the same amount of the winner portfolios

Following the most researches about the Overreaction, the research period based on the table 1, is divided into the test and establishment periods. Regarding that the research theories supposed to be tested during different periods,the research period has been divided into 16 different establishment and test periods and all the stages of the research and theories test is performed separately for each of the periods. For example, 7 research theories for 1year establishment period and 1year test period (first period) are examined and tested and similarly these 7 theories will be performed for 1year establishment period and 2years test period (second period) as well.So,the research stages are recurred 16 times. In the establishment period, the companies' shares are categorized to the winner and the loser portfolios based on the 7variables of the research and the efficiency of the winner and the loser portfolios will be surveyed in the next period (test period) to specify whether the return contrarian (the losers outrun the winners) happened or not?

After specifying the winner and the loser portfolios, the following stages are necessary to test the first stage theories:

The average residual return ($ARR_{pt}$) for both the winner and the loser portfolios in the test period is calculated as the following:

$$ARR_{pt} = \sum_{j=1}^{n} \frac{1}{n} U_{jt}$$

Wherein:

$p$ : The winner orthe loser portfolio type, $n$ : number of the shares in the winner or the loser portfolio and $t$ : the noted year in the test period.

Then the calculated average residual return during the test period years are summed to calculate the cumulative average residual return ($CARR$). This calculation will be done for both the winner and the loser portfolios separately:

$$CARR_{p} = \sum_{t=1}^{t} ARR_{pt}$$

Wherein:

$CARR_p$: cumulative average residual return of portfolio, $ARR_{pt}$: average residual return of portfolio in $t^{th}$ year, p: the winner or the loser portfolio, t: noted year in the test period.

Now, the assumed test is designed for the research theories test as the following:

$$\begin{cases} H_0 : CARR_L - CARR_W \leq 0 \\ H_1 : CARR_L - CARR_W > 0 \end{cases}$$

So:

$CARR_L$ : Cumulative average residual return of the loser portfolio in the test period

$CARR_W$ :Cumulative average residual return of the winner portfolio in the test period

Third Stage:

In this stage, for each one of the 7 variables in everytest and establishment period which have had the most Overreactions, the difference of the average return of the loser and the winner portfolio is calculated and the best contrarian investment method is determined by the tukey test. The kind of the Overreaction in different periods could be determined by the study of the shareholders' Overreaction in different periods.

## 5- RESEARCH THEORIES RESULTS

Research theories are designed in 2 phases regarding the research subject.

### 5-1- Test Results of the First Stage Theories

In this stage,the Overreaction to the noted 7 variables in 16 different test and establishment periods are surveyed separately in 112 theories. The results of this stage are shown in tables2 and 3:

Table 2: confirmation or rejection of $H_0$ theory during first to eighth stages (Theories 1 ~56)

| Variable | First Period | Second Period | Third Period | Fourth Period | Fifth Period | Sixth Period | Seventh Period | Eighth Period |
|---|---|---|---|---|---|---|---|---|
| The ratio of operating profit to investment | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| The ratio of operating cash flow to investment | ✓ | ✓ | × | ✓ | ✓ | × | ✓ | × |
| Return on assets | ✓ | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Earnings per share | ✓ | ✓ | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| Return on equity | ✓ | ✓ | × | ✓ | ✓ | ✓ | ✓ | × |
| Operating Cash Flow | × | × | ✓ | × | × | ✓ | × | × |
| Stock return | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | × | ✓ |

Table 3: confirmation or rejection of $H_0$ theory during ninth to sixteen stages (Theories 57 ~112)

| Variable | First Period | Second Period | Third Period | Fourth Period | Fifth Period | Sixth Period | Seventh Period | Eighth Period |
|---|---|---|---|---|---|---|---|---|
| The ratio of operating profit to investment | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| The ratio of operating cash flow to investment | ✓ | × | × | × | ✓ | ✓ | ✓ | × |
| Return on assets | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Earnings per share | × | ✓ | ✓ | ✓ | × | × | × | ✓ |
| Return on equity | ✓ | × | ✓ | ✓ | ✓ | ✓ | × | ✓ |
| Operating Cash Flow | ✓ | ✓ | ✓ | × | ✓ | ✓ | ✓ | × |
| Stock return | × | ✓ | × | × | × | × | ✓ | ✓ |

Rejection of $H_0$ theory means confirmation of the Overreaction to the noted variable. In other words, if the return fluctuationaverage of the loser companies minus the return fluctuation average of the winner companies is meaningfully higher than zero, there is Overreaction; and in case of anOverreaction, it could be deducted that using of the contrarian investment with the noted variable will be profitable.
Ranking of variables based on their reaction intensity for 16 research periods is shown in Table.4:

Table 4: Ranking of the variables which cause the reaction (based on reaction intensity)

| Period | First Rank | Second Rank | Third Rank |
|---|---|---|---|
| 1 | Operating Cash Flow | | |
| 2 | Operating Cash Flow | Return on assets | |
| 3 | Earnings per share | Return on equity | The ratio of operating cash flow to investment |
| 4 | Operating Cash Flow | | |
| 5 | Operating Cash Flow | | |
| 6 | The ratio of operating cash flow to investment | | |
| 7 | Stock return | Operating Cash Flow | |
| 8 | Return on equity | The ratio of operating cash flow to investment | Operating Cash Flow |
| 9 | Earnings per share | Stock return | |
| 10 | Return on equity | The ratio of operating cash flow to investment | |
| 11 | The ratio of operating cash flow to investment | Stock return | |
| 12 | The ratio of operating cash flow to investment | Operating Cash Flow | Stock return |
| 13 | Earnings per share | Stock return | |
| 14 | Earnings per share | Stock return | |
| 15 | Return on equity | Earnings per share | |
| 16 | Operating Cash Flow | The ratio of operating cash flow to investment | |

5-2- Test Results of Second Stage Theories

In this stage, the difference in the average return for the winner and the loser portfolio is calculated for each of 7 variables which showed the most reaction in each one of the test and establishment periods. Results of this stage are shown in Table5.

Table 5: calculation of the difference in the average return of the winner and the loser portfolios in each period

| Period | Establishment Period | Test Period | Variable | 1 | 2 | 3 |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | Operating Cash Flow | 35.8 | 32.1 | 3.7 |
| 2 | 1 | 2 | Operating Cash Flow | 39.3 | 30.8 | 8.5 |
| 3 | 1 | 3 | Earnings per share | 45.3 | 36.4 | 8.9 |
| 4 | 1 | 4 | Operating Cash Flow | 45.3 | 43.4 | 1.9 |
| 5 | 2 | 1 | Operating Cash Flow | 43.5 | 40.0 | 3.5 |
| 6 | 2 | 2 | The ratio of operating cash flow to investment | 38.7 | 32.3 | 6.4 |
| 7 | 2 | 3 | Stock return | 43.2 | 40.5 | 2.7 |
| 8 | 2 | 4 | Return on equity | 45.3 | 38.4 | 6.9 |
| 9 | 3 | 1 | Earnings per share | 44.8 | 39.1 | 5.7 |
| 10 | 3 | 2 | Return on equity | 44.3 | 41.6 | 1.7 |
| 11 | 3 | 3 | The ratio of operating cash flow to investment | 45.7 | 42.1 | 3.6 |
| 12 | 3 | 4 | The ratio of operating cash flow to investment | 39.9 | 36.7 | 3.2 |
| 13 | 4 | 1 | Earnings per share | 39.9 | 34.9 | 5 |
| 14 | 4 | 2 | Earnings per share | 37.4 | 32.5 | 4.9 |
| 15 | 4 | 3 | Return on equity | 45.0 | 38.5 | 6.5 |
| 16 | 4 | 4 | Operating Cash Flow | 38.9 | 35.0 | 3.9 |

(1): Abnormal average residual return of the loser portfolio in the test period(%)
(2):Abnormal average residual return of the winner portfolio in the test period(%)
(3): Abnormalaverage returndifference of the winner and the loser portfolios in the test period[(1)-(2)]

Tukeymultiple comparing test is used to rank the variables with the most reactions in each period.This test compares, ranks and categorizes several variables averages. Result of this test is shown in the table 6 by using the Minitab software:

Table 6: Ranking the most reacted variables in each period

| Group | Establishment Period | Test Period | Variable | Rank |
|---|---|---|---|---|
| First Group | 1 | 3 | Earnings per share | 1 |
| Second Group | 1 | 2 | Operating Cash Flow | 2 |
| | 2 | 4 | Return on equity | 3 |
| Third Group | 4 | 3 | Return on equity | 4 |
| | 2 | 2 | The ratio of operating cash flow to investment | 5 |
| | 3 | 1 | Earnings per share | 6 |
| Fourth Group | 4 | 1 | Earnings per share | 7 |
| | 4 | 2 | Earnings per share | 8 |
| | 4 | 4 | Operating Cash Flow | 9 |
| | 1 | 1 | Operating Cash Flow | 10 |
| Fifth Group | 3 | 3 | The ratio of operating cash flow to investment | 11 |
| Sixth Group | 2 | 1 | Operating Cash Flow | 12 |
| | 3 | 4 | The ratio of operating cash flow to investment | 13 |
| | 2 | 3 | Stock Return | 14 |
| | 1 | 4 | Operating Cash Flow | 15 |
| Seventh Group | 3 | 2 | Return on equity | 16 |

Due to the tables 5 and 6, it is determined that the earnings per share in 1year establishment period and 3year test period has abnormal average return difference about 8.9 which is the highest average difference between other variables and periods. So,the highest profitability of the contrarian investment strategy could be achieved by using the ratio of the earnings per share in 1year establishment period and 3yearstest period. Also due to the tables 4 and 5, it is determined that the investors have reacted excessively to some special variables through changing the establishment and the test periods. For example, they reacted excessively to the operating cash flow variable in the first period but in the third period they reacted excessively to the earnings per share variable. So the result is that the shareholders react excessively to some specialvariables in the test and establishment periods. Also, it is specified that the variables such as the operating cash flow and the ratio of the operating cash flow to the investment have raised the Overreactions in most of the periods.

## 6- DISCUSSION, DEDUCTION AND SUGGESTIONS

During several decades, the efficient market theory has been one of the most outstanding subjects in the financial market studies that raised a considerable interest in the financial economists on the efficiency of stock markets ( Tripathi et al., 2009). Many studies in the recent decades explain the foresight of the future procedure of the stock returns using the procedure seen on the past periods. The confirmation of the matter is, in fact, an important challenge for the efficient market theory (Fama, 1970). If the market loses its efficiency, the investment return could be increased by using the effective investment strategies. The contrarian investment strategy is one of these strategies. Therefore, the share priceOverreaction and the profitability of the contrarian investment strategy to gain the return in the Iran Stock Exchange have been studied in this research.

The following deductions have been made regarding the research theories:

Gaining the additional return is possible by using the contrarian investment strategy in the capital market of Iran, which is confirming the low efficiency of the TSE.

The shareholders react excessively to some especial variables during each establishment and test period and their reaction to them is different based on the changing of the establishment and test periods.

Using the variable of earnings per share in a one year establishment period and a three year test period could bring the maximum profitability of the contrarian investment strategy.

The operating cash flow and the ratio of the operating cash flow to the investment are more prevalent among the variables with the Overreaction and this case shows that the TSE investors have noticed the operating cash flow more.

Regarding the research results, the additional return could be gained by using the contrarian investment in the TSE. It is recommended that the investors consider this methodology while making investment decisions. Also, to gain the return by using the contrarian investment strategy, the establishment and test periods should be at first identified and then the contrarian investment strategy should be applied using an especial variable.

Regarding that this research results could be used for other researches in this field, so it is recommended that the following is considered as the future researches:

Repetition of this research considering other variables such as the ratio of the operating cash flow to the share price, the ratio of the net sale to the share price.

Review of the possibility to present a new variable for using in the contrarian investment that performs better than using the past financial performance criteria of the companies like the profit and sale.

Review of the relationship between the establishment and test period of the portfolio with the investors' strong Overreaction.

Review of the relationship between the size and the industrial field of the company with the investors' Overreaction.

Performing this research during a less than 12 months period and comparing the results from using the contrarian investment strategy with the results from using the continuous investment strategy (relative strength Index)

## REFERENCES

1.Ahmad, zand andS.Hussain.(2001)." Kuala iumpur stock exchange long run overreaction and the Chinese new year effect", journal of business finance and accounting, vol.28, pp. 63-105.

2.Ali, Norli , Nassir, AnnuarMd, Hassan, Taufiq and Abidin, Sazalizainal.(2009). "does bursa malaysia overreaction?", journal of finance and economics, No.34/2009, pp.175-193.

3.Alwathainani, Abdulaziz m.(2006). "Do investors overreact patterns of past financial performance measures?", working Paper, virginia commonwealth University.

4.Damodaran,Aswath(2007),"Return on Capital (ROC), Return on Invested Capital (ROIC)

And Return on Equity (ROE): Measurement and Implications",working paper, New York University - Stern School of Business.

5.De Bondt W, R. H Thaler (1985). "Dose the Stock Market Overreact?"Journal of Finance, Vol. 40: 793-805..

6.Dreman, D.N. 7 M.A. Berry.(1995). " Overreationunderreaction and the low- ple effect". Financial Analysts Journal, July- August. P21-30.

7.Fama , E. (1970) , "Efficient Capital Markets: A Review of Theory and Empirical work", Journal of Finance ,25 , 333-417.

8.Foster, Kevin R and Kharazi,Ali.(2007). "Contrarian and Momentum Return on Iran's Tehran Stock Exchange", Journal of International Financial Markets, Institutions & money, Vol. 17, pp.1-150.

9.Horan, Margaret and College, Wagner(2012),"Are buyback increasing EPS?", journal ofAccounting and Taxation , ,vol.4, No.1.

10.Garrison, Ray H & Noreen, Erric W & Brewer, Peter C.(2008). Managerial Accounting.Published by MCGRAW-HILL/IRWIN.Library of Congress Cataloging-in-Publication Data.

11.kadoya, susuma, Kuroko, Takashi and Namatame, Takashi.(2008). "contrarian investment strategy with data envelopment analysis concept", jornal of operational research, vol.189, pp.120-131.

12.Kenourgios, dimitris and pavlidis, nikolaos.(2005). "Individual Analysts' Earnings Forecasts:Evidence for Overreaction in the UK Stock Market", jornal of International Business and Economics Research Journal, Vol. 3, No. 9, pp.95-106.

13.Moradi, Mehdi, Salehi, Mahdi andHasanzadehnamaghi, Afshin.(2011)."An evaluation of investors overreaction to past financial function criteria: IrNIAN EVIDENCE", journal of Business Management, vol.5(15), pp.6103-6109.

14.Nicoletti, n.(2004). On The Profitability Of 12 Fundamental Analysis Strategies On The NASDAQ 100. http://www.ssrn.com.

15.Soares, J. V. and A. P. serra.(2005). "Overreaction and Underreaction: Evidence for Portuguese Stock Market", working Paper, university of Porto.

16.Tripathi, vanita and aggarwal, shalini.(2009)." overreaction effect in Indian stock market",jornal of business and accounting , vol 1-2, pp.93-114.

17.William R.Scott.(2009)," financial accounting theory(5$^{th}$ edition)", pearson education, Toronto, Canada.

18.Wu, Yuliang, Li, Youwei and Hamill, Philip.(2011). "do low-priced stocks drive long-term contrarian performance on the on the london stock exchange?"