# The Effect of Real Investors on the Inefficiency of Stock Returns of Tehran Stock Exchange

## Mehran Ansari[1], Hojat Jafari[2], *

[1]Faculty of Management and Accounting, Tehran University, Tehran, Iran

[2]Abadan Faculty of Petroleum Engineering, Petroleum University of Technology, Abadan, Iran

**Email address:**

Hojatjafari80@gmail.com (H. Jafari)

*Corresponding author

**Abstract:** Fluctuations in stock returns and the factors that affect them are controversial in financial research. Institutional investors, as a group of investors, play an important role in the economic development of the capital market through their access to huge financial resources. But real investors may not be able to achieve the return and profitability due to the scarcity of their financial resources. Accordingly, the study of the role of real investors in the volatility of stock returns is very important. The present study aims to find evidence for the relationship between real investors in open volatility of ten stocks. Few studies of financial market irregularities and the behavior of capital market investors have focused on the results. By challenging the efficient market hypothesis, it is clear that real investors raise the stock price of companies that have been successful over time. The real price and the price of unsuccessful stocks are lower than the real price, but over time the market realizes its mistake and the prices return to equilibrium. Acceptance of stock returns is irregular (Tehran Stock Exchange). In order to achieve the research goal, ten-year information (2009-2019) of 140 companies by judicial sampling method was studied. This research is applied in terms of purpose and testing the hypotheses of logit and cross-sectional regression. Fama and French three-factor model and Carhart's four-factor model were used. The results indicate that the relationship between stock price jump and real investors has been explained and finally practical suggestions have been provided.

**Keywords:** Market Anomalies, The Effect of Falling, Mutations, Real Investors

## 1. Introduction

All rational investors who seek to maximize their wealth want to maintain a diverse portfolio of their assets. To this end, they try to reach a level of risk that is consistent with their expectations. The appropriate criterion for the risk of a single asset in this case is the simultaneous measurement of its movement with the market portfolio [1]. This move, which is measured by the market portfolio covariance, is known as the systemic risk asset, i.e. the balance sheet. Portfolio acceptance is the whole market. The assumption of these risk-only assumptions for a particular asset is a function of the systematic asset risk with the total portfolio of risky asset markets. In the financial literature, the systematic risk criterion is called beta. In other words, beta is a measure of the sensitivity of a stock's return to market returns [2, 3]. Capital asset pricing model is one of the stock return forecasting models that has been used for many years. In this model, it is assumed that investors can only achieve additional returns by bearing additional risk. In this model, if the investor's goal is to gain more than the market profit, he will bear the risk higher than the market risk. The beta coefficient in this model has the necessary ability to predict the number of stocks. One of the important factors for determining the buy or sell stocks of a company is to predict the stock return of that company. Many researchers believe that the pricing model of capital assets is the correct model. In the real world, beta is also related to efficiency, and to some extent has confirmed the initial empirical evidence for this theory [4]. On the other hand, studies in many countries have challenged the empirical evidence for this theory with significant challenges, claiming that beta, as a systematic risk indicator, has lost the description of the relationship between risk and return in the long run. This is while other variables

such as sales growth, the Mali crisis index, etc. are also influential on all three, which may lead to better alternatives relative to the number [5]. Therefore, the variables that are not explained by this model are often considered as exceptions to the majority of stocks. Traditionally, financial economists believe that micro-investors are not entirely rational and often act as noisy traders, while they view institutions as well-known and complex investors [6-8]. Researchers have also found that higher-risk stocks will be preferred by real and small investors as a high-priority choice over legal investors, and these deviations will be in stocks that the investor. No rights are more. If real shareholders and smallholders enter a large share of their wealth into a high-risk share, if the share is affected, they will not only not be more efficient, but the shareholder will lose a lot of profit, and if they jump, they will be more profitable than The time allotted to him should be earned, which is beyond the factors influencing the return of shares in the financial literature [9]. So one of the things that changes the price and consequently the stock returns is the behavior of the micro-investor.

In different texts, stock returns depend on the characteristics of the company. Also, pricing theories are directly related to the relationship between risk and stock returns. For example, it has been documented in the financial literature that stock returns are as large as the company. Bazaar) Novak, 2000 (past returns) Titman, 1993 (special fluctuations) Zhang, 2006 (and probability of failure) John, 2008 (dependent). But sometimes portfolios with these conditions yield unusual positive or negative returns and factors such as The behavior of real or legal shareholders causes a change in stock returns. Therefore, stock returns cannot be achieved by existing theories. Determined the factors that are interpreted as stock yield deviations. By studying these deviations shown in research (Conrad, 2014), high-risk stocks should achieve high returns while in reality their average low average income is related. With this in mind, Junk and Kunk found high-risk, low-yield stocks (Altman, 2013) [10-15].

In any financial market, due to its breadth and depth, there are various tools for investing in which investors invest with regard to returns and risk of assets. There have been many studies on the relationship between return and risk. Various models, such as the single-factor model and the multi-factor model, have sought to establish a relationship between risk and return on investment. Researchers such as William Sharp, Stephen Ross, Fama, and French have proposed CAPM, APT, and three-factor models, respectively, to examine the relationship between returns and risk factors, Ghaemi and Tousi, 2006. However, there is still ongoing controversy. Whether the expected returns are explained by the risk factors or non-risk characteristics of the company [16-20].

Capital asset pricing model) is CAPM (equity measurement method. Capital asset pricing model is the only determinant of stock return difference defining system risk or beta coefficient. However, the available empirical evidence suggests as a systematic risk indicator, beta alone does not have the power to explain stock return differences, and other variables such as company size, price-to-earnings ratio, book value to market, real-to-legal number of shares, stock turnover, company liquidity, and sales Participation and play an effective role in explaining stock returns. The number of real shareholders in between As a series of irregularities in the stock return is that stock returns are very effective at this point to them [21-23].

This study was previously conducted in the United States in 2003 and in Korea in 2017. The behavior of real investors in relation to the effects of jumping and falling is different, and in this study we want to work with Iranian investors on their behavior. Understand these two effects and their impact on stock returns. The next important point here is that there was no daily volume information available in the US study, whereas in the present study we have daily volume, real and legal information [24].

Investigating the factors influencing efficiency has always been a controversial issue for researchers. The importance of the relationship between real investors and the returns received is that when the ratio of real investors to legal one's changes, for example, real investors with their behaviors cause a share not to go through its normal process. Suddenly cause a share to fall or jump, which is a very important share for investors because, for example, a 50% drop in a billion-dollar capital leads to millions or billions in losses, and by examining this, one can capitalize on one's own capital. Keep away from these risks.

# 2. Research Methods

Research method as a systematic process to find the answer to a question or solution to a problem. In other words, the research method is a set of rules, tools and valid and systematic ways to examine facts, discover unknowns and Achieving a solution is difficult. Research methods can be classified according to various criteria. In behavioral science, they can be divided according to the purpose of the research and how the data is collected. The method used in this research is based on the purpose of the applied type and its data using the post-event approach) through past information (in terms of data collection method, descriptive correlation research and its main purpose is to determine the existence, amount and The type of relationship between the variables being tested.

## 2.1. Statistical Society

Statistical community is a set of individuals or units that have at least one common trait. The statistical sample is "a set of signs that are selected from a part, a larger group or community, so that this set represents the qualities and characteristics of that part, group or larger community. According to the research literature, judging sampling method was used in this research. In this type of sampling, individual's companies are selected for the sample that are in the best position to provide the required information. To select sample companies, out of nearly 800 companies that

have been downgraded based on the number of trading days in the period of 09-19 and 38 companies that were ranked among the highest and lowest rankings were selected. The selection of each company requires the following sample conditions. The final sample includes 38 companies.

The companies considered in this study were selected according to the following conditions:

Companies listed on the Tehran Stock Exchange until the end of 2019 must have at least three years of data.

Companies that have valid data for all variables for five years

Provide the complete information required for this research during the research period.

## 2.2. Data Collection Method

In the present study, information related to the theoretical foundations and research literature has been provided by studying domestic and foreign articles in prestigious scientific journals and internal dissertations, through library studies. Financial information of companies listed on the Tehran Stock Exchange also includes financial reports of companies from the website of the Tehran Stock Exchange and other required information from electronic documents available on the website of the Tehran Stock Exchange and the software available in the capital market. Such as Rahvard Novin and other reputable sources have been collected. The data analysis method in this study consists of two stages, in the first stage, after collecting and analyzing the data, polygonal logit regression has been used to estimate the probabilities of crash and jackpot. In the second stage, using data. Crash and jackpot probabilities. The data are sorted by these probabilities and are divided into 10 portfolios arranged in each section based on probabilities. Then the return on portfolios, each of which is a time series, is obtained each month. The efficiency is then estimated at T +2 and at the end the data of each portfolio is compared with other portfolios sorted based on different probabilities. In addition, the independent variables of each portfolio are compared based on a significant degree with the characteristics of other portfolios. Then we will find out the relationship between probabilities and the rate of return that if there is a significant relationship between probabilities and returns in each portfolio and from a higher level among all portfolios, our hypothesis will be proven and also in the case of our sub-hypotheses.

It should be noted that the yield of each portfolio i classified portfolios was calculated based on the probabilities of Crash and Check pat on average, the weighted returns of the stock returns of the companies in the portfolio

$$R_{i,t} = K_1 R_{1,t} + K_2 R_{2,t} + \cdots + K_n R_{n,t} \qquad (1)$$

$R_i$: Monthly return on i portfolio

$R_n$: Monthly Money yield of shares of company n available in i portfolio

$K_n$: The ratio of the market value of the company's stock to the market value of the total stock of the companies in portfolio i.

## 2.3. Normal Test

In statistical analysis, the normality of the data, especially the dependent variable, is of particular importance. The Kolmogorov-Smirnov test was used to test the normality of the data. This test is a simple nonparametric method for determining the homogeneity of experimental information with selected statistical distributions. If the statistical significance level is less than the α value, the null hypothesis is rejected and if it is larger, the null hypothesis is accepted.

## 2.4. The Correlation Coefficient

The correlation coefficient is used to determine the relationship between quantitative and nominal variables. The correlation coefficient varies from 1- to +1. A positive sign indicates that the relationship is direct and a negative sign indicates that the relationship between the two variables is reversed. Based on this, it can be claimed that by increasing one variable, the other variable increases or decreases. If the correlation coefficient is zero or close to zero, it is a sign that there is no relationship between the two variables. Shows the value of the existing or non-existent relationship between the two variables. Which can be studied at three levels of α) one percent, five percent, ten percent (in this study. Pearson correlation coefficient is used in the descriptive statistics section of the data.

The Pearson correlation coefficient is calculated as follows:

$$r = \frac{\sum xy - n\bar{x}\bar{y}}{\sqrt{\sum x^2 - n\bar{x}^2}\sqrt{\sum y^2 - n\bar{y}^2}} \qquad (2)$$

This correlation coefficient is a parametric method and is used for data with normal distribution or large number of data.

## 2.5. Manai Test

Panel data is a set of data based on which observations are made by a large number of cross-sectional variables, represented by (N) and often randomly selected, over a specified period of time (T). Be located. This N * T is called statistical data. Panel data or cross-sectional data is a time series. Later, when most of the time series were rejected, the use of variables depended on the performance of the related tests. On the other hand, due to concerns about the existence of a random trend and false regression between variables, researchers before testing, test the existence of a single root in the variables. Therefore, before estimating the model, to ensure that it is not fictitious and to have uncertain results, it is necessary to make sure that the variables are stable. The basis of the unit root test is based on the logic that when 1r=is not a mana process. If the model variables are not mana, there is a possibility of fictitious regression. To avoid fictitious regression situations, the common test can be used as a pretest. In this way, the results can be trusted only in the collective context of the variables. Therefore, it is important

to examine the coexistence of variables in panel data.

## 2.6. Limer Test

Coexistence is a phenomenon that describes a situation in which a "descriptive variable" in "multiple regression" has a linear relationship with one or more other variables so that it can be considered as a linear combination of other variables. In this way, "multiple linearity" also indicates a situation where there is a linear relationship between several descriptive variables and they can be written as a linear combination of each other. In principle, due to the multiple regression method and its assumptions, the existence of independence among descriptive variables is essential [25].

## 2.7. F-LIMER Test

In estimating a model whose data is a combination type, the type of estimation pattern must first be determined. In other words, it must first be examined on which floor the panel or panel is placed. In the case of hybrid data, first test F (Chao test) to select the method of estimating the model from two solutions polling and paneling [26]. The first step in estimating panel data is to determine the constraints imposed on the econometric model. In other words, we must first determine whether the regression relationship in the sample under study has a width of inhomogeneous origin and a homogeneous slope, or that the hypothesis of a common origin and a common slope between sections) is a model of integrated data (accepted for this purpose). Based on this test, we first estimate the model in an unconventional way and in the general case by estimating the width of the common origins and common slopes and calculating the amount of regression residues, then the model is constrained and assuming the width. We estimate heterogeneous origins between common sections and slopes and obtain bound residual values. If the value of F calculated from the table F is greater with the specified degrees of freedom, the hypothesis H0 based on the homogeneity of sections and widths is rejected from the same origin, and therefore the group effects are accepted [27]. The panel was used for estimation, but if the H0 hypothesis is accepted, it means that the slopes are the same for different sections, and the ability to combine data and use a model of integrated data is statistically confirmed.

## 2.8. Hausman Test

The most common test to determine the type of panel data model is the Hausman test. This test is estimated based on the presence or absence of a relationship between regression error and the independent variables of the model. In other words, if the panel data method was chosen based on the F-Liner test, the question arises as to whether the difference in width across the origin of the cross-sectional units is consistent or whether random functions can clearly distinguish between the units. Terry states that these two methods are called fixed effects and random effects, respectively. To determine this, the Hausman test is used. In this test, the null hypothesis on the data panel model with random effects and the opposite hypothesis on the data panel model with constant effects. If the Hausman test statistic is larger than its critical values or statistics The probability is less than 5%. The null hypothesis is rejected and the hypothesis that the model of constant effects is confirmed is accepted [28].

## 2.9. Descriptive Statistics of Research Data

Descriptive statistics refer to classifying, summarizing, describing, interpreting, and graphically displaying data to communicate the researcher with the data. The role of descriptive statistics as the first step in the statistical analysis process is very important and vital [29]. Descriptive Statistics by summarizing the data, it highlights its important features to provide the necessary ideas in the researcher's mind for the second stage of statistical analysis) inferential statistics (create and show the overall distribution of the mother community to adopt statistical methods.

# 3. Data Retention Test

Before regenerating the multinomial data of the panel data that we have, we must first perform a series of tests on our data, and these results were first performed with the Manai test. According to the Mania test and the comparison between the numbers in Tables 1 to 10, we conclude that the variables Y, TVOLM, TURN, TSKEW, SALES, RM, RTPM, CRRNT are Mana and the SIZEM and AGE variables are unambiguous [30-33].

*Table 1. Age variable test.*

| Panel unit root test: Summary | Series: AGE | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 1.08668 | 0.1386 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 0.78531 | 0.2161 | 31 | 2470 |
| ADF - Fisher Chi-square | 57.723 | 0.6304 | 31 | 2470 |
| PP - Fisher Chi-square | 58.2257 | 0.6125 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

***Table 2.*** *CRRNT variable test.*

| Panel unit root test: Summary | Series: CRRNT | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 0.34385 | 0.6345 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 0.90475 | 0.0828 | 31 | 2470 |
| ADF - Fisher Chi-square | 71.802 | 0.0849 | 31 | 2470 |
| PP - Fisher Chi-square | 76.0845 | 0.0107 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

***Table 3.*** *RM variable test.*

| Panel unit root test: Summary | Series: RM | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 0.61025 | 0.7292 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 5.78944 | 0 | 31 | 2470 |
| ADF - Fisher Chi-square | 141.855 | 0 | 31 | 2470 |
| PP - Fisher Chi-square | 162.929 | 0 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

***Table 4.*** *RTPM variable test.*

| Panel unit root test: Summary | Series: RTPM | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| CrossMethod | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 13.6008 | 0 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 17.1861 | 0 | 31 | 2470 |
| ADF - Fisher Chi-square | 441.143 | 0 | 31 | 2470 |
| PP - Fisher Chi-square | 438.126 | 0 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

***Table 5.*** *SALES variable test.*

| Panel unit root test: Summary | Series: SALES | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 0.02738 | 0.4891 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 2.90496 | 0.0018 | 31 | 2470 |
| ADF - Fisher Chi-square | 95.0853 | 0.0044 | 31 | 2470 |
| PP - Fisher Chi-square | 107.650 | 0.0003 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

***Table 6.*** *SIZEM variable test.*

| Panel unit root test: Summary | Series: SIZEM | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |

| Panel unit root test: Summary | Series: SIZEM | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 0.204460 | 0.5810 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 0.23347 | 0.5923 | 31 | 2470 |
| ADF - Fisher Chi-square | 56.9415 | 0.6580 | 31 | 2470 |
| PP - Fisher Chi-square | 62.8853 | 0.4447 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

*Table 7. TSKEWM variable test.*

| Panel unit root test: Summary | Series: TSKEWM | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 17.1984 | 0 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 17.3659 | 0 | 31 | 2470 |
| ADF - Fisher Chi-square | 432.507 | 0 | 31 | 2470 |
| PP - Fisher Chi-square | 391.444 | 0 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

*Table 8. TURN variable test.*

| Panel unit root test: Summary | Series: TURN | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 3.13946 | 0.9992 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 1.14912 | 0.1253 | 31 | 2470 |
| ADF - Fisher Chi-square | 77.6365 | 0.0870 | 31 | 2470 |
| PP - Fisher Chi-square | 114.317 | 0.0001 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

*Table 9. TVOLM variable test.*

| Panel unit root test: Summary | Series: TVOLM | Exogenous variables: Individual effects | | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Cross Method | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 4.54901 | 0 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 6.41844 | 0 | 31 | 2470 |
| ADF - Fisher Chi-square | 145.078 | 0 | 31 | 2470 |
| PP - Fisher Chi-square | 155.296 | 0 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

**Table 10.** *Y variable test.*

| Panel unit root test: Summary | Series: Y | | Exogenous variables: Individual effects | |
|---|---|---|---|---|
| User-specified lags: 0 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| CrossMethod | Statistic | Prob.** | Cross Section | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | 8.33074 | 0 | 31 | 2470 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin Wstat | 13.2985 | 0 | 31 | 2470 |
| ADF - Fisher Chi-square | 311.229 | 0 | 31 | 2470 |
| PP - Fisher Chi-square | 310.733 | 0 | 31 | 2470 |

** Probabilities for Fisher tests are computed using an asymptotic Chi.
-Square distribution. All other tests assume asymptotic normality.

## 3.1. Compatible Data Test

After the data validity test, a consistent data test was performed, and in Table 11 we see the results of this test. According to this test, the correlation results between the data are very small and less than 0.05, so there is no sign of SALES, TURN, SIZEM, TSKEW, TVOLM data in any way. They are insignificant.

**Table 11.** *Compatible data test.*

| | RM | TVOLM | TSKEWM | SIZEM | AGE | TURN | CRRNT | SALES | RTPM |
|---|---|---|---|---|---|---|---|---|---|
| RM | 1.000000 | -0.000848 | -0.057304 | 0.036501 | 0.180980 | -0.012602 | -0.190958 | -0.020852 | -0.140547 |
| TVOLM | -0.000848 | 1.000000 | -0.028832 | -0.476608 | 0.065084 | -0.236666 | -0.014280 | -0.055150 | -0.018422 |
| TSKEWM | -0.057304 | -0.028832 | 1.000000 | 0.096899 | -0.015203 | 0.062594 | 0.030298 | 0.003801 | -0.108092 |
| SIZEM | 0.036501 | -0.476608 | 0.096899 | 1.000000 | -0.297518 | 0.594359 | 0.057273 | 0.021229 | -0.388477 |
| AGE | 0.180980 | 0.065084 | -0.015203 | -0.297518 | 1.000000 | -0.359011 | -0.161121 | -0.071967 | 0.065548 |
| TURN | -0.012602 | -0.236666 | 0.062594 | 0.594359 | -0.359011 | 1.000000 | 0.111795 | 0.019407 | -0.169395 |
| CRRNT | -0.190958 | -0.014280 | 0.030298 | 0.057273 | -0.161121 | 0.111795 | 1.000000 | 0.022056 | -0.013293 |
| SALES | -0.020852 | -0.055150 | 0.003801 | 0.021229 | -0.071967 | 0.019407 | 0.022056 | 1.000000 | 0.037509 |
| RTPM | -0.140547 | -0.018422 | -0.108092 | -0.388477 | 0.065548 | -0.169395 | -0.013293 | 0.037509 | 1.000000 |

## 3.2. F-Limer Test

According to the results of the F-Limer test, Table 12 shows that the probability is less than 0.05 and the assumption of zero is rejected and shows that the calculated F is larger than the degrees of freedom and shows that the data is a panel.

**Table 12.** *F-Limer test.*

| Redundant Fixed Effects Tests | Equation: Untitled | | Test cross-section fixed effects | |
|---|---|---|---|---|
| Effects Test | Statistic | Prob.** | d. f. | |
| Cross-section F | 5.613337 | 0 | 30،2461 | |
| Cross-section Chi-square | 165.53606 | 0 | 30 | |

## 3.3. Hausman Test

According to the Hausman test in Table 13 on the data, and given the probability of the probability being less than 0.05, it suggests that we should estimate the data by means of fixed effects.

**Table 13.** *Hausman test.*

| Correlated Random Effects - Hausman Test | Equation: Untitled | | Test cross-section random effects | |
|---|---|---|---|---|
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d. f | Prob | |
| Cross-section random | 16.207710 | 9 | 0.0427 | |

## 3.4. Normal Test

Figure 1 shows the descriptive characteristics of the data used, as well as the significance of the normality of the data, which indicates that the data is normal given the probability value of less than 0.05.
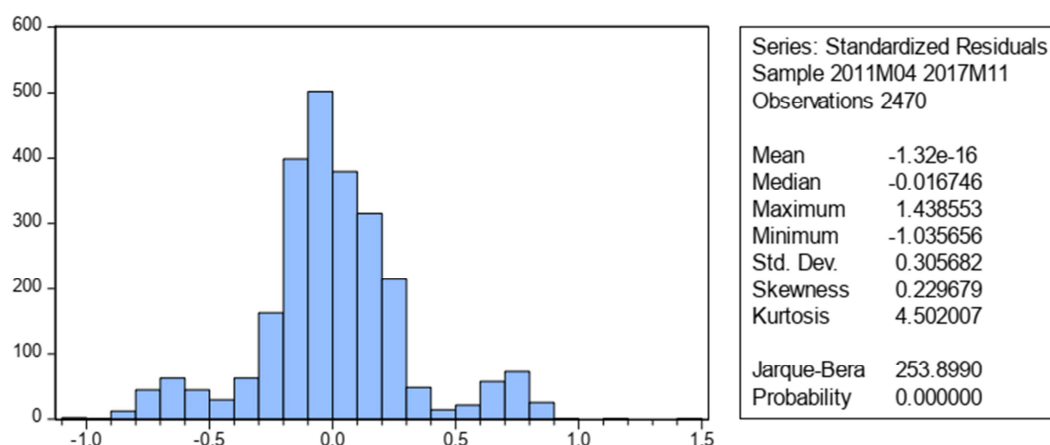
*Figure 1.* Data normalization test.

# 4. Result and Discussion

After ensuring the accuracy of the data, we begin to estimate the data. First, we obtain the general regression of the data by logit regression, and then we obtain the same work for Crash and Jackpot states, the only difference being the type of method in which Here we use the multinomial log regression method. The significant amount of data in Table 14 for TSKEW SIZEM AGE TURN CRRNT SALES variables is less than 0.05, which is very significant and shows that the yield is directly related to TVOLM SIZEM AGE SALES variables and is related to TSKEW TURN CRRNT RTPM variables. That is, the higher the sales of a company, the higher its return, and vice versa [34].

*Table 14.* Estimation of model by fixed effects method.

| Variable | Coefficient | Std. Error | t-Statistic | Prob |
|---|---|---|---|---|
| C | -1.706157 | 0.42490 | -4.015395 | 0.0001 |
| TVOLM | 11.66138 | 15.42934 | 0.755793 | 0.4498 |
| TSKEWM | -0.011101 | 0.012549 | -0.884611 | 0.3765 |
| SIZEM | 0.162979 | 0.033111 | 4.922143 | 0 |
| AGE | 0.027202 | 0.006781 | 4.011638 | 0.0001 |
| TURN | -5.93E-12 | 3.30E-12 | -1.796226 | 0.0726 |
| CRRNT | -0.000815 | 0.002029 | -0.401763 | 0.6879 |
| SALES | 0.000462 | 0.000400 | 1.156544 | 0.2476 |
| RTPM | -0.220144 | 0.057127 | -3.853572 | 0.0001 |
| AR (1) | 0.724988 | 0.014061 | 51.56015 | 0 |
| Effects Specification | | | | |
| R-squared | | 0.596884 | Mean dependent var | 0.385425 |
| Adjusted R-squared | | 0.590415 | S. D. dependent var | 0.571028 |
| S. E. of regression | | 0.365452 | Akaike info criterion | 0.840696 |
| Sum squared resid | | 324.5384 | Schwarz criterion | 0.934817 |
| Log likelihood | | -998.2598 | Hannan-Quinn criter. | 0.874888 |
| F-statistic | | 92.25763 | Durbin-Watson stat | 2.124982 |
| Prob (F-statistic) | 0 | | | |
| Inverted AR Roots | 0.72 | | | |

In Table 15, which was performed by multinomial regression, all data were first estimated as data panels and by multimedia regression, and the following data were obtained. The data is regressed as a panel and in sections of joint stock companies and their coefficients are significant at the level of 5%. The following table shows that the probability of crashing in stocks that have had positive returns in several periods is higher. In addition, there is a higher probability of crashing and falling prices in stocks that are larger in size, but in stocks that have benefited from a sharp rise in prices, the rate of return in previous periods has been negative and declining, and the size of the company is small. In addition, in the stocks that we have seen, we have a low turnover. But in the shares that have the possibility of a jackpot, the copper relationship The relationship with sales growth and the amount of real investors to the legal and negative relationship with the size of the company [35].

***Table 15.*** *Multinominal Data Regression.*

| Variable | Crash | | Jackpot | | $R^2$ |
|---|---|---|---|---|---|
| | Coefficient | Z-static | Coefficient | Z-static | |
| intercept | -2.670 | -9.348 | -0.952 | -11.548 | |
| R | 3.391 | -1.465 | -.3.423 | -3.867 | |
| Tvol | 34.801 | 16.305 | 23.073 | 9.639 | |
| Tskew | 0.889 | 2.375 | -.003 | 0.693 | |
| Size | 1.122 | 1.276 | -2.438 | -3.549 | 0.372 |
| Turn | -.017 | -0.245 | -0.003 | -2.507 | |
| Age | -0.098 | -8.306 | -1.85 | -13.924 | |
| Sales | 1.694 | 8.394 | 0.952 | 5.636 | |
| Rtp | -0.167 | 2.547 | 0.574 | 0.839 | |

So far, we've looked at the effects of Jackpot and Crash on past data, and we've seen what the effects of Jackpot and Crash have to do with past data. We estimate and then estimate the portfolios based on these probabilities, and then estimate the yield of 2t + portfolios, and in that case we also measure the relationship between different variables with Jackpot and Crash.

After the above step, we first estimate the probabilities of crash and jackpot. After estimating these two probabilities, we sort the data and arrive at two groups of 10 sorted stocks based on the probability of crash and jackpot. We now have two groups of 10 portfolios, each of which yields t. The following tables show the values of the independent variables of each portfolio with the possibility of a separate jackpot in each portfolio. The table below shows that as the probability of crash increases, the relationship of different variables to the rate of return in this case does not change completely, but if we compare the situation in which the highest probability of crash and the lowest probability of crash occurred in them, we will see that the increase in the probability of crashing the efficiency relationship with the CRRNT SIZEM TVOL Tskew decreases, the RTPM TURN increases.

***Table 16.*** *Coefficients of independent variables in Crash portfolios.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| TVOLM | 24.18081 | 5.850771 | 4.046184 | -2.85429 | -3.63034 | -6.81139 | -10.7448 | -11.3429 | -12.4811 | -17.8615 |
| TSKEWM | -0.009086 | 0.004536 | -0.02624 | 0.001080 | -0.00465 | -0.03471 | -0.02641 | -0.10660 | -0.01179 | -0.01298 |
| SIZEM | -0.004964 | 0.004152 | -0.01724 | -0.02065 | 0.049783 | 0.056144 | -0.03135 | 0.048530 | 0.001658 | -0.00998 |
| AGE | 0.005645 | 0.006077 | 0.007699 | -0.00219 | 0.012633 | 0.015126 | -0.00244 | 0.013148 | 0.012994 | 0.008127 |
| TURN | 1.95E-12 | 5.77E-12 | 7.21E-12 | 3.14E-12 | 4.17E-13 | 3.23E-12 | 9.60E-13 | -9.9E-12 | 1.17E-11 | 3.82E-12 |
| CRRNT | 0.002955 | 0.010846 | 0.001422 | 0.007945 | -0.05511 | 0.008881 | 0.000818 | -0.00174 | -0.02410 | 0.001430 |
| SALES | -0.000320 | 0.000119 | -0.00010 | 0.000246 | 0.000805 | 0.005820 | 0.000387 | 2.28E-05 | 0.002736 | -9.5E-05 |
| RTPM | -0.140041 | 0.091117 | -0.14010 | 0.049376 | 0.154677 | 0.164848 | -0.19160 | -0.18880 | -0.20653 | 0.051960 |

If we only take into account the coefficients of the first middle and end data of the Crash value, we will see that the probabilities are close to zero in the RTPM variable, which will increase the probability of real investors. And considering that its significance level is less than 0.05, it shows the significance of the null hypothesis and the impact of micro-investors on crash, and the obtained coefficients show that with the increase of crash, the impact of micro-investors decreases [36].

***Table 17.*** *Coefficients with t statistics in the end and middle initial portfolios of Crash.*

| | 1 | t | 5 | t | 10 | t |
|---|---|---|---|---|---|---|
| TVOLM | 24.18081 | 0.055090 | -3.63034 | 0.04151 | -17.86153 | 0.42280 |
| TSKEWM | -0.009086 | 0.018241 | -0.004651 | 0.023248 | -0.012983 | 0.020442 |
| SIZEM | -0.004964 | 0.017928 | 0.049783 | 0.025687 | -0.009989 | 0.015629 |
| AGE | 0.005645 | 0.004192 | 0.012633 | 0.005046 | 0.008127 | 0.003463 |
| TURN | 1.95E-12 | 3.39E-12 | 4.17E-13 | 3.20E-12 | 3.82E-12 | 2.39E-12 |
| CRRNT | 0.002955 | 0.011143 | -0.055111 | 0.007194 | 0.001430 | 0.085159 |
| SALES | -0.000320 | 0.000349 | 0.000805 | 0.000649 | -9.47E-05 | 0.000277 |
| RTPM | -0.140041 | 0.059792 | 0.154677 | 0.055847 | 0.051960 | 0.049901 |

The table below shows the value of the independent variables of each portfolio. The table below shows that by increasing the probability of a jackpot, the relationship between the different variables and the rate of return in this case does not change completely, but if we compare the situation in which the greatest probability of the jackpot and the lowest probability of the jackpot occur in them, we will see that Increasing the likelihood of jackpots affect variables RTPM TURN TVOL will be less efficient and SIZEM SALES CRRNT.

*Table 18. Coefficients of independent variables in jackpot portfolios.*

|        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------|---|---|---|---|---|---|---|---|---|----|
| TVOLM  | 34.07224 | 9.954935 | 9.520369 | 10.91874 | -3.64963 | -14.7229 | 11.59150 | -0.37020 | 62.57288 | 26.72715 |
| TSKEWM | -0.014747 | -0.00757 | -0.02874 | -0.02647 | 0.000805 | 0.000563 | -0.02696 | 0.009476 | -0.01959 | -0.01449 |
| SIZEM  | -0.005806 | 0.084542 | 0.111757 | 0.081518 | 0.011033 | -0.00783 | -0.02792 | -0.00239 | 0.019869 | 0.014188 |
| AGE    | 0.004191 | 0.008168 | 0.002580 | 0.012759 | 0.014741 | 0.000340 | -0.00033 | 0.000135 | 0.024930 | 0.002491 |
| TURN   | 4.94E-12 | 7.88E-12 | -9.2E-12 | -2.4E-12 | 1.12E-12 | 1.04E-13 | 2.34E-12 | 6.50E-12 | 8.65E-12 | 3.49E-12 |
| CRRNT  | -0.005987 | -0.02802 | -0.00269 | -0.12836 | 0.008857 | 0.132550 | 0.050798 | 0.119511 | 0.074570 | 0.096853 |
| SALES  | 2.56E-05 | 0.000728 | 0.003249 | 0.000412 | 0.000752 | -0.00024 | -0.00016 | -0.00019 | 0.002445 | 8.09E-05 |
| RTPM   | 0.137176 | 0.145207 | 0.215498 | 0.245098 | 0.221056 | 0.026838 | 0.046246 | 0.043347 | 0.041246 | 0.248492 |

If we consider only the data coefficients of the first three middle and end portfolios of the jackpot value, we will see that the t-statistic is less than 0.05, and in the RTPM variable, the higher the probability of the jackpot, the participation of real investors will have a greater effect on this anomaly [36].

Note that its significance level is less than 0.05 indicates the significance of the null hypothesis and the impact of micro-investors on the jackpot, which concludes that as the impact of the jackpot increases, the impact of micro-investors increases [37, 38].

*Table 19. Coefficients with t statistics in the end and middle initial portfolios of jackpot.*

|        | 1 | t | 5 | t | 10 | t |
|--------|---|---|---|---|----|---|
| TVOLM  | 34.07224 | 0.0321 | -3.649635 | 0.312 | 26.72715 | 0.941 |
| TSKEWM | -0.014747 | 0.011804 | 0.000805 | 0.019657 | -0.014498 | 0.020703 |
| SIZEM  | -0.005806 | 0.018217 | 0.011033 | 0.020045 | 0.014188 | 0.016237 |
| AGE    | 0.004191 | 0.003281 | 0.014741 | 0.003339 | 0.002491 | 0.003452 |
| TURN   | 4.94E-12 | 3.33E-12 | 1.12E-12 | 2.94E-12 | 3.49E-12 | 2.29E-12 |
| CRRNT  | -0.005987 | 0.002266 | 0.008857 | 0.075484 | 0.096853 | 0.002280 |
| SALES  | 2.56E-05 | 0.000491 | 0.000752 | 0.000618 | 8.09E-05 | 0.000274 |
| RTPM   | 0.137176 | 0.085001 | 0.221056 | 0.047808 | 0.248492 | 0.045169 |

Data estimation results

In the following, we present the results of estimating the Fama and French model for the portfolio data with the effects of Jackpot and Crash, respectively. In this section, for each portfolio data, the rate of return at 2t + time for each portfolio is estimated, and the t-statistic of each estimate is given.

*Table 20. Estimation of return data in jackpot portfolios.*

|              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------|---|---|---|---|---|---|---|---|---|----|
| Capm         | -1.2 | -0.33 | 0.49 | 0.48 | 0.79 | 1.02 | 1.43 | 1.41 | 1.59 | 2.34 |
|              | -3.33 | -3.05 | 2.83 | 2.54 | 1.65 | 1.44 | 1.05 | 1.63 | 2.44 | 3.22 |
| Fama-French  | 0.11 | 0.19 | 0.26 | 0.14 | 0.31 | 0.29 | 0.38 | 0.43 | 0.48 | 0.52 |
|              | -3.14 | -0.47 | 0.62 | -0.83 | 2.3 | 1.67 | 0.17 | -0.21 | -1.23 | 1.87 |

*Table 21. Fama and French data test (jackpot).*

|                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------------------|---|---|---|---|---|---|---|---|---|----|
| Value factor (HML)                | 0.494 | 0.859 | 0.239 | -0.345 | 0.171 | 0.460 | 0.998 | 0.334 | 0.223 | 0.556 |
| Size factor (SMB)                 | -0.112 | -0.003 | 0.221 | 0.087 | 0.011 | -0.021 | -0.007 | -0.018 | 0.002 | 0.014 |
| Risk factor (MKT)                 | 0.025 | 0. 0728 | 0.249 | 0.412 | 0.752 | -0.239 | 0.004 | 0.193 | 0.445 | 0.005 |
| F                                 | 0.09 | 0.11 | 0.14 | 0.12 | 0.06 | 0.05 | 0.13 | 0.08 | 0.04 | 0.03 |
| Unmodified determination coefficient | 0.42 | 0.48 | 0.38 | 0.47 | 0.39 | 0.53 | 0.48 | 0.27 | 0.24 | 0.33 |

It is observed that the significance level of test statistics in almost all portfolios is more than 0.01. Therefore, at the 99% confidence level, the null hypothesis (assuming that all coefficients are zero) is confirmed and at least one of the independent variables of goat research affects the return on stock, which can be affected by observing t coefficients of independent research variables on stock returns. Found that the lower the significance level of 0.05, the more significant

it was. Also, the table shows that the adjusted coefficient of portfolio adjustment is between 0.53 and 0.24, and this shows that a maximum of 0.53 of the stock return changes are explained by the variables of Fama and French models. It has been one of the independent variables that occurs among the stocks of the Tehran Stock Exchange and causes irregularity. Below are Fama and French models for Crash portfolios.

*Table 22. Estimation of return data in Crash portfolios.*

|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|------|---|---|---|---|---|---|---|---|---|----|
| Capm | 0.11 | 0.18 | 0.25 | 0.48 | 0.79 | 0.63 | 0.61 | 0.53 | 0.47 | 0.34 |
|      | 3.33 | 3.05 | 2.83 | 2.54 | 1.65 | 2.43 | 2.05 | -1.63 | -2.44 | -.3.22 |

|              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------|------|-------|------|-------|-----|-------|-------|-------|-------|-------|
| Fama-French  | 0.12 | 0.29  | 0.21 | 0.14  | 0.11 | -0.12 | -0.38 | -0.43 | -0.48 | -0.52 |
|              | -3.14 | -0.47 | 0.62 | -0.83 | 2.3 | 1.67  | 0.17  | -0.21 | -1.23 | 1.87  |

*Table 23.* *Fama and French data test (Crash).*

|                                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------------------------------|--------|-------|-------|--------|--------|-------|--------|--------|--------|--------|
| Value factor (HML)                   | 0.0049 | 0.004 | 0.04  | 0.020  | 0.0497 | 0.056 | 0.031  | 0.04   | 0.01   | 0.932  |
| Size factor (SMB)                    | 0.149  | 0.141 | 0.017 | 0.021  | 0.049  | 0.15  | 0.032  | 0.043  | 0.066  | 0.649  |
| Risk factor (MKT)                    | 0.137  | 0.147 | 0.21  | 0.2458 | 0.256  | 0.038 | 0.0446 | 0.0447 | 0.0446 | 0.0345 |
| F                                    | 0.001  | 0.018 | 0.005 | 0.003  | 0.012  | 0.006 | 0.008  | 0.004  | 0.005  | 0.011  |
| Unmodified determination coefficient | 0.53   | 0.49  | 0.47  | 0.39   | 0.41   | 0.47  | 0.53   | 0.58   | 0.52   | 0.63   |

Due to the significant level of F statistic, the null hypothesis is rejected and no crash occurs between the shares of Tehran Stock Exchange. The coefficient of determination is between 0.62 and 0.41, which shows that only a maximum of 62% of the changes in stock returns are explained by the variables of Fama and French models [39].

# 5. Conclusion

In the previous chapters, we explained the subject and expressed the research problem, then relying on the research literature, we chose the appropriate research method and data analysis methods. The test results of each of the research hypotheses are given below. The main hypotheses of the research are the existence of a jump and fall (explanation of stock returns on the Tehran Stock Exchange, which are as follows:

1. There is a jump effect among the stocks of Tehran Stock Exchange. The results of the study show that the null hypothesis in this test, which means that the coefficients are meaningless and their size is insignificant, is confirmed. This hypothesis is confirmed by using two functional factors, Fama and French. That is, the jackpot between stock exchanges is explained by the size factor and the risk of the stock. The results of the study are consistent with the results of Jang and Kang (2016) [40-42]. The results of this hypothesis are consistent with the results of Bergren. It is contradictory. Bergren et al. Found that the Jackpot effect would have a negative effect on future stock returns and would lead to future returns to negative.

2. There is a fall effect among the shares of Tehran Stock Exchange. Due to the probability of this hypothesis, it is rejected by the factor model, namely Fama and French. By examining the F statistics in the Fama and French models, we come to this conclusion. In general, our null hypothesis is not confirmed. This hypothesis is confirmed by various models by Jang, which shows that he researched the impact of real investors on stock returns in Korea, and concluded that stocks that have the greatest impact of Jackpot and Crash by investors. Real trades and these stocks are less efficient than the normal market [43].

3. There is a significant relationship between the ratio of real transactions and the effect of mutation. By analyzing the tests performed, the research hypothesis that there is a relationship between the ratio of real transactions and the effect of stock yield jump is confirmed, ie the amount of investment of real people has a significant effect on stock jump jump. The results are consistent with the Foucault timeline and there is a significant relationship between stock return volatility and real investor trading. It is also consistent with the findings of Kennel et al.

4. There is a significant relationship between the ratio of real transactions and the effect of fall. By analyzing the tests performed, the research hypothesis that there is a relationship between the ratio of real transactions and the effect of stock yield loss is confirmed, ie the amount of investment of real people has a significant effect on stock yield loss. In a study titled "Real Investors and Fluctuations", Fu et al. Predicts that if real investor transactions have a positive effect on stock fluctuations, there will be a decline in fluctuations in this category of stocks. Is consistent. Connell et al. Also tested the relationship between stock price volatility and real estate transactions. They found that the trend of stock price fluctuations before the trading week increased with the intensity of trading, and decreased after the mentioned weeks. The results of Kennel's research also correspond to this hypothesis.

# References

[1] Akdeniz, Levent, Aslihan Altay-Salih, and Kursat Aydogan. 2000. The Cross-Section of Expected Stock Returns on the Istanbul Stock Exchange. Russian and East European Finance and Trade 36 (5): 6-26.

[2] Bartha, M. E. (May 2018). Evolution in Value Relevance of Accounting Information. www.hbs.edu/faculty/conferences/2018-imo/Documents/Barth.Li.McClure.May.2018.

[3] Westerlund, J. KumarNarayan, P. 2012. Does the choice of estimator matter when forecasting returns?. Journal of Banking & Finance 36 (9): 2632-2640.

[4] Banz, R. W. 1981. The Relative Efficiency of Various Portfolios: Some Further Evidence: Discussion. J ournal of Finance 32 (663–682).

[5] Tabara, Neculae. Comparative accounting systems, edition of II revised and supllemented. Iasi, 2014, Tipo Moldova Publishing House.

[6] Bhandari, Laxmi Chan. 1988. Debt/Equity ratio and expected common stock returns: Empirical evidence. Journal of Finance (43): 507-528.

[7] Hsiao, C., Shen, Y., & Bian, W. (2015). Evaluating the effectiveness of China's financial reform-The efficiency of China's domestic banks. China Economic Review, 35, 70–82. https://doi.org/10.1016/j.chieco.2015.05.006.

[8]   Lapteacru, I. (2017). Market power and risk of Central and Eastern European banks: Does more powerful mean safer? Economic Modelling, 63, 46–59.

[9]   Conrad, J. K. (2014.). Death and jackpot: why do individual investors hold overpriced stocks?

[10]  Edelen, R. I. (2016). Institutional investors and stock return anomalies. Journal of Financial Economics, 119, 472–488.

[11]  Davis, James L., Eugene F. Fama, and Kenneth R. French. 2000. Characteristics, Co Variances, and Average Returns: 1929-1997. Journal of Finance (55): 392.

[12]  Berger, A. N., Klapper, L. F., & Turk-Ariss, R. (2009). Bank competition and financial stability. Journal of Financial Services Research, 35 (2), 99–118.

[13]  Eric Ghysels, P. G. (2014). Regime switches in the risk–return trade-off. Journal of Empirical Finance, 118-138.

[14]  Eugene F. Fama a, K. R. (2018). Choosing factors. Journal of Financial Economics, 128 234–252.

[15]  Foucault, TH. Sraer. D. and Thesmar. D. J. (2011). "Individual Investors and Volatility", Journal of Finance, LXVI, (4).

[16]  Fama, E. F., and K. R. French. 1995. Size and book-to-market factors in earnings and returns. Journal of Finance (50): 131-155.

[17]  Garlappi, L. Y. (2011). Financial distress and the cross-section of equity returns. Journal of Finance, 66, 789–822.

[18]  Giriffin, John M. 2002. Are the Fama and French Factors Global or Country Specific. The Review of Financial Studies (15): 783-803.

[19]  Horowitz, J. L., T. Loughran, and N. E. Savin. 2000. Three analyses of the firm size premium. Journal of Empirical Finance 7 2 (143–153.

[20]  Jang, J. a. (2016). Probability of price crashes, rational speculative bubbles, and the crosssection. Working paper, Chosun University and Korea Advanced Institute of Science and Technology.

[21]  Jang, J., & Kang, J. (2019). Probability of price crashes, rational speculative bubbles, and the cross-section of stock returns. Journal of Financial Economics, 132 (1), 222-247.

[22]  Jianan, L.. (April 2018). Absolving beta of volatility's effects. Journal of Financial Economics, 128‹1‹1-15.

[23]  Kaniel, R. Saar, G. and. Sh, Titman. (2008)." Individual Investor Trading and Stock Returns", he Journal of Finance, 63, 273-310.

[24]  Khani, A, Hoseini, S. A. and A. Khadem. (2012). Tehran Stock Exchange, Individual Investor Trading and Stock Returns in emerging markets: the case of Iran, working paper.

[25]  Keppler Michael, Xue Xing. H (2003). The Seasonal Price Behavior of Global Equity Markets. The Journal of Investing, 49-53.

[26]  Lucey Brian. M, Whelan Shane (2004). Monthly and Semi-Annual Seasonality in the Irish Equity Market1934-2000. Applied Financial Economics, 14: 203-208.

[27]  Houston, J. F., Lin, C., Lin, P., & Ma, Y. (2010). Creditor rights, information sharing, and bank risk-taking. Journal of Financial Economics, 96, 485–512.

[28]  Levin, Sheen & Zajac. J, Edward.(2001)." the Social Life of Financial Bubbles, Institutional Theory Conference", working paper, 2-10.

[29]  Lewellen, J. (2011). Institutional investors and the limits of arbitrage. Journal of Financial Economics, 102‹62–80.

[30]  Marcelo, Miralles, and Miralles Quiros. 2006. The role of an illiquidity risk factor in asset pricing: empirical evidence from the Spanish stock market. The Quarterly Review of Economics and Finance (46): 254–267.

[31]  Marsall Ben. R, Visaltanachoti Nuttawat (2010). The Other January Effect: Evidence against Market Efficiency? Journal of Banking and Finance.

[32]  Michelfelder, R. A. (2005)." Volatility of stock returns: Emerging & Mature Markets", Managerial Finance, 31, 66-68.

[33]  Mei-Chen Lin. (2018). The impact of aggregate uncertainty on herding in analysts' stock recommendations. International Review of Financial Analysis, Volume 57, Pages 90-105.

[34]  Nagel, S. (2005). Short sales, institutional investors and the cross-section of stock returns. • Pastor, L., and R. Stambaugh. 2003. Liquidity Risk and Expected Stock Returns. Journal of Political Economy (111): 642–685.

[35]  Patel Jayen B, Evans Dorla A (2003). Seasonal Stock Return Patterns in the Seven Industrialized Nations. Journal of Applied Business Research, 19 (3): 111-120.

[36]  Tan, Y., & Floros, C. (2013). Risk, capital and efficiency in Chinese banking. Journal of International Financial Markets, Institutions and Money, 26, 378–393.

[37]  Tan, Y., & Floros, C. (2018). Risk, competition and efficiency in banking: Evidence from China. Global Finance Journal, 35, 223–236.

[38]  Goel, S. (2016). The Earnings Management Motivation: Accrual Accounting vs. Cash Accounting, Australasian Accounting, Business and Finance Journal, 10 (3), 2016, 48-66.

[39]  Sharpe, William F. 1964. Capital asset prices: a theory of market equilibrium under conditions of risk. Journal of Finance (19): 425-442.

[40]  Stambaugh, R. F. (2015). Arbitrage asymmetry and the idiosyncratic volatility puzzle. Journal of Finance, 70, 1903–1948.

[41]  Stambaugh, R. Y. (2012). The short of it: investor sentiment and anomalies. Journal of Financial Economics, 104, 288–302.

[42]  Cuzdriorean, D. D. (2013). Most recent findings in earnings management area: Interesting insights from traditionally top 5 leading accounting journals, Annales Universitatis Apulensis Series Oeconomica, 15 (2), 402-416.

[43]  Yu, J. Y. (2011). Investor sentiment and the mean–variance relation. Journal of Financial Economics, 100, 367–381.