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Investigating the Effect of Environmental Uncertainty on the Relationship between Herd Behavior and Negative Price Shock in TSE

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Abstract

The purpose of this study was to investigate the effect of peripheral uncertainty on the relationship between the herd behavior of investors and the price of negative stock shock. Because the capital market is one of the main pillars of the country's economic growth and development, the incidence of any disturbance and deviation in prices causes problems with allocating and equipping funds. Reducing stock prices is an example of the disorders created in the capital market. On the other hand, one of the factors that lead to the fluctuations of return and instability of financial markets is the herd behavior of

investors. If investors lack sufficient information about environmental factors, environmental uncertainty occurs. Such a situation also affects the organization. Environmental uncertainty overshadowed the use of financial statements. Changes in stock prices and corporate status are cases that can not speak in full confidence in their occurrence. As a result, environmental uncertainty is part of the economic environment. To test the research hypotheses, 156 companies from the Tehran Stock Exchange during the years 2010 to 2020 were selected by screening method. To test the hypotheses, multivariate regression models were performed using STATA14 software. The results indicate that herd behavior has a significant effect on price shock and environmental uncertainty has no effect on the relationship between the two.

Keywords: Behavioral Finance, Environmental Uncertainty, Herd Behavior, Negative Shocks, Stock Price.

Introduction

Today, in the investment process, stock returns are considered one of the important factors because investors invest in companies to earn returns (Dastgir, Googerdchian, and Adamiat, 2015). Investors use stock returns as a benchmark for finding superior stocks and predicting future stock returns. For this purpose, they calculate the real return on investment (Safdarian, foroughian, and Karimi, 2019). One of the important components of stock returns that investors in the capital market pay attention to is stock price changes (Vaez, Abzari, and Jamali, 2009).

In the capital market, stocks that have high volatility and significant changes will face lower stock prices and future returns. This is an issue that worries investors (Sarkissian ،2016 ،Haugen et al ،1991). The fall in stock prices is a bad news announcement for the company for investors and leads to their reaction. The result of the investors' reaction will be a reduction in the company's stock price. Reducing stock prices leads to an outflow of investment from the company. Investor behavior also negatively affects stock price volatility (Saeidi and Farahanian, 2011). If the market is efficient, the stock price reflects all the information available to investors. In an efficient market, it is assumed that investors make rational decisions. Evidence, however, shows that investors do not always act rationally, and that information is not provided to the public symmetrically due to market uncertainty. The various reactions of investors led to the formation of a new paradigm called behavioral finance (Fernandez, 2011). According to behavioral finance research, one of the factors other than economic variables that lead to stock price changes in the herd

behavior of investors (thaler, 1991). In terms of herd behavior, investors take great risks without having the right information (Bikhchandani and Sharma, 2000).

In this kind of behavior, investors behave in a similar way (Zare Bahnamiri and kashiri, 2018). Annual dividend distribution and stock price changes lead to a return on investment. According to this approach, investor decisions and environmental uncertainty both affect stock prices and thus returns. Environmental uncertainty means that the behavior of investors is unpredictable (López, José, and Enrique, 2011). our goal in this research is to find out if there is a relationship between herd behavior and negative price shock. And to find out if environmental uncertainty has an effect on that relationship. The importance of this research is that in today's markets herd behavior is very common and it concerns different groups in the market. Also due to markets getting bigger, environmental uncertainty is an important issue in them. So it's very important to see if there is a link between those variables.

Literature Review

In the capital market, stock price fluctuations affect real activities through the effects of wealth on consumption and balance sheet effects. The negative shock issue of stock prices, due to management measures such as postponing the release of bad news and accelerating good news, fleeing taxes, continuing from current value projects, and lack of transparency of financial information (Fadaei, Dadashi, Zare Bahnamiri and Azinfar ،2021). On the other hand, stock returns are one of the factors that direct the investment process. Investors enter the investment process to obtain their expected returns (Dastgir, Googerdchian, and Adamiat, 2015).

An important part of stock returns is related to stock price changes. Herd behavior is one of the factors that lead to price fluctuations and shocks. One of the reasons why herd behavior causes so much damage to the economic system is that investors behave similarly strongly in the opposite direction (Saeidi and Farahanian, 2011). If the stock price is aligned with the intrinsic price, herd behavior, in the long run, may lead to market inefficiency and sharp price fluctuations, resulting in a shock return (Blasco, Corredor, and Ferreruela, 2012). Today, the performance and profitability of the organization also depend on the external environment. To the extent that unexpected and unpredictable changes can affect the performance and therefore profitability of the organization (Ghosh and Olsen, 2009). One of the external environmental factors that organizations face is environmental uncertainty. Environmental

uncertainty means how unpredictable and unsustainable the organization being invested is. Managers of these organizations use flexibility to reduce environmental uncertainty (Sloan, 1996).

Agarwal et al. (2022) in an article titled "Consumption Response to Temporary Price Shock: Evidence from Singapore's Annual Sale Event" examines the response to anticipated and transient price shock that is created by the annual sales event throughout the country. The results showed that consumers show little replacement behavior when using credit cards or when liquidity is limited. Fedia and colleagues (2021) in an article reviewed the Predicting negative stock price shocks based on the Metaheuristic approach. The results showed that extraction variables from the particle congestion optimization algorithm, along with the backup vector learning algorithm, have a better result for predicting shocks (temporary and permanent) and their number. Fernandes (2021) examined the effects of prejudice and adjustment after price shocks in the German stock market. The results showed that investors will trust the current reference points when estimating their prices after a large price change.

In a study, Apolloni et al. (2021) examined macroeconomic factors and the risk of falling stock prices. The results show that inflation and unemployment have a positive relationship and GDP and exchange rate have a negative relationship with the risk of falling stock prices. Lalwani, Sharma, and Chakraborty (2019) examined the response of investors to severe price shocks in the stock market. The results showed that in 8 out of 10 countries studied, investors caused price shocks with their behavioral biases towards different stocks. Deng, Hung, and Qiao (2018), in their study entitled " Mutual fund herding and stock price crash " showed that the herd behavior of Mutual Funds is related to an environment in which information and quality of disclosure are low. More importantly, the herd behavior of these funds reinforces the risk of falling stock prices. Afshari et al. (2018) in an article examined The Effect of Stock Price Shock on Macroeconomic Variables. The results showed that shock in the stock price index has little effect on inflation and production variables. Hamzaei (2017) examined the effect of irrational investor behavior on stock price changes.

The results showed that irrational decisions have a significant effect on stock pricing in the capital market. Savor (2012) examines the impact of major shocks on stock returns due to the role of stock return information. He received investors underreact to news about fundamentals and overreact to other shocks that move stock prices. Consistent with this hypothesis, information-based price changes are more strongly correlated with future earnings surprises than

no-information ones. Tsutsui and Hirayama (2005) in an article examined the impact of global shock and various shocks of the country on the stock returns of four major countries.

The results showed that ordinary shock has a significant magnitude that has grown over 38 years. They interpreted this as one of the important reasons for the relationship between stock prices. Nadenichek (2001) in his article titled "Asset markets, relative price shocks and trade anomalies in international real business cycle models" found that the introduction of exogenous conditions for commercial shocks to the model allows these commercial and price abnormalities to be explained. While maintaining the ability to repeat other aspects of data.

Research hypotheses

According to the main purpose of the research, the following hypotheses are proposed:

H1: The herd behavior of shareholders is positively related to the negative stock price shock.

H2: the environmental uncertainty exacerbates the relationship between shareholder herd behavior and negative price shocks.

Research Methodology

The statistical population of the study is all Tehran Stock Exchange and OTC Iran in the period of 10 years from 2010 to 2020. The surveyed companies have been selected by the screening method after applying the following restrictions:

- The end of the fiscal year is the end of March of each year and they have not changed the fiscal year during the research period.
- Have been accepted in the stock exchange before 2010.
- Their transactions during the years 2010 to 2020 have not been interrupted for more than three months.
- The information on their financial statements is fully and continuously available during the research period.
- Don't be an investment and financial intermediation company.

Finally, 156 companies were selected. STATA software was used to test the research hypotheses model.

1. Model

The research models are as follows:

$$\text{price shock}_{it} = \beta_0 + \beta_1 H_{it} + \sum \beta_j \text{controls}_{it} + \varepsilon_{it} \quad (1)$$

$$\text{price shock}_{it} = \beta_0 + \beta_1 H_{it} + \beta_2 SRV_{it} + \beta_2 SRV_{it} * H + \sum \beta_j \text{controls}_{it} + \varepsilon_{it} \quad (2)$$

2. Measuring variables

Dependent variable

stock prices shockit: In the present study, the return of the Tehran Stock Exchange index is used as the market return and negative shocks are considered as the daily return surplus, which is more than one standard deviation of the monthly stock. Negative return shocks have been identified by comparing stock returns and short-term historical fluctuations. The standard deviation is obtained from equation (3):

$$\widehat{\sigma(t_1)}^2 \equiv (1/n-2) \sum_{n=1}^{n} |r_t| |r_{t-1}| \quad (3)$$

(st) is equal to the price logarithm at the end of the day (t) and (mt) is the market index logarithm at the end of the day (t). (n) is the number of trading days in a month, the daily excessive return at the end of the day (t) is equal to:

$$rt = (st-st-1)-(mt-mt-1) \quad (4)$$

Once negative shocks are identified, they are classified into transient shocks and long-term shocks. A negative shock is transient or temporary if it retracts within thirty trading days, and long-term or permanent if it does not retract within that time frame. After identifying these shocks, the stock returns on the day the shock started are divided by the standard deviation of the returns, and the results are added together, thus obtaining a temporary and permanent shock of one year (seo and Chung, 2017):

$$\frac{|\text{return}|}{\text{sigma}} \quad (5)$$

To further examine the relationship between shock and other variables, shock is divided into four categories:

longshock: The number of permanent shocks

nlongshock: The number of permanent shocks

transitory shock: The number of transitory shocks

transitory shock: The number of transitory shocks

Independent variable

Herd behavior (H): To measure herd behavior, the lakonishok (1992) method was used, which calculates the difference between buyers and sellers of stocks across the market as an indicator of herd behavior. If some managers have reduced their shares and others have increased their shares, it can be concluded that there is no herd behavior in each stock. It is estimated that 70% of investors have increased their shares and 30% have decreased their shares. Herd behavior in calculated from equation (6), where Hi,t is equal to herd behavior of stock (i) in a month (t), and (H) is the annual average of herd behavior of stock (i) in a year (T).

$$H_{i,t}= \left|p_{i,t}-\bar{p}_t\right| -E\left|p_{i,t}-\bar{p}_t\right| \quad (6)$$

$$H=\frac{1}{T}\sum_{t=1}^{T} H_{i,t} \quad (7)$$

$$p_{i,t}=B_{i,t}/(B_{i,t}+S_{i,t}) \quad (8)$$

Bi,t is equal to the number of legal (individual) shareholders who purchased a share (i) in a month (t). Si,t is also the number of legal (individual) shareholders who sold share (i) in a month (t). As a result, Pi,t, is the ratio of the number of buyers to the total number of buyers and sellers of share (i) in a month (t). also:

$$\bar{P}_t=\frac{1}{N}\sum_{i=1}^{N} P_{i,t} \quad (9)$$

Where $\bar{P}_t$ is the ratio of the number of buyers to the total number of buyers and sellers of share (i) during the year (t).

For more accuracy, herd behavior is divided into three categories:

Hm: total herd behavior (legal and individuals)

Hmhoghoghi: herd behavior of legal shareholders

Hmhaghighi: herd behavior of individual shareholders

Moderator variable

Environmental uncertainty (srv): An inability to assign probabilities to possible future events (Duncan, 1972). This study uses company sales variability, which directly measures environmental uncertainty and is calculated by the coefficient of sales changes over the period:

$$CV(S_i) = \frac{\sqrt{\sum_{k=1}^{3} \frac{(S_i - \bar{S})^2}{3}}}{\bar{s}} \quad (10)$$

Where Si is the sales of company (i) in a year (k) and $\bar{s}$ is the three-year average of the company's sales. If the calculated number is greater than the median of data, it is assigned with number 1 and otherwise number 0.

Control variables

Firm size (size): the logarithm of the total assets of the company at the end of the year t.

Financial leverage (lev): Financial leverage is measured by dividing total liabilities by the book value of total assets.

Market-to-Book value of equity(MB): Khan and Watts (2009) have stated that companies with higher market-to-book value of equity have more investment opportunities.

Return on assets (ROA): Is the amount of net profit to the total assets of the company at the end of the year t.

Average weekly stock return (RETURN): average weekly return on the stock of a company (i) during fiscal year (t).

standard Deviation of the weekly stock return (sigma): Standard Deviation of the weekly return on stock (i) during fiscal year (t).

Findings

1. descriptive statistics

As can be seen in Table (1), the mean value of the shock variable is close to the median value, indicating that the distribution of this variable is normal. In Seo and Chung (2017) article, the shock variable has a similar situation, ie the mean and median values of shock data are close to each other. Also, these companies finance about 59% of their financial resources through debt, and considering that the median value is close to the average, it can be said that

59% of the companies have accepted high financial risk. This is consistent with the discussions raised by Mohammad Rezaei (2015) about the type of financing in Iranian companies. In addition, the return on assets of the company with an average of 11% indicates that business entities earn 11% profit and return on their resources and assets. The firm size variable, which is calculated through the natural logarithm of total assets, has an average of 14.38, which means that in the whole sample, data related to this variable are around this value. And the standard deviation for this variable is 1.58, which means that the data dispersion is low. The median is a point that divides a sample into two equal parts. In other words, 50% of the data are before and 50% of the data are after the median. As shown in table (1), the median values for "amount of permanent shock", "amount of temporary shock" and "total herd behavior" are 8.323, 102.789, and .012, respectively.

Table 1. Descriptive statistics for study variables

variable	mean	max	min	med	Std dev
longshok	8/872	47/536	0	8/323	6/554
transitoryshok	95/632	381/782	0	102/789	51/063
nlongshok	4/819	13	0	5	2/354
ntransitoryshok	35/157	66	0	38	13/868
hmhoghoghi	-0/014	0/202	-0/349	0/0005	0/111
hmhaghighi	9/6e-6	0/084	-0/591	0/014	0/070
hm	0/0001	0/064	-0/476	0/012	0/066
size	14/387	20/183	10/226	14/145	1/586
lev	0/590	2/315	0/012	0/588	0/257
roa	0/119	0/631	-0/607	0/102	0/148
return average	0/006	0/113	-0/062	0/003	0/017
return deviation	0/077	0/376	0/0002	0/068	0/047
mb	4/535	56/168	-37/99	3/113	6/575
srv	0/5	1	0	0/5	0/500

2. test of research hypotheses

First hypothesis

The test results of the hypothesis "The herd behavior of shareholders is positively related to the negative stock price shock" are presented in Tables (2) and (3). It should be noted that in the present study, shocks are divided into four categories: the number of permanent shocks, the number of transitory

shocks, the number of permanent shocks, and the number of transitory shocks. herd behavior is also divided into three categories: total herd behavior, herd behavior of legal shareholders, and herd behavior of individual shareholders. As shown in Table (2), in the model test, the probability value of the F statistic is zero and this value is less than 0.05, so the null hypothesis is rejected with 95% confidence, ie the model is significant. Based on the results of the model presented in Table (2), the t-statistic probability of the variable herd behavior in all cases shows that at a 95% probability level, this variable is positive and significant. so, the hypothesis " The herd behavior of shareholders is positively related to the amount of permanent and transitory negative stock price shocks" was approved.

Table 2. relationship between herd behavior(total, legal, individual) and amount of permanent and transitory shocks

Variables	**Amount of permanent shocks**			**Amount of transitory shocks**		
	coefficient	coefficient	coefficient	coefficient	coefficient	coefficient
	t-value	t-value	t-value	t-value	t-value	t-value
Total herd behavior	6/952 (4/09***)	-	-	95/537 (6/98***)	-	-
Legal herd behavior	-	7/231 (4/52***)	-	-	128/894 (8/69***)	-
Individual herd behavior	-	-	8/545 (5/10***)	-	-	115/599 (7/12***)
Firm size	0/762 (5/10***)	0/493 (3/06***)	0/763 (5/14***)	4/608 (4/01***)	-/114 (-0/10)	4/623 (4/07***)
leverage	-2/721 (-2/73***)	-2/397 (-2/37**)	-2/703 (-2/74***)	-29/540 (-3/43***)	-23/885 (-2/75***)	-29/286 (-3/4***)
roa	1/666 (0/96)	1/222 (0/71)	1/787 (1/03)	-17/463 (-1/19)	-25/784 (-1/84*)	-15/811 (-1/10)
Return average	4/437 (0/42)	2/129 (0/20)	4/402 (0/42)	-264/168 (-3/15***)	-309/314 (0/20***)	-264/43 (-3/2***)
Return deviation	-21/481 (-4/19***)	-23/005 (-4/62***)	-21/470 (-4/20***)	-261/28 (-5/20***)	-288/54 (-6/15***)	-261/13 (-5/2***)
mb	-0/026 (-1/25)	-0/022 (-1/10)	-0/026 (-1/24)	0/110 (0/52)	0/178 (0/98)	0/117 (0/56)
Year and Industry effect	checked			checked		
f-statistic	10/09	12/10	10/87	24/42	28/81	24/62
p-value	0/0000	0/0000	0/0000	0/0000	0/0000	0/0000
R^2	0/177	0/183	0/180	0/262	0/304	0/272

As shown in Table (3), in the model test, the probability value of the F statistic is zero and this value is less than 0.05, so the null hypothesis is rejected with 95% confidence, ie the model is significant. Based on the results of the model presented in Table (3), the t-statistic probability of the variable herd behavior in all cases shows that at a 95% probability level, this variable is positive and significant. so, the hypothesis " The herd behavior of shareholders is positively related to the number of permanent and transitory negative stock price shocks " was approved.

Table 3. relationship between herd behavior(total, legal, individual) and number of permanent and transitory shocks

variables	**number of permanent shocks**			**number of transitory shocks**		
	coefficient	coefficient	coefficient	coefficient	coefficient	coefficient
	t-value	t-value	t-value	t-value	t-value	t-value
Total herd behavior	1/962 (2/95***)	-	-	29/522 (7/57***)	-	-
Legal herd behavior	-	1/947 (3/03***)	-	-	38/446 (9/98***)	-
Individual herd behavior	-	-	2/595 (4/14***)	-	-	33/386 (7/82***)
Firm size	0/237 (4/99***)	0/164 (3/37***)	0/238 (5/03***)	0/260 (0/82)	-1/150 (-3/4***)	0/260 (0/82)
leverage	-0/406 (-0/83)	-0/318 (-0/65)	-0/401 (-0/82)	-6/776 (-2/48**)	-5/085 (-1/84*)	-6/695 (-2/47**)
roa	1/013 (1/37)	0/894 (1/22)	1/047 (1/43)	-1/589 (-0/39)	-4/057 (-1/05)	-1/084 (-0/27)
Return average	1/831 (0/33)	1/222 (0/22)	1/800 (0/33)	41/909 (1/40)	28/588 (0/97)	42/106 (1/43)
Return deviation	-14/270 (-6/5***)	-14/680 (-6/89***)	-14/267 (-6/56***)	-111/35 (-7/7***)	-119/48 (-8/6***)	-111/30 (-7/7***)
mb	-0/005 (-0/62)	-0/004 (-0/53)	-0/005 (-0/61)	0/008 (0/16)	0/028 (0/68)	0/010 (0/20)
Year and Industry effect	checked			checked		
f-statistic	12/11	12/26	12/63	22/90	25/96	23/36
p-value	0/0000	0/0000	0/0000	0/0000	0/0000	0/0000
R^2	0/208	0/211	0/211	0/323	0/371	0/331

Second Hypothesis

The test results of the hypothesis "environmental uncertainty exacerbate the relationship between shareholder herd behavior and negative price shocks" are

presented in Tables (4) and (5). As shown in Table (4), in the model test, the probability value of the F statistic is zero and this value is less than 0.05, so the null hypothesis is rejected with 95% confidence, ie the model is significant. Based on the results of the model presented in Table (4), the t-statistic probability of the moderator variable multiplied by the independent variable in all cases shows that at a 95% probability level, this variable is negative and insignificant. so, the hypothesis "environmental uncertainty exacerbates the relationship between shareholder herd behavior and the amount of permanent and transitory negative stock price shocks" was disapproved.

Table 4. effect of environmental uncertainty on the relationship between herd behavior (total, legal, individual) and amount of permanent and transitory shocks

variables	**Amount of permanent shocks**			**Amount of transitory shocks**		
	coefficient	coefficient	coefficient	coefficient	coefficient	coefficient
	t-value	t-value	t-value	t-value	t-value	t-value
Total herd behavior	7/954 (2/52**)	-	-	111/690 (4/86***)	-	-
Legal herd behavior	-	7/008 (3/38***)	-	-	133/459 (7/13***)	-
Individual herd behavior	-	-	9/226 (3/45***)	-	-	129/672 (5/80***)
Environmental uncertainty (srv)	0/076 (0/24)	0/011 (0/04)	0/061 (0/19)	-0/445 (-0/17)	-2/006 (-0/80)	-0/628 (-0/24)
Srv*herd behavior	-2/313 (-0/52)	0/486 (0/18)	-1/696 (-0/46)	-36/303 (-1/03)	-8/601 (-0/40)	-33/84 (-1)
Firm size	0/758 (5/08***)	0/491 (3/07***)	0/760 (5/12***)	4/592 (4/02***)	-0/059 (-0/05)	4/613 (4/10***)
leverage	-2/697 (-2/70***)	-2/406 (-2/38**)	-2/686 (-2/71***)	-29/208 (-3/37***)	-23/741 (-2/74***)	-29 (-3/4***)
Roa	1/686 (0/97)	1/195 (0/70)	1/801 (1/04)	-16/755 (-1/14)	-24/910 (-1/80*)	-15/073 (-1/05)
Return average	4/103 (0/38)	2/130 (0/20)	4/146 (0/39)	-263/227 (-3/12***)	-302/781 (-3/48***)	-262/54 (-3/1***)
Return deviation	-21/49 (-4/20***)	-23/010 (-4/68***)	-21/466 (-4/24***)	-259/72 (-5/21***)	-286/62 (-6/14***)	-259/03 (-5/2***)
mb	-0/026 (-1/22)	-0/022 (-1/09)	-0/025 (-1/21)	0/125 (0/59)	0/184 (1/01)	0/133 (0/63)
Year and industry effect	checked			checked		
f-statistic	9/49	11/33	10/22	21/60	26/85	22/05
p-value	0/0000	0/0000	0/0000	0/0000	0/0000	0/0000
R^2	0/177	0/183	0/180	0/263	0/304	0/272

As shown in Table (5), in the model test, the probability value of the F statistic is zero and this value is less than 0.05, so the null hypothesis is rejected with 95% confidence, ie the model is significant. Based on the results of the model presented in Table (5), the t-statistic probability of the moderator variable multiplied by the independent variable in all cases shows that at a 95% probability level, this variable is negative and insignificant. so, the hypothesis "environmental uncertainty exacerbates the relationship between shareholder herd behavior and the number of permanent and transitory negative stock price shocks" was disapproved.

Table 5. effect of environmental uncertainty on the relationship between herd behavior (total, legal, individual) and the number of permanent and transitory shocks

variable	**number of permanent shocks**			**number of transitory shocks**		
	coefficient	coefficient	coefficient	coefficient	coefficient	coefficient
	t-value	t-value	t-value	t-value	t-value	t-value
Total herd behavior	2/979 (2/96***)	-	-	-30/52 (-7/6***)	-	-
Legal herd behavior	-	2/585 (3/28***)	-	-	39/370 (7/74***)	-
Individual herd behavior	-	-	3/597 (3/92***)	-	-	36/673 (5/18***)
Environmental uncertainty (srv)	0/155 (1/31)	0/114 (0/94)	0/151 (1/28)	-2/798 (-1/31)	-0/026 (-0/04)	0/379 (0/56)
Srv*herd behavior	-2/391 (-1/07)	-1/504 (-1/34)	-2/535 (-1/25)	11/827 (0/62)	-2/032 (-0/33)	-8/244 (-0/71)
Firm size	0/231 (4/85***)	0/168 (3/44***)	0/232 (4/89***)	0/527 (1/44)	-1/143 (-3/42***)	0/244 (0/77)
leverage	-0/379 (-0/78)	-0/287 (-0/60)	-0/374 (-0/77)	-10/83 (-3/5***)	-5/046 (-1/83*)	-6/611 (-2/42**)
Roa	1/015 (1/39)	0/946 (1/34)	1/054 (1/46)	-1/593 (-0/34)	-3/947 (-1/03)	-1/035 (-0/26)
Return average	1/201 (0/21)	0/673 (0/12)	1/195 (0/22)	0/001 (1/07)	28/507 (0/95)	40/566 (1/34)
Return deviation	-14/366 (-6/5***)	-14/813 (-6/92***)	-14/324 (-6/58***)	0/003 (2/28**)	-119/479 (-8/65***)	-111/368 (-7/7***)
mb	-0/005 (-0/61)	-0/005 (-0/64)	-/005 (-0/58)	-2/54 (-0/16)	0/028 (0/66)	0/011 (0/23)
Year and industry effect	checked			checked		
f-statistic	12/07	11/78	12/48	14/49	24/37	21/47
p-value	0/0000	0/0000	0/0000	0/0000	0/0000	0/0000

R^2	0/210	0/213	0/213	0/255	0/372	0/332

Discussion and Conclusion

The purpose of this study is to investigate the effect of environmental uncertainty on the relationship between herd behavior and price shock in the Tehran Stock Exchange and OTC companies. The first hypothesis of the study examines the effect of shareholder herd behavior on negative stock price shock and the second hypothesis examines the moderating effect of environmental uncertainty on this relationship. The results of this study show that there is a positive and significant relationship between herd behavior and negative price shock, which is consistent with the findings of zanjirdar and khojaste (2016), Izadi nia and Hajian nezhad (2009), Hamzei (2017) and Christie and Huang. (1995). Results for the second hypothesis of this study show that herd behavior causes a negative shock in the stock returns of companies, but environmental uncertainty can not affect this relationship, which is consistent with the research of Raiiszade and Ramezani (2018) and Hejazi et al. (2011). The results of the present study show that to avoid negative shocks in the market, herd behavior should be minimized and environmental uncertainty can not affect stock prices. The findings of this study are useful for investors, managers, creditors, and analysts. As a result, the research suggestions are as follows:

- Stakeholders are advised not to pay attention to behavioral aspects and choices resulting from short-term forecasting when making financial decisions, as a result, herd behavior and negative shocks are reduced.
- According to the research results, managers of investment companies are advised to support research and development and new ideas, thus reducing blind imitation of investors and managers and negative shocks in the stock market.

Policymakers and relevant organizations are advised to work with the regulatory agencies to guide the Iranian stock market to an efficient market so that stock returns are closer to real returns because as the market moves towards an efficient market, herd behavior And negative shocks are reduced.

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