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The Study of the Effect of Fraction Resulted of Bad News on Stock Returns Emphasizing the Regulatory Power of Information Disclosure Policies

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ABSTRACT

This study aimed to investigate the effect of fraction resulted of bad news on stock returns emphasizing the regulatory power of information disclosure policies that for this goal, the study population is consisted of the companies listed on the Tehran Stock Exchange during a five years' period (2010-2014). Data of selected statistical sample using systematic elimination method has been collected from 122 companies. This study objectively is a practical research. In terms of type of research design because of relying on historical data, is ex post facto and its inference method is inductive and in correlation type. This study includes six main hypotheses. In this study to assess the hypotheses, the linear regression has been used. To analyze the data and test hypotheses, the EVIEWS software is used. the results of this study suggest that the fraction resulted of bad news has an effect on stock returns, abnormal cumulative returns and the stock crash risk, as well as the fraction resulted of bad news has an effect on the interaction of regulatory power of information disclosure policies, stock crash risk, the abnormal cumulative returns and stock returns.

1 Introduction

In financial markets, information can be reflected as signs, signals, news and various predictions from inside or outside of the company and be available to stakeholders. Such information may create reactions resulting in changes in stock prices. Stock market reaction to news and information is different. People's expectations depend on their predictions that sometimes have inefficiencies. Understand the source of these inefficiencies, could have important applications to study in the field of investors' rationality and market efficiency. Accordingly, it could be argued that the investors' reaction is relative and depends largely on the amount of information that they receive. In securities markets, people are more looking for simple understanding and new information with immediate implications and don't pay attention to the information that have long-term consequences and less extractable results. This pattern can cause different reactions of investors toward the good and bad news in different economic conditions [10]. Previous studies show that investors are more sensitive to bad news than good news. Investors' reaction to bad news is high and reaction to good news in uncertainty time in the market is close to zero [1]. When the investors face with uncertainty in future capital market situation, compared with the time that are more ensure about the future, the bad news cause severe stock price reduction, and good news cause its lower increase and according to the

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Financial Accounting Standards Board, the investors' and creditors' decisions and their use of information have a much greater extent than other groups. For this reason, decisions made by them on the basis of information disclosed has a major impact on resource allocation and it can be argued that full, timely and voluntary disclosure of information is a factor that purifies the capital market and prevent transaction by people who somehow have access to published information and also reveals new options or removes the weak options and eventually affect people and lead them to make the right decision and is very important. Recent studies in economics and finance have shown the consequences of restrictions on disclosure of information by assessing the effect of the inevitable disclosure doctrine, so managers will try more to provide better performance of the company and likely will have more tendency to asymmetric voluntary disclosure and specifically will have tendency to avoid the occurrence of the company's bad news. Accordingly, it is predicted that companies are more willing to delay the disclosure of bad news than good news despite regulatory policies of information disclosure. In general, in this study, the manager's trend to avoid detection of bad news rather than good ones, surveying the stock price behavior in two types including company's voluntary disclosure i.e. the dividend changes notification and management forecast of income will be evaluated and analyzed. Accordingly, some studies have argued that if managers accumulate bad news and avoid them in a certain extent before official disclosure, but disclose the good news more quickly, then, the reaction of stock market to public release of bad news in contrast with the good news that is expected to be asymmetric, so it is predicted that the stock price reaction to public release can be more for bad news than the good one, and also it is predicted that more deficit in news will create in stock price before the official disclosure of good news than bad news. Totally, the purpose of this study was to examine this issue that whether the supervisory power of information disclosure policy has an impact on the disclosure of bad news than good news or not. In fact, in this research, we're seek to answer these questions that whether a deficit resulted of bad news has an impact on stock returns emphasizing the power of regulatory policies of information disclosure? It seems that assessing this issue can be useful for managers, investors, shareholders and other beneficiary groups. [18]

2 Research theoretical principles and background

Empirical researches during the past two decades suggest that returns volatility has been time-dependent and change in volatilities in many asset markets to some extent is predictable [3]. Although many researchers agree on predictability of price volatilities and returns in most asset markets, but about how to modeling these volatilities, different approaches have been used. One of the most important approaches in this regard, the leverage effect patterns or asymmetry in volatilities. In these patterns, the momentums are divided into two categories: positive momentum or good news and negative momentum or bad news so that good and bad news with the same size may have a different impact on conditional volatility. Theoretically, it is argued that by stock price decline, the share of debt in the financial structure of the enterprise will increase, so shareholders bear more risk and expect increase in future stock returns volatility. In empirical researches, Friedman et al. [4] and many other studies have shown that negative momentums (bad news) have greater effects on returns volatility than positive momentum with the same size, so that volatilities in the stock markets are asymmetric [12]. According to the mentioned theoretical foundations, the first and third research hypotheses are presented as follows:

H1: the fraction resulting from the impact of bad news affects the stock returns.

H3: the fraction resulting from the impact of bad news affects the cumulative abnormal returns.

Skinner [20] put his research on the basis of earnings per share announcement as a source of news and concluded that due to being larger the market reaction to bad news compared with the good news, the manager in order to maintain his credit as well as to avoid the possible increase of legal proceedings against the company, spread bad news gradually and before the official announcement as the announcement of earnings per share. Kasznik and Lev [9] found that investors who warn companies that announced bad news about earnings, significantly have negative reaction higher than the companies that do not warn, for unexpected earnings per unit. Many factors motivated the managers to spread the distinct good news than bad news [7]. For example, Yermack's [24] study showed that the managers in the period before receiving grant of stock purchase authority, accelerate publication of bad news as well as keep good news confidentially in order to reduce the purchase authorization price. Verecchia [23] provided evidences that full disclosure of the confidential information makes companies to bear political costs and the competitive position of the company may face with risk [21]. According to Healy and Palepu [5] research, the manager is faced with various incentives and opportunities that encourage him to immediately disclose company's news or hide it. Suijs [22] referring to the fixed costs and variable allocated costs resulted of compulsory information disclosure, proposed voluntary disclosure of bad news as a tool that the manager use it to reduce and fix the disclosure costs. Hermalin and Weisbach [7] also considering reward motivation, and retain job for manager, examined the owners' attempt to evaluate managers based on the information they disclosed and concluded that managers in the most optimal mode, the managers' disclosure especially bad news, is not fully transparent Kothary et al. [10] reviewing the abnormal stock returns in the range of dividend announcement and manager's predictions concluded that the manager spread good news rapidly, but has delay in the disclosure of bad news. Subasi [21] expanded the Kothary et al. [10] and Verrecchia [23] researches and concluded that by controlling the factors affecting the motivation of managers to hide bad news, according to Kothari model, the findings of Verrecchia research that predecessor transactions limitations cause larger price reactions to bad news can be confirmed. Although manager is committed to reduce the information asymmetry by full, relevant and reliable disclosure of information, but according to representation theory emphasize, that the manager and shareholder make decisions based on their personal interests, may preferences of the manager to disclose information do not in line with the preference of the shareholders. This issue causes that the manager having personal incentives and also having various opportunities can implement his considered pattern in company's information disclosure that finally the news release has the most impact on his interests [7]. Therefore, the management function asymmetry in releasing the good news versus bad news results asymmetric reaction of shareholders to this news as well. According to the theoretical foundations listed, the second and fourth research hypotheses are presented as follows:

H2: the fraction resulting from the impact of bad news on the interaction of regulatory power of information disclosure policies has an impact on stock returns.

H4: the fraction resulting from the impact of bad news on the interaction of regulatory power of information disclosure policies has an impact on abnormal accumulative returns.

In Efficient Markets Hypothesis (EMH) it is stated that most investors are aware and reasonable and show an appropriate and logical reaction toward new news and information entered to the market. Thus, stock prices have a rapid, full and unbiased reaction to new information, and at any time reflect its intrinsic and true value [11]. However, Lafond and Watts [11] believe that unusual supply and demand, however, is a result of confidential information existence: When there is confidential bad

news, shares supply will increase and suggested sales prices will decrease. Conversely, when there is confidential good news, demand will increase and subsequently, the suggested purchase price will increase. If there is no confidential information, market-makers publish the public information available on stock price; it means that market-makers in time of receiving the information, lead prices to an adequate level and thus unusual buy and sell do not occur [15]. According to the theoretical foundations listed, the fifth and sixth hypotheses are presented as follows:

H5: the fraction shares resulting from the impact of bad news has an impact on shares fall risk.

H6: the fraction shares resulting from the impact of bad news in interaction with regulatory powers of information disclosure policies has an impact on shares fall risk.

3 Research Methodology

This study is practical and its design is quasi-experimental using of ex post facto approach. Also, the nature of the data used to test the hypotheses, is by panel data type. Information collection has been done using library method and research data has been collected through data of selected companies as financial forms and explanatory notes, using Rahavard Novin and Tadbir Pardaz software.

3.1 Research Hypotheses

According to theoretical principles and to achieve the objectives of the study, the following hypotheses are presented:

H1: the fraction resulting from the impact of bad news affects the stock returns.

H2: the fraction resulting from the impact of bad news on the interaction of regulatory power of information disclosure policies has an impact on stock returns.

H3: the fraction resulting from the impact of bad news affects the cumulative abnormal returns.

H4: the fraction resulting from the impact of bad news on the interaction of regulatory power of information disclosure policies has an impact on abnormal accumulative returns.

H5: the fraction shares resulting from the impact of bad news has an impact on stock crash risk.

H6: the fraction shares resulting from the impact of bad news in interaction with regulatory powers of information disclosure policies has an impact on shares fall risk

3.2 Statistical population and sample selection

The statistical population of this study is consisted of all companies listed on the Tehran Stock Exchange during the years 2010-2014. The sample selection stages are presented in Table 1. According to the Table 1, 122 companies have been selected as the research systematic sample and for each variable of this study, 610 data-year have been calculated to test the statistical hypotheses.

3.3 Research model and variables

In this study to assess the hypotheses, the following regression models have been used that in the following, the main H1 model in equation (1) is provided

Table 1: Various sampling stages

various sampling stages	No.
The number of companies listed on the Tehran Stock Exchange at the end of 1393 (2014)	520
The number of companies that left the Exchange at that time duration	49
The number of companies that entered to the Exchange at that time duration	45
The number of companies that in the study time duration have had change in fiscal year	37
The number of companies that were investor and financial broker	106
The number of companies that in the study time duration have had transactional interruption more than 6 months	118
The number of companies that their fiscal year does not end to 12.29	52
The number of sample companies	122

Source: researcher findings

$$R_{it} = \alpha + \beta_1 Bad_{it} + \beta_2 Bad_{it} * RegFD_{it} + \beta_3 Bad_{it} * HiLitRisk_{it} + \beta_4 Bad_{it} * HiAsym + \beta_5 Bad_{it} * HiDistress_{it} + \epsilon_{it} \quad (1)$$

The H2 model is as follow:

$$R_{it} = \alpha + \beta_1 Bad_{it} * Monitoring_{it} + \beta_2 Bad_{it} * RegFD_{it} + \beta_3 Bad_{it} * HiLitRisk_{it} + \beta_4 Bad_{it} * HiAsymm_{it} + \beta_5 Bad_{it} * HiDistress_{it} + \epsilon_{it} \quad (2)$$

$$R_{it} = \alpha + \beta_1 Bad_{it} * Monitoring_{it} + \beta_2 Bad_{it} * RegFD_{it} + \beta_3 Bad_{it} * HiLitRik_{it} + \beta_4 Bad_{it} * HiAsymm_{it} + \beta_5 Bad_{it} * HiDistress_{it} + \epsilon_{it} \quad (3)$$

The H3 model is as follow:

$$CAR_{it} = \alpha + \beta_1 Bad_{it} + \beta_2 Bad_{it} * RegFD_{it} + \beta_3 Bad_{it} * HiLitRisk_{it} + \beta_4 Bad_{it} * HiAsymm_{it} + \beta_5 Bad_{it} * HiDistress_{it} + \epsilon_{it}$$

The H4 model is as follow:

$$CAR_{it} = \alpha + \beta_1 Bad_{it} * Monitoring_{it} + \beta_2 Bad_{it} * RegFD_{it} + \beta_3 Bad_{it} * HiLitRisk_{it} + \beta_4 Bad_{it} * HiAsymm_{it} + \beta_5 Bad_{it} * HiDistress_{it} + \epsilon_{it} \quad (4)$$

The H5 model is as follow:

$$CrashRisk_{it} = \alpha + \beta_1 Bad_{it} + \beta_2 Bad_{it} * RegFD_{it} + \beta_3 Bad_{it} * HiLitRisk_{it} + \beta_4 Bad_{it} * HiAsymm_{it} + \beta_5 Bad_{it} * HiDistress_{it} + \epsilon_{it} \quad (5)$$

The H6 model is as follow:

$$CrashRisk_{it} = \alpha + \beta_1 Bad_{it} * Monitoring_{it} + \beta_2 Bad_{it} * RegFD_{it} + \beta_3 Bad_{it} * HiLitRisk_{it} + \beta_4 Bad_{it} * HiAsymm_{it} + \beta_5 Bad_{it} * HiDistress_{it} + \epsilon_{it} \quad (6)$$

R_{it} : Stock returns of company (i) in period (t)

CAR_{it}: Abnormal accumulative returns of company (i) in period (t)

$CrashRisk_{it}$: Stock crash risk of company (i) in period (t)

Bad_{it}: Bad news of company (i) in period (t)

$RegFD_{it}$: Number of profit prediction of company (i) in period (t)

$HiLitRisk_{it}$: Dummy variable of risk of company (i) in period (t)

$HiAsymm_{it}$: Dummy variable of informational asymmetry of company (i) in period (t)

$HiDistress_{it}$: Dummy variable of financial crisis of company (i) in period (t)

$Monitoring_{it}$: Regulatory power of information disclosure policies of company (i) in period (t)

The measurement method of the study variables is provided in the following:

Dependent variables are as follows:

1) Stock returns: is the average of monthly stock returns.

2) Abnormal returns (unusual) that equation (7), is obtained:

$$CAR_{it} = \prod_{t=1}^{T}(1 + AR_{it}) \quad (7)$$

$$AR_{it} = R_{it} - R_{mt}$$

AR_{it}: Abnormal returns

R_{it}: Real returns

R_{mt}: Market returns

3) Stock price future crash risk: Based on the study of Hutton et al. [8], the crash course in a determined fiscal year is a period in which the company's particular monthly returns must have interval by 3.2 standard deviations from its particular monthly returns mean. [8] This definition is based on this statistical concept that by assuming normality of the company's particular monthly returns distribution, volatilities that are in the mean interval plus 3.2 of standard deviation (SD) and mean minus 3.2 of SD, are considered as ordinary volatilities and volatilities out of this interval, are considered as unusual cases. Given that the share price fall is an unusual volatility, the number 3.2 is

considered as the border between normal and abnormal volatilities. In this study, the stock prices crash risk, is a dummy variable that if the company during the fiscal year, has experienced at least one episode of collapse, its value will be one and otherwise will be zero, which in equation (8) is provided:

$$W_{j\theta} = Ln(1 + \xi_{j\theta}) \quad (8)$$

$W_{j\theta}$: Particular monthly returns of company (j) in month (θ) during fiscal year.

$\xi_{j\theta}$: Is stock remain returns of company (j) in month (θ) or model residual in equation (9):

$$\boldsymbol{r_{i\theta}} = \beta_0 + \beta_1 jr_{m\theta}\text{-}2 + \beta 2 jr_{m\theta}\text{-}1 + \beta 3 jr_{m\theta} + \beta 4 jr_{m\theta}+1 + \beta 5 jr_{m\theta}+2 + \varepsilon_{jt} \quad (9)$$

$r_{j\theta}$: stock returns of company (j) in month (θ) during fiscal year

$r_{m\theta}$: Market returns in month θ that to calculate the monthly returns of the market, the beginning of the month index has been subtracted from the end of the month index and the yield is divided into the beginning of the month index.

Control variables are as follows:

1) The number of profit prediction

2) Risk: an index variable that if risk be higher than mean, is one otherwise is equal to zero.

3) Accounting Beta (systematic risk): a part of total risk of Stock Exchange that is non-removable and is created due to presence of factors affecting total price of Stock Exchange. To calculate the systemic risk, the Stock Exchange price index is used. the Beta coefficient for a particular share is determined such a way that the systematic risk degree of the share is compared with systematic risk related to the Stock Exchange price index, that in equation (10) has been provided:

$$\beta = \frac{cov(R_m, R_i)}{\sigma^2 R_m} \quad (10)$$

R_i : Company's stock returns

R_m : Market index stock returns

$\sigma^2 R_m$: R_m variance

4) Informational asymmetry: is the index variable that if the company's informational asymmetry be higher than the mean is one and otherwise equal to zero. Difference in stock proposed buy and sell price shows the informational asymmetry that the larger the number shows more informational asymmetry, which in equation (11), is provided [19]

$$SPREAD_{it} = \frac{(AF - EF) \times 100}{(AF + EF) \div 2} \quad (11)$$

$SPREAD_{it}$: The scope of the proposed shares buys and sell price difference

BP: The average of shares buys proposed price of the company i at time t

AP: The average of shares buys proposed price of the company i at time t [19]

5) Financial crisis: If the Z score financial distress of Altman's model is smaller than 1.81, then the financial distressed company takes value 1, otherwise takes zero that in equation (12) is provided:

$$Z\text{-score} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.99X_5 \quad (12)$$

X_1: (working capital) / (total assets)

X_2: (retained earnings) / (total assets)

X_3: earnings before interest and taxes / (total assets)

X_4: (stock market valuation) / (debt book value)

X_5: (Sell) / (total assets)

The moderating variable is as follows:

1) Regulatory power of information disclosure policies: is obtain by interaction (multiplying) of two following factors:

a) Institutional governance:

$$\text{Institutional governance level} = \frac{\text{Total shares held by institutional investors,}}{\text{company's total issued stock}} \quad (13)$$

Table 2: Indices describing the research variable

	stock returns	Bad news	Bad news in number of profit prediction	Bad news in risk dummy variable	Bad news in informational asymmetry dummy variable	Bad news in financial crisis dummy variable	Bad news in regulatory power of information disclosure policy	Abnormal commutative returns
Average	5.229049	0.513115	3.772131	0.321311	0.334426	0.372131	0.157311	1.197934
Mean	4.060000	1.000000	4.500000	0.000000	0.225454	0.214544	0.130000	1.06000
Max.	28.49000	1.000000	9.000000	1.000000	1.000000	1.000000	0.790000	7.430000
Min.	-7.870000	0.000000	0.000000	0.000000	0.0000000	0.000000	0.000000	0.230000
SD	5.926645	0.500238	2.757681	0.467363	0.472177	0.445422	0.200450	0.709927
skewness	0.050718	-0.052477	0.080260	0.076529	0.070190	0.023998	0.166771	0.097867
elongation	2.948809	1.002754	1.220048	1.585675	1.492659	2.048573	3.000000	19.18187
Jock-bra	0.265459	0.101245	0.814546	0.110125	0.107455	0.129554	0.141254	0.754558
probability	0.745786	0.901254	0.124574	0.895544	0.901255	0.885457	0.845457	0.254855
Total	3189.720	313.0000	1691.000	196.0000	204.0000	95.96000	95.96000	730.7400
Total SD	21391.20	152.3951	4631.336	133.0230	135.7770	24.46979	24.46979	306.9336
observations	610	610	610	610	610	610	610	
sections	122	122	122	122	122	122	122	

In Rubin [18] researches, the level of institutional ownership, total shares held by the banks and insurances, holdings, investment and financing companies, retirement and investment funds, government institutions and state-owned companies are divided by the total issued shares of the company.

b) The independence of the board of directors: the ratio of non-responsible members to the total members of the board of director.

4 Main Results

4.1 Descriptive Statistics

Before research hypotheses test, the research variable has been investigated in Table 2 as summarized, containing indices describing the research variable. In Tables 2 and 3, regarding that probability level of Jock-bra statistic is more than 5%, the null hypothesis of this statistic could not be rejected, thus, data of considered variables is normal.

Table 3: Research variable describing indices

	Number of profit prediction	Risk dummy variable	informational asymmetry dummy variable	financial crisis dummy variable	regulatory power of information disclosure policy	Stock crash risk
Average	5.504918	0.583607	0.583607	0.331148	0.364115	0.672131
Mean	5.000000	1.000000	1.000000	0.254646	0.360000	1.000000
Max.	9.000000	1.000000	1.000000	1.000000	1.060000	1.000000
Min.	3.000000	0.000000	0.000000	0.000000	0.1000000	0.000000
SD	0.850466	0.493365	0.493365	0.471012	0.181512	0.469822
skewness	1.154792	-0.339202	-0.339202	0.071757	0.352990	-0.073335
elongation	2.695579	1.115058	1.115058	1.54900	2.449427	1.537805
Jock-bra	0.205158	0.102455	0.102455	0.108157	0.201254	0.106255
probability	0.801254	0.901246	0.901246	0.901246	0.801254	0.912440
Total	3358.000	356.0000	356.000	202.0000	222.1100	410.0000
Total SD	440.4852	148.2361	148.2361	135.1082	20.06457	134.4262
observations	610	610	610	610	610	610
sections	122	122	122	122	122	122

Source: researcher findings

4.2 Variables reliability test

In Table 4, the daily rate of return over the period 2009-2013 has been tested using unit root. Also in Table 4, the null hypothesis based on the presence of unit root considering the common unit root process and by LLC, as well as IPS and ADF-Fischer and the PP-Fisher method with 122 sections and

488 observations, all in 5%level are rejected. The results of unit root test on all the variables expressing lack of root unit.

4.3 F-Limer and Hausman test

The results of F-Limer and Hausman test of research hypotheses have been provided in Table 5.

Table 4: Stock returns reliability test

method	Test statistic amount	Significance level amount	Sections number	Observations number
Null hypothesis: presence of unit root (common unit root process)				
Levin, Lin & Chow (LLC)	-51.4095	0.0000	122	488
Null hypothesis: presence of unit root (single unit root process)				
IPS (W-test)	-15.6857	0.0000	122	488
AFD-Fischer (chi-square test)	530.303	0.0000	122	488
PP-Fischer (chi-square test)	604.999	0.0000	122	488

Source: researcher's findings

Table 5: F-Limer and Hausman test of research hypotheses

Research hypotheses	f-statistics	Freedom degree	Significance level	result
H1	50.528968	(483,121)	0.0000	Panel data
H2	53.532	(483,121)	0.0000	Panel data
H3	1.899985	(483,121)	0.0000	Panel data
H4	2.197280	(483,121)	0.0000	Panel data
H5	264.689573	(483,121)	0.0000	Panel data
H6	63.573797	(483,121)	0.0000	Panel data
Research hypotheses	Chi-square statistic	Freedom degree	Significance level	result
H1	61.440952	5	0.0000	Fix effects
H2	39.35654	5	0.0000	Fix effects
H3	52.554639	5	0.0000	Fix effects
H4	31.427457	5	0.0000	Fix effects
H5	41.070658	5	0.0000	Fix effects
H6	52.524208	5	0.0000	Fix effects

Source: researcher's findings

5 Further Analysis

5.1 H1 analysis

The results of H1 evaluation have been provided in Table 6. In the Table 6, the F-statistical probability is less than 5%, so we conclude that generally, the model statistically is acceptable; determination coefficient and adjusted determination coefficient confirmed the high explanatory power of the model.

Of the provided Durbin-Watson statistic amount, lack of correlation in mentioned model can be confirmed. Given the significant amount in the above model, the H1 is confirmed.

Table 6: Evaluation of H1 model coefficients

variable	coefficients	SD	t-statistic	Significance level
The intercept	3.987747	0.246882	16.15241	0.0000
Bad news	-0.628980	0.213334	-2.948334	0.0033
Bad news in number of profit prediction	-0.163349	0.036461	-4.480107	0.0000
Bad news in risk dummy variable	-0.421665	0.063110	-6.681468	0.0000
Bad news in informational asymmetry dummy variable	-0.0.183132	0.066013	-2.774193	0.0057
Bad news in financial crisis dummy variable	-0.211249	0.060004	-3.520559	0.0005
Determination coefficient		0.84	Durbin-Watson	2.261
Adjusted determination coefficient		0.83	Significance level	0.0000

Source: researcher's findings

Table 7: Evaluation of H2 model coefficients

variable	coefficients	SD	t-statistic	Significance level
The intercept	4.200029	0.231003	18.18171	0.0000
Bad news in regulatory power of information disclosure policies	0.946844	0.133900	7.071261	0.0000
Bad news in number of profit prediction	0.134170	0.138671	0.967541	0.3338
Bad news in risk dummy variable	-0.405468	0.052013	-7.795582	0.0000
Bad news in informational asymmetry dummy variable	-0.132688	0.060404	-2.196694	0.0285
Bad news in financial crisis dummy variable	-0.146994	0.054428	-2.700701	0.0072
Determination coefficient		0.84	Durbin-Watson	2.261
Adjusted determination coefficient		0.83	Significance level	0.0000

Source: Researcher's findings

5.2 H2 analysis

The results of H2 evaluation have been provided in Table 7. In the Table 7, the F-statistical probability is less than 5%, so we conclude that generally, the model statistically is acceptable;

Determination coefficient and adjusted determination coefficient confirmed the high explanatory power of the model. Of the provided Durbin-Watson statistic amount, lack of correlation in mentioned model can be confirmed. However, due to the shortness of time period there is no need to evaluate this statistic. According to the p amount in the above model, the H2 is confirmed.

5.3 H3 analysis

The results of H3 evaluation have been provided in Table 8.

Table 8: Evaluation of H3 model coefficients

variable	coefficients	SD	t-statistic	Significance level
The intercept	1.132646	0.021170	53.50325	0.0000
Bad news	-0.144951	0.021155	6.851838	0.0000
Bad news in number of profit prediction	-0.065044	0.036359	-1.788965	0.0742
Bad news in risk dummy variable	-0.231931	0.058202	-3.984913	0.0001
Bad news in informational asymmetry dummy variable	-0.267305	0.061330	-4.358495	0.0000
Bad news in financial crisis dummy variable	-0.026854	0.051589	0.520533	0.6029
Determination coefficient		0.84	Durbin-Watson	2.261
Adjusted determination coefficient		0.83	Significance level	0.0000

Source: Researcher's findings

In the Table 8, the F-statistical probability is less than 5%, so we conclude that generally, the model statistically is acceptable; determination coefficient and adjusted determination coefficient confirmed the high explanatory power of the model. Of the provided Durbin-Watson statistic amount, lack of correlation in mentioned model can be confirmed. However, due to the shortness of time period there is no need to evaluate this statistic. According to the p amount in the above model, the H3 is confirmed.

5.4 H4 analysis

The results of H4 evaluation have been provided in Table 9. In the Table 9, the F-statistical probability is less than 5%, so we conclude that generally, the model statistically is acceptable; determination coefficient and adjusted determination coefficient confirmed the high explanatory power of the model.

Of the provided Durbin-Watson statistic amount, lack of correlation in mentioned model can be confirmed. However, due to the shortness of time period there is no need to evaluate this statistic. According to the p amount in the above model, the H4 is confirmed.

Table 9: Evaluation of H4 model coefficients

variable	coefficients	SD	t-statistic	Significance level
The intercept	1.128064	0.020811	54.20624	0.0000
Bad news	0.798950	0.110258	7.246188	0.0000
Bad news in number of profit prediction	-0.022646	0.012045	-1.880096	0.0607
Bad news in risk dummy variable	-0.226781	0.049508	-4.580667	0.0000
Bad news in informational asymmetry dummy variable	-0.249232	0.058050	-4.293375	0.0000
Bad news in financial crisis dummy variable	-0.086132	0.047276	-1.821880	0.0691
Determination coefficient		0.84	Durbin-Watson	2.161
Adjusted determination coefficient		0.83	Significance level	0.0000

Source: researcher's findings

Table 10: Evaluation of H5 model coefficients

variable	coefficients	SD	t-statistic	Significance level
The intercept	0.672560	0.001612	417.2717	0.0000
Bad news in regulatory power of information asymmetry policies	-0.040820	0.002998	-13.61592	0.0000
Bad news in number of profit prediction	-0.009576	0.000531	-18.02117	0.0000
Bad news in risk dummy variable	-0.001767	0.000818	-2.158839	0.0183
Bad news in informational asymmetry dummy variable	0.000436	0.007960	0.054724	0.9564
Bad news in financial crisis dummy variable	-0.002034	0.000749	-2.714878	0.0021
Determination coefficient		0.949	Durbin-Watson	2.21
Adjusted determination coefficient		0.933	Significance level	0.0000

Source: Researcher's findings

5.5 H5 analysis

The results of H5 evaluation have been provided in Table 10**.** In the Table 10, the F-statistical probability is less than 5%, so we conclude that generally, the model statistically is acceptable; determination coefficient and adjusted determination coefficient confirmed the high explanatory power of the model.

Of the provided Durbin-Watson statistic amount, lack of correlation in mentioned model can be confirmed. However, due to the shortness of time period there is no need to evaluate this statistic. According to the p amount in the above model, the H5 is confirmed.

5.6 H6 analysis

The results of H6 evaluation have been provided in Table 11.

Table 11: Evaluation of H6 model coefficients

variable	coefficients	SD	t-statistic	Significance level
The intercept	0.674805	0.003255	207.3274	0.0000
Bad news	-0.047439	0.004407	-10.76479	0.0000
Bad news in number of profit prediction	-0.002230	0.000253	-8.805275	0.0000
Bad news in risk dummy variable	-0.004533	0.000912	-4.970968	0.0000
Bad news in informational asymmetry dummy variable	-8.2005	0.007999	-3.435544	0.9918
Bad news in financial crisis dummy variable	-0.032987	0.009602	-3.435544	0.0020
Determination coefficient		0.84	Durbin-Watson	2.21
Adjusted determination coefficient		0.83	Significance level	0.0000

Source: Researcher's findings

In the Table 11, the F-statistical probability is less than 5%, so we conclude that generally, the model statistically is acceptable; determination coefficient and adjusted determination coefficient confirmed the high explanatory power of the model. Of the provided Durbin-Watson statistic amount, lack of correlation in mentioned model can be confirmed. However, due to the shortness of time period there is no need to evaluate this statistic. According to the p amount in the above model, the H6 is confirmed.

6 Discussion and Conclusion

This study seeks to find the impact of fraction resulted of bad news on stock return emphasizing the regulatory power of the information disclosure policies in companies listed on the Tehran Stock Exchange that according to the results of research hypotheses, fraction resulted of bad news have had

an impact on stock returns and this impact is also exist in the interaction of the fraction resulting from the impact of bad news with regulatory power of information disclosure policies. It also can be argued that the fraction resulting from bad news has had also impact on abnormal accumulative returns that this impact also was in the interaction of the fraction resulting from the impact of bad news interact with regulatory power of information disclosure policies as well.

According to the research results, fraction resulting from bad news has impact on stock crash risk and also, fraction resulting from bad news in interaction of regulatory power of information disclosure policies, has had impact on stock crash risk. The results of the present study are correspondent with the research theoretical principles and background; the empirical researches in past two decades suggest that volatilities are time-dependent and change in volatilities in many asset markets are somehow predictable [15]. Although many researchers agree about predictability of price volatilities and returns in most asset markets, but about how to modeling these volatilities, different approaches have been used. One of the most important approaches in this regard, the leverage effect patterns or asymmetry in volatilities. In these patterns, the momentums are divided into both positive momentum or good news and negative momentum or bad news, so that the good and bad news with the same size may have a different impact on conditional volatilities.

Theoretically, it is argued that by stock price decline, the share of debt in the financial structure will increase; thus investors accept more risk and expect increase in future stock returns volatilities. In empirical researches, Nelson [15] and Pagan and Schwert [16], Henry [6], Friedman et al. [4] and many other studies have shown that negative momentums (bad news) have more impact on the returns volatilities than the positive momentums (good news) with the same size, so that fluctuations in the stock markets are asymmetric. Kothary et al. [10] by assessing the abnormal stock returns in the range of announcement of dividend and the manager's predictions concluded that the manager spreads good news rapidly, but has delay in spreading the bad news.

According to the results of the study, changes in the manner and extent of disclosure of information will lead to changes in stock returns and also correction and improvement in prediction and decision making of accounting information users. So given that the main task of managers is promotion of shareholders' capital to the possible maximum extent, so the managers should have particular attention to the bad news variable and implement the returns prediction improvement strategies to increase profitability of the investors.

According to the results of the second hypothesis (H2), it is valuable that the audit organization and other legislative and regulatory bodies, pay more attention to regulatory powers in formulating the accounting standards and financial laws, and by providing necessary guidelines to limiting the managers, assist users of financial information in order to make optimize and informed decisions, more than ever. According to the H3results, the bad news can be criteria of efficiency, to predict the abnormal cumulative returns. According to the H4 results, it is recommended to the companies' managers in order to make company's financial decisions, in line with use of other financial and non-financial statistic, consider factors such as the impact of bad news and its impact on companies' abnormal returns.

According to the H5 results, it is suggested that participants in the capital market, while paying attention to the impact of bad news, consider the findings of this research about the stock crash risk long-term predictions volatilities. Also according to the H6 results, the fraction resulting from the impact of bad news on the interaction of regulatory power of information disclosure policies has an impact on the stock crash risk

It is suggested to the researchers that survey the following topics in their future studies:

- The impact of fraction resulting of bad news on investment efficiency
- The impact of fraction resulting of bad news on cost of capital
- The impact of fraction resulting of bad news on systemic risk
- The impact of fraction resulting of bad news on earnings quality
- Study of the impact of financial and non-financial variables on abnormal returns volatility using methods such as profit, neural networks and multi-agent analysis.

The most important limitation of the present study is the lack of full disclosure of information related to the research variables. Information on all the variables for stock companies is not fully available. Thus, to avoid bias in study results, some year-companies have been excluded from the sample size that has leaded to sample size reduction.

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