



Financial Statement Comparability and the Expected Crash Risk of Stock Prices

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ABSTRACT

The purpose of this study is to explain the relationship between the comparability of financial statements as a qualitative financial reporting feature with the expected risk of stock price crash. The statistical population of this research includes all companies admitted to Tehran Stock Exchange. In order to achieve the research goal, 81 companies were selected for the period between 2010 and 2017 as a sample of the study. The research aimed at being an applied research and the research method is in terms of the nature and content of the correlation. The research has been performed in the framework of deductive-deductive reasoning and for analysis of the research hypothesis; statistical analysis of the logistics has been assisted. The results of the research hypothesis test showed a significant and negative relationship between the comparability of financial statements and the expected crash in stock prices.

1 Introduction

Decisions made by users of financial reports deal with selecting one chance out of alternative ones. So information of reporter unit is useful when they can be compared with similar information from other unites and other periods. Comparability is one of the main qualitative characteristic of providing information which makes it more useful. Based on FASB8 standard and IASB's conceptual frame work for financial reporting [12] comparability, verifiability, timeliness and understandability are qualitative characteristics that enhance the usefulness of information that are relevant and faithfully represented. Comparability helps users to identify and understand similarities and differences, to reduce cost of information obtaining and processing and to increase general quantity and quality of company's information [10]. Based on other researchers attempt, it is perceived that comparability of financial statements can alleviate effect of hiding private information and bad news by managers and not exposing them which causes sudden distribution of negative news in capital market and eventually extreme decrease of stock price hence it reduces expected crash risk of investors stock price [16].

Increased commercial competitions in different industries, competition for finding new markets and financing methods required industrial owners and investors to have wide, accurate and relevant information. One of the main information utilized by many users is financial reporting. Financial reporting users need to be able to compare financial statements of commercial unit over time in order to

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identify changes happen in financial status, financial performance and financial feasibility of commercial unit. Users also need to compare various financial statements of commercial units by which evaluate their financial status, financial performance and financial feasibility comparatively [23]. Unambiguous and comparable financial data is essential for accountability and informed economic decision making and it is necessary for economic growth and development in private and governmental sectors. If informed decisions is not based on clear and comparable data, rare economic resources are wasted and the state economy is damaged. Comparability requires financial statements to be comparable because similar and consistent accounting methods are useless. In this case, users compares current value of the companies and their risk rate and compare them then make decision. Users can compare different company's information and make decision by accessing to this information and by risk anticipation [11].

Stock price crash occurs often due to stock price bubble of the firm which happens by some managerial decisions such as delay in exposing bad news and acceleration in blurting good news, tax evasion, keeping projects with negative current value and ambiguity of financial data [18]. According to accounting researches, commercial unit managers are always able to postpone bad news distribution and store them as private information which is due to high costs of exposing the information or lack of management ability to keep performing other policy (such as change of commercial unit management). Finally, when negative information volume reaches its final value, managers cannot prevent distribution of news to the market and investors. By publicizing the news in the market, investors revise their previous belief as a basis of the firm current stock price and establish their expectations based on their new information which suddenly provides negative balances of stock price called stock price crash in financial literature [15]. Thus comparability of financial statements is a crucial qualitative characteristic in providing financial statements and it aims at taking benefit of financial statements for making economic decisions by wide ranges of users. Since extreme reduction of stock price and its risks is very important and investors might suffer from losses, this study attempts to study the relationship between comparability of financial statements and expected crash risk of stock price in Tehran stock exchange. However the main question is that main question of the researcher is whether there is significant relationship between financial statements and expected crash risk of stock price?

2 Literature review

2.1. Financial statement comparability

The objective of general-purpose financial reporting is to provide users with information that enables them to assess the amount, timing, and uncertainty of a firm's future net cash flow. The FASB [12] states that information is most likely to satisfy this objective when it can be readily compared with similar information reported by other entities and by the same entity in other periods. Implicit is the idea that comparability enables users to make sharper inferences about economic similarities and differences across comparable firms so that investors can better understand and evaluate firm performance. Recent empirical studies have emerged in response to the development of empirically testable proxies for comparability [7]. While these studies vary in their settings or empirical measures, their general theme is that comparability lowers information acquisition and processing costs and enhances the quality of information available to investors. For example, De Franco et al [10] argue that comparability allows meaningful comparison among firms so that analysts can not only make sharper inferences about economic similarities and differences across comparable firms, but also better understand

how economic events are translated into firm performance. Moreover, because comparable firms constitute good benchmarks for each other, information transfer among them could reduce the amount of effort exerted by analysts in understanding and analyzing their financial statements. Kim et al [19] argue that higher comparability facilitates more standardized or otherwise less judgmental calculations of accounting information for users, especially for firms with comparable peers.

2.2 The expected crash risk

Academic communities, policy-makers and public media increasingly have recognized crash risk of stock price from 2008 (year of financial crisis). Not trusting in investor is one mistake that reduce stock price severely. Investors are worried about drop of stock price in worldwide economic financial crisis which can enhance decrease of stock value. Blanchard [3] stated that although elimination of crash risk is very important, removing crash risk idea is vital in asset value marketing (especially during market collapse). New studies illustrated that investors need to change historic crash risk to expected crash risk of stock price. Notwithstanding, most prior studies on the determinants of stock price crashes have paid little attention to expected crash risk, though they have paid considerable attention to ex post realized crash risk. A notable exception is Kim et al [19], who show that accounting opacity, captured by absolute discretionary accruals, financial restatements, and internal control weaknesses, is an important determinant of expected crash risk. In this study, our analysis focuses on the role of financial statement comparability in determining expected crash risk of stock price.

2.3 Link between financial statement comparability and the expected crash risk

The signaling theory states that there is incentive to attract volunteers when it comes to attracting capital. Similarly, keeping investor interest in the company is also an incentive for regular reporting. Companies that perform well have a strong incentive to report their operational results. Therefore, competitive disclosure will allow other companies, although not good, to report. Silence (short reporting) will be interpreted as bad news. Firms with bad news are also motivated to report to avoid being accused of having poor results. Thus, only bad news companies will not report. This situation will make companies with bad news also have to disclose their results in order to maintain their credibility in the capital market. This economic motive for reporting (even bad news) is the heart of the signaling theory on voluntary financial reporting [25]. Thus, our results are relevant to standard setters and regulators who underscore the importance of understanding expected crash risk. Finally, our study adds to prior literature that focuses on the managerial asymmetric disclosure of good versus bad news [20]. We show that financial statement comparability disinclines corporate managers from withholding bad news. The theoretical model of Jin and Myers [17] suggests that managers have incentives to withhold bad news from investors due to their concerns about employment, compensation, reputation, and so forth. However, there is a limit to managers' hiding and accumulating bad news within the firm. When the amount of hidden bad news accumulated over time reaches a tipping point, it is released all at once, resulting in an abrupt, large-scale decline in stock price, that is, a stock price crash.

At the center of this information-based theory is the importance of managers' ability and incentive to hide bad news from investors. If either the ability or the incentive is gone or diminishes, the bad news previously accumulated becomes too costly to keep inside the firm and will suddenly become publicly

released, causing a stock price crash [15]. This study examines the impact of financial statement comparability on expected crash risk. As discussed previously, comparability facilitates information about comparable peers being available to outside investors and thus makes it easier for investors to understand financial statement information across comparable firms. We argue that, by having access to and being able to understand information from comparable firms, investors could not only have a better understanding of a firm's performance but also obtain value-relevant information through inferences based on the performance and/or disclosures of the firm's comparable peers. For example, in the absence of bad news disclosure for a particular firm, investors may be able to obtain at least some of the negative information through inferences based on the performance and/or disclosures of the firm's comparable peers. This enhanced understanding of firm performance by investors plays an important role in constraining managers' ability and incentives to hoard bad news.

Maintaining the assumption that managers of firms with higher comparability have limited ability and incentives to hoard bad news, we predict that expected crash risk, captured by the options implied volatility smirk, is lower for firms with more comparable financial statements, because outside investors perceive these firms to be less crash prone. High comparability potential of financial statements reduces managers' motivation and their capacity for hiding negative news, because by accessing to information related to similar firms and chance of identifying information, investors can have better understanding from the firm performance and also they can obtain some negative news about it through analysis of performance or exposure of similar firms (even negative news are exposed). Since investors obtain some negative unexposed news about the similar firm, it is not advantages for them to hide this news yet and it will cost more, so more comparability reduces manager's motivation for hiding news. This study is essential because firstly it reviews advantages of financial statements comparability literature. Second, it develops growing resources aimed at identifying the relationship between crash risk and financial reporting transparency. Third, it develops growing resources that intended to determine the relationship between crash risk and financial reporting informing. Fourth, it improves resources related to unequal exposure of positive and negative news by managers. Thus, based on above statements, this study investigated the relationship between comparability of financial statements and expected crash risk of stock price in companies listed in Tehran stock exchange. Firms, as economic units, are looking for profitability and achieving wealth. According to experimental evidence, financial reporting accountability is the most efficient path for those aims. Recent years, due to many financial scandals in big companies (such as Enron and world come and ...) and no trust in accounting numbers which are the main part of financial reporting, investors cannot simply trust in financial statements provided by managers. When stock price crash happens, investors lose their trust. Hence, in this study, the main aim is explaining the relationship between comparability of financial statements and expected crash risk of stock price. Secondary aims of this study are as following:

- Explanation and analysis of expected crash risk of stock price ;
- Identifying effect of financial statements comparability of companies listed in stock exchange on expected crash risk of stock price in order to make optimal decisions by investors;
- Clarifying accounting information importance in evaluating supervision task and
- Providing necessary evidence for answering the research questions

Applied purposes of the study are as following:

- Improving information of current and potential investors including investors of stock exchange and also people that intend to invest on capital markets; and

- Improving knowledge of managers in companies listed in stock exchange and
- Helping companies' financial creditors; and
- Helping capital market analyzers
- Enhancing scientific information of students and researchers of relevant fields.

Ahmad et al [1] investigated effect of financial statements comparability on pricing error caused by accounting accruals' abnormalities. Results illustrated that comparability is qualitative characteristic that reflects information in stock price on-time and efficiently so inappropriate stock pricing is reduced. Chen et al [6] studied effect of smoothing profit on stock price crash risk. Results indicated that crash risk of stock price is increased by smoothing profit.

Crash risk of stock price is enhanced when smoothing profit happens with discretionary accruals. Anenn, et al [2] analyzed the relationship between stock price crash and modification of companies leverage in 14 different countries. Results indicated that in companies with had higher stock price crash, there is less inclination to modify operational leverage and this negative relationship is poorer in countries with clearer informational environment. Foroughi et al [13] investigated debt maturity effect on future crash risk of stock price. In order to test research hypothesis, multivariate regression and mixed data method were used based on two criteria of crash risk of stock price. Results concluded that debt maturity has negative effect on future crash risk of stock price. In other word, by debt maturity decrease, chance of crash risk of stock price is reduced. Jeong et al [16] studied effect of financial statements comparability on expected crash risk. Results showed that expected crash risk is reduced by increase of financial statements comparability while this negative relationship is more sever in environments in which managers are prefer to hide negative news rather than exposing them. Rahnama Roodposhti et al [21] studied auditor style and comparability of financial statements. Results of the study indicated that auditor style is effective on comparability of financial statements that have crucial role in achieving comparability; in addition to need to uniform accounting standards. Choi et al [9] investigated the relationship between financial statements comparability with stock price informing in case of future profits. They concluded that in companies with higher potential of comparing with same-industry companies, informing stock price is higher. Their findings indicated that financial statements comparability accelerates reflecting specific information of the company and information of future profit of the company.

Cambell and Young [5] illustrated effect of financial statements comparability on intensity of reaction of company's stock price so they revised providing financial statements same-industrial companies. Chen et al [7] studied financial statements comparability and efficiency of purchase decision about buyer's investment. Results indicated that when companies' financial statements have higher comparability, purchasers obtain higher stock return and indicate higher operational improvement after buying. Bollerslev and Todorov [4] outline that, since realized crash events are invariably rare and possibly even nonexistent over a limited calendar time span, it is the fear of such events that accounts for a surprisingly large fraction of historically observed crash or crisis events. Santa-Clara and Yan [22] find that the required compensation for the expected crash risk is more than 70 percent higher than the compensation for the actual realized risk. Hong and Stein [14] argue that investors' belief heterogeneity affects future crash likelihood and predict that higher trading volume is associated with more negatively skewed stock return.

3 Research hypothesis and Methodology

According to statement of the problem, research hypothesis is: “there is significant relationship between comparability of financial statements and expected crash risk of stock price”.

3.1 Research statistical model

Model of the study adopted from Jeong et al [16] was estimated as follow:

$$\text{CRASH}_{i,t} = \beta_0 + \beta_1 \text{CompAcct}_{i,t} + \beta_2 \text{Size}_{i,t} + \beta_3 \text{LEV}_{i,t} + \beta_4 \text{ROA}_{i,t} + \xi_{i,t}$$

Model elements are as following:

CRASH: expected crash risk of stock price

CompAcct: comparability of financial statements

LEV: financial leverage

ROA: return of asset

Size: firm size

In this model, dependent variable is expected crash risk of stock price. Crash period in a certain financial year is a period during which monthly specific return of company is 3.2 standard deviation lower than monthly specific return mean. This definition is based on statistical concept in that monthly specific return distribution is assumed as normal according which fluctuations between mean +3.2 standard deviation and mean -3.2 standard deviation are considered as normal fluctuations while fluctuations out of this range are regarded as abnormal ones. Since stock price crash is a virtual variable, its value is 1 if the firm suffered from at least one crash period in one financial year or this value becomes 0. Monthly specific return is calculated as follow:

$$W_{i,\theta} = Ln(1 + \xi_{i,\theta})$$

In which:

$W_{j,\theta}$: is monthly specific return of j company in month θ in one financial year

$\xi_{j,\theta}$: Residual stock return of j Company in θ month which is considered as residual

Model in second equation:

$$r_{i,\theta} = \beta_0 + \beta_{1i} r_{m,\theta-2} + \beta_{2i} r_{m,\theta-1} + \beta_{3i} r_{m,\theta} + \beta_{4i} r_{m,\theta+1} + \beta_{5i} r_{m,\theta+2} + \xi_{i,\theta}$$

In which:

$r_{j,\theta}$: is monthly specific return of j company in month θ in one financial year

$r_{m,\theta}$: Market return in month θ . For calculating monthly return of market, subtract first day of month index from last day of month index and divide it by first day of month index.

Second equation is estimated by logistic regression and mixed data method and its residual obtained from first equation is used for calculating specific monthly return of firm. Specific monthly return of firm is applied for measuring expected crash risk of stock price. Independent variable is comparability of financial statements ($CompAcct_{ijt}$) which is estimated by Di Franco et al [10] solution. For creating year-firm scale, comparability ($CompAcct_{ijt}$) of following equation is used for a five year period:

$$Earnings_{it} = \alpha_i + \beta_i Return_{it} + \xi_{it}$$

In which Earnings and return are net income and return respectively. Forecast Coefficients in above equations are α_i and β_i which are used as a standard for accounting performance of company i.

$$E(Earnings_{iit}) = \alpha_i + \beta_i Return_{it}$$

$$E(Earnings_{jit}) = \alpha_j + \beta_j Return_{it}$$

Then based on above equations, $E(Earnings_{iit})$, expected earning of company i is estimated according to accounting function of company i and, $E(Earnings_{jit})$, earning of company i is estimated according to accounting function of company j. Finally, accounting comparability of company i and j for a five year period from t-4 to t is defined as follow:

$$CompAcct_{iit} = -\frac{1}{\sigma} \times \ln |E(Earnings_{iit}) - E(Earnings_{jit})|$$

In which high values of $CompAcct$ reflect higher accounting comparability. In other word, the more this value is close to zero, the higher is comparability [9].

Control variables of the research include:

Financial leverage LEV which is obtained by dividing total debts by total assets.

Firm size, SIZE, is calculated by natural logarithm of firm total assets book value at the end of the year.

Return on assets (ROA) which is calculated through dividing annual operational earning by total company asset which is stated by percentage.

3.2 Research methodology

This study was performed in order to be applied research and considering its nature and content it is correlation. It was carried out in comparative-deductive framework. It belongs to descriptive researches (non-experimental) and correlation which is logistic analysis type. Considering data collection method, it is causative- ex post facto research. Sampling was performed purposefully so that population was screened and companies were analyzed as sample companies which were selected by systematic elimination method. Statistical population included all companies listed in stock before 2002 which were active until end of 2016. It should be noted that this research was carried out in 2010-2016 period. So for calculating comparability of financial statements variable, stock return data and net profit of last 8 years was necessary. Thus, for attaining this data we used data of companies listed

in stock before 2002. Therefore, six criteria were determined and only companies were selected that had all standards or they were removed from the study. Selection of statistical population was as follow:

- Companies need to be listed in stock before 2002 and be active until end of 2016; and
- Companies should not belong to holding, insurance, leasing, banks, financial institutions and investment because they are very different with production companies and trade firms; and
- Financial year of the firm needs to be ended at last day of the year and it is not supposed to have financial year change or be active; and
- Company has no trading interval more than three months during financial year; and
- Based on necessity of calculation method of comparability as independent variable at least two companies are required in under studied industry; and
- Financial information of companies needs to be accessible.

Taking all above information into account, 81 companies were remained as screened companies which were selected as a sample of the study. Thus, our observations were performed during 2010 to 2016 which equals 567 financial year (7 years* 81companies). In order to study sample competence, Kukran formula was used. Accordingly, at least 74 companies are considered as statistical sample so it can be said that statistical sample enjoys required competence so results can be generalized.

4 Descriptive static of research variable

In descriptive section, data analysis was performed by central indices such as mean, dispersion indices including standard deviation, skewness and kurtosis. At the following, descriptive statistic related to 567 year-company and research variables, after screening and elimination of outliers are provided:

Table 1: Descriptive Statistic of Research Variables

Variables	Central indices			Dispersion indices			
	Mean	Median	Standard deviation	skewness	kurtosis	minimum	Maximum
CRASH	0.641	1.000	0.479	-0.592	1.350	0.000	1.000
Comp Acct	0.150	-0.002	0.904	1.465	4.455	-8.976	7.240
LEV	0.647	0.642	0.259	2.149	1.485	0.147	2.658
ROA	0.139	0.119	0.159	-1.172	1.432	-1.240	0.636
Size	14.207	14.083	1.323	0.765	4.160	10.952	19.066

According to Table 1, expected crash risk of stock price averagely was 0.641 and it asserts that during research time 64.1% observations are expected to have at least on crash risk period. Standard deviation of this variable is 0.479 and its skewness and kurtosis are -0.592 and 1.350 respectively. Annual trend of expected crash risk of stock price were studied on time period out of which highest stock

price crash risk was related to 2014 and lowest risk was for 2010. In addition, financial statements comparability mean was 0.150 and highest and lowest rate were -8.976 and 7.240 respectively. Standard deviation of this variable was 0.904 and its skewness was 1.465 and kurtosis was 4.455. It was illustrated that financial statements comparability of sample firms was in their minimum level in 2013 however this variable has been increased since 2014. Financial leverage, as control variable, was 0.647 which indicated that sample firms provided 64.7% financial resources from extra organizational loan. Then by Pearson correlation coefficient, relationship between research variable and their correlation were studied. Correlation coefficient matrixes of research variables are indicated in figure two. Based on Pearson results, expected crash risk of stock price has significant and negative correlation with comparability of financial statements, firm size and return of assets while it has positive and significant relationship with financial leverage. Comparability of financial statements has significant and positive relationship with firm size and has negative and significant relationship with financial leverage. And finally there is negative and significant relationship between return of assets and financial leverage.

Table 2: Pearson Correlation Coefficient Matrix for Research Variables

Correlation coefficient (level of significance)	CRASH	CompAcct	Size	LEV	ROA
CRASH	1				
CompAcct	-0.245	1			
	(0.000)				
Size	-0.194	0.117	1		
	(0.000)	(0.005)			
LEV	0.200	-0.084	-0.015	1	
	(0.000)	(0.044)	(0.714)		
ROA	-0.160	0.023	(0.053)	-0.345	1
	(0.000)	(0.570)	(0.206)	(0.000)	

In this study, Levin, Lin & Chu statistics was used for testing variables' stationary. In this test null hypothesis which was non-stationary or unit-root was rejected so variable is stationary. Based on the results of figure 3, Levin, Lin & Chu values and also level of significance shows that all variables are 95% stationary so that level of significance is lower than 0.05 in all of them. So integration test is not needed and there is no problem with fake regression.

5 Testing research hypothesis

Aim of this test is investigating effect of financial statements comparability on expected crash risk of stock price? Statistical hypothesis is defined as follow:

H_0 : there is no significant relationship between financial statements comparability and expected crash risk of stock price.

H_1 : there is significant relationship between financial statements comparability and expected crash risk of stock price.

As it was stated, this hypothesis was tested based on Jeong et al [16] research and logistic regression model.

Table 3: Variables' Stationary Test

Variable	Calculated statistic	Level of significance	Result
Expected crash risk of stock price	-3.355	0.0004	Stationary
Comparability of financial statements	-9.501	0.0000	Stationary
Firm size	-17.93	0.0000	Stationary
Financial leverage	-16.671	0.0000	Stationary
Return of assets	-12.752	0.0000	Stationary

5.1 Likelihood Ratio test

This test is for finding out model significance and it determines whether model fit is significant. In fact, null hypothesis is that all coefficients of variables are zero. In total study of significance, if p value of likelihood ratio is lower than 0.05, model significance is approved by 95% confidence. Results of this test are indicated in figure 4. Since level of significance in figure 4 is 0.0000 so model is significant by 95% confidence.

Table 4: Likelihood Ratio of the Model

Test	Statistic	Level of significance	Result
Likelihood Ratio	157.233	0.0000	Approved

5.2 Goodness of Fit Test

This index compares observed dependent variable value with predicted dependent variable based on model. If the difference is not significant, goodness of fit is fulfilled. In this study, for testing goodness of fit, Hosmer-Lemeshow was used. If p-value is higher than 5%, H_0 is approved and it states that difference of observed dependent variable with predicted depend-

ent variable is not significant and goodness of fit is met. Based on figure 5, since level of significance is 0.0804 so goodness of fit is met.

Table 5: Goodness of Fit Test

Test	Statistic	Level of significance	Result
Hosmer-Lemeshow	79.985	0.0804	Approved

5.3 Multicollinearity Test of Research Variables

Multicollinearity means there is relationship between independent variable. In this study, for testing lack of multicollinearity, VIF test was used. When VIF of each variables is lower than 10, there is no high multicollinearity between variables. Results of this test are indicated in figure 6. And if VIF is lower than 10 for all variables and they are close to 1 it can be said that there is high multicollinearity between variables.

Table 6: Multicollinearity Test of Research Variables

Variable	Symbol	statistic VIF
Comparability of financial statements	CompAcc	1.021
Firm size	Size	1.032
Financial leverage	LEV	1.120
Return of assets	ROA	1.109

5.4 McFadden Determination Coefficients

McFadden determination coefficient is similar to normal regression determination coefficient and it ranges from 1 to 0 so that number 1 fully explains variables by the model. This statistic which is indicated in figure 8 is 0.2125 which explains 21.25% of dependent variable by independent and control variables in the model.

5.5 Model Categorization Accuracy

In Table 7, model categorization accuracy is provided. Based on results it was cleared that model is 73.37% accurate. So, 103 observations from 203 ones had lower crash risk of stock price (50.74%) and 313 observation or 364 one lacked crash risk of stock price (85.98%) so model has categorized accurately.

Table 7: Categorization Accuracy percentage

Observation	Forecasting		
	Stock price		Categorization competence (percentage)
	Crash	No crash	
Stock price crash	103	100	50.74
No Stock price crash	51	313	85.98
Total percentage			73.37

5.6 Regression Model Estimation

In table 8, results of likelihood ratio, goodness of fit and multicollinearity of VIF, model was estimated. T statistic for constant coefficient was 1.872 (insignificant), for comparability financial statements was -6.288 (significant and negative), for firm size was -2.529 (significant and negative), for financial leverage was 3.717 (significant and positive) and for return of assets was -1.681 (insignificant).

Table 8: Estimation of Logistic Model

Variable	Coefficient	T statistic	Level of significance
Constant Coefficient	2.240	1.872	0.0611
Comparability of financial statements	-5.633	-6.288	0.0000
Firm size	-0.202	-2.529	0.0114
Financial leverage	2.301	3.717	0.0002
Return of assets	-1.240	-1.681	0.0926
McFadden determination coefficient	0.2125		

5.7 Test Result

Based on provided results in table 9, H_0 is rejected because level of significance for t test related to comparability of financial statements is lower than 0.05 and its coefficient is negative (-5.663). So by 95% level of confidence, it was approved that there is relationship between comparability of financial statements and expected crash risk of stock price so that if comparability of financial statements of companies listed in Tehran stock exchange is increased, expected crash risk of stock price is reduced. Thus, main hypothesis is approved with 95% confidence. Jeong et al [16] studied effect of financial statements comparability on expected crash risk and concluded that there is significant and negative relationship between those variables.

We also obtained significant and negative relationship between financial statements comparability and expected crash risk of stock price.

Table 9: Abstract of Main Hypothesis

Hypothesis	Description	Relationship	Orientation	The mark
Main	There is significant relationship between comparability of financial statements and Expected crash risk of stock price	Approved	Reversed	Negative

5.8 Interpretation of Hypothesis Test and Comparing the Results

Since investors value their stock return highly, stock price crash severely reduces the return and it is considered more important than stock price jump.

- Based on results of hypothesis which asserted that there is significant and negative relationship between comparability of financial statements and expected crash risk of stock price, it is clear that there is significant and reverse relationship between comparability of financial statements and expected crash risk of stock price. This means that if comparability of financial statements of companies listed in Tehran stock exchange [24] is increased, expected crash risk of stock price is decreased. This reverse relationship is more evident in companies that have information with lower quality, with no outsider supervision so they have poor information and there is no competition in this industry. In addition, it has been clear that manager's do not inclined to keep negative news as secret is less in compare to positive news in companies with higher comparability of financial statements. So these results approve that comparability of financial statements dissuade managers to hide negative news and this makes investors doubtful about using financial reporting and reducing expected of companies' stock price.
- Results of the study indicated that there is significant relationship between control variables including firm size, return of assets and financial leverage with expected crash risk of stock price and comparability of company's financial statements. So based on results of Pearson statistics (Table 2), expected crash risk of stock price has negative and significant relationship with firm size and return of assets and they show positive and significant correlation with financial leverage. Results related to the relationship between financial leverage and expected crash risk of stock price is compatible with Anenn, et al [3]. They studied relationship between stock price crash and modification of companies leverage in 14 different countries. Results indicated that in companies with higher stock price crash, there is less inclination to modification of operational leverage. This negative relationship in countries with clear information is weaker.
- In addition comparability of financial statements has significant and positive correlation with firm size and it has negative and significant relationship with financial leverage. Another correlation is related to negative and significant correlation of return of assets with financial leverage.

5.9 Comparing Hypothesis Results

Based on results of main hypothesis test and R2 value which was obtained 8% by Mc Fadden, in this study it was illustrated that there are least variable changes are expressed by dependent on independent and control variables. In addition, since 64% model value were predicted correctly and 21% of model 1 value were anticipated accurately, so obtained results are 21% reliable and 21 dependent variables were forecasted by dependent and control variables. Based on variables' stationary and other models of the research, and considering dealing with heterogeneity of variance and acceptable variable for VIF index, it can be concluded that provided model is a good and reliable model.

Table 10: Summary of Hypothesis Test Results and Comparing it with Other Researches

Hypothesis	Hypothesis	Result	Other researches
Main	There is significant relationship between comparability of financial statements and Expected crash risk of stock price	Not rejected	It is compatible with Jong et al results [16].

6 Conclusions

Our study adds to the prior literature that examines the benefits of financial statement comparability. Our results suggest that accounting comparability reduces expected crash risk by helping outside investors make cross-firm comparisons of disclosure policies and firm performance. Moreover, our study extends the literature on the role of financial reporting quality in the capital market by focusing on its relation to expected crash risk. We find that managers' general tendency to withhold bad news relative to good news is mitigated for firms with higher financial statement comparability. These results support our argument that financial statement comparability discourages managers from hiding bad news and accumulating it within a firm, which reduces investors' perceptions of a firm's future crash risk. We show that financial statement comparability disinclines corporate managers from withholding bad news [16]. Thus, our results are relevant to standard setters and regulators who underscore the importance of understanding expected crash risk. Finally, our study adds to prior literature that focuses on the managerial asymmetric disclosure of good versus bad news [20]. We our results suggest that there is significant Negative relationship between comparability of financial statements and Expected crash risk of stock price.

Based on main hypothesis test which maintained that there is significant relationship between comparability of financial statements and expected crash risk of stock price, it is emphasized that there is reverse and significant relationship between financial statements and expected crash risk of stock price. Investors are noted that if financial statements of one company can be compared with another same-industrial companies, for analyzing stock price of their company, investors take more benefit from new and information of other countries and use those information of industry and market in their

trades. In their decision making, investors pay higher attention to comparability of financial statements aiming at efficient allocation of the investments. In addition, for helping investors, commercial units' managers, policymakers and accounting standards' codifiers are recommended to plan for improving qualitative characteristics of comparability of financial statements.

In this study, relationship between comparability of financial statements with expected crash risk of stock price is investigated. Thus, future researchers are recommended to:

- Carry out study on comparability of financial statements and expected crash risk of stock price highlighting companies' life cycle in companies listed in stock exchange companies; and
- Carry out study on the effect of Value Relevance of Accounting Information and expected crash risk of stock prices, in companies listed in stock exchange companies; and
- Carry out study on the effect of the Financial ratios and expected crash risk of stock prices, in companies listed in stock exchange companies; and
- Carry out study on comparability of financial statements and expected crash risk of stock prices, Using the market model in listed companies on the stock exchange; and
- Performing this study on relationship between comparability of financial statements and expected stock price in individual industries in companies listed in Tehran stock exchange [24].
- Performing this study in holding and leasing companies, banks, financial institutes and investment in companies listed in Tehran stock exchange [24].
- Performing this research on relationship between comparability of financial statements and expected crash risk of stock price in companies listed in Tehran stock exchange [24] capital market.

Appendix A: Variables definitions

Summary table of variables:

Nam variables	Symbol	Type of variable	Description
Expected crash risk of stock price	CRASH	Dependent variable	In this model, dependent variable is expected crash risk of stock price. Since stock price crash is a virtual variable, its value is 1 if the firm suffered from at least one crash period in one financial year or this value becomes 0. Which is estimated by Chen et al [8]; Hutton et al [15] solution.
Comparability of fs	CompAcc	Independent variable	Independent variable is comparability of financial statements which is estimated by Di Franco et al [10] solution.

Financial leverage	LEV	Control variables	Financial leverage which is obtained by deviding total debts by total assets.
Return of asset	ROA	Control variables	Return on assets which is calculated through dividing annual operational earning by total company asset which is stated by percentage.
Firm size	Size	Control variables	Firm size, is calculated by natural logarithm of firm total assets book value at the end of the year.

References

- [1] Ahmed, S. A., Neel, M., & Safdar I. *Evidence on the Association between Accounting Comparability and Stock Price Efficiency*. 10th Annual Lone Star Accounting Research Conference, United States. University of Texas at Dallas, 2017, January 30.
- [2] Anenn, P.C., Antoniou, C., Horton, J., Louca, C., *Corporate Governance and Stock Price Crashes*. Working Paper. Cyprus University of Technology and Exeter University Business School, 2016.
- [3] Blanchard, O., *(Nearly) Nothing to fear but fear itself*. *The Economist*, 2007, January 29th. Bleck, A., Liu, X., Market transparency and the accounting regime. *Journal of Accounting Research*, 2009, **45(2)**, P.229-256.
- [4] Bollerslev, T., Todorov, V., *Tails, fears, and risk premia*. *Journal of Finance*, 2011, **66 (6)**, 2165-2211.
- [5] Campbell, J., & Yeung, P. E. *Comparability, Investor Sophistication, and Contagion Effects*. Financial Accounting and Reporting Section Midyear Meeting, San Diego, California, 2013.
- [6] Chen C., Kim J .B, Yao L, *Earnings Smoothing and Stock Price Crash Risk*,2017, <http://ssrn.com>
- [7] Chen, C.-W., W. Collins, D. Kravet, T., D. Mergenthaler, R. *Financial statement comparability and the efficiency of acquisition decisions*. Working Paper, University of Iowa and University of Texas at Dallas. 2013, Available at: <http://ssrn.com/abstract,2169082>.
- [8] Chen, J., Hong, H., Stein, J. *Forecasting Crashes: Trading Volume, Past Returns, and Conditional Skewness in Stock Prices*. *Journal of Financial Economics*, 2001, **61**, P.345–381.
- [9] Choi, J.-H., Choi, s. A. Myers, L., Ziebart, D., *Financial Statement Comparability and the Ability of Current Stock Returns to Reflect the Information in Future Earnings*, 2014, available at: <http://ssrn.com/abstract,2337571>.
- [10] De Franco, G., Kothari, S., & S. Verdi, R., *The benefits of financial statement comparability*. *Journal of Accounting Research*, 2011, **49(4)**, P.895-931.
- [11] Drachshi, R., Badavar Nadini, Y., Hassanzadeh Brothers, R., *The Impact of Ownership Structure*

and *Financial Structure on Financial Finance Comparison Capacity*, *Audit Quarterly*, 2012, **6**, P.23-34 (in Persian).

[12] *Financial Accounting Standards Board (FASB)*. Statement of Financial Accounting Concepts No. 8: Conceptual Framework for Financial Reporting, 2010.

[13] Foroughi, Daryoosh, Amin Sakiany, *Effect of Debt deadline on the Expected Crash Risk of Stock Prices*, quarterly journal of accounting investigations. 2016, **5**, P.99-116.

[14] Hong, H., Stein, J. C., Differences of opinion, short-sales constraints, and market crashes. *Review of Financial Studies*, 2003, **16(2)**, 487-525.

[15] Hutton, A.P., Marcus, A.J., Tehranian, H., *Opaque Financial Reports, R2, and Crash Risk*. *Journal of Financial Economic*, 2009, **94**, P.67-87.

[16] Jeong-Bon Kim. Leye Li, *Financial Statement Comparability and Expected Crash Risk*, 2015, **12**, P.23-45.

[17] Jin, L., Myers, S., *R2 around the world: New theory and new tests*. *Journal of Financial Economics*, 2006, **79 (2)**, 257-292.

[18] Kim, J.-B., Li, Y., Zhang, L., *Corporate tax avoidance and stock price crash risk: Firm-level analysis*. *Journal of Financial Economics*. 2011, **100**, P.639-662.

[19] Kim, J. B., Zhang, L., *Financial reporting opacity and expected crash risk: Evidence from implied volatility smirks*. *Contemporary Accounting Research*, 2014, **31(3)**, 851-875.

[20] Kothari, S. P., Shu, S., Wysocki, P. D., *Do managers withhold bad news?* *Journal of Accounting Research*, 2009, **47 (1)**, 241-276.

[21] Rahnama RoodPoshti, Fereydoon, Vakilifard, Hamidreza, *Study accounting style and comparability of financial statements* quarterly journal of management accounting, 2015, **25**, P.67-99.

[22] Santa-Clara, P., Yan, S., *Crashes, volatility, and the equity premium: Lessons from S&P 500 options*. *Review of Economics and Statistics*, 2010, **92 (2)**, 435-451.

[23] Sherzai, Mohammad Reza and Abidine Barzegar Khondaziz. *Information asymmetry and the role of conservative information, examination of different perspectives on conservatism*, *Journal of Accountant*, 2009, **210**, P. 63-56.

[24] Tehran Stock Exchange, <http://iranpaper.ir>.

[25] Volk, Harry I, *Accounting theories*. Book of Theory Accounting, Chapter Four, 1930, 144-145.