

PalArch's Journal of Archaeology
of Egypt / Egyptology

INVESTIGATING THE EFFECT OF READABILITY OF THE BOARD OF
DIRECTORS' REPORT ON THE RISK OF STOCK PRICE FALLS IN
COMPANIES LISTED ON THE TEHRAN STOCK EXCHANGE

Zeynab Baghaei

Master student of Management Accounting Zand Shiraz Non-Profit Higher Education
Institute

Email: oranusbqi@gmail.com.

Zeynab Baghaei. Investigating the Effect of Readability of the Board of Directors' Report on the Risk of Stock Price Falls in Companies Listed on the Tehran Stock Exchange -- Palarch's Journal of Archaeology of Egypt/Egyptology 18(18), 1465-1476. ISSN 1567-214x

Keywords: Readability of Board Report, Stock Risk, Stock Price, Stock Price Fall.

ABSTRACT

This study was conducted to investigate the effect of the readability of the board report on the risk of stock price falls in companies listed on the Tehran Stock Exchange. In terms of purpose, this research is applied and descriptive-correlation in terms of nature. Hundred twenty companies were considered for analysis to achieve the research goal. These companies were among the companies listed on the Tehran Stock Exchange from 2013 to 2018 by systematic screening method and a total of 720 years-companies. The multivariate regression model and the ordinary least squares method were used to test the research hypothesis. There is a negative and significant relationship between the readability of the board report and the risk of falling stock prices based on the findings.

INTRODUCTION

After the financial and economic crisis of 2008, falling stock prices and various approaches to the issue of sudden fluctuations in stock prices have attracted much attention in recent years. Compared to rising stock prices, researchers notice the phenomenon of falling stock prices that leads to a sharp decline in returns due to the importance of stock returns for investors. On the other hand, both uncertainty and the transparency of information affect investors' behavior. Corporate executives are motivated to maximize investors' understanding of the company's value as reflected in stock prices. The lack of confidence and transparency of reforms are the main factors of

these behavioral ambiguities that affect investors' behavior (Hsiu, 2006). The increase in the on-time and reliable flow of economic, financial, social, and political information available to all stakeholders is called information transparency. Lack of transparency of financial information is defined as the deliberate denial of access to information, misrepresentation, or market inability to ensure the adequacy of relevance and quality of the information provided (Aboody, 2000). Managers use incomplete information in their financial statements to maintain current levels of stock prices. Accounting researchers recently considered the readability and comprehensibility of accounting reports. They expect that the readability of financial statements would significantly affect the risk of falling stock prices. Therefore, the present study investigated the relationship between the readability of companies' financial reports and the risk of stock price falls in companies listed on the Tehran Stock Exchange. This study tries to answer this question: Is there a significant relationship between the readability of companies' financial reports and the risk of falling stock prices? What is the relationship, if there is? This study investigates the effect of the readability of financial reports on the risk of stock price falls in companies listed on the Tehran Stock Exchange.

Moreover, the theoretical foundations and hypotheses of the research are first presented. The research methodology and findings are then described, and finally, conclusions and suggestions from the research will be expressed.

THEORETICAL FOUNDATIONS AND RESEARCH BACKGROUND:

Corporate executives have the motivation to maximize investors' understanding of the company's value as reflected in stock prices. Managers use unintelligible information in financial statements to maintain current stock price levels (Bloomfield, 2002). Managers also hide bad news due to the role of historical financial reporting feedback. To prevent investors from accessing transparent information, they disclose annual stock market reports with low readability (Li, 2008).

Many researchers, such as Chen et al. (2001), believe that internal information management is responsible for changes in a company's stock price. It means that the information randomly enters the market, and publishing information is systematically performed, whether it is good or bad. Managers are always motivated to hide negative information and news from investors and gather it inside the company. In this case, the image of the business unit looks better than the real situation, and the people outside the organization are keener to invest in the business unit. It seems that negative information will be stored within a company if managers hide bad news for a long time. The reason for this limitation is that it is too expensive or impossible to hide it if the amount of bad news collected reaches a certain threshold or limit at a certain time. When bad news ends, it comes out suddenly. In this case, it is the fall in stock prices because it causes high negative returns for the stock that the market has adapted (Hutton et al., 2009).

Hutton et al. (2009) stated that accrual earnings management is associated with stock risk. Adoption of international financial reporting standards is

associated with less negative stock skew for non-financial corporations than for financial corporations, according to Defend et al. (2015). Based on Kim et al. (2016), conservative accounting policies are responsible for reducing the concealment of bad news and reducing the risk of stock prices falling.

Complex financial statements increase the ambiguity of information. In this case, managers can hide ancillary information for long periods to the threshold. Lateral information is suddenly released when the threshold is crossed. As a result, stock prices fall. Therefore, there is a positive relationship between the complexity of financial reports and the risk of stock (Kim et al., 2018).

It is expected that the readability of financial statements has a significant effect on the risk of falling stock prices. There is a gap in the accounting and stock market literature for research on this issue because this issue has been ignored in most internal studies. Therefore, it is the motivation for this research. In the following, the research background will be studied.

Kim et al. (2014) conducted a study examining the relationship between dividend policy and stock price risk. According to their results, the risk of falling stock prices is lower in companies that distribute more dividends. The effects of dividends on the risk of falling stock prices are less in companies with larger free cash flows. Profit-sharing is also more negatively related to the risk of falling stock prices of companies with higher information asymmetries.

Ni and Zhu (2016) conducted a study entitled Borrowing Sales and the Risk of Falling Stock Prices. This study investigated the relationship between borrowing sales and falling risk prices as evidence of an emerging stock market. According to the results, the removal of borrowing sales restrictions increases the risk of falling stock prices. On the other hand, this relationship is weak when companies have less information asymmetry.

Wrest (2016) conducted a study entitled Capital market competition and the risk of falling stock prices. In this study, he investigated the effect of capital market competition on the risk of falling prices. Based on the results, he found that capital market competition reduced the impact of bad news. It is also associated with a reduced probability of falling.

Ajina et al. (2016) conducted a study examining the relationship between financial reporting readability and earnings management of companies listed on the French Stock Exchange. Six hundred fifty-two years - Observation Company during the years 2010 to 2013 are the statistical sample of this research. Companies with profit management publish more complex and less readable financial statements according to results.

Kim et al. (2019) conducted a study examining the effect of financial reporting readability on stock price risk. The results showed that the risk of falling stock prices increases if financial statements are manipulated, and this manipulation is less readable with complexity.

Vadiei Noghabi and Rostami (2016) conducted a study investigating the effect of the type of institutional ownership on the risk of future stock price falls in companies listed on the Tehran Stock Exchange. According to results, inactive institutional ownership is responsible for the positive effect of institutional ownership on the risk of future stock price falls. Active institutional owners have a regulatory role in reducing the risk of future stock price falls. On the other hand, active institutional ownership has a negative effect, and passive institutional ownership positively affects the risk of future stock price falls.

Khodarahmi et al. (2016) conducted a study investigating the effect of information asymmetry on the risk of future stock price falls of companies listed on the Tehran Stock Exchange. The results show a direct relationship between information asymmetry and the risk of future stock price falls. In addition, the risk of future stock price falls increases by increasing information asymmetry.

Darabi et al. (2017) conducted a study that examined the effect of management uncertainty on stock price risk, emphasizing the moderating role of accounting conservatism. Management overconfidence and conservatism affect the risk of falling stock prices, according to the results. As a moderating variable, conservatism has a negative, high effect of management overconfidence on the risk of falling stock prices.

Fathi et al. (2015) conducted a study investigating the moderating effect of information asymmetry on the relationship between managers' uncertainty and the risk of stock price falls. Based on the results, information overconfidence and asymmetry have a positive and significant effect on the risk of falling stock price. In addition, as a moderating variable, information asymmetry has a negative and significant effect on the relationship management uncertainty and the risk of falling stock prices.

Dadashi et al. (2016) conducted a study examining the mediating effect of financial reporting readability on the relationship between earnings management and capital expenditure. Based on fugue indicators and the length of the whole text, they concluded that the readability of financial reporting has a complete mediating effect on the relationship between profit management and capital expenditure.

RESEARCH HYPOTHESIS:

This research hypothesis presents as follows:

There is a significant relationship between the readability of the board report and the risk of falling stock prices.

RESEARCH METHODOLOGY:

In terms of the goal, the present study is applied research. It is also considered correlation with the regression approach in terms of the method. Based on composite data, multivariate regression analysis is used to test research models.

In the present study, the statistical population includes companies listed on the Tehran Stock Exchange that have all of the following conditions:

They should be listed on the Tehran Stock Exchange until the end of March 2013. Their fiscal year should end in March to observe comparability. They should not be a part of financial institutions, investments, and banks due to their different nature. They do not change the fiscal year during the scope of the research.

The companies should provide the information required during the years 2013 to 2018. Hundred twenty companies from the community form 720 years during the six years of the study after applying the above conditions. Research models and variables and their measuring method: Based on Kim et al. (2019) research, the following regression model is used to test the research hypothesis in this study.

Model 1:

$$\text{Crash - Risk} = \alpha + \beta_1 \text{MODFOG}_{it} + \beta_2 \text{OPAQUE}_t + \beta_3 \text{LOGMV}_{it} + \beta_4 \text{MTB}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{ROA}_{it} + \beta_7 \text{EARNVOL}_t + \beta_8 \text{CFVOL}_t + \varepsilon_{it}$$

A. Dependent variable: Crash-Ris stock price risk:

B.

The low-to-high oscillation criterion of Chen et al. (2001) is used to measure this variable. It is based on the following model (Kim et al., 2019).

Relationship 1)

$$\text{DUVOL}_{i,t} = \log \left\{ \left[(n_u - 1) \sum \text{DOWN } w_{i,t}^2 \right] / \left[(n_d - 1) \sum \text{up } w_{i,t}^2 \right] \right\}$$

That:

Wit: is the specific return of the company in period t, which is calculated using this relation:

Model 2:

$$w_{i,t} = \ln(1 + \varepsilon_{i,t})$$

That:

ε_{it} : is the residual return of the company's stock in period t. It is the residual of the model in the following regression model:

Model 3:

$$R_{i,t} = \alpha_i + \beta_1 R_{m,t-2} + \beta_2 R_{m,t-1} + \beta_3 R_{m,t} + \beta_4 R_{m,t+1} + \beta_5 R_{m,t+2} + \varepsilon_{i,t}$$

B. Independent Variable: Readability of MODFOG Board Report: Readability is a quality that makes reading easier and is affected by the number of parts (Syllable) of a word and the length of sentences in an operational definition. Phage index is used to measure readability in this study. This index is used as follows:

$$\text{Fog} = 0.4(\text{Word per sentence} + \text{percent of complex words})$$

The financial statements board reported that the number of words per sentence is calculated by dividing the number of words by the number of sentences. Complicated words have three parts (syllable) or more. Long sentences and a high proportion of complex words increase this index. In addition, they reduce readability (Kim et al., 2019).

In the above index, the process and method of determining the readability of financial reports are as follows:

- 1- Select randomly a sample of one hundred words from the beginning, a sample of one hundred words from the middle, and a sample of one hundred words from the end of the board report.
- 2- Count the number of sentences in each instance.
- 3- Determine the average sentence length by dividing the number of words by the number of complete sentences in each one hundred word sample.
- 4- Counting the number of three-syllable words and more than three syllables available (complex words) in each one-hundred-word text.
- 5- Add the number of complex words to the average number of words in a sentence
- 6- Multiply the sum of the number of difficult and average words in sentences with a fixed number of 0.4.
- 7- Perform calculations of items 4, 5, 6 for two more examples of one hundred words.
- 8- Calculate the average of the results of all three samples by adding and dividing by the number
- 9- There is a relationship between the phage index and the readability level: $\text{FOG} \leq 18\%$ means the text is not readable and very complex. 14-18 (hard text), 12-14 (appropriate text), 10-12 (acceptable text) and 8-10 (easy text). The calculated value is multiplied by the negative number one (1-) to obtain a direct measure of the financial reporting readability index because higher values of the above index indicate less readability of financial reports.

C- Control Variables:

Company Market Value Logarithm (LOGMV): It is equal to the natural logarithm of company market value. In this case, the company value equals

the number of company shares multiplied by the company stock price (Kim et al., 2019).

Market Value Ratio (MTB): It is the ratio of the market value of equity to the book value of equity (Kim et al., 2019). Financial Leverage (LEV): It is the ratio of total debt to total assets (Kim et al., 2019) Return on Assets (ROA): It is equivalent to the ratio of net profit to total assets (Kim et al., 2019). Total accruals three years ago (OPAQUE) (Kim et al., 2019).

Standard Return on Assets three years ago (EARNVOL) (Kim et al., 2019). Standard Cash Performance Deviation three years ago (CFVOL) (Kim et al., 2019).

RESEARCH FINDINGS

Descriptive Statistics:

Descriptive statistics of research variables are presented in Table 1 to the analysis the initial data. The readability of reporting in the studied companies is, on average, -21.108 based on the obtained results. It indicates that the readability of reporting in the studied companies is, on average, -21.108. This ratio is -17.281 in the best case and -26.195 in the worst case. In addition, the average risk of falling shares of the surveyed companies is -0.073. This ratio is 1.208 in the highest case and -1.2201 in the lowest case. In Table 4-1, descriptive statistics of other variables are presented.

Table 1: Descriptive statistics of research variables

Variable	Average	Middle	Maximum	Minimum	Standard deviation
Readability	108.21-	-833.20	-281.17	-195.26	652.1
Risk of falling stock prices	-073.0	-049.0	2208.1	-2201.1	358.0
Return on assets	095.0	082.0	626.0	-607.0	148.0
Market value ratio	804.2	404.2	509.121	-703.49	205.6
Financial Leverage	615.0	602.0	626.2	061.0	265.0
Logarithm of market value	412.14	227.14	940.19	988.10	522.1
Logarithm of accruals	-924.1	-140.10	990.16	-783.17	212.12
Standard return on assets	071.0	059.0	312.0	001.0	052.0
Standard cash flow deviation	090.0	079.0	300.0	006.0	048.0

Inferential Statistics:

The research hypotheses are tested in the inferential statistics section when the descriptive results of the dependent, independent, and control variables of the research are extracted and acquainted with an overview of the information contained in these variables.

Testing Hypotheses:

Investigation of classical assumptions of regression equation:

Breusch-Pagan-Godfrey and Camera-Watson tests were used in this study to investigate and identify heterogeneity of variance of error sentences and autocorrelation of error sentences (review of basic regression hypotheses). According to the results, there is variance heterogeneity of residues and no serial autocorrelation of residues in the research model. The generalized least squares (GLS) method was also used in this study to solve the problem of variance inequality. In table 2, the results of the described tests are shown:

Table 2: Results of classical regression hypotheses tests

Model	Breusch-Pagan-Godfrey Test			Camera-Watson tests	
	Statistics	Possibility	Test result	Statistics	Test result
Research model	098.441	024.0	Variance inequality	08.2	Lack of self-solidarity

Select A Template for The Model

The analytical-hybrid regression model has been used to test the hypotheses.

The data are combined, and regression estimates regular least squares in cross-sectional data and time series if the coefficients of cross-sectional effects and time effects are not significant. The coefficients of sections or time series are often significant in most composite data. This model is known as the combined regression model. The Hausman test was used to investigate the existence of a fixed effect, and the Chow test was used to investigate the combinability due to the compositional structure of the data. The panel data method is used to estimate the model if the significance level of the Chow test is below 0.05. In addition, money data is used to estimate the model if the significance level is more than 0.05.

The fixed effects test is used to estimate the model if the significance level of the Hausman test is below 0.05. In addition, random effects test is used to estimate the model if the significance level is more than 0.05. Chow and Hausman's tests have been used to select the fitting pattern of the research models due to the combination (panel) of the present research data. Table 3 presents the Chow and Hausman test results. For the research model, the probability value of F (Chow test) is more than 5%. Therefore, there is no need for the Hausman test because an integrated data model is appropriate to fit these relationships.

Table 3: The appropriate pattern Selection For the model

Model	Test	Statistics value	Significance level	Result	Confirmed method
Research model	Chow test	839.0	879.0	R rejected H zero	Integrated data method
	Hausman test	-	-	-	-

The result of testing research hypotheses:

There is a negative relationship between the readability of reporting and the risk of falling stock prices based on Table 4. This relationship is statistically significant at a 95% confidence level. Therefore, the research hypothesis is confirmed at the 95% confidence level. It is also concluded that there is a significant negative relationship between financial control leverage and market value logarithm with stock risk. The significance level of the F statistic is less than 5%, according to the test results of the regression model. It indicates the significance of the complete regression.

On the other hand, it means that the model is significant at the 95% confidence level. The independent and control variables of the model approximately explain 12% of the dependent variable changes based on the modified coefficient of expression. This study also examined the variance inflation factor (VIF) in line with the alignment problem. There is a problem of alignment between the variables when the VIF is more than 10. There is a lack of alignment problem between the explanatory variables of the research according to the results of alignment in Table (4).

Table 4) Results of the research hypothesis test

Variable	coefficient	t Statistics	significance	VIF
Readability of reporting	-069.0	-055.3	002.0	91.1
Return on assets	-068.0	-661.0	508.0	12.1
Market value ratio	001.0	-262.0	793.0	14.1
Financial Leverage	-155.0	-511.2	012.0	94.1
The logarithm of market value	-050.0	-114.2	034.0	99.1
Logarithm of accruals	-00000000051.0	-026.0	978.0	77.1
Standard return on assets	268.0	188.1	234.0	15.1
Standard cash flow deviation	-080.0	-362.0	716.0	19.1
Constant	-742.0	-648.3	000.0	-
The coefficient of determination	134.0	Adjusted coefficient of determination		123.0
Statistics F	125.3	Statistical probability F		001.0

DISCUSSION AND CONCLUSION:

This study was conducted to investigate the effect of the board of directors' readability on the risk of stock price falls in companies listed on the Tehran Stock Exchange. Readability has a great impact on the understanding of reports based on the research literature. It is easier to understand the information when they are more legible. Readability creates accessible and understandable information about financial markets. Therefore, we expect the readability of financial statements to affect the risk of falling stock prices significantly. Complex financial statements increase the ambiguity of information. Up to the threshold, managers can hide ancillary information for long periods. Lateral information is suddenly released when the threshold is passing. Then, stock prices lead to a fall. Therefore, the complexity of financial statements and the risk of stock fall are predicted to have a positive relationship.

Results of the hypothesis indicate a negative and significant relationship between the readability of the board report and the risk of falling stock prices. The risk of falling stock prices is reduced by increasing the readability of the board report Kim et al. (2019) conducted a study that showed the significant negative relationship between the readability of the board report and the risk of stock price falls. Their results are consistent with this study's results.

The Tehran Stock Exchange Organization is suggested to issue instructions and has more supervision over the disclosure of companies' financial statements to increase the readability of annual financial statements. When analyzing information, investors and financial analysts are also suggested to pay special attention to the readability of financial statements. Because companies have a higher risk of falling stock prices due to the poor readability of financial statements. For future research, there are some suggestions as follows:

Future researchers are suggested to follow these topics according to the research findings:

- 1- It is suggested to investigate the relationship between the readability of financial reporting and the risk of falling stock prices in this type of company due to the elimination of investment companies, banks, and insurance companies
- 2- It is suggested to study, analyze, and compare the subject of research with the results of this research due to the separation of companies based on industry.
- 3- It is suggested to conduct this research in the future with a longer period to improve the validity of the research findings.
- 4- It is suggested to use other risk criteria for stock price falls to improve the results and findings of this study.

This research has had the following limitations in implementation as other researches:

- 1- Lack of control of some factors affecting the research results, such as economic factors, political conditions, company life, laws, and regulations,

may affect the study of relationships because they are out of the researcher's reach.

2- The generalization of the results to other companies should be carefully performed due to the restrictions imposed for sampling among the companies listed on the Tehran Stock Exchange and the lack of proper access to information.

3- Financial statements prepared have been used to calculate the research variables based on historical cost. The research results may be different from the current results if the information of the financial statements is adjusted based on inflation.

REFERENCES

- Khodarahmi, Behrooz; Foroughnejad, Haidar; Sharifi, Mohammad Javad; Talebi, Alireza (2016). The effect of information asymmetry on the risk of future stock price falls of companies listed on the Tehran Stock Exchange. *Asset Management and Financing*, Volume IV, Number 14, pp. 39-58.
- Dadashi, Iman; Norouzi, Mohammad (2020). Investigating the mediating effect of financial reporting readability on the relationship between earnings management and capital expenditure. *Accounting Knowledge*, Volume 11, Number 1, pp. 135-157.
- Darabi, Roya; Zarei, Ali (2017). The effect of management uncertainty on stock price risk: with emphasis on the moderating role of accounting conservatism, *Financial Accounting Knowledge*, Volume 4, Number 1, pp: 139-121.
- Fathi, Somayeh; Heydari, Zohreh; Azizpour, Zahedin (2018). The effect of moderating information asymmetry on the relationship between managers' uncertainty and stock price fall risk, Fifth National Conference on Applied Management and Accounting Research, Tehran.
- Aboody, D., Lev, B., (2000). Information Asymmetry, R&D, and Insider Gains. *The Journal of Finance*, 55, 2747-2766.
- Ajina, A., Laouti, M., Msolli, B (2016). Guiding through the Fog: Does annual report readability reveal earnings management? *Research in International Business and Finance*, 38(9): 509–516.
- Bloomfield, R. J. 2002. The “incomplete revelation hypothesis” and financial reporting. *Accounting Horizons* 16 (3): 233–243.
- Chen, Changling. Kim, Jeong-Bon. Yao, Li (2001). “Earnings Smoothing: Does It Exacerbate Or Constrain Stock Price Crash Risk?” *Journal Of Corporate Finance*. Doi: 10.1016/J.Jcorpfin.2016.11.004.
- DeFond, M. L., M. Hung, S. Li, and Y. Li. 2015. Does mandatory IFRS adoption affect crash risk? *The Accounting Review* 90 (1): 265–299.
- Hsiu J. F. (2006). Effect of Financial Information Transparency on Investor Behavior in Taiwan Stock Market. *Proquest Database*, 16(3), 6-22.
- Hutton, A.P., Marcus, A.J., & Tehranian, H. (2009). Opaque financial reports, R2, and crash risk. *Journal of Financial Economics* 94, 67-86.
- Kim, J. B. Zhang, L. (2014). “Does accounting conservatism reduce stock price crash risk? Firm-level evidence”. Unpublished Working Paper, City University of Hong Kong.

- Kim, J.-B., L. Li, L. Y. Lu, and Y. Yu. (2016). financial statement comparability and expected crash risk. *Journal of Accounting and Economics* 61 (2–3): 294–312.
- Kim, J.-B., Luo, L., Xie, H., (2018). "Dividend Payments and Stock Price Crash Risk, American Accounting Association Annual Meeting and Conference on Teaching and Learning in Accounting". Available Online at: <http://aaahq.org/AM2014/abstract.cfm?submissionID=2390>.
- Li, F. (2008). Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics* 45 (2–3): 221–247.
- Lin, H., Wang. J., & Wu. C. (2015). Liquidity risk and expected corporate bond returns. *Journal of Financial Economics*. 99: 628–650.
- Ni, X., and Zhu, W. (2016). "Short-sales and stock price crash risk: Evidence from an emerging market". *Economics Letters*, 144: 22–24.
- Vorst, P. (2016). Equity Market Competition and Stock Price Crash Risk. Retrived from <https://www.researchgate.net/publication/283292515>.