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A study on the relationship between fraud and financial liability of listed companies in Tehran Stock Exchange

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Abstract: Financing through liability is a favorable financing option for the Board due to tax savings and its lower rates compared to the expected return on equity. However, the Board is widely motivated for misusing the wealth of shareholders and creditors to protect its own interests. In recent years, various types of financial fraud has caused great concern and has attracted the attentions. Falsification of financial statements, including the manipulation of their constituent elements through overstating assets, sales and profits or understating the liabilities, expenses and loss. Existing studies suggest a direct link between fraud in corporates and the corporates financing options. The aim of this study is to examine the relationship between fraud and financial liability and cash policies. For this purpose, a sample of 120 companies listed in Tehran Stock Exchange has been reviewed for the 5-year period 2009 to 2013. To verify the hypotheses, logistic regression analysis is used. Hypotheses testing results show that there is a significant relationship between the fraud (tax distortions) in financial reporting and financial liability in the corporates. However, there is also no significant relationship between the fraud (financial and tax distortions) in financial reporting and cash holdings in corporates.

Key words: Fraud in Financial Reporting, Financial Liability, Financial Distortions, Legal Distortions, Tax Distortions.

INTRODUCTION

Fraud in the financial accounting and reporting has grown considerably in recent years. With the appearance of financial crisis in companies like Enron, Global Crossing and WorldCom, the issue of fraud in financial entered the political arena as well. Today, the legislative bodies, accounting profession and management have shown special interest to the causes of fraud and ways to prevent the occurrence of fraudulent financial reporting[1]. Falsification of financial statements, including the manipulation of their constituent elements through overstating assets, sales and profits or understating the liabilities, expenses and loss. When the financial statements contain a significant distortion so that the

components of the financial statement do not indicate the reality, it is said that fraud has taken place[2].

Borrowing is a favorable financing option to directors, however, what is important for lenders regard to granting the credit is the borrower's ability to pay principal and interest on loans. The Board is widely motivated for misusing the wealth of shareholders and creditors to protect its own interests. Existing studies suggest a direct link between fraud in corporates and the corporates financing options. Specifically, the loss due to fraud of a reputable company makes the customers, financial suppliers and investors change commercial terms for doing transactions with the company and the uncertainty about the future prospects of the company will be increased[3].

The loss of credibility and the uncertainty increase can make external financing more difficult and costly, so that creditors are likely to charge higher interest rates, and impose additional restrictions to the company. Overall, the costly and limited external financing resulted from fraud may force companies to withdraw from the projects with present positive net value. This in turn leads to a gap between the company and the perspective of future prospects (Harford et al, 2008). It is expected that companies with fraudulent practices that are financially more constrained, have saved more of their own cash flow[4]. Therefore, the purpose of this study is to investigate the interactions between financial liabilities and accounting fraud of the companies.

LITERATURE

Sanjabi has identified the factors affecting the possibility of fraud occurrence in financial statement reporting in Iran. He categorized risk factors in four groups, and in four hypotheses, approved the inclusion of different factors in each of the four groups. In this study, questionnaires were given to the auditors and they have been asked about these factors. The results of the questionnaires were analyzed using appropriate statistical methods and consensus factors of the auditors' community have been recognized[5].

Forghan Dust Haghighi Barvary in a study, titled evaluation of analytical methods usage in assessing risk of financial statements fraud (Management Fraud), have considered the presence of rejected opinion or the absence of opinion as the classification criterion for committing fraud or lack of fraud. Using 12 final samples and considering 7 financial ratios as independent variables, they detected two variables of ratio of liabilities to assets and ratio of significant sales growth and cited the accuracy percentage of model prediction as 90 percent[6].

Safarzadeh examined the ability of financial ratios to detect fraud in financial reporting using the logit analysis. His research results showed the model good performance in classifying the sample firms, so that the percentage of the model classification accuracy exceeds 82.98 percent. The results also showed that the research model has the ability to detect fraud in financial reporting. The proposed model can help different groups of users such as auditors, tax authorities, and the banking system and so on in the differentiation of fraudulent firms from non-fraudulent firms[7].

Grove and Basilico on a study examined the fraudulent financial reporting and fraud detection: key ratios in addition to corporate governance factors. The study was conducted using Probit statistical model. The research results indicate that financial factors and corporate governance factors are effective in detecting fraud in financial reporting[8].

Ahmed et al in their study reviewed fraudulent financial reporting and the characteristics of firms. They used the least squares regression and political cost theory to predict and detect fraud. The results show that there is a significant negative relationship between firm size and audit quality and fraud in financial reporting[9].

Acito et al, on a research entitled the decisions related to the importance and correction of accounting mistakes, investigated the discovered misstatements in the financial reports of 250 American firms, during the years 2004 to 2006. The research findings show that, although in the Statement No. 99 of Auditing Standards, the necessity of considering both quantitative and qualitative nature of importance are highly emphasized for the discovery and disclosure of deliberate distortions, many existing distortions are related to the firms' decisions about the correction of accounting mistakes[10].

Chen et al in an article entitled corporate fraud, external liability and cash policies, found that the cost of corporate liability is significantly associated with corporate fraud. Due to the expensive external finance in companies with fraudulent reporting, more cash is kept to deal with negative shocks. Also, due to the precautionary motive, an increase in cash will be observed after the companies' fraud. In addition, fraud in corporates will lead to financial constraints. After the fraud in corporates, positive cash flow sensitivity to cash flow increases[11].

Fazli et al in their study entitled fraud risk factors, fraud triangle, and the likelihood of fraud found that there is a significant positive relationship between financial leverage and the ratio of sales to accounts receivable, and the possibility

of fraud. The audit committee size and the ratio of non-responsible board are the factors that lead to decrease in fraud level in financial statements[12].

RESEARCH HYPOTHESES

This study seeks to examine the relationship between fraud and financial liability of listed companies in Tehran Stock Exchange. To achieve this purpose with regard to theoretical principles, the research hypotheses have been formulated as following:

The first main hypothesis: there is a significant relationship between the fraud in financial reporting and financial liability in the corporates.

The first sub-hypothesis: there is a significant relationship between tax distortions in financial reporting and financial liability in the corporates.

The second sub-hypothesis: there is a significant relationship between legal distortions in financial reporting and financial liability in the corporates.

The third sub-hypothesis: there is a significant relationship between financial distortions in financial reporting and financial liability in the corporates.

MATEREAL AND METHOD

The method used in this study is a correlation one. This method is useful in research that aims to explore the relationship between different variables.

The present study is quasi-experimental or post-event (using past information) research that is based on the actual data of the stock market and the financial statements of companies listed in Tehran Stock Exchange. The research is in the form of cross-sectional and time-series studies since it reviews the data associated with five consecutive years and specific time periods. As the results obtained can be used in the decision-making process, this research is an applied research.

Research variables include the dependent variable, the independent variable and the control variable that are explained in the following:

Dependent variable:

Fraud in Financial Reporting:

Spatis states that when the financial statements contain a significant distortion so that the components of the financial statement do not indicate the reality, it is said that fraud has taken place[2].

So in this study to measure fraud in financial reporting, financial distortions, legal distortions, and tax distortions are used. These variables information can be seen

in audit reports and legal auditors' reports of the corporates. The definition and measurement of each variable is as follows:

Financial distortions:

In this study, the purpose of financial distortions is the deviations of the companies from accounting and financial standards. To measure the company's conducted financial distortions, the independent auditors' report is used. If the auditor's report refers to the deviation from the accounting standards and regard to the importance of it, issues reject a conditional statement, the value one is given to the variable, and otherwise the value zero is given.

Legal distortions:

One of the responsibilities of the independent auditor and especially statutory examiner of the company is to check the status of laws and regulations (including business law, Czech law, etc.) compliance in the country. In case of deviation from them, auditor or statutory examiner is required to submit the report of laws and regulations non-observance to the board of Directors and the General Assembly. To present an operational definition of this variable, a dummy variable is used. So that if there is laws and regulations non-observance (laws distortion) in the report of statutory examiner or auditor, the value one is given to the variable, and otherwise the value zero is given.

Tax distortions:

In this study, the purpose of tax distortions is tax laws and regulations non-observance that are primarily related to tax evasion, concealment of income, etc.. Audit reports of companies are the main source of data collection related to tax distortions. So if the audit reports contain provisions regarding the corporates' tax distortions, the value one is given to the variable, and otherwise the value zero is given.

Independent variables:

Financial liabilities:

In this study, the financial liability is liability cost. Interest rate of financial liabilities is used to measure it. It is calculated as follows:

$$\text{Interest rate of financial liabilities (Liability cost)} = \frac{\textit{The total incurred interest cost of the period}}{\textit{The average sum of financial facilitie reievable during the period}}$$

Control variables:

Financial leverage: It is the ratio of book value of total liabilities to book value of total assets, which reflects the company's financial leverage[5].

Firm size: It is equal to the natural logarithm of total assets[1].

Return on assets: It is equal to the ratio of net income to total assets[13].

The population, sample and period of the study

The research population is companies listed on Tehran Stock Exchange for the fiscal years 2009 to 2013. In order to estimate the sample size and sampling, purposeful elimination method is used. In other words, those companies of the population that have the following conditions are selected as the sample and the others have been removed:

1. Companies must have activity continuity during the financial year.
2. The end of their fiscal year is March
3. Companies are not among investment companies and financial intermediaries.
4. Research required information of the companies must be available.

Due to imposing these conditions, among 510 accepted companies in the Tehran Stock Exchange (their date of acceptance in Stock is before 2008), according to Cochran formula, 120 companies have been selected as the sample. The information of these companies is collected from the Tehran Stock Exchange Organization, Tehran Stock Exchange site, Eghtesad newspaper, and Rah Avard Novin and Tadbir Pardaz software.

RESULTS

When a mass of quantitative data is collected for the study, first of all organizing and summarizing it in a way that can be understood and communicated significantly is essential. Descriptive statistics methods are used to achieve this purpose. To sum up, appropriate use of descriptive statistics methods may exactly state the features of a bunch of information. Descriptive statistics are always used to determine and express the characteristics of surveys information.

Table 1. Descriptive statistics for variables

	Tax distortions	Financial distortions	Legal distortions	Financial liabilities
Mean	0.29	0.63	0.85	0.36

S.D	0.46	0.49	0.36	0.76
Variance	0.21	0.24	0.13	0.58
Min.	0	0	0	0.01
Max.	1	1	1	5.93

The study on descriptive results of research variables shows that the mean of the dependent variables of firms' tax, legal and financial distortions are respectively 0.29, 0.63 and 0.85. These results indicate that the majority of surveyed companies in terms of tax distortions, have less distortions, but in terms of legal and financial distortions most companies have distortions (with respect to the variables being 0 and 1). The mean of the variable of financial liabilities is 0.36.

The analytical statistics of research variables

The first sub-hypothesis: there is a significant relationship between tax distortions in financial reporting and financial liability in the corporates.

As can be seen in Table (3) the significance level of Omnibus test for the first sub-hypothesis has been obtained equal to 0.001 (less than 5%). According to the achieved results it can be expressed that there is a significant relationship between the independent variable of financial liability and the dependent variable of the fraud in financial reporting (tax distortions). The variable can have a proper fit of the model. Therefore, at the confidence level of higher than 95% the H_0 hypothesis is rejected and H_1 hypothesis is confirmed. The review on the regression coefficients of the financial liability variable (1.54) shows that at 5% error level, the financial liability variable has positive and significant impact on the fraud in financial reporting (Table 2). On the other hand, the values of the determination coefficients of Cox-Snell and Negel Kirk of fitted model are obtained, respectively, 8.3 and 11.8 percent. These results suggest that at least 8.3 percent and at most 11.8 percent of total changes in the fraud in financial reporting (tax distortions) of companies are explained by the financial liability variable in the logistic regression. In addition, the survey of classification results suggest that the model sensitivity in determining the companies that have no tax distortions is 96.5 percent and regard to the companies with tax distortions the model sensitivity is 17.1 percent. In general, 73.3 percent of companies are exactly classified at the fitted model.

Table 2. The results of the logistic regression model fitting of the first sub-hypothesis (tax distortions)

Variables	Regression coefficient	Standard Error	Wald statistics	Significance level
Fix No.	-1.38	0.29	22.29	0.00
Financial liability	1.54	0.71	4.67	0.03

Table (3): The test results of fit goodness of the first sub-hypothesis regression model (tax distortions)

Index	Financial liability
Cox-Snell determination coefficient	8.3
Negel Kirk determination coefficient	11.8
Existence correct predictions percentage	17.1
Non-existence correct predictions percentage	96.5
Overall correct predictions percentage of the model	73.3
Omnibus Test	10.383 (0.001)
Hosmer-Lemeshow Test	13.606 (0.093)
Hypothesis result	H_0 Rejection

The second sub-hypothesis: there is a significant relationship between legal distortions in financial reporting and financial liability in the corporates.

As can be seen in Table (5) the significance level of Omnibus test for the second sub-hypothesis has been obtained equal to 0.170 (greater than 5%). According to the achieved results it can be expressed that there is no significant relationship between the independent variable of financial liability and the dependent variable of the fraud in financial reporting (legal distortions). Therefore, at the confidence level of higher than 95% the H_0 hypothesis is accepted and H_1 hypothesis is rejected. The review on the regression coefficients of the financial liability variable (1.23) shows that at 5% error level, the financial liability variable has no significant impact on the fraud in financial reporting (Table 4). On the other hand, the values of the determination coefficients of Cox-Snell and Negel Kirk of fitted model are obtained, respectively, 1.6 and 2.7 percent. These results suggest that at least 1.6 percent and at most 2.7 percent of total changes in the fraud in financial reporting (legal distortions) of companies are explained by the financial liability variable in the logistic regression. In addition, the survey of classification results suggest that the model sensitivity in

determining the companies that have no legal distortions is 0 percent and regard to the companies with legal distortions the model sensitivity is 100 percent. In general, 85 percent of companies are exactly classified at the fitted model.

Table 4. The results of the logistic regression model fitting of the second sub-hypothesis (legal distortions)

Variables	Regression coefficient	Standard Error	Wald statistics	Significance level
Fix No.	1.45	0.35	16.84	0.00
Financial liability	1.23	1.31	0.88	0.35

Table 5. The test results of fit goodness of the second sub-hypothesis regression model (legal distortions)

Index	Financial liability
Cox-Snell determination coefficient	1.6
Negel Kirk determination coefficient	2.7
Existence correct predictions percentage	100
Non-existence correct predictions percentage	0
Overall correct predictions percentage of the model	85
Omnibus Test	1.885 (0.17)
Hosmer-Lemeshow Test	2.712 (0.951)
Hypothesis result	H_0 Acceptance

The third sub-hypothesis: there is a significant relationship between financial distortions in financial reporting and financial liability in the corporates.

As can be seen in Table (7) the significance level of Omnibus test for the third sub-hypothesis has been obtained equal to 0.740 (greater than 5%). According to the achieved results it can be expressed that there is no significant relationship between the independent variable of financial liability and the dependent variable of the fraud in financial reporting (financial distortions). Therefore, at the confidence level of higher than 95% the H_0 hypothesis is accepted and H_1 hypothesis is rejected. The review on the regression coefficients of the financial liability variable (-0.08) shows that at 5% error level, the financial liability variable has no significant impact on the fraud in financial reporting (financial distortions) (Table 6). On the other hand, the values of the determination coefficients of Cox-Snell and Negel Kirk of fitted model are obtained, respectively, 0.1 and 0.1

percent. These results suggest that at least 0.1 percent and at most 0.1 percent of total changes in the fraud in financial reporting (financial distortions) of companies are explained by the financial liability variable in the logistic regression. In addition, the survey of classification results suggest that the model sensitivity in determining the companies that have no financial distortions is 0 percent and regard to the companies with financial distortions the model sensitivity is 100 percent. In general, 62.5 percent of companies are exactly classified at the fitted model.

Table 6. The results of the logistic regression model fitting of the third sub-hypothesis (financial distortions)

Variables	Regression coefficient	Standard Error	Wald statistics	Significance level
Fix No.	0.54	0.21	6.82	0.01
Financial liability	-0.08	0.24	0.11	0.74

Table (7): The test results of fit goodness of the third sub-hypothesis regression model (financial distortions)

Index	Financial liability
Cox-Snell determination coefficient	0.1
Negel Kirk determination coefficient	0.1
Existence correct predictions percentage	100
Non-existence correct predictions percentage	0
Overall correct predictions percentage of the model	62.5
Omnibus Test	0.11 (0.74)
Hosmer-Lemeshow Test	4.424 (0.817)
Hypothesis result	H_0 Acceptance

CONCLUSION

This study examines the relationship between fraud and financial liability of listed companies in Tehran Stock Exchange. Assumption about the relationship between fraud (tax distortions) in financial reporting and financial liability has been confirmed by logistic regression test. However, the hypothesis of significant relationship between fraud (financial and legal distortions) in financial reporting and financial liability has been rejected. It is important to note that according to the obtained results there is a significant correlation between the independent

variable of liability rate (interest rate) and the dependent variable of fraud (tax distortions) in financial reporting.

The test result of the hypothesis concerning the relationship between fraud in financial reporting and financial liability is not consistent with the results of the study by Chen et al[11] that "the cost of corporate liability is significantly associated with corporate fraud".

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