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An Analysis of Fraudulent Financial Reporting Based on Fraud Hexagon Theory in Companies Listed on the Tehran Stock Exchange

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Abstract

This study aims to analyze fraudulent financial reporting based on the Fraud Hexagon theory in companies listed on the Tehran Stock Exchange. The population in this research included all the companies listed on the Tehran Stock Exchange. The samples in this research were determined using the purposive sampling method, and the selection of samples was based on the criteria determined according to the objectives of the research. The reason for using this technique was to make it easier to collect data according to the research needs. This research was conducted on the companies listed on the Tehran Stock Exchange in 2014-2023, with a statistical population of 141

companies. Finally, 1410 companies were collected for this research. The dependent variable in this research was measured using dummy variables, and logistic regression analysis was used to test the hypotheses. The results of the research indicated that the factors of collusion, CEOs' narcissism, and motivation have a significant relationship with fraudulent financial reporting. However, auditor change, CEO change, and the industry's nature do not positively affect fraudulent reporting.

Keywords: Fraudulent financial reporting, Fraud hexagon theory, Agency theory

Introduction

One of the main targets of financial reporting is to express the economic effects of financial events and operations on the status and performance of the business unit in order to help actual and potential users make financial decisions related to the business unit (Alfarago et al., 2023). The violations that happened in the capital market are related to exporters and government companies, securities trading, and investment management; several large companies are involved in cases of violations and violations in the capital market, including the Enron, WorldCom, and Xerox scandals, which have affected public trust. These violations are such that the disclosed information is wrongly presented. According to the Financial and Regulatory Organizations, these violations are fraud in financial statements. They can include manipulation of accounting information, delay in reporting, misuse of accounting principles, and deliberate deletion of accounting information. Duffield and Grabosky (2001) defined fraud in an article entitled "The Psychology of Fraud" as obtaining something of value or avoiding an obligation using deceit and trickery; therefore, the common thing of all frauds is the intention to deceive in order to achieve personal benefit. In this sense, cheating is different from "mistake" due to the "intention to deceive"(Alfarago et al., 2023). Various forms of fraud can be observed in the financial field: fraudulent financial statements, fraud of employees, sellers, and customers, investment fraud, and bankruptcy fraud. Accounting fraud can also be defined as Deliberate acts of deception in generating company accounting information to gain illegal or unfair profit. Financial fraud can lower the integrity of financial information, which may affect several parties, including creditors, investors, auditors, and even competitors (Alfarago et al., 2023).

Financial statements are tools that are used to report the performance, financial status, and results of the company's operations in a certain period to

the stakeholders, both internal and external parties, and are used as a basis for making rational decisions about the future of the company (Ratnasari & Solikhah, 2019). Financial performance is a measure to understand how a company's financial resources are used (Maryani et al., 2022). Due to the importance of the information contained in the financial statements to the stakeholders, the report must be presented correctly and responsibly. These conditions prompt management to manipulate the company's financial statements if the company's targets still need to be met to protect the company's poor performance and attract investors. Fraud occurs when someone violates the law or guidelines to achieve their target (Maryani et al., 2022). This misconduct is well-known among most people and common in the business world. PwC1's Global Economic Crime and Fraud Survey states that nearly 70 percent of organizations that experience fraud report that the fraud was committed by external and internal parties or through collusion between external and internal parties. Fraudulent practices through manipulation of financial statements are known as financial statement fraud. Because no research has been done on fraudulent financial reporting based on the Fraud Hexagon theory in the Iranian stock market, this study aims to investigate the impact of the dimensions of the Fraud Hexagon theory on financial statements fraud in companies listed on the Tehran Stock Exchange.

Literature Review

There are many definitions of fraud in its general sense. For an act to be considered a fraud, the perpetrator must be aware of the act of betrayal and intend to deceive, and the victim group must suffer from the resulting losses to be harmed (Namazi et al., 2019). According to Singleton et al. (2006), fraud is a general term. It includes all the various ways that human initiatives and people's skills can benefit from something by misrepresenting it. No clear and fixed law can be taken as a general proposition in the definition of fraud since it includes surprising, tricky, cunning, and unfair ways by which others are deceived; the only boundaries of its definition are those that limit human vices (Namazi et al., 2019).

The financial reporting system has always faced crises in gaining public trust. The increased number of frauds has caused concerns about financial statements (Pour Heydari & Bazarafshan, 2012). Financial fraud has existed

[1] PricewaterhouseCoopers (PwC)

since ancient times. Financial statement fraud is growing, and it is known as accounting, management, or fraudulent financial reporting (Namazi et al., 2019).

Agency Theory

Agency theory predicts and explains the behavior of the parties related to the company; two concepts in Agency Theory that underlie the occurrence of fraud (Ali, 2020) are as follows: (1) asymmetric information between principal and agent, and (2) conflict of interest between principal and agent. In the case of a business, the principal provides funds or capital, accepts some risks, and engages agents to perform specific tasks. Three presuppositions are used to determine the most effective contract regulating the relationship between principal and agent (Eisenhardt, 1989): assumptions about human nature, assumptions about organization, and assumptions about information. Assumptions about human nature show that humans desire self-interest and limited rationality and always care about risk (risk aversion). Organizational assumptions explain conflicting goals between organizational members, efficiency as a measure of effectiveness, and asymmetric information between managers and brokers. Assumptions about information state that information is a commodity that can be purchased. According to Jensen and Meckling (1976), asymmetric information causes adverse selection and moral hazard. Adverse selection is caused by pre-contractual activities that increase the probability of fraud due to the difficulty in identification (Ali, 2020). This is because managers are more aware of the conditions and prospects of the company and do not transfer them to investors, which can affect investors' decisions. Meanwhile, moral hazards arise from post-contractual activity when agents make decisions without fully considering the consequences of their actions. Moral hazard occurs when there is insufficient information due to actions and behaviors that cannot be observed or performed after the agent signs the contract.

Fraud Hexagon Theory

The Fraud Hexagon theory was first developed by Cressey (1953) and is known as the "Fraud Triangle. "According to Cressey's research, the three main factors influencing decision-making are pressure, opportunity, and rationalization. The Fraud Hexagon theory was developed with the advent of the Fraud Diamond theory, which was developed by Wolfe and Hermanson (2004). This theory added the dimension of capability. According to Wolfe and Hermanson (2004), adding a fourth element to the Fraud Triangle can improve fraud detection and prevention. In addition to pressure, opportunity, and

rationalization, the Fraud Diamond theory considers a person's ability to determine whether fraud will actually occur even in the presence of the other three elements. The subsequent theoretical development is the Fraud Pentagon theory, developed by Crowe (2011), which modifies the previous theory by adding the components of competence and arrogance.

Competence in this theory has the same meaning as the capability component in the Fraud Diamond theory developed by Wolfe and Hermanson (2004). Competence is a candidate's ability to manage internal control, develop concealment strategies, and control social situations. Ego (arrogance) is the attitude of superiority or greed of people who believe that internal control cannot be achieved alone. The most prominent theory about fraud was again developed by Vousinas (2019), namely the Fraud Hexagon theory. According to Vousinas (2019), collusion is a cooperation carried out by the internal members of the company with external parties, as well as the cooperation of the company's employees. Dishonest environments encourage people to participate in fraud. As a result, fraud becomes a culture that will be difficult to eliminate. This refers to dishonest attitudes and behaviors between two or more people in reaching an agreement (Nadziliyah & Primasari, 2022). It is much more difficult to prevent fraud when there is collusion between employees or between employees and external parties. When fraud begins, honest employees can be attracted by developing a culture of dishonesty in the organizational environment. Fraudsters also often coerce others into committing or concealing the fraud. A person with a persuasive personality quickly invites people around him to participate in a fraud and uses his abilities to justify others. Collusion can also occur inadvertently due to fraudsters taking advantage of other people's positions and exploiting believers by spreading the fraud throughout the organization.

Research Background

Yazdani et al. (2022) investigated the role of auditor characteristics in reducing the risk of financial reporting fraud. The results of the research showed that in companies where the tenure of the auditor is longer and also in companies where the auditor has more expertise in the industry, the probability of high fraud risk is not less, but in companies that large institutions audit, the risk of fraud is less likely to be high.

Maleki-Kakelar et al. (2021) investigated the presentation of the extended Fraud Pentagon theory in financial reporting with an emphasis on the structure of internal controls. The findings of the research showed that the variables of pressure, opportunity, rationalization, capability, and structure of internal

controls have a significant effect on fraudulent financial reporting fraud. On the other hand, the arrogance variable has no significant effect on fraudulent financial reporting.

Bozorgasl et al. (2019) investigated the CEO's narcissism and the risk of fraud in financial reporting, emphasizing the role of auditors and the audit committee. The results of the research showed that there was a positive and significant relationship between the CEO's narcissism and the risk of fraud in financial reporting. Also, the findings indicated the moderating effect of auditors' effort, auditors' expertise, and audit committee chairman on the relationship between a CEO's narcissism and fraud risk in financial reporting. As a result, narcissism as one of the CEO's personality traits can increase the risk of fraud in financial reporting. Using expert and diligent auditors and an audit committee specializing in financial and accounting affairs as part of corporate governance mechanisms can hinder fraudulent financial reporting caused by the CEO's narcissism.

Namazi and Hosseini-Nia (2019) investigated the content analysis of financial fraud theories and presented a multi-dimensional meta-model of fraud. The results of the research showed that the fraud pattern in the 1950s started from the Fraud Triangle, which includes three dimensions of pressure, opportunity, and rationalization; financial problems, weak internal control systems, and unfavorable work situations were identified as fraud patterns. In the 1980s, personal characteristics, work environment, and person integrity were introduced. In the 1990s, behavioral factors, particularly reputation, subjective norms, and control over tendency, were identified as motivational factors for managers to commit fraud. In the 2000s, aspects of a person's ability, including intelligence, position, and role, were identified, and attention was also paid to cultural and social dimensions. Since 2010, attention has been paid to meta-models, and the meta-models presented in the mentioned article had financial and non-financial dimensions. They were placed in four general categories of conditions: situational, normative, and human intelligence, and each of these four dimensions can be analyzed individually, organizationally, and internationally.

Taheri et al. (2017) investigated comparing fraud models in adjusting the audit program. The results of the research showed that the use of the Fraud Diamond model compared to the Fraud Triangle model and the Pentagon Fraud model compared to the Fraud Diamond model and the Fraud Triangle led to more adjustments to the audit program.

Safarzadeh (2010) investigated the ability of financial ratios to detect fraud

in financial reporting and logit analysis. The results of the research indicated the appropriate performance of the model in the classification of the sample companies since the accuracy percentage of the model classification exceeded 82.98%. Also, the results showed that the research model can detect fraud in financial reporting, and the proposed model can help different user groups, such as auditors, authorized tax authorities, banking systems, etc., distinguish fraudulent firms from non-fraudulent firms.

In a research, Yadiati et al. (2023) identified fraudulent financial reports in state-owned enterprises: The Hexagon Fraud theory. The results of the research showed that financial stability (motivator), external pressure (motivator), the nature of the industry (opportunity), change of auditor (capability), change of managers (rationalization), the number of images of the CEO (arrogance) and cooperation with government projects (collusion) has a positive effect on discovering fraudulent financial statements of state-owned enterprises. To some extent, financial stability, external pressure, the nature of the industry, change of managers, and cooperation with government projects have a positive effect on the detection of fraudulent financial statements of state-owned companies but changes in auditors and the number of images of the CEO have no effect on identifying fraudulent financial statements.

Johari et al. (2023) examined procurement fraud in the public sector: an analysis of the elements of the Fraud Triangle and workplace spirituality. The results of the study showed that opportunity and rationalization have a significant positive relationship with the occurrence of procurement fraud among public sector employees. However, there is a significant negative relationship between the spirituality of the workplace and the occurrence of procurement fraud. However, no hard evidence links pressure on Malaysian public sector workers to procurement fraud.

Alfarago et al. (2023) investigated the possibility of fraud from the perspective of Hexagon Fraud: evidence from Indonesia. The results of the research showed that financial stability (measured by asset growth) has a significant effect on the probability of fraud. However, the change of manager, projects with the government, transactions of related parties, change of auditor, and the number of images of the CEO did not play a role in the probability of fraud.

Jannah & Suwarno (2020) investigated the analysis of the effect of the Hexagon Fraud (pressure caused by financial targets, ability to change the manager, opportunity caused by ineffective supervision, rationalization by changing the auditor, arrogance caused by the frequent number of pictures of

the CEO, collusion by the project governance) dealt with the fraud of financial statements in manufacturing companies listed in IDX in 2018 to 2020. The results of the research showed that the element of pressure by financial targets and the element of arrogance with the frequent number of images of CEOs affect fraud in financial statements. Meanwhile, the change of managers, inefficient supervision, change in auditors, and governance projects have not had any effect on fraud in financial statements.

Wulandari et al. (2023) investigated Diamond Fraud analysis in identifying fraud in financial statements in LQ45 companies listed on the Indonesian Stock Exchange in 2018-2020. The results of the research showed that the variables of pressure and rationalization, as well as opportunities and capabilities, do not affect the fraud of financial statements. However, Diamond Fraud has a significant impact on financial statement fraud.

Haqq and Budiwitjaksono (2019) investigated the Pentagon Fraud theory in research to detect fraud in financial statements. The purpose of this research is to test the Pentagon Fraud theory in identifying fraudulent financial reporting, and in particular, it tries to examine the financial targets, financial stability, external pressure, ineffective monitoring, the nature of the industry, change of auditor, change of manager, reaction of CEOs, political connection and the existence of the company against fraud in companies have been tested. The results show that financial stability and the frequency of CEO photos can be used to detect fraud in financial reporting. However, financial targets, external pressure, ineffective supervision, the nature of the industry, auditor changes, changes in managers, political connections, and company existence cannot be used to detect fraud in financial reporting.

Sunardi and Amin (2018) investigated fraud detection in financial statements using the Fraud Diamond perspective. The results of the research showed that financial stability, changes in auditors, financial targets, deactivation, and effectiveness of supervision on fraud in financial statements had a negative impact.

Research Hypotheses

Within the framework for the mentioned background, which includes the risk of fraud, internal control, and reducing the opportunity for fraud, the following hypotheses are proposed:

H1: Financial targets affect fraudulent financial statements.

Financial targets are closely related to the company's financial performance, one of which is evaluating the profit level the company earns.

Financial performance can be measured by ROA (Return on Assets); the higher the company's ROA, the more vulnerable the company is in earnings management, which is a form of fraud in financial statements (Marheni & Suryati, 2021).

H2: CEO change affects fraudulent financial statements.

Capability is measured through changing managers. Changing managers only sometimes has a good effect on the company. The company may take action to improve the performance of the previous board of directors rather than changing the composition of the board of directors or recruiting new managers who are more competent than the previous managers. Changes are generally related to elements of political interests and interests of certain parties, which result in the company's target level being set too high or lead to agreements that cause conflicts of interest (Sari & Lestari, 2020).

H3: Managers' collusion affects fraudulent financial statements.

Collusion is a deviant act committed by two or more people who cooperate to achieve their goals only for their benefit. A contract entered into by the parties usually involves providing a certain amount of property, such as money, property, or other facilities, to facilitate their affairs.

H4: The nature of the industry affects fraudulent financial statements.

The nature of industry is the ideal state of a company. The interpretation of this can be seen from the company's accounts receivable. Accounts receivable cannot be separated from the accounts of reserves of uncollectible receivables that are judgmental. This can create an opportunity for fraud in financial statements. According to the research conducted by Pasaribu and Kharisma (2021), the nature of the industry significantly affects the signs of fraud in financial statements.

H5: Auditor change affects fraudulent financial statements.

The company's change of auditors cannot be used to detect managers' fraud in preparing financial statements. Managing the companies that commit fraud often changes auditors (Septriyani & Handayani, 2018).

H6: CEO narcissism affects fraudulent financial statements.

Arrogance is defined as the attitude of a person who feels capable of cheating due to excessive management eagerness (Christian et al., 2021). People who do not want to lose their reputation or status can commit fraud for selfish reasons. This pressure can strongly motivate people to commit misconduct to preserve their pride (Vousinas, 2019).

Research Methodology

The current study is practical in terms of purpose, data, and information collection; it is a composite.2 And historical data type. The library method was used to collect information related to the theoretical background, and the data required by the selected companies were collected from financial statements, explanatory notes accompanying financial statements, the databases of the Securities and Exchange Organization (TSETMC), Rahavard Novin software, and the stock exchange library. The sample companies' data for ten years, from 2014 to 2023, were collected and classified through Excel software to calculate the research variables. Finally, research hypotheses were tested using ImageJ and STATA Software.

Statistical Population

Considering the fact that the accepting process of companies into the Tehran Stock Exchange list has more challenging conditions than into the over-the-counter, thus it can be assumed that these companies have more stable conditions. Therefore, this research focuses on the companies listed on the Tehran Stock Exchange.

The statistical population tested in the research includes all the companies listed on the Tehran Stock Exchange in 2014-2023. However, the following conditions have been considered for the selection of the statistical sample:

1. The sample companies should not include banks, investment companies, financial intermediation, holding, leasing, and insurance companies because their disclosure of financial information and strategic corporate structures are different due to their non-production nature.

2. The end of the companies' financial year should be the end of Esfand (21st of March).

3. Companies that were listed on the stock market before 2013.

4. Companies whose activities have not been stopped in the stock market during the research and whose information is available.

Finally, according to the investigations, 141 companies in 2014-2023 had the above conditions and were selected for the statistical sample.

[2] Annual data related to 141 companies have been collected between 2023-3-20 and 2014-3-20.

Regression Model of Research

Since the dependent variable in this research is a dummy variable, logistic regression analysis was used to test the hypothesis. Logistic regression is a statistical method for modeling categorical response variables on one or more predictors of change, which can be categorical or continuous variables (Fransiska & Sinaga, 2022). The logistic regression method for testing the hypothesis is as follows:

$$FFR = \beta 0 + \beta 1ROA + \beta 2DCHANGE + \beta 3COL + \beta 4NI + \beta 5CIA + \beta 6CEOPIC + e \quad (1)$$

β0 = Constant regression coefficient

$\beta 1ROA$ = Regression coefficient of financial targets (motivation)

$\beta 2DCHANGE$ = Regression coefficient of manager change (capability)

$\beta 3COL$ = Regression coefficient of Collusion

$\beta 4NI$ = Regression coefficient of the nature of the industry (opportunity)

$\beta 5CIA$ = Regression coefficient of change in the auditor (rationalization)

$\beta 6CEOPIC$ = Regression coefficient of the number of pictures of the CEO (arrogance)

Table 1. Indexes, Explanation and Formula, and Symbols of Independent Variables

Independent Variables	Index	Explanation and Formula	Symbol
Motivation	Financial targets	Measurement using return on assets (Amin, 2018) $ROA = \frac{Net\ Profit}{Total\ Assets}$	ROA
Capability	Change of managers	Measurement uses changes in managers' structure (Haqq & Bodivitjaxonu, 2019; Ratnasari & Solikhah, 2019). Change in the structure of managers code one; otherwise, code zero.	DCHANGE
Collusion		There is cooperation between two parties to abuse a third party. If the lawsuit is disclosed in the independent auditor's report, code one; otherwise, code zero. (Sagala and Siagian, 2021).	COL
Opportunity	Type of industry	The ideal situation of a company is measured through the accounts receivable in the financial statements (Tiffani et al., 2015)	NI

		$NI = \frac{Receivable}{Sales} - \frac{Recievable_{t-1}}{Sales_{t-1}}$	
Rationalization	Change in auditor	The change in the auditor can be considered an attempt by the company's management to eliminate the effects of fraud (Fradzia, 2018). The rationalization can be shown by the change in auditor, measured by dummy variables; code one is used if the auditor has changed during the research; otherwise, code zero is used.	CEOPIC
Arrogance	CEOs' narcissism	Arrogance is defined as the attitude of a person who feels capable of cheating due to excessive management eagerness (Christian et al., 2021). People who do not want to lose their reputation or status can commit fraud for selfish reasons. This pressure can strongly motivate people to commit misconduct to preserve their pride. CEOs' signatures were used to investigate narcissism, so the size of signatures was extracted from the first page of financial statements, where CEOs approve financial statements with their signatures. A rectangle was drawn around each signature to indicate the end point of the signature on each side (Pham et al., 2017). Then, with the help of ImageJ software, the signature area was measured and entered into Excel software. The areas were divided into three quartiles: small (first quartile), medium (second and third quartile), and large (fourth quartile). The codes were determined as follows: If the CEO's signature is small, code 1 If the CEO's signature is average, code 2 If the CEO's signature is large, code 3	CIA

Results

Descriptive Statistics

In order to examine the general characteristics of the variables and their detailed analysis, it is necessary to be familiar with the descriptive statistics related to the variables. Table 2 shows the descriptive statistics of the data related to the variables used in the research.

Table 2. Descriptive Statistics of Research Variables

Name of the Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
Motivation (asset return)	1410	0.164	0.157	-0.370	0.708
Opportunity (nature of industry)	1410	-0.093	9.859	212.02	230.68
The number of observations for each variable equals 1410 cases related to 141 companies during ten year.s					

The main centrality index is the mean, which indicates the distribution's balance point and center of gravity and is a good indicator to show the centrality of the data. For example, the mean value for return on assets is equal to (0.164), which shows that most of the data are concentrated around this point. In industries like banks, the mean of this variable is about 0.04. In general, dispersion parameters determine the degree of dispersion from each other or the degree of dispersion of the parameters compared to the mean. One of the most essential dispersion parameters is the standard deviation. The value of this parameter in general descriptive statistics is equal to 9.859 for the nature of the industry and 0.157 for the return on assets, which shows that these two variables have the highest and lowest standard deviation, respectively.

Table 3. Descriptive Statistics of Research Variables after Controlling Outlier Observations

Name of the Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
Motivation (asset return)	1410	0.164	0.154	-0.156	0.594
Opportunity (nature of industry)	1410	0.008	0.371	-1.640	1.885
The number of observations for each variable equals 1410 cases related to 141 companies during ten year.s					

PC-TRIM program, presented by Barker in 2014, was used to edit outlier observations in STATA software. In this method, instead of outlier observations less than the first percentile, the number corresponding to that percentile, and instead of the large outlier observations from the 99th percentile, the number corresponding to the mentioned percentile has been replaced. In Table 4, we observe a decrease in the standard deviation of all variables.

Descriptive Statistics of Qualitative Variables

Some variables' measurement levels include the nominal, and the ranking scales used for qualitative variables. These variables are usually two-dimensional or multi-dimensional, and the use of mean, standard deviation,

skewness, and elongation coefficients are unsuitable for their description. Because using these indicators for qualitative variables is not logical, the mode and percentage frequency should be used to describe such variables. Percentage frequency for a two-dimensional variable indicates what percentage of the data of a variable has code 1 and what percentage has code 0 (Bani Mahd et al., 2015).

Table 4. Frequency Distribution of Financial Statement Renewal Variable (FFR)

Title	Frequency	Frequency Percentage
Code zero if renewal is not provided	514	36/45
Code one, if renewal is provided	896	63/55
Sum	1410	100

Table 5. Frequency Distribution of the CEO Change Variable (dchange)

Title	Frequency	Frequency Percentage
Code zero if the CEO has not changed	973	69.01
Code one, if the CEO has changed	437	30.99
Sum	1410	100

Table 6. Frequency Distribution of Collusion Variable (col)

Title	Frequency	Frequency Percentage
Code zero if the lawsuit is not disclosed in the report of the independent auditor	1379	80/97
Code one if the lawsuit is disclosed in the report of the independent auditor	31	20/2
Sum	1410	100

Table 7. Frequency Distribution of the Change of Auditor Variable (CIA)

Title	Frequency	Frequency Percentage
Code zero if the auditor has not changed	1280	78/90
Code one, if the auditor has changed	130	22/9
Sum	1410	100

Table 8. Frequency Distribution of Manager Narcissism Variable (ceople)

Title	Frequency	Frequency Percentage
If the CEO's signature is small, code 1	352	24.96
If the CEO's signature is small, code 2	1056	74.89
If the CEO's signature is small, code 3	2	0.14
Sum	1410	100

Tables 3-7 show the frequency distribution of the relevant variables. For example, it can be seen that in Table 7, only 23% of auditors have changed.

Inferential Statistics

First, this section presents the correlation coefficient between the variables. The primary purpose of presenting the correlation coefficient is to discover collinearity. Since the dependent variables in the present study are qualitative, Kendall's correlation coefficient was used.

Table 9. Correlation Coefficient (Kendall) between Research Variables

	FFR	Wi_ROA	CIA	DCCHANGE	COL	CEOPIC	Wi_NI
FFR	0.04636						
Wi_ROA	-0.0890*	0.9998					
CIA	-0.0009	0.0146*	0.01675				
DCCHANGE	-0.0038	-0.0589*	-0.0004	0.4280			
COL	-0.0109*	0.0131*	-0.0026*	-0.0065*	0.0430		
CEOPIC	-0.0507*	0.0150*	0.0047*	-0.0119*	0.0109*	0.3770	
Wi_NI	0.0088	-0.0139*	0.0056	0.0122*	0.0043*	-0.0157*	0.9992
Variables marked with * are significant at the 5% error level.							

A correlation coefficient table is usually used to detect simple collinearity. It can be seen that the coefficients between the independent variables are less than 80%, and this indicates the absence of correlation between the independent variables; thus, there is no simple collinearity. The variance Inflation Factor (VIF) test was used to check multiple collinearity. The results showed that there is no multicollinearity between the independent variables.

Testing Research Hypotheses

Considering that our dependent variable is zero and one (two-value type), using the Ordinary Least Squares (OLS) estimator does not lead to correct results. In this case, the logistic regression approach is used. The commands for estimating the model with a two-value dependent variable in STATA software are performed using the Logit Model, Probit Model, and Gumpit Model (critical value).

Table 10. The Final Estimate of the Logit Regression Model

Variables	Coefficients	The standard deviation of coefficients	z - score	Significance level	VIF
WI_ROA	-2.05	0.368	-5.57	0.000	1.02
CIA	0.0221	0.195	0.11	0.910	1.00
DCCHANGE	-.148	.123	-1.20	0.230	1.02
COL	-.804	.378	-2.13	0.033	1.01
CEOPIC	-.581	.137	-4.23	0.000	1.01
WI_NI	.055	.155	0.35	0.724	1.00
y-intercept	1.995	.265	7.52	0.000	-
Other information statistics					
McFadden coefficient	0.0320				
Likelihood statistic and its significance level	59.23			0.000	
Accuracy of model prediction	63.62 Percent				

Model Fit Quality: McFadden's coefficient shows the influence of independent variables on dependent variables. In other words, it shows the explanatory power of the dependent variable by the independent variables. As can be seen in Table 10, the McFadden coefficient is three percent.

Testing the First Hypothesis: Financial targets affect fraudulent financial statements.

It can be seen that the return on assets (ROA) variable, which is a measure of the motivation variable, has a significance level of less than 5% (0.00). At the 95% confidence level, there is a significant relationship between motivation and the re-presentation of financial statements.

Testing the Second Hypothesis: CEO change affects fraudulent financial statements.

It can be seen that the change of manager's variable (DCCHANGE), which is a measure of the ability and capability variable, has a significance level of more than 5% (0.230) and at a confidence level of 95%, it can be said that there

is no significant relationship between ability and capability and the re-presentation of financial statements.

Test of the Third Hypothesis: Collusion of managers affects fraudulent financial statements

It can be seen that the variable of disclosure of lawsuits in the independent auditor's report (COL), which measures the collusion variable, has a significance level of less than 5% (0.033). At a confidence level of 95%, there is a significant relationship between collusion and re-presentation of financial statements.

Testing the Fourth Hypothesis: The nature of the industry affects fraudulent financial statements.

It can be seen that the nature of the industry (NI) variable, which is a measure of the opportunity variable, has a significance level of more than 5% (0.724). At the 95% confidence level, there is no significant relationship between the opportunity and the re-presentation of financial statements.

Testing the Fifth Hypothesis: Changing the auditor affects fraudulent financial statements.

It can be seen that the change of auditor (CIA) variable, which is a measure of the rationalization variable, has a significance level of more than 5% (0.910). At the 95% confidence level, there is no significant relationship between rationalization and re-presentation of financial statements.

Testing the Sixth Hypothesis: A CEO's narcissism affects fraudulent financial statements.

It can be seen that the CEO's narcissism variable (CEOPIC), which is a measure of arrogance variable, has a significance level of less than 5% (0.000), and at the 95% confidence level, it can be said that there is a significant relationship between arrogance and re-presentation of financial statements.

Discussion and Conclusion

The purpose of this study is to show the effect of driving factors, including financial targets, capability (change of manager), collusion, opportunity (nature of the industry), rationalization (change in auditors), and arrogance (managers' narcissism) on fraudulent financial reporting in Tehran Stock Exchange companies since 2014 to 2023. The studies conducted showed that the factors of collusion, narcissism of CEOs, and motivation have a significant relationship with fraudulent financial reporting. These results are consistent

with the research results of Prastika (2023), Yadiati(2023), Bozorgasl (2021), Maleki-Kakelar (2021), Namazi(2019). However, the factors of auditor change, CEO change, and the nature of the industry do not positively affect fraudulent financial reporting. In order to test the research hypotheses and in order to interpret the rejected hypotheses, the following points can be mentioned:

The second hypothesis:

The second hypothesis observed that the change of managers variable (DCCHANGE), which measures the ability and capability variable, had a significance level of more than 5% (0.230). There is no significant relationship between ability and capability and fraudulent financial reporting. The interpretation of this result can be done in different ways. However, the change of managers in organizations does not have much effect on fraudulent financial reporting. Other factors that can affect fraudulent financial reporting include accounting policies and procedures, which are more critical, and the change of managers needs to be more accurate. Managers may have changed for specific reasons that do not directly affect fraudulent financial reporting. For example, if management changes have occurred due to structural changes in the organization or strategic repositioning, these changes may not directly impact fraudulent financial reporting.

The fourth hypothesis:

The fourth hypothesis showed that the nature of the industry variable (NI), a measure of the opportunity variable, has a significance level of more than 5% (0.724). At the 95% confidence level, there is no significant relationship between opportunity and fraudulent financial reporting. This result can mean that the nature or specific characteristics of the industry or economic sector do not significantly affect fraudulent financial reporting. This result means the process of re-presenting financial statements is similar between different industries. The interpretation of this result can be returned for several reasons:

Similarity of financial reporters: There might be everyday needs for financial reporters regarding the re-presentation of financial statements, regardless of the nature of the industry. This can cause significant differences between industries.

Standardization Process: If accounting and reporting standards and guidelines are similar for different industries, the impact of industry nature on re-presentation may be limited.

Generalizable factors: Other generalizable factors, such as risk management, financial performance, etc., may have a more significant impact

on re-presentation than the specific nature of the industry.

Organizational strategies and practices: In some cases, organizational strategies and practices may be more influential on the re-presentation of financial statements than the nature of the industry.

Competition and market conditions: Competitive conditions and market characteristics can also affect re-presentation only if this effect does not need any differences of industrial nature.

The fifth hypothesis:

This hypothesis showed that the change of auditor variable (CIA), a measure of the rationalization variable, has a significance level of more than 5% (0.910). At the 95% confidence level, there is no significant relationship between rationalization and fraudulent financial reporting. The new auditor may use the same methods as the previous auditor to evaluate the financial information. This conformity in auditing methods can cause minor changes in the re-presentation process.

Recommendation

The first hypothesis: Other internal and external factors may affect asset returns besides the re-presentation of financial statements. Examining these factors can find a significant relationship between these two variables.

The second hypothesis: According to the results that show that there is no significant relationship between the change of managers and the re-presentation of the financial statement, the following suggestions are presented for shareholders, the stock market, and researchers:

To the shareholders:

Shareholders can use these results as vital information to make decisions about their investments. Due to the lack of significant effect of the change of managers on fraudulent financial reporting, the selection of new managers may not lead to significant changes in the company's financial information. Therefore, shareholders can pay attention to this point carefully in their decisions.

To the stock market:

The research results may not have a destructive effect on the stock market since the change of managers does not significantly affect fraudulent financial reporting. This information can assure investors and participants in the stock market that more than a change of managers is needed to impact companies'

efficiency significantly.

To the researchers and students:

These results can help researchers and students in accounting and financial management as a basis for future research. Investigating the effect of different variables on the disclosure of lawsuits and knowing this relationship more accurately can help advance the knowledge in this field.

The fourth hypothesis:

Considering the results of this hypothesis, shareholders can be sure that the nature of the company's industry does not have much effect on fraudulent financial reporting. Hence, in evaluating the performance of companies and choosing suitable investments, they can pay attention to other factors such as financial performance, growth, and operations management. This research can be used for long-term and short-term decisions and is preferable to choices based on the conditions and characteristics of companies.

The fifth hypothesis:

According to the results of the fifth hypothesis, companies are suggested to pay attention to other issues, such as the quality of financial reporting and transparency, when making management decisions related to changing auditors. Auditor change may play a secondary role in determining the appropriate timing for fraudulent financial reporting. According to the results of this research, focusing on improving the processes and content of financial reporting is more important for companies than changing the auditor. Considering the lack of a significant relationship between auditor change and fraudulent financial reporting, shareholders can look at company auditor changes more calmly. This result can reassure shareholders that changes in the auditor alone should not be the reason for their long-term investment plans and to use other factors in their decisions.

The sixth hypothesis:

The results of this research show that CEO's narcissism has a significant effect on decisions related to fraudulent financial reporting. This result can help companies focus on improving internal processes, improving transparency of financial reporting, and committing to accounting standards as their primary goals. In decisions related to fraudulent financial reporting, internal factors, and the company's needs can be more effective than issues like the CEO's narcissism. This result can help shareholders make investment and participation decisions in companies based on other factors such as financial

performance, growth, and business. These results are consistent with the research results of Prastika (2023), Yadiati (2023), Bozorgasl (2021), Maleki-Kakelar (2021), Namazi (2019).

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