

The Effects of Corporate Governance and Managerial Compensation on Financial Fraud: Evidence from China

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Abstract

The purpose of this study is to examine whether financial crises influence the effects of manager market competition and cash compensation on the likelihood of listed firms' fraudulent financial reporting in China. We use a logistic regression model to analyze a very large sample of 1,088 Chinese listed firms from 2008 to 2018. The main findings are as follows: first, manager market competition is *negatively* associated with the probability of committing fraud. Second, managers' cash compensation is *negatively* related to the likelihood of financial fraud. These findings suggest that (1) strong manager market competition can regulate Chinese top managers effectively; (2) higher cash compensation and a good governance mechanism can encourage top managers to deter financial fraud.

Keywords: Manager Cash compensation; Market competition; financial fraud

Data Availability: The data collected in the paper are available from the CSMAR database.

1. Introduction

A recent study found that from 2001 to 2008, a quarter of Chinese listed companies committed financial fraud at least twice (Zhu and Wu 2009). This finding shows that it is very common for Chinese listed companies to engage in fraud, which weakens the confidence of public investors and impedes socioeconomic development. The case analyzed by Albrecht (2015) shows that perpetrators of fraud use their power to ask others to help them commit fraud. Thus, managers have more power to enlist employees to commit fraud. Shaw and Zhang (2008) pointed out that most companies' frauds are planned and implemented by top managers. In addition, Fleming et al. (2016) stated that managers are responsible for the quality of financial statements but also have more opportunity to engage in fraud. Top managers are directly in charge of the company's financial management and have the right to sign off on its financial statements; many listed companies have a large number of shareholders, who are remote from the company's day-to-day operations and less likely to be involved. Therefore, managers are the actual controllers of the company (Liu 2013). Therefore, it is plausible to conclude that top managers are responsible for a company's fraudulent financial statements.

Moreover, Beasley (1996) stated that manager compensation, which is a kind of incentive mechanism, influences managers' decisions; increasing manager compensation can decrease the likelihood of managers' financial fraud. LaPorta et al. (2002) focused on external factors, and found that manager market competition is related to the reputation of managers; in a competitive manager market, a manager tends to behave ethically to build a good reputation, which decreases the likelihood of committing fraud. Therefore, manager compensation and manager market competition can influence managers' decision making. However, these are cases from the U.S., a developed country. Unlike the U.S., China is a developing country with an inefficient manager market. Therefore, Yuan et al. (2008) have argued that the findings should differ between these two countries.

No prior study has examined whether changing economic conditions influenced the impacts of managerial compensation and market competition in the Chinese market from 2008 to 2018. Nonetheless, Davidson et al. (2015) pointed out that the economic environment has a strong impact on financial fraud. Yuan et al. (2008) found that from 2002 to 2004, managerial compensation was negatively associated with the probability of fraudulent reporting in China, and that a competitive manager market could keep managers from engaging in corporate fraud. As such, our study builds on the findings of Yuan et al. (2008) by focusing on the impact of top manager compensation and manager market competition on corporate fraud in Chinese listed companies from 2008 to 2018.

In recent years, many scandals have resulted from the exposure of financial fraud among listed companies in China, such as Lantian Company's inventory fraud and Leshi Internet Corporation's accounts receivable falsification. In 2008, the consequences of the subprime crisis hit China. The Chinese government launched a strong program to increase domestic demand to offset the economic impact of the crisis, and consequently this international crisis did not cause substantial damage to the Chinese economy. However, the Chinese economy's "sub-depression" in 2012 caused serious damage to Chinese companies and influenced their performance, affecting the likelihood of financial fraud (Liu 2013). Therefore, we consider the following question: has this changing Chinese market situation influenced the relationship between managers' behavior and company financial fraud?

Our major hypotheses are as follows: the number of listed companies is *negatively* associated with the likelihood of corporate wrongdoing; CEO turnover rate is *negatively* associated with the probability of corporate fraud; the presence of an internal director increases the likelihood of financial fraud; and CEO compensation is *negatively* associated with the likelihood of fraudulent financial reporting. We collect a large sample of 914 firms involved in financial fraud from 2008 to 2018, as disclosed through China Securities Regulatory Commission (CSRC) action, and a matched sample of 174 firms that did not commit fraud. We use a logic regression model to analyze the relationship between them. Our findings are in agreement with our hypotheses.

This study contributes to the literature in several ways. Most importantly, it is the first to take changes in the economic environment into consideration. After the 2008 and 2013 financial crises, we found that the more competitive manager market caused managers to behave more ethically, which provides strong evidence in support of Yuan et al. (2008). Because our sample of 1,088 listed firms is very large, our results should be representative of a large number of listed firms in China. Furthermore, our empirical tests control for other internal factors such as company financial performance.

The remainder of our paper is organized as follows. In the next section, we briefly review the previous literature and develop hypotheses. In section 3, we describe our methodology and sample. In section 4, we explain the empirical results of the main tests. In section 5, we summarize and discuss the findings. In the last section, we present our conclusions.

2. Literature Review and Hypothesis Development

Because corporate governance mechanisms are considered a crucial factor in financial fraud by many scholars (Beasley 1996; Sharma 2004; Uzun et al. 2004; Robison and Santore 2006; Yuan et al. 2008; Hannink 2013), many previous studies have investigated this area. Previous studies have found that the number of outside and inside directors is significantly related to corporate wrongdoing. Using a sample of U.S. companies, Beasley (1996) found that the number of outside directors on the Board of Directors (BOD) is negatively related to financial fraud. He also found that if the CEO is also a member of the BOD, the likelihood of fraud increases. Uzun, Varma, and Szewczyk (2004) found that the structure and composition of the BOD are significantly associated with the likelihood of financial fraud. They also suggested that the proportion of independent outside directors is negatively associated with company wrongdoing. In their discussion, they highlighted the importance of the compensation committee for preventing financial fraud, as this committee represents a corporation's incentive mechanism. While Beasley (1996) and Uzun et al. (2004) studied cases in the United States, Arshad and Razali (2014) used a sample of from Malaysia, and concluded that the presence of an independent director is significantly negatively associated with the incidence of fraud.

2.1 Pre-2008 Financial Fraud in China

Since the establishment of China's stock markets at the beginning of the 1990s, fraud has occurred frequently among listed firms (Yuan et al. 2008). Beginning in the 21st century, more and more Chinese scholars have examined the relationship between corporate governance and financial fraud in China (e.g., Yuan et al. 2008; Yang and Heng 2012; Chen et al. 2006). Yuan and Deng (2008) found that an independent outside director can increase the likelihood of fraudulent financial reporting; this finding is different from U.S. findings. This finding shows that different market systems can lead to differing relationships between corporate governance and corporate fraud. Chen et al. (2006) found that increasing the proportion of outside directors can reduce the incidence of fraudulent financial reporting, based on a sample of firms involved in fraud

from 1999 to 2003. Yang and Heng (2012) also found that a CEO who is also the member of BOD can increase the likelihood of corporate fraud, based on a large and more representative sample of firms charged with fraud from 1997 to 2007. This result is consistent with those of studies of fraud among U.S. firms.

2.2 Changes in the Chinese Market—the 2008 & 2012 Financial Crises

The subprime mortgage crisis in 2008 and the international financial crisis in 2012 had a far-reaching impact on the global economy (Sun 2014). The U.S. subprime crisis spread quickly and had a catastrophic effect on the global economic situation in 2008–2009, and inevitably had a major effect on China (Zheng and Tong 2010). In 2009, when the impact of the subprime crisis reached China, the Chinese government launched a program to increase domestic demand in response; this international crisis thus did not cause major damage on the Chinese economy (Wise et al. 2015). However, the Chinese economy's "sub-depression" in 2012 caused serious harm to Chinese companies and influenced their performance, affecting the likelihood of financial fraud (Liu 2013).

Although serious financial crises have repeatedly struck the Chinese economy, the Chinese market has still grown every year (Yang et al. 2012). This can be attributed to the stimulus package designed by the Chinese government to keep the economy on course, and its consequences both positive and negative. This package allowed China to embark on a nation-wide effort to upgrade its economy in key sectors. At the same time, attention still needs to be paid to improving China's institutional economic and legal framework to support its role as a major global player. Therefore, it is difficult to argue that 2008 to 2018 were disastrous years for China's market economy.

2.3 Manager Market Competition and Financial Fraud

In a competitive manager market, the wages a top manager earns are based on his or her past performance. A manager must work hard and convey his or her ability to the labor market to build a good reputation, so that he or she can earn higher wages in future (Fama 1980). Therefore, market competition plays a crucial role in managerial behavior. If top managers commit fraud, they will lose their reputation and no company will employ them. Therefore, the more competitive the manager market is, the less likely that managers will commit fraud. Measures of the manager market include the number of listed companies in a province, the CEO turnover rate, and the types of CEOs.

When market competition is immature, managers can gain tremendous private benefits by engaging in financial fraud (Chen et al. 2006). Generally, the greater the number of listed companies in a given economic environment, the more severe will be the labor competition in that market, and thus the more serious competition encountered by CEOs. Thus, it is likely that the top managers in provinces with more listed companies will be less likely to commit fraud and will work harder for the sake of higher wages. Based on the preceding discussion, the following hypothesis is proposed.

H1: The number of listed companies in a province is negatively related to the likelihood of financial fraud.

The CEO turnover rate can reflect the degree of competitiveness in the manager market (Rose et al. 2003). If the CEO of a company performs poorly, he or she will be replaced by the Board of Directors. However, if the market is immature, which means the number of qualified CEOs in the manager market is limited, a company with an incompetent CEO will have difficulty finding a new one. On the contrary, if there are a large number of professional managers in the market, a company with an inefficient CEO can find a better one easily. This shows the importance of market competition (Ross et al. 2003) for the relationship between CEO turnover and the likelihood of corporate fraud. In 1996, Beasley found that CEO turnover is negatively associated with the likelihood of engaging in fraud. Therefore, based on the preceding discussion, the second hypothesis is proposed as follows.

H2: CEO turnover rate is negatively related to the incidence of financial fraud.

A Board of Directors (BOD) is something like a supervisor of top managers, and holds an important position in the corporate governance system (Fama 1980). In China, listed firms are required to include independent directors on the board, and since 2003 the proportion of independent directors is required to be at least one third (Yang et al. 2012). Chen et al. (2006) investigated whether boardroom characteristics influence corporate fraud reporting in China and found that a higher proportion of outside directors reduces the likelihood of financial fraud. Most previous studies have shown that firms with CEOs who are also on the BOD are more likely to report fraudulent financial statements. Besides, Schrand, and Zechman (2012) also found that CEO overconfidence in financial statements also leads to wrongdoing. Therefore, based on the preceding discussion, the third hypothesis is proposed as follows.

H3: If the CEO is also a member of the BOD, the likelihood of financial fraud will increase.

2.4 Manager Cash Compensation and Financial Fraud

The principle of the efficiency-wage mechanism is that paying top managers a wage higher than market average will increase the opportunity cost of committing fraud, and force them to work hard for stockholders' interests (Yuan et al. 2008). Besides, Zhang and Zeng (2004) argued that the managers who are given more cash compensation are less likely to commit financial fraud. Based on the preceding discussion, a fourth hypothesis is proposed.

H4: The incidence of fraudulent financial reporting is lower if managerial compensation is higher.

3. Research Methodology

3.1 Data Source and Sample Selection

We examined all published China Securities Regulatory Commission (CSRC) enforcement actions from 2008 to 2018, which includes the four years from 2008 to 2011 following the 2008 financial crisis and the seven years after the 2012 financial crisis. Our data are of two types: (1) financial statement and corporate governance information, which is obtained from the China Stock Market and Accounting Research Database (CSMAR); (2) company capital stock types, which we manually collected from the CSRC website (<http://csrc.gov.cn/>).

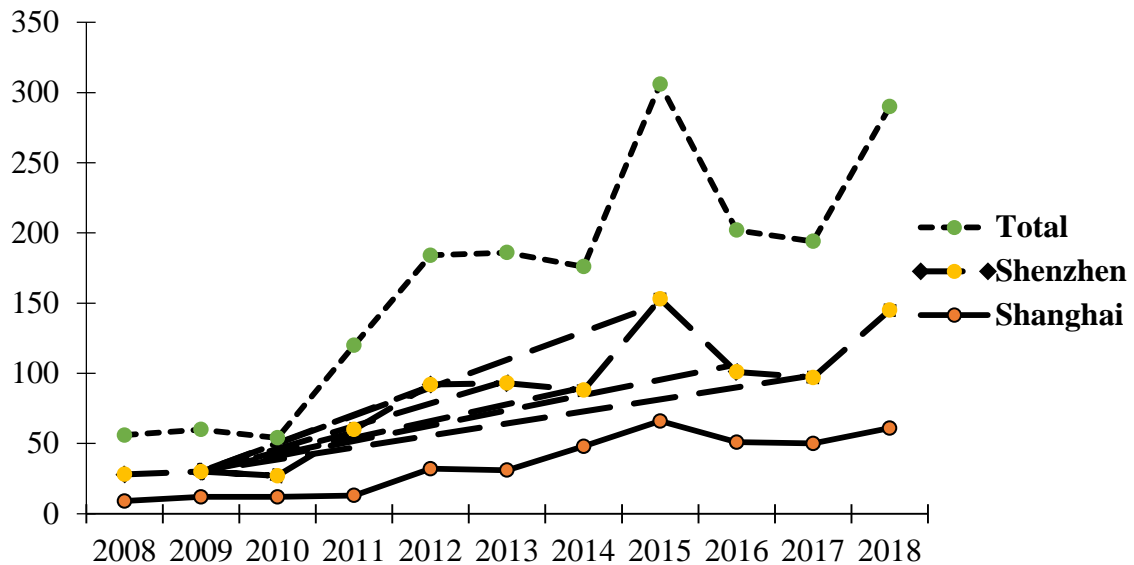
The companies we collected committed fraud just once within that duration, which gives a more representative sample. We eliminated firms as follows: 1) firms that have B-shares (B-shares are traded by foreigners, and are thus not within our consideration); 2) 10 firms for which we could only obtain partial data. Our final sample contains 914 companies that committed fraud once during the period 2008-2018 and 174 matched fraud-free firms during that period. Table 1 shows the year and stock exchange distributions of our final sample. Figure 1 shows the number of fraud-involved companies from year to year, which helps us to analyze the impacts of the financial crises on corporate fraud.

TABLE 1
The yearly and stock exchange distribution of fraud firms

Year	Shanghai	Shenzhen	Total
2008	9	19	28
2009	12	18	30
2010	12	15	27
2011	13	47	60
2012	32	60	92
2013	31	62	93
2014	48	40	88
2015	66	87	153
2016	51	50	101
2017	50	47	97
2018	61	84	145
Total	385	529	914

From all of the firm-year observations available in the Database of CSMAR during the 2008-2018 period, these firms are all committing fraud just in one year within that duration, we delete: (1) all firms that have B share; and (2) ten observations that the data cannot be collected completely.

FIGURE 1
The Time-Series of the Amount of Fraud-Involved Firms in Two Stock Exchange Distributions



3.2 Empirical Analyses

Multivariate logistic regression

We use NOLC, CEOC, and CEOT as proxy variables of manager market competition. To examine the relationship between top manager compensation and financial fraud, we use TOP3 as an explanatory variable in our test. The following logistic regression model is used to test the hypotheses:

$$\text{FRAUD} = \beta_0 + \beta_1\text{NOLC} + \beta_2\text{CEOC} + \beta_3\text{CEOT} + \beta_4\text{TOP3} + \beta_5\text{RCON} + \beta_6\text{BODS} + \beta_7\text{ROTS} + \beta_8\text{LEVE} + \beta_9\text{ROSA} + \varepsilon$$

$b_1=0,1$

In this model, FRAUD is equal to 1, which represents the firm committed to fraud, and equal to 0 otherwise. NOLC, CEOC, CEOT, and TOP3 are the explanatory variables. To evaluate the degree of manager market competition, we use NOLC to represent the number of listed companies in a given province. We expect that a greater number of listed companies means severer manager market competition, and will lead to a reduced likelihood of financial fraud. Let b_2 , b_3 , and b_4 be equal to 0 and b_1 to 1; then, the coefficient β_1 should be negative.

CEOC, coded as 0 or 1, represents CEO turnover. If a firm changes its CEO, it will be coded as 1, and otherwise 0. Because a higher CEO turnover rate indicates that the BOD will have opportunities to replace a poor CEO with a better one, decreasing the likelihood of financial fraud (Chen et al. 2006), let b_1 , b_3 , and b_4 equal 0 and b_2 equal 1;

then, the coefficient β_2 of CEOC is expected to be negative.

CEOT, coded as 0 or 1, represents whether the CEO is also a member of the BOD. If the CEO is also a member of the BOD, i.e. he or she is an internal director, this will be coded as 1, and otherwise 0. We expect internal directors to have more opportunity to commit fraud, which will increase the likelihood of financial fraud. Therefore, let b_1 , b_2 , and b_4 be equal to 0, and b_3 to 1; then, the coefficient β_3 of CEOT is expected to be positive.

TOP3 represents the total of the top three managers' salaries, which can be used to evaluate the relationship between manager compensation and financial fraud. If managers have higher salaries, their opportunity cost in conducting financial fraud is higher, which decreases the likelihood of corporate wrongdoing. Let b_1 , b_2 , and b_3 be equal to 0 and b_4 to 1; then, the coefficient β_4 of TOP3 is expected to be negative. The control variables include RCON (the company's capital stock type), BODS (the total number of BOD members when the company was established), ROTS (the proportion of shares held by individuals), LEVE (total debts divided by total assets), and ROSA (main business sales divided by total assets). In sum, β_0 is a fixed number, β_{2-9} are coefficients, b_{1-4} are either 0 or 1, and ε is the expected error. The descriptive statistics for the independent and control variables are reported in Table 2.

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TABLE 2

Descriptive Statistics for Variables

Variable	Total Firms (n=1088)					Fraud Firms (n = 914)					No-fraud Firms (n = 174)				
	Mean	Std. Dev.	Min.	Median	Max.	Mean	Std. Dev.	Min.	Median	Max.	Mean	Std. Dev.	Min.	Median	Max.
NOLC	284.47	537.52	9.00	202.00	3789.00	201.66	151.28	9.00	175.00	601.00	719.42	1211.65	31.00	306.00	3789.00
CEOC	0.65	0.48	0.00	1.00	1.00	0.59	0.49	0.00	1.00	1.00	0.97	0.18	0.00	1.00	1.00
CEOT	0.26	0.44	0.00	0.00	1.00	0.29	0.45	0.00	0.00	1.00	0.09	0.29	0.00	0.00	1.00
TOP3	231.09	261.31	18.42	156.83	3326.04	203.09	206.69	18.42	144.43	2505.73	378.21	421.51	22.95	238.68	3326.04
RCON	0.63	0.48	0.00	1.00	1.00	0.66	0.47	0.00	1.00	1.00	0.48	0.50	0.00	0.00	1.00
BODS	9.33	2.68	0.00	9.00	30.00	9.19	2.53	0.00	9.00	30.00	10.06	3.29	5.00	9.00	25.00
ROTS	37.33	35.88	0.00	39.61	100.00	33.95	37.67	0.00	166.78	100.00	55.06	14.97	10.45	55.85	89.40
LEVE	0.48	0.62	0.02	0.44	18.14	0.47	0.68	0.02	0.42	18.14	0.50	0.19	0.06	0.50	1.16
ROSA	0.28	0.33	0.00	0.18	3.18	0.30	0.35	0.00	0.20	3.18	0.15	0.12	0.00	0.12	0.73
NPRO	412	2470	-6070	6.84	50000	289	1590	-2560	63.18	37900	1060	4950	-6070	117.18	50000

Variable Definitions:

NOLC = the number of listed companies in certain province

CEOC = 1 if CEO turnover, and 0 otherwise

CEOT = 1 if CEO is the member of BOD, and 0 otherwise

TOP3 = the total cash compensation of three top managers who compensation is highest (RMB ten thousand)

RCON = 1 if listed company is controlled by family enterprise, foreign capital, or employee, and 0 otherwise

BODS = the total number of BOD members

ROTS = the percentage of shares held by individuals (tradable shares)

LEVE = total debt to total assets

ROSA = the main business sales to total assets

NPRO = net profits of listed company (RMB in millions)

4. Main Results

The fraud-involved companies all committed fraud only once in our final sample, and a matched sample of fraud-free firms was also collected. The results of the regression test are shown in Table 3. NOLC has a negative sign (-0.0002) and is highly statistically significant at $p < 0.01$. This result is consistent with H1 and implies that when there is a larger number of listed companies in a given province, there is fiercer manager market competition, and it is less likely that a company will commit financial fraud.

Consistent with H2, the coefficient of CEOC is negative (-0.1651) and statistically significant at the level $p < 0.01$. This result shows that a higher CEO turnover ratio can indeed help to deter corporate fraud. These two results together show the importance of manager market competition. If there are more listed companies in the province and more professional CEOs are available in the manager market, then when managers in a company engage in fraud, they can be easily replaced by better candidates, and thus their opportunity cost for reporting fraudulent financial statements becomes higher than in a less competitive manager market. To avoid being fired by the BOD, managers in a competitive manager market will perform better and will not engage in financial fraud.

CEOT has a significantly ($p < 0.01$) positive (0.0929) relationship with the incidence of financial fraud. Consistent with H3, this result reflects that a firm with a dual CEO/BOD director (i.e., an internal director) is more likely to engage in financial fraud. This reflects the importance of independent non-executives. The coefficient of TOP3 is -0.0003 and statistically significant at $p < 0.01$. Consistent with H4, this shows that the greater the manager compensation, the less likely it is that managers will commit fraud. Managerial compensation is related to the corporate incentive mechanism: a more efficient incentive mechanism can encourage managers to perform better and decrease the likelihood of financial fraud. Most of the control variables are significant, such as RCON, BODS, ROSA, and NPRO, which means these measures of corporate performance are important when considering the factors leading to financial fraud.

Variance Inflation Factor (VIF) Test

Table 4 shows the results of a Variance Inflation Factor (VIF) test for multicollinearity. If the VIF is close to 1, the dependent factor is not heavily impacted by its correlation with other factors. The VIFs of our variables are all close to 1. That is, our independent variables and control variables are all free from multicollinearity.

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TABLE 3
The Results of Logistic Regression Analysis

Variables	Hypotheses	Predicted Sign	(1)			(2)			(3)			(4)		
			Coefficient	t-value	P-value	Coefficient	t-value	P-value	Coefficient	t-value	P-value	Coefficient	t-value	P-value
Constant			0.9765***	21.510	0.000	1.0342***	20.660	0.000	0.8929***	18.260	0.000	0.9559***	20.130	0.000
NOLC	H1	-	-0.0002***	-12.59	0.000									
CEOC	H2	-				-0.165***	-6.770	0.000						
CEOT	H3	+							0.0929***	3.730	0.000			
TOP3	H4	-										-0.000***	-7.150	0.000
RCON			0.0706***	3.240	0.001	0.0098	0.420	0.677	0.0461**	1.990	0.047	0.0511**	2.250	0.025
BODS			-0.0091**	-2.350	0.019	-0.0078*	-1.930	0.054	-0.0083**	-2.030	0.043	-0.0064	-1.570	0.117
ROTS			-0.002***	-5.510	0.000	-0.001***	-3.950	0.000	-0.001***	-4.970	0.000	-0.002***	-5.190	0.000
LEVE			0.0023	0.140	0.885	0.0101	0.600	0.548	0.0023	0.140	0.892	0.0072	0.420	0.671
ROSA			0.1189***	3.750	0.000	0.0987***	2.950	0.003	0.1241***	3.680	0.000	0.1411***	4.250	0.000
NPRO			-0.0000**	-2.250	0.025	-0.000***	-3.160	0.002	-0.000***	-3.080	0.002	-0.0000	-0.570	0.566
R-squared				0.2015			0.1216			0.0960			0.1257	
n				1088			1088			1088			1088	

*, **, *** Denote two-tailed statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

TABLE 4
Variance Inflation Factor Statistic Test for Variables

Variables	VIF	1/VIF
NOLC	1.01	0.985884
CEOC	1.23	0.810521
CEOT	1.05	0.95227
TOP3	1.17	0.856104
RCON	1.19	0.839905
BODS	1.09	0.914698
ROTS	1.17	0.853993
LEVE	1.02	0.980615
ROSA	1.11	0.900345
NPRO	1.16	0.859911

5. Discussion

5.1 Review of the Main Results

Motivated by the changing national economic situation of China, and the lack of evidence whether manager market competition and manager compensation are associated with the likelihood of fraudulent financial reporting, we investigate this issue by (1) counting the number of listed companies in each province, (2) summarizing the CEO turnover rate, (3) evaluating the firms with dual CEO/BOD directors, and (4) calculating the top three managerial salaries.

Based on a sample of 1,088 firms from 2008 to 2018, we document several findings. First, the larger the number of listed companies in a given province, the lower the likelihood of financial fraud. Second, higher CEO turnover can decrease the chance of a company committing financial fraud. Third, independent directors can decrease the likelihood of fraudulent financial reporting. Fourth, higher managerial compensation can decrease the likelihood of corporate fraud. These results confirm our hypotheses.

5.2 Explanation of the Main Results

5.2.1 Manager Market Competition

Our first finding (a greater number of listed companies in a given province can decrease corporate fraud) shows that efficient manager market competition can deter fraud, because a province with more listed companies has fiercer market competition. Yuan et al. (2008) found the same result. They showed that manager market competition is related to manager reputation. If the market is more competitive, manager reputation is more important because the company wants to employ a manager with a high reputation instead of poor one. Therefore, in this situation, managers are motivated to

perform better to develop a good reputation, which helps decrease the likelihood of corporate financial fraud.

Second, we proved that the CEO turnover rate is negatively associated with the incidence of financial fraud. Rose et al. (2003) pointed out that an indication of manager market competition is the replacement of incompetent managers. A competitive manager market can drive a manager to operate a company based on shareholders' interests, or else they will be replaced. Beasley (1996) proved that CEO tenure is negatively related to financial fraud, which means that CEOs in fraud-involved firms have a greater chance of being fired than CEOs in fraud-free firms. Yang and Heng (2012) also found that more recently established firms are less likely to commit fraud.

Third, we proved that if the CEO is also a member of the BOD, the likelihood of corporate financial fraud will increase. Many previous studies have explored this factor (Yuan et al. 2008; Uzun et al. 2004; Chen et al. 2006; Arshad and Razali 2014; Yang et al. 2012; Chen et al. 2017). If the CEO is also a member of the BOD, which means that the dual CEO/BOD director is involved in day-to-day operations, he or she will be subject to pressure for stronger corporate performance. Rosner (2003) also pointed out that internal directors have more motivation to commit fraud because they can easily conceal fraudulent acts. Internal directors also have more opportunity to commit fraud. In line with previous studies, Yang and Heng (2012) found that firms with a lower proportion of independent directors are more likely to report fraudulent statements. Arshad and Razali (2014) also pointed out that independent non-executive directors can decrease the incidence of financial fraud. This study shows that a company's board composition has a major influence on corporate governance (Chen et al. 2017). Thus, firms should have a high proportion of independent non-executive directors, who can make more independent decisions, free from internal pressure from the organization, and maximize shareholders' interests.

5.2.2 Manager Cash Compensation

Fourth, concerning the relationship between managerial compensation and corporate financial fraud, we proved that higher compensation reduces the likelihood of financial fraud. Manager compensation is a type of manager incentive mechanism, and higher compensation can encourage managers to work hard and increase the private cost of committing fraud. Therefore, a manager receiving high compensation will be less willing to commit fraud, which decreases the likelihood of fraudulent reporting (Yuan et al. 2008). Zhang and Zeng (2004) argued that managers' cash compensation is negatively associated with financial fraud. Yuan et al. (2008) also proved that manager compensation is higher in no-fraud firms than in fraud firms.

Limitations

Because the records of listed companies from 2008 to 2018 include thousands of observations and the data provided in the database are incomplete, we eliminated

companies with incomplete information. Although our sample was very large, the result may not reflect the entire population. Company's capital stock types were not included in the database, so we obtained this information for each firm on a government website.

Because of the deficiency in available information, we collected information on 914 fraud-involved firms and only 174 fraud-free firms, and then compared the two groups. The imbalanced number of fraud-involved and fraud-free firms may lead to inaccurate results. Because the results before financial crises and after financial crises are very similar, we did not analyze the influence of financial crises deeply. In future studies, researchers can analyze the economic environment's influence year by year to determine whether there is any difference between the before-crisis and after-crisis periods.

Theoretical Contribution

Financial frauds at prominent companies have triggered a sweeping examination of corporate governance and financial fraud. Many studies have empirically tested the relationship between corporate governance mechanisms, such as BOD composition, ownership structures, and independent auditors, and the probability of financial fraud. The effect of market competition on companies' accounting fraud is an unexplored field that deserves further study, for several reasons. First, manager market competition in developed countries is more intense than in developing countries; thus, studies of developed countries may neglect its influence (Yuan et al., 2008). However, China is a developing country with an unstable economy and immature market. Therefore, we cannot ignore the effect of market competition. Yuan et al. (2008) also found that manager market competition had a close relationship with corporate financial fraud.

However, after 2004, many frauds still occurred, causing serious damage to the economy and bringing large losses to investors. The 2008 and 2012 financial crises crashed the Chinese market, making the economy more unstable. Therefore, it is important to investigate how the market environment influences the likelihood of financial fraud. Up to now, there has been no empirical evidence about the effectiveness of manager market competition and manager compensation in reducing companies' accounting fraud following an economic depression.

8. Conclusion

Our research investigates the impacts of manager market competition and manager compensation on financial fraud from 2008 to 2018 in listed companies in China. We have drawn on a large sample of 1,088 firms and used logistic regression analysis to identify the relationships between the variables. We found that manager market competition has a negative relationship with the incidence of financial fraud, and efficient manager incentive mechanisms can deter fraudulent reporting. A comparison of cases before and after the 2008 financial crisis obtained the same results.

Because manager market competition is hard to measure, and many researchers believe that it is not a major aspect of financial fraud, there are few studies in this area. The two financial crises after 2008 led to losses and bankruptcy for many companies, and such external environmental factors also can influence fraud. Therefore, this study aimed to determine whether there has been any change in the relationship between managerial factors and financial fraud. The information available was incomplete, so we used the sample data instead of the entire population. Although our findings are consistent with those of most previous studies, the results do not provide a detailed understanding of the relationship.

Because our study has some limitations, we highly recommend further research in this area. Future studies can use data from more firms over a longer period of time to make sure the sample is more representative. The firms we selected were all in mainland China; the range can be expanded to Hong Kong, Macao, and Taiwan to see whether there is any difference among these regions. Lastly, further research is needed to perform the same regression analysis year by year to find if there is any difference in the relationship between managerial factors and financial fraud in response to the financial crises in this period.

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