

# Is the Structure of the Board of Directors Associated with Accounting Fraud?

## Evidence from Japan

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**ABSTRACT:** This study investigates the types of firms that disclosed fraudulent accounting (fraud firms). Next, this study examines whether the fraud firms have common innate characteristics by comparing fraud and non-fraud firms. Finally, I clarify the differences in the composition of the board of directors between fraud and non-fraud firm and show the evidence from Japan regarding the association between accounting frauds and the structure of the board of directors. I focus on a sample of 280 firms that disclosed that the inappropriate accounting had impact on prior financial statements or that the inappropriate accounting would have an impact on the future through Tokyo Shoko Research (TSR) Investigation Report from 2007 to 2015. I use a comparison between the fraud and non-fraud firms that are similar to the fraud firms in industry and size for the empirical study.

The finding is the following: First, I document the number of accounting frauds increased since 2012 and the accounting frauds occurred at the First Section of the Tokyo Stock Exchange. Accounting fraud is prevalent in the industry of wholesale, retail, construction and communication. Also, accounting frauds occurred at the level of top management and subsidiary. And the incentive to commit accounting fraud is to sustain a firm's financial performance, not to pursue an individual private gain. This suggests that this is a feature of accounting frauds in Japan. Since the type of fraudulent financial reporting is related to sales and losses, this is the pressure that causes accounting frauds. Second, the results of t-test show that there is a difference in a firm's performance and business complexity, and the percentage of outside directors. This suggests that the poorer performance a firm possesses, and the larger the size of a firm, the more likely accounting fraud occurs. Third, there is a significant positive association between accounting fraud and the percentage of outside directors; however, there is a significant negative association between fraud and the independence of the outside directors. This suggests that while the fraud firms have a positive attitude to improve the composition of board of directors, they do not acquire the higher independence possessed by the outside directors.

**Key Words:** fraudulent accounting; innate characteristics; the board of directors; outside directors; independence.

# 1 INTRODUCTION

Nakashima and Ziebart (2015) examined whether the Japanese internal control regulation (the Financial Instruments and Exchange Act of 2006, J-SOX)<sup>1</sup> impacted both earnings management and earnings quality in Japan. They found that the Japanese results to be somewhat different than results found in prior U.S. studies. Nakashima and Ziebart (2015) documented the inconsistent results are because of the differences in the enforcement mechanism and corporate governance as well as differences between US- SOX<sup>2</sup> and J-SOX.

Internal control reporting regulation has enacted both in Japan and the U.S. to operate a firm's internal control system. Although the objective of the internal controls system is not to detect fraud, if an effective internal control system were implemented, it is likely that unintentional errors and intentional errors would be decreased. In practice, the number of the firms which disclosed material weaknesses has decreased in Japan. Nakashima and Ziebart (2015) documented that the effective internal control system help earnings quality improved in the post-J-SOX period and the results of earnings quality are consistent with the results for the U.S. and SEC standard Japanese firms.

However, Nakashima and Ziebart (2015) found that while accruals management and real management remained unchanged for control firms, accruals management increased for material weakness disclosing firm. The results of earnings management are inconsistent with the results for the U.S. and SEC standard Japanese firms. They concluded that they were skeptical regarding the extent to which J-SOX improved corporate governance and more effective enforcement was

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<sup>1</sup> Since there is our original act for internal control regulation, the Financial Instruments and Exchange Act of 2006 in Japan, this act is not the Japanese version of the U.S. Sarbanes-Oxley Act of 2002. However, following the U.S. where it is called Sarbanes-Oxley Act of 2002 as SOX in the literature, the Financial Instruments and Exchange Act of 2006 is called as J-SOX in Japan. Therefore, I call the Financial Instruments and Exchange Act of 2006 as J-SOX in this study.

<sup>2</sup> Although Sarbanes-Oxley Act of 2002 is called as SOX in the literature in general, Sarbanes-Oxley Act of 2002 is called as US-SOX in this study for making a distinction with J-SOX.

needed in Japan.

Therefore, incidentally or inevitably, the accounting fraud was found at one of excellent public firm, Toshiba in July 2015.<sup>3</sup> If an effective internal control system was organized and implemented, the opportunity of fraud involved by directors and employees should be prevented and results in the decreases in fraud occurrence, though the direct purpose of internal control regulation is not to detect fraud. Although the internal control regulation required the public firms in Japan to organize their controls system well and their internal control system should have had worked substantially, the accounting fraud occurred at one of excellent firms in Japan.

The Toshiba accounting scandal becomes one of case studies of accounting fraud triangle.<sup>4</sup> It is said that fraud occurs when pressure, rationalization, and opportunities coexist (Cressey 1973, 30). If these three factors coexist, regardless of the excellence of a firm, a fraud<sup>5</sup> can occur. According to the Investigation Report of Toshiba (Investigation Committee 2015), it seemed that there were three factors of fraud triangle at Toshiba. I regard the following as three factors of the fraud triangle at Toshiba: Pressure, where representatives are supposed to achieve profits and losses required by each budget and to meet improvements in the profits and losses mandated during each relevant period (Investigation Committee 2015, 44-45). Rationalization, where the people concerned must have considered that the activities for inappropriate accounting should not be stopped by the era of those presidents. Opportunity, where internal controls do not work well, and as a result, such frauds cannot be prevented (Investigation Committee 2015, 48).

Following Cressey's (1953) theory, if the opportunity had been constrained at Toshiba,

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<sup>3</sup> The recent accounting scandal of Toshiba declined the creditability of the market in Japan. Media asserts that Toshiba is one of excellent firms for corporate governance since it changed its corporate model from traditional "Audit & Supervisory Board" to "a Company with a Committee" very early as a public firm in Japan (Nikkei Shinbun, July 22 2015).

<sup>4</sup> In recent days, the theory of the fraud is called as the fraud diamond, incentive, opportunity, rationalization, and capability. Capability should exist in addition to the fraud triangle. See the details, Wolfe and Hermanson (2004).

<sup>5</sup> Statement of Auditing Standard No. 99 (SAS 99) (AICPA 2002, para.5) defines fraud as an intentional act that results in a material misstatement in financial statements and state that there are two kinds of fraud that means (1) misstatements arising from fraudulent financial reporting, that is an intentional misstatements or omissions of amounts or disclosures in financial statements and (2) misstatements arising from misappropriation of assets.

the accounting fraud should not have occurred. It is likely that an insufficient monitoring system under the governance structure composing a powerless internal auditor and mere façade of outside directors were not able to constrain the opportunity of the fraud occurrence. This is motivation of this study. Therefore, I investigate the relationship between fraud and governance mechanism. First, I investigate what innate characteristics the fraud firms have commonly. Second, I examine the composition of boards of director and audit committees in the fraud firms. Third, I discuss the association between fraud and the composition of board of directors.

This study contributes to literature in the following ways. First, this study provides insight into the types of the firms that disclosed fraudulent accounting, based on the theory of fraud triangle. Second, this study shows the Japanese evidence on the innate characteristics of the fraud firms by comparing fraud firms and non-fraud firms, although there are several studies regarding the particular fraud firm. Third, this study clarifies the differences in board of directors' composition, and in independence of board of directors and audit committees between fraud firms and non-fraud firm and provide evidence from Japan regarding the association between accounting fraud and board of directors' composition.

The remainder of this study proceeds as follows: Section 2 describe the corporate governance reform in Japan. Section 3 presents sample selection and describes the type of frauds engaged in by the fraud firms. Section 4 reviews prior research and develops hypotheses. Section 5 shows the research design. Section 6 presents the empirical results. The final section includes a summary and my conclusions.

## **2 Corporate Governance Reform**

Prime Minister of Japan and his cabinet formulated the Basic Concept of Japan Revitalization Strategy 2016 (Cabinet 2015). In the content, they proposed further enhancement

of corporate governance as a regulatory reform for future investment as follows:

The Government will support efforts by listed companies for improvement of the effectiveness of corporate governance through learnings and publicizing the state of listed companies' efforts concerning the CEO selection and dismissal process and composition, operation, and evaluation of the board of directors (Cabinet 2015, p.22)

The Council of Experts Concerning the Corporate Governance Code (CECCG) issued the Corporate Governance Code in June 2015. Principle 4.8 of Code states that companies should appoint at least two independent directors that have such qualities. Moreover, if a company in its own judgment believe that it needs to appoint at least one-third of the directors as independent directors based on the board's consideration of factors such as the industry, company size, business characteristics, organizational structure, and circumstances surrounding the company, it should disclose a strategy for doing so (CECCG 2015 Principle 4.8.27).

Drucker (1974, 635) states that an effective board means the review and appeal board. Since management needs to have access to the financial community to understand each other, Drucker insists that a board of directors should comprise people from outside the company. Moreover, based on the Corporate Governance Code, the Tokyo Stock Exchange required all public firms in Japan to prepare a report on corporate governance which is called as corporate governance report. This is supposed to provide stakeholders with information regarding the public firms' corporate governance situation and attitude.<sup>6</sup>

A Company with Board of Company Auditors shall have three or more company auditors, and the half or more of them shall be Outside Company Auditors (Company Law 2005, Article 373, Paragraph 1, Item 2). The Company Law states the following: the outside directors for “a Company with an Audit and Supervisory Board, if they do not appoint outside directors, should

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<sup>6</sup> TSE <http://www.jpx.co.jp/english/equities/listing/cg/01.html>

explain the reason why appointment of outside directors is not appropriate (Revised Company Law 2015, Article 327, Paragraph 2) A company with a supervisory auditor committee should establish the supervisory auditor committee and this committee should consist of more than three directors who are supervisory auditors and half of the members should be outside directors (Company Law 2005, Article 331, Paragraph 6). A company with such a committee should establish the committee and the committee should consist of more than half outside directors (Company Law 2005, Company Law, Article 400, Paragraph 3). To enhance corporate governance and control the board of directors, the Revised Corporate Law of 2015 introduced “company with audit and supervisory committee.” in May 2015 and required them to appoint three more directors and among them half of directors should be outsiders.

Principle 4-8 of the Corporate Governance Code requires that public firms should appoint more than two independent outside directors. However, these firms are allowed not to appoint them as far as they have the proper reason why they do not have independent outside directors. As prescribed by the TSE Listing Code Article 436-1, public firms should appoint more than one independent outside directors (TSE 2015, 1).

Figure 1 presents the assessment of independence of the board (CECCG 2015). Two dimensions are displayed, the time horizon and the relationship with the firm when evaluating the independence of outside executives. As shown in Figure 1, the independence criteria must be evaluated along two dimensions to determine whether the outside director is independent or not. These two dimensions are the relationship between the directors appointed and the insiders and or clients and suppliers, and the time period of the appointment of the directors. If a relationship is found between the director and the related party or person of the firm within ten years, it is then considered as “no independence.” If there is a relationship between the directors and the investors or no main stakeholders within ten years, these relationships must be disclosed.

[Insert Figure 1 Here]

## 3 SAMPLE SELECTION AND DESCRIPTION

### 3.1. Fraud Firms

The fraud firms consist of 280 public firms in Japan during the period from 2007 to 2015. The fraud firm sample that disclosed that inappropriate accounting impacted the prior financial statements or would have an impact in the future in their annual reports which were issued from April 2007 to March 2015 through Tokyo Shoko Research (TSR) Investigation Report.

Figure 2 shows the trend of the number of fraud occurrences during the period from April 2007 to March 2015. The increase in frauds is seen from 2012. The number of accounting frauds increased gradually during this period. It seems that the reason why frauds increased after 2012 is because many public firms in Japan established a “Public Interest Whistle-Blowing System” in accordance with the Whistleblower Protection Act that was enacted in 2006.<sup>7</sup>

Table 1 and Figure 3 present fraud firms by their listed stock markets. Figure 2 shows that while the number of the fraud firms listed on JASDAQ and MOTHERS increased by 2011, the fraud firms listed on the First Section and the Second Section of the Tokyo Stock Market increased after 2012. Table 2 and Figure 4 show the fraud firms divided as per industries. The industrial distribution is based on *Nikkei's Intermediate Classification* for public firms in Japan.

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<sup>7</sup> The Act prescribes that the purpose of the Act is to protect whistleblowers to provide for nullity, etc. of dismissal of Whistleblower. on the grounds of Whistleblowing and the measures that the business operator and Administrative Organ shall take concerning Whistleblowing, and to promote compliance with the laws and regulations concerning the protection of life, body, property, and other interests of citizen, and thereby to contribute to the stabilization of the general welfare of the life of the citizens and to the sound development of socioeconomy (Consumer Affairs Agency 2004, Article 1). The act also prescribes that the business operator provided for in Item (i) of Paragraph 1 of Article 2 shall not give any disadvantageous treatment such as demotion, a salary cut or other treatment to Whistleblower who is or was its employee on the basis of such Whistleblowing (Consumer Affairs Agency 2004, Article 5). The survey was implemented by the Consumer Affairs Agency for 3,624 persons who experienced an internal notification based on the Whistler-Blowing Act of 2004, private firms, public firms, and employees and attorney, and academician as style of the questionnaire-answering. According to the survey, 61.5% of all the private firms recognized the Act, the people who know both of Act and the guideline and the people who know only the Act are 36.8%, and 24.7% respectively. Focusing on the employees, the more numbers employees the firms have, the more they know the Act. While 93.9% of more than 3,000 employees know the Act, 61.1% of 101-300 employees know the Act. Focused on the introduction of public interest whistler blowing system, 46.3% of the private firms has introduced the public interest whistler blowing system, and 96.8% of more than 3,000 employee firms and 40.0% of the employees of 101-300 employees have introduced the system respectively.

Frauds mostly occurred in 46 wholesale firms (16.4 percent), followed by 39 communication firms (13.9 percent), 33 service firms (11.8 percent), 31 retail firms (11.1 percent), and 20 construction firms (7.1 percent).

[Insert Figure 2 Here]

[Insert Table 1 Here]

[Insert Figure 3 Here]

[Insert Table 2 Here]

[Insert Figure 4 Here]

I analyze the management levels where a fraud occurred and who were involved with the fraud. Of the four levels, top management has the greatest number of frauds. This result is consistent with Doyle et al. (2007) that company-level material weaknesses are related with accrual management by managers. Figure 5 presents that following top management, subsidiary has the second greatest number of frauds. A manager of public firms is evaluated by the firm's financial results. Sometimes, it seems that since the top of a subsidiary is transferred from one of top management of the parent firm, the parent firm sometimes pushes the top of the subsidiary to implement the fraud as an exchange of tokens. Since a manager is evaluated by his or her firm's financial performance, the manager tries to be involved with fraud to sustain his or her own authority. This is a type of incentive of committing a fraud by managers. This is from greed as social approval.

[Insert Figure 5 Here]

Figure 6 presents a breakdown of specific type of frauds: embezzlement by employees, fraud by a subsidiary, private gains for senior management, and protecting a firm as a whole. Of these four incentives of committing frauds, protecting a firm as a whole is the key incentive. It is followed by fraud by a subsidiary, and by embezzlement by employees and private gains for senior management as incentives to commit frauds. This is one of the characteristics founded in



Japan.

Figure 7 and 8 show the four categories account-specific frauds as per the account type. In Figure 7, I found that of the four fraud categories, “Account-Specific frauds” has the highest number of frauds. When I focus on Account-Specific frauds in Figure 8, the greatest number of account specific frauds is founded in the Sales/Purchases, which is then followed by Other Liabilities. This indicates that a firm commits fraud in areas involved with revenue-recognition, such as Sales/Purchases and Other Liabilities. This leads to aggressive earnings management.

[Insert Figure 6 Here]

[Insert Figure 7 Here]

[Insert Figure 8 Here]

### **3.2. Comparison between Fraud and Non-Fraud Firms**

I used the following process to select a sample selection to analyze the two hundreds eighty firms that disclosed fraud through TSR survey. I dropped twenty duplicate firms. There are several firms that have one more fraud during the period. I also dropped one financial institution. Finally, I have just reached sixty-one firms that disclosed their Corporate Governance Report in 2015 or 2016. The final sample was obtained from Nikkei Data, whose have complete data from 2001 through 2015. Data was obtained from the Nikkei Economic Electronic Databank System (NEEDS).

Table 3 outlines the sample selection process. To form a pair sample group, non-fraud firms are that are similar to the fraud firms in the stock exchange, industry, size, time period, and accounting method, were identified. Each fraud firm was matched with a non-fraud firm based on the following criteria: Stock Exchange, Industry Firm, and Size: total assets, Time Period: 2001-2015, Accounting method: Japan-GAAP.

[Insert Table 3 Here]

#### **4 PRIOR RESEARCH AND HYPOTHESES DEVELOPMENT**

Ge and McVay (2005) presented that firms disclosing material weaknesses tend to have innate characteristics such as complexity of operations, small firm size, and poor profitability. I also predict that fraud firms tend to have innate firm characteristics, such as financial performance, business complexity, firm size, and firm age.

Firms manage reported earnings to avoid earnings decreases and losses (Burgstahler and Dichev 1997; Suda and Shuto 2005). Burgstahler and Dichev (1997) found that cash flow from operations and changes in working capital, have been used to manage earnings. Therefore, since positive operating cash flows is the result of whether the firm has good sales, managers tend to focus on operating cash flows. Consequently, they try to manage earnings by utilizing operating cash flows. Suda and Shuto (2005) stated that Japanese managers have an incentive to manage earnings by focusing on simple earnings benchmark, nonzero earnings, because firms have no explicit contracts of earnings-based compensation for managers and the compensation is highly sensitive to negative earnings. Thus, I predict that there is a relationship between fraud and financial performance.

Firms with business complexity likely have a higher chance for occurrence of deficiencies in internal controls (Ge and McVay 2005, 148). This not only leads to non-intentional errors but also to intentional errors. I have focused on the number of segments as variable of business complexity.

Large firms have more assets and resources and tend to organize their internal controls system. However, since bureaucracy and rigid hierarchy penetrates in a larger firm, there is the firm culture where it is hard for an employee to notify authorities about the occurrence of frauds

in the large firm.

Since employees of older firms have experience of businesses, older firms likely have more established good internal controls system (Ge and McVay 2005, 149). On the other hand, since order firms have a long history with good reputations, they might try to protect their reputation even if they perform poorly. This might leads to the occurrence of frauds.

Therefore, I posit the following hypothesis with four working hypotheses:

**H1: There are four common innate characteristics of the fraud firms.**

**Working H1a: The poorer the financial performance of the firm, the more fraud it commit.**

**Working H1b: The greater the business complexity of the firm, the more fraud it commit.**

**Working H1c: The greater the size of the firm, the more fraud it commit.**

**Working H1d: The older the firm, the more fraud it commit.**

Fama and Jensen's theory (1983) suggests that a higher percentage of outside directors increases the board effectiveness as a monitor of management. To enhance corporate governance, the Revised Corporate Law of 2015 introduced "a company with a committee of audit and others" in May 2015. It is expected to strengthen the monitoring of the executives' executions by the internal and outside board of directors. Moreover, ethical education should be provided for all levels management and employees to improve their attitude for promoting appropriate accounting.

Beasley (1996) found that fraud firms have boards of directors with significantly lower percentages of outside directors than non-fraud firms by using the U.S. data in 1980-1991 and that larger proportions of outside directors significantly reduce the likelihood of fraud occurrences. Moreover, Uzun et al. (2004) found that board composition was significantly related to fraud occurrence by employing the U.S. data in 1978-2001 period. Chen et al. (2004) documented that the proportion of the board of outside directors is associated with the fraud occurrences.

However, there are empirical studies that more outside directors is related to fraud. The

reason is following: while outside directors bring knowledge, experience and objectivity to bear upon board decisions, it is difficult for them to understand the complexities of the firm and monitor its operations (Estes 1980) and a large number of outside directors representing diverse interests reduce the economic flexibility of a firm and result in more conflicts between the board and the top management (Sethi et al. 1979).Chaganti et al. (1985) did not find that there is significant relationship between the proportion of outside directors and corporate failure.

Thus, there are a mix result regarding the association between the percentage of outside directors on board of directors and fraud in English-speaking counties. Here, the structure of the board of directors in Japan should be explained.

Under the Company Law, 97.7% of all public firms set up a Companies with Board of Auditors and 2.3% of all public firms introduced a Companies with Committee. A director on the board for public firms in Japan is appointed by CEO (Chief Executive Officer) or president among core employees who have dedicated themselves for the firm since entering the firm right after graduation. CEO has a central power for directors to execute management under CEO's direction. Therefore, although directors should monitor CEO's management, in really it is hard for directors to monitor CEO' management in public firms in Japan since directors are located under top management at a firm's hierarchy (Osada 2016). An internal auditor who also is appointed by CEO among core employees but is not expected to become top management by CEO unlike directors, is supposed to audit whether directors' management is legally appropriate or whether directors' management is appropriate or rational but it is hard for him or her to assert his or her opinion to top management (Direct Force 2016).

Although originally the board of directors and internal auditors should monitor and audit the CEO's management respectively, it seems that it is hard for them to audit CEO's management. According to the Survey for public firms (Deloitte 2016), the roles of the outside directors for public firms to expect outside directors are management experiences and legal professional

knowledge. Saito (2011) documented by the survey that a firm expects outside directors to guarantee legality and appropriateness of management (44.8% of all respondent public firms) and to advice a new project (36.8%). Only 6.8% of respondent firms is to monitor of management. This suggests that public firms in Japan expect outside directors not to monitor management but to advice management (Saito 2011).

Therefore, as stated before, Revision of Companies Act of 2014 enacted and asked public firms to appoint outside directors on the board and required them to explain if they do not comply this (Ministry of Justice 2014). Also, firm “a company with audit and supervisory committee.” has been established as a new structure of a firm in order to enforce corporate governance (Ministry of Justice 2014, Article 2, 11-2、 Article 331, para 3, para. 6). Because of issuing the Revision, 3,118 firms (88.9%) have appointed an independent outside directors among 3,507 all public firms. And, 3,358 firms (95.8%) have an outside director among 3,507 all public firms according the survey for public firms in Japan by TSE (TSE 2016).

Nakashiminda and Ziebart (2016) found that there was a positive link between ‘tone at the top’ and outside directors ratio. They suggests that a higher percentage of outside directors the board has, more positive tone at the top the firm has. The fraud firms have a positive attitude for reforming the governance. Thus, I predict that fraud firms have a higher percentage of outside directors in order to enhance governance through strengthening auditing and receiving objective opinions . Accordingly, the following hypothesis is posited:

**H2: Fraud firms have a positive attitude for governance, and thus a higher percentage of outside directors of board of the directors.**

Epps and Ismail (2008) documented that the boards controlled by 90 percent of independent outsiders were negatively associated with the income-decreasing earnings management. Beasley

(1996, 455) found that there is a significantly negative relationship between the likelihood of fraud occurrences and the percentage of independent directors. Xie et al. (2003) provide evidence that earnings management is less likely to occur when the board composition has more independent outside directors.

I predict that fraud firms have a higher percentage of independence of the board of directors to prevent fraud and enhance corporate governance. Accordingly, the following hypothesis is posited:

**H3: Fraud firms have a positive attitude for governance, therefore, they have a higher independence of the board of directors.**

## **5 RESEARCH DESIGN**

### **5.1. Proxy of Fraud Occurrences**

The fraud firm sample that disclosed that inappropriate accounting had an impact on prior financial statements or would have a future impact on their annual reports which were issued during the period from April 2007 to March 2015 through Tokyo Shoko Research (TSR) Investigation Reports.

### **5.2. Independence of the Board of Directors**

Figure 1 shows the criteria of independence standards as per the Corporate Governance Code (The Council of Experts Concerning the Corporate Governance Code 2015). According to the independence standards of the Corporate Governance Code (The Council of Experts Concerning the Corporate Governance Code 2015), the criteria to determine whether a director is independent or not should be assessed along two dimensions: the relationship between the directors appointed

and the insiders/clients and suppliers and the time period of the appointment of the directors. If there has been a relationship between the director and the related party or person of the firms within ten years, it is then considered as “no independence.” If there has been a relationship between the directors and investors/not main stakeholders within ten years, these relationship must be disclosed.

### 5.3. Test Hypothesis

To test H1, I analyze the innate firm characteristics of the fraud firms. Specifically, I investigate the following four dimensions: financial performance, business complexity, firm size, and firm age. The descriptive statistics of each of the variables are shown in TABLE 3.

To test H2, I implement univariate tests. To test the relationship between fraud occurrences and the composition of the board of directors. I examine if there are significant differences between the fraud firm sample and non-fraud firm sample. T-test is used to check for significant differences. Moreover, to test H2, multivariate tests should be implemented. Similar to Beasley (1996), the logit regression model is presented as follows. I estimate the following regression equation to test H2:

$$\begin{aligned}
 \text{H2\&H3} \quad \text{FRAUD} = & \theta_0 + \theta_1 \text{GOVENANCE}_t + \theta_2 \text{BOARDSIZE}_t + \theta_3 \text{OUTSIDEDIRETOR\_percentage}_t \\
 & + \theta_4 \text{OUTSIDEDIRECTOR\_indepence}_t \\
 & + \theta_5 \text{FRGN}_t + \theta_6 \text{OUTSIDEAUDITOR\_percentage}_t \\
 & + \theta_7 \text{OUTSIDEAUDITOR\_independence}_t + \theta_8 \text{OC}_t + \theta_9 \text{SEGMENT}_t \\
 & + \theta_{10} \text{OCF}_t + \theta_{11} \text{NI}_t + \theta_{12} \text{GROWTH}_t + \theta_{13} \text{AGE}_t + \theta_{14} \text{SIZE}_t + \varepsilon_{t+1}
 \end{aligned}$$

### 5.4. Control variables

In the multivariate analyses, factors associated with firm characteristics are controlled. Firms with strong operating cash flow performance have no incentive to manage earnings through discretionary accruals (Lobo and Zhou 2006). I also predict that firms with larger operating cash flows do not need to manage earnings to report increases in earnings or income, however, I might consider that firms with larger operating cash flows might have an incentive to manage earnings through real management using OCF. *Fraud*, is 1 if the firm is committed, and 0 otherwise.

## 6 EMPIRICAL RESULTS

### 6.1. Descriptive Statistics

Table 4 provides descriptive statistics of the variables chosen in this study. The descriptive statistics indicate that the mean (standard deviation) of OCF of fraud and non-fraud firms are 0.038 (0.095) and 0.053 (0.060) respectively. The descriptive statistics indicate that the mean (standard deviation) of NI of fraud and non-fraud firms are 0.023 (1.034) and 0.034 (0.071) respectively. This indicates that fraud firms' performance is less than that of non-fraud firms.

The mean (standard deviation) of SEGMENT of fraud and non-fraud firms are 1.397(0.815) and 1.249 (0.846) respectively. This indicates that fraud firms' business complexity is greater than that of non-fraud firms. The mean (standard deviation) of AGE is 4.40 (0.572), and 3.971 (0.560) and the mean (standard deviation) of SIZE is 11.217 (2.337), and 10.246 (3.484), respectively. Surprisingly, fraud firms' AGE and SIZE are greater than non-fraud firms' AGE and SIZE.

The descriptive statistics indicate that the mean (standard deviation) of GOVERNANCE of fraud and non-fraud firms are 1.232 (0.626) and 1.129 (0.474) respectively and indicate that the mean (standard deviation) of BOARD SIZE of fraud and non-fraud firms are 8.983 (3.295) and 8.236 (2.669) respectively and the mean (standard deviation) of



OUTSIDEDIRECTOR\_percentage of fraud and non-fraud firms are 23.457 (13.938) and 17.842 (12.422) respectively.

[Insert Table 4 Here]

## **6.2. Empirical Results 1-H1: The Innate Firm Characteristics**

Table 5 shows the correlation coefficient between fraud and firm characteristics. With regard to the correlation coefficient of FRAUD and firm characteristics, the Pearson correlation (Spearman correlation) of FRAUD and performance OCF and NI are -0.083 (-0.075) and -0.060 (-0.083) respectively. The Pearson correlation (Spearman correlation) of FRAUD and business complexity, SEGMENT are 0.089 (0.016). The Pearson coefficient (Spearman coefficient) of FRAUD, and SIZE and AGE are 0.160 (0.118) and 0.060 (0.088) respectively.

[Insert Table 5 Here]

Table 6 shows the regression analysis result of the association between fraud and firm characteristics. The results indicate that fraud is significantly associated with operating cash flows. This suggests that there is a common firm characteristics and this supports H1.

[Insert Table 6 Here]

## **6.3. Empirical Results 2-H2: Association between Fraud and the Composition of Board of Directors**

Table 5 shows the correlation coefficient between fraud and corporate governance attributes. With regard to the correlation coefficient of FRAUD and corporate governance, the Pearson correlation (Spearman correlation) of Fraud and CORPORATE GOVERNANCE and BOARD SIZE are significantly 0.093 (0.089) and 0.124 (0.101) respectively. The Pearson correlation (Spearman correlation) of FRAUD and OUTSIDER\_percentage is significantly 0.208

(0.016). However, the Pearson coefficient (Spearman coefficient) of FRAUD and OUTSIDE AUDITOR\_percentage are 0.006 (0.011) respectively; those are insignificant.

Table 6 provides the results regarding the association between fraud and corporate governance attributes. Corporate governance variable are the dependent variables in the regression analysis. Table 6 presents a significant positive association between FRAUD and CORPORATE GOVERNANCE, BOARD SIZE, and OUTSIDE\_percentage. This may help in explaining the link between fraud and a positive attitude for corporate governance, which supports H2.

#### **6.4. Empirical Results 3-H3: Association between Fraud and Independence of the Board of Directors**

Table 5 shows the correlation coefficient between fraud and corporate governance attributes. With regard to the correlation coefficient of FRARD and OUTSIDEDIRECTOR\_independence, the Pearson correlation (Spearman correlation) of Fraud and FRARD and OUTSIDEAUDITOR\_independence are -0.021 (-0.056) and 0.062 (-0.059) respectively. While the Pearson and Spearman correlations between FRARD and OUTSIDEDIRECTOR\_independence FRARD and OUTSIDEAUDITOR\_independence are both significant, only the Pearson correlations between FRARD and OUTSIDEAUDITOR\_independence is significant.

Table 6 presents a significant positive association between FRAUD and OUTSIDEDIRECTOR\_independence and a significant positive association between FRAUD and OUTSIDEAUDITOR\_independence. Thus, this supports H3.

## **7 CONCLUSIONS AND FUTURE RESEARCH**

This study investigates the types of firms that disclosed fraudulent accounting (fraud firms). Next, this study examines whether the fraud firms have common innate characteristics by comparing fraud and non-fraud firms. Finally, I clarify the differences in the composition of boards of directors between fraud and non-fraud firm and show the evidence from Japan regarding the association between accounting fraud and the structure of boards of directors.

First, I document that the number of accounting frauds increased since 2012 and the accounting fraud occurred at the First Section of the Tokyo Stock Exchange. Accounting fraud is prevalent in the industry of wholesale, retail, construction and communication industries. Moreover, accounting frauds occurred at the level of top management and subsidiary. And, the incentive to commit accounting fraud is to sustain a firm's performance, not to pursue an individual private gain. This suggests that this is a feature of accounting fraud in Japan. Since the type of fraudulent financial reporting is related to sales and losses, this is the pressure that causes accounting fraud. I found that accounting fraud in Japan occurred at top management level and the manager's incentive exists in his or her sustainability of authority.

Second, the results of t-test show that there are differences in a firm's performance, such as operating cash flows and business complexity, and the percentage of outside directors as the board of directors influences the propensity to commit frauds. This suggests that the poorer performance a firm possesses, and the greater the size of a firm, the more likely accounting fraud occurs.

Third, there is a significant positive association between accounting fraud and the percentage of outside directors; however, there is a significant negative association between fraud and the independence of outside directors. This suggests that while the fraud firms have a positive attitude to improve the board of director composition, they do not acquire the higher independence possessed by the outside directors. Without increasing the independence of the board improves the corporate governance mechanism, it is likely that an accounting fraud would

reoccur.

Further research is needed to validate the empirical results on the analyses should be conducted. Moreover, the interview of the sample fraud firms' management should be implemented. The possibility of the background and the financial knowledge of outside directors could constrain the accounting fraud occurrences should be further investigated.

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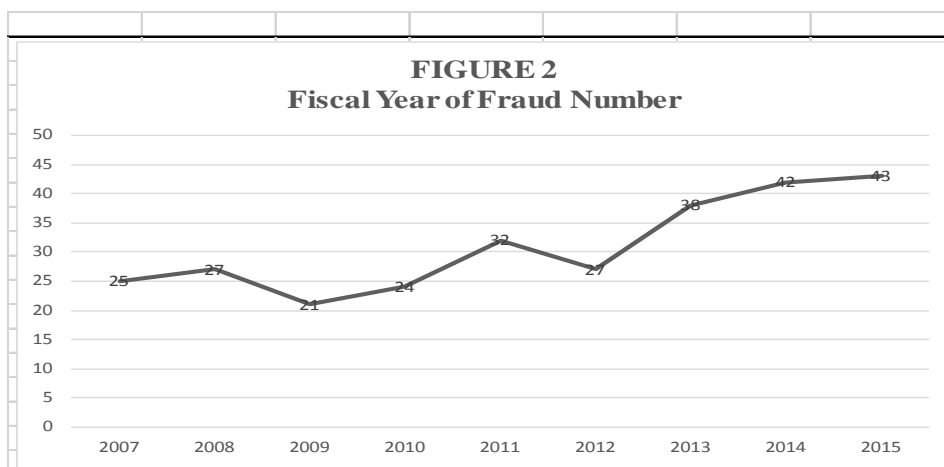
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**FIGURE 1**

**Independence Standards of Corporate Governance Code**

| Time Period            | Characteristics of Directors of Board  |  |           |   |                              |   |  |                            |
|------------------------|--|--|-----------|---|------------------------------|---|--|----------------------------|
|                        | No Independence  |  |           |   | Independence                 |   |  |                            |
|                        | Executives at Public Parent firm/Subsidiary  | Executives at Parent firm/Subsidiary   | Relatives | Executives at Main Clients or Suppliers | Executives at Main Investors | Executives at Not Main Clients or Suppliers | Executives at Related Firms or Suppliers | Person other than the left |
| Current                | X  | X  | X         |   |                              |   |  |                            |
| Previous years         | X  | NO INDEPENDENCE  |           |   | Disclosure is required.      |   |  |                            |
| Past: within ten years | X  |  |           |   |                              |   |  |                            |
| Past: ten years before |  |  |           |   | No disclosure is required.   |   |  |                            |
| Notes:                 | This table is adapted from the Corporate Governance Code (CECCG 2005).   |  |           |   |                              |   |  |                            |
|                        | As shown in this diagram, independence criteria must be evaluated along two dimensions to determine whether the director is independent or not. Those two dimension are the relationship between the directors appointed and the insiders/clients and suppliers and the time period of appointment of directors. If there is a relationship between the director and the related party or person of the firms within ten years, then it is considered 'no independence.' If there is a relationship between the directors and the investors/not main stakeholders within ten years, which must be disclosed. |  |           |   |                              |   |  |                            |
|                        |  | The independence criteria set by securities exchanges (Principle 4.9.) p.28.   |           |   |                              |   |  |                            |
|                        | X  | The criteria which the independent is denied by Companies Act.   |           |   |                              |   |  |                            |
|                        |  | The criteria in which disclosure on the relationship between independent directors and the firm is required in their corporate governance reports. |           |   |                              |   |  |                            |



The fraud firms consist of 280 public firms in Japan. The fraud firm sample which disclosed that inappropriate accounting impacted the prior financial statements or would impact in the future in their annual reports which were issued the period from April 2007 through March 2015 through Tokyo Shoko Research (TSR) Investigation Report.

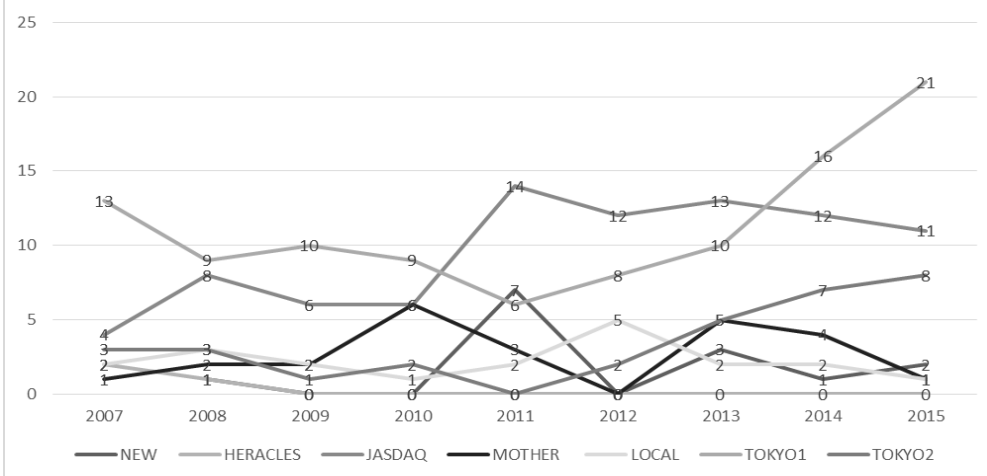
**TABLE 1**  
**Number of Firm with Fraud By Stock Exchange**

|      |                           | <b>NEW</b> | <b>HERACLES</b> | <b>JASDAQ</b> | <b>MOTHER</b> | <b>LOCAL</b> | <b>TOKYO1</b> | <b>TOKYO2</b> | <b>Total</b> |
|------|---------------------------|------------|-----------------|---------------|---------------|--------------|---------------|---------------|--------------|
| 2007 | Number of Firm with Fraud | 0          | 2               | 4             | 1             | 2            | 13            | 3             | 25           |
|      | Percentage of Fraud Firms | 0          | 8.0             | 16.0          | 4.0           | 8.0          | 52.0          | 12.0          | 100.0        |
| 2008 | Number of Firm with Fraud | 1          | 1               | 8             | 2             | 3            | 9             | 3             | 27           |
|      | Percentage of Fraud Firms | 3.7        | 3.7             | 29.6          | 7.4           | 11.1         | 33.3          | 11.1          | 100.0        |
| 2009 | Number of Firm with Fraud | 0          | 0               | 6             | 2             | 2            | 10            | 1             | 21           |
|      | Percentage of Fraud Firms | 0          | 0               | 28.6          | 9.5           | 9.5          | 47.6          | 4.8           | 100.0        |
| 2010 | Number of Firm with Fraud | 0          | 0               | 6             | 6             | 1            | 9             | 2             | 24           |
|      | Percentage of Fraud Firms | 0          | 0               | 25.0          | 25.0          | 4.2          | 37.5          | 8.3           | 100.0        |
| 2011 | Number of Firm with Fraud | 7          | 0               | 14            | 3             | 2            | 6             | 0             | 32           |
|      | Percentage of Fraud Firms | 21.9       | 0               | 43.8          | 9.4           | 6.3          | 18.8          | 0             | 100.0        |
| 2012 | Number of Firm with Fraud | 0          | 0               | 12            | 0             | 5            | 8             | 2             | 27           |
|      | Percentage of Fraud Firms | 0          | 0               | 44.4          | 0             | 18.5         | 29.6          | 7.4           | 100.0        |
| 2013 | Number of Firm with Fraud | 3          | 0               | 13            | 5             | 2            | 10            | 5             | 38           |
|      | Percentage of Fraud Firms | 7.9        | 0               | 34.2          | 13.2          | 5.3          | 26.3          | 13.2          | 100.0        |
| 2014 | Number of Firm with Fraud | 1          | 0               | 12            | 4             | 2            | 16            | 7             | 42           |
|      | Percentage of Fraud Firms | 2.4        | 0               | 28.6          | 9.5           | 4.8          | 38.1          | 16.7          | 100.0        |
| 2015 | Number of Firm with Fraud | 2          | 0               | 11            | 1             | 1            | 21            | 8             | 44           |
|      | Percentage of Fraud Firms | 4.5        | 0               | 25.0          | 2.3           | 2.3          | 47.7          | 18.2          | 100.0        |

*Local* indicates local stock exchanges such as Nagoya and Kyushu. *New* indicates the emerging stock exchange other than HERACLES, JASDAQ, and MOTHERS. The fraud firm sample which disclosed that inappropriate accounting impacted the prior financial statements or would impact in the future in their annual reports which were issued the period from April 2007 through March 2015 through Tokyo Shoko Research (TSR) Investigation Report.



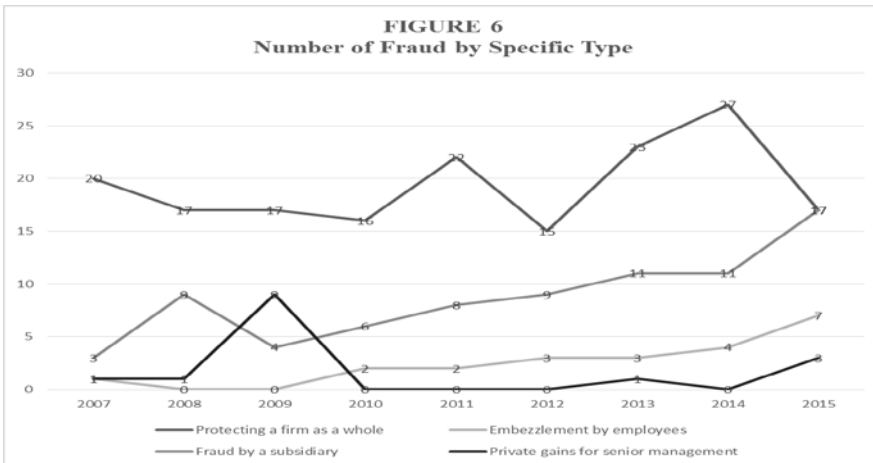
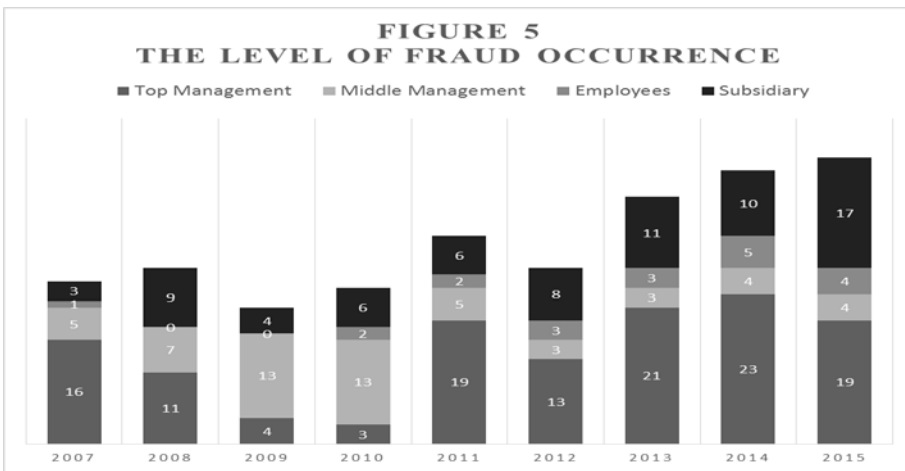
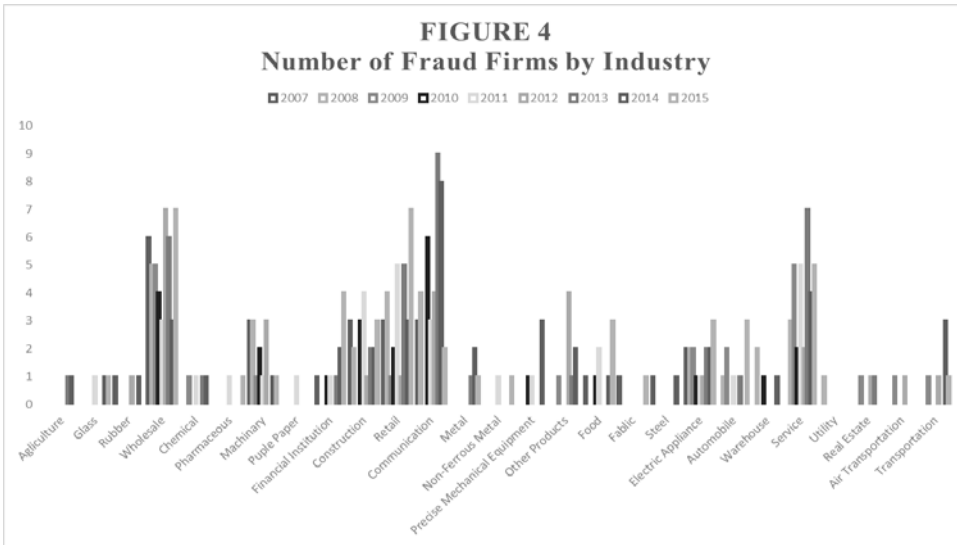
**Figure 3**  
**Number of Fraud by Stock Exchange**



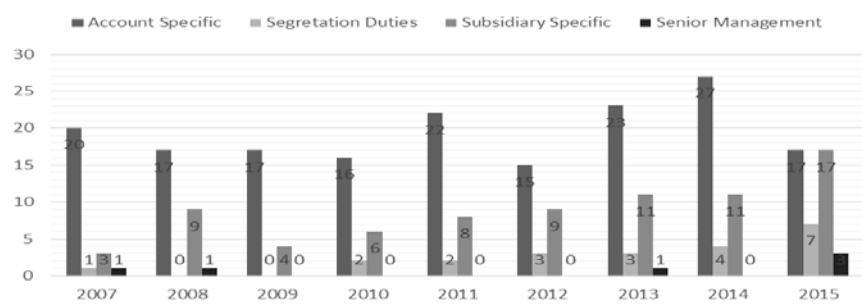
**TABLE 2**

**Number of Firm with Fraud by Industry**

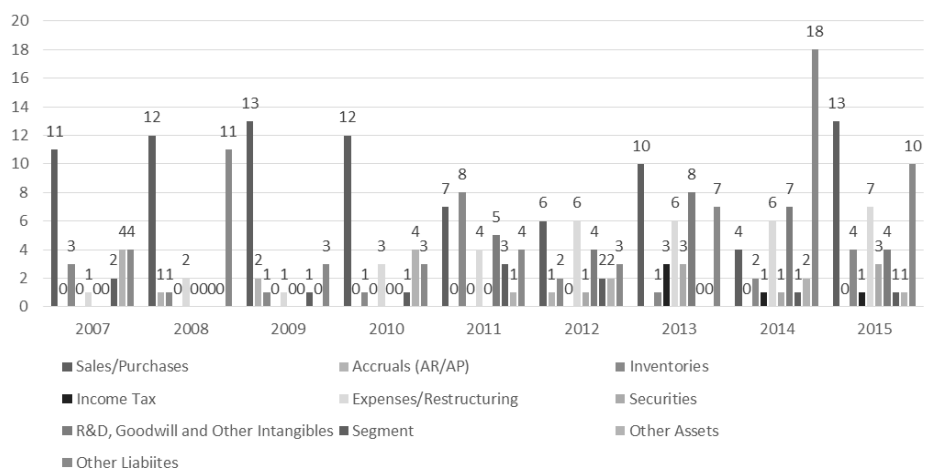
|                              | 2007            |                     | 2008            |                     | 2009            |                     | 2010            |                     | 2011            |                     | 2012            |                     | 2013            |                     | 2014            |                     | 2015            |                     | Total      | Percentage of Fraud |
|------------------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|---------------------|------------|---------------------|
|                              | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud | Number of Fraud | Percentage of Fraud |            |                     |
| Agriculture                  |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 2.6                 | 1               | 2.4                 |                 |                     | 2          | 0.7%                |
| Glass                        |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 3.1                 |                 |                     |                 |                     | 1               | 2.4                 | 1               | 2.3                 | 3          | 1.1%                |
| Rubber                       | 1               | 4.0                 |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 3.7                 |                 |                     | 1               | 2.4                 |                 |                     | 3          | 1.1%                |
| Wholesale                    | 6               | 24.0                | 5               | 18.5                | 5               | 23.8                | 4               | 16.7                | 3               | 9.4                 | 7               | 25.9                | 6               | 15.8                | 3               | 7.1                 | 7               | 15.9                | 46         | 16.4%               |
| Chemical                     |                 |                     |                 |                     | 1               | 4.8                 |                 |                     | 1               | 3.1                 |                 |                     | 1               | 2.6                 | 1               | 2.4                 |                 |                     | 4          | 1.4%                |
| Pharmaceutics                |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 3.1                 |                 |                     |                 |                     |                 |                     | 1               | 2.3                 | 2          | 0.7%                |
| Machinery                    | 3               | 12.0                | 3               | 11.1                | 1               | 4.8                 | 2               | 8.3                 | 1               | 3.1                 | 3               | 11.1                |                 |                     | 1               | 2.4                 | 1               | 2.3                 | 15         | 5.4%                |
| Pulp Paper                   |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 3.1                 |                 |                     |                 |                     |                 |                     |                 |                     | 1          | 0.4%                |
| Financial Institution        | 1               | 4.0                 |                 |                     |                 |                     | 1               | 4.2                 | 1               | 3.1                 |                 |                     | 1               | 2.6                 | 2               | 4.8                 | 4               | 9.1                 | 10         | 3.6%                |
| Construction                 | 3               | 12.0                | 2               | 7.4                 |                 |                     | 3               | 12.5                | 4               | 12.5                | 1               | 3.7                 | 2               | 5.3                 | 2               | 4.8                 | 3               | 6.8                 | 20         | 7.1%                |
| Retail                       | 3               | 12.0                | 4               | 14.8                | 1               | 4.8                 | 2               | 8.3                 | 5               | 15.6                | 1               | 3.7                 | 5               | 13.2                | 3               | 7.1                 | 7               | 15.9                | 31         | 11.1%               |
| Communication                | 3               | 12.0                | 4               | 14.8                |                 |                     | 6               | 25.0                | 3               | 9.4                 | 4               | 14.8                | 9               | 23.7                | 8               | 19.0                | 2               | 4.5                 | 39         | 13.9%               |
| Metal                        |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 2.6                 | 2               | 4.8                 | 1               | 2.3                 | 4          | 1.4%                |
| Non-Ferrous Metal            |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 3.1                 |                 |                     |                 |                     |                 |                     | 1               | 2.3                 | 2          | 0.7%                |
| Precise Mechanical Equipment |                 |                     |                 |                     |                 |                     | 1               | 4.2                 | 1               | 3.1                 |                 |                     |                 |                     | 3               | 7.1                 |                 |                     | 5          | 1.8%                |
| Other Products               |                 |                     |                 |                     | 1               | 4.8                 |                 |                     |                 |                     | 4               | 14.8                | 1               | 2.6                 | 2               | 4.8                 |                 |                     | 8          | 2.9%                |
| Food                         | 1               | 4.0                 |                 |                     |                 |                     | 1               | 4.2                 | 2               | 6.3                 |                 |                     |                 |                     | 1               | 2.4                 | 3               | 6.8                 | 8          | 2.9%                |
| Fabric                       | 1               | 4.0                 |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 2.3                 | 2          | 0.7%                |
| Steel                        | 1               | 4.0                 |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     | 1               | 2.4                 |                 |                     | 2          | 0.7%                |
| Electric Appliance           | 2               | 8.0                 | 2               | 7.4                 | 2               | 9.5                 | 1               | 4.2                 | 1               | 3.1                 | 1               | 3.7                 | 2               | 5.3                 | 2               | 4.8                 | 3               | 6.8                 | 16         | 5.7%                |
| Automobile                   |                 |                     | 1               | 3.7                 | 2               | 9.5                 |                 |                     | 1               | 3.1                 |                 |                     | 1               | 2.6                 |                 |                     | 3               | 6.8                 | 8          | 2.9%                |
| Warehouse                    |                 |                     | 2               | 7.4                 |                 |                     | 1               | 4.2                 |                 |                     |                 |                     |                 |                     | 1               | 2.4                 |                 |                     | 4          | 1.4%                |
| Service                      |                 |                     | 3               | 11.1                | 5               | 23.8                | 2               | 8.3                 | 5               | 15.6                | 2               | 7.4                 | 7               | 18.4                | 4               | 9.5                 | 5               | 11.4                | 33         | 11.8%               |
| Utility                      |                 |                     | 1               | 3.7                 |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     |                 |                     | 1          | 0.4%                |
| Real Estate                  |                 |                     |                 |                     | 1               | 4.8                 |                 |                     |                 |                     | 1               | 3.7                 | 1               | 2.6                 |                 |                     |                 |                     | 3          | 1.1%                |
| Air Transportation           |                 |                     |                 |                     | 1               | 4.8                 |                 |                     |                 |                     | 1               | 3.7                 |                 |                     |                 |                     |                 |                     | 2          | 0.7%                |
| Transportation               |                 |                     |                 |                     | 1               | 4.8                 |                 |                     |                 |                     | 1               | 3.7                 |                 |                     | 3               | 7.1                 | 1               | 2.3                 | 6          | 2.1%                |
| <b>Total</b>                 | <b>25</b>       | <b>100.0</b>        | <b>27</b>       | <b>100.0</b>        | <b>21</b>       | <b>100.0</b>        | <b>24</b>       | <b>100.0</b>        | <b>32</b>       | <b>100.0</b>        | <b>27</b>       | <b>100.0</b>        | <b>38</b>       | <b>100.0</b>        | <b>42</b>       | <b>100.0</b>        | <b>44</b>       | <b>100.0</b>        | <b>280</b> | <b>10000.0%</b>     |



**FIGURE 7**  
**Number of Fraud Type**



**FIGURE 8**  
**Number of Account-Specific Fraud by Account Type**



**TABLE 3 : Sample Selection**

| Selection Criteria   | Number of Observation |
|--|-----------------------|
| The firms which disclosed inappropriate accounting                       | 280                   |
| Less: Duplicate firms  | 20                    |
|  | 260                   |
| Less Financial institutions  | 10                    |
|  | 250                   |
| Less: The firms which the corporate governance reports are not available | 192                   |
| Total observation  | 58                    |

| TABLE 4  |             |        |         |      |                 |        |         |         |              |     |
|--|-------------|--------|---------|------|-----------------|--------|---------|---------|--------------|-----|
| Descriptive Statistic of Firm Characteristics and Board Composition for Fraud Firms and NonFraud Firms (2007-2015) |             |        |         |      |                 |        |         |         |              |     |
| Category   | Fraud Firms |        |         | Sign | Non-Fraud Firms |        |         | t-value | significance |     |
|  | N           | Mean   | S.D.    |      | N               | Mean   | S.D.    |         |              |     |
| OCF  | 753         | 0.038  | 0.095   | <    | 838             | 0.053  | 0.060   | -3.224  | 0.001        | *** |
| OC   | 753         | 3.613  | 0.117   | >    | 843             | 3.402  | 1.416   | 3.429   | 0.001        | *** |
| NI   | 753         | 0.023  | 1.034   | <    | 819             | 0.034  | 0.071   | -2.338  | 0.020        | **  |
| FOREIGN  | 753         | 0.835  | 1.108   | >    | 843             | 0.796  | 1.060   | 0.725   | 0.469        |     |
| SEGMENT  | 753         | 1.397  | 0.815   | >    | 838             | 1.249  | 0.846   | 3.562   | 0.000        | *** |
| SIZE   | 753         | 11.217 | 2.337   | >    | 843             | 10.246 | 3.484   | 6.602   | 0.000        | *** |
| GROWTH   | 744         | 2.990  | 21.948  | >    | 779             | 2.742  | 15.071  | 0.256   | 0.798        |     |
| AGE  | 753         | 4.040  | 0.572   | >    | 843             | 3.971  | 0.560   | 2.417   | 0.016        | **  |
| GOVERNANCE   | 753         | 1.232  | 0.626   | <    | 843             | 1.129  | 0.474   | 3.678   | 0.000        | *** |
| FOREIGN  | 753         | .8353  | 1.10823 | >    | 753             | .7960  | 1.06047 | .725    | .469         |     |
| BOARD SIZE   | 753         | 8.983  | 3.295   | >    | 843             | 8.236  | 2.669   | 4.938   | 0.000        | *** |
| OUTSIDEDIRECTOR_percentage   | 753         | 23.457 | 13.938  | >    | 843             | 17.842 | 12.422  | 8.454   | 0.000        | *** |
| OUTSIDEDIRECTOR_Independence   | 753         | 69.425 | 41.104  | <    | 843             | 71.204 | 43.919  | -0.836  | 0.403        |     |
| OUTSIDEAUDITOR_percentage  | 753         | 56.725 | 30.596  | >    | 843             | 56.380 | 30.024  | 0.227   | 0.820        |     |
| OUTSIDEAUDITOR_Independenc   | 753         | 52.930 | 39.529  | >    | 843             | 47.823 | 42.176  | 2.496   | 0.013        | **  |

Variable Definitions ; \*\*, \*, and \*\*\* indicate significance at p< 10 %, p< 5%, p<1%;. t-value is based on White's (1980) standard error. all variables are deflated by total assets in the beginning of the year.

|                              |  |
|------------------------------|--|
| OCF                          | OCF (cash flows from operations) minus mean of OCF   |
| OPERATING CYCLE (OC)         | The log of the average of[(sales/360)/(Average Accounts Receivable)+(Cost of Goods Sold/360)/Average Inventory]]   |
| NI                           | Net income/Average assets  |
| SEGMENT                      | Number of reported business segments   |
| SIZE                         | log of SALES   |
| GROWTH                       | Sales in the beginning of the year / Sales in the end of the year  |
| AGE                          | The years when the firm passed since the firm was established  |
| GOVERNANCE                   | 1 if the firm is a company with company auditors, 2 if the firm is a company with nominating committee, and 3 if the firm is a company with audit and supervisory committee. |
| FOREIGN                      | Rate of foreign investors sharing  |
| BOARD SIZE                   | Number of Board of Directors   |
| OUTSIDEDIRECTOR_percentage   | Number of Outside Directors / Number of Board of Directors   |
| OUTSIDEDIRECTOR_Independence | Number of Independent Outside Directors / Number of Outside Directors  |
| OUTSIDEAUDITOR_percentage    | Number of Outside Auditors / Number of Company Auditors  |
| OUTSIDEAUDITOR_Independenc   | Number of Independent Outside Auditors / Number of Outside Auditors  |

| TABLE 5                      |         |         |         |         |         |        |         |         |         |            |            |                            |                              |                           |                             |
|------------------------------|---------|---------|---------|---------|---------|--------|---------|---------|---------|------------|------------|----------------------------|------------------------------|---------------------------|-----------------------------|
| Correlations Diagonal        |         |         |         |         |         |        |         |         |         |            |            |                            |                              |                           |                             |
|                              | FRAUD   | OCF     | NI      | SIZE    | OC      | GROWTH | AGE     | SEGMENT | FOREIGN | GOVERNANCE | BOARD SIZE | OUTSIDEDIRECTOR_percentage | OUTSIDEDIRECTOR_Independence | OUTSIDEAUDITOR_percentage | OUTSIDEAUDITOR_Independence |
| FRAUD                        | 1.000   | -.083** | -.060*  | .160**  | .084**  | .007   | .060    | .089**  | .018    | .093**     | .124**     | .208**                     | -.021                        | .006                      | .062*                       |
| OCF                          | .001    | .017    | -.000   | .001    | .796    | .016   | .000    | -.469   | .000    | .000       | .000       | .405                       | .820                         | .013                      |                             |
| NI                           | -.075** | 1.000   | .390**  | .154*   | .099**  | .081** | .086*   | .192**  | .000    | .078**     | -.115**    | .003                       | -.094**                      | -.018                     |                             |
| SIZE                         | .003    | .000    | .000    | .000    | .002    | .001   | .135    | .000    | .991    | .002       | .000       | .921                       | .000                         | .477                      |                             |
| OC                           | -.085** | .513**  | 1.000   | .126**  | .075**  | .431** | .027    | .018    | .211**  | -.024      | .042       | -.125**                    | .001                         | -.032                     |                             |
| GROWTH                       | .001    | .000    | .000    | .003    | .000    | .284   | .476    | .000    | .348    | .098       | .000       | .968                       | .205                         | .030                      |                             |
| AGE                          | .118**  | .237**  | .197**  | 1.000   | .532**  | .039   | .564**  | .414**  | .468**  | -.043      | .379**     | -.040                      | .203*                        | -.059*                    |                             |
| SEGMENT                      | .000    | .000    | .000    | .000    | .128    | .000   | .000    | .000    | .085    | .000       | .113       | .000                       | .018                         | .000                      |                             |
| FOREIGN                      | -.028   | .176**  | .065**  | -.047   | 1.000   | .085** | .409**  | .224**  | .147**  | -.019      | .098**     | -.141**                    | .047                         | -.078**                   |                             |
| GOVERNANCE                   | .260    | .000    | .009    | .061    | .001    | .000   | .000    | .000    | .448    | .000       | .000       | .000                       | .002                         | .169                      |                             |
| BOARD SIZE                   | -.044   | .261**  | .498**  | .099**  | -.036   | 1.000  | -.099** | .000    | .080**  | .006       | .016       | .014                       | .005                         | .037                      |                             |
| OUTSIDEDIRECTOR_percentage   | -.084   | .000    | .000    | .000    | .155    | .000   | .986    | .002    | .820    | .523       | .598       | .837                       | .150                         | .219                      |                             |
| OUTSIDEDIRECTOR_Independence | .088**  | .084**  | -.006   | .487**  | .070**  | -.018  | 1.000   | .306**  | .160**  | .015       | .269**     | -.119**                    | .097**                       | -.219**                   |                             |
| OUTSIDEAUDITOR_percentage    | .000    | .001    | .811    | .000    | .005    | .479   | .000    | .000    | .547    | .000       | .000       | .000                       | .000                         | .230                      |                             |
| OUTSIDEAUDITOR_Independence  | .106**  | .084**  | .058*   | .413**  | .184**  | .013   | .327**  | 1.000   | .298**  | .031       | .305**     | .092**                     | .112**                       | -.084**                   |                             |
| OCF                          | .000    | .001    | .022    | .000    | .000    | .617   | .000    | .000    | .216    | .000       | .000       | .000                       | .000                         | .001                      |                             |
| NI                           | .010    | .263**  | .290**  | .635**  | .040    | .172** | .177**  | .340**  | 1.000   | .005       | .349**     | .106**                     | .189**                       | -.161**                   |                             |
| SIZE                         | .698    | .000    | .000    | .000    | .112    | .000   | .000    | .000    | .845    | .000       | .000       | .000                       | .000                         | .000                      |                             |
| OC                           | .089**  | -.004   | .008    | -.035   | -.041   | .037   | .015    | .074**  | .027    | 1.000      | .268**     | .193**                     | .181**                       | -.601**                   |                             |
| GROWTH                       | .000    | .881    | .741    | .166    | .102    | .146   | .542    | .003    | .290    | .000       | .000       | .000                       | .000                         | .000                      |                             |
| AGE                          | .101**  | .113**  | .052*   | .476**  | .001    | .087** | .369**  | .381**  | .297**  | 1.000      | -.067**    | .124**                     | .228**                       | -.046                     |                             |
| SEGMENT                      | .000    | .000    | .038    | .000    | .971    | .001   | .000    | .000    | .000    | .000       | .008       | .000                       | .000                         | .067                      |                             |
| FOREIGN                      | .179**  | -.086** | -.068** | .097**  | -.097** | -.040  | .007    | .107**  | .062*   | .226**     | -.059*     | 1.000                      | .241**                       | -.086**                   |                             |
| GOVERNANCE                   | .000    | .001    | .007    | .000    | .000    | .121   | .795    | .000    | .013    | .000       | .018       | .000                       | .001                         | .083                      |                             |
| BOARD SIZE                   | -.056   | .055*   | .051*   | .262**  | .014    | .034   | .046    | .122**  | .205**  | .183**     | .095**     | .205**                     | 1.000                        | -.137**                   |                             |
| OUTSIDEDIRECTOR_percentage   | .026    | .029    | .043    | .000    | .578    | .181   | .065    | .000    | .000    | .000       | .000       | .000                       | .000                         | .831                      |                             |
| OUTSIDEDIRECTOR_Independence | .011    | -.136** | -.107** | -.174** | -.088** | -.021  | -.187** | -.118** | -.238** | -.477**    | -.310**    | -.077**                    | -.162**                      | 1.000                     |                             |
| OUTSIDEAUDITOR_percentage    | .646    | .000    | .000    | .000    | .422    | .000   | .000    | .000    | .000    | .000       | .000       | .002                       | .000                         | .000                      |                             |
| OUTSIDEAUDITOR_Independence  | .059    | .012    | .058*   | .157**  | .007    | .034   | -.006   | .055*   | .106**  | -.402**    | -.066**    | -.038                      | .006                         | .215**                    |                             |
| OCF                          | .018    | .625    | .021    | .000    | .766    | .188   | .801    | .033    | .000    | .000       | .008       | .127                       | .821                         | .000                      |                             |

Correlations above (below) the diagonal are Pearson (Spearman) correlations.  
The bottom number in each is a two-tail p-value. \* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level.  
See Table 4 for definition of each variable.

**TABLE 6**  
**Logit Regression Results for Fraud Firms and Non-Fraud Firms**

|   | <i>Estimated Coefficients</i>           | <i>Standard Errors</i> | <i>T-Statistics</i> |     |
|---|---|------------------------|---------------------|-----|
| For Variable Definitions, See TABLE 4+B76 |   |                        |                     |     |
| <i>Intercept</i>                          | 2.164                                   | .658                   | .001                | *** |
| <i>OCF</i>                                | -2.118                                  | .929                   | .023                | **  |
| <i>NI</i>                                 | -.269                                   | .846                   | .751                |     |
| <i>SIZE</i>                               | .062                                    | .044                   | .156                |     |
| <i>OC</i>                                 | .007                                    | .060                   | .912                |     |
| <i>GROWTH</i>                             | .001                                    | .003                   | .794                |     |
| <i>AGE</i>                                | -.148                                   | .129                   | .251                |     |
| <i>SEGMENT</i>                            | -.074                                   | .076                   | .330                |     |
| <i>FOREIGN</i>                            | -.169                                   | .069                   | .014                | **  |
| <i>GOVERNANCE</i>                         | .446                                    | .140                   | .001                | *** |
| <i>BOARD SIZE</i>                         | .103                                    | .024                   | .000                | *** |
| <i>OUTSIDEDIRECTOR_percentage</i>         | .049                                    | .005                   | .000                | *** |
| <i>OUTSIDEDIRECTOR_Independence</i>       | -.007                                   | .001                   | .000                | *** |
| <i>OUTSIDEAUDITOR_percentage</i>          | .003                                    | .003                   | .298                |     |
| <i>OUTSIDEAUDITOR_Independence</i>        | .006                                    | .002                   | .000                | *** |
|   |   |                        |                     |     |
| Pseudo R <sup>2</sup>                     | .157                                    |                        |                     |     |
| Chi-Square Test of Model's Fit            | 188.715 (0.0001)(14 degrees of freedom) |                        |                     |     |

For Variable Definitions, See TABLE 4; \*, \*\*, and \*\*\* indicate significance at p < 10 %, p < 5%, p < 1%; t-value is based on White's (1980) standard error.

