

Can The Fraud Triangle Predict Accounting Fraud? : Evidence from Japan

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ABSTRACT: The reliability for the capital market in Japan has fallen by accounting fraud which occurred at one of the excellent firms in Japan. Why did accounting fraud occur in Japan? First, it is likely that governance mechanism and the internal controls system did not work well in Japan. Second, it is likely that since forensic accounting education is not cultivated in Japan, there have been no chances to learn theory of fraud systematically and theoretically. Although a forensic accounting course will first be opened in Japan in Fall 2017, Huber (2017) argues that the fraud triangle does not apply to fraud and the model that attempts to predict and detect fraud should be considered, since the fraud triangle is not supported by empirical studies. Urgent studies to clarify a fraud mechanism and to detect and predict fraud will be needed. This is the motivation of my study. Therefore, I examine whether the fraud triangle can apply to financial statement fraud. The effectiveness of the fraud triangle should be clarified through this analysis.

Key words: Forensic Accounting; Fraud; the Fraud Triangle; Fraudulent Financial Statement; Incentive; Opportunity; Rationalization

1 INTRODUCTION

The reliability for the capital market in Japan has fallen by accounting fraud which occurred at one of the excellent firms in Japan. Why did accounting fraud occur in Japan?

First, it is likely that governance mechanism and the internal controls system did not work well in Japan. Nakashima (2010) examined whether managers had changed their earnings management in the post-internal controls regulation in Japan (J-SOX)¹. While accruals management and real management had a trade-off in the post-SOX in the U.S., earnings management remained unchanged in Japan in the post-J-SOX (Nakashima and Ziebart 2015). This result was inconsistent with the U.S. studies' result (Cohen et al. 2008). Nakashima and Ziebart (2015) suggested that the inconsistent results with the U.S. results may have been from the deficiency of governance mechanism and the feasible internal controls system. Nakashima (2017) documented that there is a possible relationship between fraud and governance mechanism.

Second, it is likely that since forensic accounting education is not cultivated in Japan, there have been no chances to learn theory of fraud systematically and theoretically. While a forensic accounting course will first be opened in Japan in Fall 2017, Huber (2017) argues that the fraud triangle does not apply to fraud and the model that attempts to predict and detect fraud should be considered, since the fraud triangle is not supported by empirical studies. Urgent studies to clarify a fraud

¹ The Standard for Assessment and Audit for Internal Control over Financial Reporting (<http://www.fsa.go.jp/en/news/2007/20070420.pdf>) was enacted in 2008. Although this is not an exact Japanese version of SOX, the terminology of J-SOX is generally used in Japan after media used the internal controls and reporting regulation as J-SOX. Therefore, the terminology of J-SOX for the regulation is used in this paper.

mechanism and to detect and predict fraud will be needed. This is the motivation of my study. Therefore, I examine whether the fraud triangle can apply to financial statement fraud. The effectiveness of the fraud triangle should be clarified through this analysis.

This study contributes to the literature in the following ways. First, this study provides the results regarding the effectiveness of the fraud triangle theory framework, focusing on pressure, opportunity, and rationalization through using Japanese public firm data. Beasley (1996) and Nakashima (2017) suggest that financial statement fraud is associated with ineffective inner governance mechanism. This study can provide a comprehensive model with all three factors that includes not only financial ratios but also governance information for predicting fraudulent financial statements, although Skousen et al's (2009) model has only two factors of the fraud triangle.

Second, I used publicly available financial statements in which the fraud firms already restated the amounts for the analysis. This means that fraud can be predicted through the innate characteristics such as the financial structure and corporate governance by the prediction model. The prediction model based on the fraud triangle will help regulators and auditors to identify fraudulent financial reporting firms. The prediction model will provide regulators and auditors with an indicator for the red flag signals leading to the possibility of fraud. Also, it is likely for managers to encourage avoiding the indicators computed through this modified Skousen et al's (2009) model as the red flag signals.

Third, this study adds the feature of Japanese corporate culture and governance into the modified prediction model based on Skousen et al.'s (2009) model. Huber (2016, 20) indicates that national culture is a significant factor in

researching fraud. If cultural differences exist in auditors' evaluation of internal controls and assessment of risks, auditors need to take such differences into account when planning audits and selecting audit procedures to be performed by auditors in other countries (Huber 2012, 16). Although the prediction model developed in this study is based on the fraud triangle framework, the model includes the specific feature related to Japanese firms, such as governance and organizational structures in Japan. This model provides a useful predictor for regulators for investigation to identify fraud related to the cultural dimensions.

The remainder of this study proceeds as follows; Section 2 reviews previous studies regarding the relationship between the fraud triangle and the occurrence of fraud. Section 3 develops hypotheses. Section 4 describes the research design. Section 5 discusses the empirical results. The final section summarizes and concludes this study.

2 LITERATURE REVIEW

Fraud is defined as an intentional act that results in a material misstatement in financial statements that are the subject of an audit in AS 2401: Consideration of Fraud in a Financial Statement Audit (PCAOB 2016, para 05). According to AS 1001, the auditor has a responsibility to plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or fraud (PCAOB 2016, Para .02 of AS 1001). Management, along with those who have responsibility for oversight of the financial reporting process (such as the audit committee, board of trustees, board of directors, or the owner in owner-managed entities), should set the proper tone; create and

maintain a culture of honesty and high ethical standards; and establish appropriate controls to prevent, deter, and detect fraud (PCAOB 2016, para. 04).

AS 2401 (PCAOB 2016) provides the following concept of the fraud risk factors based on Cressey's (1953) theory:

Three conditions generally are present when fraud occurs. First, management or other employees have an *incentive* or are under *pressure*, which provides a reason to commit fraud. Second, circumstances exist—for example, the absence of controls, ineffective controls, or the ability of management to override controls—that provide an *opportunity* for a fraud to be perpetrated. Third, those involved are able to *rationalize* committing a fraudulent act. Some individuals possess an *attitude*, character, or set of ethical values that allow them to knowingly and intentionally commit a dishonest act (PCAOB 2016, para. 07).

Dichev et al. (2013) conducted the survey and the interview with CFOs in the U.S. and found that incentives of earnings management are outside and inside pressure to hit earnings benchmarks (92.9%, 91%) and executives' career fears (88.6%). Although Dichev et al. (2013) did not conduct the archival study but showed that the interviewed firms have larger sales, lower sales growth, and higher credit ratings, compared with the typical Compustat firms. Also, they succeeded in that they received the CEOs' general ideas that the red flag signals for detecting earnings management when earnings are inconsistent with operating cash flows and deviation from industry norms (Dechow et al. 2011, 40).

Nakashima and Ziebart (2016) documented that the lower objective decision-makings by managers is linked to the trade-off between accruals and real management based on the results of the survey that asked the public firms' CEO

about their internal controls system and auditing in Japan. They use the objective decision-makings as a proxy of rationalization of the fraud triangle. However, they did not conduct an archival study by using the financial ratios nor prove that all three factors of the fraud triangle can detect fraudulent financial statements.

There were few archival studies that examined whether the fraud triangle theory applies to fraud and there was little evidence to support the effectiveness of the fraud triangle in order to predict and detect fraud (Skousen et al 2009, 2; Huber 2017, 5). There were some empirical studies that financial statement fraud was associated with inner governance mechanism. Beasley (1996) documented that the proportion of outside directors, board composition, and board size affected the likelihood of financial statement fraud. Nakashima (2017) found that there was a significant association between fraud and the percentage of outside directors and a significant association between fraud and the independence of the outside directors. These studies focused on the constraints of opportunity, one factor of the fraud triangle.

Peasons (1995, 45) documented that financial leverage, capital turnover, asset composition and firm size were significant factors impacting the likelihood of fraudulent financial statements by using the prediction model that the developed models were useful to identify fraudulent financial statements. Summers and Sweeney (1998, 144) documented that the fraud firms had significantly more inventories relative to sales, were growing faster, and had a higher return on assets than non-fraud firms prior to the fraud occurrence and that their model was useful to detect fraud.

Song et al. (2016) found that the model based on the Dechow (2011) model that used accruals quality, performance, non-financial measures, off-balance sheet

activities, conservatism, market-related incentives, and the Japanese-specific factors for predicting fraudulent financial statements for public firms in Japan generally possess higher explanation power for detecting accounting fraud.

Aghghaleh et al. (2016) examined whether the Beneish M-Score model (1999) and Dechow F-Score model (2011) based on financial ratios can predict the financial statement fraud for Malaysian fraud firms. They found that the ability of Dechow F-Score model (73.17%) was higher than the Beneish M-Score model (69.51%) and the Dechow F-Score model better fit the Malaysian fraudulent financial statements.

Mehta and Bhavani (2017) investigated whether the Beneish M-score model, the Altman Z-Score and Benford's Law can detect financial statement fraud through the case of Toshiba. Beneish M-model was the model that uses eight financial ratios to find how much earnings are manipulated (Aghghaleh S.F. et al. 2016; Mehta and Bhavani 2017, 693). They found that the Beneish Model failed to detect the fraud in Toshiba's financial statements (Mehta and Bhavani 2017, 707).

Thus, extant archival studies (Peasons 1995; Summers and Sweeney 1998; Song et al. 2016)² examined whether the prediction model that used financial ratios can predict fraudulent financial statements by focusing on a manager's motivation to manage earnings and they did not clarify the relationship between the comprehensive factors of the fraud triangle and fraudulent financial statements.

Skousen et al. (2009) was one of the empirical studies that examined the effectiveness of the fraud theory comprehensively. They documented that five pressure proxies and two opportunity proxies are significantly related to fraudulent

² Mehta and Bhavani (2017, 706) found that the Beneish model that used financial ratios is not effective to detect the fraud at Toshiba. Since this is a case study, it is not said the model cannot apply to the fraud in general.

financial statements and found that rapid asset growth, increased cash needs and external financing positively related to the occurrence of fraud and provided evidence of effectiveness of the fraud triangle. They also indicated that ownership of shares and controls of the board of directors were also associated with fraud occurrence but that the number of independent auditors on the audit committee was negatively related to the occurrence of fraud.

This study examines whether the model that focuses on all three factors of the fraud triangle based on Skousen et al. (2009) can predict fraudulent financial statements.

3 HYPOTHESES DEVELOPMENT

The fraud triangle is a framework for the occurrence of fraud, developed by a criminologist, Cressey (1953). The fraud diamond was mentioned by Wolfe and Hermanson (2004) by adding capability to the three factors of the fraud triangle. AS 2401: Consideration of Fraud in a Financial Statement Audit (PCAOB 2016) indicates that risk factors consists of incentives/pressure, opportunity, and rationalization. Pressure includes financial stability or profitability threatened by economics, industry or the firm's operating condition, a manager's excessive pressure to meet the requirement, and a manager's personal financial situation. Opportunity includes the nature of industry or the firm's operations, ineffective monitoring of management, unstable organization structure, and internal control deficiencies, rationalization includes ineffective communication, excessive non-financial management participation (PCAOB 2016).

However, Huber (2017) describes that the fraud triangle does not apply and

cannot be applied to fraud and that fraud triangle had been used to mention acts that are not fraud. Also, Huber (2017, 21) concluded that the results of fraud studies using the fraud triangle were invalid because the results did not support the conclusions they presented.

Cressy's theory (1953) describes that when incentives/pressure, opportunity, and rationalization coexist, fraud occurs. There are some archival studies to detect financial statement fraud by using the fraud triangle framework. I predict that since fraud firms possess weak internal control systems and feasible governance mechanisms, they show a red flag signal in the pre-occurrence of fraud and there is an association between the three factors of the fraud triangle and fraud. I investigate whether the fraud triangle can apply to the fraudulent financial statements through testing the following premise by using the prediction model based on Skousen et al. (2009). The three risk factors of the fraud triangle are related to fraudulent financial statements.

$$FRAUD_t = f(\theta_0 Pressure_{t-1}, \theta_1 Opportunity_{t-1}, \theta_2 Rationalization_{t-1})$$

Where,

Pressure is the degree to which the person in authority has the motivation to commit fraud. Opportunity is the degree to which conditions are such that fraud could be committed due to feasible governance or defective internal control systems. Rationalization is the degree to which the person in authority has an attitude or ethical values such that they would allow themselves to commit fraud socially and universally.

And where,

If Pressure or Opportunity or Rationalization=0, Fraud=0

If all three of these factors exist in a given situation, it would be highly likely

that fraudulent financial statements have occurred. If any one of the factors is missing, then it would be highly unlikely that fraudulent financial statements have occurred. I set up the following hypothesis:

H1: The three factors of the fraud triangle, pressure, opportunity, and rationalization, are associated to the fraudulent financial statements and can predict the fraudulent financial statements effectively.

Proxies for Pressure

Operating conditions:

Peasons (1995, 41) indicated that the measure sales to total current assets represented the sales generating power of a firm's asset and a manager's ability to compete in the industry. The inability to compete successfully may provide an incentive for engaging in fraud financial reportings. The results of sales/total assets in fraud firms were negatively significantly smaller than non-fraud firms (Peason 1995, 41; Skousen et al. 2009).

Growth:

Beasley (1996, 453) describes that if the firm experiences rapid growth, managers may be motivated to misstate financial statements to give the appearance of stable growth and documented that rapid growth is associated with the fraud occurrence. Summers and Sweeney (1998, 136) suggest that unethical managers may be induced to misstate financial statements when growth slows or reverse in order to maintain the appearance of consistent growth and that rapid growth leads to weaknesses in internal controls.

External leverage:

Persons (1995, 40) indicates that if these income-increasing accounting policies are not sufficient to avoid a violation of debt covenants, managers may be motivated to understate of liabilities or overstate assets. Skousen et al. (2009, 8) suggest that managers feel pressure as a result of the need to obtain additional debt to stay competitive and that new financing may be necessary in order to expand plant and facilities. Dechow et al. (1996) documented the demand for external financial resources depends not only on how much cash is generated from operating and investing activities but also on the funds available within the firm.

Financial targets:

AS 2401: Consideration of Fraud in a Financial Statement Audit (PCAOB 2016, Appendices 85) indicates that the profitability or trend level expectations of investment analysts, institutional investors, significant creditors, or other external parties. Persons (1995, 40), Beasley (1998, 453) and Loebbecke et al. (1998, 10-11) suggest that poor financial performance may give managers an incentive to overstate revenues or understate expenses. Some empirical studies document that managers manage earnings in order to meet or beat loss or negative earnings or the earnings target. Some studies documented that managers manage earnings to avoid losses or decreases to meet the earnings benchmark (Burgstahler and Dichev 1997; Suda and Shuto 2008, 80). The earnings management is implemented to respond to the market's expectations (Suda 2007, 34). Suda and Shuto (2008, 81) suggest that managers in Japan have incentive to manage earnings to meet nonzero

earnings to increase their compensation and avoid turnover.³

Skousen et al. (2009, 7) suggest that recurring negative cash flows from operating or an inability to generate positive operating cash flows in light of reported earnings growth may also be associated with financial stability.

Graham et al.(2005) and Suda and Hanaeda (2008)⁴ document that managers consider that earnings are the most significant financial measure. The reason why they try to meet earnings targets is to build credibility with the capital market and to help maintain or increase the firm's stock price. Future prospects for investors in the U.S. Dichev et al. (2013, 4) suggest that CFOs feel that earnings misrepresentation occurs in an attempt to influence stock price, because of outside and inside pressure to hit earnings benchmarks and to avoid adverse compensation and career consequences for senior executives.

Gordon (1964, 262) states that managers with the power, smooth the rate of growth in income since they need to increase stockholder satisfaction for the manager's job security and utility. Suda (2000, 262) indicates that CEOs possess incentives to smooth earnings, since smoothness of earnings leads to higher stock prices.

Therefore, the following working hypothesis 1(a) should be set up:

³ Shuto (2010, 250-251) examines the incentives of managers to manage earnings focusing on the contract relationships and the capital market and suggests that a loss avoidance, a decrease avoidance, meeting earnings target, and suggests that earnings management to avoid loss is associated with managerial compensation, turnover, and financial covenants and earnings management to avoid decreases and to meet targets are associated with factors regarding the market such as equity incentive, earnings relevance, growth, and direct financing.

⁴ Graham et al.(2005) documented that most CFOs feel that their inability to reach the earnings benchmark is seen by outside labor market as managerial failure. And their career concern motivation is one of the incentives for manage earnings in the U.S. On the other hand, according to Suda and Hanaeda (2005)'s results, career concern by outsiders is not higher motivation in Japan. Three former presidents of Toshiba may possess such a career concern about a position of Keidanren. However, since it is hard for research to measure managers' career concern through financial ratios, this study does not focus on the career concerns.

Working H1a: Financial ratio that reflects incentive is associated with the occurrence of fraud.

Proxies for Opportunity

Factors regarding opportunity is a restraint that prevents or reduces fraud occurrence. The following are the constraints that inhibit fraud occurrence.

Nature of industry:

AS 2401: Consideration of Fraud in a Financial Statement Audit (PCAOB 2016, Appendices 85) indicates that the nature of the industry or the entity's operations provides opportunities to engage in fraudulent financial reporting that can arise from a strong financial presence or ability to dominate a certain industry sector that allows the entity to dictate terms or conditions to suppliers or customers that may result in inappropriate or non-arm's-length transactions. Summers and Sweeney (1998, 136-137) and Skousen et al. (2009, 10) indicate that account receivable and inventory are followed by the manager's judgment involved in estimating uncollectible accounts and obsolete inventory and that managers may employ those two accounts as earnings management.

AS 2401: Consideration of Fraud in a Financial Statement Audit (PCAOB 2016, Appendices) describes that if significant operations located or conducted across international borders in jurisdictions where differing business environments and cultures exist, the opportunity of fraud is likely. It seems that one of the indirect causes at Toshiba is the purchasing of Westinghouse Electric Corporation in the U.S. (Nikkei 2017).

Ineffective governance:

Klein (2002) indicates that boards and audit committees structured to be independent of management are the best functions to oversight their management. When governance of the firm is not robust, it is likely that the internal control systems do not work well and weak internal controls fail to prevent or detect opportunistic earnings management and fraudulent financial statements. It is likely that fraud firms possess higher incentive and stronger power of CEOs and weak monitoring.

Fama and Jensen's theory (1983) suggests that a higher percentage of outside directors increases the board effectiveness as a monitor of management. There are some empirical studies documents that board composition was significantly associated with the occurrence of fraud occurrence (Beasley 1996; Uzun et al. 2004; Chen et al. 2004; Nakashima 2016) documented that fraud is associated with the number of outside directors. Outside directors are expected to carry out the role of monitoring management.

Also, there is a so-called main bank system in Japan and a firm's financial institution had been serving as the main portion of the creditors for a long time in Japan. The financial institution has a role of overseeing management in Japan (Osano 2005, 102 and 162-163). Shuto (2010) found that the firms with higher ownership by financial institutions seemed not to manage earning.⁵ Additionally, foreign ownership is expected in the role of oversight management. These two factors are the Japanese special features.

⁵ However, Song et al. (2016, 34) found that the ratio of ownership by cross-shareholdings among groups had significant results, while the ratio of ownership by financial institution had no significant results.

The role of internal auditors is expected to monitor management. The number of internal auditors should be used as a proxy of effective governance. Thus, I predict that fraud firms have a smaller percentage of outside directors, and ownership by foreign investors and financial institution cannot enhance governance.

Becker et al. (1998) documented that clients of non-Big Six auditors report discretionary accruals that are higher than the discretionary accruals reported by clients of Big Six auditors. This suggests that the BIG6 have a function of the constraint of earnings management. However, there was a research survey that there was no significant difference in size, frequency of the meeting, composition, and their experience of the board of directors and audit committees (Beasley et al. 2010)

Organizational structure:

AS 2401: Consideration of Fraud in a Financial Statement Audit (PCAOB 2016, para 3) indicates that it is management's responsibility to design and implement programs and controls to prevent, deter, and detect fraud. The CEO possesses a dominant power of decision making (Skousen et al. 2009). Skousen et al.(2009) and Beasley (1996) documented that the longer the CEO possess a position of power, the greater the likelihood that the CEO can control his or her decisions. I predict that the fraud occurrence is related to the number of the executives that left the firm. Following Hofsted (1980), Japan has a higher score in power distance among five cultural dimensions. It is likely that the stronger the power of the CEO is, the less effective governance is inside the firm.

Therefore, the following working hypothesis 1(b) should be set up:

Working H1b: Financial ratio that reflects opportunity is associated with the occurrence of fraud.

Proxies for Rationalization

Crumbley et al. (2017, 3-15) define rationalization as reframing where a CEO is about to cheat will adjust the definition of cheating to exclude his or her actions. I define that rationalization as *the rationale that a manager transfers his or her subjective decisions to social and universal significance* in order to justify his or her misuses or mistakes. Skousen, et al. (2009, 66-67) indicate that rationalization is difficult to measure and they include auditor changes, audit opinions, and accruals as a proxy for rationalization related to managers' discretions. I employ a proxy that empirical studies uses to measure managers' earnings management, and an audit opinion and audit quality as a direct proxy and an indirect proxy for rationalization respectively.

Possible indirect associations with managerial discretions:

If quality auditing implemented, a manager is afraid that fraudulent financial statements should be detected. Therefore, audit quality restrains financial statement fraud. The Japanese Big four are PwC Arata having partnership with PricewaterhouseCoopers, Tohmatsu having partnership with Deloitte Touche Tohmatsu, ShinNihon having partnership with Ernst & Young, and Azusa having partnership with Azusa.

There are some empirical studies regarding the audit opinions and earnings management. Bartov et al. (2001) examine the association between a firm's discretionary accruals generated by various discretionary models and the

firm's likelihood of a qualified audit report. The higher absolute value of the discretionary accruals produced by a model that indicate earnings management, the higher the probability for a qualified audit report (Bartov et al. 2001). Francis and Krishnan (1999) document that auditors are more likely to issue modified audit reports for high-accrual firms.

There are four types of audit reports: unqualified opinion, qualified opinion, adverse opinion and disclaimer. In the case of material doubts about going concern, although auditors conclude that it is appropriate to disclose the information, if there is the event and situation that users possess material doubts about going concern, it is needed to describe *an additional information*⁶ to the audit reports (JICPA 2006, 14. para. a). I predict that it is likely that unqualified opinion with an additional information might embody the doubt regarding going concern. Here, I use auditor's opinion as an indirect observation of accruals management⁷ as a proxy of rationalization in this study⁸.

⁶ JICPA (2006, p.17, para.5) defines additional information as the information that auditors conclude that financial statements present fairly but they stress the financial statements and the matter that they should describe the explanation regarding the decisions.

⁷ Omid (2015) suggests that auditors' opinions are related to accruals management but not related to real management. The factor of rationalization exists on whether there is a manager's discretion. Since real management is earnings management that managers manage earnings through cash flows, it is hard for us to distinguish real transaction of cash flows and real management through cash flows. In this paper, I focus on accrual management as rationalization.

⁸ AS 2401: Consideration of Fraud in a Financial Statement Audit (PCAOB 2016, para 81A) states that the auditor has a responsibility, under certain conditions, to disclose possible fraud to the Securities and Exchange Commission to comply with certain legal and regulatory requirements. These requirements include reports in connection with the termination of the engagement, such as when the entity reports an auditor change and the fraud or related risk factors constitute a reportable event or are the source of a disagreement. Summers and Sweeney (1998) describe that most of auditor changes are for legitimate reasons, the risk of audit failure and subsequent litigation. Skousen et al. (2009) mentioned that occurrence of fraud may be related the changes of auditors. Although Toshiba changed their auditor after fraud found in 2016, Toshiba tried to replace the current auditor due to the disagreement of the financial results with the auditor. Considering this fact, although a firm permits replacement of the auditor, there might be a possibility to have some problems in the firm. However, focusing on Toshiba Fraud, since it seems that audit changes happened after the fraud in Japan, I remove the AUDIT CHANGE from my prediction model.

Possible managerial discretion:

Skousen et al. (2009, 66) indicate that accruals are representative of a manager's decision and provide insight into their financial reporting rationalization. Beneish (1999, 454) suggested that managers' desires to sell their equity is a motivation for earnings overstatement. Managers exercise discretion through accruals (Beneish 1999, 454). Extant archival studies regarding earnings management estimate discretionary accruals⁹ from total accruals and conduct the approach that discretionary accruals is a metrics that summarize manager's discretionary behavior (Asano and Shuto 2007, 87).

Thus, I set up the following working hypothesis 1 (c):

Working H1c: Financial ratio that reflects rationalization is associated with the occurrence of fraud.

4 RESEARCH DESIGN

4.1. Fraud Firms Selection and A Pair Sample

Tokyo Shoko Research (TSR) Investigation Report (Tokyo Shoko Research 2016) provides that 280 public firms in Japan disclosed fraudulent financial statements 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)

⁹ Discretionary accruals are generally computed by non-discretionary accruals from total accruals following Jones model, modified Jones model, CFO modified model (Suda 2000).

Investigation Report (Tokyo Shoko Research 2016). As step 1, I confirm these firms as my initial sample of fraud firms. As step 2, I eliminate the four financial institutions. As step 3, I remove the two firms that prepare financial statements following to the US GAAPs and the eleven firms that applied IFRS in order to compare the financial statement data. The final firms comprise 150 firms as fraud firms. Table 1 reports the sample selection.

[Insert Table 1 Here]

In order to develop a pair sample of non-fraud firms, I matched them based on the industry and size (total assets). Table 2 presents sample statistics for mean and median for the fraud and non-fraud firms. The results of t-tests shows insignificant differences between the two samples.

[Insert Table 2 Here]

4.2. Data

Data is obtained from Nikkei NEEDS. Nikkei data is a retroactive modified financial statement when restatement data is disclosed by the firm. I use the restated financial statement data from Nikkei database. Palep and Healy (2013, 8-13) state that an analyst who encounters biases accounting possesses two options either to adjust current earnings and book values to eliminate manager's accounting biases, or to recognize the biases and adjust future forecasts accordingly. The purpose of my study is to predict fraudulent financial statements through the fraud triangle model using publicly available data that eliminate manager's bias.¹⁰ The prediction model by the fraud triangle help financial statement users such as bankers, analysts, or regulators to predict fraudulent

¹⁰ Song et al.(2016) restored all the restated data to the original statement and used the restored datasets for all analyses of the fraud sample.

financial statements through the firm innate characteristics, not through managers' manipulations.

5 EMPIRICAL RESULTS

5.1. The Univariate Analysis

I compare two variables using t-tests and Wilcoxon rank-sum tests of the differences. Table 3 shows that descriptive statistics for the fraud firms and non-fraud firms and results of paired t-tests. There are negative significant differences in incentive factors such as *GPM*, *SALESAR*, *ROA*, *FOREIGNSALES*, *FINANCE*, and *FCF*. I find that the fraud firms have a smaller ratio and a smaller amount in *ROA*, *FINANCE*, and *FCF*. While the differences in financial stability that are inconsistent with Skousen et al. (2009), profitability, financial target, and external leverage are consistent with Skousen et al. (2009).

There are significant differences in opportunity factors such as *BOARD*, *OUTSIDEDIRECTOR*, *OUTSIDEAUDITOR*, and *CEOOWN* between fraud firms and non-fraud firms. A difference in governance such as the number of outside directors is consistent with Beasley (1998). In addition, *OPINION*, *AUDITQUALITY*, and *ACCRUALS* as rationalization factors differ between fraud and non-fraud firms significantly. This is not consistent with Skousen et al. (2009). I find that the fraud firms have a greater accruals than non-fraud firms. This suggests that earnings quality of fraud firms is lower than earnings quality of non-fraud firms.

[Insert Table 3 Here]

5.2. The Model to Predict Fraud

The three factors of the fraud triangle is not directly observed (Skousen et al, 2009). Although I develop the proxies for the three factors following Skousen et al. (2009), I add some proxies as Japanese specific features into the original Skousen et al.(2009) model. I employ a multivariate model to examine whether variables lead to increase the occurrence of fraudulent financial statements. The dependent variable is (1) fraud or (0) no fraud. Some independent variable are dropped from the original model by the univariate analysis.

The following logit regression model is used to test the hypotheses:

H1:

$$FRAUD_t = \beta_0 + \beta_1 GPM_{t-1} + \beta_2 GROWTH_{t-1} + \beta_3 ROA_{t-1} + \beta_4 FOREIGNSALES_{t-1} + \beta_5 FINANCE_{t-1} + \beta_6 FCF_{t-1} + \beta_7 LEV_{t-1} + \beta_8 BOARD_{t-1} + \beta_9 OUTSIDEDIRECTOR_{t-1} + \beta_{10} OUTSIDEAUDITOR_{t-1} + \beta_{11} CEOOWNERSHIP_{t-1} + \beta_{14} FOREINGEQUITY_{t-1} + \beta_{15} OPINION_{t-1} + \beta_{16} AUDITQUALITY_{t-1} + \beta_{17} ACCRUALS_{t-1} + \beta_{18} TA_{t-1} + \varepsilon_{t-1}$$

Where,

<i>FRAUD</i>	a dummy variable with a value of one when a firm disclosed that inappropriate accounting impacted the prior financial statements or would have an impact in the future in their annual reports and a value of zero otherwise
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PRESSURE

<i>GPM</i>	gross profit margin =subtracting cost of goods sold (COGS) from total sales and dividing that number by total sales
<i>GROWTH</i>	changes in sales - industry average change in sales

<i>ROA</i>	Return on assets: net income/ total assets
<i>LEV</i>	total borrowing /total assets
<i>FOREINGSALES</i>	foreign sales/total sales*100
<i>FINANCE</i>	cash flows from operations-average cash flow from investing t-3 to cash flow from investing t-1/current assets _{t-1}
<i>FCF</i>	Free cash flows=cash flows from operations- cash flows from investing

OPPORTUNITY

<i>BOARD</i>	Log of number of board of directors
<i>OUTSIDEDIRECTOR</i>	number of outside directors / number of board of directors
<i>OUTSIDEAUDITOR</i>	number of outside auditors / number of auditors
<i>CEOOWNERSHIP</i>	the percentage of ownership in the firm held by the president
<i>DIRECTOROWNERSHIP</i>	the percentage of ownership in the firm held by directors
<i>FOREIGNEQUITY*</i>	Number of shares held by the foreign investors / Number of shares outstanding × 100
<i>FINEQUITY*</i>	Number of shares held by financial institutions / Number of shares outstanding × 100

RATIONALIZATION

<i>AUDITOPINION</i>	a dummy variable with a value of one when the auditor expresses unqualified opinion and a value of zero
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	otherwise.
<i>AUDITQUALITY</i>	a dummy variable with a value of one when a firm engages with Big 4 auditor and a value of zero otherwise.
<i>ACCRUALS</i>	total accruals = (net income after tax- extraordinary incomes + extraordinary losses)-operating cash flows
<i>TA</i>	Δ accounts receivables + Δ inventories + Δ accounts payable + Δ tax payable + Δ others+ depreciation

Notes: * Author includes those variables as the Japanese special features.

5.3. Test Hypothesis

In order to test working hypothesis 1a, 1b, and 1c, I conduct correlations and logistic regression analysis.

5.3.1 Empirical Results 1a: Pressure

Correlation analysis is implemented in order to examine whether fraud is correlated to factors of the fraud triangle. Table 4 presents the correlation coefficient between fraud and factors of firm characteristics and governance mechanisms. With regard to the correlation coefficient of FRAUD and firm characteristics, the Pearson correlation of FRAUD and *GPM*, *SALESAR*, *ROA*, *FOREIGNSALES*, *FINANCE*, *FCF*, and *LEV* are -0.054, 0.029, 0.057, 0.020, 0.018, -0.109, -0.062, -0.294, -0.150, 0.131 respectively.

[Insert Table 4 Here]

I examine the association between fraud and factor through logistic regression. Table 5 reports the results of the logistic cross-sectional regression analysis for fraud firms and non-fraud firms. The Chi-square test of the model fit of

641.240 (8 degrees of freedom) is significant at 0 level. While the coefficients for *GPM* and *FCF* are positively and statistically significant, the coefficient for *FINANCE* is -4.514 and has a significant negative association with fraud, suggesting that the pressure factors affect the likelihood of financial statement fraud. These results indicate that risk factors regarding pressures by AICPA (2002, A2 a) are important factors as red flags for detecting fraud. This is consistent with the results of Skousen et al. (2009). Therefore, working hypothesis 1a is supported.

[Insert Table 5 Here]

5.3.2 Empirical Results 1b: Opportunity

With regard to the correlation coefficient of *fraud* and governance mechanism, the Pearson correlation of *fraud* and *OUTSIDEDIRECTOR*, *OUTSIDEAUDITOR* and *CEOOWN* are 0.047, -0.847, and 0.068 significant respectively.

Table 5 provides the results regarding the association between fraud and corporate governance attributes. Table 5 presents a significant negative association between fraud and *OUTSIDEDIRECTOR* and *OUTSIDEAUDITOR*, suggesting that opportunity factors affect the likelihood of financial statement fraud. To test working H1b, I focus on the association of governance proxies and fraudulent financial statements between fraud firms and non-fraud firms. The rate of outside directors and outside auditors are associated with a reduced likelihood of fraudulent financial reporting. Thus, this supports 1b. The results of regression suggest that ineffective governance is significantly associated with fraudulent financial statements. This suggests that outside directors and outside auditors work as constraints of fraud.

5. 3. 3. Empirical Results 1c: Rationalization

With regard to the correlation coefficients of *fraud* and rationalization factors, the Pearson correlation of *fraud* and *OPINION*, *AUDITQUALITY*, *ACCRUALS* and *TA* are -0.577, 0.066, and 0.230 significant respectively. This suggests that fraud is correlated with rationalization factors such as *OPINION* negatively, and fraud is correlated with rationalization factors such as *AUDIT QUALITY* and *ACCRUALS* positively. Therefore, it is likely that three factors of the fraud triangle can apply to fraud prediction for the public firms in Japan.

Table 5 reports that the coefficient (t-value) for *AUDITOPINION* and *ACCRUALS* are -9.177(1.127), 1.782 (0.651) and significant, suggesting that rationalization factors affect the likelihood of financial statement fraud. Thus, this supports H1c. Table 5 shows that while the coefficient (t-value) of *ACCRUALS* is positive and significant at 0.01%, the coefficient (t-value) of *TA* is positive and insignificant by using restated data. This suggests that the fraud firms had earnings management through accruals. To test working H1c, I focus on the association of fraud and rationalization factors in fraudulent financial statements between fraud firms and non-fraud firms. *OPINION* and *ACCRUALS* are associated with fraudulent financial reportings. Thus, this supports H1c.

After the financial statements are restated, the association between fraud and *TA* is insignificant, while the association between fraud and *ACCRUALS* is significant. This suggests that although restatement removes managers' bias, the state of accruals as the innate characteristics is likely to link to fraudulent financial statements. As Francis and Krishnan (1999, 157) indicated that there is a significant association between the uses of high-accruals and modified opinions for asset realization uncertainties and for going concern problems, the results of

regression suggest that there is a possibility that rationalization is related to fraudulent financial reporting through managerial decision-makings.

6 CONCLUSIONS AND FUTURE RESEARCH

I provide evidence from Japan by investigating whether the model focused on the fraud triangle factors can predict fraudulent financial statements by using fraud firms and non-fraud firms in Japan. The followings are my findings: First, univariate analysis results suggest that there is a significant difference in *GPM*, *SALESAR*, *ROA*, *FOREIGNSALES*, *FINANCE*, and *FCF* for pressure factors between fraud firms and non-fraud firms. Governance factors such as *BOARD*, *OUTSIDEDIRECTOR*, *OUTSIDEAUDITOR* and *CEOOWN* for opportunity factors differs between fraud firms and non-fraud firms. There are differences in rationalization factors such as *OPINION*, *AUDITQUALITY*, and *ACCRUALS* between fraud firms and non-fraud firms. In addition, total accruals as a rationalization factor differs between fraud and non-fraud firms. While the differences in financial targets and profitability are consistent with Skousen et al. (2009), the differences in opportunity factors are inconsistent with Skousen et al.(2009). There is a significant difference in rationalization factors between the two samples, suggesting that this is not consistent to Skousen et al.(2009).

Second, the results of the logistic cross-sectional regression analysis suggested that all three factors of pressure, opportunity, and rationalization affect the likelihood of fraudulent financial statements. The results of the regression analysis suggest that the financial targets and profitability as pressure, ineffective governance as opportunity, and a managers' discretions as rationalization are

significantly associated with fraudulent financial statements. Based on these results, it seems that fraud firm managers have discretions through accruals and decrease accruals quality. The results of the regression analysis suggest that there is a possibility that rationalization is related to managerial discretions.

This study has limitations: Although I examined whether the three factors of the fraud triangle can predict fraudulent financial statements, it was difficult to find a proxy for rationalization and measure the rationalization factor itself. This study focused on just accruals management by managers and use total accruals as a proxy of rationalization. In the next step, it is needed to use real management as a proxy of rationalization.

When I focus on Toshiba's fraud, it seems that fraud may come from a manager's desires for future career consequences such as a position of Keidanren. Therefore, a manager's career concern motivation may be one incentive for managing earnings in Japan, although it is difficult for researchers to measure his or her psychological aspects. I will conduct a survey for managers to measure their psychological aspects through a questionnaire. To examine the relationship between a manager's psychological factors and fraud occurrence is needed.

APPENDICES

Risk Factors Relating to Misstatements Arising From Fraudulent Financial Reporting

Incentives/Pressures				
a. Financial stability or profitability is threatened by economic, industry, or entity operating conditions, such as (or as indicated by):				
	Factors	Financial Ratio	Name of Ratio	Authors
— High degree of competition or market saturation, accompanied by declining margins	Financial Stability/	GPM	gross profit margin	Skousen et al. (2009)
	Financial Stability/ Liquidity	GROWTH	changes in sales - industry average change in sales	Skousen et al. (2009)
— Rapid growth or unusual profitability, especially compared to that of other companies in the same industry	Operating Condition			Summers and Sweeney (1998); Skousen et al. (2009)
— New accounting, statutory, or regulatory requirements				
b. Excessive pressure exists for management to meet the requirements or expectations of third parties due to the following:				
— Profitability or trend level expectations of investment analysts, institutional investors, significant creditors, or other external parties (particularly expectations that are unduly aggressive or unrealistic), including expectations created by management in, for example, overly optimistic press releases or annual report messages	Extremal Pressure for Earnings Targets	ROA	return on assets	Summers and Sweeney (1998); Dichev et al. (2012); Skousen et al. (2009)
— Need to obtain additional debt or equity financing to stay competitive—including financing of major research and development or capital expenditures		LEV	total borrowing /total assets	Persons (1995); Beneish (1999); Skousen et al. (2009)
— Marginal ability to meet exchange listing requirements or debt repayment or other debt covenant requirements	Extremal Pressure for Obtaining Additional Debt	FINANCE	cash flows from operations-average cash flow from investing t-3 to cash flow from investing t-1/current assets _{t-1}	Beneish (1999); Skousen et al. (2009)
— Perceived or real adverse effects of reporting poor financial results on significant pending transactions, such as business combinations or contract awards		FCF	cash flows from operations- cash flow from investing -cash dividends	Beneish (1999); Skousen et al. (2009)
c. Information available indicates that management's or those charged with governance's personal financial situation is threatened by the entity's financial performance arising from the following:				
d. There is excessive pressure on management or operating personnel to meet financial targets set up by those charged with governance or management, including sales or profitability incentive goals.	Financial Targets by Managers	ROA	return on assets: net income/ total assets	Dichev et al.(2012), Summers and Sweeney (1998); Skousen et al. (2009)

Opportunities				
a. The nature of the industry or the entity's operations provides opportunities to engage in fraudulent financial reporting that can arise from the following:				
— Significant financial interests in the entity		CEO OWNERSHIP	the percentage of ownership in the firm held	
— Significant portions of their compensation (for example, bonuses, stock options, and earn-out arrangements) being		DIRECTOR OWN	the percentage of ownership in the firm held	Beneish (1999); Skousen et al. (2008)
— Significant bank accounts or subsidiary or branch operations in tax-haven jurisdictions for which there appears to be no clear business justification	Nature of Industry	FOREIGN SALES	foreign sales/total sales	Skousen et al. (2009)
— Contractual arrangements lacking a business purpose				
b. There is ineffective monitoring of management as a result of the following:				
		FOREIGN EQUITY*	number of shares held by the foreign investors / number of shares outstanding × 100	Nakashima (2017)
		FINEQUITY*	number of shares held by financial institutions / number of shares outstanding × 100	Song et al. (2016); Nakashima (2017)
		BOARD SIZE	number of board of directors	
— Ineffective oversight over the financial reporting process and internal control by those charged with governance		OUTSIDE DIRECTORS	number of outside directors / number of board of directors	Beasley (1996); Nakashima (2017)
— The exertion of dominant influence by or over a related party		OUTSIDE AUDITORS	number of outside auditors / number of company auditors	Nakashima (2017)

Rationalizations				
<p>Risk factors reflective of attitudes/rationalizations by those charged with governance, management, or employees, that allow them to engage in and/or justify fraudulent financial reporting, may not be susceptible to observation by the auditor. Nevertheless, the auditor who becomes aware of the existence of such information should consider it in identifying the risks of material misstatement arising from fraudulent financial reporting. For example, auditors may become aware of the following information that may indicate a risk factor:</p>				
<ul style="list-style-type: none"> Ineffective communication, implementation, support, or enforcement of the entity's values or ethical standards by management or the communication of inappropriate values or ethical standards 	Ineffective Communication	AUDITOPINION	a dummy variable with a value of one when the auditor expresses unqualified opinion and a value of zero otherwise.	
		AUDIT QUALITY	a dummy variable with a value of one when a firm engages with Big 4 auditor and a value of zero otherwise.	Beckers (1998) and Nakashima (2010)
<ul style="list-style-type: none"> Nonfinancial management's excessive participation in or preoccupation with the selection of accounting principles or the determination of significant estimates 	Managerial Discretion	ACCRUALS	(net income after tax-extraordinary incomes + extraordinary losses)-operating cash flows	Skousen et al. (2009)
<ul style="list-style-type: none"> Nonfinancial management's excessive participation in or preoccupation with the selection of accounting principles or the determination of significant estimates 	Managerial Discretion	TA	$\Delta AR + \Delta INV + \Delta AP + \Delta ax$ payable + Δ others + depreciation	Beneish et al.(1999)
<ul style="list-style-type: none"> Known history of violations of securities laws or other laws and regulations, or claims against the entity, its senior management, or board members alleging fraud or violations of laws and regulations 				
<ul style="list-style-type: none"> Excessive interest by management in maintaining or increasing the entity's stock price or earnings trend 				
<ul style="list-style-type: none"> A practice by management of committing to analysts, creditors, another third parties to achieve aggressive or unrealistic forecasts 				
<ul style="list-style-type: none"> Management failing to correct known significant deficiencies or material weaknesses in internal control on a timely basis 				
<ul style="list-style-type: none"> An interest by management in employing inappropriate means to minimize reported earnings for tax-motivated reasons 				
<ul style="list-style-type: none"> Recurring attempts by management to justify marginal or inappropriate accounting on the basis of materiality 				
<ul style="list-style-type: none"> The relationship between management and the current or predecessor auditor is strained, as exhibited by the following: <ul style="list-style-type: none"> — Frequent disputes with the current or predecessor auditor on accounting, auditing, or reporting matters — Unreasonable demands on the auditor, such as unreasonable time constraints regarding the completion of the audit or the issuance of the auditor's report — Formal or informal restrictions on the auditor that inappropriately limit access to people or information or the ability to communicate effectively with those charged with governance — Domineering management behavior in dealing with the auditor, especially involving attempts to influence the scope of the auditor's work or the selection or continuance of personnel assigned to or consulted on the audit engagement 				
Notes: Following Fraud Risk Factors from SAS99, I list up the financial ratios that reflect the factor respectively based on the previous studies.				

REFERENCE

- Abegglen, J.C. 2006. *21st-Century Japanese Management: New Systems, Lasting Values*, Palgrave Macmillan.
- Aghghaleh, S.F., Z.M.Mohamed and M M.Rahmat. 2016. Detecting financial statement frauds in Malaysia: comparing the abilities of Beneish and Dechow Models. *Asian Journal of Accounting Governance* 7:57-65.
- AICPA. 2002. Statement of Auditing Standard No. 99 (SAS 99). AU Section 316 Consideration of Fraud in a Financial Statement Audit (Supersedes SAS No. 82.), Source: SAS No. 99; SAS No. 113.Albrecht, W. S. 2003. *Fraud Examination*, Thompson South-Western.
- Albrecht, W. S. 2003. *Fraud Examination*, Thompson South-Western.
- Alden, M.E., D.M.Bryan, B.J. Lessley, and A.Tripathy. 2012. Detection of financial statement fraud using evolutionary algorithms, *Journal of Emerging Technologies in Accounting*, 9:71-94.
- Asano, N., and A. Shuto. 2007. A method to detect accounting manipulation, *Accounting Manipulation*, K. Suda, T. Yamamoto, and S. Otomasa (eds), Diamond Publisher.(in Japanese).
- Bartov, E. 2000. Discretionary-accruals models and audit qualifications, *Journal of Accounting and Economics*, 30(3): 421-452.
- Becker, C., M. L. DeFond, J. Jiambalvo, and K.R.Subramanyam. 1998. The effect of audit quality on earnings management, *Contemporary Accounting Research*, March, DOI: 10.1111/j.1911-3846.1998.tb00547.x
- Beneish, M.D. 1999. Incentives and penalties related to earnings overstatements that violate GAAP, and post-Sarbanes Oxley period. *The Accounting Review* 83 (3) May: 757-787.
- Beasley, M. 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review* 71 (4): 443-465.
- Bonner, S.E., Z. Palmrose, and S. M. Young. 1998. Fraud type and auditor litigation: An analysis of SEC accounting and auditing enforcement releases, 73(4):503-532.
- Burgstahler, D. and I. Dichev.1997. Earnings management to avoid earnings Decreases and losses, *Journal of Accounting and Economics* 24: 99-126.
- Beasley, M.S., J. V. Carchello, D. R. Hermanon, T. L. Neal. 2010, *Fraudulent Financial Reporting: 1998-2007: An Analysis of U.S. Public Companies*, The Committee of Sponsoring Organizations of the Treadway Commission (COSO), May 2010.
- The Committee of Sponsoring Organizations of the Treadway Commission (COSO).2010. News Release, Alamonte Springs, May 20.
http://www.coso.org/documents/COSOReleaseonFraudulentReporting2010PDF_001.pdf

- Chen, G. M. Firth, D. N. Gao and O. Rui. 2006. Ownership structure, corporate governance, and fraud: Evidence from China, *Journal of Corporate Finance*, 12(3): 424-448.
- Cohen D.A., A. Dey, and T. Z. Lys. 2008. Real and Accrual - Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods. *The Accounting Review*: May, 83(3):757-787.
<https://doi.org/10.2308/accr.2008.83.3.757>
- Cressey, D.R. 1953. *Other People's Money*, Montclair: Patterson Smith, 30.
- Crumbly, D.L., L. E. Heitger, G. S. Smith. 2013. *Forensic and Investigative Accounting (6th Edition)*, C.C.H. Wolters Kluwer.
- Dechow, P. M., R.G. Sloan, and A. P. Sweeney. 1996. Causes and consequences of earnings Manipulation: An Analysis of firms subject to enforcement actions by the SEC, *Contemporary Accounting Research*, 9(2): 1-36.
- Dechow, P. M., W. Ge, C.R. Larson, and R. G. Sloan. 2011. Predicting material accounting misstatement. *Contemporary Accounting Research* 28:17-82.
- Dichev. I. D., J. Graham, C.R. Harvey, and S. Rajgopal. 2013. Earnings quality: Evidence from the field. *Journals of Accounting and Economics* 56(2-3):1-33.
- Fama, E. F. and M. C. Jensen. 1983. Separation of Ownership and Control, *Journal of Law and Economics*, 26, June.
- Financial Service Agency. 2007 *Provisional Translation of On the Setting of the Standards and Practice Standards for Management Assessment and Audit concerning Internal Control Over Financial Reporting (Council Opinions)*. Business Accounting Council. February 15.
- Financial Times. 2017. Toshiba looks for auditor to replace PwC, April 26, 2017.
<https://www.ft.com/content/b958b98e-2a60-11e7-bc4b-5528796fe35c>
- Francis, J.R. and Krishnan, J. 1999. Accounting Accruals and Auditor Reporting Conservatism, *Contemporary Accounting Research* 16(1):135 - 165.
- Francis, J., R. LaFond, P. Olsson, and K. Schipper. 2008. *Earnings quality*, now Publishers, eds. 2006. Foundations and Trends in Accounting 1(4):259-340.
- Graham, J. R., C. R. Harvey, and R. Rajgopal. 2005. The economic implications of corporate financial reporting, *Journal of Accounting and Economics* 40: 3-73.
- Gordon, M. 1964. Postulate, principles, and research in accounting, *The Accounting Review* 39(April):251-263.
- Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29:193-228.
- Hofstede, G. 1980. *Culture's consequences: international differences in work-related values*, Beverly Hills, CA: Sage Publications.
- Huber, W.D. 2001. Culture and corruption: Using Hofstede's cultural dimensions to explain

- perceptions of corruption.
http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=371197.
- Huber, W.D. 2012. Culture risk: An exploratory study of the influence of culture on auditors' evaluation of internal control and assessment of control risk.
http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=371197.
- Huber, D. 2017. Forensic accounting, fraud theory, and the end of the fraud triangle, Forthcoming in *Journal of Theoretical Accounting Research*.
- The Japanese Institutes of Certified Accountants (JICPA). 2006. *Practical standard of audit reports*.
- Klein, A. 2002. Audit Committee, Board of Director Characteristics, and Earnings Management, *Journal of Accounting and Economics*, 33(3):375-400.
- Leuz, C., D. Nanda, and P. D. Wysocki. 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69: 505-527.
- Loebbecke, J., M. M. Eining, and J. J. Willingham. 1989. Auditors' experience with material irregularities: Frequency, nature, and detestability. *Auditing: A Journal of Practice and Theory*, 9(1)(Fall):1-28.
- Mehta, A. and G. Bhavani. 2017. Application of forensic tools to detect fraud: The case of Toshiba, *Journal of Forensic & Investigative Accounting*, 9(1):692-710
- Nakashima. M. 2010. *Earnings Management and Earnings Quality*, Hakuto Shobo(in Japanese).
- Nakashima. M. 2017. Is the Structure of the Board of Directors Associated with Accounting Fraud? Evidence from Japan, Working paper at 2017 Forensic Accounting Section Conference of AAA in Orland.
- Nakashima, M. and D.A. Ziebart. 2015. Did Japanese-SOX have an impact on earnings management and earnings quality?", *Managerial Auditing Journal*, Vol. 30 Issue: 4/5, pp.482-510, doi: 10.1108/MAJ-06-2013-0890
- Nakashima, M. And D.A. Ziebart. 2016. Tone at the top and shifts in earnings management: Evidence from Japan, *Journal of Forensic & Investigative Accounting*, 8(2):288-324.
- Nikkei Asian Review.2017. *Changing auditors may not solve Toshiba's problem*, April 26, 2017.
<http://asia.nikkei.com/Business/Companies/Changing-auditors-may-not-solve-Toshiba-s-problem>
- Nikkei Asian Review.2017. *Toshiba's Westinghouse mess points to deep cultural problems*, Feb23.
<http://asia.nikkei.com/magazine/20170223/On-the-Cover/Toshiba-s-Westinghouse-mess-points-to-deep-cultural-problems>
- Norris, F.2006. Deep Secret: Why Auditors Are Replaced, New York Times, Business Day, JULY 28,
<http://www.nytimes.com/2006/07/28/business/28norris.html>
- Omid, A.M. 2015. Qualified audit opinion, accounting earnings management and real earnings management: Evidence from Iran, *Asian Economic and Financial Review*, 5(1):46-57.

- Osano, H. 2005. *Economics of Corporate Governance*, Nihon Keizai Shinbunsha. (in Japanese).
- Palep, K.G. and P.M. Healy. 2013. *Business Analysis and Valuation Using Financial Statement*, 5th edition, Cengage Learning.
- PCAOB. *AS 1001: Responsibilities and Functions of the Independent Auditor*, <https://pcaobus.org/Standards/Auditing/Pages/AS1001.aspx>
- PCAOB. 2016. *AS 2401: Consideration of Fraud in a Financial Statement Audit Guidance on AS 2401*, <https://pcaobus.org/Standards/Auditing/Pages/AS2401.aspx>
- Persons, O.S. 1995. Using financial statement data to identify factors associated with fraudulent financial reporting, *Journal of Applied Business Research*, 11(3): 38-46.
- Schuchter, A. and M. Levi 2013. The fraud triangle revisited, *Security Journal*:1-15.
- Shuto. A. 2010, *Earnings Management of Japanese Firms—Theories and Practices*, Chuo Keizaisha (in Japanese).
- Skousen, C. J, K. R. Smith, C. J. Wright. 2009. Detecting and predicting financial statement fraud: The effectiveness of the fraud triangle and SAS No. 99, in M. Hirschev, K. John, A. K. Makhija (ed.) *Corporate Governance and Firm Performance (Advances in Financial Economics*, 13), Emerald Group Publishing Limited, 53 – 81.
- Song. M., N. Oshiro, and A. Shuto 2016. Predicting accounting fraud: Evidence from Japan, *The Japanese Accounting Review*, 6: 17-63.
- Suda, K. 2000. *Positive Theory of Financial Accounting*. Hakuto Shobo (in Japanese).
- Suda, K, T. Yamamoto, and S. Otomasa. 2007. *Accounting Manipulation*, Diamond Sha (in Japanese).
- Suda, K. and E. Hanaeda. 2008. Japanese firms' financial reporting: the Results from the survey, *Securities Analysts Journal*, 46:51-69.
- Suda, K. and A. Shuto. 2008. Earnings management to meet earnings benchmarks: evidence from Japan Published in Japan: *Economic, Political and Social Issues*. - New York, NY: Nova Science Publ., ISBN 978-1-60456-675-8:67-85
- Summers, S.L. and J. T. Sweeney. 1998. Fraudulently misstated financial statements and insider trading: An empirical analysis, *The Accounting Review*, 73(1):131-146.
- Tokyo Shoko Research (TSR). 2016. *Tokyo Shoko Research (TSR) Investigation Report*, Tokyo Shoko Research.
- United States federal law. 2002. *Sarbanes-Oxley Act of 2002*. <http://fl1.findlaw.com/news.findlaw.com/hdocs/docs/gwbush/sarbanesoxley072302.pdf>
- Uzun, H., S. H. Szewczyk and R. Varma. 2004. Board Composition and Corporate Fraud, *Financial Analysts Journal*, 60(3):33-43.
- White, H. 1980. A heteroskedasticity-Consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*. 48 (4):817-838.
- Wolfe, D.T. and D.R. Hermanson. 2004. The fraud diamond: considering the four elements of

fraud, *the CPA Journal*, December.

Selection Criteria	Number of Observation
The firms which disclosed inappropriate accounting	280
Less: Duplicate firms for each year	20
Less Financial institutions	4
Less US-GAAP firms	2
Less IFRS firms*	11
Subtotal	243
Less: Firms that data are not available	93
Total observation	150

*Notes: KYB applied IFRS since fiscal year 2016 and KYB occurred fraud before 2015. I include KYB into Fraud firm sample.

Factor	Fraud Firms (n=150)		Non-Fraud Firms (n=150)	
	Mean	Median	Mean	Median
Total Assets	265,892.93	32,372.00	211,315.48	31,359.50
Sales	281,441.01	39,982.00	222,981.74	37,554.00

TABLE 3
Descriptive Statistic of Factors for the Fraud Triangle for Fraud Firms and NonFraud Firms (2007-2015)

Factor	Fraud Firms		Sign	Non-Fraud Firms		t-value	significance
	Mean	S.D.		Mean	S.D.		
<u>Pressure</u>							
<i>GPM</i>	0.2401	0.1476	<	0.2565	0.1567	-2.4664	0.0137 **
<i>GROWTH</i>	2.8002	129.0473	>	-2.4963	21.7907	1.3108	0.1901
<i>SALESAR</i>	20.3804	70.0991	>	13.5694	46.0198	2.6319	0.0086 **
<i>OIOCF</i>	-0.0399	0.1498	>	-0.8972	30.5623	0.9089	0.3636
<i>NWC</i>	0.6357	19.0677	>	0.1561	2.5430	0.8078	0.4193
<i>ROA</i>	0.0007	0.1087	<	1.4344	9.2208	-5.0381	0.0000 ***
<i>FOREINGSALES</i>	8.8621	16.3558	<	11.0910	19.3815	-2.8016	0.0051 ***
<i>FINANCE</i>	0.0370	0.2856	<	0.2218	0.3157	-14.0651	0.0000 ***
<i>FCF</i>	0.0275	0.2403	<	0.0854	0.1235	-6.9451	0.0000 ***
<i>LEV</i>	0.6098	0.3204	>	0.5339	0.2510	6.0422	0.0000
<u>Opportunity</u>							
<i>BOARD</i>	1.9963	0.3926	>	1.9674	0.4136	1.6430	0.1005 ***
<i>OUTSIDEDIRECTOR</i>	0.1191	0.1549	>	0.1048	0.1494	2.1624	0.0307 **
<i>OUTSIDEAAUDITO</i>	0.6697	0.1596	>	1.5200	0.3421	-72.9500	0.0000 ***
<i>CEOOWN</i>	0.0638	0.1239	<	0.0484	0.1016	3.1164	0.0019 ***
<i>DIRECTOROWN</i>	0.0870	0.1449	<	0.2368	4.7539	-1.0208	0.3075
<i>FOREIGNEQUITY</i>	0.0935	0.1214	<	0.1317	0.8157	-1.5028	0.1330
<u>Rationalization</u>							
<i>FINEQUITY</i>	0.1729	0.1467	<	0.2587	1.8243	-1.5183	0.1291
<i>OPINION</i>	0.6276	0.4837	<	1.3057	0.4772	-32.3394	0.0000 ***
<i>AUDITQUALITY</i>	0.7133	0.4524	>	0.6517	0.4767	3.0364	0.0024 ***
<i>ACCRUALS</i>	-0.0608	0.1593	>	-0.1990	0.3808	10.8424	0.0000 ***
<i>TA</i>	0.0113	0.0766	>	0.0099	0.0704	0.4444	0.6568

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

<i>GPM</i>	gross profit margin =subtracting cost of goods sold (COGS) from total sales and dividing that number by total sales;
<i>GROWTH</i>	changes in sales - industry average change in sales
<i>SALESAR</i>	sales / accounts receivable
<i>OIOCF</i>	operating income-cash flows from operations/total assets
<i>NWC</i>	average of net working capital for two years; (current assets-current liabilities+current assets-current liabilities-1)/total assets
<i>ROA</i>	return on assets: net income/ total assets
<i>FOREINGSALES</i>	foreign sales/total sales
<i>FINANCE</i>	(cash flows from operations-average cash flow from investing $t-3$ to cash flow from investing $t-1$)/current assets $t-1$
<i>FCF</i>	cash flows from operations- cash flow from investing
<i>LEV</i>	total debts /total assets
<i>BOARD</i>	log of number of board of directors
<i>OUTSIDEDIRECTOR</i>	number of outside directors / number of board of directors
<i>OUTSIDEAAUDITOR</i>	number of outside auditors / number of company auditors
<i>CEOOWNERSHIP</i>	the percentage of ownership in the firm held by the president
<i>DIRECTOROWN</i>	the percentage of ownership in the firm held by directors
<i>FOREIGNEQUITY</i>	number of shares held by the foreign investors / number of shares outstanding \times 100
<i>FINEQUITY</i>	number of shares held by financial institutions / number of shares outstanding \times 100
<i>OPINION</i>	a dummy variable with a value of one when the auditor expresses unqualified opinion and a value of zero otherwise.
<i>AUDITQUALITY</i>	a dummy variable with a value of one when a firm engages with Big 4 auditor and a value of zero otherwise.
<i>ACCRUALS</i>	total accrual = (net income after tax- extraordinary incomes + extraordinary losses)-operating cash flows
<i>TA</i>	$\Delta AR + \Delta INV + \Delta AP + \Delta tax payable + \Delta others + depreciation$

TABLE 4
Correlations Diagonal

	Fraud	GPM	GROWTH	SALESAR	GROCF	NWC	ROA	FOREIGN SALES	FINANCE	FCF	LEV	BOARD	OUTSIDE DIRECTOR	OUTSIDEAUDITOR	CEOOWNERSHIP	FOREIGNEQUITY	FINEQUITY	OPINION	AUDIT QUALITY	ACCRUALS	TA	
Fraud	1.000																					
GPM	0.04	1.000																				
GROWTH	0.10	0.09	1.000																			
SALESAR	0.07	0.19**	-0.17*	1.000																		
GROCF	0.00	0.00	0.00	0.16	1.000																	
NWC	0.18	0.26	0.12**	-0.07*	0.00	1.000																
ROA	0.00	0.00	0.00	0.00	0.00	0.00	1.000															
FOREINGSALES	0.78	0.16	0.06	0.00	0.00	0.00	0.00	1.000														
FINANCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000													
FCF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000												
LEV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000											
BOARD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000										
OUTSIDE DIRECTOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000									
OUTSIDEAUDITOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000								
CEOOWNERSHIP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000							
FOREIGNEQUITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000						
FINEQUITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000					
OPINION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000				
AUDIT QUALITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000			
ACCRUALS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000		
TA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.000	

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 3 for definition of each variable.

TABLE 5
Logit Regression Results for Fraud Firms and Non-Fraud Firms

Independent Variable	Estimated Coefficients	Standard Errors	Chi-Square Test	Pr>ChiSq
GPM	3.946	1.168	51.733	.001 ***
GROWTH	.005	.006	1.005	.421
ROA	-.094	.084	.910	.262
FOREINGSALES	-.014	.011	.986	.193
FINANCE	-4.514	1.218	.011	.000 ***
FCF	4.265	1.514	71.186	.005 ***
LEV	.305	.457	1.357	.504
BOARD	.920	.467	2.509	.049 **
OUTSIDEDIRECTOR	-2.704	.835	.067	.001 ***
OUTSIDEAUDITOR	-11.931	.908	.000	.000 ***
CEOOWNERSHIP	-2.047	1.478	.129	.166
FOREIGNEQUITY	1.119	1.094	3.061	.306
FINEQUITY	-.531	.695	.588	.445
OPINION	-9.177	1.127	.000	.000 ***
AUDITQUALITY	-.507	.352	.602	.149
ACCRUALS	1.782	.651	5.939	.006 ***
TA	2.021	1.850	7.543	.275
Pseudo R ²	322.59 ***			
Chi-Square Test of Model's Fit	2476.1951(0.0001)(17 degrees of freedom)			

For Variable Definitions, See TABLE 3 ; *, **, and *** indicate significance at p< 10 % , p< 5%, p<1%; t-value is based on White's (1980) sta