

Can the Fraud Triangle Explain Fraudulent Financial Statements? Evidence from Japan

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The reliability of the capital market in Japan has fallen due to accounting fraud that occurred at a prestigious firm in 2015. The number of cases of fraudulent financial reporting has increased in Japan (Nakashima and Ziebart 2019).¹ Why did these occur? First, the governance mechanisms and the internal control system did not function efficiently. Nakashima and Ziebart (2015) suggest that a weak governance structure and internal control systems were not able to make managers earnings management change even under the Financial Instruments and Exchange Act of 2008 (J-SOX).² Nakashima and Ziebart (2019) identified a possible relationship between fraud and governance mechanisms. Since fraudulent financial reporting is encompassed by earnings management (Ball 2009), one cause is considered to be deficiencies in internal control or weak governance structure.

Second, although the theory of fraud³ is taught in auditing courses in some institutes, forensic accounting, which developed in the U.S., is not widely taught in business degree programs at tertiary institutes in Japan. Furthermore, not all business administration departments or schools include auditing courses in their curriculums.

Studies to clarify a fraud mechanism and a method to detect fraud are urgently needed, and existing studies detect fraud in various ways such as a machine learning approach (Bao *et al.* 2019; Kondo *et al.* 2019) and financial ratio-based approach

¹ Ball (2009, 280) defines earnings management as managers' intervening in the reporting of their own financial performance and fraudulent financial reporting as knowingly failing to comply with GAAP and suggests that earnings management encompasses fraudulent financial reporting. Dechow and Skinner (2000, 239) indicate that there is a conceptual distinction between fraudulent financial reporting and earnings management that fall within GAAP, and that fraudulent accounting is regard as earnings management that explicitly violates GAAP. Dechow and Skinner (2000, 238) argue that financial fraud is an extreme form of earnings management and that fraudulent financial reporting occurs if there are opportunities such as a feasible internal controls system and weak governance mechanism. In the current study, I therefore consider feasible internal controls system and weak governance mechanism as one cause of fraudulent financial reporting.

² The Financial Instruments and Exchange Act of 2008 (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. The Act is a new legislation of internal controls reporting regulation for public firms that falls within the scope of the Financial Instruments and Exchange Law, which was replaced with the Financial Instruments and Exchange Law (Japan Times 2008) <https://www.japantimes.co.jp/news/2006/12/29/business/outline-of-the-j-sox-financial-rules/#.XuDSmUX7RPY>. Although this is not an exact Japanese version of SOX, the new regulation is called J-SOX since it was created by the influence of the U.S. Sarbanes-Oxley Act. The terminology of J-SOX is generally used in Japan after the media referred to the internal controls and reporting regulation as J-SOX. Therefore, this study uses the terminology of J-SOX regarding regulation.

³ IAS 240 (2009) defines fraud as an intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage.

Beneish, M.D. 1999; Skousen *et al.* 2009; Song *et al.* 2016). Schuchter and Levi (2013; 2015) consider the fraud triangle theory focusing on each factor. Hogan *et al.* (2008) and Trompeter *et al.* (2013) review the accounting literature regarding the fraud triangle. Trompeter *et al.* (2014) examine the non-accounting literature. Some studies explore how each factor of the fraud triangle theory influences the propensity of fraudulent financial reporting (Armstrong *et al.* 2010; Cohen *et al.* 2010; Ndofo *et al.* 2013).

This study is different from previous studies in the following ways. Beasley (1996) and Nakashima and Ziebart (2019) suggest that fraudulent financial reporting is associated with ineffective internal governance mechanisms. First, the current study can provide a comprehensive model that includes not only financial ratios but also governance information for detecting fraudulent financial statements. I provide evidence that not only incentive/pressure and opportunities influence such reporting but also attitudes/rationalization. Attitudes/rationalizations are unobservable and hard to measure; therefore, my study employs factors influencing a manager's discretionary behavior, such as an auditor's opinion, audit quality, and accruals, as a proxy of attitudes/rationalizations. I find that all three factors of the fraud triangle can explain fraudulent financial reporting; thus, the theory is supported by this empirical study. A detection model based on the fraud triangle will help regulators and auditors identify the fraudulent financial reporting of firms by applying an indicator for the red flags leading to the possibility of fraud.

Second, this study provides results regarding the effectiveness of the fraud triangle theory framework using Japanese public firm data. I used publicly available financial statements in which fraudulent firms had restated the amounts for analysis. Restatements are statements where earnings manipulation by a manager has been removed already. Song *et al.* (2016) employ the original data of fraudulent firms where managers have manipulated earnings. From the perspective of an investor's decision-making, Song *et al.*'s (2016) model is useful to predict accounting fraud before the fraud is officially detected.

On the other hand, my study uses restated financial statement data. I predict that fraudulent firms possess common innate characteristics and financial indicators even if they disclose their restated financial statements. There is a widespread assumption in the market that every firm discloses a fair financial statement. The common innate characteristics of the fraud firms can help investors, analysts, and regulators detect a fraudulent firm through publicly available data when they apply the indicator of the fraud triangle as a predictor of accounting fraud, even if they investigate past financial statements retrospectively.

Although Song *et al.* (2016) use original data, it is normally too difficult for researchers and analysts to obtain such data since public firms should disclose their restatement after they are required to do so when fraud is detected. Because we generally use only publicly available data for analysis, it is valuable for researchers and professionals to predict fraudulent firms using publicly available data.

Using Taiwanese data, Lou *et al.* (2009) examine whether the identified variable for each factor, incentives/pressures, opportunities, and attitudes/rationalizations, can predict fraudulent financial statements. Third, this study adds the feature of Japanese corporate culture and governance into the modified detection model based on the fraud triangle framework. The model includes specific features related to Japanese firms, such as governance and organizational structures in Japan. This model provides an indicator related to cultural dimensions that will be useful for regulators when investigating fraud.

The remainder of this article proceeds as follows. Section 2 reviews previous studies regarding the relationship between the fraud triangle and the occurrence of fraud. Section 3 describes the risk factors of the fraud triangle. The hypotheses are developed in section 4, while the research design is described in section 5. Section 6 discusses the empirical results. Section 7 summarizes and concludes this article.

Literature Review

There are substantial studies that examined whether each factor of the fraud triangle theory related to fraud. Free and Murphy (2015) interviewed the individuals convicted of fraud and found the key element of fraud. Dichev *et al.* (2013) and Nakashima (2019a) conducted a survey and interview with CFOs in the U.S. and Japan, respectively. Dichev *et al.* (2013) found that the incentives of earnings management are outside and inside pressure to hit earnings benchmarks (92.9%, 91%), and executives' career fears (88.6%). Nakashima (2019a) suggest that Japanese CFOs misrepresent earnings because there is inside pressure to hit earnings benchmarks (73.68%), outside pressure to hit earnings benchmarks (59.65%). Dichev *et al.* (2013) and Nakashima (2019a) did not conduct the archival study. There are archival studies on the association between earnings management and managerial incentives (Harris and Bromiley 2007; Armstrong *et al.* 2010; Suda 2000; Shuto 2010).

There were some empirical studies that financial statement fraud was associated with internal governance mechanisms as opportunities, one of the fraud triangles. Beasley (1996) found that the proportion of outside directors, board composition, and board size affected the likelihood of financial statement fraud. Nakashima and Ziebart (2019) 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 opportunities, one factor of

the fraud triangle.

Peasons (1995, 45) found 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) found that the fraudulent firms had significantly greater inventories relative to sales, were growing faster, and had a higher return on assets than non-fraudulent firms prior to the occurrence of fraud and that their model was useful to detect fraud.

Song *et al.* (2016) found that the model based on the Dechow (2011) model, which used accruals quality, performance, nonfinancial 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 explanatory 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 could predict financial statement fraud for fraudulent Malaysian firms. They found that the ability of the Dechow F-Score model (73.17%) was higher than the Beneish M-Score model (69.51%) and that the Dechow F-Score model better fit the fraudulent Malaysian 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. The Beneish M-model uses eight financial ratios to find the extent to which 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)⁴ examined whether a prediction model using 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 found that five Incentives/Pressures proxies and two opportunities proxies are significantly related to fraudulent financial statements, and found that rapid asset growth, increased cash needs and external financing positively

⁴ Mehta and Bhavani (2017, 706) found that the Beneish M-model (1999) 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.

related to the occurrence of fraud and provided evidence of effectiveness of the fraud triangle. They also indicated that ownership of shares and control of the board of directors were also associated with occurrence of fraud, but that the number of independent auditors on the audit committee was negatively related to the occurrence of fraud.

Free (2015) discusses the framework of the fraud triangle and reviews the studies regarding the fraud triangle. Crumbley and Ariail (2020) provide a four- component model that includes motivation, pressures, rationalization, and opportunity. Schuchter and Levi (2013) and Schuchter and Levi (2015) review the findings from the literature of the fraud triangle. De Clark (2017) discusses the fraud triangle through focusing on rationalization.

There are some survey studies and interviews that focused on incentives as one factor of the fraud triangle and found that managers misrepresent earnings due to inside and outside pressure. Also, there are substantial studies that analyze the association between fraud and one or two factors among the fraud triangles. This study examines whether a model that focuses on all three factors of the fraud triangle based on Skousen *et al.* (2009) can predict fraudulent financial statements. Although Skousen *et al.* (2009) conduct an empirical study that analyzes all three factors of the fraud triangle, they were not able to clarify rationalization factors.

Lou *et al.* (2009) prove that all three factors of the fraud triangle can predict fraudulent financial statements. The authors suggest that fraudulent financial reporting is positively correlated to the following: more financial pressure of a firm or supervisor of a firm, higher ratio of complex transactions, and more questionable integrity of a manager. They prove that all three factors of the fraud triangle can predict fraudulent financial statements. However, they examine risk factors only by applying the fraud triangle theory. My study employs the theory of planned behavior (Ajzen 1991).

Fraud Risk Factors of the Fraud Triangle Theory

Fraud is defined as an intentional act that results in a material misstatement in financial statements that are the subject of an audit in IAS 241 (2016)⁵. Following IAS 240, JICPA issues the Auditing Standard 240 (AS 240) stating that the auditor has a responsibility to plan and perform the audit to obtain reasonable assurance about whether the financial

⁵ The International Auditing Practice Committee (IAPC) of The International Federation of Accountants (IFAC) (currently The International Auditing and Assurance Standards Board: IAASB) issued International Standards on Auditing (ISA) 240 ‘the Auditors’ Responsibility to Consider Fraud in an Audit of Financial Statements’ in 2001. The IAASB approved the proposed revision of ISA 240 in 2004. Business Accounting Council (2013) issued Opinion on the Standard Setting to Address Risks of Fraud in an Audit. <https://www.fsa.go.jp/en/news/2013/20130411-1/01.pdf> JICPA (2015) adopts ISA 240 and issues a Statement on Auditing Standards entitled The Auditor’s Responsibility to Consider Fraud in an Audit of Financial Statements in 2015 (JICPA 2015). <https://www.fsa.go.jp/en/news/2013/20130411-1/01.pdf>

statements are free of material misstatements, whether caused by error or fraud (JICPA 2015, para. 02). 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), management 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 (JICPA 2015, para. 04).

AS 241 (2015) provides the following concept of the fraud risk factors based on Cressey's (1953) theory: Three conditions are generally present when fraud occurs. First, management or other employees have an *incentive* to commit fraud or are under *pressure to do so*, which provides them a reason. Second, circumstances exist (e.g., the absence of controls, ineffective controls, or the ability of management to override controls) that provide *opportunities* for 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).

The fraud risk factors of auditing standard (AS 240) are based on Cressy's (1953) fraud triangle theory. Cressy (1953) indicates that the fraud triangle has three factors: incentives/pressures, opportunities, and attitudes/rationalizations. Based on previous studies, I provide the rationale regarding why these variables are appropriate risk factors.

Incentives/Pressures

Financial Stability (SALESAR):

Persons (1995, 40) indicated that lower profit may give management an incentive to overstate revenues or understate expenses. Persons (1995, 40) and suggests that sales to accounts receivable, sales to total assets, and inventory to total sales are especially useful in fraud detection and Persons (1995, 41) and Skousen *et al.* (2009) employ these proxies as Incentives/Pressures. Summers and Sweeney (1998, 136–137) and Skousen *et al.* (2009, 10) indicate that accounts 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.

Growth (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 found that rapid growth is associated with fraud. Summers and Sweeney (1998, 136) suggest that unethical managers may be induced to misstate financial statements when growth slows or reverses in order to maintain the appearance of consistent growth and that rapid growth leads to weaknesses of

internal controls.

External Leverage (LEV, FINANCE, FCF):

Persons (1995, 40) indicates that if these income-increasing accounting policies are not sufficient to avoid a violation of debt covenants, then managers may be motivated to understate liabilities or overstate assets. Skousen *et al.* (2009, 8) suggests that managers feel pressure as a result of the need to obtain additional debt to stay competitive and that new financing may be necessary to expand plants and facilities. Dechow *et al.* (1996) found that 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 (ROA):

AS 241 (JICPA 2015) indicates the profitability or trend level expectations of investment analysts, institutional investors, significant creditors, or other external parties. Beasley (1996, 453) and Loebbecke *et al.* (1998, 10-11) document that managers manage earnings in order to meet or beat losses, negative earnings or the earnings target. Some studies found that managers manage earnings to avoid losses or decreases to meet the earnings benchmark (Burgstahler and Dichev, 1997; Suda and Shuto, 2008, 80). Earnings management is implemented to respond to the market's expectations (Suda *et al.* 2007, 34). Suda and Shuto (2008, 81) suggest that managers in Japan have an incentive to manage earnings to meet nonzero earnings to increase their compensation and avoid turnover.⁶

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)⁷ 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. Dichev *et al.* (2013, 4) suggest that CFOs feel that earnings

⁶ 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.

⁷ Graham *et al.* (2005) found 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.

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 sufficient power smooth the rate of income growth because they need to increase stockholder satisfaction to ensure 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.

Opportunities

Factors regarding opportunities are restraints that prevent or reduce occurrence of fraud. The following are the constraints that inhibit occurrence of fraud.

Nature of the Industry (FOREIGN SALES):

IAS 240 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.

IAS 240 provides that if significant operations located or conducted across international borders in jurisdictions where differing business environments and cultures exist, then fraud is likely. It appears that one of the indirect causes at Toshiba is the purchasing of Westinghouse Electric Corporation in the U.S. (Nikkei Asian Review, 2017).

Ineffective Governance (OUTSIDE DIRECTOR):

Klein (2002) indicates that boards and audit committees structured to be independent of management function best for the oversight of 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 fraudulent firms possess higher incentives and stronger CEOs along with weak monitoring. Ndofo *et al.* (2015) found not only that information asymmetries arising from industry- and firm-level complexities increase the possibility of accounting fraud, but also that aggressive monitoring by the audit committee reduces the possibility of reporting fraud.

Fama and Jensen's theory (1983) suggests that a higher percentage of outside directors increases the board's effectiveness as a monitor of management. There are some empirical studies showing that board composition was significantly associated with the occurrence of fraud (Beasley, 1996; Uzun *et al.* 2004; Chen *et al.*, 2006; Nakashima, 2016)

found that fraud is associated with the number of outside directors. Outside directors are expected to carry out the role of monitoring management.

Additionally, 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 the 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 earnings.⁸ Additionally, foreign ownership is expected to take on the role of oversight management. These two factors are the Japanese special features.

Internal auditors are expected to monitor management. The number of internal auditors should be used as a proxy for effective governance.

Thus, I predict that fraudulent firms have a smaller percentage of outside directors and that ownership by foreign investors and financial institutions cannot enhance governance.

Organizational Structure (CEOOWN):

AS 2401 (JICPA, 2015) indicates that it is the 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) found that the longer the CEO possesses a position of power, the greater the likelihood that the CEO can control his or her decisions. I predict that the occurrence of fraud is related to the number of executives that left the firm. Following Hofstede (1980), Japan has a higher score in power distance among the five cultural dimensions. It is likely that the stronger the CEO is, the less effective governance is inside the firm.

Attitudes/Rationalizations

The concept of rationalization has been discussed (Cohen *et al.* 2010; Free 2015; De Klerk 2017; Free and Murphy; Schuchter and Levi 2015). However, the issue is not yet inconclusive. Crumbley *et al.* (2017, 3–15) define rationalization as reframing such that, when a CEO is about to cheat, they will adjust the definition of cheating to exclude his or her actions. I define rationalization as *the rationale that a manager ascribes social and universal significance to his or her subjective decisions* in order to justify his or her misuses or mistakes. As mentioned in AS 240, attitudes/rationalizations include an interest by management in employing inappropriate means to minimize reported earnings for tax-motivated reasons, and low

⁸ 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.

morale among senior management, and the relationship between management and auditor is strained. It seems that attitudes/rationalizations refer to management's behavior.

According to Ajzen's (1991, 181) planned behavior theory, individuals' intention to perform a given behavior is assumed to capture the motivational factors that influence a behavior. Dechow and Skinner (2000, 238) suggest that financial fraud is an extreme form of earnings management in terms of managerial intent. Since managerial intent is unobservable (Dechow and Skinner 2000, 238), it is difficult to determine whether the managerial content includes deceit. In this study, I employ the proxies of attitudes/rationalizations as a manager's behavior. According Ajzen's (1991) planned behavior theory, manager's behavior includes their intention and managerial intention reflects managerial discretions.

Drucker (1993, 462) states that the proof of the sincerity and seriousness of management is uncompromising emphasis on integrity of character and argues that the character of the CEO and top management should be evaluated to determine whether they possess integrity. Lou *et al.* (2009) consider whether manager's integrity is questionable by measuring historical restate times.

Skousen *et al.* (2009, 66-67) indicate that rationalization is difficult to measure, and they include auditor changes, audit opinions, and accruals as proxies for rationalization related to managerial discretions.

Possible Managerial Discretion: Accruals (ACCRUALS, TA):

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). Francis and Krishnan (1999, 14) suggest that it is possible for higher accrual firms to issue a modified audit report for asset realization.⁹ Suppose that unfaithful managers do not possess integrity, I believe that unfaithful managers manage earnings by using accruals. Thus, I focus on a managerial discretion by gauging accruals.

Possible indirect associations with managerial discretions: Audit Quality (AUDIT QUALITY):

I employ the other proxies of attitudes/rationalizations as communication problems. As a communication issue, an audit opinion and audit quality are focused. If quality auditing is implemented, then a manager is afraid that fraudulent

⁹ Extant archival studies regarding earnings management estimate discretionary accruals and conduct the approach that discretionary accruals is a metrics that summarize manager's discretionary behavior (Asano and Shuto, 2007, 87). Discretionary accruals are generally computed by non-discretionary accruals from total accruals following Jones model, modified Jones model, CFO modified model (Suda, 2000). Song *et al.* (2016, 25) use various discretionary accruals as accruals quality.

financial statements would be detected. To organize a firm's internal controls is the universal responsibility of a manager. However, there is a difference in the internal control auditing between Western countries and Japan. While an auditor audits a firm's internal control system directly in Western countries, an auditor just audits whether the internal control report that is prepared by the manager is presented fairly based on "the three pieces" given by the manager, which include a business description, a figure of the workflows, and risks and controls (Financial Service Agency, 2007, 17). An auditor should not audit a firm's internal control systems directly in Japan. In other words, while the evaluation of the effectiveness of internal control over financial reporting is the responsibility of a manager, the managerial assessment on the effectiveness of internal control is the responsibility of an auditor in Japan (Financial Service Agency, 2007, 5).

Therefore, if managers possess an incentive to manipulate financial numbers, and the manager can access the internal control system, then the firm's internal control system itself does not work (Nakashima, 2018a). Quality auditing does not help to enhance the firm's internal controls system for reducing opportunities in Japan. A higher quality auditing might deter a manager from considering committing fraud. Therefore, the Big Four,¹⁰ as a proxy of audit quality, restrains a manager's unethical behavior. Several studies suggest that there is an association between audit quality and accounting fraud. Becker *et al.* (1998) found 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 result suggests that the Big Six constrain earnings management, and there is an association between higher audit quality and earnings management. Lennox and Pittman (2010) show that the occurrence of fraudulent financial reporting is consistently lower for Big Five clients.

Audit Opinion (OPINION):

There are some empirical studies regarding 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 the absolute values of the discretionary accruals produced by a model that indicates earnings management are, the higher the probability of a qualified audit report (Bartov *et al.* 2001). Francis and Krishnan (1999) show that auditors are more likely to issue modified audit reports for high-accrual firms. Francis and Krishnan (1999, 141) assert that auditors can compensate for the intrinsic uncertainty of high-accrual situations by lowering their threshold for issuing modified reports for asset realization and ongoing concern problems, lessening the likelihood of failing to issue a

¹⁰ 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 PricewaterhouseCoopers.

modified report when it is appropriate to do so.

There are four types of audit reports: unqualified opinion, qualified opinion, adverse opinion and disclaimer. In the case of material doubts about an ongoing concern, although auditors conclude that it is appropriate to disclose the information, if there is an event and situation where users possess material doubts about an ongoing concern, it is necessary to provide *additional information*¹¹ to the audit reports (JICPA 2006, 14. para. a). I predict that it is likely that an unqualified opinion with additional information might embody the doubt regarding an ongoing concern. Here, I use the auditor's opinion as an indirect observation of a manager's discretion¹² as a proxy of rationalization in this study.¹³ Table 1 presents the variables to reflect the fraud risk factors of the fraud triangle.

¹¹ JICPA (2006, 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.

¹² 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 difficult for us to distinguish real transaction of cash flows and real management through cash flows. In this paper, I focus on accruals management as rationalization.

¹³ AS 241 (JICPA, 2015, 1) states that an auditor conducting an audit in accordance with ISAs is responsible for obtaining reasonable assurance that the financial statements taken as a whole are free from material misstatement, whether caused by fraud or error and that owing to the inherent limitations of an audit, there is an unavoidable risk that some material misstatements of the financial statements may not be detected, even though the audit is properly planned and performed in accordance with the ISAs. Summers and Sweeney (1998) describe that most auditor changes are for legitimate reasons, including 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.

TABLE 1
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):				
Risk Factors	Terminologies to Reflects Risk Factors	Financial Ratio		Prior Studies
— High degree of competition or market saturation, accompanied by declining margins	Financial Stability/ Liquidity	GPM	gross profit margin	Skousen et al. (2009)
— Rapid growth or unusual profitability, especially compared to that of other companies in the same industry		GROWTH	changes in sales - industry average change in sales	Skousen et al. (2009) 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	Extremal Pressure for Obtaining Additional Debt	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		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 equity		CEO OWNERSHIP	the percentage of ownership in the firm held	
— Significant portions of their compensation (for example, bonuses, stock options, and earning-out arrangements)				Beneish (1999); Skousen et al. (2009)
— 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	Nakashima (2017)
— 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)

Attitudes/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 		AUDITOPINION	a dummy variable with a value of one when the auditor expresses unqualified opinion and a value of zero otherwise.	Skousen et al. (2009)
		AUDITQUALITY	a dummy variable with a value of one when the auditor expresses unqualified opinion and a value of zero otherwise.	Beckers et al. (1998); 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/Firm Characteristics	ACCRUALS	total accrual = (net income after tax-extraordinary incomes + extraordinary losses)-operating cash flows	Skousen et al. (2009); Song et al. (2016)
<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 • 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 • Excessive interest by management in maintaining or increasing the entity's stock price or earnings trend • A practice by management of committing to analysts, creditors, another third parties to achieve aggressive or unrealistic forecasts • Management failing to correct known significant deficiencies or material weaknesses in internal control on a timely basis • An interest by management in employing inappropriate means to minimize reported earnings for tax-motivated reasons • Recurring attempts by management to justify marginal or inappropriate accounting on the basis of materiality • 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 	Managerial Discretion	TA (Total accruals)	$\Delta AR + \Delta INV + \Delta AP + \Delta tax payable + \Delta others + depreciation$	Skousen et al. (2009)
<p>Notes: Following fraud Risk Factors from IAS240, I list up the financial ratios that reflect the factor respectively based on the previous studies.</p>				

4. Hypotheses Development

The fraud triangle is a framework to explain the occurrence of fraud that was 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 241 indicates that risk factors consist of incentives/pressures, opportunities, and rationalization (JICPA 2015). 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. Opportunities 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 and excessive nonfinancial management participation (JICPA 2015).

Cressy's theory (1953) provides that, when incentives/pressures, opportunities, and attitudes/rationalizations coexist, fraud occurs. There are some archival studies to detect financial statement fraud by using the fraud triangle framework. I predict that, since fraudulent firms possess weak internal control systems and feasible governance mechanisms, they show a red flag 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 fraudulent financial statements by testing the following premise using the prediction model based on Skousen *et al.* (2009). The three risk factors of the fraud triangle are related to fraudulent financial statements.

$$FRAUD_t = f(\theta_0 Incentives/Pressures_{t-1}, \theta_1 Opportunities_{t-1}, \theta_2 Rationalization_{t-1})$$

where,

Incentives/Pressures is the degree to which the person in authority has the motivation to commit fraud, opportunities is the degree to which conditions are such that fraud could be committed due to feasible governance or defective internal control systems, and 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 Incentives/Pressures or Opportunities or Rationalization = 0, then Fraud = 0.

A rationale whether the factors based on the fraud triangle, incentive, opportunities, and attitudes/rationalizations that reflects financial ratios respectively should be shown in this model. The financial ratios that is related to each factor need to be associated with fraud. If all three of these factors exist in a given situation, then 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.

Fraud risk factors of these standards (AS 240) are based on the fraud triangle (Cressey 1953). According to AS 240

(JICPA 2015), Consideration of Fraud in a Financial Statement Audit, risk factors are classified into incentives/pressures, opportunities, and attitudes/rationalizations (JICPA 2015).¹⁴ Financial stability or profitability threatened by economic, industry, or entity-operating conditions provides incentives; the nature of industry or the entity's operations provides opportunities; and risk factors that allow those in charge of governance, management, or employees to engage in or justify fraudulent financial reporting provide scope for attitudes/rationalizations (JICPA 2015). I therefore formulate the following hypothesis:

H1: The three factors of the fraud triangle, incentives/pressures, opportunities, and attitudes/rationalizations, are associated with fraudulent financial statements and can predict fraudulent financial statements effectively.

In reality, a manager feels pressure to meet goals (Graham *et al.* 2005; Suda and Haneda 2007). If a firm or a manager possess incentives/pressures to commit fraud, it is likely they will do so. Financial stability or profitability are threatened by economic, industry, or entity operating conditions. Excessive pressure exists for management to meet the requirements or expectations of third parties. Information available indicates that management is threatened by the entity's financial performance (JICPA 2015, 23). Therefore, I formulate the following hypothesis 1(a):

H1a: Risk of fraudulent financial reporting is identified when a firm's financial stability or profitability is threatened by economic conditions or a manager faces excessive pressure to meet earnings targets or debt covenant requirements.

If a firm or a manager experience conditions or circumstances in which internal control systems or governance do not function efficiently, they are likely to commit fraud. The nature of the industry or the entity's operations provides opportunities to engage in fraudulent financial reporting (JICPA 2015, 26). There is ineffective monitoring of management. Therefore, I formulate the following hypothesis 1(b):

H1b: Risk of fraudulent financial reporting is identified when internal control of a firm is not well organized and monitoring management is ineffective.

The auditor may not be able to observe risk factors that reflect attitudes/rationalizations by those charged with governance, management, or employees that allow them to engage in and/or justify fraudulent financial reporting. Nevertheless, the auditor who becomes aware of the existence of such information should consider it in identifying the risks

¹⁴ There are two types of fraud relevant to the auditor's consideration: fraudulent financial reporting and asset misappropriation. In this paper, I focus on risk factors of the fraudulent financial reporting.

of material misstatement arising from fraudulent financial reporting (JICPA 2015). I therefore develop the following hypothesis 1(c):

H1c: Risk of fraudulent financial reporting is identified when a manager can justify such reporting.

If there are no sufficient Communication, implementation, support, or enforcement of the entity's values or ethical standard by management or management communicate inappropriate values or ethical standards are not effective, attitudes/rationalizations of management can be identified as risk fraud factors (JICPA 2015, 27). If a manager fails to communicate the firm's value inside the firm or communicate inappropriate values, this situation leads to deficiencies in internal controls, and auditors provide an opinion regarding the deficiencies. Thus, I formulate the hypothesis 1(d):

H1d: Risk of fraudulent financial reporting is identified when communication by managers is not effective.

5 Research Design

5.1. Fraudulent Firm Selection and Pair Sample

The 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 fraudulent firm sample disclosed that inappropriate accounting impacted the prior financial statements or would have an impact on their future annual reports that were issued from April 2007 to March 2015 through the Tokyo Shoko Research (TSR) Investigation Report (Tokyo Shoko Research 2016). As step 1, I confirm these firms as my initial sample of fraudulent firms. As step 2, I eliminate the four financial institutions. As step 3, I remove the two firms that prepare financial statements following the U.S. GAAPs and the eleven firms that applied IFRS in order to compare the financial statement data. The final firms comprise 150 fraudulent firms. Table 2 reports the sample selection.

TABLE 2
Sample Selection

Selection Criteria	Number of Observation
The firms that 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

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

To develop a pair sample of non-fraudulent firms, I matched them based on industry and size (total assets). Table 3 presents sample statistics for the mean and median for fraudulent and non-fraudulent firms. The results of t-tests show insignificant differences between the two samples.

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

Variable	Fraud Firms (n=1,050)		Non-Fraud Firms (n=1,050)	
	Mean	S.D	Mean	S.D
<i>TOTAL ASSETS</i>	265,892.93	649,817.70	210,527.00	520,526.44
<i>SALES</i>	281,441.01	686,228.37	222,981.74	560,669.22

5.2. Data

The data are obtained from Nikkei NEEDS. Nikkei data is a retroactive modified financial statement used when restatement data is disclosed by the firm. I use the restated financial statement data from the Nikkei database. Palepu and Healy (2013, 8-13) state that an analyst who encounters biased accounting has two options as follows: either to adjust current earnings and book values to eliminate managers' 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 managers' biases.¹⁵ The prediction model of the fraud triangle helps financial statement

¹⁵ 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.

users, such as investors, creditors, analysts, or regulators, to predict fraudulent financial statements through the firm's innate characteristics, not through managers' manipulations.

6 Empirical Results

6.1. Univariate Analysis

I compare two variables using t-tests and Wilcoxon rank-sum tests of the differences. Table 4 shows the descriptive statistics for the fraudulent firms and non-fraudulent firms and the 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 fraudulent firms have a smaller ratio and a smaller amount in *ROA*, *FINANCE*, and *FCF*. While the differences in financial stability 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 opportunities factors, such as *BOARD*, *OUTSIDEDIRECTOR*, *OUTSIDEAUDITOR*, and *CEOOWNERSHIP*, between fraudulent firms and non-fraudulent firms. A difference in governance, such as the number of outside directors, is consistent with Beasley (1996). In addition, *OPINION*, *AUDITQUALITY*, and *ACCRUALS* as rationalization factors differ between fraudulent and non-fraudulent firms significantly. This difference is not consistent with Skousen *et al.* (2009). I find that the fraudulent firms have greater accruals than non-fraudulent firms. This result suggests that the earnings quality of fraudulent firms is lower than the earnings quality of non-fraudulent firms.

TABLE 4
Descriptive Statistics of Factors for the Fraud Triangle for Fraud Firms and Non-Fraud Firms (2007-

Factor	Fraud Firms (n=1,050)		Sign	Non-Fraud Firms (n=1,050)		t-value	significance
	Mean	S.D.		Mean	S.D.		
<u>Incentives/Pressures</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>FOREIGNSALES</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>Opportunities</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>OUTSIDEAUDITOR</i>	0.6697	0.1596	>	1.5200	0.3421	-72.9500	0.0000 ***
<i>CEOOWNERSHIP</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
<i>FINEQUITY</i>	0.1729	0.1467	<	0.2587	1.8243	-1.5183	0.1291
<u>Attitudes/Rationalizations</u>							
<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.

GPM gross profit margin =subtracting cost of goods sold (COGS) from total sales and dividing that number by total

GROWTH $\frac{\text{sales}_t - \text{sales}_{t-1}}{\text{sales}_{t-1}}$

changes in sales - industry average change in sales

SALESAR sales / accounts receivable

OIOCF operating income-cash flows from operations/total assets

NWC average of net working capital for two years; (current assets-current liabilities+current assets-current liabilities-1)/total assets

ROA return on assets: net income/ total assets

FOREIGNSALES foreign sales/total sales

FINANCE (cash flows from operations-average cash flow from investing $_{t-3}$ to cash flow from investing $_{t-1}$)/current assets $_{t-1}$

FCF cash flows from operations- cash flow from investing

LEV total debts /total assets

BOARD log of number of board of directors

OUTSIDEDIRECTOR number of outside directors / number of board of directors

OUTSIDEAUDITOR number of outside auditors / number of company auditors

CEOOWNERSHIP the percentage of ownership in the firm held by the president

DIRECTOROWN the percentage of ownership in the firm held by directors

FOREIGNEQUITY number of shares held by the foreign investors / number of shares outstanding $\times 100$

FINEQUITY number of shares held by financial institutions / number of shares outstanding $\times 100$

OPINION a dummy variable with a value of one when the auditor expresses unqualified opinion and a value of zero otherwise.

AUDITQUALITY a dummy variable with a value of one when a firm engages with Big 4 auditor and a value of zero otherwise

ACCRUALS total accruals = (net income after tax- extraordinary incomes + extraordinary losses)-operating cash flows

TA $\Delta AR + \Delta INV + \Delta AP + \Delta \text{tax payable} + \Delta \text{others} + \text{depreciation}$

6.2. The Model to Detect Fraudulent Financial Statements

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

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

H1:

$$FRAUD_t = \beta_0 + \beta_1 SALESAR_{t-1} + \beta_2 GROWTH_{t-1} + \beta_3 ROA_{t-1} + \beta_4 FOREINGSALES_{t-1} + \beta_5 FOREINGSALES_{t-1} + \beta_6 BOARD_{t-1} + \beta_7 BOARD_{t-1} + \beta_8 OUTSIDEDIRECTOR_{t-1} + \beta_9 OUTSIDEDIRECTOR_{t-1} + \beta_{10} CEOOWNERSHIP_{t-1} + \beta_{11} OPINION_{t-1} + \beta_{12} AUDITQUALITY_{t-1} + \beta_{13} ACCRUALS_{t-1} + \beta_{14} TA_{t-1} + \beta_{15} INDUSTRY_{t-1} + \beta_{16} YEAR_{t-1} + \beta_{17} SIZE_{t-1} + \varepsilon$$

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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Incentives/Pressures

<i>GROWTH</i>	changes in sales - industry average change in sales
<i>SALESAR</i>	sales/accounts receivable
<i>ROA</i>	Return on assets: net income/ total assets

Opportunities

<i>FOREINGSALES</i>	foreign sales/total sales*100
<i>BOARD</i>	log of number of board of directors
<i>OUTSIDEDIRECTOR</i>	number of outside directors / numbers of board of directors
<i>CEOOWNERSHIP</i>	percentage of ownership in the firm held by the president

Attitudes/Rationalizations

<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
<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.

Control Variables

<i>INDUSTRY</i>	The firm's Sales/OperatingIncome (OI)- IndustryAverage Sales/OI.
<i>YEAR</i>	auto-dummies for each of the year
<i>SIZE</i>	firm size = Sales/Total Assets

Note: Total assets is generally used as control variables, since total asset is used for deflators for variables, sales is used as a control variable of firm size in this study.

6.3. Hypothesis Test

To test working hypotheses 1a, 1b, and 1c, I conduct correlations and logistic regression analysis.

6.3.1 Empirical Results 1a: Incentives/Pressures

Correlation analysis is implemented in order to examine whether fraud is correlated to the factors of the fraud triangle. Table 5 presents the correlation coefficient between fraud and the factors of firm characteristics and governance mechanisms. With regard to the correlation coefficient of *FRAUD* and firm characteristics, the Pearson (Spearman) correlation of *FRAUD* and *GPM*, *ROA*, *SALESAR*, *FOREIGNSALES*, *FINANCE*, *FCF* are -.054(-.041), -.109(-.378), -.062(-.039), -.294(-.464), -.150 (-.366) significant, respectively.

I examine the association between fraud and the factors through logistic regression. Table 5 reports the results of the logistic cross-sectional regression analysis for fraudulent firms and non-fraudulent firms. The chi-squared test of the model showed 0.587, which is significant at the 0 level. While the coefficients for *LEV* is 0.593 positively and statistically significant, the coefficient for *ROA* is -0.390 and has a significantly negative association with fraud, suggesting that the

Incentives/Pressures factors affect the likelihood of financial statement fraud. These results indicate that risk factors regarding Incentives/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.

TABLE 5
Correlations Diagonal

	FRAUD	GPM	ROA	SALESAR	FOREIGNSALES	S	FINANCE	FCF	BOARD	DIRECTOR	OUTSIDE	OUTSIDEAUDITOR	CEOOWNERSHIP	OPINION	AUDITQUALITY	ACCRAUALS	S	TA	INDUSTRY	YEAR	SIZE
FRAUD	1.000	-.054 [†]	-.109 ^{**}	.057 ^{**}	-.062 ^{**}	-.294 ^{**}	-.150 ^{**}	.036	.047 ^{**}	-.847 ^{**}	.068 ^{**}	-.577 ^{**}	.066 ^{**}	.230 ^{**}	.010	.004	.000	.098 ^{**}	.000	.000	.000
GPM		1.000	.075 ^{**}	.130 ^{**}	-.048 [†]	.141 ^{**}	.067 ^{**}	-.198 ^{**}	.121 ^{**}	.055 [*]	.297 ^{**}	.034	-.100 ^{**}	.031	-.167 ^{**}	.132 ^{**}	.013	-.186 ^{**}	.000	.000	.000
ROA			1.000	.000	-.047 [†]	.062 ^{**}	.076 ^{**}	.047 ^{**}	.030	.065 ^{**}	-.025	.027	.038	.055 [*]	-.035	.007	.073 ^{**}	-.044 [†]	.000	.000	.000
SALESAR				1.000	-.100 ^{**}	.043	.026	-.069 ^{**}	-.077 ^{**}	-.065 ^{**}	.125 ^{**}	-.016	.044 [*]	.065 ^{**}	-.009	.118 ^{**}	.002	.132 ^{**}	.000	.000	.000
FOREIGNSALES					1.000	.071 ^{**}	.071 ^{**}	.162 ^{**}	-.017	.052 [*]	-.141 ^{**}	.049 [*]	.058 ^{**}	-.032	.062 ^{**}	-.056 [*]	-.031	-.139 ^{**}	.000	.000	.000
FINANCE						1.000	.770 ^{**}	.067 ^{**}	-.039	.270 ^{**}	.031	.206 ^{**}	.030	-.096 ^{**}	-.050 [*]	.015	-.016	-.053 [†]	.000	.000	.000
FCF							1.000	.022	-.007	.154 ^{**}	.068 ^{**}	.110 ^{**}	.024	-.081 ^{**}	-.173 ^{**}	.023	-.009	-.041	.000	.000	.000
BOARD								1.000	-.020	-.033	-.225 ^{**}	-.028	.219 ^{**}	.028	.061 ^{**}	-.016	-.204 ^{**}	-.055 [†]	.000	.000	.000
OUTSIDEDIRECTOR									1.000	-.149 ^{**}	-.027	-.018	-.102 ^{**}	-.070 ^{**}	-.037	.051 [*]	.095 ^{**}	.084 ^{**}	.000	.000	.000
OUTSIDEAUDITOR										1.000	-.094 ^{**}	.484 ^{**}	-.058 ^{**}	-.203 ^{**}	-.011	-.013	-.013	-.089 ^{**}	.000	.000	.000
CEOOWNERSHIP											1.000	-.054 [*]	-.078 ^{**}	.021	-.180 ^{**}	.114 ^{**}	-.011	.023	.000	.000	.000
OPINION												1.000	-.013	.000	.334	.000	.627	.297	.000	.000	.000
AUDITQUALITY													1.000	-.021	-.113 ^{**}	-.019	-.019	.039	-.031	.000	.000
ACCRAUALS														1.000	-.046 [*]	.052 [*]	-.027	-.074 ^{**}	.000	.000	.000
TA															1.000	-.124 ^{**}	.039	.060 ^{**}	.000	.000	.000
INDUSTRY																1.000	-.054 [*]	.015	.000	.000	.000
YEAR																	1.000	.051 [*]	.000	.000	.000
SIZE																		1.000	.018	.000	.000

Note: 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. INDUSTRY: the firm's Sales/OperatingIncome (OI)- IndustryAverage Sales/OI, YEAR: auto-dummy for each of the year, SIZE: Sales/Total Assets.

6.3.2 Empirical Results 1b: Opportunities

With regard to the correlation coefficient of *FRAUD* and governance mechanisms, the Pearson and Spearman correlation of *FRAUD* and *BOARD*, *OUTSIDEDIRECTOR*, *OUTSIDEAUDITOR* are 0.036(0.041), 0.047(0.051), -0.847(-0.847) respectively, and all are significant.

Table 6 provides the results regarding the association between fraud and corporate governance attributes. Table 5 presents a significantly positive association between fraud and *BOARD*, *OUTSIDEDIRECTOR*, and *CEOOWN* suggesting that board of directors, outside directors and management do not work to suppress fraud as opportunities factors. To test working hypothesis 1b, I focus on the association of governance proxies and fraudulent financial statements between fraudulent firms and non-fraudulent firms. Thus, this supports 1b. The results of the regression suggest that ineffective governance is significantly associated with fraudulent financial statements.

6.3.3. Empirical Results 1c: Attitudes/Rationalizations

With regard to the correlation coefficients of the *fraud* and rationalization factors, the Pearson and Spearman correlation of *FRAUD* and *OPINION*, *AUDITQUALITY*, *ACCRUALS* are -0.577(-0.577), 0.066(0.066), 0.230 respectively, and all are significant.

This significant suggests that these factors of rationalization affect the likelihood of financial statement fraud. Thus, this supports H1c. On the other hand, there is no association between fraud and *TA* (-.099). This result suggests that fraud is negatively correlated with rationalization factors such as *OPINION* and *AUDITQUALITY*, and with rationalization factors such as *ACCRUALS* positively.

Table 6 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 when using restated data. This result suggests that it is likely that fraudulent 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 fraudulent firms and non-fraudulent firms. *OPINION*, *AUDITQUALITY* and *ACCRUALS* are associated with fraudulent financial reporting. Additionally, Table 6 shows that the coefficient for *AUDITQUALITY* is -.583 and significant, suggesting that it is likely possible for even high audit quality to affect a manager's discretion. Thus, this result 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, there is a significant association between the uses of high-accruals and modified opinions for asset realization uncertainties and for ongoing concern problems, and the results of the regression suggest that there is a possibility that rationalization is related to fraudulent financial reporting through managerial decision-making.

Taken together, hypothesis 1 is supported since the three working hypotheses are supported through the correlations and logistic regression analysis. So, the three factors of the fraud triangle probably can apply to fraud prediction for the public firms in Japan.

TABLE 6
Logit Regression Results for Fraud Firms and Non-Fraud Firms (n=2015)

	B	S.E.	Wald	df	Significance	Exp(B)	EXP(B) 95% Confidece Interval	
							Lower	Upper
<u>INCENTIVES/PRESSURES</u>								
<i>GPM</i>	3.907	1.193	10.732	1	.001 ***	49.765	4.805	515.407
<i>ROA</i>	-.117	.081	2.067	1	.151	.890	.759	1.043
<i>SALESAR</i>	.002	.002	0.426	1	.514	1.002	.997	1.006
<i>FOREIGNSALES</i>	-.011	.011	0.940	1	.332	.989	.968	1.011
<i>FINANCE</i>	-4.641	1.284	13.058	1	.000 ***	.010	.001	.120
<i>FCF</i>	4.441	1.544	8.275	1	.004 ***	84.846	4.117	1748.452
<u>OPPORTUNITIES</u>								
<i>BOARD</i>	1.126	.469	5.763	1	.016 **	3.084	1.230	7.736
<i>OUTSIDEDIRECTOR</i>	-2.538	.846	9.004	1	.003 ***	.079	.015	.415
<i>OUTSIDEAUDITOR</i>	-11.860	.884	180.071	1	.000 ***	.000	.000	.000
<i>CEOOWNERSHIP</i>	-1.966	1.561	1.585	1	.208	.140	.007	2.988
<u>ATTITUDES?RATIONALIATIONS</u>								
<i>OPINION</i>	-9.423	1.127	69.920	1	.000 ***	.000	.000	.001
<i>AUDITQUALITY</i>	-.618	.349	3.129	1	.077 *	.539	.272	1.069
<i>ACCRUALS</i>	2.164	.728	8.830	1	.003 ***	8.704	2.089	36.270
<i>TA</i>	-.051	1.776	.001	1	.977	.950	.029	30.844
<u>CONTROLS</u>								
<i>INDUSTRY</i>	-.003	.009	.127	1	.721	.997	.980	1.014
<i>YEAR</i>	.098	.052	3.519	1	.061 *	1.103	.996	1.223
<i>SIZE</i>	.249	1.173	2.080	1	.149	1.283	.914	1.801
<i>Constant</i>	18.266	1.849	97.645	1	.000 ***	85684730.518		
Pseudo R ²	312.622 ***							
Chi-Square Test of Model's Fit	696.679 (0.0001)(8 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.								

7 Conclusions and Future Research

I provide evidence from Japan by investigating whether factors based on the fraud triangle theory are the cause of fraudulent financial reporting by using a sample of fraudulent firms and a pair sample in Japan. The following are my findings: First, univariate analysis results suggest that there is a significant difference in *GPM*, *SALESAR*, *ROA*, *FOREIGNSALES*, *FINANCE*, and *FCF* as Incentives/Pressures factors between fraudulent firms and non-fraudulent firms.

Governance factors, such as *BOARD*, *OUTSIDEDIRECTOR*, *OUTSIDEAUDITOR* and *CEOOWNERSHIP* as the opportunities, differ between fraudulent firms and non-fraudulent firms. There are also differences in rationalization factors, such as *OPINION*, *AUDITQUALITY*, and *ACCRUALS*, between fraudulent firms and non-fraudulent firms.

Second, the results of the logistic regression show that *ROA* and *LEV* as incentives/Pressures; *BOARD* and *OUTSIDEDIRECTOR* as opportunities; and *OPINION*, *AUDITQUALITY*, and *ACCRUALS* as attitudes/rationalizations, all affect fraudulent financial reporting. The incentive factors, such as financial targets and profitability, and the opportunities factors, such as ineffective monitoring, are consistent with Skousen *et al.*'s (2009) results. Board of directors and outside directors do not work as restraint of fraud in Japan. This result is consistent of the results of Nakashima (2019b). Board of directors and outside directors are appointed through management's connection. The theory of house preferred than justice for them in Japan (Mito 1991) and to sacrifice themselves for the firm is a rationale of justification. They cannot work as a professional nor accuse fraud. If they accuse fraud, their accusation is considered as a betrayal and they would be removed from the firm.

The results of the logistic cross-sectional regression analysis suggested that all three factors of incentives/pressures, opportunities, and attitudes/rationalizations affect the likelihood of fraudulent financial statements. The results of the regression analysis suggest that financial targets and profitability as incentives/pressures, ineffective governance as opportunities, and accruals and opinion as attitudes/rationalization are significantly associated with fraudulent financial statements. Based on these results, it seems that fraudulent firms that committed fraud focusing on accruals lead to the decrease in accruals quality. The results of the regression analysis suggest that it is possible that higher *ACCRUALS* and *OPINION* (unqualified audit reports with opinions) can help users to predict fraud.

To date, extant studies have conducted analyses to support the fraud triangle, and a few studies suggest that the rationalization factors affect fraudulent financial statements. This affect may be the first study to support the rationalization factor of the fraud triangle. My study documents a significant association between accruals and fraud by employing publicly available restated data. This association suggests that we can find the firms with occurrences of fraud by applying the indicator of accruals.

This study has some 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 total accruals as a proxy of rationalization. In the next step, it is necessary to use variables for accruals

management and real management as a proxy for rationalization.

When I focus on Toshiba's fraud, apparently fraud may come from a manager's desires for future career consequences, such as a position at Keidanren. Therefore, a manager's career concerns 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 of managers to measure their psychological aspects through a questionnaire. It is necessary to examine the relationship between a manager's psychological factors and the occurrence of fraud.

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