Columbia Business School
AT THE VERY CENTER OF BUSINESS™
Center on Japanese Economy and Business

CENTER ON JAPANESE ECONOMY AND BUSINESS

日本経済経営研究所

Working Paper Series

Sept. 17, 2018, No. 366

Earnings Management and Internal Control in Bank-Dominated Corporate Governance: Evidence from Japan

Hideaki Sakawa and Naoki Watanabel

This paper is available online at www.gsb.columbia.edu/cjeb/research

COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK

Earnings Management and Internal Control in Bank-dominated Corporate Governance: Evidence from Japan

Hideaki Sakawa*
Nagoya City University/Columbia Business School

Naoki Watanabel
Nagoya City University

ABSTRACT

We examine the relationship between internal governance and earnings management in Japanese listed firms. Post the recent accounting frauds in large companies such as Olympus Corp. and Toshiba Corp., Japanese internal governance systems have also been widely criticized. Different from the US and UK, Japan is known as bank-dominated corporate governance system. We predict that the bank-client relationship is expected to mitigate opportunistic earnings management by mitigating the degree of information asymmetry, which is a main cause of agency problems arising from debt contracts. Our results show that bank-appointed audit board members mitigate managerial earnings management. Furthermore, neither outside directors nor audit committees (ACs) are helpful to decrease opportunistic managerial earnings management. Our findings imply that a lender monitoring system, through audit board members, could contribute by substituting the monitoring role of outside directors and ACs.

Keywords: Auditing; Japan; Agency Theory; Corporate Governance

* The authors are grateful to Hugh Patrick, David Weinstein, Takatoshi Ito, Yiting Cao, Masahiro Endoh, Naru Hagiwara, and participants of VF seminar at CJEB and American Accounting Association 2017 Annual Meetings for their insightful comments. This research is financially aided by the Grant-in-Aid for Young Scientists (A) (MEXT/JSPS KAKENHI Grant Number 17H04784), the Grant-in-Aid for Scientific Research (C) (MEXT/JSPS KAKENHI Grant Number 17K03695), and the Grant-in-Aid for Scientific Research (B) (MEXT/JSPS KAKENHI Grant Number 17KT0036).

INTRODUCTION

Corporate governance mechanisms contribute to the alignment of the interests of managers with the interests of shareholders by enhancing the reliability of financial information (Watts and Zimmerman 1986). Audit quality is a central issue to protect well-functioned capital market. In the early 21st century, several corporate financial scandals, such as those involving Enron or World.com, undermined the confidence of the US capital markets (Chan, Farrell, and Lee 2008). After the recent accounting scandals of Olympus and Toshiba, internal corporate governance systems and audit quality in Japan have also been widely criticized by practitioners and the media (Financial Times 2007; Financial Times 2012a; Financial Times 2015; etc.).

After these corporate scandals of the US, an international trend has prevailed for development and implementation of corporate governance mechanisms to address the opportunistic behaviors that have assumed investors' credibility with respect to financial information. Japanese audit quality has been reformed to improve. In 2006, corporate governance reports are required to submit for listing firms at Tokyo Stock Exchange (Listing Standards of Tokyo Stock Exchange). In 2008, publicly listed firms have a duty of submitting the submission of "*Internal Control Report*" (*Financial Instruments and Exchange Act* Article 24-4-4).

Although the recent Japanese accounting scandals results in doubts about the audit quality of publicly listed firms, no studies have examined the association between audit quality

and internal control systems. We address the empirical questions whether or not Japanese internal control systems result in lower audit quality. We also extend banking literature by examining whether or not banking relationships are helpful to enhance the audit quality based on previous studies. In addition, we investigate whether bank-appointed audit board member maintain audit quality. Different from Anglo-American internal control systems, audit board members (or *Kansayaku*) have a strong authority, such as the validity of accounts, under Japanese corporate law (Aoki et al. 1994).

Previous literatures imply that auditing role of credible accounting information is a way of mitigating agency problems (Jensen and Meckling 1976) and higher quality of financial reporting lead to reducing information asymmetry (Datar et al. 1991). In the US, board structures with higher independence of the audit committee (AC) are expected to monitor corporate accounting processes (Klein 2002b). Fairness of financial reporting depends on the effectiveness of internal control mechanisms (Garcia-Meca and Sanchez-Ballesta 2009; Ghosh, Marra, and Moon 2010). The listing requirement of NYSE and NASDAQ, which have to appoint at least three outside directors in audit committee in US, are not necessarily linked to demand of outside directors by creditors or shareholders (Klein 2002a). We extend the principle of '*One size does not fit all*' to examine the relation between the audit quality and board of directors (Klein 2002a, 2002b).

The expected relations between the audit quality and internal control are not obvious in

Japan. Different corporate governance structures are likely to be optimal for different firms (e.g., Larcker, Richardoson, and Tuna 2007). Within countries with strong legal enforcement, the relationships of bank-dominated economies such as those of Japan and Germany differ from those with market-oriented economies such as the US and UK (Aoki 1990). In addition, most Japanese board members are comprised of inside directors who have been promoted from firm employees (Aoki 1990). This is especially true in Japan, which allows firms to adopt either an Anglo American-style model or a more traditional Japanese model, which makes it especially difficult to characterize and measure board quality in Japan.

Commercial banks are expected to be delegated as monitors by appointing board members or audit board members for other creditors and shareholders in Japan (Aoki, Patrick, and Sheard 1994; Morck and Nakamura 1999). Especially, commercial banks delegate their employees as directors or auditors to the boards of clients' firms. Thus, the bank-appointed directors or auditors are expected to be effective monitors in relationship-oriented systems (Aoki 1990). Therefore, we examine whether the relation between bank-appointed directors and board members and audit quality measured by discretionary accruals.

Using Japanese listed firms which consisted of 11,437 firm–year observations during 2006–2014, we analyze the role of bank-appointed board members related to accounting quality. As expected, we find that discretionary accruals are lower for firms with bank-appointed board members. We further analyze the relation between board independence and

audit quality. Different from U.S. (Klein 2002b), outside directors are not associated with discretionary accruals. Our results are robust when we control for observable confounding factors of firm and corporate governance characteristics associated with audit quality or bank-appointed auditors using of propensity-score matching (PSM) method.

This study contributes to the literatures related to following two ways. First, the recent accounting frauds uncovered in large companies have revived the debate related to desirable monitoring mechanisms under bank-dominated systems, such as those of Japan (Financial Times 2006; Financial Times 2011). Our findings make an important contribution by providing empirical evidence related to the debate on desirable monitoring systems in Japan. Second, we contribute to the growing finance literature related to lenders' monitoring. Bank-dominated systems, represented as main bank relationships, are regarded as "the epitome of relationship banking" (Patrick 1994). We extend the literature related to the monitoring of lenders, which has not examined the relationship between bank-appointed audit board members and earnings management in Japan.

The remainder of our manuscript is organized as follows. The next section presents background on Japanese corporate governance. After that we discuss the empirical predictions. Next, the empirical strategies and data are explained, followed by a summary of the empirical results. Finally, the paper is concluded with a discussion of our findings.

JAPANESE DUAL AUDIT SYSTEMS AND AUDITING

Internal Audit Systems

We introduce two types of Japanese internal audit systems, as portrayed in Figure 1. Before establishment of the Commercial Code Revision on Boards (2003), firms had to adopt a dual system, which comprises a board of directors and audit board members (traditionally designated as statutory auditors), as shown in (1) of Figure 1. After the 2000s, Japanese corporate governance mechanisms have been reformed to adopt Anglo-Saxon mechanisms, inducing changes of board systems and traditional bank-dominated corporate governance features (Chizema and Shinozawa 2012). Further, the introduction of the *US*-style committee system has been permitted after the establishment of the Commercial Code Revision on Boards (2003). However, firms with a committee system are not widely observed in Japan, because adoption of the committee system is a voluntary choice of firms[1].

Insert Figure 1 about here

As for the independence of internal control, appointment of outside directors is not mandated under audit board member systems that do not have audit committees[2]. In these types

[1] Firms with the *US*-style committee system occupies only 2 percent of our samples.

[2] The principle of Corporate Governance in Japan recommends firms with at least one outside

of firms, most of the directorships are occupied by inside directors who were promoted from employees. Thus, these less independent boards of directors do not tend to monitor the activities of executives. On the other hand, audit board members are expected to monitor their executives to protect the interest of shareholders in Japan. In this system, the audit board separately monitors activities of executives in their firm from the board of directors.

Furthermore, amendments of commercial laws were implemented in 1993, 2001, and 2005 to strengthen the independence of audit board members[3]. Post the amendments of 2005, firms that adopted a dual system must appoint outside audit board members that comprise more than half of the audit board, which has at least three members[4]. Therefore, monitoring of the audit board is expected to comprise more effective managing and monitoring by accounting auditors than prior to the amendment.

director (Tokyo Stock Exchange 2009). However, firms with no outside directors are widely observed in our data.

[3] For example, firms are encouraged to increase the number of outside audit members. In addition, the terms of office and responsibility of audit members are extended by law. Before the amendments of 1993, appointment of outside audit members was not mandated (Sakawa and Watanabel 2013).

[4] Outside audit members have not formerly been a director, officer, or employee of the company or its subsidiaries.

The Role of Audit Board Members

Figure 2 depicts the monitoring roles of audit board member systems, who can monitor the financial reporting of firms. Large firms have to appoint external auditors, such as accounting auditors. The selection of accounting auditors must be approved by the audit board before shareholder meetings. Accounting auditors conduct a primary audit of the financial activities of their client firms, and submit the financial reports to both the board of directors and the audit board. Audit board members have the right to audit both the process and the results of reporting. They can express their opinions or concerns related to financial reporting at the shareholder meetings.

Insert Figure 2 about here

Audit board members are guaranteed their positions and rights under Japanese corporate governance systems. While both the board of directors and the audit board members are elected at the shareholder meeting, the terms of audit board members are four years, which is longer than those of directors. In addition, executives cannot decrease their terms. As for legal rights, audit board members can participate in board meetings and express their opinions to prevent illegal activities and inappropriate decisions that may harm firm values. Audit board members

have the right to investigate the operations and assets of their firms, and to ask directors and employees to report on the operation of their company.

Audit Quality

Audit quality also depends on the audit firm size (Becker, DeFond, Jiambalvo, and Subramanyam 1998; Francis, Maydew, and Sparks 1999). Regarding the change of accounting audits, large Japanese audit firms were restructured after *Kanebo*'s earnings fraud was uncovered in 2005. The large audit firms, known as the Big 4, included *Deloitte Touche Tohmatsu*, *Shin-Nihon Ernst & Young*, *KPMG Azsan LLC*, and *Chuo-Aoyama PWC*. In 2006, *PWC* was restructured as *Arata PWC,* and *Chuo-Aoyama* was restructured as *Misuzu*, which became defunct in July 2007. Thereafter, during 2006–2007, the Big 5 audit firms were *Deloitte Touche Tohmatsu*, *Shin-Nihon Ernst & Young*, *KPMG Azsan LLC*, *Arata PWC*, and *Chuo-Aoyama*. After the Japanese FSA suspended Chuo Aoyama for two months due to Kanebo's earnings fraud, Chuo-Aoyama lost their reputation (Skinner and Srinivasan 2012). Since 2008, Japan's large audit firms comprised the Big 4, excluding *Chuo-Aoyama*.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Research on Internal Control Systems

The monitoring roles of the board of directors are useful to monitor managers' activities

(Fama and Jensen 1983; Jensen and Meckling 1976; Shleifer and Vishny 1997). We summarize the role of internal control, such as board size and the independence of both the board and the audit committees. First, Jensen (1993) points out that board of director monitoring roles could become less effective as board size increases. This effect is attributable to problems of coordination and communication. Second, the board's ability to function as an effective monitor depends on its managerial independence (Beasley 1996). Therefore, board independence and independent audit committees are expected in effective internal control mechanisms. Finally, regarding the role of ACs, independent audit committees enhance the quality of financial reporting in the US and several countries outside the US (Garcia-Meca and Sanchez-Ballesta 2009; Ghosh et al. 2010; Klein 2002a).

Research on Audit Quality

Audit quality is regarded as a means of reducing agency issues to mitigate information asymmetry. The role of internal control to improve financial reporting has been paid attention by academics and practitioners (Qi, Li, Zhou, and Sun 2017). As for empirical studies, mixed evidence exists about the relationship between board structure such as board size and board independence and earnings management (Chin, Firth, and Rui 2006; Xie, Davidson, and DaDalt 2003; Davidson, Goodwin-Stewart, and Kent 2005; Bradbury Mak, and Tan 2006). In addition, directors who are appointed by commercial banks can provide their private

information and participate in managerial decision making of clients' firms, such as capital investment and accounting conservatism (Hoshi, Kashyap, and Scharfestein 1990, 1991; Erkens, Subramanyam, and Zhang 2014). Therefore, we address whether or not banking relationship enhances audit quality, measured by managerial earnings manipulation, in Japan.

Bank Monitoring System

Under Japanese bank-dominated corporate governance, bank relationships—represented as bank-appointed audit board members are expected to help mitigate opportunistic earnings management in Japanese firms. First, bank relationships can be expected to provide effective monitoring by reducing degrees of information asymmetry. Lending activities help to reduce information asymmetry and to increase market liquidity because private information might be gathered from bank relationships (Sakawa, Ubukata, and Watanabel 2014). Second, commercial banks have an incentive to monitor their clients' firms, and frequently appoint the directors or audit boards[5]. If commercial banks fail in this monitoring role, they have to bear economic loss because the clients might not meet their contracted obligations[6]. Bank

[5] Sheard (1994) shows examples of commercial bank involvement in the restructuring of client firms. Even in the 2010s, bank involvement is a typical means of supporting poor performing firms. Such practices have raised concern by shareholders, particularly foreign investors (Financial Times 2012b).

[6] In the case of Toshiba, the stock price of lenders that have a relationship with Toshiba

monitoring roles are represented as a function of client firms connected by bank relations (Aoki et al. 1994). Third, by appointing managers or employees as directors or audit board members of clients' firms, commercial banks are better able to monitor or audit the activities and financial position of their clients, relative to what the banks can do through arms-length monitoring (Sheard 1994). In addition, Banks' appointment of directors or audit board members serves as a disciplinary mechanism, by forcing executive turnover at firms when they face poor performance (Kang and Shivdasani 1995; Kaplan and Minton 1994). Furthermore, bank-appointed directors enhance executive incentives in Japanese firms (Colpan and Yoshikawa 2012). This discussion leads the following hypothesis.

Hypothesis: Firms with bank audit board members have less opportunistic earnings management than firms without bank audit board members.

DATA AND RESEARCH DESIGN

Data

We selected data from non-financial firms with dual audit systems listed on the first section of the Tokyo Stock Exchange, after introducing the Japanese Company Act of 2005, which strengthens the independence and right of audit board members. Financial accounting data were collected from the Nikkei Needs Corporate database. Corporate governance data, including

declined after announcement of the accounting scandals (Financial Times 2016).

ownership structure and board composition, were obtained from the Nikkei Needs Corporate Governance evaluation system (CGES) database. The audit firms' information was hand-collected by Toyo Keizai (2006–2014). The big N audit firms consisted of the Big 4 or Big 5 firms during our sample periods. Our selected sample consisted of 11,437 firm–year observations during 2006–2014[7].

Proxy for Bank Monitoring Mechanisms

We use bank monitoring proxy as the ratio of appointed audit board members to outside board members (*Bank Audit Board*). *Bank audit board* is the ratio of bank-appointed audit board members to outside directors. As for internal control systems, we included three variables such as audit board size, board size, and outside directors. *Audit Board Size* is the number of members on the audit board. *Board Size* represents the number of directors on the board. *Outside Directors* is the percentage of directors from outside the firm[8]. We eliminated firms

[7] We selected our sample firms based on the following criteria: (i) Financial statements are available in the sample period. (ii) Observations include at least 15 firms in the same industry, as classified by the Nikkei Industry Classification Code.

[8] Following previous Japanese studies, we defined board independence as the proportion of outside directors who have never served as executive director, executive officer, or employee of the company or any of its subsidiaries, as reported in the companies' annual report.

that use committees to analyze the role of the bank audit board, because firms with committees have no audit board.

Measures of Financial Reporting Quality

Following previous studies, this study uses discretionary accruals as our measure of accruals-based earnings management. We estimate the following equation (1) using of cross-sectional models for each industry with at least 15 observations in a given year based on Nikkei Industry Classification Code

$$\frac{\text{Accruals}_{\text{it}}}{A_{\text{it}-1}} = \frac{\alpha}{A_{\text{it}-1}} + \beta_1 \frac{\Delta REV_{\text{it}}}{A_{\text{it}-1}} + \beta_2 \frac{PPE_{\text{it}}}{A_{\text{it}-1}} + \varepsilon_{\text{it}} \qquad (1)$$

where *Accruals* stands for total accruals, measured as the difference between net income (earnings before extraordinary items and discontinued operations) and operating cash flows for firm *i* in year *t*, *ΔREV* signifies the change in net revenue for firm *i* in year *t*, and *PPE* represents property, plant, and equipment for firm *i* in year *t*.

The estimated residuals are defined as the discretionary accruals for firm i in the current year. Our measures of discretionary accruals are estimated by the Jones, the cross-sectional modified Jones, and the CFO-modified Jones model (Jones 1991; Dechow, Sloan, and Sweeney 1995; Kasznik 1999). We adopt the absolute value of discretionary accruals (ADA) as audit quality variables. The higher the accruals quality is, the smaller the ADA is.

Empirical Methodology

To investigate our empirical predictions, we examined the following OLS regression equation.

$$\text{ADA}_{it} = \beta_0 + \beta_1 Bank\ Monitoring_{it} + + \beta_2 Internal\ Contorl_{it} + \Sigma\beta_j \text{Control}_{it} + \varepsilon_{it} \quad (2)$$

where variables are defined in Appendix A. In this equation, ADA represents the absolute value of discretionary accruals, using the Jones and the modified Jones model.

We adopted two sets of control variables. First, we used firm characteristics variables such as stock return volatility, firm size, growth opportunity, return on assets, financial leverage, and Topix 500 dummy[9] (DeFond and Jiambalvo 1994; Frankel, Johnson, and Nelson 2002; Matsumoto 2002). Second, we used governance variables such as Big N dummy, management shareholdings[10], and stock options[11].

Empirical Strategy

[9] The Topix 500 index consists of the top 500 listed firms on the Tokyo stock Exchange, and accounts for about 85 percent of the Exchange related to market capitalization.

[10] *Management Shareholdings* signifies the proportion of directors' shareholdings, following Morck, Nakamura, and Shivdasani (2000).

[11] Earnings management is more prevalent at firms whose executive compensation is closely tied to stock value via stock options (Bergstresser and Philippon 2006; Cornett, Marcus, and Tehranian 2008).

We used propensity score matching (PSM) to control for the impact of confounding variables on the dependent variable. First, we estimated the conditional probability of the appointment of bank audit board to firms using a logit model. We matched firms with bank audit boards to at most four firms, without examining whether or not the bank audit board moderated earnings management. After adopting PSM, there was no significant difference between firms with bank audit boards and firms without in the resulting sample. By using PSM, we could create conditions that are similar to the randomized control group design in a quasi-randomized experiment.

As for a logit model, bank board members were adopted as dependent variables and control variables. We used two types of control variables. First, we adopted ownership variables such as main bank shareholdings and foreign ownership. In addition, we also controlled firm characteristics such as cash to assets and bank lending[12], the skewness of the daily returns, market beta, the minimum of the daily returns, and the standard deviation of the daily abnormal returns.

EMPIRICAL RESULTS

Descriptive Statistics and Logit Model

Table 1 presents the descriptive statistics in Panel A, and the correlation matrix in Panel B.

[12] Bank loans are a main source of financing for Japanese firms (Chan, Jiang, and Mo 2017).

We showed the mean difference between firms without *Bank Audit Members* and firms with *Bank Audit Members* in Table 2. The mean of the *ADA* of firms without *Bank Audit Members* is significantly higher than that of firms with such members. On the other hand, both *Main Bank Shareholdings* and *Bank Debt* of firms without *Bank Audit Members* are significantly lower than those of firms with such members.

Insert Table 1 and Table 2 about here

Table 3 shows the results of logit models to derive the score of PSM after controlling for confounding factors. In Table 3, the dependent variable is the Bank Audit Board dummy. We differently adopted four models to confirm the robustness. This table indicates that *Main Bank Shareholdings*, *Foreign Ownership*, and *Cash to Assets* are significant and positive in Models (1)–(4). We can find that Bank debt is significantly positive in Models (2) and (4).

Insert Table 3 about here

OLS Results

We investigated our empirical predictions related to Japanese internal control mechanisms and

earnings management by estimating the OLS results of equation (2). We report the OLS results, including those for *Bank Audit Board*, in Table 4[13]. First, we found that *Bank Audit Board* is significant and negatively associated with earnings management. This result implies that bank–client relations function effectively through appointment of audit board members. *Board Size* is negatively associated with earnings management. Both *Outside Directors* and *Audit Board Size* are not significant.

The results of control variables show that *Management shareholdings* are significant and positive, which implies that agency conflicts can be expected to occur in firms with higher managerial ownership. *Volatility* is significant and positive. *Market to Book* is positively associated with earnings management, suggesting that earnings management is greater for firms with high growth opportunities, consistent with Matsumoto (2002). *Stock Option* is positively associated with earnings management, consistent with Bergstresser and Philippon (2006), and Cornett, Marcus, and Theranian (2008). Finally, *TOPIX 500* is negatively associated with earnings management.

Insert Table 4 about here

---

[13] For consideration of the multicollinearity of *Bank Directors* and *Bank Audit Members*, we included these two variables separately.

Propensity Score Matching

Next, we discuss additional analyses to solve issues arising from unobservable confounding factors. Using these four models, we investigated the effect of bank board members on earnings managements in Table 5. In each of the four models, we adopted three *ADA* estimated by the Jones model, the modified Jones model, and the CFO Jones model. We found that the coefficient of *Bank Audit Board* is negatively associated with earnings management for Models (1)–(4), which is consistent with the results of OLS in Table 4. In addition, the coefficient of *Outside Directors* is not significant. These results suggest that *Bank Audit Board* substitutes for monitoring mechanisms such as independent directors under Japanese bank-dominated corporate governance.

Insert Table 5 about here

Additional Analysis

In this section, we confirm three types of robustness of our findings. First, we investigate the possible endogenous relations between monitoring activity and earnings management. To explore endogenous relations between internal control and earnings management, we used two-

stage least-squares regression. We adopted instrument variables as lagged variables of instrumented variables, foreign shareholdings, and a dummy variable of American depositary receipts (ADR)[14].

Insert Table 6 and Table 7 about here

Table 6 and Table 7 show the results of two-stage least-squares regression. The estimated results of the first stage are summarized in Table 6. Using Table 7, the coefficient of *Bank Audit Board* is negatively associated with earnings management for all three models. *Board Size* is significant and negative in Model (3), after considering endogeneity. *Outside Directors* is significant and positive in Model (1), which implies that they represent ineffective monitors for preventing opportunistic earnings management. The results of financial variables are almost identical to the OLS results.

Furthermore, we examined the relationship between the internal governance system and earnings management in Japan. As we mentioned, literatures point out the effective monitoring of both *Outside Directors* and *Audit Committee.* Therefore, we adopted all firms, including

---

[14] ADRs are equal to 1 if a firm has American depositary receipt **(**ADR**)** programs, otherwise they are 0. Kang and Stultz (1997) find that firms with ADR programs have greater foreign ownership. Therefore, we adopt the ADR dummy as an instrument variable.

firms with ACs and firms without. From Table 8, we can observe that *Board Size* is significant and negatively related with earnings management. Both *Outside Directors* and *Committee* are not significantly correlated with earnings management.

Insert Table 8 about here

Finally, we confirmed robustness, using an alternative definition of board independence in untabulated results. We adopted a strict definition of board independence, following previous studies such as Klein (2002a)[15]. Using the strictly defined board independence, we also did not find the results of either board independence or *Committees* as significant. Therefore, we can confirm the robustness of our results by untabulated estimations.

CONCLUSIONS

Using 11,437 firm–year observations from 2006 to 2014, we examined the monitoring role of bank–client relations. Japanese audit quality has been discussed frequently, since several cases

[15] Previous studies such as Klein (2002a) define board independence by several criterions. Following the strict definition of the guidelines of TSE, we defined four categories of outside directors who might not be truly "independent directors:" (1) directors related to the parent company, (2) directors related to other affiliated companies, (3) directors who come from commercial banks, and (4) directors who are mutually dispatched.

of corporate fraud surfaced recently. We extend the perspectives of a bank-dominated system, which are expected to include bank-appointed audit board members (Aoki 1990; Aoki et al., 1994). In addition, the principle of corporate governance in Japan recommends outside directors as effective monitors. Therefore, we investigated whether outside directors mitigate managerial opportunistic earnings management or not.

We provide empirical evidence related to the association between earnings management and internal control. We find that bank monitoring mechanisms function through bank-appointed audit board members. This result implies that bank-appointed audit board members mitigate earnings management by mitigating the degree of information asymmetry between lenders and borrowers.

We also find that outside directors are not helpful to decrease opportunistic managerial earnings management. Board independence does not affect managerial opportunistic earnings management under Japanese bank-dominated systems. Under Japan's unique internal control system, we revealed the monitoring roles of bank relationships, such as bank-appointed audit board members.

We focus on Japanese firms to address the serious concerns related to accounting scandals. Our study provides an invaluable insight for both investors and regulators to ascertain the effectiveness of bank–client relations as effective gatekeepers in Japan. Furthermore, we contribute relationship banking literatures by analyzing the relationship between the features

of a bank-dominated system and earnings management.

REFERENCES

Aoki, M. 1990. Toward an economic model of the Japanese firm. *Journal of Economic Literature* 28(1): 1–27.

Aoki, M., H. Patrick, and P. Sheard. 1994. The Japanese main bank system: An introductory review. In *The Japanese main bank system: Its relevancy for developing and transforming economies*, edited by M. Aoki, and H. Patrick, 1–50. Oxford: Oxford University Press.

Beasley, M. S. 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review* 71(4): 443–465.

Becker, C. L., M. L. DeFond, J. Jiambalvo, and K. R. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15(1): 1–24.

Bergstresser, D., and T. Philippon. 2006. CEO incentives and earnings management. *Journal of Financial Economics* 80: 511–529.

Bradbury, M., Y. Mak, and S. Tan. 2006. Board characteristics, audit committee characteristics, and abnormal accruals. *Pacific Accounting Review* 18: 47–68.

Chan, K. C., B. Farrell, and P. Lee. 2008. Earnings Management of Firms Reporting Material Internal Control Weaknesses under Section 404 of the Sarbanes-Oxley Act. *Auditing: A Journal of Practice and Theory* 27(2): 161–179.

Chan, K. H., E. J. Jiang, and P. L. L. Mo. 2017. The Effects of Using Bank Auditors on Audit Quality and the Agency Cost of Bank Loans. *Accounting Horizons* 31(4): 133–153.

Chin, K., M. Firth, and O. Rui. 2006. Earnings management, corporate governance, and the market performance of seasoned equity offerings. *Journal of Contemporary Accounting and Economics* 2: 73–98.

Chizema, A., and Y. Shinozawa 2012. The “company with committees:” Change or continuity in Japanese corporate governance? *Journal of Management Studies* 49(1): 77–101.

Chung, R., M. Firth, and J. Kim. 2002. Institutional monitoring and opportunistic earnings management. *Journal of Corporate Finance* 8(1): 29–48.

Colpan, A., and T. Yoshikawa. 2012. Performance sensitivity of executive pay: The role of foreign investors and affiliated directors in Japan. *Corporate Governance: An International Review* 20(6): 547–561.

Commercial Code Revision on Boards. 2003. Ministry of Justice, Japan.

Cornett, M. M., A. J. Marcus, and A. J. Tehranian. 2008. Corporate governance and pay-for-performance: The impact of earnings management. *Journal of Financial Economics* 87(2): 357–373.

Datar, S., G. Feltham, and J. Hughes. 1991. The role of audits and audit quality in valuing news issues. *Journal of Accounting & Economics* 14 (1): 3–49.

Davidson, R., J. Goodwin-Stewart, and P. Kent. 2005. Internal governance structures and earnings management. *Accounting and Finance* 45(2): 241–267.

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70(2): 193–225.

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 Review* 13(1): 1–36.

DeFond, M. L., and J. Jiambalvo. 1994. Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics* 77(1-2): 145–176.

Erkens, D. H., K. R. Subramanyam, and J. Zhang. 2014. Affiliated Banker on Board and Conservative Accounting. *The Accounting Review* 89(5): 1703–1728.

Fama, E., and M. Jensen. 1983. Separation of ownership and control. *Journal of Law and Economics* 26(2): 301–325.

Financial Times. 2006. Kanebo's history of alleged "cooking the books." May 12.

Financial Times. 2007. An accountability gap is holding back Japan's economy. March 15.

Financial Times. 2011. Ex-Olympus chief questioned payments. October 14.

Financial Times. 2012a. Former Olympus chief warns on governance. April 19.

Financial Times. 2012b. Olympus unveils new management. February 27.

Financial Times. 2015. Toshiba chief promises overhaul amid calls for him to quit. June 25.

Financial Times. 2016. Toshiba shares sink for a third day as financial worries deepen. December 29.

Francis, J. R., E. L. Maydew, and H. C. Sparks. 1999. The role of big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice and Theory* 18(2): 17–34.

Frankel, R. M., M. F. Johnson, and K. K. Nelson. 2002. The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review* 77 (Supplement): 71–105.

Garcia-Meca, E., and J. P. Sanchez-Ballesta. 2009. Corporate governance and earnings management: A meta-analysis. *Corporate Governance: An International Review* 17(5): 594–610.

Ghosh, A., A. Marra, and D. Moon. 2010. Corporate boards, audit committees, and earnings management: Pre- and post-SOX evidence. *Journal of Business Finance and Accounting* 37(9-10): 1145–1176.

Gul, F. A., C. J. P. Chen, and J. S. L. Tsui. 2003. Discretionary accounting accruals, managers' incentives, and audit fees. *Contemporary Accounting Research* 20(3): 441–464.

Healy, P. M. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7(1-3): 85–107.

Holthausen, R. W., D. F. Larcker, and R. G. Sloan. 1995. Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics* 19(1): 29–74.

Hoshi, T., A. Kashyap, and D. Scharfstein. 1990. The role of banks in reducing the costs of financial distress in Japan. *Journal of Financial Economics* 27(1): 67–88.

Hoshi, T., A. Kashyap, and D. Scharfstein. 1991. Corporate structure, liquidity, and investment: Evidence from Japanese industrial groups. *Quarterly Journal of Economics* 106(1): 33–60.

Jensen, M. C. 1993. The modern industrial revolution, exit, and the failure of internal control system. *Journal of Finance* 48(3): 831–880.

Jensen, M. C., and W. H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3(4): 305–360.

Jones, J. J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29(2): 193–228.

Kang, J. K., and A. Shivdasani. 1995. Firm performance, corporate governance, and top executive turnover in Japan. *Journal of Financial Economics* 38(1): 29–58.

Kang, J. K., and R. M. Stultz. 1997. Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan. *Journal of Financial Economics* 46(1): 3–28.

Kaplan, S. N., and B. A. Minton. 1994 Appointments of outsiders to Japanese boards: Determinants and implications for managers. *Journal of Financial Economics* 36(2): 225–258.

Kasznik, R. 1999. On the association between voluntary disclosure and earnings management. *Journal of Accounting Research* 37(1): 57–81.

Klein, A. 2002a. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics* 33(3): 375–400.

Klein, A. 2002b. Economic determinants of audit committee independence. *The Accounting Review* 77(2): 435-452.

Larcker, D., F. S. A. Richardson, I, Tuna. 2007. Corporate Governance, Accounting Outcomes, and Organizational Performance. *The Accounting Review* 82(4): 963-1008.

Leuz, C., D. Nanda, and P. D. Wysocki. 2003. Earnings management and investor protection: An international comparison. *Journal of Financial Economics* 69(3): 505–527.

Matsumoto, D. A. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review* 77(3): 483–514.

Morck, R., and M. Nakamura. 1999T. Banks and corporate control in Japan. *Journal of Finance* 54(1): 319–339.

Morck, R., M. Nakamura, and A. Shivdasani. 2000. Banks, ownership structure, and firm value in Japan. *Journal of Business* 73(4): 539–567.

O'Brien, J. P., P. David, T. Yoshikawa, and A. Delios. 2014. How capital structure influences diversification performance: A transaction cost perspective. *Strategic Management Journal* 35(7): 1013–1031.

Patrick, H. 1994. The relevance of Japanese finance and its main bank system. In *The Japanese main bank system: Its relevancy for developing and transforming economies*, edited by M. Aoki, and H. Patrick, 353–408. Oxford: Oxford University Press.

Qi, B., L. Li, Q. Zhou, and J. Sun. 2017. Does internal control over financial reporting really alleviate agency conflicts? *Accounting and Finance* 57(4): 1101–1125.

Sakawa, H., K. Moriyama, and N. Watanabel. 2012. Relation between top executive compensation structure and corporate governance: Evidence from Japanese public disclosed data. *Corporate Governance: An International Review* 20(6): 593–608.

Sakawa, H. and N. Watanabel. 2013. Does Statutory Auditors Matter in Bank-dominated Corporate Governance? Evidence from Japan. *Corporate Ownership and Control* 10(3): 228–235.

Sakawa, H., M. Ubukata, and N. Watanabel. 2014. Market Liquidity and Bank-dominated Corporate Governance: Evidence from Japan. *International Review of Economics and Finance* 31: 1–11.

Sheard, P. 1994. The main bank and the governance of financial distress. In *The Japanese main bank system: Its relevancy for developing and transforming economies*, edited by M. Aoki, and H. Patrick, 188–230. Oxford: Oxford University Press.

Shleifer, A., and R. W. Vishny. 1997. A survey of corporate governance. *Journal of Finance* 52(2): 737–783.

Skinner, D. J., and S. Srivinasan. 2012. Auditor quality and auditor reputation: Evidence from Japan. *The Accounting Review* 87(5): 1737–1765.

Tokyo Stock Exchange. 2009. Principles of corporate governance for listed companies. Tokyo Stock Exchange Inc., Tokyo.

Toyo Keizai. 2006–2014. Japan corporate handbook. Tokyo, Japan.

Wild, J. J. 1996. The audit committee and earnings quality. *Journal of Accounting, Auditing and Finance* 11: 247–276.

Xie, B., W. Davidson, and P. DaDalt. 2003. Earnings management and corporate governance:

The role of the board and the audit committee. *Journal of Corporate Finance* 9(3): 295–316.

APPENDIX A

Definition of Variables

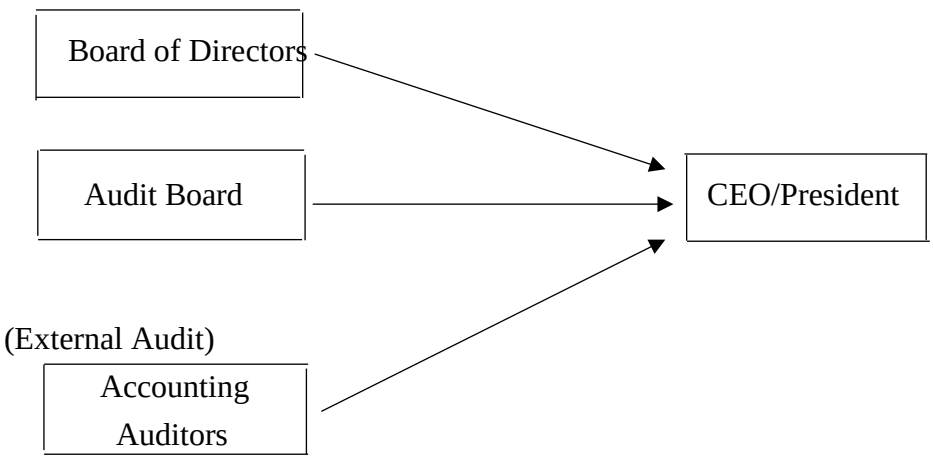
Variable	Definition
Dependent Variables	
Jones	ADA using the Jones model (%)
Modified Jones	ADA using a modified Jones model (%)
Modified CFO Jones	ADA using a modified Jones model with cash flow (%)
Board Variables	
Bank Audit Board	Number of outside audit board members who come from commercial banks
Audit Board Size	Number of audit board members
Board Size	Number of directors on the board
Outside Directors	Outside directors/ Board Size (%)
Other Variables	
Volatility	Stock price volatility during three years
ln (MV)	The logarithm of market value is adopted as firm size
Market to Book	Growth opportunity; Market Value/ Book Value of Capital
ROA	Return on Assets
Leverage	Debt/Total Assets
Topix 500	Topix 500 is equal to 1 if a firm includes the Topix 500 index; otherwise it is 0.
Big N	Big N audit firms consist of Big 4 or Big 5 audit firms
Management Shareholdings	Percentage of shareholding by board of directors that is followed by Morck, Nakamura, and Shivdasani (2000)
Stock Option	Stock-based incentives means the adoption of executive stock options (Sakawa, Moriyama, and Watanabel 2012). Stock Option is equal to 1 if a firm adopts stock options; otherwise it is 0.
Main Bank Shareholdings	Percentage of main bank shareholdings that is followed by Morck et al. (2000)
Foreign Ownership	Percentage of foreign shareholdings
Cash to Assets	The ratio of cash and security to assets
Bank Debt Ratio	The ratio of Bank debt to Market Value that is followed by O'Brien, David, Yoshikawa, and Delios (2014)
Skewness	The skewness of the daily returns
Beta	The slope of the coefficient form regressing daily returns
Min_Return	The minimum of the daily returns
Std_Return	The standard deviation of the daily abnormal returns

Corporate Ownership	Percentage of corporate shareholdings
ADR	ADR is equal to 1 if a firm has American depositary receipt **(**ADR**)** programs; otherwise it is 0.
Bank Directors	Outside directors who come from commercial banks/ Board Size (%)

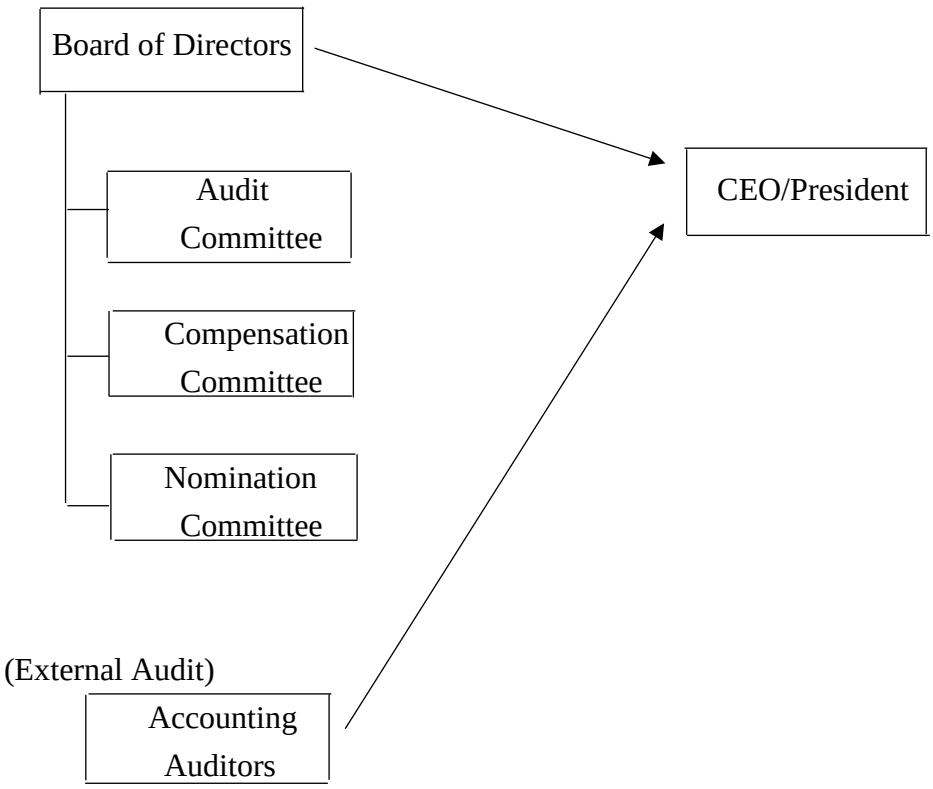
FIGURE 1

Two Types of Japanese Monitoring Systems

(1) Dual audit system (Board Directors and Audit board members) in Japan



(2) Committee system



Each arrow represents the monitoring activities towards the CEO/President.

FIGURE 2
Monitoring of the Dual Audit System

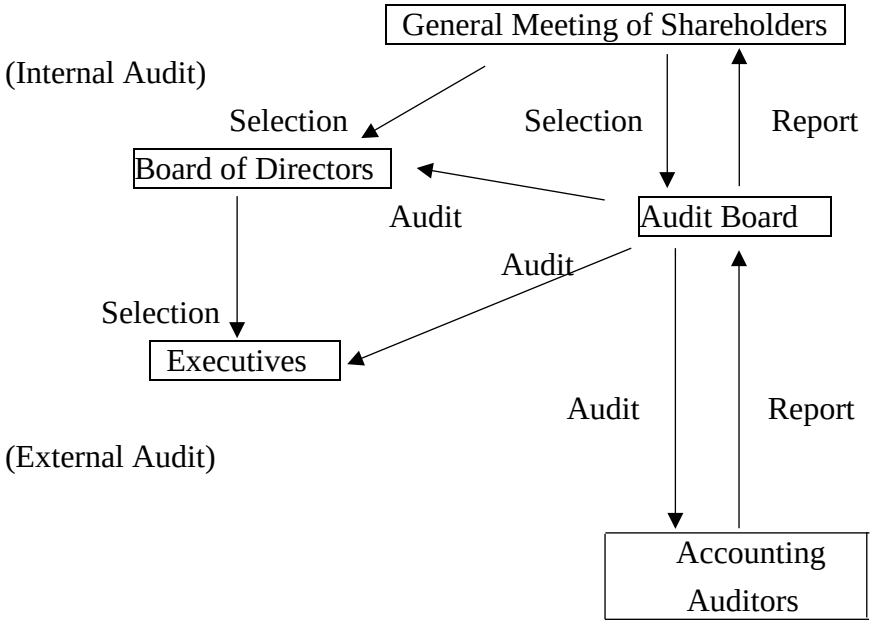


TABLE1

Descriptive Statics and Correlation Matrix

Panel A. Summary Statistics

	Number	Mean	Median	S.D.	5%	95%
Dependent Variables						
Jones	11437	3.313	2.256	4.123	0.191	9.493
Modified Jones	11437	3.301	2.247	4.164	0.196	9.491
Modified CFO Jones	11437	2.629	1.810	3.317	0.174	7.582
Board Variables						
Bank Audit Board	11437	0.254	0.000	0.512	0.000	1.000
Audit Board Size	11437	3.905	4.000	0.692	3.000	5.000
Board Size	11437	9.037	8.000	3.544	5.000	16.000
Outside Directors	11437	9.766	0.000	12.439	0.000	33.333
Other Variables						
Volatility	11437	2.408	2.296	0.809	1.333	3.852
ln (MV)	11437	10.778	10.564	1.522	8.654	13.637
Market to Book	11437	1.331	0.998	1.637	0.436	3.147
ROA	11437	6.108	4.919	6.340	-0.985	16.299
Leverage	11437	48.739	49.100	19.667	16.380	80.340
Topix 500	11437	0.281	0.000	0.450	0.000	1.000
Big N	11437	0.815	1.000	0.388	0.000	1.000
Management Shareholdings	11437	4.354	0.598	8.497	0.035	23.851
Stock Option	11437	0.311	0.000	0.463	0.000	1.000
Matching Variables						
Main Bank Shareholdings	11437	1.068	0.000	1.701	0.000	4.710
Foreign Ownership	11437	13.557	10.390	11.800	0.870	36.450
Cash to Assets	11437	0.002	0.001	0.007	0.000	0.008
Bank Debt Ratio	11437	0.393	0.106	0.766	0.000	1.674
Skewness	11433	0.271	0.183	1.014	-1.092	1.942
Beta	11433	1.057	1.039	0.395	0.444	1.725
Min_Return	11433	-9.058	-7.968	4.477	-17.647	-3.811
Std_Return	11433	1.863	1.708	0.827	0.905	3.360

Variables are defined in Appendix A.

Panel B. Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Jones															
2. Modified Jones	0.96 *														
3. Modified CFO Jones	0.75 *	0.77 *													
4. Board Size	-0.04 *	-0.05 *	-0.04 *												
5. Committee	-0.10 *	-0.10 *	-0.09 *	0.14 *											
6. Outside Directors	-0.11 *	-0.11 *	-0.11 *	0.10 *	0.39 *										
7. Bank Directors	0.01	0.00	0.00	0.03 *	0.07 *	-0.05 *									
8. Volatility	0.20 *	0.20 *	0.21 *	0.01	-0.11 *	-0.17 *	-0.02								
9. ln (MV)	-0.12 *	-0.12 *	-0.11 *	0.13 *	0.46 *	0.44 *	0.15 *	-0.20 *							
10. Market to Book	0.10 *	0.10 *	0.08 *	-0.02	-0.02	0.01	0.08 *	0.11 *	0.21 *						
11. ROA	0.01	0.00	-0.05 *	-0.08 *	-0.08 *	-0.03 *	0.05 *	-0.10 *	0.24 *	0.37 *					
12. Leverage	0.05 *	0.05 *	0.05 *	0.13 *	0.14 *	0.12 *	0.01	0.24 *	-0.05 *	0.07 *	-0.33 *				
13. Topix 500	-0.11 *	-0.11 *	-0.10 *	0.12 *	0.40 *	0.35 *	0.15 *	-0.13 *	0.77 *	0.14 *	0.13 *	-0.01			
14. Big N	-0.02	-0.02 *	-0.02	0.04 *	0.06 *	0.04 *	0.09 *	-0.08 *	0.16 *	0.04 *	0.09 *	-0.01	0.13 *		
15. Management Shareholdings	0.12 *	0.12 *	0.11 *	-0.11 *	-0.28 *	-0.20 *	-0.05 *	0.04 *	-0.20 *	0.13 *	0.25 *	-0.14 *	-0.20 *	0.01	
16. Stock Option	0.04 *	0.04 *	0.05 *	-0.04 *	0.01	-0.03 *	0.14 *	-0.01	0.14 *	0.14 *	0.17 *	-0.10 *	0.13 *	0.10 *	0.15 *

* indicates significance at the 5% level or better. N =11,437.

TABLE 2
Mean Difference

	Bank Audit Member			
	No	Yes	Difference	t-value
Dependent Variables				
Jones	3.399	3.007	0.392 ***	(4.21)
Modified Jones	3.398	2.958	0.440 ***	(4.68)
Modified CFO Jones	2.705	2.358	0.346 ***	(4.63)
Board Variables				
Audit Board Size	3.853	4.089	-0.236 ***	(-15.24)
Board Size	8.859	9.673	-0.814 ***	(-10.21)
Outside Directors	9.532	10.600	-1.067 ***	(-3.80)
Other Variables				
Volatility	2.401	2.433	-0.032	(-1.73)
ln (MV)	10.678	11.133	-0.455 ***	(-13.32)
Market to Book	1.345	1.283	0.061	(1.66)
ROA	6.364	5.196	1.168 ***	(8.18)
Leverage	47.440	53.360	-5.920 ***	(-13.43)
Topix 500	0.253	0.382	-0.129 ***	(-12.76)
Big N	0.808	0.843	-0.035 ***	(-4.00)
Management Shareholdings	4.843	2.615	2.227 ***	(11.67)
Stock Option	0.324	0.265	0.059 ***	(5.61)
Matching Variables				
Main Bank Shareholdings	0.998	1.317	-0.319 ***	(-8.34)
Foreign Ownership	13.254	14.635	-1.381 ***	(-5.19)
Cash to Assets	0.002	0.003	-0.001 ***	(-7.31)
Bank Debt Ratio	0.363	0.502	-0.139 ***	(-8.04)
Skewness	0.278	0.244	0.034	(1.50)
Beta	1.041	1.115	-0.075 ***	(-8.38)
Min_Return	-9.026	-9.171	0.145	(1.44)
Std_Return	1.869	1.843	0.025	(1.35)
Number	8927	2510	11437	

***, **, *, and † indicate significance at the 0.1%, 1%, 5%, and 10% levels, respectively. Table 2 shows the mean difference between firms without Bank Audit Board Members and firms with Bank Audit Board Members. *T*-statistics are shown in parentheses. Variables are defined in Appendix A.

TABLE 3
Estimated Results Related to Logit Models

	(1)	(2)	(3)	(4)
			Bank Audit Board	
Main Bank Shareholdings	0.119 ***	0.099 ***	0.111 ***	0.092 ***
	(8.77)	(7.10)	(8.12)	(6.57)
Foreign Ownership	0.008 ***	0.011 ***	0.007 ***	0.010 ***
	(3.85)	(4.91)	(3.43)	(4.53)
Cash to Assets	16.860 ***	16.280 ***	15.040 ***	13.910 ***
	(5.43)	(5.30)	(4.86)	(4.55)
Bank Debt Ratio		0.227 ***		0.243 ***
		(7.20)		(7.50)
Skewness			0.038	0.035
			(1.14)	(1.04)
Beta			0.473 ***	0.411 ***
			(6.30)	(5.41)
Min_Return			-0.018 +	-0.018 +
			(-1.71)	(-1.76)
Std_Return			-0.303 ***	-0.360 ***
			(-5.01)	(-5.82)
Constant	-1.816 ***	-1.885 ***	-1.872 ***	-1.801 ***
	(-15.20)	(-15.67)	(-13.71)	(-13.16)
Year Dummies	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes
Number of observations	11437	11437	11433	11433
Pseudo R2	0.021	0.025	0.026	0.031
Log Likelihood	-5894.3	-5866.8	-5863.6	-5834.0
LR chi square	248.3 ***	303.4 ***	307.8 ***	367.0 ***
ACU	0.604	0.619	0.613	0.628

***, **, *, and † indicate significance at the 0.1%, 1%, 5%, and 10% levels, respectively. Industry dummies are 1-digit industry classifications. AUC means the area under the ROC (Receiver Operating Characteristics) curve. We cluster standard errors at the firm level. *Z*-values are in parentheses. Variables are defined in Appendix A.

TABL 4

Estimated Results Related to Audit Board Member (OLS)

$$\mathrm{ADA}_{it} = \beta_0 + \beta_1 Internal\ Contorl_{it} + \beta_2 Bank\ Monitoring_{it} + \Sigma\beta_j \mathrm{Control}_{it} + \varepsilon_{it} \quad (2)$$

	(1)	(2) Modified Jones	(3)	(4) Jones	(5) Modified CFO Jones
Bank Audit Board		-0.237 ***	-0.234 ***	-0.204 **	-0.197 ***
		(-3.86)	(-3.79)	(-3.11)	(-3.86)
Audit Board Size	-0.071		-0.062	-0.060	-0.037
	(-1.24)		(-1.07)	(-1.00)	(-0.79)
Board Size	-0.042 ***	-0.044 ***	-0.042 ***	-0.040 ***	-0.041 ***
	(-3.97)	(-4.16)	(-3.95)	(-3.67)	(-4.90)
Outside Directors	0.004	0.005	0.005	0.005 +	0.003
	(1.39)	(1.43)	(1.45)	(1.77)	(1.14)
Volatility	0.942 ***	0.948 ***	0.945 ***	0.957 ***	0.795 ***
	(8.88)	(8.93)	(8.89)	(9.22)	(8.83)
ln (MV)	-0.059	-0.062	-0.051	-0.071	-0.011
	(-1.13)	(-1.20)	(-0.98)	(-1.40)	(-0.26)
Market to Book	0.203 *	0.203 *	0.202 *	0.180 *	0.161 *
	(2.36)	(2.36)	(2.36)	(2.37)	(2.41)
ROA	-0.019	-0.019	-0.020	-0.008	-0.047 ***
	(-1.27)	(-1.29)	(-1.33)	(-0.49)	(-3.83)
Leverage	0.001	0.002	0.002	0.004	0.000
	(0.44)	(0.55)	(0.62)	(1.43)	(-0.23)
Topix 500	-0.505 ***	-0.501 ***	-0.498 ***	-0.469 ***	-0.302 **
	(-3.89)	(-3.87)	(-3.84)	(-3.75)	(-2.92)
Big N	0.022	0.031	0.030	0.042	0.057
	(0.20)	(0.28)	(0.28)	(0.40)	(0.72)
Management Shareholdings	0.039 ***	0.040 ***	0.039 ***	0.040 ***	0.034 ***
	(5.72)	(5.74)	(5.66)	(5.70)	(6.92)
Stock Option	0.266 ***	0.254 **	0.255 **	0.287 ***	0.304 ***
	(3.39)	(3.23)	(3.24)	(3.49)	(4.95)
Constant	2.029 **	1.824 **	1.934 **	1.864 **	1.284 *
	(3.22)	(2.94)	(3.04)	(3.16)	(2.46)
Year Dummies	Yes	Yes	Yes	Yes	Yes
Number of observations	11437	11437	11437	11437	11437
Adjusted R-squared	0.069	0.070	0.070	0.072	0.073
F Test	25.27 ***	25.21 ***	24.32 ***	24.00 ***	23.67 ***

***, **, *, and † indicate significance at the 0.1%, 1%, 5%, and 10% levels, respectively. Dependent variables are ADA of *Modified Jones* in Models (1)–(3), ADA of *Jones* in Model (4), and ADA of *Modified CFO Jones* in Model (5)**.** To control for residual dependence in our pooled time-series cross-sectional regression, we clustered standard errors at the firm and year level. *T*-statistics are shown in parentheses. Variables are defined in Appendix A.

TABLE 5

Estimated Results (Using Propensity-matched Sample)

	Model (1)			Model (2)			Model (3)			Model (4)		
	Jones	Modified Jones	Modified CFO Jones	Jones	Modified Jones	Modified CFO Jones	Jones	Modified Jones	Modified CFO Jones	Jones	Modified Jones	Modified CFO Jones
Bank Audit Board	-0.244 **	-0.211 *	-0.204 **	-0.224 **	-0.187 *	-0.178 *	-0.197 *	-0.167 *	-0.156 *	-0.205 *	-0.183 *	-0.171 **
	(-2.65)	(-2.28)	(-2.70)	(-2.62)	(-2.12)	(-2.53)	(-2.53)	(-2.05)	(-2.45)	(-2.57)	(-2.17)	(-2.67)
Audit Board Size	-0.037	-0.037	-0.017	-0.105	-0.105	-0.060	-0.102	-0.091	-0.099	-0.056	-0.063	-0.041
	(-0.45)	(-0.41)	(-0.25)	(-1.33)	(-1.19)	(-0.91)	(-1.32)	(-1.05)	(-1.58)	(-0.71)	(-0.71)	(-0.61)
Board Size	-0.042 **	-0.037 *	-0.030 *	-0.036 *	-0.031 +	-0.030 *	-0.030 *	-0.029 +	-0.034 **	-0.034 *	-0.029 +	-0.034 **
	(-2.60)	(-2.27)	(-2.33)	(-2.27)	(-1.84)	(-2.46)	(-2.14)	(-1.95)	(-2.97)	(-2.31)	(-1.86)	(-2.82)
Outside Directors	-0.003	-0.003	-0.005	0.004	0.004	0.001	0.000	0.001	0.000	0.004	0.005	0.001
	(-0.62)	(-0.60)	(-1.14)	(0.75)	(0.82)	(0.28)	(0.10)	(0.22)	(-0.03)	(0.86)	(0.97)	(0.22)
Volatility	1.023 ***	1.078 ***	0.830 ***	1.004 ***	1.053 ***	0.838 ***	0.935 ***	1.016 ***	0.781 ***	0.962 ***	1.021 ***	0.779 ***
	(5.88)	(5.97)	(5.78)	(7.06)	(6.80)	(6.58)	(8.55)	(7.36)	(8.39)	(8.24)	(7.21)	(8.40)
ln (MV)	-0.027	-0.070	-0.021	0.067	0.021	0.040	-0.008	-0.041	0.033	0.015	-0.024	0.018
	(-0.36)	(-0.94)	(-0.35)	(0.86)	(0.27)	(0.67)	(-0.12)	(-0.61)	(0.62)	(0.21)	(-0.34)	(0.32)
Market to Book	0.540 ***	0.443 **	0.401 ***	0.152 *	0.127 +	0.136 *	0.259 *	0.215 *	0.218 *	0.222 +	0.189 +	0.188 *
	(4.04)	(3.21)	(4.34)	(1.96)	(1.94)	(1.99)	(2.33)	(2.16)	(2.45)	(1.93)	(1.89)	(2.05)
ROA	-0.050 *	-0.019	-0.076 ***	-0.025	-0.001	-0.058 ***	-0.028	-0.004	-0.061 ***	-0.024	-0.001	-0.056 ***
	(-2.03)	(-0.60)	(-3.86)	(-1.37)	(-0.02)	(-3.56)	(-1.58)	(-0.15)	(-3.92)	(-1.35)	(-0.03)	(-3.94)
Leverage	-0.004	0.000	-0.005 +	0.003	0.007 +	0.000	0.000	0.004	-0.002	0.001	0.005	-0.001
	(-0.87)	(0.01)	(-1.69)	(0.98)	(1.81)	(-0.10)	(0.12)	(1.16)	(-0.75)	(0.36)	(1.37)	(-0.48)
Topix 500	-0.596 **	-0.535 **	-0.380 *	-0.748 ***	-0.702 ***	-0.437 **	-0.576 **	-0.538 **	-0.420 **	-0.623 ***	-0.600 **	-0.396 **
	(-2.97)	(-2.80)	(-2.29)	(-3.57)	(-3.48)	(-2.70)	(-3.18)	(-3.03)	(-2.87)	(-3.34)	(-3.26)	(-2.67)
Big N	0.046	0.039	0.192	0.069	0.071	0.093	0.100	0.105	0.126	0.071	0.088	0.116
	(0.28)	(0.24)	(1.55)	(0.48)	(0.50)	(0.74)	(0.77)	(0.81)	(1.12)	(0.53)	(0.66)	(1.03)
Management	0.050 ***	0.049 **	0.039 ***	0.041 ***	0.039 ***	0.037 ***	0.050 ***	0.049 ***	0.044 ***	0.040 ***	0.037 **	0.035 ***
Shareholdings	(3.30)	(3.25)	(4.54)	(3.96)	(3.61)	(4.62)	(4.52)	(4.28)	(5.55)	(3.61)	(3.20)	(4.25)
Stock Option	0.216 +	0.289 *	0.339 ***	0.257 *	0.339 *	0.365 ***	0.266 *	0.336 **	0.319 ***	0.246 *	0.327 *	0.307 **
	(1.91)	(2.17)	(3.60)	(2.25)	(2.52)	(3.88)	(2.49)	(2.59)	(3.52)	(2.20)	(2.41)	(3.21)
Constant	1.557 +	1.505 +	1.242	0.675	0.678	0.742	1.500 *	1.284 +	1.010 +	1.049	0.958	0.960
	(1.66)	(1.66)	(1.63)	(0.72)	(0.76)	(0.99)	(2.00)	(1.73)	(1.66)	(1.31)	(1.22)	(1.54)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number	8060	8060	8060	8026	8026	8026	8138	8138	8138	8041	8041	8041
Adj R-squared	0.079	0.082	0.076	0.072	0.074	0.073	0.081	0.083	0.085	0.074	0.075	0.078
F Test	9.01 ***	8.83 ***	9.34 ***	11.39 ***	11.14 ***	9.68 ***	12.27 ***	11.61 ***	11.38 ***	10.45 ***	10.15 ***	10.82 ***

***, **, *, and † indicate significance at the 0.1%, 1%, 5%, and 10% levels, respectively. We matched firms with Bank Audit Board (n= 2510) to firms without (n= 8927), which is based on the propensity score of Models (1)–(4) in Table 7. We clustered standard errors at the firm level. *T*-values are in parentheses. Variables are defined in Appendix A.

TABLE 6

Estimated Results Related to First Stage (add)

	(1) Board Size	(2) Outside Director	(3) Audit Board Size	(4) Bank Audit Board
Lag Board Size	0.861 ***	-0.084 ***	0.005 ***	0.000
	(105.97)	(-4.51)	(4.97)	(-0.20)
Lag Outside Director	0.001	0.919 ***	0.000	0.000
	(0.63)	(149.74)	(0.55)	(0.60)
Lag Audit Board Size	0.012	0.129	0.855 ***	0.004
	(0.43)	(1.48)	(109.42)	(1.23)
Lag Bank Audit Board	0.024	0.028	-0.003	0.908 ***
	(0.82)	(0.30)	(-0.45)	(124.98)
Lag Foreign Ownership	-0.005 **	0.020 *	-0.001 +	-0.001
	(-2.86)	(2.45)	(-1.92)	(-1.64)
Lag Corporate Ownership	0.091	-0.041	0.018	-0.041 **
	(1.00)	(-0.11)	(0.85)	(-3.20)
Lag ADR	-0.123 *	0.586 **	0.005	-0.002
	(-2.11)	(2.92)	(0.44)	(-0.29)
Volatility	-0.079 ***	-0.088	-0.008 +	-0.001
	(-4.27)	(-1.06)	(-1.81)	(-0.44)
ln (MV)	0.169 ***	0.073	0.032 ***	0.003
	(8.64)	(0.87)	(7.09)	(1.31)
Market to Book	-0.012 +	0.066	-0.003	-0.002
	(-1.80)	(1.13)	(-1.38)	(-1.23)
ROA	0.005 +	0.005	0.000	0.001
	(1.78)	(0.39)	(-0.39)	(1.49)
Leverage	0.003 ***	0.003	0.001 ***	0.000
	(3.74)	(1.03)	(3.54)	(1.18)
Topix 500	-0.008	0.039	0.009	0.001
	(-0.15)	(0.21)	(0.83)	(0.16)
Big N	-0.055	-0.055	0.003	0.006
	(-1.54)	(-0.41)	(0.43)	(1.18)
Management Shareholdings	-0.001	-0.022 *	-0.001 **	0.000
	(-0.57)	(-2.56)	(-3.20)	(-1.05)
Stock Option	-0.027	0.295 *	0.003	-0.006
	(-0.87)	(2.40)	(0.37)	(-1.33)
Constant	-0.479 *	2.246 **	0.153 ***	-0.025
	(-2.47)	(2.75)	(3.69)	(-0.90)
Year Dummies	Yes	Yes	Yes	Yes
Number of observations	9784	9784	9784	9784
Adjusted R2	0.848	0.833	0.811	0.833
F	989.8 ***	1509.7 ***	1565.5 ***	824.4 ***

***, **, *, and † indicate significance at the 0.1%, 1%, 5%, and 10% levels, respectively. Dependent variables are Board Size, Outside Directors, Audit Board Size, and Bank Audit Board. Our instrumental variables are lagged variables of the instrumented variables, Foreign Ownership, and American depositary receipt **(**ADR**)**. We clustered standard errors at the firm level. *T*-values are in parentheses. Variables are defined in Appendix A.

TABLE 7

Estimated Results Related to Audit Board Members (2SLS)

$$\mathrm{ADA}_{it} = \beta_0 + \beta_1 Internal\ Contorl_{it} + \beta_2 Bank\ Monitoring_{it} + \Sigma\beta_j \mathrm{Control}_{it} + \varepsilon_{it} \quad (2)$$

	(1) Jones		(2) Modified Jones		(3) Modified CFO Jones	
Bank Audit Board	-0.208	**	-0.223	**	-0.209	***
	(-2.63)		(-2.93)		(-3.38)	
Audit Board Size	-0.101		-0.121		-0.121	
	(-1.16)		(-1.34)		(-1.60)	
Board Size	-0.021	+	-0.024	+	-0.035	***
	(-1.67)		(-1.95)		(-3.61)	
Outside Directors	0.009	*	0.009	+	0.007	+
	(2.06)		(1.88)		(1.70)	
Volatility	0.923	***	0.912	***	0.732	***
	(7.54)		(7.30)		(7.12)	
ln (MV)	-0.071		-0.039		-0.004	
	(-1.24)		(-0.64)		(-0.07)	
Market to Book	0.171	*	0.196	*	0.169	*
	(2.03)		(2.00)		(2.04)	
ROA	-0.014		-0.030	+	-0.056	***
	(-0.78)		(-1.80)		(-4.11)	
Leverage	0.002		-0.001		-0.001	
	(0.58)		(-0.19)		(-0.56)	
Topix 500	-0.491	***	-0.543	***	-0.307	**
	(-3.65)		(-3.83)		(-2.65)	
Big N	0.079		0.071		0.039	
	(0.75)		(0.66)		(0.47)	
Management Shareholdings	0.044	***	0.044	***	0.037	***
	(5.50)		(5.64)		(6.30)	
Stock Option	0.212	*	0.183	*	0.278	***
	(2.40)		(2.16)		(4.00)	
Constant	1.967	***	1.985	**	1.623	**
	(3.44)		(3.23)		(3.15)	
Year Dummies	Yes		Yes		Yes	
Number of observations	9784		9784		9784	
Adjusted R-squared	0.064		0.063		0.067	
F Test	19.11	***	19.97	***	18.45	***
Hansen J Test	6.34	+	5.91		3.95	
Underidentification test	2265.6	***	2265.6	***	2265.6	***
Anderson-Rubin Wald F	4.742	***	5.84	***	8.858	***
Anderson-Rubin Wald Chi2	33.27	***	40.98	***	62.16	***

***, **, *, and † indicate significance at the 0.1%, 1%, 5%, and 10% levels, respectively. Dependent Variables are ADA of *Jones* in Model (1), ADA of *Modified Jones* in Model (2), and ADA of *Modified CFO Jones* in Model (3)**.** The results of the first stage are shown in Table 5. We adopted the Hansen J test for over identification test. *Z*-values are in parentheses. Under-identification tests show the value of the Kleibergen-Paap LM statistic. Both Anderson-Rubin Wald F and Anderson-Rubin Wald Chi2 mean the values of Weak-instrument-robust inference. We clustered standard errors at the firm level. *T*-values are in parentheses. Variables are defined in Appendix A.

TABLE 8
Estimated Results (OLS)

$$\mathrm{ADA}_{it} = \beta_0 + \beta_1 Internal\ Contorl_{it} + \beta_2 Bank\ Monitoring_{it} + \Sigma\beta_j \mathrm{Control}_{it} + \varepsilon_{it} \quad (2)$$

	(1)		(2)		(3)		(4)	
	Modified Jones							
Board Size	-0.044	***	-0.044	***	-0.046	***	-0.045	***
	(-4.19)		(-4.20)		(-4.46)		(-4.21)	
Outside Directors	0.004		0.005				0.005	
	(1.38)		(1.45)				(1.57)	
Committee			-0.134		0.040		-0.141	
			(-0.60)		(0.20)		(-0.63)	
Bank Directors					-0.004		-0.009	
					(-0.39)		(-0.84)	
Volatility	0.954	***	0.954	***	0.952	***	0.953	***
	(9.14)		(9.15)		(9.11)		(9.13)	
ln (MV)	-0.068		-0.067		-0.061		-0.065	
	(-1.38)		(-1.35)		(-1.25)		(-1.32)	
Market to Book	0.196	*	0.196	*	0.198	*	0.196	*
	(2.45)		(2.45)		(2.46)		(2.45)	
ROA	-0.018		-0.018		-0.019		-0.019	
	(-1.26)		(-1.26)		(-1.27)		(-1.28)	
Leverage	0.002		0.002		0.002		0.002	
	(0.51)		(0.51)		(0.55)		(0.52)	
Topix 500	-0.511	***	-0.513	***	-0.508	***	-0.514	***
	(-3.98)		(-4.01)		(-3.94)		(-4.01)	
Big N	0.020		0.021		0.029		0.020	
	(0.19)		(0.19)		(0.27)		(0.19)	
Management Shareholdings	0.040	***	0.040	***	0.039	***	0.040	***
	(5.83)		(5.83)		(5.78)		(5.81)	
Stock Option	0.282	***	0.283	***	0.301	***	0.287	***
	(3.66)		(3.67)		(3.86)		(3.71)	
Constant	1.842	**	1.818	**	1.829	**	1.808	**
	(3.07)		(3.02)		(3.03)		(3.01)	
Year Dummies	Yes		Yes		Yes		Yes	
Number of observations	11689		11689		11689		11689	
Adjusted R-squared	0.070		0.070		0.069		0.070	
F Test	26.97	***	25.62	***	25.03	***	24.45	***

***, **, *, and † indicate significance at the 0.1%, 1%, 5%, and 10% levels, respectively. Dependent Variables are ADA of *Modified Jones* in Models (1)–(4). To control for residual dependence in our pooled time-series cross-sectional regression, we clustered standard errors at the firm and year level. *T*-statistics are shown in parentheses. Variables are defined in Appendix A.