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## EARNINGS MANAGEMENT AND MAIN BANK MONITORING MECHANISMS: EVIDENCE FROM JAPAN

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**Hideaki Sakawa***
Associate Professor, Nagoya City University
Graduate School of Economics
1, Yamanohata, MIzuho-cho, Mizuho-ku, Nagoya-city, 467-8501, Japan
e-mail: sakawa@econ.nagoya-cu.ac.jp

**Naoki Watanabe**
Associate Professor, Nagoya City University
Graduate School of Economics

**Akihiro Yamada**
Associate Professor, Chuo University
Faculty of Commerce

*Corresponding author

The Melco Foundation

Nagoya, Japan

# EARNINGS MANAGEMENT AND MAIN BANK MONITORING MECHANISMS: EVIDENCE FROM JAPAN *

**Hideaki Sakawa**[+]
**Naoki Watanabe**
**Akihiro Yamada**

## ABSTRACT

From the point of view of the agency problem, some monitoring mechanisms are represented as shareholders and the other stakeholders as lenders. The features of monitoring mechanisms differ across countries. In countries with dispersed ownership structures, such as the US, the largest block shareholders play a monitoring role to prevent opportunistic earnings management. On the other hand, Japan is one of the largest countries that have concentrated and long-term ownership structures, which differ from in Anglo-Saxon countries. There remains an empirical question about the relationship between Japanese corporate governance and the prevention of managerial opportunistic behavior. The effectiveness of monitoring roles has been criticized in light of corporate governance failures in the country, but few studies have investigated whether or not main banks are effective monitors for earnings management. This study investigates whether or not main bank systems are effective for mitigating client firms' earnings management behavior in Japan. Although Japanese traditional corporate governance mechanisms are known as relational or bank-dominated systems, foreign ownership in the country has increased since 1990s. In the period of transition to corporate governance, there remains the question of who is a gatekeeper for effectively decreasing opportunistic earnings management in Japan. We find that earnings management in firms with main bank relationships tend to be mitigated, compared with firms without such relationships. In addition, foreign shareholdings effectively help mitigate earnings management. This implies that main bank systems function as effective gatekeepers under bank-dominated systems and can effectively substitute for block shareholdings in the Anglo-Saxon system, that is, the system in countries with dispersed ownership structures.

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[+] Corresponding author. *Telephone number*: +81-52-872-5724, *Fax number*: +81-52-872-5724, *E-mail address*: sakawa@econ.nagoya-cu.ac.jp (H. Sakawa)

**Keywords***:* Earnings management, Main bank monitoring, Transition, Corporate governance, Foreign Shareholders

## 1 INTRODUCTION

Corporate governance refers to important mechanisms that influence the management decision making of firms in which ownership and management are separate. From the point of view of ownership differences in the agency problem (Jensen & Meckling, 1976), some monitoring mechanisms are represented as shareholders and the other stakeholders as lenders. The features of monitoring mechanisms differ across countries (e.g., La Porta, Lopez-de-Silanes, & Vishny, 1999). In countries with dispersed ownership structures, such as the United States, the largest block shareholders play a monitoring role to prevent opportunistic earnings management (Hadani, Goranova, & Khan, 2011)[1]. In countries where firms have concentrated ownership, large-block shareholdings of one shareholder can be used to exploit other shareholders (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998; 2000; La Porta et al., 1999; Shleifer & Vishny, 1997). Therefore, the monitoring of block shareholders is not expected in countries with concentrated ownership structures, unlike in countries where firms have dispersed ownership structures.

Previous studies imply that opportunistic earnings management would not be fully prevented either by monitoring by large block shareholders or by commercial banks. Theoretical studies like those of Diamond (1984) and Fama (1985) show that banks perform monitoring at lower costs because they are delegated monitors and have information advantages. In general, the opportunistic behavior of client firms directly worsens a bank's financial health. Therefore, monitoring is the most distinctive and important activity for banks (Freixas & Rochet, 1997). The association between ownership structure and earnings management differs from corporate governance mechanisms (Garcia & Ballesta, 2009). Particularly for East Asia, Fan and Wong (2002) point out that the conflicts between concentrated shareholders and minority shareholders are associated with low protection of investors' rights.

Based on the work of Leuz, Nanda, and Wysocki (2003), the following three distinct country clusters are defined: (1) outsider economies with strong legal enforcement, like the United States; (2) insider economies with strong legal enforcement, like Japan; and (3) insider economies with weak legal enforcement, like India. In countries with dispersed ownership structures or in outsider economies with strong legal enforcement, such as the United States, the stronger the bank monitoring of a firm's earnings management, the more effective the monitoring is (Ahn & Choi, 2009). On the other hand, Jha, Shankar, and Prakash (2015) show that the monitoring role of private banks does not help mitigate earnings management in India. Therefore, studies have produced mixed evidence related to the effectiveness of bank monitoring.

Japan is one of the largest countries that have concentrated and long-term ownership structures, which differs from those in Anglo-Saxon countries. In the 1990s, the Japanese

relationship-oriented corporate governance system, like main bank shareholdings, had been regarded as one that functions well (Aoki, 1990; Aoki, Patrick, & Sheard, 1994; Sheard, 1994). Japanese main bank systems are also known to delegate the role of monitoring for other creditors and shareholders (Aoki et al., 1994; Morck & Nakamura, 1999). In fact, banks and corporate shareholders play the important role of a disciplinary mechanism (Kaplan & Minton, 1994), and main banks play the role of forcing turnover at firms with poor performance, like significant lost profits (Kang & Shivdasani, 1995). Therefore, their long-term shareholdings might provide an incentive for effective monitoring.

The Japanese corporate ownership structure after the financial deregulation period is characterized by an increase of foreign shareholdings, and this increase of foreign shareholdings is also significant after the 1990s. Foreign shareholders typically have short-term investment horizons (Uno & Kamiyama, 2010), and their interests are based on trade profits[2]. For the sake of short-term trading profits, they are expected to be less active in their monitoring activity of decreasing opportunistic earnings management.

There remains the empirical question about the relationship between Japanese corporate governance and prevention of managerial opportunistic behavior. The effectiveness of monitoring roles has not been fully examined in Japan after the 1990s, despite having been criticized in light of corporate governance failures in the country. In fact, Plender (2007) raised questions about the effectiveness of Japanese corporate governance. In addition, the recent corporate scandal involving Olympus Corp. has been described by a former chief executive, Michael Wood (Soble, 2011), as a typical case of false reporting induced by opportunistic earnings management in Japan in the 2000s. However, few studies have investigated whether or not main banks are effective monitors for earnings management. In this study, we investigate whether or not bank-dominated governance systems moderate earnings management as effective monitoring mechanisms in Japan.

The results of our study are summarized as follows. First, we find that main bank monitoring activities are effective for preventing opportunistic earnings management. This finding implies that main bank systems play an important monitoring role in financial reporting under the Japanese-bank dominated corporate governance system. Second, foreign shareholdings are not associated with earnings management. These results suggest that Japanese bank-dominated corporate governance plays the important monitoring role of mitigating earnings management.

The rest of our paper is organized as follows. In Section 2, we provide a background of Japanese corporate governance. In section 3, we construct our empirical hypotheses, and in Section 4, we explain our empirical strategies and data. In section 5, we present our empirical results, and in Section 6, we summarize and discuss the findings.

## 2 BACKGROUND OF JAPANESE CORPORATE GOVERNANCE SYSTEM

The Japanese corporate governance system is regarded as being in a transitional period. Its traditional corporate governance is a bank-centered and relationship-oriented system, different from a market-oriented system such as that in the United States. Until the early 1990s, traditional Japanese firms were characterized by their highly concentrated patterns of long-term ownership, such as having a main bank and adopting the keiretsu system (Aoki, 1990). A main bank acts as the largest lender and shareholder for the client firm[3]. Like the keiretsu system, stable cross shareholdings are a feature of traditional Japanese corporate governance. Stable shareholdings in Japan are similar to those in other East Asian countries (Claessens, Djankov, & Lang, 2000).

After the financial deregulation, commercial banks were limited in their use of cross shareholding by the Banks' Shareholding Restriction Law (Hoshi & Kashyap, 2010). Miyajima and Kuroki (2007) report that cross shareholdings have decreased since 1997, and the Japanese financial deregulation is expected to restrict main bank shareholdings to less than 5%, which would weaken main bank monitoring. The Japanese ownership structure is not characterized as family controlled, as in most East Asian countries. Rather, they are controlled by the mutual relationships and main bank shareholdings and cross shareholdings (Morck & Nakamura, 2005). Because of these characteristics, short-term shareholders, such as foreign shareholders, have increased (Ahmadjian & Robbins, 2005), which implies a weakening of Japanese corporate governance in the 2000s because the traditional main bank systems and keiretsu system might have weakened.

Furthermore, audit quality is important for precise financial reporting. Audit quality also depends on the audit firm size (Becker, DeFond, Jiambalvo, & Subramanyam, 1998; Francis, Maydew, & Sparks, 1999). Large Japanese audit firms were restructured after the Kanebo Co. earnings fraud case in 2005. In this fraud case, external auditors from Chuo-Aoyama PWC, one of the Big 4 audit firms, were accomplices in falsifying accounting reports (Sanchanta, 2006)[4]. However, even after the restructuring of the large audit firms, there remains the question of whether or not the audit quality of these large audit firms (i.e., Big N, or firms belonging to the Big 4 or Big 5) in Japan has improved. The recent corporate scandal of Olympus Corp. symbolizes the lack of internal controls in Japanese firms and raises doubts about whether or not even audit firms with sterling reputations can be effective gatekeepers[5]. In that sense, there remains the important task of revealing who is a gatekeeper for effectively decreasing opportunistic earnings management in Japan.

# 3 HYPOTHESES DEVELOPMENT

In this section, we describe the construction of two hypotheses about the relationship between Japanese ownership structure and earnings management. Japanese corporate governance has been in a transitional mode since after the 2000s when the financial deregulation was implemented, and unstable shareholders, as represented by foreign shareholders, are expected to increase. Therefore, we construct the hypotheses based on, respectively, traditional and recent changes in Japanese corporate governance mechanisms.

Aoki et al. (1994) emphasize that main bank monitoring roles are a function of client firms connected by their relationships with their main banks. Regarding bank-centered economies, main bank ties present benefits for client firms because main banks appoint directors for client firms when they are in a bad condition (Sheard, 1994). In addition, main banks tend to hold states in the client firms as stable shareholders (Prowse, 1990). Main bank shareholdings have functioned as effective monitors in Japan in the 1990s (Hiraki, Inoue, Ito, Kuroki, & Masuda, 2003; Morck & Nakamura, 1999; Morck, Nakamura, & Shivdasani, 2000)[6]. Japanese banks help provide positive incentives for executives in firms with bank relationships (Colpan & Yoshikawa, 2012; Sakawa & Watanabel, 2008). As Goto and Uchida (2012) mention, main banks have played an effective monitoring role in Japan since after the 2000s. Therefore, we construct the following hypothesis:

***Hypothesis 1:*** *Greater main bank shareholdings are associated with less earnings management, proxied by discretionary accruals (DA).*

Foreign shareholders increased rapidly during the 2000s. Regarding investment strategies, Lang and McNichols (1997) point out that short-horizon investors trade more frequently for the sake of lower transaction costs. Uno and Kamiyama (2010) find that the investment horizon of foreign shareholders is less than a year. Shorter-term shareholders might not be interested in preventing earnings management because they are more concerned about short-term profits. However, foreign shareholdings might actively monitor to mitigate opportunistic earnings management. In Japan, foreign shareholdings put pressure to disclosure in order to increase their profit and the firm's market liquidity. (Sakawa, Ubukata, & Watanabel, 2014). In addition, foreign investors seek profitability when the corporations diversify and their styles differ from those of domestic shareholders (David, O'Brien, Yoshikawa, & Delios, 2010). These findings suggest the active monitoring by shareholders, such foreign shareholders. However, this previous evidence has not determined whether or not foreign shareholdings effectively perform their monitoring function. In the following hypothesis, we assume the effective monitoring of foreign shareholdings.

***Hypothesis 2:*** *Greater foreign shareholdings are associated with less earnings management, proxied by discretionary accruals (DA).*

# 4 EMPIRICAL STRATEGIES AND DATA

## 4.1 Empirical Strategies

Japanese corporate governance is a bank-centered and relationship-oriented system that differs from the market-oriented system in the United States. After the 2000s, Japanese corporate governance has been adopted as a feature of Anglo-Saxon-type corporate governance mechanisms. After introducing earnings management metrics, we describe the construction of a model examining the association between earnings management and corporate governance mechanisms. In particular, we examine the relationship between earnings management and corporate governance in Japan.

In this study, we use discretionary accruals as a proxy of earnings management, consistent with previous studies (Bartov, Mohanram, & Seethamraju, 2001; Klein, 2002; Warfield, Wild, & Wild, 1995). We adopt the absolute value of discretionary accruals because managers adjust the earnings report upward or downward using positive or negative accruals, respectively. According to the Jones and cross-sectional modified Jones models, discretionary accruals (*DA*) are calculated as in equation (1), which represents a difference between total accruals (*TA*) and nondiscretionary accruals (*NDA*), divided by total assets for the beginning period. The total accruals (*TA*) are the difference between net income and cash flows from operations.

$$\frac{DA_{\mathrm{it}}}{A_{\mathrm{it-1}}} = \frac{TA_{\mathrm{it}}}{A_{\mathrm{it-1}}} - \frac{NDA_{\mathrm{it}}}{A_{\mathrm{it-1}}} \qquad (1)$$

The total accruals (*TA*) are calculated as in the Jones and cross-sectional modified Jones models (Dechow, Sloan, & Sweeney, 1995; Jones, 1991). Assets (*A*) denotes total assets for firm *i* in the year *t*. Each of the models is estimated using equation (2), and each model's non-discretionary accruals (*NDA*) are estimated separately using both equations (3) and (4).

$$\frac{TA_{\mathrm{it}}}{A_{\mathrm{it-1}}} = \frac{\alpha}{A_{\mathrm{it-1}}} + \beta_1 \frac{\Delta REV_{\mathrm{it}}}{A_{\mathrm{it-1}}} + \beta_2 \frac{PPE_{\mathrm{it}}}{A_{\mathrm{it-1}}} + \varepsilon_{\mathrm{it}} \qquad (2)$$

$$\frac{\mathrm{ND}A_{\mathrm{it}}}{A_{\mathrm{it-1}}} = \frac{\hat{\alpha}}{A_{\mathrm{it-1}}} + \hat{\beta}_1 \frac{\Delta REV_{\mathrm{it}}}{A_{\mathrm{it-1}}} + \hat{\beta}_2 \frac{PPE_{\mathrm{it}}}{A_{\mathrm{it-1}}} \qquad (3)$$

$$\frac{\mathrm{ND}A_{\mathrm{it}}}{A_{\mathrm{it-1}}} = \frac{\hat{\alpha}}{A_{\mathrm{it-1}}} + \hat{\beta}_1 \frac{\Delta REV_{\mathrm{it}} - \Delta AR_{\mathrm{it}}}{A_{\mathrm{it-1}}} + \hat{\beta}_2 \frac{PPE_{\mathrm{it}}}{A_{\mathrm{it-1}}} \qquad (4)$$

In these equations, *TA* 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 the year *t*; *ΔREV* signifies change in net revenue for firm *i* in the year *t*; *ΔAR* is the change in accounts receivable for firm *i* in the year *t*; *PPE* represents property, plant, and

equipment for firm *i* in the year *t*; and $\varepsilon_{it}$ represents error terms for firm *i* in the year *t*. A previous study of Japanese companies by Darrough, Pourjalali, and Saudagaran (1998) do not use either the Jones or modified Jones model because of limitations in the historical data. Therefore, we adopt and extend these models from the previous studies on Japan. The model is estimated separately for each Nikkei industry three-digit code and year to obtain industry-specific estimates of the coefficients, following Teshima and Shuto (2008). The change in accounts receivable (*ΔAR*) is not included in estimating the parameters of *TA* in equation (2), but it is included in the estimation of non-discretionary accruals (*NDA*) in equation (4).

The increases of transient shareholders, such as foreign shareholders, tend to be significant for our sample period. These gradual changes in Japanese corporate governance have influenced earnings management. We examine the following ordinary least squares (OLS) regression equation.

$$|\mathrm{DA}|_{it} = \beta_0 + \beta_1 Main\ Bank\ \mathrm{Shareholdings}_{it} + \beta_2\ \mathrm{Foreign\ Shareholdings}_{it} + \Sigma\beta_i \mathrm{Control}_{it} + \varepsilon_{it} \qquad (5)$$

In this equation, |DA| stands for the absolute value of discretionary accruals (*DA*) using the Jones and modified Jones models.

We include two ownership variables to analyze the two empirical hypotheses. We define the main bank as the largest lender of the clients (Aoki et al., 1994). Therefore, *Main Bank Shareholdings* represents the proportion of the largest lender's shareholdings, following Morck et al. (2000). *Foreign shareholdings* is defined as the proportion of large foreign investors that own more than 5 percent[7].

The control variables are selected as in previous studies. *Cross shareholdings* is equal to the proportion of cross shareholdings. Japanese business groups, or *Keiretsu*, are known as a major entity in cross shareholdings. These cross shareholdings are a kind of "mutual insurance" that prevents hostile takeovers (Dow & McGuire, 2009). *Management Shareholdings* means the proportion of the board of directors' shareholdings, following Morck et al. (2000) and Teshima and Shuto (2008). *Top 10 Ownership* is adopted to control for ownership concentration. *R&D Intensity* is measured by the ratio of annual R&D expenditure to sales. We adopt stock return volatility (*Volatility*) to control for firm risk, as well as M&A and Big N dummy variables. *M&A Dummy* is equal to 1 if a firm experiences M&A activity and is 0 otherwise, and *Big N* is equal to 1 if a firm is audited by a Big 4 or Big 5 audit firm and is 0 otherwise. We control for growth as a market-to-book ratio (*MTB*) because growing firms are more likely to be associated with earnings management (Matsumoto, 2002). Firm size is controlled for by the logarithm of market value (*MV*), and firm profit by return on assets (*ROA*). We also adopt a negative profit dummy variable (*Negative Profit*) that is equal to 1 if return on assets (*ROA*) is negative and is 0 otherwise. We also

include financial leverage (*Leverage*) to control for correlation with discretionary accruals (DeFond & Jiambalvo, 1994; Frankel, Johnson, & Nelson, 2002), and executive stock option compensation (*Stock Option*) (Sakawa, Moriyama, & Watanabel, 2012) to control for long-term incentives. Finally, we also use directors' compensation (*Director Compensation*) as a control variable, following Teshima and Shuto (2008).

We also control for several bank characteristic variables following Ahn and Choi (2009). The deposit relationships are controlled by cash balance, defined as the ratio of cash and deposits to total assets. This ratio is predicted to have aearnings management because banks with stronger deposit relationships have more discernible information. Collateral loan might also be related to bank monitoring, and we control for collateral loan with a dummy variable that is equal to 1 if firms have collateral debt and is 0 otherwise. We also control for loan type using transactional debt ratio, which is calculated as the ratio of transactional debt, consistent with David, O'Brien, and Yoshikawa (2008), and is related to bank monitoring activity. Finally, we control for refinance risk using debt term, which is defined as the ratio of short-term debt. Barclay and Smith (1995) state that firms with low refinance risk are likely to issue short-term debt. Thus, firms with lower debt terms are predicted to face higher refinance risk and are monitored by banks, consistent with Ahn and Choi (2009).

### 4.2 Data and Descriptive Statistics

We select the data from nonfinancial firms listed in the first section of the Tokyo Stock Exchange during 2006–2010[8]. The financial accounting data are collected from the Nikkei Needs Corporate database, and the corporate governance data, including stock ownership and board composition, are obtained from the Nikkei Needs Corporate Governance Evaluation System (CGES) database. The audit firms' information is hand-collected by Toyo Keizai (2006–2010). The Big N audit firms consist of Big 4 or Big 5 audit firms during our sample period[9]. Our selected sample consists of 6,134 firm–year observations[10].

Table 1. Summary Statistics

| Variable | N | Mean | Median | S.D. | 5% | 95% |
|---|---|---|---|---|---|---|
| *Dependent Variables* | | | | | | |
| Jones DA | 6134 | 0.039 | 0.027 | 0.048 | 0.002 | 0.111 |
| Modified Jones DA | 6134 | 0.039 | 0.027 | 0.048 | 0.002 | 0.111 |
| Performance-matched Jones DA $ROA_t$ | 6134 | 0.056 | 0.039 | 0.064 | 0.003 | 0.163 |
| Performance-matched Modified Jones DA $ROA_t$ | 6134 | 0.056 | 0.039 | 0.064 | 0.004 | 0.162 |
| *Ownership Structure* | | | | | | |
| Main Bank Shareholdings | 6134 | 1.206 | 0.000 | 1.773 | 0.000 | 4.770 |
| Foreign Shareholdings | 6134 | 1.665 | 0.000 | 5.684 | 0.000 | 10.530 |
| Cross Shareholdings | 6134 | 9.330 | 7.580 | 8.659 | 0.000 | 26.550 |
| Management Shareholdings | 6134 | 3.372 | 0.394 | 7.227 | 0.029 | 18.384 |
| Top 10 Ownership | 6134 | 47.217 | 44.835 | 13.880 | 27.700 | 72.480 |
| *Other Variables* | | | | | | |
| R&D Intensity | 6134 | 0.037 | 0.016 | 0.070 | 0.000 | 0.141 |
| Volatility | 6134 | 2.434 | 2.325 | 0.780 | 1.397 | 3.840 |
| M&A Dummy | 6134 | 0.015 | 0.000 | 0.120 | 0.000 | 0.000 |
| Big N | 6134 | 0.821 | 1.000 | 0.383 | 0.000 | 1.000 |
| Market to Book | 6134 | 1.386 | 1.080 | 1.210 | 0.433 | 3.212 |
| ROA | 6134 | 5.381 | 4.436 | 6.075 | -2.290 | 15.241 |
| Negative Profit | 6134 | 0.100 | 0.000 | 0.300 | 0.000 | 1.000 |
| ln (MV) | 6134 | 10.988 | 10.770 | 1.583 | 8.747 | 13.911 |
| Leverage | 6134 | 51.716 | 52.560 | 19.709 | 18.340 | 82.400 |
| Stock Option | 6134 | 0.347 | 0.000 | 0.476 | 0.000 | 1.000 |
| Director Compensation | 6134 | 281.3 | 208.0 | 280.3 | 65.0 | 725.0 |
| Cash Balance | 6134 | 0.122 | 0.100 | 0.091 | 0.021 | 0.299 |
| Collateral | 6134 | 0.370 | 0.000 | 0.483 | 0.000 | 1.000 |
| Transaction Debt | 6134 | 0.114 | 0.000 | 0.202 | 0.000 | 0.583 |
| Debt Term | 6134 | 0.522 | 0.508 | 0.309 | 0.000 | 1.000 |

Note: The variables are defined in Appendix A.

Table 1 presents the descriptive statistics. The mean of the absolute value of discretionary accruals (*DA*) using the Jones and modified Jones models are about 4% of total assets. The average of *Main Bank Shareholdings* is about 1.2%, which means that these banks' stakes are smaller. This lower degree of ownership might be the result of the financial deregulation, which restricts bank ownership to less than 5%. The average of *Foreign Shareholdings* is about 1.7%, which is larger than the main bank shareholdings. The mean of *Cross Shareholdings* is about 9%, which implies that traditional cross shareholdings are maintained. The average of *Management Shareholdings*

and *Top 10 Ownership* are about 3.4% and 47%, respectively. As for the other characteristics of the sample firms, *Big N* accounts for 82% of the firms on average, which implies that most firms employ large audit firms with good reputations. The average of the market-to-book ratio (*MTB*) is about 1.4. *Stock Options* have been introduced at about 35% of the firms, which implies that more than one-third of executives have long-term incentives. The descriptive statistics of the bank characteristic variables are summarized as follows. The average of cash balance is about 0.122. The mean of collateral is about 0.37, smaller than that reported for the United States by Ahn and Choi (2009). Transactional debt occupies about 0.114, which is similar to the evidence for Japanese firms in the early 2000s by David et al. (2008). The average of debt term is about 0.552.

# 5 EMPRICAL RESULTS

## 5.1 OLS Results

Our OLS results for equation (5) are presented and interpreted in this subsection. Using the OLS results, we investigate the adequacy of our two hypotheses about the relationship between corporate governance structure and earnings management. We first report the OLS results for equation (5) in Table 2, which shows that *Main Bank Shareholdings* is negatively associated with earnings management, consistent with H1. Main bank shareholdings are effective for preventing managerial opportunistic earnings management, which implies that after the financial deregulation, main bank shareholdings have remained effective in restricting bank stakes. In contrast, we could not obtain significant results for foreign shareholdings, inconsistent with H2.

Table 2. Estimated Results (OLS)

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Modified Jones DA | | | | | Jones DA |
| | Cash Balance | Collateral | Transaction Debt | Debt Term | Full | Full |
| Main Bank Shareholding | -0.001 ** | -0.001 ** | -0.001 ** | -0.001 ** | -0.001 * | -0.001 ** |
| | (-2.80) | (-2.74) | (-2.83) | (-2.75) | (-2.58) | (-2.70) |
| Foreign Shareholdings | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (1.09) | (1.13) | (1.12) | (1.10) | (1.09) | (1.10) |
| Cross Shareholdings | 0.000 *** | 0.000 *** | 0.000 *** | 0.000 *** | 0.000 *** | 0.000 *** |
| | (-5.32) | (-5.66) | (-5.82) | (-5.82) | (-5.20) | (-5.25) |
| Management Shareholdings | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (1.04) | (1.34) | (1.20) | (1.22) | (1.14) | (1.10) |
| Top 10 Ownership | 0.000 * | 0.000 * | 0.000 * | 0.000 * | 0.000 * | 0.000 * |
| | (2.54) | (2.29) | (2.55) | (2.43) | (2.33) | (2.20) |
| R&D Intensity | -0.006 | -0.005 | -0.006 | -0.005 | -0.005 | -0.008 |
| | (-0.43) | (-0.33) | (-0.41) | (-0.32) | (-0.34) | (-0.54) |
| Volatility | 0.012 *** | 0.013 *** | 0.013 *** | 0.013 *** | 0.013 *** | 0.013 *** |
| | (6.43) | (6.88) | (6.74) | (6.72) | (6.48) | (6.42) |
| M&A Dummy | 0.014 ** | 0.015 ** | 0.014 ** | 0.014 ** | 0.014 ** | 0.013 ** |
| | (2.62) | (2.68) | (2.63) | (2.67) | (2.68) | (2.70) |
| Big N | -0.003 + | -0.003 + | -0.003 + | -0.003 + | -0.003 + | -0.003 + |
| | (-1.76) | (-1.82) | (-1.77) | (-1.83) | (-1.87) | (-1.94) |
| Market to Book | 0.003 ** | 0.003 ** | 0.004 ** | 0.004 ** | 0.003 ** | 0.003 ** |
| | (2.77) | (2.85) | (2.95) | (2.93) | (2.69) | (3.18) |
| ROA | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (-0.65) | (-0.48) | (-0.46) | (-0.49) | (-0.53) | (-0.84) |
| Negative Profit | 0.009 ** | 0.010 ** | 0.009 ** | 0.009 ** | 0.009 ** | 0.008 * |
| | (2.64) | (2.88) | (2.86) | (2.85) | (2.66) | (2.37) |
| ln (MV) | -0.001 + | -0.001 + | -0.002 * | -0.002 * | -0.001 + | -0.002 + |
| | (-1.69) | (-1.85) | (-2.08) | (-2.10) | (-1.75) | (-1.93) |
| Leverage | 0.000 + | 0.000 * | 0.000 | 0.000 | 0.000 * | 0.000 * |
| | (1.94) | (2.15) | (1.48) | (1.50) | (2.40) | (2.34) |
| Stock Option | 0.004 * | 0.004 * | 0.004 * | 0.004 * | 0.004 * | 0.004 * |
| | (2.25) | (2.39) | (2.37) | (2.37) | (2.29) | (2.49) |
| Director Compensation | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (-0.68) | (-0.61) | (-0.60) | (-0.57) | (-0.64) | (-0.60) |
| Cash Balance | 0.017 | | | | 0.015 | 0.015 |
| | (1.39) | | | | (1.21) | (1.22) |
| Collateral Ratio | | -0.005 ** | | | -0.004 * | -0.005 * |
| | | (-2.65) | | | (-2.54) | (-2.57) |
| Transaction Debt | | | 0.003 | | 0.002 | 0.002 |
| | | | (1.00) | | (0.55) | (0.71) |
| Debt Term | | | | -0.004 + | -0.004 + | -0.004 + |
| | | | | (-1.88) | (-1.66) | (-1.80) |
| Constant | 0.003 | 0.008 | 0.009 | 0.012 | 0.007 | 0.010 |
| | (0.24) | (0.82) | (0.88) | (1.15) | (0.65) | (0.88) |
| Num. obs. | 6134 | 6134 | 6134 | 6134 | 6134 | 6134 |
| Adjusted $R$-squared | 0.095 | 0.095 | 0.094 | 0.095 | 0.096 | 0.097 |
| $F$ Test | 11.53 *** | 12.21 *** | 11.01 *** | 10.80 *** | 12.03 *** | 12.60 *** |

Notes: The dependent variables are the modified Jones discretionary accruals (DA) in Models (1)-(5) and Jones discretionary accruals (DA) in Model (6). The standard errors are

two-way clusters with *t*-values shown in parentheses. The robust *t*-statistics are shown in parentheses. +, *, **, and *** indicate that the estimates are significant at 10%, 5%, 1%, and 0.1%, respectively.

The results for the control variables are summarized as follows. *Cross Shareholdings* also has a negative and significant relationship with earnings management, and *Top 10 Ownership* is significant and positive at 5% for the sample firms. The variables *Volatility* and *M&A Dummy* are significant and positive, and *Big N* is not significant at 5%. *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). *ROA* is not significant, but *Negative Profit* is significant and positive. *ln(MV)* is not significant at 5%. *Stock Option* is positively associated with earnings management, which contradicts our prediction. Finally, *Collateral* is significantly negative, inconsistent with Ahn and Choi (2009).

Table 3. Additional Estimated Result

| | (1) Matched DA ROA(t) | | (2) Matched Modified DA ROA(t) | |
|---|---|---|---|---|
| Main Bank Shareholding | -0.001 | * | -0.001 | * |
| | (-2.18) | | (-2.02) | |
| Foreign Shareholdings | 0.000 | | 0.000 | |
| | (1.19) | | (1.15) | |
| Cross Shareholdings | 0.000 | *** | 0.000 | *** |
| | (-3.68) | | (-3.95) | |
| Management Shareholdings | 0.000 | | 0.000 | |
| | (1.59) | | (1.55) | |
| Top 10 Ownership | 0.000 | * | 0.000 | * |
| | (2.05) | | (2.05) | |
| R&D Intensity | -0.018 | | -0.016 | |
| | (-0.93) | | (-0.89) | |
| Volatility | 0.012 | *** | 0.012 | *** |
| | (5.27) | | (5.21) | |
| M&A Dummy | 0.009 | | 0.012 | |
| | (1.23) | | (1.43) | |
| Big N | -0.004 | * | -0.004 | * |
| | (-2.17) | | (-2.32) | |
| Market to Book | 0.004 | ** | 0.004 | ** |
| | (3.05) | | (2.75) | |
| ROA | 0.000 | | 0.000 | |
| | (-0.66) | | (-0.40) | |
| Negative Profit | 0.015 | ** | 0.015 | ** |
| | (2.99) | | (3.09) | |
| ln (MV) | -0.001 | | -0.001 | |
| | (-0.89) | | (-0.79) | |
| Leverage | 0.000 | | 0.000 | |
| | (0.90) | | (0.90) | |
| Stock Option | 0.003 | + | 0.003 | |
| | (1.86) | | (1.63) | |
| Director Compensation | 0.000 | | 0.000 | |
| | (-0.83) | | (-0.82) | |
| Cash Balance | 0.031 | * | 0.031 | * |
| | (2.36) | | (2.33) | |
| Collateral Ratio | -0.003 | | -0.003 | |
| | (-1.20) | | (-1.10) | |
| Transaction Debt | 0.002 | | 0.002 | |
| | (0.58) | | (0.38) | |
| Debt Term | -0.001 | | -0.001 | |
| | (-0.32) | | (-0.22) | |
| Constant | 0.016 | | 0.015 | |
| | (1.13) | | (1.10) | |
| Num. obs. | 6134 | | 6134 | |
| Adjusted $R$-squared | 0.063 | | 0.061 | |
| $F$ Test | 7.59 | *** | 7.38 | *** |

Notes: The variables are defined in Appendix A. The dependent variables are the Jones model's performance-matched discretionary accruals (DA) with the current ROA in Model (1) and modified Jones model's performance-matched discretionary accruals (DA) with the current ROA in Model (2). The standard errors are two-way clusters, with the *t*-values shown in parentheses.

The robust *t*-statistics are shown in parentheses. +, *, **, and *** indicate that the estimates are significant at 10%, 5%, 1%, and 0.1%, respectively.

To check the robustness of the results, we also estimate the Jones model's performance-matched discretionary accruals with the current ROA following Kothari, Leone, and Wasley (2005)[11]. According to the estimated results shown in Table 3, *Main Bank Shareholdings* is significantly negative, consistent with H1. Furthermore, *Foreign shareholdings* is not significant, inconsistent with H2, and *Cross shareholdings* is significant and negative. These results support the robustness of the OLS results using performance-matched discretionary accruals.

5.2 Simultaneous Equations

We also consider endogeneity, an ownership variable, and earnings management. In particular, we investigate the possible endogenous relationships between monitoring activity and earnings management. To explore the endogenous relationship between main bank monitoring, cross shareholdings, foreign shareholdings, and earnings management, we use two-stage least-squares (2SLS) regression. We estimate four models to check the robustness of the results in Table 4. We adopt instrumental variables, namely the lagged variables of main bank monitoring, cross shareholdings, foreign shareholdings, and a dummy variable for American depositary receipt **(**ADR**)**[12].

Table 4. Estimated Results (2SLS)

| | (1) DA | (2) Modified DA | (3) Matched DA ROA(t) | (4) Matched Modified DA ROA(t) |
|---|---|---|---|---|
| Main Bank Shareholding | -0.001 * | -0.001 * | -0.001 * | -0.001 * |
| | (-2.43) | (-2.48) | (-2.15) | (-2.08) |
| Foreign Shareholdings | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.75) | (0.81) | (1.06) | (1.01) |
| Cross Shareholdings | 0.000 *** | 0.000 *** | 0.000 *** | 0.000 *** |
| | (-5.27) | (-5.18) | (-3.39) | (-3.55) |
| Management Shareholdings | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.40) | (0.39) | (1.48) | (1.42) |
| Top 10 Ownership | 0.000 * | 0.000 * | 0.000 | 0.000 |
| | (2.27) | (2.37) | (1.57) | (1.57) |
| R&D Intensity | -0.001 | 0.001 | -0.013 | -0.012 |
| | (-0.08) | (0.12) | (-0.87) | (-0.87) |
| Volatility | 0.011 *** | 0.011 *** | 0.010 *** | 0.010 *** |
| | (5.98) | (6.02) | (4.79) | (4.76) |
| M&A Dummy | 0.008 | 0.008 | 0.005 | 0.006 |
| | (1.58) | (1.56) | (0.59) | (0.70) |
| Big N | -0.003 + | -0.003 + | -0.004 | -0.004 + |
| | (-1.79) | (-1.69) | (-1.57) | (-1.68) |
| Market to Book | 0.005 *** | 0.005 *** | 0.006 *** | 0.006 *** |
| | (3.76) | (3.76) | (3.71) | (3.61) |
| ROA | 0.000 | 0.000 | 0.000 | 0.000 |
| | (-0.56) | (-0.42) | (-0.83) | (-0.65) |
| Negative Profit | 0.008 ** | 0.008 ** | 0.015 *** | 0.015 *** |
| | (2.67) | (2.97) | (3.70) | (3.82) |
| ln (MV) | -0.002 * | -0.002 * | -0.001 | -0.001 |
| | (-2.34) | (-2.31) | (-1.32) | (-1.31) |
| Leverage | 0.000 + | 0.000 + | 0.000 | 0.000 |
| | (1.65) | (1.66) | (0.65) | (0.60) |
| Stock Option | 0.004 ** | 0.004 * | 0.004 * | 0.004 * |
| | (2.69) | (2.42) | (2.14) | (1.98) |
| Director Compensation | 0.000 + | 0.000 + | 0.000 | 0.000 |
| | (-1.68) | (-1.75) | (-0.67) | (-0.62) |
| Cash Balance | 0.018 + | 0.018 + | 0.039 ** | 0.040 ** |
| | (1.69) | (1.69) | (2.77) | (2.82) |
| Collateral Ratio | -0.004 * | -0.004 * | -0.002 | -0.002 |
| | (-2.24) | (-2.10) | (-0.91) | (-0.77) |
| Transaction Debt | 0.004 | 0.005 | 0.004 | 0.004 |
| | (1.30) | (1.32) | (0.78) | (0.75) |
| Debt Term | -0.003 | -0.002 | 0.002 | 0.003 |
| | (-1.11) | (-0.94) | (0.72) | (0.86) |
| Constant | 0.014 | 0.013 | 0.022 | 0.022 |
| | (1.38) | (1.24) | (1.55) | (1.58) |
| Num. obs. | 4768 | 4768 | 4768 | 4768 |
| Adjusted $R$-squared | 0.086 | 0.087 | 0.058 | 0.057 |
| $F$ Test | 10.25 *** | 10.54 *** | 8.17 *** | 8.23 *** |
| Hansen $J$ Test | 1.559 | 1.671 | 0.558 | 0.650 |

Notes: The dependent variables are the Jones discretionary accruals (DA) in Model (1), modified Jones DA in Model (2), Jones model's performance-matched DA with the current ROA in Model (3), and modified Jones model's performance-matched DA with the current ROA in Model (4). All estimations use the instrumented variables Main Bank Shareholdings, Foreign Shareholdings, and Cross Shareholdings. Our instrumental variables are lagged variables of main bank shareholdings, foreign shareholdings, cross shareholdings, and American depositary receipt

(ADR). The *Z*-values are in parentheses. +, *, **, and *** indicate that the estimates are significant at 10%, 5%, 1%, and 0.1%, respectively.

From Table 4, we find that the estimated results of the 2SLS regression are almost identical to the OLS results. *Main Bank Shareholdings* is negatively associated with earnings management for all four models, which is consistent with H1. *Foreign Shareholdings* is not significant, which implies that such shareholdings are ineffective monitors for preventing opportunistic earnings management. As for the other firm characteristic variables, the coefficient of *Cross Shareholdings* is significant and negative after considering endogeneity. *Top 10 Ownership* is positive but not significant at 5%. *M&A Dummy* is not significant. *Big N* is also not significant, which implies that large audit firms with good reputations do not help mitigate opportunistic earnings management in Japan. As for the bank characteristic variables, collateral is the only significantly negative variable for the Jones and modified Jones models, and we could not find significant effects of the bank characteristic variables.

# 6 CONCLUSIONS

## 6.1 Key Findings and Implications

In this study, we examine the relationship between earnings management and Japanese corporate governance structure, represented as main bank monitoring and foreign shareholdings, respectively. The Japanese corporate ownership structure is characterized by main bank ownership and cross-shareholders such as keiretsu, different from the dispersed ownership structure that prevails in the United States. The recent increase of foreign shareholdings might occur the possibility that the increase of these institutional investors would change monitoring systems in Japan. Therefore, we investigated whether or not these Japanese corporate governance features mitigate opportunistic earnings management.

Our empirical findings show that main bank shareholdings function as effective gatekeepers. Despite the restriction of financial shareholdings by the financial deregulation after the 2000s, main bank shareholdings remain effective. As for foreign shareholders, we could not obtain significant results. In other words, recent Japanese ownership structural changes, such as regarding foreign shareholdings, are expected not to provide incentives to seek precise financial reporting[13]. We obtain significant results for cross shareholdings, which implies that cross shareholdings have functioned effectively to mitigate earnings management in Japan since the 2000s.

These results imply that main bank shareholdings persist as an important component of Japanese corporate governance since the financial deregulation after the 2000s. Under Japanese bank-dominated corporate governance, main banks' roles have remained important even after the transitional period of market-oriented corporate governance mechanisms. This result implies that the monitoring activity of main banks plays an important role under bank-dominated corporate

governance and as a substitute for block shareholdings in countries with dispersed ownership structures.

### 6. 2 Limitation and Future Research

Japanese audit quality has been discussed frequently since the emergence of two important cases of corporate fraud in the past decade involving Kanebo Co. (2005) and Olympus Corp. (2011). In our study, we specifically examine whether or not the main bank relationships, which have recently weakened, have functioned as effective monitors. Ascertaining the effectiveness of the monitoring by main bank systems is invaluable to preventing managerial opportunistic behaviors in the transitional period for ownership structure, such as that with the increase of foreign owners. These findings are expected to provide lessons for other emerging countries that anticipate an increase of foreign shareholdings. The institution of Japanese corporate governance has changed recently. For example, corporate governance code has been introduced to expect for more effective corporate governance mechanisms like the reform of internal control. These reforms would change Japanese corporate governance, and thus, investigating them would be a valuable future task.

NOTES

1. Lin and Manowan (2012) classify outside block shareholders and analyze their role in mitigating earnings management.

2. Sakawa et al. (2014) find that foreign shareholdings are positively associated with market liquidity in Japan.

3. There is a long-term relationship between a firm and a bank from which the firm obtains its largest share of borrowings (Aoki et al., 1994).

4. In 2005, the large audit firms included the Big 4 Japanese audit firms: Deloitte Touche Tohmatsu, Shin-Nihon Ernst & Young, KPMG Azsan LLC, and Chuo-Aoyama PWC. In 2006, PWC became Arata PWC, and Chuo-Aoyama became Misuzu, before eventually ceasing operations in July 2007. Therefore, the Big 5 audit firms in 2006–2007 became the following: Deloitte Touche Tohmatsu, Shin-Nihon Ernst & Young, KPMG Azsan LLC, Arata PWC, and Chuo-Aoyama. From 2008 to the present, the Big 4 audit firms have excluded Chuo-Aoyama and have remained important audit firms in Japan.

5. Soble (2012), for example, reported the recent corporate scandal of Olympus Corp. as follows: *"Both KPMG, which oversaw Olympus' financial reporting until 2009, and its successor E&Y signed off on the company's accounts even though they found problems in parts of its business that turned out to have been involved in disposing of hidden losses."*

6. Kwak, Lee, and Eldridge (2009) investigate how bank managers use discretionary components of accruals in Japanese banks.

7. Previous studies expect the monitoring role of block shareholders and define them as shareholders who hold at least 5% of a firm's shares (Brockman, Chung, & Yan, 2009; Heflin & Shaw, 2001; Mehran, 1995). Therefore, foreign shareholdings are defined as the proportion of large foreign investors that hold 5% or more of a firm's shares.

8. We investigate the periods since the Kanebo Co. earnings fraud case during 2006–2010. In 2011, Japanese firms were damaged by the devastating effects of the Great East Japan Earthquake. Moreover, Japanese financial reporting systems were suddenly confused and delayed.

9. Previous studies adopt this method to gather audit firms' information in Japan.

10. We restrict our sample firms using the following criteria: (i) financial statements are available for the sample period, and (ii) observations included at least five firms in the same industry, as classified by the Nikkei Industrial three-digit code.

11. Previous studies like those of Lin and Yung (2014) and Tang and Chang (2015) also check the robustness of results using of Kothari et al. (2005)'s model.

12. *ADR* is equal to 1 if a firm has ADR programs and is 0 otherwise. Kang and Stulz (1997) find that firms with ADR programs have greater foreign ownership. Therefore, we adopt the ADR dummy variable as an instrumental variable.

13. This result might have changed after the institutional change in Japan. In June 2015, the Corporate Governance Code was introduced. Therefore, the monitoring of institutional shareholders like foreign shareholders would be expected after the introduction of this code.

## Appendix A. Variable definitions

| Variable | Definition |
|---|---|
| Dependent Variables | |
| Jones DA | Absolute value of discretionary accruals (DA) using the Jones model |
| Modified Jones DA | Absolute value of discretionary accruals (DA) using the modified Jones model |
| Performance-matched Jones DA $ROA_t$ | The absolute value of the Jones model's performance-matched discretionary accruals (DA) with the current ROA by Kothari et al. (2005) |
| Performance-matched Modified Jones DA $ROA_t$ | The absolute value of the modified Jones model's performance-matched discretionary accruals (DA) with the current ROA by Kothari et al. (2005) |
| Ownership Structure | |
| MainBank Shareholdings | The proportion of main bank shareholdings |
| Foreign Shareholdings | The proportion of foreign shareholdings that hold more than 5% of the shares outstanding |
| Cross Shareholdings | The proportion of cross shareholdings |
| Management Shareholdings | The proportion of the board of directors' shareholdings |
| Top 10 Ownership | The proportion of Top 10 ownerships |
| Other Variables | |
| R&D Intensity | The ratio of annual R&D expenditure to sales |
| Volatility | Stock volatility during three years |
| M&A Dummy | A dummy variable that is equal to 1 if a firm experiences M&A activity and is 0 otherwise |
| Big N | The Big N audit firms, which consist of Big 4 or Big 5 audit firms |
| Market to Book | Market to Book = Market Value/Book Value of Capital |
| ROA | Return on assets |
| Negative Profit | A variable that is equal to 1 if the ROA is negative and is 0 otherwise |
| ln (MV) | The logarithm of the market value |
| Leverage | Financial Leverage = Debt/Total Assets (%) |
| Stock Option | A variable that is equal to 1 if a firm adopts stock option and is 0 otherwise |
| Director Compensation | The total amount of director's compensation (million yen) |
| Cash Balance | The ratio of cash and deposits to total assets |
| Collateral | A variable that is equal to 1 if a firm has collateral debt and is 0 otherwise. |
| Transaction Debt | The ratio of all bonds outstanding to the sum of all bank loans and all bonds outstanding |
| Type of Debt Term | The ratio of short-term debt to total debt |

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