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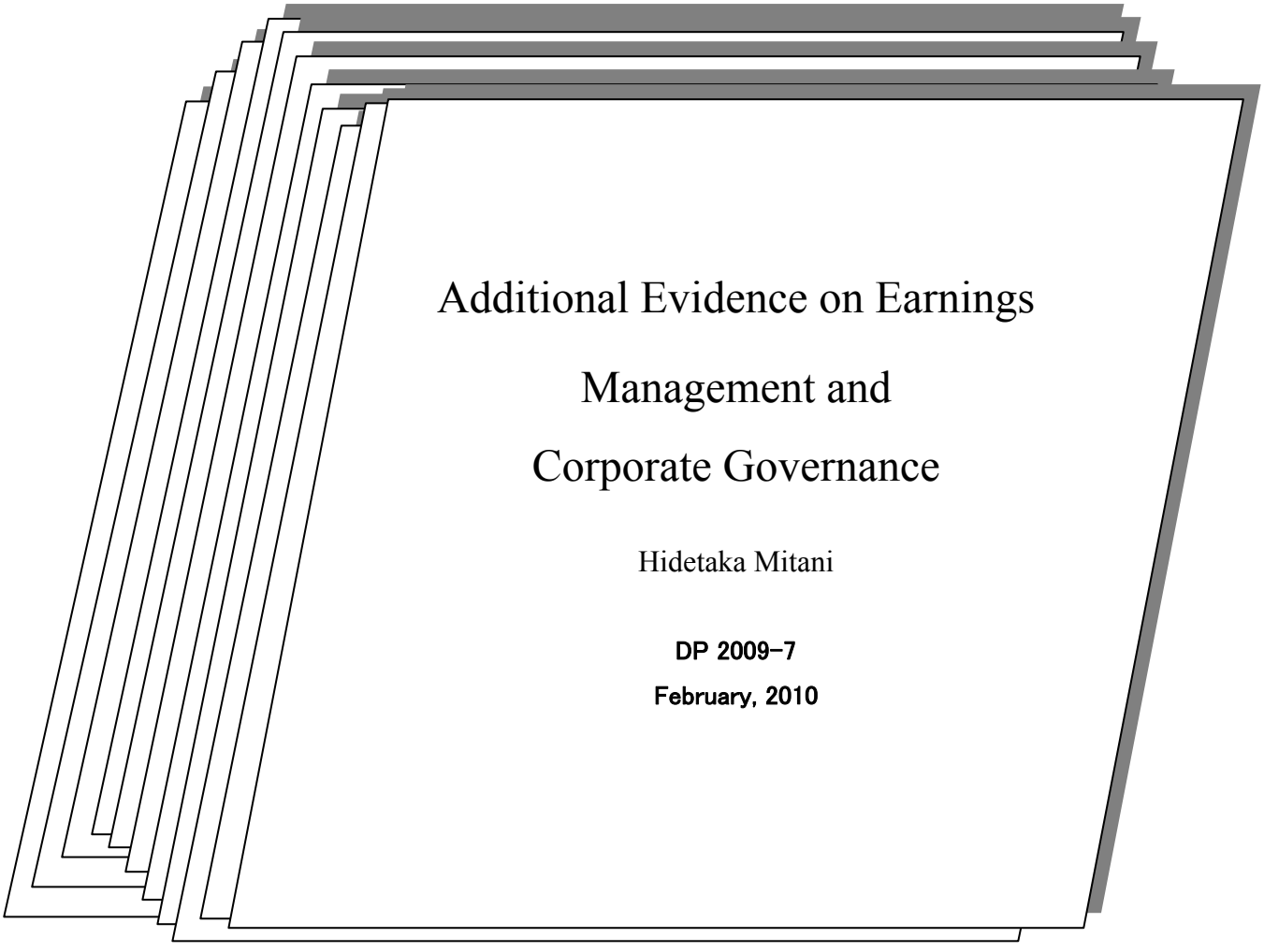

Additional Evidence on Earnings Management and Corporate Governance

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Hidetaka Mitani*

Abstract

The primary purpose of this paper is to analyze the relationship between corporate governance mechanism and earnings management. Specifically, using a sample of 799 large Japanese manufacturing firms from the period 1999 to 2004, we verify the effect of different governance mechanisms, including internal (managerial ownership, ownership concentration and executive stock option) and external (institutional investors ownership, financial institutions and other corporations shareholding), on earnings management. For internal governance mechanisms, this study presents following three results. First, firms with higher managerial ownership are associated with more earnings management. Second, there is a significant U-shaped relationship between ownership concentration and earnings management. Third, executive stock option does not affect the earnings management; the performance-based managerial scheme is not always effective. For external governance mechanisms, this study presents following three results. First, firms with higher institutional investors ownership are associated with less earnings management. Second, there is a significant U-shaped relation between the shareholdings of financial institutions and earnings management. Third, the shareholdings of foreign other corporations have a positive effect on earnings management. Furthermore, the cross-share holdings of other domestic corporations do not affect the earnings management.

Keywords: Earnings management, Corporate governance

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The paper represents the personal views of the authors and is not the official view of the Financial Services Agency or the Financial Research and Training Center.

1. Introduction

In widely held corporations with separation of ownership and control, a main objective of corporate governance is to mitigate agency costs between shareholders and managers. One manifestation of such agency costs is "earnings management" whereby the true financial performance of a company is distorted by managers for private gains (Klein (2002)).[1)] Thus, earnings management is window-dress financial statement.

Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen (1999)). Managers undertake earnings management for a variety of reasons, such as the use of accounting information in performance-based compensation contracts for managers, the use of accounting based covenants in debt contracts and the need to meet analysts' expectation and management forecasts about firm performance.

Corporate governance can be broadly classified into internal and external mechanisms (Denis and McConnell (2003)). Internal mechanisms are those related to managerial ownership, executive compensation and ownership concentration. External mechanisms relate to the market for corporate control i.e. the takeover pressure and the institutional ownership, financial institutions and other corporations shareholdings. The primary purpose of this paper is to analyze the relationship between corporate governance mechanisms and earnings management. Specifically, using a sample of 799 large Japanese manufacturing firms from 1999 to 2004, We verify the effect of different governance mechanisms (including internal and external) on earnings management.

For internal governance devices, this study presents following three results. First, firms with higher managerial ownership are associated with more earnings management. Second, there is a significant U-shaped relation between earnings management and ownership concentration, which is defined as the ratio of shares owned by top ten large stockholders; earnings management is increasing in concentration at low levels of managerial ownership, reaches a minimum when ownership concentration reaches 51%, and again increasing at higher levels. This suggests a roughly U-shaped relationship. Third, executive option compensation does not affect the earnings management; the performance-based managerial incentive scheme is not always effective.

For external governance devices, this study presents following three results. First, there is a significant negative relation between earnings management and the proportion of shares held by institutional investors; firms with higher institutional ownership are associated with less earnings management. Second, there is a significant U-shaped relation between earnings

[1)] Earnings management can be accomplished by the choice of accounting methods and by the assumptions and estimates used in computing the accruals.

management and the shareholdings of financial institutions; specifically, the turning point on the U-shaped function of the shareholdings of financial institutions is approximately 39 % (minimum). Third, the shareholdings of foreign other corporations have a positive effect on earnings management. Furthermore, the cross-share holdings of other domestic corporations do not affect the earnings management; that is, these external governance mechanisms do not constrain earnings management effectively.

The traditional agency literature presents that shareholdings by managers help align their interests with those of shareholders (Jensen and Meckling (1976)).[2)] That is, managerial shareholdings are good for the corporate governance. However, we conclude the shareholdings by managers are not valid governance mechanism, since this paper does not present this mechanism constrains earnings management effectively. Why does not the shareholding by managers function effectively as a means of the corporate governance ? Bolton, Scheinkman and Xiong (2005) suggest that earnings management is not driven by the conflict between ownership and control, but driven by the conflict between current and future shareholders, since current shareholders may choose to incentivize management for short-term stock performance, even though they recognize that this creates incentives for management to manipulate earnings. That is why the shareholdings by managers, designed to work in the interest of current shareholders and resolve the conflict between ownership and control, do not constrain earnings management effectively.

Additionally, the empirical result on the relationship between earnings management and ownership concentration generally supports Maug (1998). Maug (1998) offers a theory of the relationship between a liquid stock market and the incentives of large shareholders to monitor public corporations. In his theory, an increase in the ratio of shares are owned by large shareholders, which indicates the degree of ownership concentration, strengthens the large shareholders' incentives to monitor, because owing a larger stake makes the return on the firm's shares more significant for the large shareholders. He calls this the lock-in effect. However, at the same time, if a large fraction of the total shares is owned by the large shareholders, then fewer shares are held by households, making the market less liquid in these shares. He calls this the liquidity effect. This effect reduces the large shareholders' incentives to monitor, because this loss of liquidity causes the problem that small shareholders free ride on the effort of the large shareholders. Hence, the degree of ownership concentration that is measured in ratio of shares that are owned by large shareholders will be decided by the trade-off between the lock-in effect and the liquidity effect. The empirical result in this paper presents that ownership concentration with which both effects balance is approximately 51%.

[2)] In contrast, Stulz (1988) suggests that larger managerial ownership provides managers with deeper entrenchment and opportunistic behaviors. He offers a theory of the relationship between managerial ownership and Tobin's Q on the topic of a takeover process. He concludes increased shareholder welfare from higher management ownership results from more effective opposition to takeovers and not from better alignment of management and shareholder interests.

The role of institutional investors has been increasingly important in capital markets. Institutional investors hold a significant fraction of the shares of public firms and some of them actively monitor the firms in their investment portfolios. We present the evidence that institutional ownership is associated with lower earnings manipulation. This evidence supports the implications of Kahn and Winton (1998) that intervention or monitoring, which is activism by institutional investors, should be most likely for firms that are relatively accessible to well-informed outsiders: mature or well-established "blue-chip" firms.

The financial institutions are in the position that the risk that firms' shareholders skim wealth from debtholders by making suboptimal investment decisions which compromise debtholders interests is held as a debtholders. That is, the financial institutions are to be always exposed to the agency conflict between the shareholders and debtholders of the firm. However, Jensen and Meckling (1976) suggest that the financial institutions act as shareholder's standpoint, and the agency cost which stems from the shareholders-debtholders agency problem can be reduced.

Unlike U.S. financial institutions, Japanese financial institutions are allowed to take equity positions in the firms to which they lend. That is, in Japan, the agency cost may be reduced as Jensen and Meckling (1976) suggest, because the financial institutions can become shareholders in the firms to which they lend. Hence, if financial institutions not only hold a part of the shares of firms but also play a more active role in monitoring and disciplining managers, it would be thought that the shareholdings of financial institutions are good for governance. However, in terms of profit maximization, these cross-shareholdings may insulate managers from takeover threats and facilitate opportunistic managerial behaviors. That is, larger shareholdings of financial institutions would provide managers with deeper entrenchment and greater scope for opportunistic behaviors. Hence, a linear negative relation is not assumed easily between financial shareholdings and managerial earnings management. This paper supports the consideration of the above-mentioned. We present the evidence that U-shaped relation is in the between earnings management and the shareholdings of financial institutions. Specifically, the inflection point which is the percentage shareholdings of financial institutions at which the earnings management reaches its minimum is approximately 39%.

There have been several attempts to investigate the relationship between earnings management and corporate governance. Beasley (1996) finds that financial statement frauds are more likely to occur in firms with insider-dominated boards. Klein (2002) shows that an increase in the number of insiders on boards or audit committees is associated with greater earnings management. Leuz et al. (2003) examine the relationship between outside investor protection and earnings management using 31 countries data. Bergstresser and Philippon (2006) and Burns and Kedia (2006) show that the positive relation between the performance-based managerial incentive scheme and earnings management. Given the prior literatures, we attempt to provide a more comprehensive view about corporate governance by establishing the relation between various governance mechanisms and earnings management.

Additionally, Bushman and Smith (2001) define the role of the accounting information in the corporate governance as an input data to advance the corporate governance efficiently and propose to extend governance research to explore more comprehensively the use of accounting information. By contrast, in this paper, we mainly recognize accounting information as an output of corporate governance, because considerations that reflect the role of the corporate governance which is defined as the mechanism of disciplining managers are approved under this recognition.

The remaining paper is organized as follows. Section 2 presents the hypotheses that should be verified in this paper. Section 3 describes our sample, variables and test specification. These results of the empirical tests are presented in Section 4. Section 5 presents the conclusion.

2. Hypotheses

Denis and McConnell (2003) argue that corporate governance can be broadly classified into internal and external mechanisms. Internal mechanisms are those related to managerial ownership, ownership concentration and executive compensation. External mechanisms are related to the market for corporate control e.g., the takeover pressure, the institutional ownership, financial institutions and other corporations shareholdings. The primary purpose of this paper is to analyze the relationship between these corporate governance mechanisms and earnings management. To this end, the hypotheses that should be verified in this paper are presented as follows.

2.1 Internal governance devices

A. *Managerial ownership*

The traditional agency literature presents that shareholdings by managers help align their interests with those of shareholders (Jensen and Meckling (1976)). This alignment effect suggests that earnings management as a proxy for opportunistic behaviors decreases uniformly with an increase in managerial ownership. That is, managerial shareholdings are good for the corporate governance. Then, the hypothesis that should be verified is as follows. Higher managerial ownerships are associated with less earnings management.

B. *Ownership concentration*

Under the common held assumption that monitoring costs are not fully shared among shareholders, the free rider problem associated with monitoring is mitigated when ownership is more concentrated. Hence, in general, because efficient governance becomes possible when the ownership concentration is high, it is thought that the possibility of the earnings management can be excluded.

However, Maug (1998) presents a precise theory to the relation between the ownership concentration and the monitoring. He offers a theory of the relationship between a liquid stock

market and the incentives of large shareholders to monitor public corporations. In his theory, an increase in the ratio of shares are owned by large shareholders, which indicates the degree of ownership concentration, strengthens the large shareholders' incentives to monitor, because owing a larger stake makes the return on the firm's shares more significant for the large shareholders. He calls this the lock-in effect. However, at the same time, if a large portion of the total shares is owned by the large shareholders, then fewer shares are held by households, making the market less liquid in these shares. He calls this the liquidity effect. This effect reduces the large shareholders' incentives to monitor, because this loss of liquidity causes the problem that small shareholders free ride on the effort of the large shareholders. Hence, the degree of ownership concentration that is measured in the ratio of shares that are owned by large shareholders will be decided by the trade-off between the lock-in effect and the liquidity effect.

Then, the hypotheses that should be verified are as follows. If monitoring incentive rises uniformly as the ownership concentration increases, higher ownership concentration would be associated with less earnings management. In contrast, if the suggestion of Maug (1998) is correct, the ownership concentration would be decided by the trade-off between the lock-in effect and the liquidity effect. Therefore, it is thought that the relation between earnings management and ownership concentration becomes U-shaped.

C. *Stock options*

The problem in the corporate governance is the conflict of interest between firms' dispersed owner-investors and the managers hired to determine firms' investment projects and payout decisions. Grant of stock options is motivated by a desire to align managers' incentives with those of shareholders. Hence, if the stock options perform efficiently, the earnings management as manager's opportunistic behavior will be controlled.

However, stock option may have the perverse effect of encouraging managers to exploit their discretion in reporting earnings in order to manipulate the stock prices of their companies. The recent empirical evidence supports such inefficient function of the stock option. For example, Bergstresser and Philippon (2006), Burns and Kedia (2006) present the evidence about the positive relation between executive stock option and earnings management. In sum, stock option increases the incentive for managers to manipulate their firms' reported earnings.

Hence, it is thought that the hypothesis that should be verified is not decided in the foresight, because the interpretation of hypothesis is changed by the estimated result.

2.2 External governance devices

A. *Institutional ownership*

One increasingly important issue relating to investor monitoring concerns the role of institutional shareholder activism by pension funds, mutual funds and insurance companies. Such institutional investors often buy large stakes in firms and could take an active role in

monitoring management. Prior studies present that ownership by institutional investors is positively related to earnings performance and corporate value (see e.g., Del (1996) and Chung et al. (2002)).

Pound (1988) interprets such positive relation between institutional ownership and firms' performance by presenting the efficient-monitoring hypothesis. According to the efficient-monitoring hypothesis, institutional investors have greater expertise and can monitor management at lower cost than small individual investors. Hence, the hypothesis that should be verified is that higher institutional investors shareholdings are associated with less earnings management.

B. *Cross-shareholdings*

Cross-shareholdings among other corporations may insulate managers from takeover threats and facilitate the pursuit of private benefit, because many of the corporations that have mutually stocks are stable shareholder, and the monitoring activity is not efficiently executed. Hence, the hypothesis that should be verified is that corporate shareholdings are positively correlated with earnings management.

C. *Foreign other corporations ownership*

In Japan, many of foreign other corporations are foreign institutional investors. Even though they are institutional investors, it is thought that they are in the position of informational disadvantage for the investment grade corporate compared with the domestic institutional investors. Hence, because the monitoring to the investment grade corporate is not efficiently executed, it is thought that the earnings management is not restrained by the shareholdings of the foreign institutional investors. That is, the hypothesis that should be verified is that higher foreign other corporations holdings are associated with more earnings management.

D. *Financial institutions shareholdings*

Unlike U.S. financial institutions, Japanese financial institutions are allowed to take equity positions in the firms to which they lend. Just like the case of cross-shareholdings by other corporations, it is thought that the financial institutions also are stable shareholders. However, considerations from a different view point are possible in the monitoring function.

The financial institution is in the position that the risk that firms' shareholders skim wealth from debtholders by making suboptimal investment decisions which compromise debtholders interests is held as a debtholders. In sum, the financial institutions are to be always exposed to the agency conflict between the shareholders and debtholders of the firm. Jensen and Meckling (1976) suggest if the financial institutions act as shareholder's standpoint, the agency cost which stems from the shareholders-debtholders agency problem would be reduced. That is, if financial institutions not only hold a part of the shares of firms but also play a more active role in

monitoring and disciplining managers, it would be thought that the shareholdings of financial institutions are good for governance.

However, in terms of profit maximization, these cross-shareholdings among banks may insulate managers from takeover threats and facilitate opportunistic managerial behaviors. That is, larger shareholdings of financial institutions would provide managers with deeper entrenchment and greater scope for opportunistic behaviors.

Hence, based upon the above-mentioned considerations, the hypotheses that should be verified are the following. If the monitoring of the financial institution functions efficiently along with the increase of the shareholdings ratio of the financial institutions, there is a negative relation between the shareholdings of financial institutions and the earnings management. In contrast, there is a positive relation between the shareholdings of financial institutions and the earnings management if the entrenchment effect appears along with the increase of the shareholdings of the financial institutions and the chance for opportunistic behavior is given to management. That is, a linear negative relation is not assumed easily between financial shareholdings and managerial earnings management. Consequently, we hypothesize that U-shaped relation is in the between the earnings management and the shareholdings of financial institutions.

3. The Sample, Variables and Test Specification

3.1 Sample

The sample includes 799 listed Japanese manufacturing firms in the Tokyo Stock Exchange from 1999 to 2004. The financial statements data necessary for the study are available from Nikkei-NEEDS Financial Quest. As a result, the sample yields 4794 firm-year observations.

3.2 Variables

3.2.1 Earnings management

This paper uses discretionary accruals as the proxy for earnings management. Discretionary accruals are used as the proxy for earnings management in a variety of studies related to earnings management. Accounting earnings have two major components: cash flows from operations and accounting adjustments called total accruals. It is thought that total accruals are generated from the recognition of cost by the consumption basis and the recognition of earnings by the sales basis. Earnings management is manifested by the estimates and judgments made in reporting total accruals. Total accruals can be decomposed into two parts: non-discretionary accruals and discretionary accruals. Hence, Discretionary accruals are defined as total accruals minus nondiscretionary accruals. In this study, discretionary accruals are estimated by two cross-sectional models, which are the model of Jones (1991) and the modified version of the Jones model (Dechow et al. (1995)).

We first compute the total accruals for firm i at time t.

$$TA_{it} = (\Delta CA_{it} - \Delta CL_{it} - \Delta Cash_{it} + \Delta STD_{it} - \Delta Other\ allowances_{it} - Dep_{it} \quad (1)$$

TA_{it} represents the total accruals of firm i at time t, and the Δ operator represents a one-year change in a variable. The components of accruals include: ΔCA_{it} is the change in current assets, ΔCL_{it} is the change in current liabilities, $\Delta Cash_{it}$ is the change in cash holdings. ΔSTD_{it} is the change in the sum of the following items: change in short-term debt, change in commercial paper, change in long-term debt payable within one year, change in bonds and convertible bonds payable within one year. $\Delta Other\ allowances$ is the change in the sum of the following items: change in allowance for doubtful receivables, change in accrued bonus and allowance for bonus payable, change in other short-term allowance, change in reserve for retirement allowance, change in other long-term allowance. Dep_{it} is the depreciation and amortization expense.

In order to compute the discretionary and non-discretionary component of the total accruals, we estimate a version of the Jones (1991) and the modified version of the Jones model. The Jones (1991) model is specified as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_0 + \alpha_1\left(\frac{\Delta Rev_{it}}{A_{it-1}}\right) + \alpha_2\left(\frac{PPE_{it}}{A_{it-1}}\right) + \varepsilon_{it} \quad (2)$$

Subsequently, the modified version of the Jones model is specified as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_0 + \alpha_1\left(\frac{\Delta Rev_{it} - \Delta Rec_{it}}{A_{it-1}}\right) + \alpha_2\left(\frac{PPE_{it}}{A_{it-1}}\right) + \varepsilon_{it} \quad (3)$$

where TA_{it} is the total accruals computed as in equation (1) above, ΔRev_{it} is the change in sales, ΔRec_{it} is the change in accounting receivables, PPE_{it} is the property, plant and equipment. All variables are normalized by total assets at the beginning of the year. In equation (2) and (3), the parameters are estimated for each year and industry using cross-sectional data. Using the industry classification code provided for each firm in the Nikkei industry classification code, we classify 15 different industry groups.[3)]

[3)] However, to ensure the accuracy of the estimated coefficients, a minimum of 10 observations were required for each industry-year regression. Specifically, the oil industry that consists of 8 companies is included in chemical industry. Moreover, the shipbuilding industry that consists of 4 companies is included in other transportation equipment. Hence, the industry classification becomes 15 from 17 by this adjustment.

The estimated coefficients for equation (2) and (3) are used to construct nondiscretionary accruals. For example, nondiscretionary accruals of equation (2) are calculated as follows.

$$NDA_{it} = \hat{\alpha}_0 + \hat{\alpha}_1\left(\frac{\Delta Rev_{it}}{A_{it-1}}\right) + \hat{\alpha}_2\left(\frac{PPE_{it}}{A_{it-1}}\right) \quad (2.1)$$

Nondiscretionary accruals of Equation (3) is calculated just like equation (2.1).

$$NDA = \hat{\alpha}_0 + \hat{\alpha}_1\left(\frac{\Delta Rev_{it} - \Delta Rec_{it}}{A_{it-1}}\right) + \hat{\alpha}_2\left(\frac{PPE_{it}}{A_{it-1}}\right) \quad (3.1)$$

So, discretionary accruals in each equation can be derived as:

$$DA_{it} = TA_{it} - NDA_{it} \quad (4)$$

where DA_{it} represents the discretionary accruals as in equation (4). It is thought that DA_{it} take both the positive and negative values. Positive DA_{it} suggest that income-increasing manipulations, and negative DA_{it} suggest that income-decreasing manipulations.

Managers have incentive to manipulate earnings not only upwards but also downwards. For example, in periods of high earnings, managers may want to hide some earnings for potential future low earnings periods as per the "cookie jar" hypothesis. On the contrary, in periods of negative earnings, they may take"big baths"[4] to generate negative discretionary accruals so that the future earnings target easier to meet. As this paper is interested in manipulation in both discretions, we use the absolute value of DA_{it} as a proxy for the extent of opportunistic earnings management.

3.2.2 Governance variables

The variables as an internal governance mechanism are as follows: Management holdings ratio (*Manage_share*) is defined as the fraction of the shares held by managers. Ownership concentration (*Top_ten_share*) is defined as the ratio of shares held by top ten large shareholders. Grant of stock option (*Executive incentive*) which is defined as the dummy variable equals one if the corporation gives stock option.

The variables as an external governance mechanism are as follows: Financial institution holdings ratio (*Finance_share*) is defined as the fraction of the shares held by financial institutions. Domestic other corporation's holdings ratio (*Corp_share*) is defined as the fraction of the shares held by other corporations. Institutional investors shareholdings ratio

[4] e.g., overstating bad assets or taking a large discretionary restructuring charge.

(*Invest_share*) is defined as the proportion of the shares held by domestic institutional investors. Foreign other corporations holdings ratio (*Foreign_share*) is defined as the fraction of the shares held by foreign other corporations.

3.2.3 Control variables

While this paper is interested in examining how governance mechanisms can influence the extent of earnings management, there are several additional factors that affect earnings management. Hence, those factors need to be controlled for in the estimations. Specifically, these include size, growth opportunity, profitability, current growth and leverage.

Firm size which is measured by the natural logarithm of sales (*Size*) predicts that larger firms have less earnings management in order to reduce political costs. Growth opportunity which is measured by the market-to-book ratio (*Growth opportunity*) predicts that firms with higher market-to-book ratios show greater opportunistic earnings management, because these firms are thought to have larger levels of asymmetric information. Profitability which is measured by the return on asset (*Profitability*) predicts that firms with higher profitability have more opportunistic for earnings management. Current growth which is measured by the change of asset scaled by lagged asset (*Current growth*) also is thought to influence the degree of earnings management. However, it is not clear that how the degree of the earnings management is affected by the current growth. Financial leverage which is measured by the total borrowing divided by total asset (*Leverage*) predicts debt increases opportunistic earnings management in order to avoid covenant violation. Table 1 lists the descriptive statistics of the variables.

Table 1 Descriptive statistics

Variable	Mean	Median	Std Dev	Minimum	Maximum
Abs_*DA*	0.047	0.032	0.064	0.000	1.955
Abs_adj_*DA*	0.046	0.032	0.066	0.000	2.098
Manage_share	0.030	0.004	0.071	0.000	0.643
Top_ten_share	0.431	0.405	0.141	0.000	0.982
Finance_share	0.334	0.333	0.150	0.000	0.709
Corp_share	0.235	0.190	0.163	0.000	0.918
Invest_share	0.021	0.008	0.035	0.000	0.331
Foreign_share	0.078	0.042	0.096	0.000	0.780
Size	11.438	11.235	1.236	5.124	15.992
Growth opportunity	1.235	1.023	1.160	0.169	46.057
Profitability	0.038	0.030	0.050	-0.501	0.708
Current growth	0.018	0.001	0.402	-0.799	23.096
Leverage	0.504	0.504	0.237	0.000	8.353

Abs_*DA*: Absolute discretionary accruals. Calculated using Jones (1991) model. Abs_adj_*DA*: Absolute adjusted discretionary accruals. Calculated using Dechow et al. (1995). *Manage_share*: Management holdings ratio. *Top_ten_share*: Possession ratio of ten high-ranking big shareholdings ratio. *Finance_share*: Financial institution holdings ratio. *Corp_share*: Domestic other corporations holdings ratio. *Invest_share*: Institutional investors holdings ratio. *Foreign_share*: Foreign other corporations holdings ratio. *Size*: Measured by log of total asset. *Growth opportunity*: Measured by market-to-book ratio. *Profitability*: Measured by return on asset. *Current growth*: Measured by change of asset scaled by total asset. *Leverage*: Measured by total debt divided by total asset.

3.2.4 Empirical model

Consequently, the above discussion leads to the following basic estimated equation (5). Each firm and year are denoted by i and t, respectively. Equation (5) includes indicator variables (Industry fixed effects) in order to take the industry-specific effect. Additionally, indicator variables for year (Year fixed effects) also are included in the regression model. In order to avoid the endogenity problem, this paper runs the estimated equation (5) using all lagged explanatory variables.

$$
\begin{aligned}
|DA|_{it} = {} & \alpha + \beta_1 Manage\_share_{it-1} + \beta_2 Top\_ten\_share_{it-1} \\
& + \beta_3 Finance\_share_{it-1} + \beta_4 Corp\_share_{it-1} \\
& + \beta_5 Invest\_share_{it-1} + \beta_6 Foreign\_share_{it-1} \\
& + \beta_7 Executive\,incentive_{it-1} + \beta_8 Size_{it-1} \\
& + \beta_9 Growth\,opportunity_{it-1} + \beta_{10}\, Profitability_{it-1} \\
& + \beta_{11} Current\ growth_{it-1} + \beta_{12} Leverage_{it-1} \\
& + Industry + Year + \varepsilon_{it,}
\end{aligned}
\tag{5}
$$

Additionally, to examine strictly hypotheses in section 2, following governance variables are included in the regression model: ownership concentration squared $(Top\_ten\_share)^2$, and financial institution holdings squared $(Finance\_share)^2$. Specifically, the following regression model is estimated:

$$
\begin{aligned}
|DA|_{it} = {} & \alpha + \beta_1 Manage\_share_{it-1} + \beta_2 Top\_ten\_share_{it-1} \\
& + \beta_3 (Top\_ten\_share_{it-1})^2 + \beta_4 Finance\_share_{it-1} \\
& + \beta_5 (Finance\_share_{it-1})^2 + \beta_6 Corp\_share_{it-1} \\
& + \beta_7 Invest\_share_{it-1} + \beta_8 Foreign\_share_{it-1} \\
& + \beta_9 Executive\,incentive_{it-1} + \beta_{10} Size_{it-1} \\
& + \beta_{11} Growth\,opportunity_{it-1} + \beta_{12}\, Profitability_{it-1} \\
& + \beta_{13} Current\ growth_{it-1} + \beta_{14} Leverage_{it-1} \\
& + Industry + Year + \varepsilon_{it,}
\end{aligned}
\tag{6}
$$

4. Empirical Results

The results of estimated equation (5) using ordinary least squares regression are shown in Table 2.

Table 2 Regression analysis of earnings management

	Abs_*DA*	Abs_adj_*DA*
Intercept	0.080	0.087
	(0.016)***	(0.018)***
Manage_share	0.078	0.087
	(0.045)*	(0.044)**
Top_ten_share	-0.018	-0.021
	(0.020)	(0.020)
Finance_share	-0.012	-0.011
	(0.016)	(0.015)
Corp_share	0.013	0.016
	(0.020)	(0.019)
Invest_share	-0.052	-0.048
	(0.021)***	(0.022)**
Foreign_share	0.119	0.126
	(0.040)***	(0.041)***
Executive incentive	0.001	0.001
	(0.003)	(0.002)
Size	-0.010	-0.010
	(0.003)***	(0.003)***
Growth opportunity	0.005	0.006
	(0.003)*	(0.003)*
Profitability	0.029	0.022
	(0.040)	(0.046)
Current growth	-0.014	-0.018
	(0.017)	(0.019)
Leverage	0.086	0.091
	(0.042)**	(0.041)***
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Adj.R^2	0.187	0.180
Sample size	4422	4422

Table 2 presents the estimated result in equation (5).
Note:
Abs_*DA*=Absolute discretionary accruals. Calculated using Jones (1991) model
Abs_adj_*DA*=Absolute adjusted discretionary accruals. Calculated using Dechow et al. (1995)

Robust standard errors are reported in parentheses. Statistical significance at the 10, 5, and 1 percent level is indicated by *, **, ***, respectively.

Shareholdings by managers (*Manage_share*) are significantly positive. In sum, firms with higher managerial ownership are associated with more earnings management. This result is not in line with the hypothesis that higher managerial ownerships are associated with less earnings management. Hence, the alignment effect does not hold true in this estimation. Why does not the shareholding by managers function effectively as a means of the corporate governance? Bolton, Scheinkman and Xiong (2005) suggest that earnings management is not driven by the conflict between ownership and control, but driven by the conflict between current and future shareholdings, since current shareholders may choose to incentivize management for short-term stock performance, even though they recognize that this creates incentives for management to manipulate earnings. That is why the shareholdings by managers, designed to work in the interest of current shareholders, do not constrain earnings management effectively.

Ownership concentration (*Top_ten_share*) is not statistically significant though the sign condition of negative which hypothesis suggests was obtained. Thus, it is not clear whether ownership concentration affects the earnings management. Also in the case of financial institution holdings ratio (*Finance_share*) , the similar result is obtained. Hence, it is not clear whether financial institution shareholding affects the earnings management.

Domestic other corporations holdings ratio (*Corp_share*) is not statistically significant though the sign condition of positive which hypothesis suggests was obtained. Thus, it is not clear whether cross-shareholdings among other corporations affect the earnings management. Institutional holdings ratio (*Invest_share*) is significantly negative. This result is in line with the hypothesis that higher institutional investors shareholdings are associated with less earnings management. Hence, the efficient-monitoring hypothesis holds true. Foreign other corporations holdings ratio (*Foreign_share*) is significantly positive. This result is in line with the hypothesis that higher foreign other corporations holdings ratio are associated with more earnings management. In Japan, many of foreign other corporations are foreign institutional investors. Even though they are institutional investors, they are in the position of informational disadvantage for the investment grade corporate compared with the domestic institutional investors. Hence, the monitoring activity is not efficiently executed. Grant of stock option (*Executive incentive*) is not statistically significant. Hence, though it is not clear whether executive option compensation affect the earnings management, the performance-based managerial incentive scheme is not always effective as suggested by the hypothesis.

We argue briefly about the influence of control variables on earnings management. The estimated coefficient of firm size (*Size*) is significantly negative. Thus, larger firms have less earnings management. Additionally, the estimated coefficient of growth opportunity (*Growth opportunity*) is significantly positive. Firms with higher market-to-book ratios show greater opportunistic earnings management. Hence, this result is in line with the hypothesis that these firms are larger levels of asymmetric information. Financial leverage (*Leverage*) increases opportunistic earnings management. However, neither the return on asset (*Profitability*) nor the

change of asset (*Current growth*) has any effect on the earnings management.

Then, to examine strictly hypotheses in section 2, following governance variable is introduced into the equation (6): ownership concentration squared $(Top\_ten\_share)^2$. The results of estimation are shown in Table 3.

Table 3 Regression analysis of earnings management

	Abs_*DA*	Abs_adj_*DA*
Intercept	0.114	0.121
	(0.024)***	(0.028)***
Manage_share	0.081	0.089
	(0.031)***	(0.030)***
Top_ten_share	-0.152	-0.160
	(0.059)***	(0.066)**
(*Top_ten_share*)^2	0.149	0.154
	(0.060)***	(0.065)**
Finance_share		
(*Finance_share*)^2		
Corp_share	0.012	0.014
	(0.009)	(0.010)
Invest_share	-0.052	-0.048
	(0.022)**	(0.022)**
Foreign_share	0.123	0.129
	(0.037)***	(0.038)***
Executive incentive	0.001	0.001
	(0.002)	(0.002)
Size	-0.010	-0.010
	(0.003)***	(0.003)***
Growth opportunity	0.005	0.005
	(0.003)*	(0.003)
Profitability	0.024	0.017
	(0.041)	(0.047)
Current growth	-0.015	-0.019
	(0.017)	(0.019)
Leverage	0.086	0.091
	(0.041)**	(0.040)***
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Adj.R^2	0.190	0.183
Sample size	4422	4422

Table 3 presents the estimated result in equation (6) contains the following governance variable: ownership concentration squared ((*Top_ten_share*)²).
Note:
Abs_*DA*=Absolute discretionary accruals. Calculated using Jones (1991) model
Abs_adj_*DA*=Absolute adjusted discretionary accruals. Calculated using Dechow et al. (1995)
Robust standard errors are reported in parentheses. Statistical significance at the 10, 5, and 1 percent level is indicated by *, **, ***, respectively.

Table 3 presents the estimated coefficients of (*Top_ten_share*) and $(Top\_ten\_share)^2$ are all statistically significant: the coefficient of (*Top_ten_share*) is negative, that of $(Top\_ten\_share)^2$ is positive. This result is not in line with the hypothesis that higher ownership concentration is associated with less earnings management, but in line with the hypothesis that the relation between earnings management and ownership concentration becomes the U-shaped. This result indicates that earnings management is increasing in concentration at low levels of managerial ownership, reaches a minimum when ownership concentration reaches 51 %, and again increasing at higher levels. Hence, the inflection point on the U-shaped function of ownership concentration is approximately 51%. This result remains as it is even if changing the discretionary accruals as the dependent variables, which are estimated by two alternative models: the Jones (1991) model and the modified version of the Jones model (Dechow et al. (1995)). That is, this result does not depend on the choice of the discretionary accruals model.

Shareholdings by managers (*Manage_share*) are significantly positive. This result also presents that the alignment effect which is presented by Jensen and Meckling (1976) does not hold true. Thus, higher managerial ownerships are associated with more earnings management.

Institutional holdings ratio (*Invest_share*) is significantly negative. This result also supports the hypothesis that higher institutional investors shareholdings are associated with less earnings management. Hence, the efficient-monitoring hypothesis holds true. Foreign other corporations holdings ratio (*Foreign_share*) is significantly positive. This result also supports the hypothesis that higher foreign other corporations holdings ratio are associated with more earnings management.

Secondly, following governance variable is introduced into the equation (6): financial institution holdings squared $(Finance\_share)^2$. The results of estimation are shown in Table 4.

Table 4 Regression analysis of earnings management

	Abs_*DA*	Abs_adj_*DA*
Intercept	0.102	0.108
	(0.022)***	(0.025)
Manage_share	0.058	0.063
	(0.031)*	(0.029)**
Top_ten_share		
(*Top_ten_share*)^2		
Finance_share	-0.165	-0.171
	(0.052)***	(0.061)***
(*Finance_share*)^2	0.214	0.222
	(0.074)***	(0.084)***
Corp_share	-0.005	-0.005
	(0.008)	(0.009)
Invest_share	-0.056	-0.053
	(0.021)**	(0.022)***
Foreign_share	0.111	0.116
	(0.036)***	(0.036)***
Executive incentive	0.002	0.001
	(0.003)	(0.003)
Size	-0.009	-0.010
	(0.003)***	(0.003)***
Growth opportunity	0.005	0.005
	(0.003)	(0.003)
Profitability	0.029	0.022
	(0.041)	(0.047)
Current growth	-0.015	-0.019
	(0.017)	(0.019)
Leverage	0.086	0.091
	(0.041)**	(0.040)**
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Adj.R^2	0.193	0.189
Sample size	4422	4422

Table 4 presents the estimated result in equation (6) contains the following governance variable: financial institution holdings squared ((Finance_share)²).
Note:
Abs_*DA*=Absolute discretionary accruals. Calculated using Jones (1991) model
Abs_adj_*DA*=Absolute adjusted discretionary accruals. Calculated using Dechow et al. (1995)
Robust standard errors are reported in parentheses. Statistical significance at the 10, 5, and 1 percent level is indicated by *, **, ***, respectively.

Table 4 presents the estimated coefficients of (*Finance_share*) and $(Finance\_share)^2$ are all statistically significant: the coefficient of (*Finance_share*) is negative, that of $(Finance\_share)^2$ is positive. This result is in line with the hypothesis that the U-shaped relation is between the earnings management and the shareholdings of financial institutions. Specifically, the inflection point on the U-shaped function of financial institutions shareholding is approximately 39%. Thus, this result suggests that the monitoring of the financial institution can function efficiently along with the increase in the shareholdings ratio of financial institution if financial institution shareholdings are to 39%. In contrast, if financial institution shareholdings exceed 39%, there will appear not the monitoring effect but entrenchment effect along with the increase of the shareholdings of the financial institutions. This result also does not depend on the choice of the discretionary accruals model.

Shareholdings by managers (*Manage_share*) are significantly positive. This result also presents that the alignment effect does not hold true. Thus, higher managerial ownerships are associated with more earnings management. Institutional holdings ratio (*Invest_share*) is significantly negative. This result also supports the hypothesis that higher institutional investors shareholdings are associated with less earnings management. Hence, the efficient-monitoring hypothesis holds true. Foreign other corporations holdings ratio (*Foreign_share*) is significantly positive. This result also supports the hypothesis that higher foreign other corporations holdings ratio are associated with more earnings management.

Finally, both governance variables are introduced into the equation (6): ownership concentration squared $(Top\_ten\_share)^2$, and financial institution holdings squared $(Finance\_share)^2$. The results of estimation are shown in Table 5.

Table 5 Regression analysis of earnings management

	Abs_*DA*	Abs_adj_*DA*
Intercept	0.132	0.140
	(0.031)***	(0.037)***
Manage_share	0.092	0.101
	(0.048)**	(0.047)**
Top_ten_share	-0.119	-0.126
	(0.076)	(0.078)*
(*Top_ten_share*)^2	0.094	0.098
	(0.066)	(0.067)
Finance_share	-0.143	-0.149
	(0.048)***	(0.055)***
(*Finance_share*)^2	0.211	0.220
	(0.073)***	(0.084)***
Corp_share	0.025	0.028
	(0.021)	(0.021)
Invest_share	-0.053	-0.049
	(0.021)**	(0.022)**
Foreign_share	0.131	0.138
	(0.043)***	(0.044)***
Executive incentive	0.002	0.001
	(0.003)	(0.002)
Size	-0.011	-0.011
	(0.003)***	(0.004)***
Growth opportunity	0.004	0.005
	(0.003)	(0.003)
Profitability	0.024	0.017
	(0.041)	(0.047)
Current growth	-0.015	-0.019
	(0.017)	(0.019)
Leverage	0.087	0.091
	(0.041)**	(0.040)**
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Adj.R^2	0.196	0.188
Sample size	4422	4422

Table 5 presents the estimated result in equation (6) contains the following governance variables: ownership concentration squared ((Top_ten_share)² and financial institution holdings squared ((Finance_share)²).
Note:
Abs_*DA*=Absolute discretionary accruals. Calculated using Jones (1991) model
Abs_adj_*DA*=Absolute adjusted discretionary accruals. Calculated using Dechow et al. (1995)
Robust standard errors are reported in parentheses. Statistical significance at the 10, 5, and 1 percent level is indicated by *, **, ***, respectively.

Table 5 presents the estimated coefficients of (*Finance_share*) and $(Finance\_share)^2$ are all statistically significant: the coefficient of (*Finance_share*) is negative, that of $(Finance\_share)^2$ is positive. This result also supports the hypothesis that the U-shaped relation is between the earnings management and the shareholdings of financial institutions. Specifically, the inflection point on the U-shaped function of financial institutions shareholding is approximately 34%. However, the coefficient of (*Top_ten_share*) is negative only when adjusted discretionary accruals (Abs_adj_*DA*) are used for a dependent variable. Hence, by this result, the hypothesis about ownership concentration cannot be interpreted clearly.

Finally, we argue briefly about the influence of control variables on earnings management from Table 3 to Table 5. The estimated coefficient of firm size (*Size*) is significantly negative. Thus, larger firms have less earnings management. In Table 3, the estimated coefficient of growth opportunity (*Growth opportunity*) is significantly positive only when discretionary accruals (Abs_*DA*) are used for a dependent variable. Financial leverage (*Leverage*) increases opportunistic earnings management. However, neither the return on asset (*Profitability*) nor the change of asset (*Current growth*) has any effect on the earnings management.

5. Conclusion

The primary purpose of this paper is to analyze the relationship between corporate governance mechanism and earnings management. Specifically, using a sample of 799 large Japanese manufacturing firms from the period 1999 to 2004, we verify the effect of different governance mechanisms, including internal (managerial ownership, ownership concentration and executive stock option) and external (institutional investors ownership, financial institutions and other corporations shareholding), on earnings management.

For internal governance mechanisms, this study presents following three results. First, firms with higher managerial ownership are associated with more earnings management. Second, there is a significant U-shaped relationship between ownership concentration and earnings management. Third, executive stock option does not affect the earnings management; the performance-based managerial scheme is not always effective.

For external governance mechanisms, this study presents following three results. First, firms with higher institutional investors ownership are associated with less earnings management. Second, there is a significant U-shaped relation between the shareholdings of financial institutions and earnings management. Third, the shareholdings of foreign other corporations have a positive effect on earnings management. Furthermore, the cross-share holdings of other domestic corporations do not affect the earnings management.

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