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**Reporting of Internal Control
Deficiencies, Restatements, and
Management Forecasts**

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Reporting of Internal Control Deficiencies, Restatements, and Management Forecasts

Abstract

We examine the relationship between accuracy in management forecasts and the effectiveness of internal controls by using the unique setting in Japan, where disclosing management forecasts is effectively mandated. Feng et al. (2009) posit and find that managers of firms reporting internal control weaknesses under the Sarbanes–Oxley Act (SOX) report less accurate earnings forecasts compared with other firms in the U.S., where management forecasts are disclosed voluntarily. In line with this notion, our results show that firms disclosing internal control deficiencies and those restating financial highlights report less accurate management forecasts in the Japanese market, where the disclosure of management forecasts are effectively mandated. Furthermore, we find that manager’s optimistic biases cause such inaccurate management forecasts. Our results indicate that the effectiveness of internal controls has a significant impact on internal reports, which are used in forming forecasts; therefore, internal control weaknesses induce less accurate management forecasts.

1. Introduction

This study investigates the relationship between the accuracy of management forecasts and the effectiveness of internal controls in the Japanese market. Although a number of studies have examined management forecasts and have clarified factors that influence the accuracy of forecasts, the effectiveness of internal controls has not been discussed as a factor that determines the accuracy of management forecasts. However, Feng et al. (2009) posit and find that firms with ineffective internal controls report less accurate management forecasts than

others. Managers of firms with ineffective internal controls are likely to rely on erroneous internal management reports in forming forecast; therefore, their earnings forecasts might be less accurate than those of firms with effective internal controls. Following Feng et al. (2009), we regard firms disclosing internal control deficiencies (ICD) as firms with ineffective internal controls, since they report material weaknesses in internal control systems. This disclosure is required under the Financial Instruments and Exchange Law in Japan, which is parallel to the SOX in the U.S.

In addition to this disclosure, we also regard firms restating their financial highlights as firms with weak internal controls. Financial highlights are condensed financial statements publicized by Japanese firms in around 40 days after the fiscal year ends. This report is required by Japan's stock exchange to ensure the timeliness of disclosure. Certainly, this disclosure is the earliest information of a firm's performance for the market participants, and therefore it is likely to be very useful for revising their expectations. However, since financial highlights are disclosed soon after the accounts are settled and are approved by the board of directors, that is before the audit procedures are completed and before the annual shareholder's meetings are held, they are likely to involve errors or fraud stemming from inaccurate internal management reports. Therefore, some managers ought to restate the released financial highlights when a significant difference is revealed between disclosed values and newly calculated values as audit procedures proceed. Therefore, we ascertain that the firms restating financial highlights are the firms that have weak internal controls. However, internal control weaknesses of such firms may be less severe than those disclosing ICD if they do not disclose ICD. Since the effectiveness of internal control weaknesses is essentially a question of degree, may be several firms that do not have internal control weaknesses sufficient to disclose ICD. Nevertheless, even if firms have any internal control weaknesses, they are likely to report more or less inaccurate management

forecasts. Stated differently, firms restating their financial highlights might report less accurate management forecast than other firms because of their internal control weaknesses, even though they do not disclose ICD. We then investigate whether the accuracy of management forecasts disclosed by firms that restate is lower than those disclosed by firms that do not restate, in addition to conducting an analysis regarding the accuracy of management forecasts of firms with ICD. Simultaneously, we compare the accuracy of management forecasts of the firms that restate the released financial highlights with that of the firms with ICD.

Thus, our study is in line with the findings of Feng et al. (2009), while our view point is different from theirs in that we regard both firms, those reporting ICD and those restating financial highlights, as those with weak internal controls. Thereby, we contribute to a series of managers' forecast examinations as well as to the prior literature concerning internal control reports and restatements. In addition, disclosure of management forecasts is effectively mandated in Japan; therefore, whether or not managers disclose earnings forecasts need not be controlled in this study, while it is required in studies examining other markets. When the market investigated has a voluntarily disclosure system of management forecasts, the analysis concerning the accuracy of management forecasts usually involves errors in controlling for the incentives of the disclosure itself. On the other hand, since we investigate the Japanese market, where disclosure of management forecasts is effectively mandated, it allows us to clarify the direct relationship between internal control weaknesses and the accuracy of management forecasts without controlling for any incentives to disclose the forecasts. Hence, this study has an advantage in assessing whether the effectiveness of internal controls influence the accuracy of management forecasts, and it provides new evidence.

Our results indicate that firms disclosing ICD and those restating financial highlights report less accurate management forecasts. This is consistent with the prediction that firms with

weak internal controls report less accurate management forecasts. Furthermore, we find that a manager's optimistic bias causes such inaccurate management forecasts. While managers are likely to report optimistically biased forecasts, internal control weaknesses may accelerate this tendency. Thus, we find that the accuracy of management forecasts is lower among firms with weak internal controls. Although firms that restate probably suffer somewhat less internal control weaknesses than firms that disclose ICD, the results show that the accuracy and the bias of management forecasts are indifferent between these two firms.

Our study makes the following contribution to the literature. We provide new evidence regarding the relationship between a manager's forecast accuracy and internal control weaknesses in a market that has an effectively mandated disclosure system regarding managements' forecasts. We also examine whether internal control weaknesses relate to opportunistic or pessimistic forecast biases, while Feng et al. (2009) do not. The results indicate that internal control weaknesses cause opportunistic biases of management forecasts. Since people use any information disclosed by firms for their investment decisions, inherent biases in such information are useful for them. Hence, our results contribute to market participants making better decisions about their investments. Moreover, we contribute to a series of audit research, as we utilize unaudited financial information disclosed by firms. The financial information that we use includes management forecasts and financial highlights, both of which are unaudited. Although control risk is well known as a component of material misstatement risk in the audit risk model, we usually cannot examine the possible direct effect of control risk on the misstatement of financial information, since financial information before an audit is generally inaccessible. Hence, the misstatements that we determine in audited financial statements are the ones that have not been detected through audit procedures. Therefore, the number of misstatements in those statements is likely to be much smaller than the number to

which the control risks are actually related. In contrast, we utilize unaudited financial information disclosed by firms; therefore, this allows us to examine the direct effect of internal control weaknesses (control risk) on the misstatement of financial information. Thus, we contribute to the literature by revealing the possible effect of control risk on unaudited financial information.

This paper is organized as follows: Section 2 provides a literature review of management forecasts and Section 3 explains the setting in Japan. Section 4 describes the hypothesis and examination model for this study. The data and variables' statistics are presented in Section 5, and Section 6 reports and explores the empirical results. Section 7 provides concluding remarks.

2. Literature Review

Several previous studies have examined management earnings forecasts in the U.S. market. Hirst et al. (2008) provide a comprehensive review of management forecasts of U.S. firms, and they raise three perspectives from which prior studies have investigated. These are antecedents, characteristics, and consequences. The accuracy of management forecasts that we investigate in this study is one of the characteristics of management forecasts. A number of factors lead to management forecast errors. Cotter et al. (2006) and Matsumoto (2002) find that management utilizes earnings forecasts to guide the market expectations regarding future earnings in order to meet such expectations when they release actual earnings¹. In addition, Rogers and Stocken (2005) show that managers misrepresent their forward-looking information as the market's ability to detect misrepresentations decreases. These results indicate that managers have several

¹ On the other hand, Kasznik (1999) shows that managers are inclined to manage reported earnings toward their forecasts. His result implies that managers regard forecasted values that they make as a benchmark to either meet or beat.

incentives or opportunities to report less accurate forecasts. However, tools exist to prevent managers from disclosing less accurate forecasts. Ajinkya et al. (2005) and Karamanou and Vafeas (2005) show that firms with better governance structures disclose more accurate management forecasts than others. Thus, previous research has been inclined to shed light on a manager's incentives or deterrent mechanism against management's opportunistic behavior in order to explore the determinant factors of errors in management forecasts.

On the other hand, Feng et al. (2009) investigate the influence of internal control efficiency on management earnings forecasts. Managers of firms with ineffective internal controls are likely to rely on erroneous internal management reports in forming forecasts; therefore, their earnings forecasts might be less accurate than those of firms with effective internal controls. Feng et al. (2009) show that the accuracy of management forecasts is lower among firms reporting ICD under Section 404 of SOX for U.S. companies. This result indicates that a manager's earnings forecasts can be less accurate irrespective of manager's incentives. Okuda and Suzuki (2009) also find that the creation of a department to monitor internal controls reduces errors in management earnings forecasts in the context of the Japanese market. This result implies that managers are able to utilize more accurate internal management reports when making forecasts, and therefore the made earnings forecasts are more accurate if a department is created to supervise internal control systems. These results support the notion that effective internal control systems improve the accuracy of management forecasts, while ineffective systems deteriorate it.

3. The Japanese Setting

3.1 Internal Control Reports in Japan

The importance of companies' internal controls has been recognized, especially in the U.S. soon

after fraudulent behavior by firms such as Enron and World.com occurred. Since SOX was enacted in 2002, management of Securities and Exchange Commissions (SEC) registrants has been obligated to prepare the internal control report. Meanwhile, the environment surrounding the Japanese financial capital market has been changing drastically²; therefore, an urgent need existed to (1) compile comprehensive and cross-sectional rules for user protection and develop an environment where users can invest with confidence, (2) enhance fairness and transparency as well as restore confidence in the market, and (3) enhance the attractiveness of the Japanese market as an international market. To respond to these needs, the bills to develop the legislative framework for the Financial Instruments and Exchange Law, which was amended from the Securities Exchange Law, were approved in the ordinary Diet session in June 2006 (Financial Service Agency (FSA), 2006). Enhancing disclosure requirements was one of the policies involved with the bills, and it included enhancing internal control system. The internal control reporting system was therefore enforced in September 2007 and was applicable from the business year beginning on or after April 1, 2008. In other words, Japanese firms have been disclosing an assessment of the validity of their internal controls over financial reporting since the fiscal year ending in March 2009. Thus, Japan was about six years behind the U.S. in implementing internal control report disclosure system.

The Japanese internal control report system was designed taking into account the criticism against the one originally introduced by the SOX in the U.S. (FSA, 2007) Stated differently, the FSA took measures to minimize the burden on listed companies in reporting the evaluation of internal control systems. According to FSA (2007, 2010), there are six differences

² FSA (2006) provides three viewpoints to present a dramatic change in the Japanese environment. From the user's viewpoint, although several financial technologies had been developed, regulations for user protection at that moment had not appeared. From the market's perspective, it also insisted that a Japanese household's financial assets should shift from savings to investments, since Japanese people mainly held financial assets in the form of cash and deposits. Finally, it presented that the Japanese market should enhance its attractiveness as an international market amid the globalization of financial and capital markets.

between the laws in the U.S. and in Japan, which are as follows.

(1) In determining the scope of internal control assessment, a top-down, risk-based approach has been adopted in Japan. This results in a narrower scope of internal control assessment relative to American firms.

(2) The classification of internal control deficiencies is simplified. The U.S. has three levels of internal control deficiencies, including material weaknesses, significant deficiencies, and control deficiencies, while in Japan deficiencies are classified only into two levels, including material weaknesses and deficiencies in Japan.

(3) Japanese auditors are required to solely audit the managerial assessment of internal controls, and they are not required to carry out the direct reporting that has been adopted in the U.S. Direct reporting implies that auditors directly audit and report on the effectiveness of internal controls.

(4) Internal control audits are to be performed by the same auditors responsible for auditing a company's financial statement in Japan, while the teams conducting the internal control audit and the financial statement audit are generally separated in the U.S.

(5) The internal control audit report is prepared in conjunction with the report of financial statements audit in Japan, while these are allowed to be separately prepared in the U.S.

(6) In Japan, auditors may contact the company's personnel, such as corporate auditors³ (*kansayaku*), audit committees, or internal auditors in charge of supervising or monitoring operations of internal control when necessary. Such coordination is not explicitly specified in SOX.

³ Large Japanese companies employ two types of auditors: corporate auditors and independent auditors. For more details, see Matsumoto (1999) and Pong and Kita (2006).

Although details differ somewhat between these two countries, the basic concept regarding the evaluation of the effectiveness of internal controls is identical. However, the percentage of Japanese firms disclosing ICD and having fiscal year ending in March 2009 was about 2%⁴, which is much lower than that of U.S. firms. According to prior studies, the ratio of U. S. firms disclosing ICD is at least more than 10% (Ashbaugh-Skaife et al., 2007; Doyle et al., 2007). Such a low frequency of Japanese firms' disclosure of ICD may be explained by the notion that companies attempt not to disclose material weaknesses to reduce the risk of being recognized as a company having "serious material weakness" (Yazawa, 2010). Alternatively, Japanese regulation might force management to have a higher threshold for disclosing material weaknesses in internal controls because of the FSA measures to minimize the burden on listed companies. For whatever reason, the low frequency of Japanese firms' disclosure of ICD is distinctive.

3.2 Management Forecasts in Japan

According to the Financial Instruments and Exchange Law, listed Japanese firms prepare and file annual securities report (*Yuka Shoken Hokokusho*). Since the reports include a variety of information, such as financial statements, detailed information on business activities, and corporate governance information, firms take time to prepare it. Hence, the report is publicly available about three months after a firm's fiscal year ends. To fill the gap in the timeliness of information, listed Japanese firms are required by the stock exchange to disclose condensed financial statements (*Kessan Tanshin*) immediately after the financial statement accounts are settled (Kato et al., 2009; Ota, 2010). On average, it takes 40 days to disclose financial highlights, and this is the earliest information accessible to market participants.

⁴ In Japan, more than 70% of firms have March fiscal year ends.

Although audits of financial statement have not been completed when financial highlights are publicized, the information involved in the report helps market participants revise their expectations in a timely manner.

Another distinctive feature of Japanese firms' disclosure is that they provide next year's forecast in parallel with realized values in the condensed report. Listed Japanese companies disclose estimated values of several accounts, such as sales, operating profit, ordinary profit (income before special items), net income, earnings per share, and dividends per share, as per the requirements of the stock exchange. Except for dividend information, management generally discloses point forecasts. Forecast disclosure is regarded as an effectively mandated rule in Japan, since the stock exchange strongly encourages managers of listed firms to provide forecasts. In Japan, more than 90% of listed firms disclose the following year's forecast⁵ (Kato et al., 2009).

In sum, the Japanese environment provides a unique setting to investigate the relationship between the effectiveness of internal controls and accuracy of management forecasts for the following two reasons. First, the percentage of firms disclosing ICD in March 2009 was about 2%, much lower than that of U.S. firms under SOX. Second, management forecast disclosure is effectively mandated by Japan's stock exchange, and such a system is unobserved in other countries, including the U.S. In short, the factors that exist at the time when a manager decides to issue a forecast need not be controlled while examining the Japanese environment. We examine the relationship between the effectiveness of internal controls and the accuracy of management forecasts by using this unique setting in Japan.

⁵ The TSE (Tokyo Stock Exchange) allows firms with high uncertainty about future prospects not to report management forecasts to prevent investors from making decisions on the basis of misleading information. However, the TSE requires even those firms to report management forecasts by the end of the fiscal year shortly after removing the uncertainty (TSE, 2006).

4. Hypothesis Development

We basically follow Feng et al. (2009) to develop a hypothesis with regard to the relationship between the effectiveness of internal controls and management forecast errors. Weak internal controls will affect the financial inputs to management forecasts because some material weaknesses likely result in erroneous or incomplete internal management reports (Feng et al., 2009). Accordingly, we posit that the accuracy of management forecasts is relatively lower among firms with ineffective internal controls compared with those with effective internal controls.

Weakness in internal controls is not likely to be a question of whether or not such controls exist, rather it is a question of the level of control. A material weakness in internal controls is defined as “a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected (Public Company Accounting Oversight Board (PCAOB), 2004).” However, there are at least two other levels of severity of internal control problems, which were identified by PCAOB (2004). These are control deficiency and significant deficiency, even though these deficiencies per se are not required to be disclosed in the U.S. (SEC, 2004) Likewise Japanese firms are required to disclose ICD only when their internal control systems are *materially* deficient. Regarding the relationship with the accuracy of management forecasts, firms with material weaknesses in internal controls are likely to have *material* forecast errors. Although firms are not obliged to disclose internal control deficiencies unless they are at the “material weakness” level, firms with any level of internal control deficiencies may report more or less inaccurate forecasts. If so, the distinction of whether or not material weaknesses are reported may not be enough to portray the relationship between the effectiveness of internal controls and management forecast errors.

Recent discussions about the effectiveness of internal controls are frequently linked to the filings regarding the internal control report under Section 302 or Section 404 of SOX. Ineffective internal controls are, however, sometimes highlighted as a determining factor of restatements (Kinney and McDaniel, 1989; DeFond and Jiambalvo, 1991), which are regarded as a problematic accounting practice. Effective internal control systems can possibly result in detecting and correcting unintentional errors before financial statements are released. Therefore, a high frequency of restatements may represent the ineffectiveness of a firm's internal control systems. Indeed, Ashbaugh-Skaife et al. (2007) find that prior restatements have a significant positive relationship with the reporting of internal control deficiencies.

To delineate the relationship between the effectiveness of internal controls and the accuracy of management forecasts in a broader way than done by Feng et al. (2009), we shed light on firms that restate their financial statements. The Japanese environment provides an interesting setting for examining this relationship. As discussed in Section 2.2, financial highlights disclosed by Japanese firms include forecasts as well as the values of accounts realized. Although realized values represent past accounting transactions and are unlikely to change after the release, financial highlights are publicized before the auditing procedure. Therefore, errors or fraud in financial highlights may be detected as auditors perform the procedure after the release. In addition, timeliness and reliability represent a trade-off relationship; therefore, timely information has a higher possibility of including unreliable information. Accordingly, some errors or fraud may be revealed in financial highlights after the release, and firms then need to restate them. However, firms that restate do not necessarily have sufficient ICD to be disclosed. Although the effectiveness of internal controls is a question of the level of effectiveness, ICD disclosure is required only when their deficiencies result in more than a remote likelihood that a material misstatement of financial statements will not be

prevented or detected. Hence, even firms that need not disclose ICD may well restate released financial information, as firms not disclosing ICD may still have internal control weaknesses. We then posit that firms that restate their financial highlights have more or less internal control weaknesses irrespective of ICD disclosure.

The Japanese stock exchange requires listed companies to disclose details of the amendment in released information immediately after they are revealed⁶. We regard firms that publicize amendments to financial highlights as restatement firms, while this definition may be somewhat different from those used in previous studies⁷. According to Table 2, 4.4% of listed firms restated disclosed financial information. The percentage is relatively higher than that of ICD firms (2.3%⁸). In other words, even firms without *material* weaknesses in internal controls restate their financial highlights. These statistics indicate that there are several firms whose internal control systems are not deficient enough to report material weaknesses but are actually ineffective enough to restate released information. By incorporating the possible influence of restatement firms' internal control weaknesses on management forecast errors in the analysis, we are able to investigate the influence of different levels of internal control weaknesses on management forecast errors. We then develop Model (1) to examine the relationship between internal control weaknesses and management forecast errors.

$$Abs(MFE) = \alpha + \beta_1 ICD + \beta_2 RES + \beta_3 LOSS + \beta_4 EQUITY + \beta_5 SIZE + \beta_6 DIST + \beta_7 SD(NI) + \beta_8 GROW + \beta_9 IND_DIV + \beta_{10} GEO_DIV + \beta_{11} Abs(lagMFE) + \varepsilon, \quad (1)$$

⁶ In amending financial highlights, whether such an amendment has a material impact on investors' investment decisions is taken into account (TSE, 2010, Rule 405).

⁷ Previous research generally specified restatement firms as firms that amended audited financial statements, while in this study, restatement firms are defined as firms amending condensed financial statements, which are unaudited.

⁸ This percentage is a little higher than that of the entire set of listed firms that disclosed ICD because of the data requirements in this study. Details of the data requirements are explained in Section 4.

The definitions of the variables are presented in Table 1. The dependent variable, $Abs(MFE)$ is higher (lower) if the management forecast is less (more) accurate. The variables examined in this study are ICD and RES , which are dummy variables for firms disclosing ICD and restating financial highlights, respectively. As we posit that firms having weak internal controls report less accurate management forecasts, the expected signs of the coefficient on ICD and RES are both positive.

(Insert Table 1 around here)

To control for other determinants of the accuracy of management forecasts, we detect nine control variables following the prior literature, especially Ota (2006), who examined the determining factors of errors in management forecasts for Japanese firms. $LOSS$, $EQUITY$, $SIZE$, $DIST$ ⁹, and $GROW$ are controls for the influence of reporting losses, external financing, size, the degree of distress, and growth on the accuracy of management forecasts, respectively. These firm characteristics have been specified as the factors that induce managers to report biased forecasts. Moreover, innate variability and complexity in their operation are likely to make it difficult for managers to disclose accurate earnings forecasts. Therefore, $SD(NI)$, IND_DIV , and GEO_DIV are controlled in Model (1). Prior studies present that management forecast errors are persistent. To control for this persistent effect from management forecast error, we add $Abs(lagMFE)$ into the model. In addition to these variables, we control for the effect of industry on the accuracy of management forecasts, while industry dummies are not shown in Model (1) to avoid redundancy.

⁹ We follow Ohlson (1980) and Ota (2006) to estimate $DIST$. The details of score loading and score coefficients are described in Appendix.

5. Data and Descriptive Statistics

5.1 Data

The sample observations are listed Japanese firms having fiscal year end in March 2009. The listed Japanese firms are required to file the internal control report only after the fiscal year end in March 2009. Since our analysis needs realized earnings data to calculate the accuracy of management forecasts, we also use data from the fiscal year end in March 2010. Since we are accessible to such data until March 2010 fiscal year end, then we limit sample observations to firms having fiscal year ends in March 2009. Since certain control variables need data from previous periods to be calculated, then we went back to the data as necessary. We obtained sample firms' financial data from *Nikkei NEEDS Financial Quest*, which covers realized financial data as well as management forecasts. We removed firms that did not have the required data to calculate the variables in Model (1), resulting in a sample of 2214 observations. To control for the possible effect of outliers on the results, the continuous variables *SIZE*, *SD(NI)*, and *GROW* are winsorized at the 1 and 99 percentiles. Regarding *abs(MFE)* and *abs(lagMFE)*, signed *MFE* and *lagMFE* are winsorized at the 1 and 99 percentiles, and these absolute values are used in the empirical model estimations.

5.2 Descriptive Statistics and Correlation Matrix

Table 2 provides the descriptive statistics. As discussed in the previous section, the percentage of ICD firms and restatement firms is 2.3% and 4.4%, respectively. This indicates that the probability of firms restating financial highlights is higher than that of firms disclosing ICD. Regarding management signed forecast errors, its mean (median) value of -0.038 (0.001) implies that the average value is influenced by some firms reporting highly opportunistic earnings forecasts, while median firms reported earnings forecasts that fell slightly below the

realized value in the next period. This negative mean value is comparable to that obtained by Kato et al. (2009), while their median value is negative. Sample period differences may cause this difference in the distribution of management forecast biases, since their sample period is from 1997 to 2006.

(Table 2 is inserted around here)

Table 3 presents the correlation matrix. According to Table 3, the univariate relationship between $Abs(MFE)$ and ICD is positive (0.14, 0.07), and it is consistent with our hypothesis. The relationship between $Abs(MFE)$ and RES is also positive (0.13 and 0.10). These results support our expectation that firms with ineffective internal controls report less accurate earnings forecasts. Except for the correlations between $LOSS$ and $DIST$ of 0.53 and 0.59, the correlations do not pose any multicollinearity problems, while the VIF for all of the control variables is below 10. Therefore, our regression model is free of multicollinearity concerns.

(Table 3 is inserted around here)

6. Empirical Results

6.1 Univariate Analysis

Table 4 presents the result of the univariate analysis. We compare the accuracy of management forecasts between firms in two ways. The first is between ICD firms (firms that disclosed ICD) and non-ICD firms (firms that did not disclose ICD), and the second is between restatement firms (firms that restated financial highlights) and non-restatement firms (firms that did not restate financial highlights). Table 4 shows that the mean value of $abs(MFE)$ is significantly

higher for ICD firms than for non-ICD firms. The median value is also higher for ICD firms than for non-ICD firms at the 0.01 level (two-tailed). As is the case of a comparison between ICD firms and non-ICD firms, the mean and median values of $abs(MFE)$ are significantly higher for restatement firms than for non-restatement firms at the 0.01 level (two-tailed). In keeping with the results of the correlation matrix, Table 4 shows that firms with ineffective internal controls report less accurate management forecasts compared with firms with effective internal controls.

(Table 4 is inserted around here)

6.2 Regression Results

The results of the multivariate analysis are reported in Table 5. The coefficient on *ICD* is 0.097, which is significant at the 0.10 level (two-tailed). This result indicates that Japanese firms disclosing ICD report less accurate management forecasts than other firms. The coefficient on *RES* (0.059) also has a positive and significant value at the 0.05 level (two-tailed), which supports our hypothesis. Since the severity of internal control weaknesses may differ between firms disclosing ICD and restatement firms, we conducted the analysis to test for the difference between the coefficients on *ICD* and *RES*. The result is stated in the last two rows of Table 4. According to the table, while the coefficient on *ICD* exceeds that on *RES*, the difference is not statistically significant. These results indicate that although both firms, those reporting ICD and restating financial highlights, reported less accurate management forecasts, the level of accuracy between them is statistically indifferent.

(Table 5 is inserted around here)

Regarding the results of the control variables, the coefficients on *SIZE*, *DIST*, *GEO_DIV*, and *Abs(lagMFE)* are statistically significant, and these have expected signs. While all of the independent variables are not statistically significant, the explanatory power of the model (adj. R^2) is approximately 0.29, which is the same or higher compared with other studies regarding Japanese firms (Ota 2006) and U.S. companies (Ajinkya et al., 2005; Karamanou and Vafeas, 2005; Rogers and Stocken, 2005). Therefore, Model (1) is likely to specify the relevant factors that relate to the accuracy of management forecasts.

6.3 Additional Analysis

Although the difference between realized earnings and management forecasts has been frequently discussed in terms of accuracy, several studies have explored it in terms of bias (Hirst et al., 2008). To clarify whether the accuracy of management forecasts is induced by an optimistic or pessimistic bias, we separately reestimate Model (1) for firms having positive and negative management forecast errors. These analyses allow us to examine whether managements' optimistic or pessimistic biases influence the results.

Prior literature shows that management forecasts generally reflect optimistic biases (Ajinkya et al., 2005; Kato et al., 2009; Rogers and Stocken, 2005). If management forecasts inherently involve optimistic biases, managers in firms with weak internal controls may report more optimistic forecasts. Without accurate internal management reports, firms' managers ought to disclose their optimistic expectations if they are inherently optimistic in forming their forecasts. On the other hand, if firms with weak internal controls report less accurate management forecasts just because of the uncertainty about their future performance, management forecasts may be biased in both the optimistic and pessimistic directions. If the

former explanation is valid, the coefficients on *ICD* and *RES* will be positive only while using firms with negative management forecast errors (opportunistic bias). In contrast, if the latter explanation is valid, the coefficients on *ICD* and *RES* will be positive both while using firms with negative management forecast errors and while using those with equal to or greater than zero management forecast errors.

(Table 6 is inserted around here)

Table 6 reports the results of Model (1). Column (1) indicates firms with negative management forecast errors and column (2) indicates those with equal to or greater than zero management forecast errors. The coefficients on *ICD* (0.128) and *RES* (0.107) are both positive and significant at the 0.10 and the 0.05 levels, respectively, as shown in column (1). On the other hand, as shown in column (2) the coefficient on *ICD* is negative (-0.016), while it is insignificant. With respect to *RES*, the coefficient has an insignificant positive value (0.015). These results indicate that firms with weak internal controls report optimistic management forecasts and the coefficients are significant at the conventional level. Since the coefficients on *ICD* and *RES* are not statistically significant in column (2), we interpret that internal control weaknesses do not involve pessimistic biases in management forecasts. As in the results shown in Table 5, the difference between the coefficients on *ICD* and *RES* are significant neither in column (1) nor in column (2). Collectively, our results imply that less accurate management forecasts by firms with weak internal controls are likely to be induced by their optimistic biases.

7. Conclusion

In this study, the relationship between the accuracy of management forecasts and the

effectiveness of internal controls was investigated. In Japan, disclosing management forecasts is effectively mandated; therefore, we need not control for factors that are likely to influence the issuance of forecasts, unlike in other countries such as the U.S. Therefore, the Japanese setting allows us to examine the determinants of the accuracy of management forecasts without controlling for incentives to disclose such forecasts.

Following Feng et al. (2009), we posit that managers of firms with weak internal controls are likely to rely on erroneous internal management reports in forming forecasts; therefore, their earnings forecasts might be less accurate than those of firms with effective internal controls. We shed light on firms disclosing ICD as well as firms restating financial highlights, since they have more or less internal control weaknesses. Consistent with the notion that firms with weak internal controls report less accurate management forecasts, our results indicate that firms disclosing ICD and firms restating financial highlights report less accurate management forecasts. Furthermore, we find that a manager's optimistic bias causes such inaccurate management forecasts. While managers are likely to report optimistically biased forecast, internal control weaknesses may accelerate such tendencies of management.

The limitations of this research include its limited sample period and possible omitted variable problems. This study examines only firms having fiscal year end in March 2009; therefore, the results may not be generalizable. Moreover, the explanatory power (around 0.30) of our regression model is comparable with that of other studies, but it is far from high. There is still a room to improve this explanatory power by including additional variables. These issues are left for future research. Although there are a few limitations to this study, our findings provide new evidence concerning the relationship between the accuracy of management forecasts and the effectiveness of internal controls.

Appendix: Estimation of Distress Risk

Following Ota (2006), we employ the principal component method of factor analysis, which is suggested by Ohlson (1980), and we calculate the degree of distress risk to estimate Model (1). Ohlson (1980) provides a bankruptcy probability model by using nine variables. We use factor scores from the first component as a proxy for the degree of financial distress.

(Table A1 is inserted around here)

Table A1 presents the definition of the variables used in the principal component method of factor analysis. The sample period for which we conduct the analysis is from April 2002 to March 2009. All stock variables, such as liabilities, assets, and cash flows, represent mean values during the period. The descriptive statistics and the results of the principal component method of factor analysis are shown in Tables A2 and A3, respectively. The factor loading sign and the score coefficients of the first principal component are consistent with Ohlson (1980) and Ota (2006). Therefore, we interpret that the first principal component in Table A3 represents the intensity of financial distress. We then utilize the factor score from the first principal component to calculate *DIST* in Model (1).

(Table A2 and A3 are inserted around here)

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Table 1 Variable Definition

<i>MFE</i>	The management earnings forecast error defined as the difference between realized earnings of period $t + 1$ and the management earnings forecast of period $t + 1$ made at the earnings announcement of period t , deflated by the market value of equity at the end of fiscal year t .
<i>Abs(MFE)</i>	The absolute value of the management earnings forecast error
<i>ICD</i>	Dummy variable that is equal to one if the firm discloses internal control deficiencies and zero otherwise
<i>RES</i>	Dummy variable that is equal to one if the firm restates the disclosed financial highlights and zero otherwise
<i>LOSS</i>	Dummy variable that is equal to one if the firm reports negative net income and zero otherwise
<i>EQUITY</i>	Dummy variable that is equal to one if the firm issues equity during the period
<i>SIZE</i>	The logarithm of the market value of equity at the end of fiscal year $t - 1$
<i>DIST</i>	Ohlson O-score (For details, see Appendix.)
<i>SD(NI)</i>	The standard deviation of <i>ROA</i> over the prior 7 years (requiring at least three non-missing observations.)
<i>GROWTH</i>	The average of sales growth (from $t - 1$ to t) over the prior 7 years (requiring at least three non-missing observations.)
<i>IND_DIV</i>	The industry concentration measure defined as the sum of the squares of (firm sales in each industry segment/total sales)
<i>GEO_DIV</i>	The geographic concentration measure defined as the sum of the squares of (firm sales in each geographic segment/total sales)
<i>lagMFE</i>	The management earnings forecast error in year $t - 1$
<i>Abs(lagMFE)</i>	The absolute value of management earnings forecast error in year $t - 1$

Table 2 Descriptive Statistics

	Obs.	Mean	SD	Q1	Median	Q3
<i>MFE</i>	2,214	-0.038	0.224	-0.045	0.001	0.038
<i>Abs(MFE)</i>	2,214	0.112	0.198	0.014	0.040	0.113
<i>ICD</i>	2,214	0.023	0.151	0.000	0.000	0.000
<i>RES</i>	2,214	0.044	0.206	0.000	0.000	0.000
<i>LOSS</i>	2,214	0.360	0.480	0.000	0.000	1.000
<i>EQUITY</i>	2,214	0.086	0.280	0.000	0.000	0.000
<i>SIZE</i>	2,214	23.046	1.755	21.789	22.812	24.156
<i>DIST</i>	2,214	-0.018	0.140	-0.101	-0.034	0.039
<i>SD(NI)</i>	2,214	0.036	0.045	0.012	0.022	0.041
<i>GROWTH</i>	2,214	0.050	0.098	0.001	0.031	0.073
<i>IND_DIV</i>	2,214	0.796	0.255	0.568	0.994	1.000
<i>GEO_DIV</i>	2,214	0.892	0.196	0.835	1.000	1.000
<i>lag_MFE</i>	2,214	-0.122	0.207	-0.144	-0.054	-0.012
<i>lag_ABS(MFE)</i>	2,214	0.131	0.201	0.021	0.059	0.144

The sample consists of Japanese listed companies having fiscal year end in March 2009. All variables are defined in Table 1.

Table 3 Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>MFE</i>	1	1.00	-0.11	-0.08	-0.01	-0.08	-0.02	0.17	-0.04	-0.09	0.12	-0.02	-0.10	0.10	-0.07
<i>Abs(MFE)</i>	2	-0.72	1.00	0.07	0.10	0.33	0.01	-0.43	0.28	0.34	-0.01	0.13	-0.03	-0.41	0.49
<i>ICD</i>	3	-0.14	0.14	1.00	0.11	0.09	0.06	-0.08	0.06	0.10	-0.05	0.03	0.01	-0.08	0.09
<i>RES</i>	4	-0.08	0.13	0.11	1.00	0.10	0.00	-0.08	0.10	0.03	-0.04	0.02	-0.02	-0.09	0.10
<i>LOSS</i>	5	-0.17	0.31	0.09	0.10	1.00	0.04	-0.20	0.59	0.45	-0.13	-0.02	-0.10	-0.74	0.73
<i>EQUITY</i>	6	-0.05	0.05	0.06	0.00	0.04	1.00	0.01	0.05	0.14	0.17	-0.04	-0.01	-0.03	0.02
<i>SIZE</i>	7	0.20	-0.35	-0.09	-0.08	-0.19	0.01	1.00	-0.18	-0.28	0.13	-0.38	-0.36	0.26	-0.34
<i>DIST</i>	8	-0.23	0.35	0.13	0.13	0.53	0.11	-0.21	1.00	0.20	-0.16	-0.14	0.02	-0.56	0.54
<i>SD(NI)</i>	9	-0.20	0.28	0.17	0.04	0.34	0.21	-0.27	0.36	1.00	0.07	0.12	-0.09	-0.42	0.49
<i>GROWTH</i>	10	0.02	0.02	-0.03	0.00	-0.05	0.25	0.01	-0.08	0.22	1.00	0.01	-0.11	0.08	-0.08
<i>IND_DIV</i>	11	-0.01	0.08	0.03	0.02	-0.02	-0.05	-0.37	-0.09	0.08	0.02	1.00	0.22	0.02	0.03
<i>GEO_DIV</i>	12	-0.06	0.00	0.01	-0.03	-0.11	-0.01	-0.36	0.03	0.04	-0.01	0.16	1.00	0.17	-0.13
<i>lag_MFE</i>	13	0.29	-0.46	-0.10	-0.11	-0.60	-0.05	0.30	-0.59	-0.44	-0.02	-0.02	0.04	1.00	-0.90
<i>ABS(lagMFE)</i>	14	-0.28	0.47	0.11	0.11	0.59	0.05	-0.32	0.58	0.46	0.03	0.04	-0.03	-0.99	1.00

Pearson (Spearman) correlations are reported in the lower (upper) diagonal. All variables are defined in Table 1.

Table 4 Univariate Analysis

	Obs.	Mean	Median	<i>t</i> -stat.(<i>p</i> -value)	<i>z</i> -stat.(<i>p</i> -value)
Total	2,214	0.112	0.040		
non-ICD	2,162	0.107	0.040	-3.355	-3.138
ICD	52	0.294	0.079	(0.00)	(0.00)
non-RES	2,116	0.106	0.039	-3.646	-4.824
RES	98	0.231	0.092	(0.00)	(0.00)

This table reports mean and median values of management forecast accuracy for the sample of all firms, non-ICD firms (firms that did not disclose ICD), ICD firms (firms that disclosed ICD), non-RES firms (firms that did not restate financial highlights), and RES firms (firms that restated financial highlights). A two-sample *t*-test (Wilcoxon rank-sum test) is used to test (two-tailed) for significant differences in means (median) between ICD and non-ICD groups as well as RES and non-RES groups.

Table 5 Regression Result

<i>Constant</i>		0.782***
		(9.34)
<i>ICD</i>	(+)	0.097*
		(1.91)
<i>RES</i>	(+)	0.059**
		(2.17)
<i>LOSS</i>	(+)	-0.001
		(-0.049)
<i>EQUITY</i>	(+)	0.010
		(0.65)
<i>SIZE</i>	(-)	-0.029***
		(-10.4)
<i>DIST</i>	(+)	0.127**
		(2.05)
<i>SD(NI)</i>	(+)	0.091
		(0.61)
<i>GROW</i>	(+)	0.017
		(0.26)
<i>IND_DIV</i>	(-)	-0.021
		(-1.22)
<i>GEO_DIV</i>	(-)	-0.060***
		(-2.67)
<i>ABS(lagMFE)</i>	(+)	0.286***
		(5.69)
Observations		2214
Adj. R ²		0.2867
ICD = RS (F-value)		0.41
		(p-value)
		(0.52)

This table reports the parameter estimates and *t*-statistics from the OLS estimation of *Abs(MFE)* on the *ICD* dummy, *RES* dummy, and other control variables. All variables are defined in Table 1. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 level (two-tailed), respectively. The *t*-statistics are based on White's (1980) heteroskedasticity consistent standard errors and covariance.

Table 6 Additional Analysis

		Column (1)	Column (2)
		MFE < 0	MFE ≥ 0
<i>Constant</i>		1.021*** (6.74)	0.465*** (8.29)
<i>ICD</i>	(+)	0.128* (1.88)	-0.016 (-0.55)
<i>RES</i>	(+)	0.107** (2.21)	0.015 (1.15)
<i>LOSS</i>	(+)	0.003 (0.18)	0.004 (0.49)
<i>EQUITY</i>	(+)	0.040 (1.35)	-0.010 (-1.16)
<i>SIZE</i>	(-)	-0.039*** (-7.94)	-0.017*** (-9.01)
<i>DIST</i>	(+)	0.213*** (2.64)	-0.019 (-0.49)
<i>SD(NI)</i>	(+)	0.125 (0.53)	-0.090 (-0.85)
<i>GROW</i>	(+)	0.056 (0.48)	0.057* (1.77)
<i>IND_DIV</i>	(-)	-0.029 (-0.90)	0.001 (0.11)
<i>GEO_DIV</i>	(-)	-0.068 (-1.50)	-0.038*** (-2.74)
<i>lagMFE</i>	(+)	0.301*** (4.26)	0.190*** (5.00)
Observations		1078	1136
Adj. R ²		0.3263	0.3031
ICD = RS (F-value)		1.68	0.06
(p-value)		(0.20)	(0.80)

This table reports the parameter estimates and *t*-statistics from the OLS estimation of *Abs(MFE)* on the *ICD* dummy, *RES* dummy, and other control variables for the sample of firms with negative management forecast errors (Column 1) and firms with equal to or greater than zero management forecast errors (Column 2). All variables are defined in Table 1. ***, **, and * indicate significance at the 0.01, 0.05, and 0.10 level (two-tailed), respectively. The *t*-statistics are based on White's (1980) heteroskedasticity consistent standard errors and covariance.

Table A1 Variable Definition for Principle Component Analysis

<i>TLTA</i>	Total liabilities/Total assets
<i>WCTA</i>	Working capital/Total assets
<i>CLCA</i>	Current liabilities/Current assets
<i>NITA</i>	Net income/Total assets
<i>FUTL</i>	Operating cash flow/Total liabilities
<i>INTWO</i>	Dummy variable that is equal to one if earnings are negative for the last two years and zero otherwise
<i>OENEG</i>	Dummy variable that is equal to one if total liabilities exceed total assets and zero otherwise
<i>CHIN</i>	The difference between earnings in t and those in $t - 1$ divided by the sum of absolute value of earnings in t and those in $t - 1$

Table A2 Descriptive Statistics

	<i>TLTA</i>	<i>WCTA</i>	<i>CLCA</i>	<i>NITA</i>	<i>FUTL</i>	<i>INTWO</i>	<i>OENEG</i>	<i>CHIN</i>
N	30,119	30,119	30,119	30,119	30,119	30,119	30,119	30,119
Mean	0.59	0.13	1.00	0.01	0.09	0.10	0.01	0.01
SD	2.58	2.57	5.59	0.22	4.24	0.30	0.12	0.56
p10	0.23	-0.12	0.27	-0.04	-0.05	0.00	0.00	-1.00
p25	0.37	0.01	0.45	0.00	0.02	0.00	0.00	-0.27
p50	0.56	0.16	0.70	0.02	0.09	0.00	0.00	0.04
p75	0.72	0.32	0.99	0.04	0.20	0.00	0.00	0.29
p90	0.85	0.47	1.49	0.08	0.37	0.00	0.00	0.98

The sample consists of Japanese listed companies from April 2002 to March 2009. All variables are defined in Table A1.

Table A3 Result of Principle Component Analysis

	Factor Loadings	Score Coefficients
<i>TLTA</i>	0.950	0.345
<i>WCTA</i>	-0.950	-0.346
<i>CLCA</i>	0.838	0.305
<i>NITA</i>	-0.371	-0.135
<i>FUTL</i>	-0.009	-0.003
<i>INTWO</i>	0.131	0.048
<i>OENEG</i>	0.293	0.107
<i>CHIN</i>	-0.051	-0.018
Eigenvalue	2.749	
Variation Explained	34.4%	

This table reports the factor loadings and score coefficients of principle component analysis. The variables are from Ohlson (1980) and Ota (2006). All variables are defined in Table A1.