A comparison of management and auditor going concern risk disclosure: Evidence from regulatory change in Japan

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Abstract

This paper compares management and auditor going concern risk disclosures. It exploits a unique regulatory change in Japan that impacted the going concern risk disclosure practice. Prior to 2009, managers were directed to make financial statement note disclosures if they considered there was substantial doubt about the going concern status. The note disclosures were required to be audited. After 2009, substantial doubt disclosures by management are not audited and can be considered voluntary. We test whether going concern risk disclosure is enhanced by requiring managers rather than auditors to make the disclosure voluntarily. Analysis shows increased overall levels of going concern risk disclosure after the 2009 regulatory change, which is substantially attributable to voluntary disclosure in the Business Risk section of annual reports. The results are of interest to regulators because they suggest that it is appropriate for managers to be assigned primary responsibility for going concern risk disclosure.

Keywords: going concern; business risk disclosure; voluntary disclosure

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1. Introduction

This study investigates whether going concern information is more likely to be disclosed when the disclosure is required to be made by managers compared to when it is required to be made by auditors. Prior literature on voluntary disclosure by managers has proposed conflicting theories as to whether managers are willing to disclose bad information. For example, Kothari et al. (2009) argue that managers' attitude to good news and bad news is not symmetrical and managers have a tendency to progressively release good news but withhold bad news. On the other hand, Skinner (1994) argues that managers disclose bad news to maintain good relations with the investor community. Prior literature also provides mixed evidence on the theories. If the former is the case, establishing specific requirements about what should be disclosed by management or requiring auditors rather than managers to disclose bad information is considered necessary. However, if managers have an incentive to disclose bad news voluntarily, such requirements cannot be justified.

Recently, the FASB has considered developing specific requirements for managers to assess their going concern status and disclose the assessment (FASB 2014). In addition, the IAASB has been attempting to enhance auditors' involvement in clients' going concern matters. IAASB (2015) states: "Changes to ISA 570 respond to the public interest call for greater auditor attention to going concern and will result in enhanced auditor work effort in going concern "close call" situations, as well as increased focus on disclosures when a material uncertainty exists. This enhanced focus by auditors could potentially result in improved disclosures by management, which is also in the public interest." However, if managers are willing to provide going concern

information voluntarily, such detailed disclosure requirements and enhanced auditor involvement may not be necessary.

In Japan, disclosure and auditing standards regarding going concern issues were revised in 2009. Before the standards were changed, auditors are required to modify their auditor report by including an explanatory paragraph when there is a substantial doubt about a client's going concern status. The revised standards require management to disclose a substantial doubt about their going concern status in the Business Risk section of an annual report. Auditors do not audit the disclosure, but are required to mention going concern issues in their auditor report only when there is a material uncertainty about the going concern status (that is, when a substantial doubt is not dissolved by management's action plan to address it). Using this unique setting, we examine if managers are more likely to disclose going concern issues voluntarily in the Business Risk section of an annual report than auditors who are required to report the issues in their auditor report.

Using a sample that comprises Japanese listed companies for the period from 2003 to 2013, we find that going concern disclosure is enhanced by the standard change. That is, managers are more likely disclose going concern issues than auditors when there is a substantial doubt.

The results have important implications for standard setters and regulators. They imply that recent initiatives of standard setters to impose detailed disclosure requirements on managers and require auditors to assess the management disclosure are not useful for enhancing going concern disclosure.

In the next section, we provide some institutional background about going concern disclosure requirements and their change in 2009 in Japan. Then, we review relevant literature and develop a hypothesis to be tested. In section 4, the research design is described, followed by

results. Finally, we make concluding remarks.

2. Institutional Background

For the purpose of this study, the disclosure and auditing standards and their changes in Japan provide a useful research setting. In January 2002, the auditing standards were revised to add requirements on assessing and reporting on a client's going concern status. Auditors were required to assess the appropriateness of going concern disclosure made by managers in the notes and issue a qualified or adverse opinion when the disclosure is not appropriate. Furthermore, even when the disclosure by managers is appropriate, if there is a *substantial doubt* as to the going concern status, auditors are required to modify their auditor report by including an explanatory paragraph. It is notable that auditors interpreted the standard such that they included an explanatory paragraph regardless of whether the substantial doubt is dissolved by management action plans to respond to it.[1]

The disclosure requirements were also established to make them aligned with the auditing standards in October 2002, which required managers to disclose events or situations that have caused a *substantial doubt* in the notes to financial statements. The management disclosure was not considered voluntary disclosure, rather essentially it was compulsory disclosure in that auditors issued a qualified or adverse opinion if they concluded the disclosure was not appropriate.

In 2009, the disclosure and auditing standards were significantly changed. The new auditing standards require auditors to include an explanatory paragraph when there is a *material uncertainty* about the going concern status. That is, if there is a substantial doubt, but the doubt is

[1] This was not what the standard setters intended. The standards were supposed to require auditors to modify their auditor report only when a substantial doubt is not dissolved after taking into account management action plans. However, the standards did not work as expected. This led to the standard change in 2009.

dissolved by considering management action plans to respond to it, auditors no longer mention it in their audit report. In other words, a severer situation is reported after the standard change.

In line with the audit standard change, the disclosure requirements were also revised. Under the new requirements, managers were required to disclose events or situations that have caused a *material uncertainty* in the notes to financial statements. Importantly, additional disclosure requirements were developed at the same time. Managers are required to disclose events or situations that have caused a *substantial doubt* in the Business Risk section of an annual report. Also, they are required to explain their action plans to address the events or situations in the Management Discussion & Analysis (MD&A) section of an annual report. It is notable that the disclosure in the Business Risk section and the MD&A section of an annual report is not audited. That is, the disclosure by managers in these sections can be considered voluntary, which is in contrast with the disclosure in the notes to financial statements before the standard change in 2009.

In sum, the disclosure in the notes to financial statements (and auditor report modification) before the standard change and the disclosure in the Business Risk section of an annual report after the change are comparable, where a substantial doubt regarding the going concern status is mentioned. However, the former is considered compulsory disclosure in that it is audited, while the latter is considered voluntary disclosure. If the disclosure is not affected by whether it is voluntary or compulsory, the managers' propensity to disclose going concern issues should be the same before and after the standard change. However, if managers are willing to disclose bad news (e.g., Skinner, 1994), managers are more likely to disclose going concern issues after the standard change. On the contrary, if manages are reluctant to disclose bad news (e.g., Kothari, 2009), managers are less likely to disclose going concern issues after the standard change.

By comparing going concern disclosures before and after the standard change, we can test

which of the conflicting theories on management voluntary disclosure is supported, which has not been able to be addressed in prior studies.

3. Literature Review and Hypotheses

Carson et al. (2013) identify the need for research that specifically addresses responsibility for going-concern disclosures. They note that management, the audit committee and auditors have a role in disclosure, and internationally there is regulatory interest in distinguishing the roles of these parties. For example, the FASB has long-held the view that going concern disclosure should be part of GAAP and has recently moved to require managers to perform annual and interim assessments of going concern (FASB, 2012, 2014). Whether management or auditors should be required to disclose going concern risk remains an open empirical question, which is addressed in this study.

Prior research on managers' propensity to make voluntary disclosures is pertinent to our research question of whether management or auditors should be required to disclose going concern risk. The general question addressed is: under what circumstances will a manager disclose or withhold information? (Verrecchia, 2001). Verrecchia (1983) discusses discretionary disclosure when users of the information have rational expectations about the motivation of managers to withhold bad news. He shows that management decision-making on when to disclose and the quality of disclosures is based on the disclosure's asset pricing effect because of inferences drawn by users. When managers expect the inference is that information withheld is bad news they are motivated to disclose information.

Empirical studies have examined the propensity of managers to disclose bad news. Skinner (1994) examines the disclosure of negative earnings news and outlines several reasons why managers disclose bad news. He suggests motivation to disclose is related to shareholder

litigation that might occur because of a substantial decline in share price connected to undisclosed information. Also, managers have concerns about maintaining reputational capital, which can be eroded through a lack of timely disclosure. Skinner (1994) also suggests managers generally seek to maintain good relations with the investor community. His empirical results show that bad earnings news is more frequently pre-empted by voluntary disclosure than other news, which is consistent with managers viewing the cost of surprising investors with bad news as being substantial.

Balkrishnan et al. (2014) find that companies respond to shocks by stepping up disclosure, and find that voluntary disclosure can, to some extent, be used by managers to influence firm value and the market liquidity. This finding is consistent with theoretical models showing voluntary disclosure is used by managers to reduce information asymmetry (Diamond, 1985; Diamond and Verrecchia, 1991).

In contrast to evidence suggesting voluntary management disclosure of bad news, Kothari et al. (2009) find that managers delay the release of bad news about dividend payouts and management earnings forecasts. Their analysis shows that market reaction to the release of bad news is greater in magnitude than it is for the release of good news, which shows managers progressively release good news but tend to accumulate bad news. Importantly, the analysis shows disclosure behavior varies predictably with management incentives related to litigation risk, career concerns (promotion, internal and external employment opportunities and potential termination), personal shareholding and overall level of information asymmetry.

Regarding incentives to withhold bad news, Kothari et al. (2009) suggest an agency explanation, based on misalignment of managerial and shareholder disclosure preferences. Various incentives are discussed, including reducing information asymmetry to enjoy a lower cost of capital; not revealing proprietary information about performance to competitors;

attempting to increase option grant value, stock sale price; concern about lower bonus payments and general loss of wealth through market price decline. In addition, it is suggested that managers may gamble that bad news will be reversed or overshadowed by other good news which obviates the need for release (Graham et al., 2005).

Prior studies on managers' propensity to disclose are therefore consistent with Verrecchia (1983: 180) suggesting the existence of an "equilibrium threshold level of disclosure such that traders' conjecture about the content of withheld information is fulfilled by a manager's motivation to withhold the information". Whether managers will decide to disclose bad news related to going concern problems can be assessed from this perspective.

The onset of financial distress brings a new set of concerns for managers regarding the costs of information asymmetry. A range of stakeholders, including investors, suppliers, customers and lenders are faced with the problem of obtaining reliable information regarding the extent of the firm's distress (Wruck, 1990). In this context, managers with superior information about the extent of problems can use disclosures (for example, the MD&A) to preserve their reputational capital and assist stakeholders make informed decisions which can mitigate the negative response to disclosure of distress. Graham et al. (2005) argue that a key motivation for managers to make voluntary disclosures is to reduce the perception of information risk among shareholders.

However, it is by no means settled that in relation to going concern problems managers will have incentives to make disclosure. Several prior studies document reasons why managers will decide to withhold news regarding going concern problems. For example, Amin et al. (2014) report a significant negative relation between the issue of a going concern opinion and the cost of equity capital. Another management concern is that disclosure will be a self-fulfilling prophecy. Evidence suggests that companies receiving a going concern audit opinion are more likely to

subsequently fail (Kida, 1980; Geiger et al., 1998; Vanstraelen, 2003). While prior research on this phenomenon has focused on audit opinions rather than management information, it is likely that managers will be concerned that any disclosure of going concern information might precipitate bankruptcy. Prior management actions can also be influential to the disclosure decision. Chen et al. (2013) show that managers prefer not to receive a going concern audit opinion if they have engaged in insider selling of shares so as to avoid market-price swings and possible regulatory attention.

Consistent with Skinner's (1994) finding regarding earnings news, a key motivation for managers to make going concern disclosures is protection from potential litigation (Kaplan and Williams, 2013). Several other factors have been found to influence the attitude of managers to disclosure of going concern problems including governance and audit committee effectiveness, managerial ability and management style (Carcello and Neal, 2003, 2003a; Uang et al., 2006; Bamber et al., 2010; Krishnan and Wang, 2015).

Even if managers are inclined to make disclosures, whether they are informative is questionable. Uang et al. (2006) examine directors' mandatory GAAP going concern statements in the financial reports of UK listed companies. They find the statements to be of little value, and suggest managers are reluctant to disclose problems. Uang et al. (2006) report that management statements "convey arbitrary and unhelpful messages to users. Neither its content nor its nature is related in any way to the severity of the subsequent outcome" (Uang et al. 2006: 790). In contrast, they find auditors' going concern comments are more credible and have predictive ability for distress outcomes. This suggests an "information dissonance" between the going concern disclosures made by auditors and managers (Uang et al. 2006: 791).

Research that has focused on MD&A disclosures is also informative. Interestingly, compared with the finding on GAAP statements by Uang et al. (2006), the implications of

MD&A going concern disclosures are more positive. Holder-Webb and Cohen (2007) considered the quality of MD&A disclosures. They develop a proprietary instrument for measuring disclosure quality for distressed companies. Their analysis shows the quality of disclosures is generally low, suggesting managers opportunistically disclose insufficient information. Importantly however, they find managers increase disclosure quality with the onset of distress, and this is sustained for companies that eventually recover from distress. This is consistent with managers addressing information asymmetry to mitigate the negative response to disclosure of distress and reduce perceived shareholder information risk.

Mayhew et al. (2015) also show the value of voluntary MD&A disclosures by examining their incremental contribution to bankruptcy prediction. They test the disclosure of an explicit statement of going concern problems and the linguistic tone of information in disclosures. The findings show that a MD&A going concern disclosure variables (existence and tone) add significantly to financial variables in predicting bankruptcy. The MD&A variables remain significant after the auditor going concern opinion is controlled for. This finding suggests MD&A information is a valuable addition to GAAP disclosure, and shows managers have superior private information, which can be used to responsibly inform investors.

Shirata and Sakagami (2008) provide evidence for Japanese companies that qualitative disclosures in financial and annual reports including MD&A disclosure provide incremental information regarding the prediction of bankruptcy.

Beretta and Bozzolan (2004) develop a framework for analysis of risk communication. They highlight the importance of quality disclosures in narrative disclosures such as found in the MD&A to clarifying and validating the quantitative measures used in financial reports. The development of their disclosure index suggests that high quality narrative disclosure can ‘present the firm’s situation and perspectives *through the eyes of management*…’ (Beretta and Bozzolan,

2004: 285).

Behn et al. (2001) provide further evidence of the value of MD&A narrative disclosure. They find management plans to address going concern problems disclosed in MD&A are related to auditor's going concern opinions. Specifically, information on plans to raise capital through borrowing or issue equity are found to send a positive signal to auditors, and mitigate the likelihood of a going concern opinion. While the study shows MD&A information influences auditor decision making, it is also likely to be applicable to investor decision-making.

Overall, prior studies of MD&A going concern problems indicate management is disposed to using the disclosure mechanism to reduce information asymmetry. It suggests managers view favorably the opportunity to provide a narrative of their company's situation and plans to tackle going concern problems.

Prior studies demonstrate the audit reporting model can influence the going concern reporting rate (Carcello, et al., 1995, 1997; Raghunandan and Rama, 1995; Citron and Taffler, 2004; Bedard 2016a). Citron and Taffler (2004) examined the implementation of SAS No. 600 in the United Kingdom (UK), which required a clear statement of management's responsibility for the financial statements and the auditor's role in giving an opinion based on audit work performed. They find the replacement of a requirement for audit qualification with an explanatory modification paragraph provides a reporting framework more conducive to going concern reporting as indicated by the increased going concern reporting rate after the introduction of SAS No. 600. The result is attributable to the explanatory modification disclosure being more palatable to managers, and reducing conflict between management and auditors over going concern reporting. This finding is consistent with recent audit regulation initiatives suggesting a general recognition that management has a responsibility to provide information about the entity and its financial statements through corporate disclosure mechanisms (IAASB, 2011; Bedard et

al., 2016), which is the Japanese regulatory approach since 2009.

Overall, we suggest the Japanese audit reporting model implemented in 2009 will affect the equilibrium disclosure threshold (Verrecchia, 1983) such that disclosure will be enhanced. The prior literature discussed above indicates that management decision-making about disclosure is influenced by a range of environmental and company specific factors. However, research suggests MD&A disclosure enables company managers to provide a nuanced narrative discussion of going concern problems and their plans for addressing those problems. This allows managers to effectively address information asymmetry thereby mitigating the possible negative response to disclosure of distress. The Japanese regulation also clearly defines the responsibility of managers to assess their company's ability to continue as a going concern and the auditor's role in giving an opinion based on audit work performed. Consistent with the findings of Citron and Taffler (2004) we suggest this reporting model is conducive to management disclosure as it mitigates the negative implications of the auditor issuing a qualified audit report when a company has going concern problems. The following hypothesis is therefore suggested:

H1: Going concern risk disclosure is enhanced when it is required to be made by management, compared to when it is required to be made by auditors.

4. Research Design

4.1. Model

In order to investigate whether going concern risk disclosure is enhanced after the disclosure standard has been changed, we estimate the logit regression model shown in Equation 1 below:

$$Pr\ (Going\ Concern_{i,t}=1) = \alpha + \beta_1\ Standard\_Change + \beta_2\ Zmijewski_{i,t} + \beta_3\ Loss_{i,t} + \beta_4\ Size_{i,t} + \beta_5\ Age_{i,t} + \beta_6\ Return_{i,t} + \beta_7\ Volatility_{i,t} + \beta_8\ Leverage_{i,t} + \beta_9\ \Delta Leverage_{i,t} + \beta_{10}\ OCF_{i,t} + \beta_{11}\ Invest_{i,t} + \beta_{12}\ Newfinance_{i,t} + \beta_{13}\ Big4_{i,t} + \beta_{14}\ March_{i,t} + \varepsilon_{i,t} \quad (1)$$

where *Going Concern* is a dichotomous variable indicating whether firms disclose going concern risk. We use three different measures of *Going Concern*: *GC, GC_note, and GC_risk. GC* is a dummy variable which equals one if firms disclose going concern risk in the notes before March 2009, or if firms disclose going concern risk either in the notes or in the Business Risk section of the annual report after March 2009, and zero otherwise. *GC_note* is a dummy variable which equals one if firms disclose going concern risk in the notes and zero otherwise. *GC_risk* is a dummy variable which equals one if firms disclose going concern risk in the Business Risk section of the annual report, and zero otherwise. Following prior studies, we also test the effect of standard change on going concern risk disclosure using *First_GC, First_note*, and *First_risk* which indicate if firms disclose *GC*, *GC_note*, and *GC_risk* for the first time (Chen et al., 2013).

As stated in section 2, the disclosure standard on going concern risk changed in March 2009. *Standard_Change* is a dummy variable which is equal to zero before March 2009, and one after March 2009. We focus on this variable to test our hypothesis. If going concern risk disclosure is enhanced when it is required to be made by management, the coefficient of *Standard_Change* will be significant and positive.

We include in the model variables that which have been found in prior studies to affect the probability of going concern disclosure (Carcello et al. 2000; Behn et al. 2000; Craswell et al 2002; Geiger and Rama 2003; Butler et al. 2004; Fargher et al 2008; Carcello et al 2009; Blay et al 2012; Bruynseels and Willekins 2012; Chen et al. 2013; Geiger 2014; Goodwin and Wu 2016). *Zmijewski* is a default risk calculated as the Zmijewski (1984) score, which is equal to (-4.3 - 4.5

* (net income / total assets) + 5.7 * (total liabilities / total assets) + 0.004 * (current assets / current liabilities)). Since a higher Zmijewski score means higher probability of bankruptcy, we expect that the coefficient of *Zmijewski* will be positive. *Loss* is an indicator variable which equals one if firms report negative net income, and zero otherwise. The coefficient is expected to be positive. *Size* is the natural log of total assets, and *Age* is the natural log of number of years since the firm started its business. Because relatively younger and smaller firms are more likely to experience financial distress and bankruptcy, we expect negative coefficients for both variables. *Return* is the cumulative stock return over the current year and *Volatility* is the standard deviation of monthly stock return over the current year. Stock return and stock volatility indicate greater firm risk, so positive coefficients are expected.

Leverage is the sum of the book values of liabilities and equity divided by the book value of equity. *ΔLeverage* is a change in *Leverage* from the previous year to the current year ($Leverage_t$ - $Leverage_{t-1}$). Since default risk is greater for firms with higher debt levels, we expect positive coefficients for both *Leverage* and *ΔLeverage*.

We also control for liquidity constraints, which indicates a firm's ability to meet its short-term financial obligations. *OCF* is operating cash flow divided by total assets. *Invest* is calculated as the sum of cash and cash equivalents, short-term securities, and long-term securities divided by total assets. *Newfinance* is a dummy variable which equals one if firms issue new stocks or bonds, or borrow a cash from banks at the current year, and zero otherwise. Firms with liquidity constraints are more likely to default and therefore we expect negative coefficients for *OCF*, *Invest*, and *Newfinance*.

Big4 is an indicator variable which equals one if a firm is audited by a big 4 audit firm, which includes Shinnihon (EY), Azusa (KPMG), Arata (PwC), and Tohmatsu (DTT) in Japan. *March* is a dummy variable which equals one if the firm's fiscal year ends in March, and zero

otherwise. About 70 percent of Japanese firms have a fiscal year end on March 31st.We also include industry dummies in our model. Variable definitions are summarized in Appendix A.

4.2. *Sample selection and data collection*

The sample selection started with all listed Japanese companies for fiscal year ending March 2004 to fiscal year ending March 2015 (47,322 firm-year observations). As stated, the requirement of business risk disclosure was introduced from the fiscal year ending March 2004. We excluded 3,073 financial related observations (i.e., banking, securities, insurance, and other financial businesses) because companies in these industries are highly regulated and the differences from other industries are substantial (44,249 observations). We also deleted 3,283 observations for companies that were audited by more than one audit firm. This resulted in a sample comprised of 40,966 firm-year observations.

In this study, we conduct logit analysis to investigate the effect of the standard change regarding going concern disclosure on the managers' propensity of disclosing the going concern risk. Prior studies restrict the sample to financially distressed companies, because most companies that receive a going concern opinion are financially distressed (Hopwood et al. 1994; Mutchler et al.1997; Reynolds and Francis 2000; Carcello and Neal 2000; DeFond et al. 2002). Following Defond et al. (2002) and Chen et al. (2013), we define financially distressed companies as companies that report either negative earnings or negative operating cash flow at the current fiscal year. In our sample, there were 7,944 observations that matched the distress criteria and have necessary data for analysis. Companies that disclose going concern risk and have necessary data were 1,304. Since 1,155 observations out of financially distressed companies disclosed the going concern risk, our sample for the logit analysis comprises 8,903 observations (7,944 + 1,304 – 1,155). Table 1 shows the sample selection procedure.

[Table 1 around here]

To construct the *GC_risk* dummy, we first identified companies that included the phrase "going concern" in the text of the business risk disclosure section in their annual reports from eol database. Subsequently, we read the disclosure to ensure that it related to going concern risk.[2] For *GC_note* and other variables, we collected the data from Nikkei NEEDS Financial QUEST database.

5. Results

5.1. *Statistics of the disclosure of going concern risk*

Table 2 presents the number of firms that disclose going concern risk during our sample period.

[Table 2 around here]

Panel A shows the cross matrix of the *GC* and *Standard_Change* variables. While 3.1 percent of companies (553 / 18,021) disclosed the going concern risk before the standard change, 5.3 percent of companies (1,209 / 22,945) disclosed the risk after the change. The results indicate that the propensity of disclosing going concern risk increased after the standards regarding going concern disclosure changed. Results in Panel B and Panel C of Table 2 suggest this results from an increase in firms disclosing going concern risk in the Business Risk section of their annual

[2] Some companies used the expression going concern in a disclosure indicating they did not have going concern risk.

reports. Panel C shows that while only 0.8 percent of companies (144 / 18,021) disclosed going concern risk in the Business Risk section before the standard change, the rate increased to 5.2 percent (1,200 / 22,945) after the change. On the other hand, Panel B shows the propensity to disclose going concern risk in the notes slightly decreased, from 3.1 percent (553 / 18,021) to 2.0 percent (470 / 22,945). Panel B also shows that about 2.5 percent of firms disclose going concern risk in their notes (1,023 / 40,966). Compared to other countries, Japanese companies are less likely to receive going concern opinion (e.g., Carson et al. 2013).

Table 3 and Table 4 show the descriptive statistics and the correlation matrix for variables included in the analysis, respectively.

[Table 3 around here]

[Table 4 around here]

5.2. *Logit regression results*

The results of logit analysis based on equation (1) are shown in Table 5. Columns 1 to 3 report the results using *GC*, *GC_note*, and *GC_risk* as dependent variables, respectively. Columns 4 to 6 report the results when lagged *GC*, *GC_note*, or *GC_risk* is included additionally. We also show the results using *First_GC*, *First_GC_note*, and *First_GC_risk* as dependent variables in columns 7 to 9.

[Table 5 around here]

The coefficient of *Standard_Change* in column 1 is statistically significant at the one percent level. The result indicates that disclosure of going concern risk increased after the standard

changed. The positive coefficient is still significant after controlling for the going concern risk disclosure in the previous year (column 4). Furthermore, the coefficient for *Standard_Change* in column 7 is significant at the one percent level, which means first-time disclosure of going concern risk increases after the standard change in 2009. The evidence therefore supports our hypothesis.

While the coefficient of *Standard_Change* in column 2 is negatively significant, the coefficient in column 3 is positively significant at the one percent level. This indicates that the going concern risk disclosure in the notes decreased, but the disclosure in the Business Risk section increased after the standard change. The results are the same when we include lagged going concern risk disclosure variables in the model (columns 5 and 6) and when we use first-time going concern risk disclosures as the dependent variables (columns 8 and 9).

Of the control variables, the coefficient for *Zmijewski* is positive and significant at the one percent level in all columns. Firms with higher default risk are therefore more likely to disclose going concern risk. *Loss* is positively significant at the one percent level in columns 4 to 9, and at the five percent level in column 2 indicating the propensity of disclosing going concern risk is higher for firms reporting negative income. A significant negative coefficient for *Size* in all columns implies smaller firms are more likely to disclose going concern risk. *Age* has a significantly positive coefficient in columns 1 and 2. *Return* is significantly positive, and *Volatility* is significantly negative in all columns. The results suggest that firms with lower stock return and higher stock volatility are more likely to disclose going concern risk.

In addition, the effects of *Leverage* are positive but the effects of Δ*Leverage* are negative only in columns 1 to 3. *OCF* is significantly negative in all columns. Furthermore, *Newfinance* is negative and significant in all columns except for column 8. The results show that firms with relatively higher liquidity are less likely to disclose going concern risk. A negative coefficient for *Big4* in columns 1 to 3 suggests that firms audited by Big 4 audit firms are less likely to disclose the

risk. Finally, *March* is negatively significant when we use *GC* and *GC_risk* as dependent variables (columns 1, 3, 4, 6, 7, and 9). Overall, the coefficients of control variables are consistent with our expectations.

5.3. *Analysis of predicted probability of disclosing the going concern risk*

As an additional analysis, we analyze whether the firm that is predicted to disclose the going concern risk actually disclosed the risk. First, we conducted logit analysis based on equation (1) using the full sample. We then calculated the predicted probability to disclose going concern risk based on the logit results. Next, we coded a firm as a firm that is predicted to disclose the going concern risk (*Predicted_GC*=1) when the predicted probability is larger than 0.5 (50%), and coded a firm as a firm that is not predicted to disclose the risk (*Predicted_GC*=0) when the predicted probability is smaller than 0.5 (50%). Table 6 shows the cross matrix of *GC* and *Predicted_GC*. Panel A and B are the results for the period before the revision and the period after the revision, respectively.

[Table 6 around here]

As shown in row 2 in column 1 of Table 6, the number of firms that are not predicted to disclose the going concern risk (*Predicted_GC*=0) but actually disclosed the risk (*GC*=1) is 258 during the period before the standard change, and comprises 8.2 percent of firms that are not predicted to disclose the risk (3,147, row 3 in column 1). For the period after the standard change, the number of firms that are not predicted to disclose the going concern risk (*Predicted_GC*=0) but actually disclosed the risk (*GC*=1) is 506 (row 5 in column 1), which comprises 12.1 percent of firms that are not predicted to disclose the risk (4,189, row 6 in column 1).

On the other hand, the number of firms that are predicted to disclose the going concern risk (*Predicted_GC*=1) and actually disclosed the risk (*GC*=1) is 131 (row 2 in column 2) during the period before the standard change and 409 (row 5 in column 2) during the period after the change. They comprise 70.4 percent (131 / 186) and 71.6 percent (409 / 571) of firms that are predicted to disclose the risk during the period before and after the standard change, respectively. The results imply that firms are more likely to disclose going concern risk after the disclosure standards were revised, which also supports our hypothesis.

As sensitivity analysis (untabulated), we coded *Predicted_GC* as one when the predicted probability is larger than 0.6 (60%), and as zero when the predicted probability is smaller than 0.4 (40%). The results show that the ratio of firms that are not predicted to disclose the going concern risk but actually disclosed the risk increased from 7.3 percent to 10.5 percent after the standard change. However, the ratio of firms that are predicted to disclose the risk and actually disclosed the risk slightly declined from 79.4 percent to 78.3 percent. Overall, this analysis supports the hypothesis that going concern risk disclosure is enhanced after the disclosure standard change.

6. Concluding Remarks

This paper compares management and auditor going concern risk disclosures. It exploits a unique regulatory change in Japan that impacted audit and financial report disclosure of going concern risk. Prior to 2009, managers were directed to make financial statement note disclosures if they considered there was substantial doubt that the company was a going concern. The disclosure was audited, and a qualified or adverse opinion was given if the disclosure was not appropriate, and a modified opinion would be given regardless of whether management dissolved going concern issues by disclosure of an action plan. Therefore, prior to 2009, management disclosure of going concern substantial doubt was essentially mandatory and driven by auditor

concerns regarding a company's going concern status.

Since 2009, responsibility for disclosure of going concern substantial doubt has largely shifted to managers. Audited financial report note disclosures are required when there is a material uncertainty regarding a company's ability to continue as a going concern. However, the post 2009 regulation requirements are for management disclosure of substantial doubt in the Business Risk section of an annual report. Moreover, management plans to address going concern issues are required to be included in the MD&A section of the annual report. Therefore, in the post 2009 environment, substantial doubt disclosures by management are not audited and can be considered voluntary.

We examine disclosure of going concern risk before and after the regulatory change in 2009, to examine whether managers are more or less likely to make going concern risk disclosures in a voluntary setting. Prior work on the issue of whether managers will voluntarily disclose bad news suggests competing motivations. We suggest the Japanese audit reporting model implemented in 2009 will enhance disclosure because it enables company managers to provide a nuanced narrative discussion of going concern problems and allows them to mitigating the possible negative response to disclosure of distress.

We test whether going concern risk disclosure is enhanced when it is required to be made by management, compared to when it is required to be made by auditors. Analysis shows increased overall levels of going concern risk disclosure after the 2009 regulatory change. In addition, we find this increase is substantially attributable to voluntary disclosure in the Business Risk section of sample company annual reports. Regression analysis is conducted for a sample of distressed companies which includes controls for company bankruptcy risk and other factors that have been found to influence the probability of a going concern report. We find an indicator variable for post 2009 regulatory period is significant and positive, which is consistent with our

hypothesis. In addition, this finding is consistent when we limit the analysis of companies that make a first-time going concern disclosure.

Overall, the results indicate the 2009 regulatory change resulted in increased going concern risk disclosure. This is consistent with the view that managers will disclose bad news to maintain good relations with investors (Skinner, 1994) and to allow them to provide a nuanced discussion that can mitigate any negative response to disclosure of going concern problems.

The study is of academic relevance because it exploits a unique setting to address the largely unanswered question of who should be responsible for going concern disclosures (Carson et al., 2013). The results are of interest to regulators because they suggest that it is appropriate for managers to be assigned primary responsibility for going concern risk disclosure. The results do not suggest that imposing detailed disclosure requirements on managers or requiring auditors to assess management disclosures is useful for enhancing going concern disclosure.

There are limitations to this study. First it is possible that our results may be attributable to unobserved omitted variables. For example, it is possible that other regulatory or environmental events over the period of the study could have 'contaminated' the results. Second, the results have limited generalizability to other jurisdictions due to unique characteristics of the Japanese setting. Third, our analysis merely examines the incidence of going concern risk disclosure and does not offer insights regarding the quality of voluntary management going concern risk disclosures. This is important to determining the efficacy of the Japanese regulatory approach and is an issue that could be addressed in future research.

Appendix A. Variables definitions

Variables	Definitions
Going concern realted variables	
1. *GC*	One if firms disclose going concern risk in the notes before March 2009, or if firms disclose going concern risk either in the notes or in the Business Risk section of the annual report after March 2009, and zero otherwise
2. *GC_note*	One if firms disclose going concern risk in the notes, and zero otherwise
3. *GC_risk*	One if firms disclose going concern risk in the Business Risk section of the annual report, and zero otherwise
4. *First_GC*	One if firms disclose *GC* at the first time, and zero otherwise
5. *First_GC_note*	One if firms disclose *GC_note* at the first time, and zero otherwise
6. *First_GC_risk*	One if firms disclose *GC_risk* at the first time, and zero otherwise
Firm's characteristics	
7. *Standard_Change*	One after March 2009, and zero before March 2009
8. *Zmijewski*	Default risk calculated by Zmijewski score Zmijewski score = -4.3 -4.5 * (net income / total assets) + 5.7 * (total liabilities / total assets) + 0.004 * (current assets / current liabilities)
9. *Loss*	One if firms report negative net income, and zero otherwise
10. *Size*	Natural log of total assets
11. *Age*	Natural log of number of years since the firm started its business
12. *Return*	Firm's cumulative stock return over the current year
13. *Volatility*	Standard deviation of monthly stock returns over the current year
14. *Leverage*	Sum of the book values of liability and equity, divided by the book value of equity
15. *ΔLeverage*	Change in *Leverage* from the previous year to the current year
16. *OCF*	Operating cash flow divided by total assets
17. *Invest*	Sum of cash & cash equivalents, short-term securities, and long-term securities, divided by total assets
18. *Newfinance*	One if firms issue new stocks or bonds, or borrow a cash from banks at the current year, and zero otherwise
19. *Big4*	One if a firm is audited by a big 4 audit firms which includes Shinnihon, Tohmatsu, Azusa, and Arata, and zero otherwise
20. *March*	One if a firm's fiscal year ends in March, and zero otherwise

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Table 1. Sample selection

	Excluded	Number of observations
All listed companies (fiscal year ending March 2004 to fiscal year ending March 2015)		47,322
1. Companies in non finance-related industries	3,073	44,249
2. Companies whose financial statements are not joint-audited by more than one audit firm	3,283	40,966
Logit analysis sample = 3+4-5		
3. Companies that disclose going concern risk either at note or business risk section and have necessary data for analysis		1,304
4. Companies that match the distress criteria (either negative net income or negative operating cash flow) and have necessary data for analysis		7,944
5. Companies that disclose going concern risk and that match the distress criteria and have necessary data for analysis		1,155
Total		8,093

Table 2. Cross matrix of going concern variables and *Standard_Change* dummy

Panel A: Cross matrix of *GC* and *Standard_Change* dummy

	Standard_Change=0	*Standard_Change*=1	Total
GC=0	17,468	21,736	39,204
GC=1	553	1,209	1,762
Total	18,021	22,945	40,966

Panel B: Cross matrix of *GC_note* and *Standard_Change* dummy

	Standard_Change=0	*Standard_Change*=1	Total
GC_note=0	17,468	22,475	39,943
GC_note=1	553	470	1,023
Total	18,021	22,945	40,966

Panel C: Cross matrix of *GC_risk* and *Standard_Change* dummy

	Standard_Change=0	*Standard_Change*=1	Total
GC_risk=0	17,877	21,745	39,622
GC_risk=1	144	1,200	1,344
Total	18,021	22,945	40,966

Notes: *GC* = one if firms disclose going concern risk in the notes before March 2009, or if firms disclose going concern risk either in the notes or in the Business Risk section of the annual report after March 2009, and zero otherwise; *GC_note* = one if firms disclose going concern risk in the notes, and zero otherwise; *GC_risk* = one if firms disclose going concern risk in the Business Risk section of the annual report, and zero otherwise; *Standard_Change* = one after March 2009, and zero before March 2009.

Table 3. Descriptive statistics

	Mean	Std. Dev.	Min.	Q1	Med.	Q3	Max.	Obs.
1. *GC*	0.161	0.368	0.000	0.000	0.000	0.000	1.000	8,093
2. *GC_note*	0.086	0.281	0.000	0.000	0.000	0.000	1.000	8,093
3. *GC_risk*	0.125	0.330	0.000	0.000	0.000	0.000	1.000	8,093
4. *Standard_Change*	0.588	0.492	0.000	0.000	1.000	1.000	1.000	8,093
5. *Zmijewski*	0.305	0.304	0.000	0.029	0.203	0.527	1.000	8,093
6. *Loss*	0.663	0.473	0.000	0.000	1.000	1.000	1.000	8,093
7. *Size*	9.990	1.657	4.644	8.890	9.928	10.952	17.185	8,093
8. *Age*	3.831	0.573	1.609	3.434	4.007	4.234	4.905	8,093
9. *Return*	0.026	0.706	-0.983	-0.340	-0.085	0.185	10.629	8,093
10. *Volatility*	52.470	26.779	4.491	34.455	47.975	65.351	423.374	8,093
11. *Leverage*	3.771	7.960	1.010	1.680	2.440	3.860	434.590	8,093
12. *ΔLeverage*	0.324	7.513	-144.810	-0.080	0.030	0.220	393.190	8,093
13. *OCF*	-0.018	0.189	-2.351	-0.046	-0.007	0.036	11.743	8,093
14. *Invest*	0.236	0.165	0.000	0.119	0.193	0.305	0.988	8,093
15. *Newfinance*	0.648	0.478	0.000	0.000	1.000	1.000	1.000	8,093
16. *Big4*	0.700	0.458	0.000	0.000	1.000	1.000	1.000	8,093
17. *March*	0.683	0.465	0.000	0.000	1.000	1.000	1.000	8,093

Notes: *GC* = one if firms disclose going concern risk in the notes before March 2009, or if firms disclose going concern risk either in the notes or in the Business Risk section of the annual report after March 2009, and zero otherwise; *GC_note* = one if firms disclose going concern risk in the notes, and zero otherwise; *GC_risk* = one if firms disclose going concern risk in the Business Risk section of the annual report, and zero otherwise; *Standard_Change* = one after March 2009, and zero before March 2009; *Zmijewski* = default risk calculated by Zmijewski score; *Loss* = one One if firms report negative net income, and zero otherwise; *Size* = the natural log of total assets; *Age* = the natural log of number of years since the firm started its business; *Return* = firm's cumulative stock return over the current year; *Volatility* = standard deviation of monthly stock returns over the current year; *Leverage* = sum of the book values of liability and equity, divided by the book value of equity; *ΔLeverage* = change in *Leverage* from the previous year to the current year; *OCF* = operating cash flow divided by total assets; *Invest* = sum of cash & cash equivalents, short-term securities, and long-term securities, divided by total assets; *Newfinance* = one if firms issue new stocks or bonds, or borrow a cash from banks at the current year, and zero otherwise; *Big4* = one if a firm is audited by a big 4 audit firms which includes Shinnihon, Tohmatsu, Azusa, and Arata, and zero otherwise; *March* = one if a firm's fiscal year ends in March, and zero otherwise.

Table 4. Correlation matrix

（The coefficients below (above) the diagonal are the Pearson (Spearman) correlation coefficients.）

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. *GC*		0.749 *	0.787 *	-0.005	0.251 *	0.169 *	-0.154 *	-0.097 *	-0.147 *	0.206 *	0.118 *	0.202 *	-0.076 *	-0.033 *	0.013	-0.071 *	-0.073 *
2. *GC_note*	0.702 *	1	0.324 *	-0.142 *	0.228 *	0.126 *	-0.112 *	-0.082 *	-0.150 *	0.185 *	0.119 *	0.160 *	-0.085 *	-0.050 *	0.043 *	-0.046 *	-0.056 *
3. *GC_risk*	0.860 *	0.420 *		0.121 *	0.189 *	0.139 *	-0.118 *	-0.074 *	-0.113 *	0.157 *	0.086 *	0.169 *	-0.041 *	-0.023	-0.007	-0.054 *	-0.055 *
4. *Standard_Change*	0.101 *	-0.090 *	0.241 *		-0.117 *	0.119 *	0.039 *	0.054 *	0.051 *	0.015	-0.123 *	0.029 *	0.159 *	0.049 *	-0.121 *	-0.054 *	0.087 *
5. *Zmijewski*	0.304 *	0.301 *	0.251 *	-0.070 *		0.173 *	0.170 *	0.102 *	-0.095 *	0.163 *	0.909 *	0.389 *	0.033 *	-0.398 *	0.226 *	-0.010	0.003
6. *Loss*	0.147 *	0.134 *	0.117 *	0.104 *	0.211 *		-0.089	-0.005	-0.210 *	0.169 *	-0.011	0.269 *	0.477 *	0.054 *	-0.075 *	-0.019	-0.017
7. *Size*	-0.320 *	-0.237 *	-0.295 *	-0.027 *	0.070 *	-0.080 *		0.428 *	0.034 *	-0.274 *	0.282 *	0.036 *	0.159 *	-0.273 *	0.076 *	0.147 *	0.224 *
8. *Age*	-0.159 *	-0.112 *	-0.147 *	-0.013 *	-0.002	-0.025 *	0.424 *		0.115 *	-0.224 *	0.170 *	-0.030 *	0.184 *	-0.197 *	-0.036 *	0.012	0.301 *
9. *Return*	-0.041 *	-0.091 *	-0.004	0.025 *	-0.079 *	-0.157 *	-0.047 *	-0.029		-0.166 *	-0.005	-0.120 *	-0.017	0.010	-0.078 *	0.017	0.074 *
10. *Volatility*	0.370 *	0.329 *	0.329 *	0.077 *	0.191 *	0.152 *	-0.349 *	-0.277 *	0.111 *		0.081 *	0.107 *	-0.096 *	0.112 *	0.105 *	-0.093 *	-0.042 *
11. *Leverage*	0.169 *	0.175 *	0.151 *	-0.014	0.361 *	0.026 *	0.062 *	-0.012	0.004	0.093 *		0.262 *	0.037 *	-0.448 *	0.228 *	0.017	0.035 *
12. *ΔLeverage*	0.088 *	0.097 *	0.079 *	0.017	0.119 *	0.042 *	0.004	-0.041 *	-0.031 *	0.045 *	0.759 *		0.072 *	-0.132 *	0.120 *	0.008	-0.032 *
13. *OCF*	-0.129 *	-0.157 *	-0.103 *	0.063 *	-0.053 *	0.100 *	0.148 *	0.129 *	-0.001	-0.127 *	0.032 *	0.003		-0.077 *	-0.148 *	0.027 *	0.082 *
14. *Invest*	0.043 *	-0.003	0.035 *	0.054 *	-0.310 *	0.075 *	-0.330 *	-0.320 *	0.067 *	0.164 *	-0.143 *	-0.032 *	-0.073 *		-0.150 *	-0.045 *	-0.055 *
15. *Newfinance*	-0.022 *	0.034 *	-0.045 *	-0.126 *	0.191 *	-0.060 *	0.095 *	-0.048 *	-0.012	0.062 *	0.059 *	0.012	-0.080 *	-0.150 *		0.007	-0.023
16. *Big4*	-0.217 *	-0.173 *	-0.205 *	-0.106 *	-0.054 *	-0.035 *	0.258 *	0.084 *	0.001	-0.240 *	-0.015	-0.009	0.049 *	-0.046 *	0.010		0.009
17. *March*	-0.110 *	-0.062 *	-0.091 *	0.060 *	-0.016	-0.020	0.214 *	0.286 *	0.034 *	-0.060 *	-0.020	-0.020	0.052 *	-0.101 *	-0.020	0.040 *	

Notes: *GC* = one if firms disclose going concern risk in the notes before March 2009, or if firms disclose going concern risk either in the notes or in the Business Risk section of the annual report after March 2009, and zero otherwise; *GC_note* = one if firms disclose going concern risk in the notes, and zero otherwise; *GC_risk* = one if firms disclose going concern risk in the Business Risk section of the annual report, and zero otherwise; *Standard_Change* = one after March 2009, and zero before March 2009; *Zmijewski* = default risk calculated by Zmijewski score; *Loss* = one One if firms report negative net income, and zero otherwise; *Size* = the natural log of total assets; *Age* = the natural log of number of years since the firm started its business; *Return* = firm's cumulative stock return over the current year; *Volatility* = standard deviation of monthly stock returns over the current year; *Leverage* = sum of the book values of liability and equity, divided by the book value of equity; *ΔLeverage* = change in *Leverage* from the previous year to the current year; *OCF* = operating cash flow divided by total assets; *Invest* = sum of cash & cash equivalents, short-term securities, and long-term securities, divided by total assets; *Newfinance* = one if firms issue new stocks or bonds, or borrow a cash from banks at the current year, and zero otherwise; *Big4* = one if a firm is audited by a big 4 audit firms which includes Shinnihon, Tohmatsu, Azusa, and Arata, and zero otherwise; *March* = one if a firm's fiscal year ends in March, and zero otherwise.

* indicate significance at the 0.05 level (two-tailed test).

Table 5. Results of logit analyses

	Expected sign	*GC* (1)	*GC_note* (2)	*GC_risk* (3)	*GC* (4)	*GC_note* (5)	*GC_risk* (6)	*First_GC* (7)	*First_GC_note* (8)	*First_GC_risk* (9)
1. *Standard_Change*	+	1.887 ***	-0.280 ***	12.529 ***	1.401 ***	-0.215 ***	7.855 ***	1.320 **	-0.177 ***	10.452 ***
		(7.70)	(-12.16)	(18.75)	(3.22)	(-11.08)	(13.12)	(2.31)	(-10.28)	(13.05)
2. *Zmijewski*	+	10.446 ***	11.014 ***	11.006 ***	22.325 ***	22.800 ***	15.198 ***	21.685 ***	32.920 ***	21.717 ***
		(14.27)	(12.56)	(13.84)	(15.41)	(12.76)	(12.79)	(13.23)	(11.02)	(12.97)
3. *Loss*	+	1.160	1.504 **	1.027	2.334 ***	2.495 ***	2.174 ***	4.149 ***	4.079 ***	3.104 ***
		(1.41)	(2.70)	(0.24)	(6.04)	(5.14)	(5.02)	(5.66)	(4.39)	(4.36)
4. *Size*	–	-0.565 ***	-0.560 ***	-0.553 ***	-0.673 ***	-0.655 ***	-0.671 ***	-0.665 ***	-0.702 ***	-0.655 ***
		(-16.20)	(-11.34)	(-14.89)	(-9.33)	(-7.61)	(-8.79)	(-8.70)	(-5.60)	(-8.23)
5. *Age*	–	1.175 *	1.304 **	1.122	-0.997	1.095	1.035	1.034	1.035	1.034
		(1.81)	(2.30)	(1.18)	(-0.03)	(0.61)	(0.29)	(0.25)	(0.19)	(0.24)
6. *Return*	+	-0.764 ***	-0.576 ***	-0.848 **	-0.652 ***	-0.467 ***	-0.661 ***	-0.578 ***	-0.506 ***	-0.521 ***
		(-3.99)	(-5.30)	(-2.39)	(-4.53)	(-4.73)	(-4.35)	(-4.49)	(-4.00)	(-4.53)
7. *Volatility*	+	1.025 ***	1.025 ***	1.021 ***	1.015 ***	1.016 ***	1.017 ***	1.024 ***	1.030 ***	1.017 ***
		(10.12)	(9.37)	(8.08)	(6.10)	(6.13)	(6.34)	(8.63)	(7.31)	(5.61)
8. *Leverage*	+	1.056 ***	1.043 ***	1.048 ***	-0.984	-0.991	-0.991	1.036	1.026	1.002
		(4.60)	(4.42)	(4.96)	(-1.18)	(-0.85)	(-0.56)	(1.59)	(1.36)	(0.06)
9. *ΔLeverage*	+	-0.984 *	-0.984 **	-0.979 **	1.028	1.018	1.020	1.002	1.001	1.010
		(-1.67)	(-2.11)	(-2.47)	(1.64)	(1.58)	(1.05)	(0.06)	(0.05)	(0.37)
10. *OCF*	–	-0.254 ***	-0.227 ***	-0.354 ***	-0.243 ***	-0.224 **	-0.362 ***	-0.124 ***	-0.172 **	-0.323 ***
		(-3.57)	(-3.48)	(-3.50)	(-2.86)	(-2.44)	(-3.17)	(-2.87)	(-2.05)	(-2.94)
11. *Invest*	–	1.208	-0.843	-0.867	1.329	1.187	-0.851	-0.741	-0.426	-0.593
		(0.69)	(-0.46)	(-0.46)	(0.85)	(0.36)	(-0.45)	(-0.67)	(-1.37)	(-1.08)
12. *Newfinance*	–	-0.659 ***	-0.778 **	-0.622 ***	-0.690 ***	-0.715 **	-0.684 ***	-0.682 **	-0.827	-0.666 ***
		(-5.00)	(-2.27)	(-5.11)	(-3.50)	(-2.45)	(-3.26)	(-3.05)	(-1.12)	(-3.01)
13. *Big4*	–	-0.648 ***	-0.573 ***	-0.731 ***	1.080	1.079	1.023	-0.926	1.114	-0.913
		(-5.44)	(-5.29)	(-3.46)	(0.71)	(0.54)	(0.20)	(-0.60)	(0.63)	(-0.66)
14. *March*	–	-0.675 ***	-0.946	-0.667 ***	-0.694 ***	-0.904	-0.675 ***	-0.656 ***	-0.839	-0.625 ***
		(-4.76)	(-0.51)	(-4.27)	(-3.47)	(-0.75)	(-3.36)	(-3.30)	(-1.09)	(-3.38)
15. *Lagged GC*	+				98.089 ***					
					(26.21)					
16. *Lagged GC_note*	+					80.794 ***				
						(21.21)				
17. *LaggedGC_risk*	+						83.302 ***			
							(23.31)			
Constant		1.708	-0.896	-0.534	-0.224 ***	-0.143 ***	-0.050 ***	-0.067 ***	-0.020 ***	-0.032 ***
		(1.09)	(-0.17)	(-1.14)	(-2.65)	(-2.65)	(-4.67)	(-3.90)	(-4.13)	(-4.60)
industry effects		*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Observations		8,093	8,063	8,093	7,577	7,550	7,577	6.801	7,115	7,164
Going Concern=1		1,304	699	1,008	1,262	657	1,002	469	292	383
Pseudo R^2		0.340	0.381	0.383	0.550	0.564	0.561	0.333	0.410	0.349

Notes: *GC* = one if firms disclose going concern risk in the notes before March 2009, or if firms disclose going concern risk either in the notes or in the Business Risk section of the annual report after March 2009, and zero otherwise; *GC_note* = one if firms disclose going concern risk in the notes, and zero otherwise; *GC_risk* = one if firms disclose going concern risk in the Business Risk section of the annual report, and zero otherwise; *First_GC* = one if firms disclose *GC* at the first time, and zero otherwise; *First_GC_note* = one if firms disclose *GC_note* at the first time, and zero otherwise; *First_GC_risk* = one if firms disclose *GC_risk* at the first time, and zero otherwise; *Standard_Change* = one after March 2009, and zero before March 2009; *Zmijewski* = default risk calculated by Zmijewski score; *Loss* = one One if firms report negative net income, and zero otherwise; *Size* = the natural log of total assets; *Age* = the natural log of number of years since the firm started its business; *Return* = firm's cumulative stock return over the current year; *Volatility* = standard deviation of monthly stock returns over the current year; *Leverage* = sum of the book values of liability and equity, divided by the book value of equity; *ΔLeverage* = change in *Leverage* from the previous year to the current year; *OCF* = operating cash flow divided by total assets; *Invest* = sum of cash & cash equivalents, short-term securities, and long-term securities, divided by total assets; *Newfinance* = one if firms issue new stocks or bonds, or borrow a cash from banks at the current year, and zero otherwise; *Big4* = one if a firm is audited by a big 4 audit firms which includes Shinnihon, Tohmatsu, Azusa, and Arata, and zero otherwise; *March* = one if a firm's fiscal year ends in March, and zero otherwise. We report robust standard errors of estimates. The values in parentheses are t-statistics.
***, **, * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively (two-tailed test).

Table 6. Cross matrix of *GC* and *Predicted_GC*

Panel A. Cross matrix of *GC* and *Predicted_GC* (the period before the standard change)

	(1)	(2)	
	Predicted GC=0	*Predicted GC*=1	Total
1. *GC*=0	2,889	55	2,944
2. *GC*=1	258	131	389
3. Total	3,147	186	3,333

Panel B. Cross matrix of *GC* and *Predicted_GC* (the period after the standard change)

	Predicted GC=0	*Predicted GC*=1	Total
4. *GC*=0	3,683	162	3,845
5. *GC*=1	506	409	915
6. Total	4,189	571	4,760

Notes: *GC* = one if firms disclose going concern risk in the notes before March 2009, or if firms disclose going concern risk either in the notes or in the Business Risk section of the annual report after March 2009, and zero otherwise; *Predicted_GC* = one if firm's predicted probability based on equation (1) is larger than 0.5, and zero otherwise.