

Internal Control Reporting and Accounting Conservatism

Beng Wee Goh
Singapore Management University
Singapore
bwgoh@smu.edu.sg

Dan Li *
TsingHua University
Beijing, China
lidan@sem.tsinghua.edu.cn

December 18, 2008

*** Corresponding author**

We wish to thank Bryan Church, Arnold Schneider, Eugene Comiskey, Steve Matsunaga, Jayanthi Krishnan, and participants at the AAA 2008 Annual Meeting and Conference for their comments. We also appreciate the financial support from Singapore Management University and Tsinghua University.

Internal Control Reporting and Accounting Conservatism

Abstract

One objective of the internal control reporting requirements of the Sarbanes-Oxley Act of 2002 (SOX) is to improve the quality of financial reporting. This study examines whether a relation exists between internal control quality and accounting conservatism, which is an important feature of high financial reporting quality. Using a sample of firms which disclose material weaknesses (MWs) in internal control under SOX, we find that firms with MWs exhibit less accounting conservatism than firms with no such weaknesses. However, firms that disclose MWs and whose auditors subsequently confirm the remediation of these weaknesses exhibit more conservative accounting earnings than firms that continue to have MWs. We also find that the internal control reporting requirements have a disciplining effect on firms' financial reporting. Specifically, firms with MWs exhibit more conservative earnings after the disclosure of such weaknesses, regardless of whether or not these weaknesses are remediated. Overall, our results show that the quality of internal control affects accounting conservatism and underscore the importance of the internal control reporting requirements in enhancing the quality of financial reporting.

Key words: internal control; conservatism; material weaknesses; disclosure; Sarbanes-Oxley Act

1. Introduction

“This law (Sarbanes-Oxley Act) says to shareholders that the financial information you receive from a company will be true and reliable.... This law says to workers: we will not tolerate reckless practices that artificially drive up stock prices and eventually destroy the companies, and the pensions, and your jobs.”¹

President George W Bush

In 2002, following a series of high-profile cases of corporate improprieties, the U.S. Congress passed the Sarbanes-Oxley Act (SOX), which is widely considered to contain the most important and sweeping corporate reforms since the 1930s. As can be seen from the above excerpt from President Bush’s speech, made during his signing of the Act, one of the objectives of regulators in passing SOX is to ensure the reliability of financial reporting and to prevent companies from artificially driving up stock prices to mislead investors.² In this study, we examine whether the internal control reporting requirements of SOX help to enhance the quality of financial reporting by ensuring conservative accounting practices.³

¹ This speech of President Bush can be found at:
<http://www.whitehouse.gov/news/releases/2002/07/20020730.html>.

² Underlying the internal control reporting requirements is the regulators’ concern that weak internal controls undermine financial reporting quality and result in a company’s use of aggressive accounting rules to create artificially high stock prices. Indeed, anecdotal evidence suggests that weak internal controls are related to fraudulent financial reporting. In 1999, a study conducted by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) asserted that a poor internal control environment contributed to the occurrences of fraud documented over the ten year time frame 1987-1997. The former SEC Commissioner, Isaac Hunt Jr., in his speech in 1999, also noted that “internal control deficiencies were undermining the financial reporting system.” (Hunt 1999).

³ Two important SOX provisions to achieve this objective are Sections 302 (SOX 302) and 404 (SOX 404) of the Act. SOX 302 requires management to evaluate the effectiveness of disclosure and control procedures, report results of the evaluation, and indicate any “significant changes” in internal controls since the last Form 10-K or Form 10-Q was filed (SEC 2002). SOX 404 requires the management’s assessment of internal controls over financial reporting and the auditors’ report on the effectiveness of internal controls to be included in the firms’ 10-K reports (SEC 2003).

Unlike Doyle et al. (2007a) and Ashbaugh-Skaife et al. (2008a), which examine the relation between internal control quality and accruals quality, we choose accounting conservatism as our measure of financial reporting quality. This is because Watts (2003a, 2003b) argues that conservative accounting benefits the users of a firm's accounting reports, by preventing managers from introducing bias and noise into contractual accounting measures in order to overpay themselves. Also, conservative accounting results in the early termination of negative NPV (Net Present Value) investments and mitigates the incentives of managers, in reporting accounting measures used in a contract, to undertake negative NPV project behavior. Therefore, the interests of stakeholders are better protected when managers practice conservative accounting than when they do not. In sum, accounting conservatism is an important feature of high quality financial reporting.

We first examine whether weak internal controls are associated with less conservative accounting. If such a relation exists, then the regulators' emphasis on internal controls to prevent companies from using overly aggressive accounting practices is justified and would benefit stockholders. In addition, in order to allow stronger inferences to be made about the effects of internal control weaknesses (ICWs) on accounting conservatism, we conduct inter-temporal tests of the changes in the status of internal controls. We specifically examine whether firms that disclose, and later remediate, ICWs show greater accounting conservatism than firms that continue to have such weaknesses. Lastly, as Watts (2003a) contends that a demand for accounting conservatism arises from litigation, we expect the disclosure of ICWs under SOX to potentially increase the litigation risks of these firms (i.e., as a result of their overly aggressive accounting practices or less conservative accounting). Hence, we also examine

whether firms with ICWs report more conservatively after the disclosure of these weaknesses. Such conservative reporting behavior will provide evidence that the reporting requirements have a disciplining effect on firms to report conservatively and will mitigate investors' concerns that earnings and net assets are overstated.

Following Basu (1997) and Watts (2003a, 2003b), we define conservatism as the application of a higher standard of verification for favorable information, whereby accounting income reflects "bad news" on a more timely basis than "good news." We operationalize accounting conservatism in a number of ways. Two tests of conditional conservatism, based on Basu, are widely applied in empirical accounting research. First, we use a piecewise linear regression of earnings on contemporaneous stock returns to examine whether weak internal controls are associated with lower timeliness to reflect bad news. Second, we examine whether weak internal controls are negatively associated with the rate of the reversal of negative earnings changes. Finally, to overcome the potential limitations associated with the interpretations and assumptions underlying the approaches of Basu, we conduct additional tests of conditional conservatism as suggested by Ball and Shivakumar (2005, 2006), namely accrual-based conditional conservatism.

Using a sample of firms which disclosed at least one material weakness (MW) from January 2003 to November 2005, we find results that are generally consistent with our expectations.⁴ First, we find that firms with weak internal controls, as proxied by the existence of at least one MW, exhibit lower levels of accounting conservatism compared to control firms without such weaknesses. This result is in line with the expectation of

⁴ According to Auditing Standards No. 2 (PCAOB 2004), a MW is "a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the financial statements will not be prevented or detected." A significant deficiency is "a control deficiency, or combination of control deficiencies, that adversely affects the company's ability to initiate, authorize, record, process, or report external financial data reliably in accordance with generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of the company's annual or interim financial statements that is more than inconsequential will not be prevented or detected."

regulators that weak internal controls result in a lower quality of financial reporting. Second, we find that firms that disclose and later remediate their MWs exhibit greater accounting conservatism than firms that continue to have these weaknesses. This finding suggests that the improvement in internal control quality results in more conservative accounting; this further strengthens the results on the relation between internal control quality and accounting conservatism. Finally, we find that our sample of firms with MWs report more conservatively after the disclosure of these weaknesses, regardless of whether or not these weaknesses are remediated. This result suggests that the internal control reporting requirements have a disciplining effect on firms with weak internal controls, possibly because of the increasing litigation risk following the disclosure of MWs. Overall, our results provide empirical evidence that supports the benefits of the internal control reporting requirements of SOX against the widely documented costs of these requirements (SEC 2006).

This study makes several contributions. First, it examines the implications of the internal control reporting requirements of SOX on the financial reporting quality of firms. This issue is timely and important given the controversies surrounding the internal control reporting requirements of SOX, such as the high costs of compliance. Given that accounting conservatism is universally demanded by stakeholders (Ball et al. 2000; Basu et al. 2001) and is an important feature of high quality financial reporting, examining the association between internal control quality and accounting conservatism can provide insights into the efficacy of the internal control reporting requirements. With regard to financial reporting, our results show that mandating firms to assess their internal controls and to disclose the ICWs discovered in the process can have a disciplining effect on firms to report more conservatively. The remediation of previously identified ICWs also makes

firms more conservative in their financial reporting. Hence, the internal control reporting requirements of SOX provide benefits to market participants by ensuring that financial reporting is both more conservative and of a higher quality.

Second, prior research finds that conditional conservatism, as measured by asymmetric timeliness, varies across the characteristics and economic contexts of firms (Basu et al. 2001; Ball et al. 2000, 2003; Beekes et al. 2004; Ball and Shivakumar 2005; Bushman and Piotroski 2006; Ahmed and Duellman 2007). This study extends this line of research by suggesting that internal control quality is a potential factor that drives the observed differences in conservatism between public companies. Specifically, higher internal control quality could lead to a higher level of conservative reporting. Also, we show that firms report more conservatively after the disclosure of MWs, which is consistent with the argument of Watts (2003a) that a demand for accounting conservatism arises from litigation.

Third, prior research finds that firms with ICWs present higher information risk to investors relative to firms having effective internal controls, resulting in higher cost of equity (Ashbaugh-Skaife et al. 2008b). Hence, firms with ICWs potentially increase agency costs between management and outsiders. Watts (2003a, b) argues that accounting conservatism has evolved as part of an efficient contracting technology that helps in reducing deadweight losses resulting from agency problems. Our findings that strong internal controls are associated with higher accounting conservatism provide additional evidence on the efficacy of conservatism in reducing potential agency costs of firms.

Finally, this study complements related studies examining the relation between internal control and financial reporting quality. Doyle et al. (2007a) and Ashbaugh-Skaife

et al. (2008a) find that internal control quality is positively related to earnings quality, as measured by the extent to which accruals are realized as cash flows. This study finds that internal control quality is positively related to accounting conservatism, which is another important element of earnings quality.

The remainder of the paper is organized as follows: Section 2 develops the hypotheses; Section 3 explains the research design; Section 4 presents the empirical results; Section 5 describes additional analyses; and Section 6 concludes.

2. Hypothesis development

Fama and Jensen (1983) contend that the modern large corporation is characterized by the absence of the classical entrepreneurial decision maker. Instead, the company's residual claims are diffused among many shareholders, who vest their decision rights in the company's managers. Agency costs are created because the managers who initiate and implement important decisions do not bear a major share of the wealth effects of their decisions. To mitigate agency problems, shareholders align managerial incentives by linking managerial compensation to firm performance. This, in turn, incentivizes managers to overstate firm performance in the short term, in order to extract greater compensation for themselves. Once managers make excessive distributions to themselves, it is extremely difficult to recover these distributions, especially once the managers retire or leave the firm. Watts (2003a) points out that this effectively implies a limited liability of managers with respect to shareholders.

Watts (2003a) also argues that such moral hazard problems will exist in financial reporting as long as the reports' accounting measures inform investors about managerial performance and will affect the asset allocation decisions of investors and the welfare of managers. These effects on their welfare will motivate managers to introduce bias and

noise into the same accounting measures that regulators hope will inform investors, just as they motivate managers to introduce bias and noise into contractual accounting measures. The absence of constraints on this opportunistic managerial behavior means that the accounting measures in financial reports that, a priori, appear neutral will, in practice, be significantly biased and noisy.

Watts (2003a) argues that conservative accounting is a means of addressing the moral hazard caused by the parties to a firm having asymmetric information, asymmetric payoffs, limited horizons, and limited liability. For example, conservatism can constrain the management's opportunistic behavior in reporting the accounting measures used in a contract. In practice, conservatism more than offsets managerial bias, and, on average, also defers earnings and understates cumulative earnings and net assets. In contracts these effects increase a firm's value because they constrain the management's opportunistic payments to themselves and to other parties, such as the shareholders. This increased value is shared among all parties to the firm, increasing everyone's welfare. In this sense, conservatism is an efficient contracting mechanism.

Despite the importance of conservative accounting in promoting efficient contracting between managers and shareholders, little is understood about the mechanisms that can facilitate conservative accounting. The importance of internal controls, such as a monitoring mechanism, has long been highlighted by researchers. The SEC (Securities and Exchange Commission) defines internal control as “a process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the reliability of financial reporting.” Hence, effective internal controls can facilitate conservative accounting by preventing

management from introducing bias and noise into accounting measures and by requiring stricter standards in recognizing good news as gains rather than bad news as losses.

For instance, an important internal control over financial reporting is the maintenance of proper accounting policies and procedures and of adequate controls over non-routine transactions. When proper accounting policies and procedures are absent or inadequate, management is more likely to introduce bias and noise into accounting measures, in order to expedite the recognition of revenues/gains and to defer the recognition of expenses/losses. On the other hand, when accounting policies and procedures are clearly stipulated, management has less room to use aggressive accounting practices to increase their compensation.

Another important internal control that can facilitate conservative accounting is the existence of an effective internal audit function. A firm's manager frequently has more information than the shareholders on matters such as the future cash flows from new product development. In the absence of a verification requirement, a manager can bias upward the estimates of those future cash flows, producing large payments under earnings-based compensation plans and possibly leading to negative NPV investments by the firm. The recovery of excess compensation payments and reparations for excess investments is difficult when a manager leaves the firm before the cash flows are realized. An effective internal audit function can independently verify the estimates of future cash flows and report their estimates independently to the board for ratification. This may allow the identification of negative NPV investments, and prevent the short-term horizon problems that arise when the management forgoes positive NPV projects with near-term negative earnings. Overall, the presence of an effective internal audit function facilitates the use of conservative accounting.

Finally, an important internal control is the hiring of accounting personnel with both high levels of accounting expertise and technical competence in either financial accounting standards or SEC filing requirements. Many aggressive and fraudulent accounting practices have involved the use of complex and highly structured accounting transactions; the Enron case is a good example of such practices. Without sufficient expertise and technical competence among the accounting personnel, the management has greater opportunities to structure complex transactions in order to overstate earnings and net assets. Furthermore, such aggressive accounting practices may be likely to go undetected if the accounting personnel are incompetent. Therefore, ensuring an adequate staffing of highly competent and/or experienced accounting personnel can further facilitate conservative accounting.

Given the above discussions, we hypothesize a positive relation between internal control quality and the level of accounting conservatism: firms with ICWs are likely to exhibit less accounting conservatism than firms with no such weaknesses. Also, to ascertain further the relationship between internal control quality and accounting conservatism, we perform inter-temporal tests, as in Ashbaugh-Skaife et al. (2008a), to examine whether firms with ICWs that show an improvement in internal control quality exhibit more accounting conservatism than firms that fail to show a similar improvement. A significant result would not only show that the remediation of ICWs can cause firms to report more conservatively, but would also strengthen the results on the positive association between internal control quality and accounting conservatism. Hence, we hypothesize as follows:

H1: There is a positive relation between internal control quality and the level of accounting conservatism.

H2: Firms with ICWs that remediate previously disclosed weaknesses exhibit greater accounting conservatism than firms that continue to have such weaknesses.

If, *a priori*, firms with lower internal control quality are less conservative in their accounting practices, and the objective of SOX is to prevent overly aggressive accounting practices, then an important issue is whether the internal control reporting requirements of SOX increase the level of accounting conservatism for firms with low internal control quality. To shed light on this issue, we examine whether these firms with lower internal control quality report more conservatively after the disclosure of ICWs. Based on Watts (2003a), we argue that there are two reasons to explain why these firms report more conservatively after the disclosure of ICWs.

Firstly, Watts (2003a) contends that litigation is one reason for firms to engage in conservative accounting, as litigation is more likely when earnings and net assets are overstated rather than understated. The disclosure of ICWs is likely to increase the risk of the firm being sued because investors become aware of its lower internal control quality and may perceive this as resulting in the overstatement of earnings and net assets. Consequently, a firm has incentives to employ more conservative accounting practices after it reports ICWs, so as to mitigate its risk of being sued. Secondly, Watts (2003a) contends that regulation provides incentives for the reported financial statements of firms to be conservative, as losses from overvalued assets and overstated income are more observable and usable in the political process than forgone gains due to undervalued assets or unvalued income. This phenomenon creates incentives for regulators and standard setters to be conservative.

The passing of SOX can be seen as an attempt and a prompt maneuver by regulators to stem overly aggressive accounting and to restore investor confidence in financial reporting. As weak internal controls are more likely to result in overly

aggressive accounting, the internal control reporting requirements can be seen as part of the regulators' efforts to ensure effective internal controls and financial reporting quality. Any reporting of ICWs is likely to be subject to increased scrutiny by the regulators because these firms have the greatest likelihood of aggressive accounting practices. This intensifies the pressure on a firm to report more conservatively, in order to reduce the political costs. Based on the above discussions, we expect a firm to report more conservatively after the disclosure of ICWs.

H3: For firms with ICWs, accounting conservatism is higher after the disclosure of these weaknesses than before the disclosure.

3. Research Design

3.1 Measures of accounting conservatism

3.1.1 Timeliness of earnings to “news”

Our first measure of accounting conservatism is a firm's timeliness of earnings to news. Asymmetric recognition of economic losses indicates that earnings reflect “bad news” more quickly than “good news.” In a piecewise-linear regression, with market-adjusted stock return as the independent variable and current-year accounting income as the dependent variable, as shown in model (1) below, the timeliness of earnings is inferred from the responsiveness of accounting income to the change in market values. Negative and positive market-adjusted stock returns are used, respectively, as proxies for bad news and good news.

$$NI = \alpha_0 + \alpha_1 DR + \alpha_2 R + \alpha_3 R * DR + \varepsilon \quad (1)$$

where firm i and time t subscripts are omitted. NI is the net income, before extraordinary items reported, for firm i in the period t divided by the beginning of fiscal year total assets, DR is an indicator variable that equals 1 if the market-adjusted return for firm i

during year t is negative, and 0 otherwise, and R is the market-adjusted annual stock return for firm i at the fiscal year-end.

The asymmetric recognition of economic losses relative to gains (i.e., conditional conservatism) is captured by the coefficient α_3 . To examine H1, we include the additional intercept and interactive slope coefficients to capture the incremental effect of the existence of MWs (i.e., firms with low internal control quality) on conservatism, as shown in model (2). A negative coefficient for α_7 will indicate that firms with MWs have lower incremental timeliness of earnings to bad news than firms without such weaknesses; this result will be consistent with H1.

$$NI = \alpha_0 + \alpha_1 DR + \alpha_2 R + \alpha_3 R * DR + \alpha_4 MW + \alpha_5 DR * MW + \alpha_6 R * MW + \alpha_7 R * DR * MW + \varepsilon \quad (2)$$

where firm i and time t subscripts are omitted. MW is an indicator variable that equals 1 if the firm has MWs in internal controls, and 0 otherwise. The other variables are as previously defined.

The hypothesis H2 predicts that MW firms that remediate these weaknesses will report more conservatively than firms that continue to have these weaknesses. To examine this hypothesis, we include MW_FIXED in model (1), as shown in model (3), where MW_FIXED is an indicator variable that equals 1 if the firm has remediated MWs at the time of the second SOX 404 report, and 0 otherwise. Ashbaugh-Skaife et al. (2008a) determine whether a firm remediates its ICWs on the basis of the receipt of a subsequent unqualified SOX 404 opinion. As an unqualified SOX 404 opinion objectively and unambiguously shows that the firm has fully remediated its MWs, we use the SOX 404 opinions to determine the timeliness of firms in the remediation of such weaknesses. We deem a firm to have remediated MWs if it receives an unqualified second SOX 404

report, and to have continuing MWs if it receives an adverse second SOX 404 report. A positive coefficient of δ_7 would suggest that firms that remediate ICWs exhibit more accounting conservatism than firms that do not, further strengthening the proposition of a positive relation between internal control quality and accounting conservatism.

$$NI = \delta_0 + \delta_1 DR + \delta_2 R + \delta_3 R * DR + \delta_4 MW_FIXED + \delta_5 DR * MW_FIXED + \delta_6 R * MW_FIXED + \delta_7 R * DR * MW_FIXED + \varepsilon \quad (3)$$

where firm i and time t subscripts are omitted.

To examine H3, we include an indicator variable EXPOST in model (1), as shown in model (4), where EXPOST is coded as 1 for fiscal years after the disclosure of MWs (i.e., the fiscal years 2003 to 2005, 2004 and 2005, and 2005, respectively, for firms that disclose MWs in 2003, 2004, and 2005). If, as predicted by H3, the higher litigation risk associated with the disclosure of MWs causes these firms to report more conservatively, the coefficient δ_7 is expected to be significantly positive.

$$NI = \delta_0 + \delta_1 DR + \delta_2 R + \delta_3 R * DR + \delta_4 EXPOST + \delta_5 DR * EXPOST + \delta_6 R * EXPOST + \delta_7 R * DR * EXPOST + \varepsilon \quad (4)$$

where firm i and time t subscripts are omitted. EXPOST is an indicator variable that equals 1 for the fiscal years after the disclosure of MWs, and 0 for the fiscal years before the disclosure of MWs. The other variables are as previously defined.

3.1.2 Persistence of earnings changes

Although empirical research has widely used the approach of Basu (1997) for tests of conditional conservatism (e.g., the asymmetric recognition of losses), both the application and interpretation of model (1) require caution. Gigler and Hemmer (2001) develop a model of the relation between the biases in financial reporting and the managers' incentives to issue timely voluntary disclosures. They find that firms with relatively more conservative accounting are less likely to make timely voluntary

disclosures than firms with less conservative accounting. Consequently, contemporaneous stock returns reflect the news more quickly for firms with less conservative accounting.⁵

Being mindful of these issues, we use a second approach based on another test of conditional conservatism in Basu, namely the lower persistence of negative earnings changes. Basu shows that, relative to good news periods, conservatism results in lower persistence of earnings in bad news periods. Higher persistence means that less current value relevant news is reported in current earnings and that more of it will be reported in future earnings. The deferred recognition of relatively good news results in positive changes in income being less likely to reverse than negative earnings changes. This is because, from a time series perspective, the bad news reflected in current earnings will appear as a transitory shock in the earnings process, whereas the effects of a current positive shock will be spread over the earnings of several future periods as anticipated gains are realized. The following model from Basu is used to estimate this relation:

$$\Delta NI_t = \beta_0 + \beta_1 D\Delta NI_{t-1} + \beta_2 \Delta NI_{t-1} + \beta_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \varepsilon \quad (5)$$

where firm *i* subscripts are omitted. ΔNI_t is the change in net income, before extraordinary items, for firm *i* in fiscal year *t* deflated by beginning-of-year total assets, ΔNI_{t-1} is the change in net income for firm *i* in fiscal year *t-1* deflated by beginning-of-year total assets, and $D\Delta NI_{t-1}$ is an indicator variable that equals 1 if $\Delta NI_{t-1} < 0$, and 0 otherwise.

Timely recognition of economic losses implies that these losses are recognized as transitory income decreases, and are therefore reversed in the next period, leading to a

⁵ Dietrich et al. (2007) argue that the interpretation of model (1) is valid only when the market is efficient; in particular, if market returns cause earnings, and not the reverse. However, Ryan (2006) notes that two well-known empirical results, the low R^2 's observed in contemporaneous returns-earnings regressions (Collins et al. 1997; Ely and Waymire 1999; Francis and Schipper 1999) and a large literature showing that returns typically reflect information on a timelier basis than earnings, indicate that the concern mentioned by Dietrich et al. is likely to induce a very tiny bias in the estimation of conservatism.

negative value of β_3 . The less negative the coefficient β_3 , the greater the indication that conservatism is decreasing. We further develop this model to test H1, as shown in model (6) below. If firms with MWs report less conservatively than firms without such weaknesses, then the coefficient β_7 will be significantly positive, which means that firms with MWs have a reduced tendency to reverse negative earnings changes in the following period.

$$\Delta NI_t = \beta_0 + \beta_1 D\Delta NI_{t-1} + \beta_2 \Delta NI_{t-1} + \beta_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \beta_4 MW_t + \beta_5 D\Delta NI_{t-1} * MW_t + \beta_6 \Delta NI_{t-1} * MW_t + \beta_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * MW_t + \varepsilon \quad (6)$$

where firm i subscripts are omitted and all variables are as previously defined.

Similar to model (3), model (7) is used to test H2. If MW firms that remediate their weaknesses exhibit greater accounting conservatism, then the negative earnings changes will be reverted quickly compared to those firms without remediation. In this case, we predict a negative coefficient γ_7 .

$$\Delta NI_t = \gamma_0 + \gamma_1 D\Delta NI_{t-1} + \gamma_2 \Delta NI_{t-1} + \gamma_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \gamma_4 MW_FIXED_t + \gamma_5 D\Delta NI_{t-1} * MW_FIXED_t + \gamma_6 \Delta NI_{t-1} * MW_FIXED_t + \gamma_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * MW_FIXED_t + \varepsilon \quad (7)$$

where firm i subscripts are omitted and all variables are as previously defined.

Similar to model (4), model (8) is used to test H3. The negative coefficient γ_7 will suggest that firms with MWs improve their financial reporting quality by reporting more conservatively after the disclosure of these weaknesses.

$$\Delta NI_t = \gamma_0 + \gamma_1 D\Delta NI_{t-1} + \gamma_2 \Delta NI_{t-1} + \gamma_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \gamma_4 EXPOST_t + \gamma_5 D\Delta NI_{t-1} * EXPOST_t + \gamma_6 \Delta NI_{t-1} * EXPOST_t + \gamma_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t + \varepsilon \quad (8)$$

where firm i subscripts are omitted and all variables are as previously defined.

3.2 *Sample selection*

Using the sample firms in Doyle et al. (2007b), we identify 1,098 firms that, under either SOX 302 or SOX 404, disclose at least one MW from January 2003 to November 2005.⁶ We focus on firms which disclosed MWs because the reporting of these weaknesses is mandatory, whereas the reporting of significant deficiencies and control deficiencies is not (Doyle et al. 2007b).⁷ Therefore, using firms that disclosed significant deficiencies and control deficiencies may create self-selection problems. Furthermore, MWs represent a more severe form ICW and are the most likely to result in less conservative accounting practices. We deem firms with at least one MW as firms with weak internal controls (i.e., low internal control quality) and firms with no MWs as firms with strong internal controls (i.e., high internal control quality).

Panel A of Table 1 summarizes the sample collection procedure for the descriptive statistics and for testing H1, which examines whether firms with MWs exhibit less accounting conservatism than firms with no such weaknesses. For the testing of H1, we choose the fiscal years 2000 and 2001 to measure accounting conservatism, as these two years just precede the enactment of SOX and, therefore, avoid any confounding effects due to this Act. Hence, we assume that MWs exist within the firm even before their detection in our sample period. We start with 2,196 firm-year observations for the MWs sample and then remove the following numbers of firms: 571 with missing data in Compustat, 377 with missing data in CRSP, and 74 outlier firms with extreme values for

⁶ We thank Jeffrey Doyle, Weili Ge, and Sarah McVay for sharing the data. The data can be found at: <http://faculty.washington.edu/geweili/ICdata.html>.

⁷ Although both MWs and significant deficiencies are deficiencies in the design or operation of internal controls, significant deficiencies are less severe and are not required to be publicly disclosed under SOX 302 (SEC 2004). Hence, the disclosure of significant deficiencies is clearly voluntary. On the other hand, under SOX 302, if management identifies a MW in their controls, they are precluded from reporting that the controls are effective and must disclose the identified MW. Hence, the disclosure of MWs is effectively mandatory. According to Doyle et al. (2007a), there is some ambiguity regarding whether SOX 302 certifications require the public disclosure of MWs and whether some firms might interpret the MW disclosure requirement under SOX 302 as voluntary. The authors' conclusion, from reading most of the SEC guidance, is that most firms are treating the disclosure as mandatory.

net income, returns, and earnings changes. This procedure yields 1,164 firm-year observations for our MWs sample. For our control sample, we start with an initial 7,932 firms-year observations for firms with no MW disclosures during the sample period and with available Compustat data. Then, we exclude 1,034 firms with missing data in CRSP and 448 outlier firms. This yields 6,450 firm-year observations for our control sample. In total, we have 7,614 firm-year observations to use for our descriptive statistics and the testing of H1.

Panel B of Table 1 summarizes the sample collection procedure for testing H2, which is our remediation test. We focus on the MWs sample because remediation is not possible for the control sample, as it contains no MWs. Based on an initial sample of 1,098 MW firms, we remove 473 firms that have no second SOX 404 opinions (as this prevents us from knowing whether the MWs are remediated) and 41 firms with missing data in Compustat. This procedure yields a final sample of 584 firms, among which, in terms of second SOX 404 reports, 408 have unqualified opinions and 176 have adverse opinions.

Panel C of Table 1 summarizes the sample collection procedure for testing H3, which examines whether the disclosure of MWs causes firms with such weaknesses to report more conservatively. We are interested in firm-year observations before and after the disclosure of MWs; for example, for firms which disclosed MWs in 2003, 2004, and 2005, the post-disclosure firm-year observations include, respectively, observations from years 2003 to 2005, 2004 and 2005, and 2005. After removing firms with missing Compustat and CRSP data and outlier firms, we are left with 962 firm-year observations for the post-MW disclosure period. Then, we add the MW firm-year observations for the

years 2000 and 2001 (used in testing H1) for our pre-MW disclosure period, resulting in a combined sample of 2,126 firm-year observations.

3.3 Descriptive statistics

Panel A of Table 2 presents the descriptive statistics of the sample used to test H1. The statistics are based on the firm-year observations for the fiscal years 2000 and 2001. Consistent with Doyle et al. (2007b) and Ashbaugh et al. (2007), the table shows that firms with MWs are smaller in size (measured by the log of total assets) and financially weaker (shown by the significantly lower net income) than the control firms. The earnings skewness statistics show that earnings before extraordinary items are less negatively skewed for firms with MWs than for firms without these weaknesses, which is consistent with the former recording a smaller frequency of large losses (i.e., less conservative). Furthermore, in firms with MWs, the mean value of the market-adjusted stock return (R) is significantly larger and the median value of the book value of equity over market value of equity (BVMV) is significantly smaller than those in the control firms. Panel B of Table 2 presents both Pearson and Spearman correlation statistics; we do not find any unusual correlations that warrant our concern.

4. Empirical Results

4.1 Multivariate regression results

4.1.1 Relation between internal control quality and accounting conservatism (H1)

Panels A and B of Table 3 present the results of estimating Model (1) for the MW and control firms, respectively. The positive coefficients on the interaction term DR*R suggest the presence of accounting conservatism in both samples ($\alpha_3 = 0.26, 0.37, p = 0.00$). In other words, regardless of the presence of MWs, the earnings of all firms reflect

unexpected losses in a more timely fashion than unexpected gains. Model (2) is used to test more formally whether strong internal controls (i.e., the absence of MWs) have an incremental effect on accounting conservatism. Panel C of Table 3 presents the results. Although we find no evidence to show that the earnings of the MW firms reflect unexpected gains in a different manner than the control firms ($\alpha_6 = 0.01$, $p = 0.37$), we find that, compared to the control firms, the earnings of the MW firms reflect unexpected losses less timely. This finding is supported by the significantly negative coefficient on $R*DR*MW$ ($\alpha_7 = -0.11$, $p = 0.01$). Therefore, the results support the contention of H1 that internal control quality is positively related to accounting conservatism.

Table 4 reports the results for our second measures of conservatism, which uses persistence of earnings changes. Panels A and B report the estimation of model (4) for the MW firms and control firms, respectively. From these panels, there is clear evidence of transitory loss, but not of gain components, for the control firms rather than for the MW firms. In particular, for the control firms, the coefficient β_2 on lagged positive earnings changes is significantly positive (Panel B, $\beta_2 = 0.073$, $p = 0.00$), which indicates the continuation of income increases. The persistence of the level of earnings after experiencing an income increase is consistent with the deferred recognition of economic gains as repeating elements over time in accounting income (Ball and Shivakumar 2005). Moreover, for the control firms, the incremental coefficient β_3 is significantly negative (Panel B, $\beta_3 = -0.076$, $p = 0.00$), which is consistent with loss recognition being more transient than gain recognition (i.e., more conservatism). In contrast, we do not observe a similar conservatism associated with the MW firms in Panel A.

Panel C of Table 4 formally tests the differences in accounting conservatism between the MW and control firms, using the persistence of earnings changes measure.

Relative to the control firms, the MW firms are more likely to recognize transitory gains, since the incremental coefficient β_6 is significantly negative ($\beta_2 = -0.638$, $p = 0.00$). The coefficient β_7 is significantly positive ($\beta_7 = 2.16$, $p = 0.00$), which suggests that the MW firms are less likely to incorporate transitory losses in income. Thus, these results are consistent with the contention of H1 that MW firms are associated with lower levels of accounting conservatism.

4.1.2 Improvement in internal control quality and accounting conservatism (H2)

Table 5 presents the results examining the relation between the improvement in internal control quality and accounting conservatism. As mentioned earlier, the sample is based on firms with available second SOX 404 reports, and we are interested in finding out whether firms that improve their internal controls (as evidenced by the receipt of an unqualified second SOX 404 report) exhibit more conservative accounting than firms that continue to have MWs (as evidenced by the receipt of an adverse second SOX 404 report).

Panels A and B of Table 5 present the results using, respectively, the timeliness of earnings to news and the persistence of earnings changes models. Panel A shows that the coefficient on $R*DR*MW_FIXED$ is 0.18. The positive sign shows that firms that improve their internal controls exhibit more conservative accounting than firms that continue to have MWs. However, the coefficient is not statistically significant ($p = 0.16$). Panel B shows that the coefficient on $D\Delta NI_{t-1}*\Delta NI_{t-1}*MW_FIXED_t$ is -0.34 and is statistically significant ($p = 0.00$). This result, consistent with H2, suggests that firms that remediate their MWs exhibit greater accounting conservatism than firms that do not, further strengthening the results in Section 4.1.1 on the positive relation between internal control quality and accounting conservatism.

4.1.3 *Changes of accounting conservatism after disclosure of MWs (H3)*

H3 predicts that firms with MWs report more conservatively after the disclosure of these weaknesses due to the higher litigation costs associated with the existence of these weaknesses. Table 6 presents the results using the timeliness of earnings to news model, in which we use the indicator variable EXPOST to distinguish firm-year observations before and after the disclosure of MWs. Panel A of Table 6 shows the results of changes in accounting conservatism for the MW firms after the disclosure of MWs. Although the significantly positive coefficient δ_3 suggests that, before disclosure of MWs, the earnings are more timely to reflect bad news rather than good news ($\delta_3 = 0.25$, $p = 0.03$), the incremental coefficient on the interaction term $R*DR*EXPOST$ is significantly positive ($\delta_7 = 0.17$, $p = 0.05$), which is consistent with the contention of H3 that accounting conservatism increases after the disclosure of MWs.

The accounting literature provides evidence that, following the demise of Arthur Andersen and the passing of SOX, public firms face an unprecedentedly high risk of litigation, which in turn may put pressure on all firms to report more conservatively (Ahmed et al. 2006; Krishnan 2007). As such, the reported results in Panel A of Table 6 may be due to SOX rather than to the disclosure of MWs. Hence, Panel B reports the results on the changes in accounting conservatism for our control firms. This panel shows that accounting conservatism also increases in our control firms ($\delta_7 = 0.11$, $p = 0.00$), although the magnitude of the coefficient is smaller than that of the MW firms.

In order to examine more rigorously whether the MW firms exhibit incremental accounting conservatism due to the disclosure of MWs, we use four-way interactions to capture the differences in the increases in accounting conservatism between the MW and control firms. The results, reported in Panel C of Table 6, show that the coefficient on

MW*DR*R*EXPOST is 1.06 but is not significant ($p = 0.29$). Thus, although the MW firms exhibit greater accounting conservatism after the disclosure of MWs, this increase is not statistically greater than that of the control firms.

Table 7 reports the results of testing H3 using the persistence of earnings changes model. Panels A and B show, respectively, the results using the MW and control samples. The results show that the MW firms incorporate more transitory losses after the disclosure of the MWs ($\gamma_7 = -1.43$, $p = 0.02$), which provides support for the argument that conservatism increases after the disclosure of MWs. In contrast, there is no evidence that the control firms incorporate more transitory losses ($\gamma_7 = 0.09$, $p = 0.31$). Panel C shows the results, using four-way interactions, of the examination into whether, after the disclosure of MWs, there is incremental increase in conservatism for MW firms than for the control firms. The panel shows that the MW firms incorporate more transitory losses than the control firms after the disclosure of MWs ($\gamma_{15} = -1.47$, $p = 0.00$). This result, which is consistent with H3, suggests that MW firms do report more conservatively after the disclosure of MWs.

5. Additional Analyses

5.1 Sensitivity tests of H3

The results in Table 7 show that firms report more conservatively after the disclosure of MWs. To ensure that this result is not driven by firms reporting more conservatively after they remediate these weaknesses, we conduct additional tests on H3 by eliminating firms that subsequently remediate their weaknesses and firms that are non-accelerated filers (i.e., we are unsure whether their MWs are remediated). Hence, the sample now comprises firms that have MWs but have not remediated these weaknesses

by the time of the second SOX 404 report. Panels A and B of Table 8 present the results of the additional tests, using the two measures of accounting conservatism discussed earlier. While Panel A shows that the result is not significant, Panel B shows that, using our second measure of accounting conservatism, the coefficient on $MW_t * D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t$ is negative and significant ($\gamma_{15} = -1.93, p = 0.00$). This latter result shows that firms that continue to have MWs report more conservatively after disclosure of these weaknesses. Hence, the results reported in Table 7 are not driven by firms that remediate MWs and are most likely due to the disclosure of MWs; this provides further support for H3.

5.2 *Alternative measure of conservatism*

To corroborate our findings, we use the model recently developed in Ball and Shivakumar (2005, 2006), referred to as accruals-based loss recognition, as the third measure of conservatism. Accrual-based accounting eliminates the transitory effects on cash flows and constructs earnings with less noise than cash flow from operations, which implies that accruals and cash flow from operations are contemporaneously negatively correlated (Dechow 1994). Ball and Shivakumar (2005, 2006) incorporate another role for accruals in this relation, that is the timely recognition of economic gains and losses. They assert a positive, but asymmetric, correlation between accruals and contemporaneous cash flows. This positive correlation arises because cash flow revisions in the current period tend to be positively correlated with the current revisions for expected future cash flows. Furthermore, timely recognition of unrealized gains and losses is based on expected, not realized, cash flows, and is therefore accomplished through accruals. Consequently, timely gain and loss recognition will produce a positive correlation between accruals and current period cash flows. This correlation is

asymmetric because losses, under conservative reporting, are more likely to be recognized on a timely basis than gains.⁸ This is shown in the following model:

$$\text{ACCRUAL} = \gamma_0 + \gamma_1\text{DCFO} + \gamma_2\text{CFO} + \gamma_3\text{CFO*DCFO} \quad (9)$$

where firm *i* and time *t* subscripts are omitted. Ball and Shivakumar (2005) predict a negative γ_2 and a positive incremental coefficient γ_3 for accounting conservatism. To examine H1, MW is added in model (9) to interact with other independent variables. If MWs in internal control adversely impact accounting conservatism, then γ_7 is predicted to be negative.

$$\begin{aligned} \text{ACCRUAL} = \gamma_0 + \gamma_1\text{DCFO} + \gamma_2\text{CFO} + \gamma_3\text{CFO*DCFO} + \gamma_4\text{MW} + \gamma_5\text{DCFO*MW} \\ + \gamma_6\text{CFO*MW} + \gamma_7\text{CFO*DCFO*MW} + \varepsilon \end{aligned} \quad (10)$$

where firm *i* and time *t* subscripts are omitted.

Similarly, the variable MW_FIXED is included in model (9), as shown in model (11). If, as predicted by H2, the remediation of MWs improves the conservatism level of firms, then θ_7 is predicted to be positive. Lastly, to examine H3, the variables EXPOST and MW are added to model (9), as shown in model (12). A positive coefficient ω_{15} for the four-way interaction term MW*DCFO*CFO*EXPOST will show that, after firms disclose MWs, their accruals can effectively and timely reflect the future expectation of the negative change of cash flows (i.e., the MW firms exhibit more accounting conservatism after the disclosure of MWs relative to the control firms).

$$\begin{aligned} \text{ACCRUAL} = \theta_0 + \theta_1\text{DCFO} + \theta_2\text{CFO} + \theta_3\text{DCFO*CFO} + \theta_4\text{MW_FIXED} + \\ \theta_5\text{DCFO*MW_FIXED} + \theta_6\text{CFO*MW_FIXED} + \\ \theta_7\text{DCFO*CFO*MW_FIXED} + \varepsilon \end{aligned} \quad (11)$$

$$\begin{aligned} \text{ACCRUAL} = \omega_0 + \omega_1\text{DCFO} + \omega_2\text{CFO} + \omega_3\text{DCFO*CFO} + \omega_4\text{EXPOST} + \\ \omega_5\text{DCFO*EXPOST} + \omega_6\text{CFO*EXPOST} + \omega_7\text{DCFO*CFO} \\ * \text{EXPOST} + \omega_8\text{MW} + \omega_9\text{MW*DCFO} + \omega_{10}\text{MW*CFO} + \omega_{11}\text{MW} \end{aligned}$$

⁸ Ball and Shivakumar (2006) incorporate conditional conservatism, the asymmetric timeliness with which accruals recognize economic losses, into the existing accruals models. The findings contribute to accounting research on the role of accruals in conditional conservatism and the specification of accruals models (Guay 2006).

$$*CFO*DCFO + \omega_{12}MW*EXPOST + \omega_{13}MW*DCFO*EXPOST + \omega_{14}MW*CFO*EXPOST + \omega_{15}MW*DCFO*CFO*EXPOST + \varepsilon \quad (12)$$

where firm i and time t subscripts are omitted.

Panel A of Table 9 presents the results on the relation between internal control quality and accounting conservatism using accrual-based conservatism. This panel shows that the coefficient γ_7 is -0.15 and is marginally significant ($p = 0.07$). The negative coefficient suggests that firms with MWs accrue substantially less unrealized losses in the cash-loss year (i.e., less conservative accounting) compared to firms without such weaknesses. This result supports our finding that firms with MWs are less conservative in their accounting than firms without these weaknesses.

Panel B of Table 9 presents the results relating to the question of whether firms that remediate their MWs exhibit more accounting conservatism than firms that continue to have these weaknesses. The panel shows that the coefficient on $DCFO*CFO*MW_FIXED$ is 0.92 and is significant ($p = 0.00$). This result shows that firms that remediate their MWs show greater accounting conservatism than firms that do not; this finding is consistent with our earlier results. Lastly, Panel C of Table 9 reveals the results relating to whether firms with MWs become more conservative in their reporting after the disclosure of these weaknesses, using the accrual-based model. The coefficient on $MW*DCFO*CFO*EXPOST$ is 0.16 and is marginally significant ($p = 0.10$). Again, this is consistent with our earlier results and with H3.

6. Conclusions

The internal control disclosure requirements of SOX assume that effective internal control provides more reliable financial information and that the disclosure of MWs in internal control will benefit users of financial statements by enhancing

information transparency. Our study extends this line of research by examining two issues related to accounting conservatism. We focus on conditional accounting conservatism because only timely loss recognition, conditional on a firm incurring economic losses, can increase debt and governance contracting efficiency (Ball and Shivakumar 2005). We first conduct several cross-sectional tests to assess whether the presence of MWs result in accounting conservatism and whether firms which remediate MWs exhibit greater accounting conservatisms than firms that do not. Also, we examine whether the disclosure of MWs has a disciplining effect on firms to report more conservatively.

The results show that firms that disclose MWs exhibit a lower level of accounting conservatism compared to firms without such weaknesses. More importantly, the results show that firms that remediate MWs exhibit greater accounting conservatism than firms that continue to have these weaknesses. We also find that firms report more conservatively after the disclosure of MWs, regardless of whether or not these firms remediate their weaknesses. This result suggests that the SOX internal control requirements have a disciplining effect on firms to report more conservatively, possibly due to the increased litigation risks that arise from the existence of MWs. Collectively, our cross-sectional and inter-temporal change analysis test results are consistent with internal control having a significant impact on financial reporting quality. We also provide useful evidence to support the benefits of the internal control requirements of SOX against the widely documented costs of such requirements (SEC 2006). Finally, our results also provide additional evidence that accounting conservatism is inherently generated by effective accounting governance mechanism.

References

- Ahmed, A.S., and S. Duellman, 2007. Accounting conservatism and board of director characteristics: An empirical analysis. *Journal of Accounting and Economics* 43(2-3): 411-437.
- Ahmed, A.S., S. Duellman, and A.M. Abdel-Meguid. 2006. The Sarbanes Oxley Act, auditor independence and accounting accruals: An empirical analysis. Working paper. Texas A&M University, State University of New York, and Syracuse University.
- Ashbaugh-Skaife, H., D. Collins, and W. Kinney. 2007. The discovery and reporting of internal control deficiencies prior to SOX-mandated audits. *Journal of Accounting and Economics* 44(1-2): 166-192.
- Ashbaugh-Skaife, H., D. Collins, W. Kinney, and R. LaFond. 2008a. The effect of SOX internal control deficiencies and their remediation on accruals quality. *The Accounting Review* 83(1): 217-250.
- Ashbaugh-Skaife, H., D. Collins, W. Kinney, and R. LaFond. 2008b. The effect of SOX internal control deficiencies on firm risk and cost of equity. *Journal of Accounting Research*. Forthcoming
- Ball, R., A. Robin, and J. Wu. 2003. Incentives versus standards: Properties of accounting income in four East Asian countries. *Journal of Accounting and Economics* 36(1-3): 235-270.
- Ball, R. and L. Shivakumar. 2005. Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics* 39(1): 83-128.
- Ball, R. and L. Shivakumar. 2006. The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research* 44(2): 207-242.
- Ball, R., S.P. Kothari and A. Robin. 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29(1): 1-51.
- Basu, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24(1): 3-37.
- Basu, S., L. Hwang, and C. Jan. 2001. Differences in conservatism between big eight and non-big eight auditors. Working paper. Emory University, Chinese University of Hong Kong, and California State University-Hayward.
- Beekes, W., P. Pope, and S. Young. 2004. The link between earnings timeliness, earnings conservatism and board composition: Evidence from the UK. *Corporate Governance: An International Review* 12(1): 47-59.
- Bushman, R. and J. Piotroski. 2006. Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and*

Economics 42(1): 107-148.

Collins, D., E. Maydew, and I. Weiss. 1997. Changes in the value-relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics* 24(1): 39-67.

Committee of Sponsoring Organizations of the Treadway Commission (COSO). 1999. *Fraudulent Financial Reporting: 1987-1997: An Analysis of U.S. Public Companies*. New York: AICPA.

Dechow, P. 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics* 18(1): 3-42.

Dietrich, J., K. Muller, and E. Riedl. 2007. Asymmetric timeliness tests of accounting conservatism. *Review of Accounting Studies* 12(1): 95-124.

Doyle, J., W. Ge, and S. McVay. 2007a. Accruals quality and internal control over financial reporting. *The Accounting Review* 82(5): 1141-1170.

Doyle, J., W. Ge, and S. McVay. 2007b. Determinants of weaknesses in internal control over financial reporting. *Journal of Accounting and Economics* 44(1-2): 193-223.

Ely, K. and G. Waymire. 1999. Accounting standard setting organizations and earnings relevance: Longitudinal evidence from NYSE common stocks, 1927-1973. *Journal of Accounting Research* 37(2): 293-317.

Fama, E. F. and M. C. Jensen. 1983. Separation of ownership and control. *Journal of Law and Economics* 26(1): 301-325.

Francis, J. R. and K. Schipper. 1999. Have financial statements lost their relevance? *Journal of Accounting Research* 37(2): 319-352.

Geiger, M.A., K. Raghunandan, and D.V. Rama. 1998. Costs associated with going-concern modified audit opinions: An analysis of auditor changes, subsequent opinions, and client failures. *Advances in Accounting* 16(1): 117-139.

Gigler, F.B. and T. Hemmer. 2001. Conservatism, optimal disclosure policy, and the timeliness of financial reports. *The Accounting Review* 76 (4): 471-493.

Guay, W. 2006. Discussion of the role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research* 44(2): 243-255.

Hunt, I. 1999. Remarks by Isaac Hunt to the 27th Annual National AICPA Conference on current SEC developments (December 7).

Krishnan, G. 2007. Did earnings conservatism increase for former Andersen clients? *Journal of Accounting, Auditing and Finance* 22(2): 141-163.

Public Company Accounting Oversight Board (PCAOB). 2004. Auditing Standards (AS) No. 2, An audit of internal control over financial reporting performed in conjunction with an audit of financial statements. PCAOB.

Ryan, S.G. 2006. Identifying conditional conservatism. *European Accounting Review* 15(4): 511-525.

Securities and Exchange Commission (SEC). 2002. *Final Rule: Certification of Disclosure in Companies' Quarterly and Annual Reports*. Release Nos. 33-8124; 34-46427.

Securities and Exchange Commission (SEC). 2003. *Final Rule: Management's Reports on Internal Control over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports*. Release Nos. 33-8238; 34-47986. Washington D.C.: SEC August 14.

Securities and Exchange Commission (SEC). 2004. *Management's Reports on Internal Control over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports-Frequently Asked Questions*.

Securities and Exchange Commission (SEC). 2006. Final Report of the Advisory Committee on Smaller Public Companies. Washington D.C.: SEC April 23.

Watts, R.L. 2003a. Conservatism in accounting Part1: Explanations and implications. *Accounting Horizons* 17(3): 207-221.

Watts, R.L. 2003b. Conservatism in accounting Part 2: Explanations and implications. *Accounting Horizons* 17(4): 287-301.

TABLE 1 Sample selection**Panel A: Sample selection for H1****MW sample:**

	<i>2000</i>	<i>2001</i>	<i>Total</i>
Identified MW firms from 2003 to 2005	1,098	1,098	2,196
<i>less:</i> firms with missing data in Compustat	240	331	571
<i>less:</i> firms with missing monthly buy-and-hold period returns in CRSP	203	174	377
<i>less:</i> firms within +/- 1% outliers of entire sample	41	33	<u>74</u>
Total firm year observations for MW sample			1,164

Compustat Control Sample:

Clean firms with available data in Compustat 2001 or 2000			7,932
<i>less:</i> firms with unavailable data in CRSP and 12 months buy-and-hold returns in fiscal years			1,034
<i>less:</i> firms within +/- 1% outliers of entire sample			<u>448</u>
Total firm year observations for control firms sample			6,450

Total firm year observations used in descriptive statistics and testing H1 7,614

Panel B: Sample selection for H2

Identified MW firms from 2003 to 2005	1,098
<i>less:</i> firms without 404 auditor opinions (i.e., non-accelerated filers)	473
<i>less:</i> firms with missing data in Compustat	<u>41</u>
	584*

*Among the 584 firms with a second SOX 404 opinion, 408 received an unqualified auditor report and 176 received an adverse report.

Panel C: Sample selection for H3

Firm-year observations that disclose MW in 2003	205
Firm-year observations that disclose MW in 2004	704
Firm-year observations that disclose MW in 2005	<u>588</u>
Total firm-year observations that disclose MWs	1,497
Less: firms with missing data in both Compustat and CRSP	493
Less: firms within \pm 1% outliers	<u>42</u>
Useful observations	962
Plus:	
MW firms in 2000 and 2001(see Panel 1)	<u>1,164</u>
All firm-year observations for MW firms	2,126

TABLE 2 Descriptive statistics

This table provides a description of the sample that is used for H1. Panel A shows the distribution of the sample firms with MWs and the control firms with no such weaknesses. TA is the natural log of total assets (Compustat #6). NI is the net income before extraordinary items (Compustat #123) divided by the total assets. R is the market-adjusted fiscal year stock returns. ΔNI_t is the difference in net income, before extraordinary items, between the current year and previous year divided by the beginning balance of total assets. ΔNI_{t-1} is the difference in net income, before extraordinary items, between last year and prior year divided by the beginning balance of total assets. BVMV is the book value of equity (Compustat #60) over the market value of equity (Compustat #199*Compustat #25). # indicates significant differences between the MW sample and the control sample at the 0.10 level or better, two-tailed. Differences in means (medians) are assessed using a t-test (Wilcoxon rank sum test). Panel B shows the correlations among the key variables used in the empirical analyses. Pearson and Spearman correlations are found, respectively, above and below the diagonal. * indicates significance at the five percent levels, two-tailed.

Panel A: Distributional Properties of Variables

MW firms (n = 1,164 observations in 2000 and 2001)

	Mean	Median	Std. Dev	Q1	Q3
TA	5.78 [#]	5.62 [#]	1.90	4.48	6.84
NI	-0.04	0.02 [#]	0.20	-0.06	0.05
R	0.16	0.04	0.73	-0.35	0.47
ΔNI_t	-0.07	0.00	2.45	-0.05	0.03
ΔNI_{t-1}	0.13	0.01	5.77	-0.03	0.03
BVMV	0.81	0.56	17.63	0.29	1.01

Control firms (n = 6,450 observations in 2000 and 2001)

	Mean	Median	Std. Dev	Q1	Q3
TA	5.89 [#]	5.74 [#]	2.15	4.31	7.34
NI	-0.04	0.03 [#]	0.22	-0.04	0.06
R	0.17	0.06	0.71	-0.29	0.48
ΔNI_t	0.14	0.00	11.53	-0.05	0.02
ΔNI_{t-1}	-0.17	0.00	11.45	-0.03	0.03
BVMV	0.82	0.57	1.13	0.30	1.04

Panel B: Pearson Correlations (top) and Spearman Correlations (bottom)

	TA	NI	RETURN	ΔNI_t	ΔNI_{t-1}	BVMV
TA	1.00	0.32*	0.02*	0.00	0.00	-0.01
NI	0.26*	1.00	0.19*	0.02*	-0.01	0.01
R	0.11*	0.29*	1.00	0.01	0.00	-0.03*
ΔNI_t	0.03*	0.43*	0.30*	1.00	-0.97*	0.01
ΔNI_{t-1}	0.07*	0.27*	0.05*	-0.12*	1.00	0.14*
BVMV	-0.13*	-0.15*	-0.27*	-0.15*	-0.05*	1.00

TABLE 3 Regression analyses of the relation between internal control quality and accounting conservatism using the timeliness of earnings to news model (test of H1)

This table reports the results of the regressions that investigate the relation between internal control quality and accounting conservatism, using the firms' timeliness of earnings to news to measure accounting conservatism. Panels A and B present the results of the analyses used to examine into whether accounting conservatism exists, respectively, in the MW and control firms. Panel C presents the results which show whether the MW and control firms differ in their accounting conservatism. DR_{it} is an indicator variable that equals 1 if the market-adjusted return for firm i during year t is negative, and 0 otherwise. MW is an indicator variable that equals 1 if the firm has MWs in internal controls, and 0 otherwise. The other variables are defined in Table 2. ***, **, and * denote, respectively, significance at less than 1, 5, and 10 percent levels, based on two-tailed tests.

Panel A: MW firms (MW = 1)

$$NI = \alpha_0 + \alpha_1 DR + \alpha_2 R + \alpha_3 R*DR + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	α_0	-0.01	-0.71	0.48
DR	α_1	0.02	1.29	0.20
R	α_2	0.00	-0.39	0.70
DR*R	α_3	0.26***	7.34	0.00
Adj- R^2 (%)		7.58%		
No. of obs.		1,164		

Panel B: Control firms (MW = 0)

$$NI = \alpha_0 + \alpha_1 DR + \alpha_2 R + \alpha_3 R*DR + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	α_0	0.02***	3.31	0.00
DR	α_1	0.03***	3.21	0.00
R	α_2	-0.02***	-3.09	0.00
DR*R	α_3	0.37***	22.94	0.00
Adj- R^2 (%)		12.00%		
No. of obs.		6450		

Panel C: Full sample

$$NI = \alpha_0 + \alpha_1 DR + \alpha_2 R + \alpha_3 R*DR + \alpha_4 MW + \alpha_5 DR*MW + \alpha_6 R*MW + \alpha_7 R*DR*MW + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	α_0	0.02***	3.33	0.00
DR	α_1	0.03***	3.23	0.00
R	α_2	-0.02***	-3.11	0.00
DR*R	α_3	0.37***	23.09	0.00
MW	α_4	-0.02*	-1.91	0.06
DR*MW	α_5	0.00	-0.10	0.92
R*MW	α_6	0.01	0.89	0.37
R*DR*MW	α_7	-0.11***	-2.78	0.01
Adj- R^2 (%)		11.40%		
No. of obs.		7,614		

TABLE 4 Regression analyses on the relation between internal control quality and accounting conservatism using the persistence of earnings changes model (test of H1)

This table reports the results of the regressions that investigate the relation between internal control quality and accounting conservatism, using the firms' persistence of earnings changes to measure accounting conservatism. Panels A and B present the results of the analyses used to examine whether accounting conservatism exists, respectively, in the MW and control firms. Panel C presents the results of the analyses used to show whether MW and control firms differ in their accounting conservatism. $D\Delta NI_{it-1}$ is an indicator variable that equals 1 if $\Delta NI_{it-1} < 0$, and 0 otherwise. The other variables are defined in Table 2. ***, **, and * denote, respectively, significance at less than 1, 5, and 10 percent levels, based on two-tailed tests.

Panel A: MW firms (MW = 1)

$$\Delta NI_t = \beta_0 + \beta_1 D\Delta NI_{t-1} + \beta_2 \Delta NI_{t-1} + \beta_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	β_0	-0.02	-0.50	0.62
$D\Delta NI_{t-1}$	β_1	0.38***	5.85	0.00
ΔNI_{t-1}	β_2	0.07***	11.87	0.00
$D\Delta NI_{t-1} * \Delta NI_{t-1}$	β_3	1.25***	62.75	0.00
Adj- R^2 (%)		80.88%		
No. of obs.		1,164		

Panel B: Control firms (MW = 0)

$$\Delta NI_t = \beta_0 + \beta_1 D\Delta NI_{t-1} + \beta_2 \Delta NI_{t-1} + \beta_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	β_0	-0.02***	-3.28	0.00
$D\Delta NI_{t-1}$	β_1	-0.12***	-11.67	0.00
ΔNI_{t-1}	β_2	-0.09***	-4.44	0.00
$D\Delta NI_{t-1} * \Delta NI_{t-1}$	β_3	-0.92***	-44.78	0.00
Adj- R^2 (%)		99.87%		
No. of obs.		6,450		

Panel C: Full sample

$$\Delta NI_t = \beta_0 + \beta_1 D\Delta NI_{t-1} + \beta_2 \Delta NI_{t-1} + \beta_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \beta_4 MW_t + \beta_5 D\Delta NI_{t-1} * MW_t + \beta_6 \Delta NI_{t-1} * MW_t + \beta_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * MW_t + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	β_0	-0.02**	-2.38	0.02
$D\Delta NI_{t-1}$	β_1	-0.12***	-8.47	0.00
ΔNI_{t-1}	β_2	-0.09***	-3.22	0.00
$D\Delta NI_{t-1} * \Delta NI_{t-1}$	β_3	-0.92***	-32.51	0.00
MW_t	β_4	0.00	0.10	0.92
$D\Delta NI_{t-1} * MW_t$	β_5	0.50***	13.56	0.00
$\Delta NI_{t-1} * MW_t$	β_6	0.16***	5.60	0.00
$D\Delta NI_{t-1} * \Delta NI_{t-1} * MW_t$	β_7	2.16***	71.99	0.00
Adj- R^2 (%)		99.72%		
No. of obs.		7,614		

Table 5 Regression results on the relation between improvement in internal control quality and accounting conservatism (test of H2)

This table reports the results of the regressions that investigate whether, among the MW firms, the firms that remediate their weaknesses by the time of the second SOX 404 report exhibit greater accounting conservatism than firms that still have weaknesses at the time of this report. MW_FIXED is an indicator variable that equals 1 if the firm receives an unqualified second SOX 404 report, and 0 if the firm receives an adverse second SOX 404 report. The other variables are as previously defined. ***, **, and * denote, respectively, significance at less than 1, 5, and 10 percent levels, based on two-tailed tests.

Panel A: Results using the timeliness of earnings to news model

$$NI = \delta_0 + \delta_1 DR + \delta_2 R + \delta_3 R * DR + \delta_4 MW_FIXED + \delta_5 DR * MW_FIXED + \delta_6 R * MW_FIXED + \delta_7 R * DR * MW_FIXED + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	δ_0	0.03	0.80	0.42
DR	δ_1	0.01	0.11	0.91
R	δ_2	-0.02	-0.35	0.73
DR*R	δ_3	0.38***	3.77	0.00
MW_FIXED	δ_4	0.00	0.13	0.90
DR*MW_FIXED	δ_5	0.06	1.17	0.24
R*MW_FIXED	δ_6	-0.01	-0.09	0.93
R*DR*MW_FIXED	δ_7	0.18	1.41	0.16
Adj-R ² (%)		17.06%		
No. of obs.		519		

Panel B: Results using the persistence of earnings changes model

$$\Delta NI_t = \gamma_0 + \gamma_1 D\Delta NI_{t-1} + \gamma_2 \Delta NI_{t-1} + \gamma_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \gamma_4 MW_FIXED_t + \gamma_5 D\Delta NI_{t-1} * MW_FIXED_t + \gamma_6 \Delta NI_{t-1} * MW_FIXED_t + \gamma_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * MW_FIXED_t + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	γ_0	0.03	0.90	0.37
D ΔNI_{t-1}	γ_1	-0.06	-1.11	0.27
ΔNI_{t-1}	γ_2	-0.88***	-13.75	0.00
D ΔNI_{t-1} * ΔNI_{t-1}	γ_3	0.61***	6.08	0.00
MW_FIXED _t	γ_4	-0.02	-0.43	0.67
D ΔNI_{t-1} * MW_FIXED _t	γ_5	0.11*	1.77	0.08
ΔNI_{t-1} * MW_FIXED _t	γ_6	0.61***	9.38	0.00
D ΔNI_{t-1} * ΔNI_{t-1} * MW_FIXED _t	γ_7	-0.34***	-3.40	0.00
Adj-R ² (%)		48.29%		
No. of obs.		584		

TABLE 6 Test of changes in conservatism after disclosure of MWs using the timeliness of earnings to news model (test of H3)

This table reports the results of the regressions that examine whether MW firms report more conservatively after the disclosure of MWs, using the timeliness of earnings to news model. EXPOST is an indicator variable that equals 1 for fiscal years after the disclosure of the MWs, and 0 for fiscal years before the disclosure of these weaknesses. The other variables are as previously defined. ***, **, and * denote, respectively, significance at less than 1, 5, and 10 percent levels, based on two-tailed tests.

Panel A: MW firms (MW = 1)

$$NI = \delta_0 + \delta_1 DR + \delta_2 R + \delta_3 R*DR + \delta_4 EXPOST + \delta_5 DR*EXPOST + \delta_6 R*EXPOST + \delta_7 R*DR*EXPOST + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	δ_0	0.00***	-0.47	0.01
DR	δ_1	0.02**	0.89	0.02
R	δ_2	-0.01***	-0.77	0.01
DR*R	δ_3	0.25**	7.55	0.03
EXPOST	δ_4	0.03**	2.04	0.02
DR*EXPOST	δ_5	0.00**	0.10	0.02
R*EXPOST	δ_6	-0.04**	-2.23	0.02
R*DR*EXPOST	δ_7	0.17**	3.26	0.05
Adj- R^2 (%)		10.85%		
No. of obs.		2,126		

Panel B: Control firms (MW = 0)

$$NI = \delta_0 + \delta_1 DR + \delta_2 R + \delta_3 R*DR + \delta_4 EXPOST + \delta_5 DR*EXPOST + \delta_6 R*EXPOST + \delta_7 R*DR*EXPOST + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	δ_0	0.02***	4.62	0.00
DR	δ_1	0.02***	2.61	0.01
R	δ_2	-0.02***	-3.56	0.00
DR*R	δ_3	0.33***	22.58	0.00
EXPOST	δ_4	0.02***	3.07	0.00
DR*EXPOST	δ_5	0.00	0.52	0.60
R*EXPOST	δ_6	-0.02**	-2.21	0.03
R*DR*EXPOST	δ_7	0.11***	5.71	0.00
Adj- R^2 (%)		12.14%		
No. of obs.		16,559		

TABLE 6 (continued)*Panel C: Full sample*

$$NI = \delta_0 + \delta_1 DR + \delta_2 R + \delta_3 R*DR + \delta_4 EXPOST + \delta_5 DR*EXPOST + \delta_6 R_{it}*EXPOST + \delta_7 R*DR*EXPOST + \delta_8 MW + \delta_9 MW*DR + \delta_{10} MW*R + \delta_{11} MW*R*DR + \delta_{12} MW*EXPOST + \delta_{13} MW*DR*EXPOST + \delta_{14} MW*R*EXPOST + \delta_{15} MW*DR*R*EXPOST + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	δ_0	0.02***	5.27	0.00
DR	δ_1	0.02***	2.50	0.01
R	δ_2	-0.02***	-3.47	0.00
DR*R	δ_3	0.32***	22.10	0.00
EXPOST	δ_4	0.01***	2.74	0.01
DR*EXPOST	δ_5	0.01	0.59	0.55
R*EXPOST	δ_6	-0.01**	-2.07	0.04
R*DR*EXPOST	δ_7	0.11***	5.50	0.00
MW	δ_8	-0.03***	-2.59	0.01
MW*DR	δ_9	0.00	-0.13	0.90
MW*R	δ_{10}	0.01	0.89	0.37
MW*R*DR	δ_{11}	-0.07**	-2.07	0.04
MW*EXPOST	δ_{12}	0.02	1.10	0.27
MW*DR*EXPOST	δ_{13}	0.00	-0.10	0.92
MW*R*EXPOST	δ_{14}	-0.03	-1.49	0.14
MW*DR*R*EXPOST	δ_{15}	0.06	1.06	0.29
Adj- R^2 (%)		11.94%		
No. of obs.		18,685		

TABLE 7 Test of changes in conservatism after disclosure of MWs using the persistence of earnings changes model (test of H3)

This table reports the results of the regressions that examine, using the persistence of earnings changes model, whether MW firms report more conservatively after the disclosure of MWs. EXPOST is an indicator variable that equals 1 for fiscal years after the disclosure of MWs, and 0 for fiscal years before the disclosure of MWs. The other variables are as previously defined. ***, **, and * denote, respectively, significance at less than 1, 5, and 10 percent levels, based on two-tailed tests.

Panel A: MW firms

$$\Delta NI_t = \gamma_0 + \gamma_1 D\Delta NI_{t-1} + \gamma_2 \Delta NI_{t-1} + \gamma_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \gamma_4 EXPOST_t + \gamma_5 D\Delta NI_{t-1} * EXPOST_t + \gamma_6 \Delta NI_{t-1} * EXPOST_t + \gamma_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	γ_0	-0.02	-0.05	0.96
$D\Delta NI_{t-1}$	γ_1	0.38	0.71	0.47
ΔNI_{t-1}	γ_2	0.07	1.45	0.15
$D\Delta NI_{t-1} * \Delta NI_{t-1}$	γ_3	1.25***	7.67	0.00
$EXPOST_t$	γ_4	0.96*	1.91	0.06
$D\Delta NI_{t-1} * EXPOST_t$	γ_5	-1.45*	-1.84	0.07
$\Delta NI_{t-1} * EXPOST_t$	γ_6	-0.91***	-19.40	0.00
$D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t$	γ_7	-1.43**	-2.42	0.02
Adj- R^2 (%)		99.60%		
No. of obs		2,126		

Panel B: Control firms

$$\Delta NI_t = \gamma_0 + \gamma_1 D\Delta NI_{t-1} + \gamma_2 \Delta NI_{t-1} + \gamma_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \gamma_4 EXPOST_t + \gamma_5 D\Delta NI_{t-1} * EXPOST_t + \gamma_6 \Delta NI_{t-1} * EXPOST_t + \gamma_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	γ_0	-0.02	-0.76	0.45
$D\Delta NI_{t-1}$	γ_1	-0.11***	-2.49	0.01
ΔNI_{t-1}	γ_2	-0.08	-0.91	0.36
$D\Delta NI_{t-1} * \Delta NI_{t-1}$	γ_3	-0.93***	-10.72	0.00
$EXPOST_t$	γ_4	0.25***	6.58	0.00
$D\Delta NI_{t-1} * EXPOST_t$	γ_5	-0.34***	-5.72	0.00
$\Delta NI_{t-1} * EXPOST_t$	γ_6	-0.89***	-10.25	0.00
$D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t$	γ_7	0.09	1.01	0.31
Adj- R^2 (%)		96.03%		
No. of obs		16,559		

TABLE 7 (continued)

Panel C: Full sample

$$\Delta NI_t = \gamma_0 + \gamma_1 D\Delta NI_{t-1} + \gamma_2 \Delta NI_{t-1} + \gamma_3 D\Delta NI_{t-1} * \Delta NI_{t-1} + \gamma_4 EXPOST_t + \gamma_5 D\Delta NI_{t-1} * EXPOST_t + \gamma_6 \Delta NI_{t-1} * EXPOST_t + \gamma_7 D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t + \gamma_8 MW_t + \gamma_9 MW_t * D\Delta NI_{t-1} + \gamma_{10} MW_t * \Delta NI_{t-1} + \gamma_{11} MW_t * \Delta NI_{t-1} * D\Delta NI_{t-1} + \gamma_{12} MW_t * EXPOST_t + \gamma_{13} MW_t * D\Delta NI_{t-1} * EXPOST_t + \gamma_{14} MW_t * \Delta NI_{t-1} * EXPOST_t + \gamma_{15} MW_t * D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	γ_0	-0.02	-0.35	0.73
$D\Delta NI_{t-1}$	γ_1	0.01	0.13	0.89
ΔNI_{t-1}	γ_2	-0.03	-0.12	0.90
$D\Delta NI_{t-1} * \Delta NI_{t-1}$	γ_3	-0.15	-0.51	0.61
$EXPOST_t$	γ_4	0.03	0.52	0.60
$D\Delta NI_{t-1} * EXPOST_t$	γ_5	0.02	0.21	0.83
$\Delta NI_{t-1} * EXPOST_t$	γ_6	0.06	0.23	0.81
$D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t$	γ_7	0.03	0.11	0.91
MW_t	γ_8	0.00	0.01	1.00
$MW_t * D\Delta NI_{t-1}$	γ_9	0.37*	1.88	0.06
$MW_t * \Delta NI_{t-1}$	γ_{10}	0.10	0.39	0.69
$MW_t * \Delta NI_{t-1} * D\Delta NI_{t-1}$	γ_{11}	1.40***	4.71	0.00
$MW_t * EXPOST_t$	γ_{12}	0.92***	5.10	0.00
$MW_t * D\Delta NI_{t-1} * EXPOST_t$	γ_{13}	-1.47***	-5.17	0.00
$MW_t * \Delta NI_{t-1} * EXPOST_t$	γ_{14}	-0.97***	-3.83	0.00
$MW_t * D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t$	γ_{15}	-1.47***	-4.03	0.00
Adj- R^2 (%)		99.60%		
No. of obs.		18,685		

TABLE 8 Sensitivity tests on H3 by excluding firms that remediate MWs

This table reports the results of the regressions that examine whether MW firms report more conservatively than the control firms after the disclosure of MWs, by excluding firms that remediate their MWs at the time of the second SOX 404 report. All the variables are as previously defined. ***, **, and * denote, respectively, significance at less than 1, 5, and 10 percent levels, based on two-tailed tests.

Panel A: Results using timeliness of earnings to news model

	Coeff	Estimate	t-stat	p-value
INTERCEPT	δ_0	0.02***	5.26	0.00
DR	δ_1	0.02***	2.50	0.01
R	δ_2	-0.02***	-3.47	0.00
DR*R	δ_3	0.32***	22.09	0.00
EXPOST	δ_4	0.01***	2.74	0.01
DR*EXPOST	δ_5	0.01	0.59	0.55
R*EXPOST	δ_6	-0.01**	-2.07	0.04
R*DR*EXPOST	δ_7	0.11***	5.50	0.00
MW	δ_8	-0.03***	-2.58	0.01
MW*DR	δ_9	0.00	-0.13	0.90
MW*R	δ_{10}	0.01	0.89	0.37
MW*R*DR	δ_{11}	-0.07**	-2.07	0.04
MW*EXPOST	δ_{12}	0.10***	3.07	0.00
MW*DR*EXPOST	δ_{13}	-0.12***	-2.57	0.01
MW*R*EXPOST	δ_{14}	-0.30***	-6.04	0.00
MW*DR*R*EXPOST	δ_{15}	0.15	1.50	0.13
Adj- R^2 (%)		11.80%		
No. of obs		17,983		

Panel B: Results using persistence of earnings changes model

	Coeff	Estimate	t-stat	p-value
INTERCEPT	γ_0	-0.02***	-3.23	0.00
$D\Delta NI_{t-1}$	γ_1	0.01	1.25	0.21
ΔNI_{t-1}	γ_2	-0.03	-1.14	0.26
$D\Delta NI_{t-1} * \Delta NI_{t-1}$	γ_3	-0.15***	-4.72	0.00
$EXPOST_t$	γ_4	0.03***	4.85	0.00
$D\Delta NI_{t-1} * EXPOST_t$	γ_5	0.02**	1.95	0.05
$\Delta NI_{t-1} * EXPOST_t$	γ_6	0.06**	2.18	0.03
$D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t$	γ_7	0.03	1.02	0.31
MW_t	γ_8	0.00	0.06	0.96
$MW_t * D\Delta NI_{t-1}$	γ_9	0.37***	17.39	0.00
$MW_t * \Delta NI_{t-1}$	γ_{10}	0.10***	3.64	0.00
$MW_t * \Delta NI_{t-1} * D\Delta NI_{t-1}$	γ_{11}	1.40***	43.65	0.00
$MW_t * EXPOST_t$	γ_{12}	-0.06*	-1.62	0.10
$MW_t * D\Delta NI_{t-1} * EXPOST_t$	γ_{13}	-0.41***	-7.04	0.00
$MW_t * \Delta NI_{t-1} * EXPOST_t$	γ_{14}	-0.05	-0.64	0.52
$MW_t * D\Delta NI_{t-1} * \Delta NI_{t-1} * EXPOST_t$	γ_{15}	-1.93***	-19.02	0.00
Adj- R^2 (%)		75.81%		
No. of obs.		17,983		

TABLE 9 Regression results of H1, H2, and H3 using the accrual-based accounting conservatism measure as in Ball and Shivakumar (2005)

This table reports the results of the regressions that examine H1, H2, and H3, using the accrual-based accounting conservatism measure as in Ball and Shivakumar (2005). Panels A, B, and C present the results of H1, 2, and 3, respectively. ACCRUAL is net income before extraordinary items minus its operating cash flows at fiscal year-end, deflated by beginning-of-year total assets. CFO is operating cash flows at fiscal year-end deflated by beginning-of-year total assets. DCFO is an indicator variable that equals 1 if CFO is negative, and 0 otherwise. The other variables are as previously defined. ***, **, and * denote, respectively, significance at less than 1, 5, and 10 percent levels, based on two-tailed tests.

Panel A: H1

$$\text{ACCRUAL} = \gamma_0 + \gamma_1\text{DCFO} + \gamma_2\text{CFO} + \gamma_3\text{CFO*DCFO} + \gamma_4\text{MW} + \gamma_5\text{DCFO*MW} + \gamma_6\text{CFO*MW} + \gamma_7\text{CFO*DCFO*MW} + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT		-0.02***	-4.93	0.00
DCFO	θ_1	-0.02***	-4.49	0.00
CFO	θ_2	-0.52***	-19.58	0.00
DCFO*CFO	θ_3	0.84***	26.69	0.00
MW	θ_4	-0.02**	-2.29	0.02
DCFO*MW	θ_5	0.02	1.29	0.20
CFO*MW	θ_6	0.05	0.72	0.47
DCFO*CFO*MW	θ_7	-0.15*	-1.79	0.07
Adj- R^2 (%)		10.07%		
No. of obs		7,614		

Panel B: H2

$$\text{ACCRUAL} = \theta_0 + \theta_1\text{DCFO} + \theta_2\text{CFO} + \theta_3\text{DCFO*CFO} + \theta_4\text{MW_FIXED} + \theta_5\text{DCFO*MW_FIXED} + \theta_6\text{CFO*MW_FIXED} + \theta_7\text{DCFO*CFO*MW_FIXED} + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	θ_0	-0.07***	-2.53	0.01
DCFO	θ_1	-0.02	-0.43	0.67
CFO	θ_2	-0.31	-1.28	0.20
DCFO*CFO	θ_3	0.25	0.87	0.38
MW_FIXED	θ_4	0.05*	1.73	0.08
DCFO*MW_FIXED	θ_5	0.07	1.56	0.12
CFO*MW_FIXED	θ_6	-0.22	-0.80	0.43
DCFO*CFO*MW_FIXED	θ_7	0.92***	2.86	0.00
Adj- R^2 (%)		12.66%		
No. of obs.		584		

TABLE 9 (continued)*Panel C: H3*

$$\text{ACCRUAL} = \omega_0 + \omega_1 \text{DCFO}_t + \omega_2 \text{CFO}_t + \omega_3 \text{DCFO} * \text{CFO} + \omega_4 \text{EXPOST} + \omega_5 \text{DCFO} * \text{EXPOST} + \omega_6 \text{CFO} * \text{EXPOST} + \omega_7 \text{DCFO} * \text{CFO} * \text{EXPOST} + \omega_8 \text{MW} + \omega_9 \text{MW} * \text{DCFO} + \omega_{10} \text{MW} * \text{CFO} + \omega_{11} \text{MW} * \text{CFO} * \text{DCFO} + \omega_{12} \text{MW} * \text{EXPOST} + \omega_{13} \text{MW} * \text{DCFO} * \text{EXPOST} + \omega_{14} \text{MW} * \text{CFO} * \text{EXPOST} + \omega_{15} \text{MW} * \text{DCFO} * \text{CFO} * \text{EXPOST} + \varepsilon$$

	Coeff	Estimate	t-stat	p-value
INTERCEPT	ω_0	-0.01***	-4.69	0.00
DCFO	ω_1	-0.02***	-4.88	0.00
CFO	ω_2	-0.52***	-25.65	0.00
DCFO*CFO	ω_3	0.78***	31.42	0.00
EXPOST	ω_4	0.00	-0.47	0.64
DCFO*EXPOST	ω_5	0.02***	3.14	0.00
CFO*EXPOST	ω_6	0.10***	3.69	0.00
DCFO*CFO*EXPOST	ω_7	-0.14***	-4.42	0.00
MW	ω_8	-0.02***	-3.63	0.00
MW*DCFO	ω_9	0.02*	1.83	0.07
MW*CFO	ω_{10}	0.06	1.06	0.29
MW*CFO*DCFO	ω_{11}	-0.09	-1.26	0.21
MW*EXPOST	ω_{12}	0.00	0.10	0.92
MW*DCFO*EXPOST	ω_{13}	-0.02	-1.13	0.26
MW*CFO*EXPOST	ω_{14}	-0.05	-0.61	0.54
MW*DCFO*CFO*EXPOST	ω_{15}	0.16*	1.62	0.10
Adj- R^2 (%)		10.97%		
No. of obs.		18,685		