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**THREE ESSAYS ON MATERIAL WEAKNESS  
DISCLOSURES, RESTATEMENT ANNOUNCEMENTS,  
AND AUDITOR'S LITIGATION RISK**

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## **ABSTRACT OF THE THESIS**

Three Essays on Material Weakness Disclosures, Restatement Announcements, and  
Auditor's Litigation Risk

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The first essay examines the information content of material weakness (MW) disclosures conditional on previously announced financial restatements. I distinguish between MW disclosures that primarily serve as an advance warning of potential misstatements and MWs that are disclosed concurrent with, or after, a restatement announcement. I find that the market reaction to MW disclosures following restatements is significantly lower than the reaction to early MW disclosures, consistent with the idea that the informational value of the late MW disclosures was communicated via the restatement news. To emphasize the importance of distinguishing between MW-related restatements and other MWs, I also examine managerial turnover following MW disclosures, showing that after controlling for concurrent and preceding restatements, the impact of MW disclosures on turnover— shown in prior literature - is greatly reduced.

The second paper examines the market reaction to restatement announcements by studying the combined effects of restatements and prior MW disclosures. I hypothesize that restatement announcements following a MW should elicit less negative market reaction compared to unwarned restatements. I develop a sample of firms whose

restatements were preceded by a MW related to the restatement and/or disclosed in one of the prior four quarters preceding the restatement. I show that firms which announce a restatement following a MW disclosure experience significantly more negative returns than do firms whose restatements were not preceded by a MW. Further analyses show that firms which make the bad news warnings are in high-litigious industries and have more adverse future operating performance than firms which do not issue warnings.

The third essay examines the impact of auditors' litigation risk on auditors' reporting decisions and audit fees using a novel approach developed in prior literature. I find that auditors facing high litigation risk are more likely to issue a going concern report and an adverse internal control opinion and to charge higher audit fees. Overall, the results suggest that auditors' incentives to report conservatively to their clients are positively associated with auditors' litigation exposure.

## **DEDICATION**

To my wife, my son, and my parents

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## **Chapter 1: Does Timing Matter? Evidence from Material Weakness Disclosures and Restatement Announcements**

### **1.1 Introduction**

The internal control provisions of the Sarbanes-Oxley Act (SOX) have been enacted primarily to provide investors with an early warning about any deficiency in the firms' ICFR, and subsequently, any material misstatements that might follow in the financial statements (PCAOB 2004; Hammersley et al. 2008). In other words, reporting of a MW by the firm is an implicit acknowledgement by the firm's officers that there is a likelihood of possible misstatement in past, current, or future financial statements.

Building on these arguments, the consensus in prior research has always been that MW disclosures are bad news that induces investors to anticipate possible future losses. For example, in examining the capital market consequences of MW disclosures, Hammersley et al. 2008, Beneish et al. 2008, and De Franco et al. 2005 find that these disclosures have a negative impact on investors' valuation of the firm's stock. The argument for the adverse market reaction in these papers is that MW disclosures contain new and useful information about the firm's internal controls which could have led to opportunistic and misleading disclosures by management. While this reasoning might be true in cases where firms elect to provide timely disclosures of MWs as soon as they are discovered, it is often the case that managers delay the MW disclosure until after they announce a financial restatement (Glass, Lewis & Co. 2007) – at which time investors can easily anticipate that a MW has existed in the firm's controls (PCAOB 2007). To the extent that there is a variation in the timeliness of reporting a MW, then

we should also expect to see a variation in the market reaction to the disclosure depending on when its information content became known to the public.

In order to adequately evaluate the informational impact of MW disclosures, it is necessary therefore to distinguish between MWs that were not preceded by restatements as compared with disclosures that came concurrent with or later than the associated restatement. This is particularly important since, as this paper shows, more than half of the disclosures are triggered by prior restatements that led management to admit the existence of a MW. In other words, MWs that are disclosed by firms following a restatement are lagging indicators of issues largely known to the public already. Due to the large number of non-timely MW disclosures (MW disclosures occurring concurrent with or subsequent to restatement announcements), it is important, therefore, to understand how investors incorporate the timing of these disclosures in their valuation decisions about the firm's stock.

This paper examines the value relevance of MW disclosures conditional on the timing of their disclosure in relation to a previously announced restatement, if any. That is, I identify firms which disclose a MW that was not preceded by a restatement and firms which disclose a MW that was preceded by a restatement and examine how investors react differently to the MW disclosure for the two groups. I argue that early MW disclosures – those that are *not preceded* by an earlier restatement – should induce investors to expect potentially adverse misstatements that reduce firm value. In contrast, late disclosures should lead to little or no adverse reaction since the associated adverse consequences have already been disclosed in the restatement (that preceded the MW disclosure). However, investors can also perceive the late disclosure as a failure of

managers to make the disclosures early enough to warn investors about a potential restatement. In such case, it is also likely that investors will raise concerns about management's credibility and/or competence, leading to further stock price downward movements. Summing up, I expect that early MW disclosures should lead to more negative market reaction relative to MW disclosures that follow the associated restatement.

Consistent with expectations, I find that the market reaction to MW disclosures varies depending on whether a restatement was previously announced. For both SOX 302 and 404 disclosures, I find that early MWs are valued more negatively by investors than delayed disclosures, which convey much less incremental information to market participants than those disclosures that are not associated with prior restatements. I also find that the market response to the disclosure varies depending on whether the disclosure is subject to auditor attestation or not. Unaudited MW disclosers following restatements are shown to have a positive impact on market returns, yielding an average CARs of 1.6% (p-value = 0.02)<sup>1</sup>. Audited MW disclosures, on the other hand, are perceived negatively by investors even when the disclosure is made following a restatement.

While the results imply that the information content of a MW disclosure is highly determined by its timing, and thus its relevance, the results have implications that extend beyond that finding. Most importantly, the results draw researchers' attention on the importance of distinguishing between MW disclosures which are tied to

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<sup>1</sup> Since the sample used in this paper pools firms making disclosures pursuant to SOX 302 and SOX 404, I determine for each MW disclosure if the external auditor attests to that disclosure *per se*. This means that a firm could be required to comply with SOX 404, but still disclose a MW on its quarterly report according to SOX 302. In this case, the MW is not included in the auditor-attestation sample since auditor attestation is not required for quarterly reports.

prior restatements and those which are not. While I show that separating out uninformative and informative MW disclosures have significant implications for assessing the market consequences of the disclosure, the issue is also crucial in research topics examining other consequences of reporting a MW.

Finally, I demonstrate that failing to control for restatements that primarily precede or are made concurrent with a MW can bias research findings and thus lead to potentially inaccurate inferences in various settings. To show that, I re-examine the relation between SOX 404 MW disclosures and subsequent changes in corporate governance which was studied in prior research (Johnstone et al. 2011). The authors show that MW disclosures induce turnover of key personnel. I sharpen this finding by showing that executive turnover is mainly driven by the proportion of sample firms that *restated* their financials. That is, conditional on a restatement, the impact of a MW disclosure on turnover is greatly reduced. By comparing across MWs based on their relationship to restatements, I show that turnover is concentrated in those MWs which involved a restatement that was announced during the same period as the MW. In particular, I show that MWs that are not associated with any restatement do not display a significantly positive association with managers'/directors' turnover. That is, turnover appears to be largely an effect of the restatement and not attributable to MW disclosures themselves<sup>2</sup>.

This paper makes several contributions to the area of ICOFR. First, the paper contributes to prior work on the information content of MW disclosures (e.g.

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<sup>2</sup> The only exception is the CFO turnover which shows a positive relation to MW disclosures even after controlling for restatements.

Hammersley et al. 2008; Beneish et al. 2008; De Franco et al. 2005; Gupta and Nayar 2007) by showing that the information content of MW disclosures is conditional on the timing of the disclosure. Incorporating “timing” of disclosure in the research design is crucial particularly due to the large number of public firms making delayed disclosures. Second, the paper also examines whether the impact of disclosure timing varies across groups of firms that are required to have mandated ICOFR audits and those which are not. This is of importance since prior research has generally found evidence that SOX 404 disclosures are less informative than SOX 302 disclosures. To the extent that earlier studies did not separate out the MWs that were preceded by restatements, they were combining informative and uninformative MWs, thereby reducing the power of their tests. Third, the paper also draws the attention of researchers to the importance of isolating MW disclosures from restatements in studies in which the impact of either MW disclosures or restatements is investigated. Failure to do so might incorrectly attribute research findings to one event rather than the other. In particular, I show that executive turnover which was inferred as a consequence of MW disclosure (Johnstone et al 2011) is not found in the group of MW disclosures that are not tied to a restatement.

The remainder of the paper is organized as follows. Section 2 discusses the background and motivation of the research. Section 3 reviews the literature and develops the hypothesis of the study. Section 4 describes the sample selection and data sources. Section 5 explains the empirical model used in the paper. Section 6 presents the empirical findings. Section 7 analyzes Johnstone et al.’s findings based on the paper’s arguments and findings. Section 8 concludes the paper.



## **1.2 Background and Motivation**

SOX was enacted in 2002 to establish reforms in the financial market following a series of corporate scandals that negatively impacted investors' trust in the integrity of financial reporting. SOX has two main sections that are related specifically to internal control issues within public companies. The two provisions, Sections 302 and 404, focus on ICOFR and were enacted mainly to improve corporate financial reporting (Bedard et al. 2009) and they are argued to have the greatest potential of doing so (Nicolaisen 2004). In particular, Section 302, which became effective on August 29, 2002, requires top officers of all public firms to disclose quarterly all MWs in the firm's ICOFR. Beginning with fiscal year ending after November 15, 2004, Section 404 requires accelerated filers to assess the effectiveness of the ICOFR, and their auditors to both make their own evaluation and to attest to management's findings. In compliance with Section 404, non-accelerated filers are required, starting with fiscal years ending after December 15, 2007, to only document a management report on ICOFR. However, non-accelerated filers are not required to comply with the audit attestation requirement.

The periodic testing and evaluation of ICOFR seek to uncover MWs in the firms' ICOFR and communicate them to investors in a timely manner. According to PCAOB (2004) a MW in ICOFR is "a significant deficiency, or a combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected". Such information alerts investors of existing deficiencies in the ICOFR, allowing them to determine the degree of reliance on both current and future financial statements.

For these provisions to be effective, internal control reports should contain both meaningful (Rice and Weber 2010) and timely information. If companies comply by disclosing all MWs immediately upon discovery, then one would expect these disclosures to become informative as they bring new and useful information to market participants. In this case, the MW disclosure will serve as an early warning, alerting investors of potential misstatements that might occur in financial statements. If further detected and announced, the misstatement will lead to a decline in the firm's stock price (GAO 2006; Palmrose et al. 2004).

Here is an example of an ICOFR report by a public company explaining the potential impact of a MW on financial statements.

*“The existence of a significant deficiency or a material weakness could result in errors in the company's financial statements that could result in a restatement, cause the company to fail to timely meet its reporting obligations and cause investors to lose confidence in its reported financial information, leading to a decline in the company's stock price”.*

While a MW in the firm's ICOFR can potentially lead to a misstatement, it is also true that a restatement to correct previously issued financial statements likely indicates the existence of a MW in the firm's controls (PCAOB 2007; Leone 2007). One should expect, therefore, that firms should warn investors of any current deficiencies in their ICOFR before material errors and irregularities are discovered (Glass Lewis & Co. 2007). However, it has been found that a large number of restating firms reported that they have effective ICOFR prior to their restatement filings, and only recognize the existence of a MW after they restate their financial statements (Glass, Lewis & Co. 2007; Rice and Weber 2010; Turner and Weirich 2006). In 2005,

for example, Glass Lewis & Co. found that 57% of the MWs were disclosed subsequent to restatement filings.

Prior research has consistently shown that MW disclosures are bad news warnings that lead to negative stock price reaction. The empirical evidence that MW disclosures cause investors to react negatively to the disclosure is based on the premise that reporting a MW conveys *new* information about the firm's reporting quality (Hammersley et al. 2008, Beneish et al. 2008). However, as mentioned above, this is not likely the case since firms often delay these disclosures until a misstatement is discovered and announced. That variation in the timeliness of reporting a MW, therefore, will likely introduce variation in investors' perceptions of the MW depending on what incremental information the disclosure provides. In other words, to the extent that investors rely on MW disclosures to extract information about the firm's reporting quality, the informational value of MW disclosures that were not preceded by a restatement will likely be different from the content of disclosures that are made after a restatement, which, according to the PCAOB, has already signaled a weak internal control environment. Accordingly, we should also expect to observe a differential market response to the MW disclosure conditional on the timing of the disclosure. I test that conjecture in the paper.

The following is an example of a restatement announcement by a public firm followed by a disclosure of a MW.

Restatement announcement (June 3, 2005):

*It was determined that expenses related to the incentive-based deferred compensation of the Company's CEO should have been recorded in the third quarter of fiscal 2004 and first quarter of fiscal 2005. As a result, additional expenses and*

*accrued liabilities of \$1.5 million and \$2.2 million will be recorded in these quarters, respectively.*

*Management also determined that the Company's deferred tax benefit recorded in the third quarter of fiscal 2005 was improperly included in income and should have been applied to additional paid in capital. Consequently, the tax benefit of \$2.4 million recognized during the quarter will be reduced and additional paid in capital will be increased by the same amount with no overall effect to cash or equity.*

MW disclosure (June 14, 2005):

*The Company did not maintain effective controls over the accounting for certain compensation arrangements. Adjustments related to a deferred compensation arrangement with a key employee were included in the restatement of the Company's consolidated financial statements.*

*The Company did not maintain effective controls over the accounting for income taxes. This material weakness resulted in adjustments that were included in the restatement of the Company's consolidated financial statements.*

### **1.3 Literature Review and Hypothesis Development**

The first group of studies dealing with ICOFR in the post-SOX era provides evidence on the characteristics of firms that disclose internal control weaknesses. Ge and McVay (2005) find that firms with weak internal controls have more operating segments, are more likely to report foreign currency translation, are smaller, have shorter firm history, and are less profitable compared to other firms. In a related paper, Ashbaugh- Skaife et al. (2007) find that firms that disclose control weaknesses have more complex operations, greater accounting risk, more auditor resignations, fewer resources for internal control, and are more likely to engage in mergers and acquisitions and restructurings. Rice and Weber (2010) complement that stream of research by examining the determinants of (non-) disclosure of MWs during the periods in which the misstatements occurred. Their paper shows that MW disclosure is positively associated with prior restatements, recent auditor changes, poor financial health, and

previous disclosure of unaudited control weaknesses while negatively associated with firm size and external capital needs.

Another stream of research focuses on the capital market consequences of reporting on the quality of internal controls. Asbaugh-Skaife et al. (2009) and Costello and Moerman (2010) show that internal control quality is associated with higher costs of equity and debt capital, respectively. However, Ogneva et al. (2007) find that Section 404 internal control weaknesses disclosures have little or no explanatory power for cost of capital levels.

Other work examines the impact of the effectiveness of internal control on earnings guidance, showing that firms that disclose ineffective internal controls have larger management forecast errors than firms that disclose effective internal controls (Feng et al. 2009). In a different stream of research, Hoitash et al. (2007), Raghunandan and Rama (2006), and Hogan and Wilkins (2006) find that companies reporting internal control problems pay higher audit fees.

Other research examines whether SOX compliance results in better financial reporting quality. Using unexpected total and current accruals as measures of earnings quality, Bedard (2006) finds that internal control requirements lead to improved earnings quality. Similarly, Nagy (2010) provides evidence that firms with mandated audits of MW disclosures are less likely to restate their financial statements than non-complying firms, and that MW disclosure is positively associated with the likelihood of future restatements. Finally, Bizzaro et al. (2010) find a significant association between the incidence as well as the frequency of MWs and the probability of financial restatements.

The research most closely related to this study is by Hammersley (2008) and Beneish et al. (2008). Hammersley et al. (2008) examines market reaction to disclosure of internal control weaknesses under Section 302 of SOX and to the characteristics of these weaknesses. They find that market reaction to the disclosures of internal control weaknesses varies with the severity of the weakness (i.e. control deficiency, significant deficiency, or MW) and is most negative when the weaknesses disclosed are material, showing a size-adjusted returns of -0.95% over the three day window around the disclosure of the MWs. Beneish et al. (2008) contributed to this line of research by examining stock market reaction to unaudited disclosures under Section 302 and audited disclosures under Section 404 of SOX. They find a significant market reaction to disclosures of unaudited MWs under Section 302 but no market response to Section 404 disclosures, either conditional or unconditional on prior 302 disclosures. Their explanation for the insignificant market response to Section 404 MW disclosures is consistent with the arguments that auditors' certification could result in a lower threshold for Section 404 MW disclosures (Doyle et al. 2007) and that larger firms (complying with SOX 404) operate in less uncertain information environments than smaller firms.

Methodologically, this paper resembles Rice and Weber's (2010) study which examine the determinants of (non-disclosure) of existing MWs during misstatement periods. Similar to Rice and Weber (2010), I isolate a sample of firms which disclosed a MW that is linked to the restatement in question. However, my paper differs from theirs in two main aspects. First, Rice and Weber's (2010) study focuses on the determinants of disclosing (and non-disclosing) MWs during the periods in which the misstatement

occurred. My paper focuses more on the market reaction to timely and non-timely disclosures. Second, given the objective of their study, their sample comprises only firms that restated their financial statements. The sample used in my paper, on the other hand, consists of all firms disclosing MWs regardless of whether they announced a restatement.

My research contributes to the above evidence by addressing whether the stock market reaction to MW disclosures varies with the occurrence of prior related financial restatements. This is particularly important since prior research finding - that MW disclosures are negatively valued by investors - are based on the conjecture that these disclosures provide incremental information of which investors have no prior knowledge. As explained above, this is not likely the case as many of these disclosures become known to the public only at the time, or after, firms announce a restatement.

Upon announcing the restatement news investors can easily conclude that the firm has ICOFR deficiencies that led to the restatement. This will likely make any subsequent MW disclosures related to the restatement less valuable since investors have already impounded such information in the stock price at the time the restatement news is revealed. Accordingly, one should observe minimal stock price decline in response to the disclosure of a MW following a restatement. Alternatively, investors could also perceive the late disclosure as a signal of management inclination to withhold bad news and/or their failure to detect and report a MW on time. The delayed disclosure can thus induce further drops in the stock price as investors raise concerns about management credibility and/or competence. Unlike late disclosures, early MW disclosures, on the other hand, send an advance warning to investors concerning potential misstatements.

In response, investors will revise their expectations downward about the firm's future profitability or its risk assessments (Hammersley et al. 2008, Beneish et al. 2008), creating a substantial negative stock price reaction.

Based on the above discussion, I phrase my primary hypothesis as follows:

*H1: investor reaction to the early warning of a MW disclosure is significantly more negative than the reaction to a MW disclosure following a restatement announcement.*

#### **1.4 Sample Selection**

Disclosures of MWs are made in accordance with Sections 302 and 404 of SOX. Section 302, first effective in August 2002, mandates disclosure on the effectiveness of ICOFR and of any related MWs. Section 404 requires that auditors attest to the ICOFR as well as to management's report on its effectiveness. The sample is identified from the Audit Analytics database and consists of public companies disclosing their *initial* MWs from August 2002 to December 2009.

The sample selection procedure identified 5,156 unique public announcements of MWs that are made pursuant to both SOX 302 and SOX 404 in quarterly and annual reports. To ensure that the initial disclosure dates for the MWs are correct, I compare these dates to the SEC filings from EDGAR and make necessary changes<sup>3</sup>.

The selection procedure for the full sample is summarized in Table 1.1. To identify firms making early and late MW disclosures, I use Audit Analytics to

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<sup>3</sup> The Audit Analytics database records MWs only if they are disclosed in a firm's 10-Q or 10-K. A closer look at actual SEC filings revealed that a number of firms in Audit Analytics disclose their initial MWs on other forms (e.g. 8k, NT10K, etc) prior to their quarterly and annual filings. That required a review of the initial disclosure dates on the Audit Analytics database to ensure that a MW is not recorded prior to that date.



determine if a firm disclosing a MW had a prior restatement. The initial sample (5,156 disclosures) was merged to the restatements database (10,117 restatements) to determine filings of restatements preceding disclosures of MWs. The merge resulted in 6,132 observations representing MW disclosures associated with no, one, or more prior restatement(s). I then eliminate 426 observations for firms restating their financial statements before August 2002 since it was not required to publicly disclose MWs prior to that date. The resulting sample (5,706 firms) was then merged to the Merged CRSP-Compustat database to determine firms that are not listed on the Center for Research in Securities Prices (CRSP) tapes. The merge resulted in 2,302 listed firms with MW disclosures associated with no, one, or multiple restatements.

Given the dates for MW disclosures and for restatement announcements, I retrieved the individual ICOFR and restatements filings from SEC filings on EDGAR. In order to classify each firm as whether it is making an early or a late MW disclosure, I map the contents of the MW to the content of a prior restatement, if any<sup>4</sup>. If the disclosed MW is not preceded by a related restatement, the MW disclosure is considered to be a leading indicator of potential misstatements, and is classified as an *early* MW disclosure. If the firm acknowledges that the disclosed MW led to the prior restatement or that the MW disclosure underlies the prior restatement, then the MW is regarded as a lagging indicator, and is classified as a *late* MW disclosure.

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<sup>4</sup> While firms usually announce restatements on separate 8-K: “Non-reliance of previously issued financial statements”, some firms do not make such announcement but disclose their restated financial restatements with the new quarter’s or year’s results. These stealth restatements were taken into consideration in arriving at the correct classification of firms.

In cases where the MW is preceded by more than one restatement, I identify which restatement is related to the MW in question and omit the rest from the sample. That step results in omitting 297 duplicate restatements unrelated to the MW disclosure. The following observations are also deleted: 32 observations for MWs that were initially disclosed before the firm goes public; 30 observations where there is no MW reported<sup>5</sup>; and 33 duplicate observations. The final sample, 1,910 observations, comprises 920 MW disclosures not preceded by restatements, 494 disclosures following restatement announcements, and 496 disclosures disclosed within the three-day window around the restatements announcements<sup>6</sup>.

After partitioning the sample based on the timing of the MW disclosure, detailed information about the MW is collected from the company's reports from SEC EDGAR. More specifically, the following information was identified: a) whether the ICOFR report containing the MW disclosure is subject to auditor attestation of SOX 404, b) who discovered the MW, c) severity of the MW (company-level or account-specific), and d) the name of the external audit firm at the time of the MW disclosure.

The current research uses an event study approach to investigate the stock price reaction to disclosures of MWs. Many of these disclosures, however, are made concurrently with other news in the event window. This is especially a concern since a large number of MWs are disclosed on quarterly and annual reports. Therefore, to isolate the impact of other confounding information on market returns, I search the SEC

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<sup>5</sup> These are cases when the firm either discloses a significant deficiency or explain general deficiencies in their ICOFR without referring to the deficiency as a MW.

<sup>6</sup> While 476 of MW disclosures are made within the (-1,+1) window around restatement announcements, the vast majority of the MWs are disclosed on the restatement filing itself. The market reaction tests, shown later, exclude this group of firms from the analyses.

filings for confounding events in the three-day window around the disclosure of a MW. The market reaction tests in this paper are performed for both the full and the clean sample.

### 1.5 Model Specification

The following model is used to test the hypothesis that investors react less negatively to MWs that are disclosed following restatement announcements compared to early MW disclosures.

$$\begin{aligned}
 CAR = & a + B_1 MW\_Follow + B_2 Surprise + B_3 Dir\_Departure + B_4 Late\_Filing \\
 & + B_5 Aud\_Change + B_6 Other\_News + B_7 Big4 + B_8 Aud\_Attest \\
 & + B_9 Auditor\_Discovered + B_{10} CLW + B_{11} Big4xAud\_Attest \\
 & + B_{12} Big4xMW\_Follow + B_{13} Aud\_AttestxMW\_Follow \\
 & + B_{14} Auditor\_DiscoveredxMW\_Follow + B_{15} CLWxMW\_Follow + e
 \end{aligned}$$

CAR refers to the size-adjusted abnormal returns, and is computed as the firm's daily return less the daily return for an equally-weighted portfolio of firms in the same market capitalization decile, and then the abnormal return is cumulated over the interval to compute the window returns. The variable of interest in the model, *MW\_Follow*, is a dummy variable that equals 1 if the MW is disclosed following a restatement that is claimed to have arisen from the MW, and 0 otherwise. Since most of the disclosures of MWs occur in annual and quarterly reports, I include a variable, *Surprise*, to capture the effect of earnings information released during the event window. Consistent with Hammersley et al. (2008), *Surprise* is measured as the difference between earnings announced in the event window and earnings announced four quarters prior divided by the market value four quarters prior to the MW disclosure. If earnings news is announced on an amended quarterly or annual filing, *Surprise* is measured as earnings reported on the amended filing less as-first-reported earnings divided by the market

value four quarters prior. If no earnings are reported in the event window, *Surprise* is equal to 0. Following Beneish et al. (2008), I control for the presence of other news that is released during the three days around the event date. *Aud\_Change* is an indicator variable that equals 1 if the firm announces an auditor change, and 0 otherwise; *Late\_Filing* is an indicator variable that equals 1 if the firm announces a delay in filing annual and/or quarterly reports, and 0 otherwise; *Other\_News* is an indicator variable that equals 1 if the firm announces other news, and 0 otherwise. I also include *Dir\_Departure* to control for announcement of director changes within the event window, and is set to 1 if the firm announces a director change within the event window, and 0 otherwise.

In line with prior literature (Beneish et al. 2008 and Hammersley et al. 2008), I include a variable, *Big4*, that proxy for audit quality. *Big4* is a dummy variable that equals 1 if the firm is audited by one of the Big 4 audit firms, and 0 otherwise. Big 4 auditors provide greater assurance on the quality of financial statements when a MW exists than do small auditors (Hammersley et al. 2008). I expect a positive coefficient on *Big4*.

Since the sample pools all MW disclosures, *Aud\_Attest* is included to determine if the disclosed MW is subject to auditor attestation of ICOFR. An attestation by the external auditor of a disclosed MW indicates that the auditor is protecting investors' interests and is more independent of the client, both of which are valued positively by the market. Another explanation is that larger firms may operate in less uncertain environments; therefore, investors might have prior knowledge and already anticipated certain information before it is publicly disclosed (Collins et al. 1987). A competing

argument, however, is that auditor attestation to reported MWs can imply that management sought to hide information that was later discovered by auditors during the attestation process. Consequently, investors may react negatively to MW disclosures in the expectation that management has the intention to conceal other bad news. The expectation for *Aud\_Attest* coefficient sign is, therefore, an empirical question.

Following Hammersley et al. (2008), I include *Auditor\_Discovered* to distinguish between MWs which are discovered by the external auditor and those which are not, and is equal to 1 if the auditor is involved in concluding that a MW exists in the firm's ICOFR, and 0 otherwise. The effect of *Auditor\_Discovered* on market return could be either positive or negative, depending on whether the market perceives the discovery of MW as part of the routine audit work (Hammersley et al. 2008) or as indicative of management's desire to withhold important information from investors, respectively.

Following Hammersley et al. (2008) and Beneish et al. (2008), *CLW* is used to proxy for the severity of the weakness and is equal to 1, if the firm discloses a company-level weakness, and 0 otherwise. Given that company-level weaknesses are more severe than account-specific MWs, *CLW* is predicted to have a negative coefficient.

An interaction term, *Big4xAud\_Attest*, is also included to capture the market impact of MW disclosures at times when the auditor is required to attest to such disclosures. *Big4*, *Aud\_Attest*, *Auditor\_Discovered*, and *CLW* are also interacted with the main variable, *MW\_Follow*, to examine the extent of the joint effects of these variables on market returns.

## 1.6 Results

### 1.6.1 Descriptive Statistics

Table 1.2 presents the number and percentage of MW disclosures in the sample partitioned on the timing of the disclosure in relation to the prior restatement. The table shows that of the total sample (N=1910), only around 48% of the firms disclose MWs in a timely fashion while the remainder of firms fail to warn investors of misstatements prior to their occurrence. This finding is also consistent with Glass Lewis & Co.'s (2005) finding that the majority of MW disclosures are communicated to the market subsequent to restatement filings.

In order to investigate whether attestation by the external auditor leads to more timely disclosures, the sample is further partitioned according to whether the MW disclosure is subject to a mandated audit under SOX 404. The argument here is that if management is aware that the external auditor will have to certify to their ICOFR assessment, they might be more inclined to provide accurate and timely information regarding the firm's ICOFR.

Column (a) and (c) reveals that of the 969 MW disclosures that are not subject to auditor attestation, only 50% are disclosed beforehand and are not associated with any prior restatement. Even more surprisingly, around 54% of firms that are required to have mandated MW audits fail to make timely disclosures of MWs, and only disclose the weakness at the time, or after, they announce that their prior financial statements should be restated. In fact, the majority of timely disclosures of MWs are made by firms that are not required to have auditor attestation of ICOFR (50.15% vs. 46.12%). The finding raises concerns on the recent debate that compliance with SOX 404B, the

auditor attestation requirement, provides more accurate and timely disclosures to investors. Table 1.3 break downs MW disclosures by year, timing of disclosure, and auditor attestation. As shown, the number of MW disclosures increased after 2003, reaching its peak in 2005, and then falling again afterwards. In 2004, only 13 firms made disclosures that were subject to auditor attestation; however, more than half of these firms were late disclosers. In 2005 when most firms began compliance with SOX 404, the number of MW disclosures increased considerably, particularly for accelerated filers, possibly indicating that management of these firms might have had fewer incentives to voluntarily disclose MWs that were not yet subject to auditor attestation. Even when auditors were required to make such attestation, however, only around 50% of firms made timely disclosures of MWs. While the number of MW disclosures began to decline following 2005, the trend towards non-timely disclosures has prevailed since then, only reversing following 2007.

Table 1.4 displays the industry composition of MW disclosures in the sample. The table reports that firms making early and late disclosures of MWs are almost equally distributed across industry groups, with industries of Durable Manufacturers, Computers, and Financials having the largest concentration of MW disclosures.

Table 1.5 provides a comparison of the characteristics of firms making timely and late disclosures of MW along several dimensions. The table reports that firms reporting early MW warnings are significantly smaller (have a lower market value) than firms making late MW disclosures. Clearly, firms that are subject to auditor attestation under SOX 404 generally have higher market capitalization than those firms that are not subject to such attestation. The table also shows that firms making timely disclosures

are generally less profitable than those which are not. This is evidenced by both a lower ROA and a higher LOSS for firms disclosing early information compared to firms which are not.

Firms reporting timely MW disclosures also appear to be less leveraged than those making late disclosures, which might indicate that these firms refrain from disclosing MWs that would otherwise lead to higher cost of debt (Costello and Moerman 2010). Firms making early and late disclosures do not seem to be significantly different in their sales growth rates (SALESGR). Young firms are also shown to have relatively late disclosures of MWs. The finding is consistent with younger firms being more prone to failure than aged firms (Dopuch et al. 1987), so they tend to withhold information that could otherwise raise concerns about their going-concern prospects. Finally, firms of non-Big 4 auditors seem to provide more timely information about their MW disclosures than firms of Big 4 auditors (also consistent with Rice and Weber 2010).

Table 1.6 presents a breakdown of the number of MW disclosures based on the size of audit firm auditing the client. The table shows that clients of Big4 audit firms have a high frequency of reporting MWs than clients of non-Big4. This is true for both firms which are required to have an auditor attestation and those which do not. However, a closer look at table (5) shows that the number of MW disclosures associated with a concurrent, or a prior, restatement for clients of the Big 4 (N=780) exceeds that of disclosures that are timely made (N=565). In comparing the percentage of timely and non-timely disclosures between Big4 and non-Big4, the table shows that clients of non-Big 4 audit firms are more likely to make timely disclosures of MWs than are clients of



Big 4 auditors ( $355/565=63\%$  vs  $565/1345=42\%$ ). The percentage of timely disclosures is also higher for non-Big4 clients regardless of whether a mandated audit of the disclosure is required.

## **1.6.2 Empirical Results**

### **1.6.2.1 Univariate Analysis**

Table 1.7 shows the market reaction to MW disclosures conditional on the main variables in the model, namely, the size of the audit firm, who discovered the MW, and the severity of the weakness.

Panel (A) of Table 1.7 displays the size-adjusted returns conditional on whether the firm is audited by a Big 4 or a non-Big 4 auditor. As expected, firms seem to experience less negative returns when they are audited by a Big 4 auditor. An audit performed by a Big 4 auditor provides greater credibility to investors for reliance on the fairness of the financial statements; therefore, leading to a lower negative market reaction to a MW disclosure. This is only true, however, when the MW disclosure is made on time. Following restatements, audits made by Big4 and non-Big4 auditors are equally less informative. That is, the market has already learned of prior restatements, and subsequent disclosures of MWs are less informative, regardless of who provides the audit to the firm.

Panel (B) shows that firms disclosing a company-level weakness are generally experiencing negative returns. The only exception is when the weakness is disclosed following a restatement, in which case it has less negative impact on market returns.

Panel (C) shows that an auditor-discovered weakness is valued less negatively by the market only if it is disclosed on time. Auditor-discovered weaknesses also appear to be perceived more favorably by the market than management-detected weaknesses, indicating that investors value the work of external auditors in protecting their interests in their firms.

Table 1.8 presents the test of market reaction to the disclosure of MWs conditional on auditor attestation to the MW. Panels (A) and (B) of table 1.8 show the market reactions to MW disclosures in the contaminated and clean samples, respectively.

For MW disclosures that are not subject to auditor attestation, Column (c) of Panel (A) shows that the mean size-adjusted returns for the *full* sample over the (-1,+1) window surrounding the MW disclosure is -0.7% (p-value=0.09). The marginally significant market reaction for the full sample is driven by the significantly positive returns to the late MW disclosures. Column (b) shows that the mean cumulative abnormal return is a positive 1.6% over the event window when the MW disclosure follows a restatement. The favorable market reaction is likely driven by positive reactions to remediation efforts initiated by the firm after the restatement was announced. Column (a) shows a market reaction of -2% (p-value<1%) when the disclosures are prospective in nature, indicating that firms experience significantly negative returns at the first time investors became aware of a MW.

For firms subject to auditor attestation, a similar pattern of market returns over the event date exists for the sample firms. That is, investors react more negatively to early disclosures of MWs than to late disclosures. Interestingly, even following the

restatement, investors still show to react negatively to the disclosure; however, the reaction has been reduced significantly. While there could also be a positive response by investors to firms' actions to fix the MWs, it seems that the positive reaction is more than offset by concerns of investors about the firm's financial reporting quality raised by the additional attestation by the external auditor. For example, auditors might put pressures on firms to give more explanation of why the restatement occurred. This could possibly raise investors' concerns about (other) areas of control weaknesses that might be indicative of potential misstatements. Also, failure of auditors to discern areas of weaknesses prior to the occurrence of a restatement might raise concerns about auditors' competence and independence of management, causing investors to react negatively when they learn about the MW.

Panel B of table 1.8 replicates the above analysis for the clean sample, examining only those companies with no other news in the three-day window around the disclosure of MWs. The analysis for the clean sample shows results similar to those reported above.

Overall, the univariate results suggest that the market reaction to MW disclosures is contingent on the timing of the disclosure of the MW. The results provide evidence that investors are reacting more negatively to disclosures of MWs that signal potential future misstatements than to disclosures that address prior restatements.

### **1.6.2.2 Multivariate Analysis**

Table 1.9 presents the regression analysis for testing the paper's hypothesis. Recall that *MW\_Follow* is set to 1 when the MW is disclosed following a restatement, and 0 otherwise. The hypothesis predicts a positive coefficient on *MW\_Follow*. Model 1

excludes *MW\_Follow* in an attempt to compare the estimated coefficients to those found in prior literature. Model 2 examines the impact of the timing of the MW disclosure on market returns, excluding interaction effects from the analysis. Consistent with expectations and with the univariate results reported earlier, the coefficient on *MW\_Follow* is positively significant at the 1% level. Model 3 comprises all main and interaction effects. Results of Model 3 show that *MW\_Follow* is still positive and significant. Firms that are subject to MW audits appear to experience negative abnormal returns upon disclosure. Having the auditor confirm to the existence of the MW(s) possibly leads to elevated concerns about the firm's financial reporting quality. The relatively, significant, coefficient for *Auditor\_Discovered* is consistent with investors' belief that auditors are protecting their stake in the firms they own. MW disclosures that follow restatements appear to be punished more by investors when the firm discloses that the auditor discovers the weakness (*Auditor\_Discovered* $\times$ *MW\_Follow* is significantly negative). This is likely the case as investors attribute the discovery of the MW-related restatement to the auditor, and therefore, react negatively to the disclosure. The last two columns, Model 4, report the results for the clean sample. *MW\_Follow* is still positively significant. All other model's variables retain their coefficients.

Overall, the empirical evidence in this paper suggests that market reactions to MW disclosures are much stronger if the disclosure is not preceded by a restatement. This is a natural finding in that investors' beliefs about future earnings shifts based on the restatement and a subsequent disclosure of a MW does not lead to a further significant change in beliefs. However, this is not the only possible economic outcome. As explained above, managers who delay MW disclosures may be punished by the

market and, therefore, the market would drop further at the time of the MW disclosure. Empirically, this is not the case as the market adjusts mainly at the time of the restatement and adjustments at a subsequent MW disclosure are mostly minimal.

### **1.7 Changes in Corporate Governance following MW Disclosures**

The above analyses show that MW disclosures are more likely associated with prior restatements and that the information content of the disclosure is highly conditional on its timing. While the above findings indicate that combining informative and uninformative MW disclosures might reduce the power of the market reaction tests, failure to account for the restatement that is disclosed with, or likely drives, the MW can greatly bias findings related to issues that extend beyond market reaction studies.

In this section, I demonstrate the importance of distinguishing restatement-related MWs from other MW disclosures. Using the above methodology, I show that failure to control for restatements might lead to inaccurate inferences on the association between MW disclosures and corporate governance changes which was documented in Johnstone et al. 2011.

Johnstone et al. (2011) document that disclosure of SOX 404 MWs is positively associated with subsequent turnover of members of boards of directors, audit committees, CFO, and CEO. Johnstone et al. (2011) argues that a MW disclosure is a material negative event that destabilizes the firm's governance structure and therefore, should lead to managers' and/or directors' turnover. The following model is tested by Johnstone et al. (2011):

$$\begin{aligned}
TURNOVER = & a + B_1 MW + B_2 CEOCHAIR + B_3 INDEPDIR + B_4 BOD\_SIZE \\
& + B_5 LNASSETS + B_6 LEVERAGE + B_7 ROA + B_8 LOSS \\
& + B_9 STKPERFORM + B_{10} BKMKT + B_{11} INSTISHR + B_{12} ANALYST \\
& + B_{13} EXCHANGE + e
\end{aligned}$$

According to Johnstone et al. (2011), the model variables are defined as follows:

*BOD\_TURNOVER*: Equals one if there is a non-management turnover on the board of directors in year  $t + 1$ ; zero otherwise.

*AC\_TURNOVER*: Equals one if there is turnover on the audit committee in year  $t + 1$ ; zero otherwise.

*CFO\_TURNOVER*: Equals one if there is CFO turnover in year  $t + 1$ ; zero otherwise.

*CEO\_TURNOVER*: Equals one if there is CEO turnover in year  $t + 1$ ; zero otherwise.

*MW*: Equals one if a firm reports an MW in year  $t$ ; zero otherwise.

*CEOCHAIR*: Equals one if the CEO is also the board chairperson in year  $t$ ; zero otherwise.

*INDEPDIR*: Equals the proportion of independent directors on board in year  $t$ .

*BOD\_SIZE*: Equals the number of directors serving on the board in year  $t$ .

*LNASSETS*: Equals the logarithm of total assets in year  $t$ .

*LEVERAGE*: Equals total debt/total assets in year  $t$ .

*ROA*: Equals net income/total assets in year  $t$ .

*LOSS*: Equals one if the company reports a net loss; zero otherwise.

*STKPERFORM*: Equals firm stock return less the CRSP value-weighted return in year  $t$ .

*BKMKT*: Equals the ratio of book value to market value.

*INSTISHR*: Equals the proportion of institutional shareholdings of common stock in the firm.

*ANALYST*: Equals the average number of analysts following the firm.

*EXCHANGE*: Equals one if the firm is listed on the NYSE; zero otherwise.

Using a logistic regression model, Johnstone et al.'s paper find that *MW* is significantly positive, indicating that the disclosure of a MW is positively associated

with turnover of key individuals (members of the board of directors, audit committee, CEO, CFO) during the year following the disclosure of a MW.

Even though Johnstone et al.'s evidence suggests that firms that disclose a MW have more turnover of key personnel than firms that did not disclose a MW, the authors did not account for the impact of restatements announced during the same period of the MW disclosure. This is important for two reasons. First, as argued by the PCAOB, and as shown above, MW disclosures are more likely associated with restatement announcements. Second, the literature has shown that restatements are positively associated with management and/or directors' turnover (Argawal and Cooper 2007; Desai et al. 2006; Srinivasan 2005). If the above reasoning is true, then it is also possible that the finding shown by Johnstone et al. is likely driven by the impact of the restatement (or the combined impact of the restatement and the MW) rather than the MW disclosure alone. For example, a MW might not have a material adverse impact on the firms' financial reporting quality to warrant a manager/director change. But to the extent that it is associated with a restatement, it becomes more likely that it will lead to a higher turnover.

Similar to Johnstone et al., I collect a sample of firm-year observations representing MW SOX 404 disclosures from 2004 through 2006. I also collect a control sample of firm-year observations with no MWs from 2004 through 2007<sup>7</sup>. The two samples were gathered from the Audit Analytics database. Further, I collect data on board of director, audit committee, CEO, and CFO changes in the year following the

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<sup>7</sup> The different sample periods for the two samples are because of Johnstone et al.'s second hypothesis which requires a subsequent year (2007) data.

fiscal year covered by the ICOFR report. Using Corporate Library, I further obtain data on other control variables (i.e. *CEOCHAIR*, *INDEPDIR*, *BOD\_SIZE*, *INSTISHR*) used by Johnstone et al. (2011)<sup>8</sup>. I then use the Merged CRSP-Compustat database to collect necessary data on *LNASSETS*, *LEVERAGE*, *ROA*, *LOSS*, *BKMKT*, *EXCHANGE*. I finally use CRSP and IBES to gather data on *STKPERFORM* and *ANALYST*, respectively. The final sample as compared to Johnstone et al.'s is shown in Table 1.10 under 'Replicated Analysis: All Obs.' columns.

As an additional step to Johnstone et al.'s methodology, and to ensure that the positive association in their paper persists after controlling for the restatement impact, I identify an additional dummy variable, *RESTATE*, that equals 1 for a) restatements that are disclosed during the prior fiscal year up till the turnover date (if *TURNOVER*=1) and b) restatements that are disclosed during the prior fiscal year up till the file date of the financial reports (if *TURNOVER*=0).

Table 1.10 shows the number and percentage of restatements for different dependent-variable models. The number and percentages of restatements are reported under 'Replicated Analysis: No. (%) of Obs. Related to restatements' columns in table 1.10.

As shown in the table, restatements are more likely identified with firms which report a MW than with firms which do not. This appears to be consistent across the 4 models.

To ensure my analysis compare well to Johnstone et al., I first re-examine the association between MW disclosures and turnover using the same methodology they

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<sup>8</sup> Johnstone et al. (2011) use Risk Metrics to obtain these variables.



employ (i.e. not controlling for restatements). As shown in the ‘Replicated Model (No RESTATE)’ columns in tables 1.11 and 1.12, the results compare well to those of Johnstone (‘Johnstone et al.’s Model’ columns). That is, in all the models, I show that MW is positively associated with turnover.

I now re-run the tests after controlling for *RESTATE* and observe the change in the MW coefficient, if any. The results are reported under columns ‘Replicated Model (RESTATE INC.)’ in tables 1.11 and 1.12. As shown, the MW coefficient is no longer significant. That is, conditional on a restatement, MW disclosures do not appear to have a significant impact on turnover. In other words, the turnover that follows MW disclosure is likely due to the restatement impact, rather than to the effect of the MW. The only exception is the CFO turnover analysis which still shows a positive impact of a MW on the turnover of a CFO. The CFO holds the primary responsibility for the firm’s ICOFR, therefore, observing a positive impact of a MW on turnover is intuitive.

As it might take some time for firms to restate their financials before they replace a manager/director, I also expand the restatements sample to include also those firms that announce a restatement within 60 days following the turnover date. The results remain consistent with those reported above. Overall, the findings shed light on the importance of separating out MW-related restatements from other MWs. As shown above, failure to do so can bias the research findings and implications.

## **1.8 Conclusion**

Given the large number of firms making MW disclosures following financial restatements, this paper examines whether all MW disclosures are equally informative to investors. I isolate a unique dataset of MWs where the MW is related to a prior

restatement and classify all MW disclosures into two groups, depending on when the disclosure was made. MW disclosures that are not associated with prior restatement are classified as “early MW” disclosures and those that were disclosed following a related restatement are classified as “late MW” disclosures. I hypothesize that due to differential information content, shareholder and market reaction will differ across these groups.

I find that more than 50% of the MW disclosures are made at the time, or after, the firm announces a restatement. I also find that a large proportion of firms making late disclosures are subject to auditor attestation of SOX 404. The market reacts less negatively to MW disclosures that are made after the firm announces a restatement, indicating that investors have already anticipated the disclosure of the MW and impounded such information into the stock price at the time the restatement news became publicly known.

While I show that MW disclosures following restatements have a lower market impact than early MW disclosures, the difference in market reaction appears to be lower for firms that are required to have auditor attestation of MW disclosures. Auditor attestation could, by itself, provide valuable information about the firm’s ICOFR, regardless of when it is disclosed to investors. For example, auditors might put pressures on firms to give more explanation of why the restatement occurred. This could possibly raise investors’ concerns about (other) areas of control weaknesses that might lead to additional restatements.

I finally employ the paper’s methodology to demonstrate the importance of controlling for restatements that primarily precede or are made concurrent with a MW

disclosure. More specifically, I show that after controlling for restatements, the impact of MW disclosures on turnover – shown in prior research - is greatly reduced. Taken together, these results demonstrate the need to assess jointly the restatements and MW disclosures rather than studying them in isolation.

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## 1.10 Tables for Chapter 1

**Table 1.1 - Sample Selection**

MW disclosures sample	5,156
Firms listed on CRSP	2,302
Less – observations with multiple unrelated restatements	(297)
Less – MW disclosures before the firm goes public	(32)
Less – observations where no MW reported	(30)
Less – Duplicate Observations	(33)
Final sample of firms disclosing MWs	1,910
Firms disclosing early MWs	920
Firms disclosing late MWs	990
With restatement	496
After restatement	494

The table summarizes the sample selection procedure.

**Table 1.2 – Number and Percentage of MW Disclosures Partitioned by Timing of Disclosure and Auditor Attestation**

Early MW disclosures (N=920) (48.2%)		MW disclosed with or after restatements (N=990) (51.8%)		Total Sample (N=1910) (N=100.0%)		MW disclosed with restatements (N=496) (26.0%)	
SOX302 (a)	SOX404 (b)	SOX302 (c)	SOX404 (d)	SOX302 (e)	SOX404 (f)	SOX302 (g)	SOX404 (h)
486 (50.15%)	434 (46.12%)	483 (49.85%)	507 (53.88%)	969 (50.73%)	941 (49.27%)	235 (24.25%)	261 (27.74%)

The table shows the number and percentage of MW disclosures partitioned by a) timing of the MW disclosure and b) whether the disclosure is subject to SOX 404 auditor attestation. Columns (a) and (b) show the number (percentage) of firms that provide early MW disclosures. Columns (c) and (d) show the number (percentage) of firms that disclose MWs at the time of, or after the restatement announcement. Columns (e) and (f) show the number (percentage) of firms in the total sample. Columns (g) and (h) show the number (percentage) of firms that disclose MWs at the time of the restatement announcement.



**Table 1.3 - Number of MW Disclosures Partitioned by Timing of Disclosure, Auditor Attestation, and Year**

Year Disclosed	Early MW disclosures (N=920) (48.2%)		MW disclosed with or after restatements (N=990) (51.8%)		Total Sample (N=1910) (100%)		MW disclosed with restatements (N=496) (26%)	
	SOX302 (a)	SOX404 (b)	SOX302 (c)	SOX404 (d)	SOX302 (e)	SOX404 (f)	SOX302 (g)	SOX404 (h)
2002	5	-	2	-	7	-	1	-
2003	14	-	32	-	46	-	8	-
2004	65	5	103	8	168	13	39	1
2005	130	186	169	188	299	374	80	90
2006	87	73	81	124	168	197	49	75
2007	72	72	45	102	117	174	33	48
2008	78	61	29	57	107	118	13	31
2009	35	37	22	28	57	65	12	16

The table shows the number and percentage of MW disclosures partitioned by a) timing of the MW disclosure, b) whether the disclosure is subject to SOX 404 auditor attestation, and c) year in which the MW was disclosed. Columns (a) and (b) show the number (percentage) of firms that provide early MW disclosures. Columns (c) and (d) show the number (percentage) of firms that disclose MWs at the time of, or after the restatement announcement. Columns (e) and (f) show the number (percentage) of firms in the total sample. Columns (g) and (h) show the number (percentage) of firms that disclose MWs at the time of the restatement announcement.

**Table 1.4 - Industry Distribution of MW Disclosures**

Industry Description	All firms N	Early MW disclosures (N=920)				MW disclosed with or after restatements			
		SOX302		SOX404		SOX302		SOX404	
		N	%	N	%	N	%	N	%
Mining and Construction	59	16	3.29	17	3.92	18	3.73	8	1.58
Food	35	11	2.26	8	1.84	6	1.24	10	1.97
Textiles and Printing	53	13	2.67	13	3.00	11	2.28	16	3.16
Chemicals	36	6	1.23	11	2.53	<b>10</b>	2.07	9	1.78
Pharmaceuticals	111	40	8.23	17	3.92	26	5.38	28	5.52
Extractive	62	16	3.29	14	3.23	12	2.48	20	3.94
Durable manufacturers	383	111	<b>22.84</b>	92	<b>21.20</b>	105	<b>21.74</b>	75	<b>14.79</b>
Transportation	109	31	6.38	23	5.30	26	5.38	29	5.72
Utilities	42	6	1.23	11	2.53	13	2.69	12	2.37
Retail	179	35	7.20	22	5.07	55	11.39	67	13.21
Services	170	32	6.58	34	7.83	51	10.56	53	10.45
Computers	328	95	<b>19.55</b>	72	<b>16.59</b>	82	<b>16.98</b>	79	<b>15.58</b>
Financial	309	64	<b>13.17</b>	91	<b>20.97</b>	62	<b>12.84</b>	92	<b>18.15</b>
Other	34	10	2.06	9	2.07	6	1.24	9	1.78
Total	1910	471	100.00	409	100%	483	100%	507	100%

Industry groups are determined by SIC codes as follows: Mining and Construction (1000-1999 excluding 1300-1399), Food (2000-2111), Textiles, Printing, and Publishing (2200-2799), Chemicals (2800-2824, and 2840-2899), pharmaceuticals (2830-2836), extractive (2900-2999, 1300-1399), durable manufacturers (3000-3999, excluding 3570-3579 and 3670-3679), computers (7370-7379, 3570-3579, 3670-3679), transportation (4000-4899), utilities (4900-4999), retail (5000-5999), financial (6000-6799), services (7000-8999, excluding 7370-7379).

**Table 1.5 - Characteristics of Firms Disclosing MWs**

Variable	SOX302 Disclosures							SOX404 Disclosures							
	Early MW disclosures			MW disclosed with or after restatements				t-test	Early MW disclosures			MW disclosed with or after restatements			
	Mean	Med	STD	Mean	Med	STD	Mean		Med	STD	Mean	Med	STD	t-test	
ASSETS	3164	88	40714	1281	190	3936	101	6871	406	82685	7144	678	65750	-0.05	
MVAL	412	75	2892	837	116	2963	-1.97**	759	276	1735	2369	619	6849	-3.45***	
ROA	-0.18	-0.02	0.5	-0.1	0	0.43	-2.31**	-0.04	0.01	0.21	-0.02	0.02	0.21	-1.31	
LOSS	0.56	1	0.5	0.48	0	0.5	2.06**	0.39	0	0.49	0.28	0	0.45	2.82***	
LEV	0.44	0.36	0.35	0.54	0.47	0.53	-2.47**	0.39	0.35	0.26	0.4	0.37	0.21	-0.33	
SALESGR	0.88	0.13	6.1	1.09	0.08	14.88	-0.22	0.28	0.1	1.2	0.16	0.11	0.34	190*	
AGE	5.68	6	191	5.16	5.01	156	3.93***	6.01	6.01	152	6.12	6.01	128	-0.94	
BIG4	0.53	1	0.5	0.71	1	0.45	-4.88***	0.71	1	0.45	0.87	1	0.33	-4.84***	

The table reports characteristics of firms disclosing MWs in the sample. ASSETS is measured as the total assets at year-end. MVAL is market value of the firm at year end. ROA is return on assets and is measured as income before extraordinary items divided by total assets at year-end. LOSS is equal to 1 if the aggregate earnings before extraordinary items in t and t-1 is negative, and 0 otherwise. LEV is leverage of the firm at year-end, and is measured as total liabilities divided by total assets. SALESGR is the percentage change in sales, and is measured as sales(t) – sales (t-1)/sales (t-1). Age is measured as the number of years the firm's stock has been publicly traded. BIG4 equals 1 if the firm is audited by one of the Big 4, and 0 otherwise.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10% respectively

**Table 1.6 - Distribution of MW Disclosures by Audit-Firm Size**

Type of Auditor	N	Early MW disclosures (N=920)		MW disclosed with or after restatements (N=990)	
		SOX302	SOX404	SOX302	SOX404
		Big4	1345	255	310
Non-Big4	565	231	124	133	77
Total	1910	486	434	483	507

The table shows the number of MW disclosures by the size of the firm's auditor.

**Table 1.7 - Market Reaction Conditional on Size of Auditor, Severity of MW, and Who Discovered the MW**

**Panel (A): Size-Adjusted Returns for MW Disclosures Conditional on Size of Audit Firm**

	Full Sample			Early MW disclosures			MWs following restatements		
	Big4=1	Big4=0	t-test	Big4=1	Big4=0	t-test	Big4=1	Big4=0	t-test
CARs (-1,+1)	-0.6	-1.7	1.92**	-1.5	-2.5	-1.51	0.6	1.3	0.76
Sample Size	877	421		504	331		373	90	
% negative	50	62		58	66		49	49	
p-value	0.03	0.00		1	1		0.17	0.13	

The table shows the size-adjusted returns to MW disclosures conditional on whether the firm is audited by a Big 4 auditor Big4 is a dummy variable equals to 1 if the firm is audited by one of the Big 4 auditing firms, and 0 otherwise.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10%, respectively

**Panel (B): Size-Adjusted Returns for MW Disclosures Conditional on Severity of the MW**

	Full Sample			Early MW disclosures			MWs following restatements		
	CLW=1	CLW=0	t-test	CLW=1	CLW=0	t-test	CLW=1	CLW=0	t-test
CARs (-1,+1)	-1.2	-0.8	0.83	-2.1	-1.7	0.63	1.8	0.4	-1.33
Sample Size	527	771		407	428		120	343	
% negative	58	55		63	59		43	51	
p-value	0.01	0.01		<0.0001	<0.0001		0.07	0.35	

The table shows the size-adjusted returns to MW disclosures conditional on whether the MW is a company-level weakness. CLW is a dummy variable equals to 1 if the firm discloses a company-level weakness, and 0 otherwise.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10%, respectively

**Panel (C): Size-Adjusted Returns for MW Disclosures Conditional on who discovered the MW**

	Full Sample			Early MW disclosures			MWs following restatements		
	A_Disc=1	A_Disc=0	t-test	A_Disc=1	A_Disc=0	t-test	A_Disc=1	A_Disc=0	t-test
CARs	-0.8	-1.3	-0.83	-1.5	-2.7	-1.74*	0.2	2.2	1.9*
Sample Size	887	411		539	296		348	115	
% negative	56	58		59	65		52	40	
p-value	0.00	0.01		0.00	<0.0001		0.56	0.03	

The table shows the size-adjusted returns to MW disclosures conditional on whether the auditor discovered the MW. Auditor\_Disc is a dummy variable equals to 1 if the auditor concludes that a MW exists, and 0 otherwise.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10%, respectively

**Table 1.8 - Market Reaction to MW disclosures – Contaminated and Clean Samples**

**Panel A – Size-Adjusted Returns for MW disclosures Partitioned by Auditor Attestation and Timing of Disclosure – Contaminated Sample**

	MW disclosures <i>not subject</i> to SOX404 auditor attestation				MW disclosures subject to SOX404 auditor attestation			
	Full Sample (a)	Early MW Disclosures (b)	Late MW Disclosures (c)	t-test (d)	Full Sample (e)	Early MW Disclosures (f)	Late MW Disclosures (g)	t-test (h)
CARs	-0.70%	-2.00%	1.60%	-4.04	-1.20%	-1.80%	-0.08%	-3.65
Sample Size	639	415	224		659	420	239	
p-value	0.0877	0.0002	0.0245	<0.0001	<0.0001	<0.0001	0.82	0.0003
% Negative	55%	62%	43%		58%	60%	55%	

The table presents the size-adjusted returns for the *contaminated* sample of firms disclosing MWs. Columns (a) through (c) show the size-adjusted returns for MW disclosures that are not subject to SOX 404 auditor attestation. Columns (e) through (g) show the size-adjusted returns for MW disclosures that are subject to SOX 404 auditor attestation.

**Panel B – Size-Adjusted Returns for MW disclosures Partitioned by Auditor Attestation and Timing of Disclosure – Clean Sample**

	MW disclosures <i>not subject</i> to SOX404 auditor attestation				MW disclosures subject to SOX404 auditor attestation			
	Full Sample (a)	Early MW Disclosures (b)	Late MW Disclosures (c)	t-test (d)	Full Sample (e)	Early MW Disclosures (f)	Late MW Disclosures (g)	t-test (h)
CARs	-0.40%	-1.80%	1.90%	-3.64	-1.10%	-1.70%	-0.01%	-2.83
Sample Size	468	297	171		456	291	165	
p-value	0.3919	0.0028	0.0273	0.0003	0.0002	<0.0001	0.7184	0.0049
% Negative	54%	61%	43%		59%	63%	53%	

The table presents the size-adjusted returns for the *clean* sample of firms disclosing MWs. Columns (a) through (c) show the size-adjusted returns for MW disclosures that are not subject to SOX 404 auditor attestation. Columns (e) through (g) show the size-adjusted returns for MW disclosures that are subject to SOX 404 auditor attestation.

**Table 1.9 Regression Model**

Variables	Predicted sign	Model 1 (N=1229)		Model 2 (N=1229)		Model 3 (N=1229)		Model 4 (N=869)	
		Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	+/-	-0.012	0.064	-0.018	0.006	-0.021	0.011	-0.015	0.098
MW_Follow	+			0.023	<.0001	0.052	0.000	0.053	0.001
Surprise	+	0.011	0.003	0.010	0.005	0.010	0.005	0.010	0.004
Dir_Departure	-	-0.012	0.439	-0.012	0.447	-0.013	0.409		
Late_Filing	-	-0.026	0.010	-0.022	0.028	-0.024	0.016		
Aud_Change	-	-0.108	0.001	-0.109	0.001	-0.106	0.001		
Other_News	+/-	0.003	0.655	0.003	0.676	0.004	0.516		
Big4	+	0.013	0.020	0.008	0.130	0.001	0.864	-0.006	0.515
Aud_Attest	+/-	-0.010	0.054	-0.009	0.090	-0.017	0.065	-0.022	0.031
Auditor_Discovered	+/-	0.005	0.315	0.003	0.566	0.013	0.054	0.009	0.248
CLW	-	-0.003	0.570	0.001	0.836	-0.003	0.573	-0.005	0.484
Big4xAud_Attest	+/-					0.019	0.079	0.031	0.013
Big4xMW_Follow	+/-					-0.010	0.424	-0.005	0.736
Aud_AttestxMW_Follow	+/-					-0.011	0.334	-0.016	0.208
Auditor_DiscoveredxMW_Follow	+/-					-0.030	0.012	-0.033	0.017
CLWxMW_Follow	+/-					0.014	0.193	0.026	0.047
ADJ R2			2.240%		3.620%		4.380%		4.770%

**Variable Definitions:**

**CARs:** Size-adjusted returns, and is computed as the firm's daily return less the daily return on an equally-weighted portfolio of firms in the same market capitalization decile.

**MW\_Follow:** A dummy variable equals to 1 if the MW is disclosed following a restatement, and 0 otherwise.

**Surprise:** Is the difference between earnings announced in the event window and earnings announced four quarters prior divided by the market value four quarters prior. If earnings is released on an amended quarterly or annual filing, surprise is measured as earnings reported on the amended filing less originally reported earnings divided by the market value four quarters prior. Surprise is equal to 0 if no earnings are reported in the event window.

**Dir\_Departure:** A dummy variable equals to 1 if there is a director change in the event window, and 0 otherwise.

**Late\_Filing:** A dummy variable equals to 1 if there is a late filing report in the event window, and 0 otherwise.

**Aud\_Change:** A dummy variable equals to 1 if there is an auditor change in the event window, and 0 otherwise.

**Other\_News:** A dummy variable equals to 1 if there is other confounding news in the event window, and 0 otherwise.

**Big4:** A dummy variable equals to 1 if the firm is audited by one of the Big 4 auditing firms, and 0 otherwise.

**Aud\_Attest:** A dummy variable equals to 1 if the MW disclosure is subject to SOX 404 auditor attestation, and 0 otherwise.

**Auditor\_Discovered:** A dummy variable equals to 1 if the auditor concludes that a MW exists, and 0 otherwise.

**CLW:** A dummy variable equals to 1 if the firm discloses a company-level weakness, and 0 otherwise.

**Table 1.10 Sample observations as compared to Johnstone et al.'s 2011**

	BOD_TURNOVER			AC_TURNOVER			CEO_TURNOVER			CFO_TURNOVER		
	Johnstone et al's Analysis	Replicated Analysis		Johnstone et al's Analysis	Replicated Analysis		Johnstone et al's Analysis	Replicated Analysis		Johnstone et al's Analysis	Replicated Analysis	
		All Obs.	No. (%) of Obs. related to restatements		All Obs.	No. (%) of Obs. related to restatements		All Obs.	No. (%) of Obs. related to restatements		All Obs.	No. (%) of Obs. related to restatements
No-MW sample	3,602	2,155	74 (3.5%)	1,908	2,155	114 (5.3%)	1,908	2,155	68 (3.15%)	1,908	2,155	67 (3.1%)
MW sample	733	259	116 (44.7%)	549	259	79 (30.5%)	549	259	117 (45.1%)	549	259	116 (44.8%)
Total Sample	4,335	2,414	190 (7.9%)	2,457	2,414	193 (8.0%)	2,457	2,414	185 (7.7%)	2,457	2,414	183 (7.6%)

The table reports the make-up of sample observations as compared to Johnstone et al. 2011 for the 4 models. The first column under each model 'Johnstone et al.' Analysis' shows the number of observations used in Johnstone et al.'s paper. The second column 'All Obs.' shows the number of observations in the sample used to replicate Johnstone et al.'s paper. The 'No.(%) of Obs. related to restatements' show the number and proportion of restatements that are disclosed during the prior fiscal year up till the turnover date (if  $TURNOVER=1$ ) and restatements that are disclosed during the prior fiscal year up till the file date of the financial reports for the following fiscal year (if  $TURNOVER=0$ ). BOD\_TURNOVER: equals one if there is non-management turnover on the board of directors in year  $t + 1$ ; zero otherwise. AC\_TURNOVER: equals one if there is turnover on the audit committee in year  $t + 1$ ; zero otherwise. CFO\_TURNOVER: equals one if there is CFO turnover in year  $t + 1$ ; zero otherwise. CEO\_TURNOVER: equals one if there is CEO turnover in year  $t + 1$ ; zero otherwise.

**Table 1.11**  
**Regression Model of Board of Director and Audit Committee Turnover on MW Disclosures**

Variables	Exp. sign	BOD_TURNOVER						AC_TURNOVER					
		Johnstone et al.'s Model		Replicated Model (No RESTATE)		Replicated Model (RESTATE INC.)		Johnstone et al.'s Model		Replicated Model (No RESTATE)		Replicated Model (RESTATE INC.)	
		Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2
<i>Intercept</i>	+/-	-0.543	0.756	-1.449	18.814***	-1.461	19.051***	-0.420	0.308	-0.479	2.700*	-0.505	2.987*
<i>MW</i>	+	0.548	32.402***	0.473	10.089***	0.278	2.615	1.260	145.505***	0.418	9.249***	0.225	2.124
<i>CEOCHAIR</i>	+	0.167	5.685***	-10.579	0.001	-10.557	0.001	-0.119	1.997	-10.909	0.0015	-10.87	0.002
<i>INDEPDIR</i>	+	-0.336	1.842	-0.755	5.790***	-0.738	5.511**	0.105	0.119	-0.382	1.9639	-0.375	1.891
<i>BOD_SIZE</i>	+/-	0.084	24.961***	0.093	19.238***	0.094	19.822***	0.036	3.061*	0.044	5.367**	0.0451	5.750*
<i>LNASSETS</i>	+	-0.050	2.122	-0.078	2.963*	-0.081	3.208*	-0.098	5.51	-0.086	4.824**	-0.09	5.292*
<i>Leverage</i>	+	0.340	7.101***	0.521	3.799**	0.519	3.748**	0.347	5.397**	0.303	1.6623	0.284	1.455
<i>ROA</i>	-	-1.289	8.258***	0.252	0.187	0.251	0.185	-0.780	2.342*	-0.174	0.1026	-0.149	0.076
<i>LOSS</i>	+	0.265	4.532***	0.436	5.799**	0.441	5.928**	0.349	6.175***	0.514	9.726***	0.4991	9.167***
<i>STKPERFORM</i>	-	0.371	11.810	-0.438	8.175***	-0.438	8.111***	0.160	1.612	-0.524	16.413***	-0.538	17.221***
<i>BKMKT</i>	+	0.154	1.642*	-0.056	0.382	-0.068	0.558	0.202	2.134*	-0.022	0.0647	-0.029	0.108
<i>INSTISHR</i>	+	-0.170	2.380	-0.072	0.723	-0.068	0.645	-0.057	0.172	0.018	0.0611	0.0223	0.092
<i>ANALYST</i>	+	0.012	4.368**	0.009	3.261*	0.009	3.164*	0.004	0.295	0.011	5.595**	0.011	5.736**
<i>EXCHANGE</i>	+/-	0.086	1.171	-0.018	0.023	-0.018	0.023	0.083	0.756	0.147	1.9427	0.1486	1.988
<i>RESTATE</i>	+					0.454	5.727**					0.3565	7.624***
<i>N</i>		4,335		2,414		2,414		4,335		2,414		2,414	

The table reports regression results of the impact of MW disclosures on subsequent board of director and audit committee turnover. The 'Johnstone et al.'s Model' column shows the numbers as reported in Johnstone et al.'s 2011 paper. The 'Replicated Model (No RESTATE)' column shows the coefficients and their significance based on a replicated model of Johnstone et al.'s 2011 paper. The 'Replicated Model (RESTATE INC)' column shows the coefficients and their significance based on a replicated model of Johnstone et al.'s 2011 paper after controlling for restatements. BOD\_TURNOVER: equals one if there is non-management turnover on the board of directors in year t + 1; zero otherwise. AC\_TURNOVER: equals one if there is turnover on the audit committee in year t + 1; zero otherwise.

\*\*\*, \*\*, \* indicate significance at the 1%, 5%, and 10% levels, respectively

**Table 1.12**  
**Regression Model of CEO and CFO Turnover on MW Disclosures**

Variables	Exp. sign	CEO_TURNOVER						CFO_TURNOVER					
		Johnstone et al.'s Model		Replicated Model (No RESTATE)		Replicated Model (RESTATE INC.)		Johnstone et al.'s Model		Replicated Model (No RESTATE)		Replicated Model (RESTATE INC.)	
		Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2	Coeff	Wald X2
<i>Intercept</i>	+/-	-2.721	2.820*	-2.969	31.127***	-3.023	32.041***	-0.969	0.651	-2.061	17.893***	-2.067	18.025***
<i>MW</i>	+	0.476	4.820**	0.399	3.270*	-0.032	0.016	0.701	18.546***	0.605	9.891***	0.461	4.235**
<i>CEOCHAIR</i>	-	-0.337	3.722**	-10.061	0.000	-9.959	0.000	-0.170	1.730*	-10.028	0.0004	-9.996	0.000
<i>INDEPDIR</i>	+	0.166	0.064	0.063	0.015	0.070	0.019	-0.021	0.002	0.280	0.3616	0.282	0.365
<i>BOD_SIZE</i>	+/-	0.078	3.069*	0.015	0.195	0.019	0.297	-0.020	0.335	0.026	0.6777	0.027	0.725
<i>LNASSETS</i>	+	-0.084	0.865	-0.040	0.310	-0.046	0.419	-0.103	2.423	-0.100	2.2852	-0.104	2.446
<i>Leverage</i>	+	-0.329	1.026	0.334	0.659	0.265	0.405	0.103	0.202	0.200	0.2832	0.184	0.238
<i>ROA</i>	-	-0.624	0.448	-0.896	1.454	-0.982	1.712	1.088	2.102	-1.079	2.4193	-1.079	2.437
<i>LOSS</i>	+	1.034	16.183***	0.355	1.917	0.296	1.324	0.690	11.309***	0.289	1.504	0.279	1.405
<i>STKPERFORM</i>	-	-0.472	3.409**	-0.914	11.380***	-0.941	12.070***	-0.010	0.003	-0.621	7.4531***	-0.626	7.580***
<i>BKMKT</i>	+	0.482	3.680**	-0.011	0.010	-0.028	0.058	-0.004	0	-0.035	0.1072	-0.038	0.121
<i>INSTISHR</i>	+	-0.518	3.231	-0.149	1.377	-0.141	1.232	0.189	0.747	0.005	0.0017	0.008	0.005
<i>ANALYST</i>	+	-0.016	0.951	0.008	0.888	0.008	0.858	-0.005	0.174	-0.007	0.7887	-0.007	0.775
<i>EXCHANGE</i>	+/-	0.130	0.375	0.206	1.096	0.200	1.022	0.090	0.348	0.082	0.221	0.079	0.209
<i>RESTATE</i>	+					0.735	12.111***					0.256	1.581
<i>N</i>		4,335		2,414		2,414		4,335		2,414		2,414	

The table reports regression results of the impact of MW disclosures on subsequent CEO and CFO turnover. The 'Johnstone et al.'s Model' column shows the numbers as reported in Johnstone et al.'s 2011 paper. The 'Replicated Model (No RESTATE)' column shows the coefficients and their significance based on a replicated model of Johnstone et al.'s 2011 paper. The 'Replicated Model (RESTATE INC.)' column shows the coefficients and their significance based on a replicated model of Johnstone et al.'s 2011 paper after controlling for restatements. CFO\_TURNOVER: equals one if there is CFO turnover in year t + 1; zero otherwise. CEO\_TURNOVER: equals one if there is CEO turnover in year t + 1; zero otherwise.

\*\*\*, \*\*, \* indicate significance at the 1%, 5%, and 10% levels, respectively



## Chapter 2: Restatement Announcements and Prior Material Weakness Disclosures

### 2.1 Introduction

This paper examines the market reaction to restatement announcements by studying the combined effects of restatements and MW disclosures. Reporting of a MW is an implicit acknowledgement by firm's management that there is a likelihood of possible misstatement in past, current, or future financial statements<sup>9</sup>. If MW disclosures achieve their intended purpose of communicating issues that are likely to cause material misstatements, then restatements that were the result of previously disclosed control deficiencies should contain less incremental bad news relative to restatements that were made without a prior MW warning. The main focus of my paper is on contrasting restatements that were preceded by a MW disclosure with those that were not preceded by an earlier MW disclosure.

In my first paper, I established that MW disclosures that precede a restatement induce a negative market reaction whereas those that follow a restatement do not elicit any reaction. In sharp contrast, restatements cause the market to respond negatively even if they were preceded by an earlier MW disclosure. In particular, I show that firms that disclose an early MW disclosure exhibit lower future operating performance and have a higher litigation risk when compared with firms that announce restatements without an earlier MW disclosure. To compare investors' reaction across the early MW

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<sup>9</sup> According to PCAOB (2004) and Hammersley et al. (2008), a MW provides investors with an early warning about any deficiency in the firms' ICFR, and subsequently, any material misstatements that might follow in the financial statements.

disclosure group and other firms, I start with the sample of all restatements and then check if the restatement was preceded by a MW related to the restatement in any prior period or a MW in one of the prior four quarters preceding the restatement (the prior warning group). The non-prior warning group comprises *all* restating firms which are not in the prior warning group. I then examine differences in market reaction, future operating performance, and litigation patterns across these groups.

Consistent with prior research, I find that the majority of firms fail to disclose a MW prior to announcing a restatement. Examining the market reaction across the two groups, I find that firms issuing a restatement following a MW disclosure experience more significant negative returns than firms issuing a restatement without a prior MW warning. The early MW news in fact strengthens the adverse market reaction to the restatement. Specifically, the univariate analysis shows that the cumulative abnormal returns over the 3-day window around all (income-decreasing) restatement announcements following a MW is -3.8% (-4.6%) compared to -1.4% (-1.4%) for firms whose restatements were not preceded by a prior MW disclosure. The significant difference in returns across the groups holds even after restricting the non-MW-disclosing firms to those that eventually disclose a MW after they announce a restatement.

I then examine whether restatements that follow a MW have more adverse consequences than other restatements. In particular, I examine the change in future operating performance following restatement announcements across the two groups. I find that firms whose restatements follow a MW disclosure suffer a more negative change in operating performance than firms whose restatements were not preceded by a

MW. This finding could be explained as follows: firms could have disclosed an earlier MW warning when they perceive future earning changes to be disappointing. This argument is based on empirical findings in the voluntary disclosure literature that shows that the market reaction to negative earnings surprises are larger if preceded by a (voluntary) disclosure from management that earnings will be lower than expected (see for example, Kaznik and Lev 1995). I find a similar pattern holds for MW warnings disclosures even though MW disclosures are not in any sense, voluntary<sup>10</sup>. In particular, when comparing the future earnings changes for the two groups of firms, I find that firms that preempt the restatement with a MW disclosure are the ones that have more permanent change in earnings – and therefore, are penalized more by the market. In other words, the more severe price reaction to the restatement is magnified by the expectation of adverse future earnings changes that is implied by a joint disclosure of a MW and a restatement.

To sharpen the above finding that prior MW disclosures might indicate pervasive deficiencies in the internal control system that could manifest in permanent financial problems, I compare the stock performance across the two sample groups prior to, and after their restatement announcements. I find that firms that pre-disclose a MW begin to experience significantly greater negative returns upon revealing their MWs compared to firms that did not disclose an earlier MW - but not prior to that. In fact, before the MW date, the two groups of firms are perceived to have indistinguishably negative market returns. Following the MW disclosure, the pattern of significantly

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<sup>10</sup> If a MW is detected, it has to be disclosed. So the only ambiguity is how diligently the firm or the external auditor searches for and detects a MW. My viewpoint is that MW disclosures that are readily apparent or are more serious will be identified and disclosed whereas less serious ones may not be detected. From this perspective, the joint disclosure of a MW and a restatement simply indicates more serious problems for the firm than a restatement that does not involve a MW disclosure.

different returns continue to persist for up to one year following the restatement announcement date after which time the negative returns revert to a point at which they become insignificantly different across the subsamples.

Additionally, I test whether firms that made the prior (MW) warnings have high litigation risk compared to other firms. The argument here is that if these firms predict a permanent shortfall in earnings, then it is also likely that these firms have incentives to make the disclosures earlier, particularly if these firms have concerns about shareholder litigation that could follow a sudden drop in earnings (consistent with Skinner 1994). I find that firms that advance the bad news disclosures (MW) are operating in high-litigious industries compared to firms that withhold the news. The expected high litigation costs that may arise from providing misleading or omitted disclosures incentivize these firms to provide their MW disclosures early to the public. However, when comparing whether firms that make an earlier MW disclosure are more (or less) likely to get sued (i.e. measured by the number of class action lawsuits following a restatement) – as a penalty for withholding the bad news, I fail to find evidence to support that conjecture.

This paper contributes to the literature in several aspects. First, the paper examines the market reaction to restatement announcements by studying the combined effects of restatements and MW disclosures. Importantly, the paper demonstrates that investors respond more negatively to restatements following a MW in anticipation that the *joint* disclosure of a MW and a restatement would lead to a more permanent deterioration in future operating performance than would the *single* disclosure of a restatement. Second, the paper also compares litigation patterns and stock performance

behavior for the two groups of firms, showing consistently that firms which jointly disclose a MW and a restatement experience more adverse future consequences than firms which announce a restatement without a prior acknowledgement of a MW. Finally, the paper also raises concerns to regulators as to the failure of restating firms to discern deficiencies in their internal control structure prior to the detection of financial misstatements – an objective that SOX has intended to achieve by requiring registrants and their auditors to implement periodic tests of controls to discover existing deficiencies.

The paper is organized as follows. Section 2 surveys the related literature and explains the paper's hypothesis. Section 3 explains the research design, including the model used to test the paper's hypothesis. Section 4 presents descriptive statistics, univariate, and multivariate results for the market reaction tests. Section 5 discusses additional tests and robustness checks. Section 6 provides arguments for the paper's results. Section 7 concludes the paper.

## **2.2 Literature Review and Hypothesis Development**

Prior to SOX, a number of studies investigated the market impact of restatements, showing a consistent negative market reaction to restatement announcements. Dechow et al. (1996) report a -9% return for firms alleged with earnings misstatements during 1982-1992. Additionally, Wu (2002) documents a -11% drop in stock price for a sample of 255 firms announcing restatements from 1977 to 2000. In another study conducted by the Government Accountability Office (GAO 2002), a -10% abnormal returns was reported for a sample of 689 firms announcing restatements from 1997 to March 2002. Finally, Palmrose et al. (2004) shows

significant negative abnormal returns of -9% over a 2-day window around a sample of restatement announcements from 1995 to 1999.

In studying how different attributes of restatements affect market reaction, Callen et al. (2006) argue that not all restatements are perceived alike by investors, showing that the market impact of income-increasing restatements due to errors are not significantly different from zero. In a similar vein, Hennes et al. (2009) emphasizes distinguishing between unintentional and intentional restatements, showing a much more negative market reaction to irregularities-related restatements (-14%) than to errors-related restatements (-2%).

Following SOX, a number of studies re-examined the market reaction to restatements in an attempt to observe how the enactment of SOX could possibly have changed investors' perceptions of restatements. Generally, post-SOX studies show a much lower negative reaction to restatements announcements. Hranaiova and Byers (2007), for example, show a -1.2% return in response to restatement announcements post SOX. Similarly, Scholz (2008) report an average market-adjusted returns of -1.3% for a sample of restatements announced from 2001-2006.

In an attempt to explain why the market reaction to restatements attenuate after SOX, Huang (2009) shows that the lower negative impact is due to changes in the frequencies of restatement characteristics, including severity of restatements, disclosure avenues, and the initiating parties.

While the above studies show a considerable drop in the market reaction to restatements following SOX, the literature is silent, however, on how investors incorporate MW disclosures into their perceptions of subsequent restatement

announcements. The issue is of concern particularly since management disclosures of a MW provide investors with information regarding the reliability of financial statements, including information that financial restatements may result (Ashbaugh-Skaife et al. 2007). Building on that argument, researchers have generally found support that reporting MW provides value-relevant information to market participants (Hammersley et al. 2008, Beneish 2008, Ashbaugh-Skaife et al. 2009; Costello and Moerman 2010). Hammersley et al. 2008, for example, finds that investors revise their expectations about the firm's reporting quality when MW disclosures are made in expectation that financial statements might be materially misstated.

However, while MW and restatements are often causally related, there are also many instances when a company discloses a restatement without any prior admission of a MW, and only recognizes the existence of a MW following their restatement announcements, or not at all (Glass, Lewis & Co. 2007; Rice and Weber 2010; Turner and Weirich 2006). For example, for a sample of restatements announced in 2005, Glass Lewis & Co. found that 57% of the MWs were disclosed subsequent to restatement filings.

To more clearly explain how the prior disclosure of a MW could induce a variation in market returns upon announcing a restatement, I show below an excerpt of an 8-K restatement announcement following a prior disclosure of a MW that led to the restatement in question:

The following is a MW disclosure that was filed on March 31, 2005 for a public firm:

“... Based on the evaluation and information provided by the company's independent auditor, our CEO and Controller concluded that a material weakness existed with respect to our controls over accounting for FASB 91 cost deferrals on home equity loans”.

The following restatement announcement was filed on April 20, 2005 for the same firm:

“...the Chief Accounting Officer of the Registrant concluded that, due to the previously identified problems relating to accounting for FASB 91 costs deferrals, the Registrant's interim financial statements for the first three quarters for the fiscal year ended December 31, 2004, should no longer be relied upon”.

While the above firm has reported a MW issue before the restatement, the vast majority of firms fail to disclose a MW prior to announcing their restatements. I exploit that variation in the timeliness of reporting a MW to examine the association between MW reporting and the severity of the market reaction to subsequent restatement announcements. When a MW precedes the restatement, the information content of the restatement, at least based on simple information economics, should be reduced. In other words, given two restatements of the same magnitude, the one preceded by a MW should affect price less than the restatement that was not preceded by a MW. To the extent that the initial MW disclosure should have led the market to anticipate a restatement, the price reaction at the subsequent restatement should be more muted.

The paper's primary hypothesis can thus be stated as follows:

*H1: The market reaction to restatement announcements that are preceded by a MW disclosure is less negative than the market reaction to restatement announcements that are not preceded by a MW.*

### **2.3 Sample Selection**

The sample consists of firms that announce their initial restatements following disclosures of MWs and those that restate without disclosing a prior MW. The initial process identified 8,491 restatement announcements from September 2002 to December 2009 using the Audit Analytics database<sup>11</sup>. To ensure that MWs disclosures are not preceded by previous restatements, that is, to ensure that MW disclosures are indicative

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<sup>11</sup> The Audit Analytics Database compiles restatements from all electronic filings of SEC registrants since January 1, 2001.



of *future* restatements rather than addressing *prior* restatements, I consider only “initial” restatement announcements by sample firms. This identified 5,662 firms disclosing their initial restatements.

To determine whether a restatement was disclosed following a MW, I merge the resulting restatement dataset to a sample of 5,156 initial MW disclosures identified during the same period in order to identify restatements that were preceded by a MW and those which were not. After merging, I identify 846 restatement announcements that were preceded by a MW disclosure, and 4,816 restatements that were announced without a prior MW disclosure. I further use Compustat-CRSP database to identify 2,316 listed firms, with 327 firms pre-disclosing a MW prior to their restatement announcements.

For each MW preceding a restatement announcement, I determine whether the MW a) was disclosed in any of the prior 4 quarters and/or b) is tied to the restatement in question. If a MW disclosure does not satisfy any of these criteria, the restatement is not preceded by a MW. Of the 327 firms, I identify 110 firms which announce a restatement concurrent with the MW disclosure, 33 restatements that follow unrelated MW disclosures reported beyond the four preceding quarters, and 6 restatements not associated with a prior MW disclosure. Of the restating firms that have no prior MW, I dropped one restatement that was found to involve a misstatement detected in the process of conversion to an alternative accounting principle<sup>12</sup>. The final sample consists

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<sup>12</sup> As explained later in the paper, there are other restatements in the GAAP category; however, all of them are accompanied by restatements in non-GAAP categories and therefore, are included in the analyses.

of 178 restating firms with a prior MW disclosure and 2,137 restating firms with no prior MW warning<sup>13</sup>.

The study employs an event-study methodology to estimate abnormal returns over the three-day window around the restatement announcement date. I define day 0 as the day when the restatement event is initially revealed to the public.

## 2.4 Model Specification

The following model is used to test the hypothesis that investors react less negatively to restatement announcements that follow a MW than to restatements made without a prior MW disclosure.

$$CAR = \alpha + B_1 PRIOR\_RELATED\_MW + B_2 MAG + B_3 FRAUD + B_4 PERSIST + B_5 PERVASIV \\ + B_6 REVENUE + B_7 SEC + B_8 LOG\_AT + B_9 PRIOR\_RETURN + B_{10} LEVERAGE \\ + e$$

The model estimates the size-adjusted, abnormal returns over the three-day window around the restatement announcement for the sample firms. Size-adjusted abnormal returns (CAR) are computed as the firm's daily return less the daily return for an equally-weighted portfolio of firms in the same market capitalization decile, and then the abnormal return is cumulated over the interval to compute the window returns. *PRIOR\_REL\_MW*, the variable of interest, is an indicator that equals to 1 if the restatement is preceded by a related MW or a MW that was disclosed in any of the four quarters preceding the restatement date, and 0 otherwise. To control for other factors that might impact market returns, I include, consistent with prior literature (Palmrose et

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<sup>13</sup> To ensure that the sample size compares well to sample sizes used in other studies, I replicate Scholz (2008) sample selection procedure based on the methodology used to identify the sample in this study. I identify 2,324 (multiple) restatements with available announcement returns during 2003-2006 compared to 2,240 identified by Scholz (2008) for the same period.

al. 2004; Burks 2011), two sets of variables to control for restatement and firm characteristics.

The first group of controls related to the characteristics of the restatement. *MAG*, the magnitude of the restatement, is measured as the cumulative change in net income over the restating periods divided by the total value of the firm's assets at the end of the fiscal year prior to the restatement announcement. I predict a positive coefficient since returns should decrease the more the restated income falls below the as-first-reported numbers. I use an indicator variable, *FRAUD*, to control for restatements that involve an irregularity by the firm. Restatements involving fraud questions managers' credibility and therefore, are more penalized by the market (Hennes et al. 2008). Accordingly, I expect market returns to be negatively associated with the existence of fraud restatements. I also include a variable, *PERSIST*, to measure the number of periods restated and expect market returns to have a negative loading on this variable. Consistent with Burks (2011) and Palmrose et al. (2004), I also include a variable *PERVASIV* that measures the number of account groups being affected by the restatement. To measure *PERVASIV*, I form six restatement categories and then determine the number of account groups that are affected by each restatement. The restatement categories are revenue, cost of sales, operating expenses, non-operating expenses, merger-related, and other. I expect a negative association between *PERVASIV* and the market reaction to restatements.

I also include an indicator variable, *REVENUE*, to control for the impact of revenue restatements, which are argued to have a more negative impact on returns than other types of restatements (Huang 2009). Consistent with Palmrose (2004) and Burks

(2011), I also include a variable *SEC* to distinguish between restatements that are initiated by the SEC and other restatements. SEC-prompted restatements indicate the firm's failure to promptly discover or report a material misstatement, causing investors to raise concerns about managers' competence and/or credibility. Accordingly, I expect SEC-prompted restatements to have a more negative impact on market returns.

The second set of controls relate to firm's characteristics that could impact stock returns. The first of these relate to the size of the firm, that is, to control for the difference in information environments between small and large firms. Investors in large firms are more likely to have access to news prior to their public disclosure than are investors of small firms (Collins et al. 1987). This will likely make restatements announcements of large firms less informative upon their public release than those of small firms. To capture that impact, I use *LOG\_AT* measured as the log of total value of assets measured at the end of the fiscal year prior to the restatement announcement. I also include *PRIOR\_RETURN* to control for the impact of any difference in prior stock performance among firms on current market returns. Consistent with Palmrose et al. (2004), *PRIOR\_RETURN* is measured as the mean abnormal returns over the (-120,-2) window relative to the restatement announcement date. Since market reaction to restatements could also depend on how levered a firm is (Palmrose et al. 2004), *LEVERAGE* is included, and is measured as the value of long-term debt divided by firm's total assets measured at the fiscal-year end preceding the restatement announcement date.

## **2.5 Results**

### **2.5.1 Distribution of MWs and Restatements by Year**

Table 2.2 presents the distribution of MWs and restatement announcements over the sample period. As shown, most of MW disclosures preceding restatements are concentrated in year 2005. The high frequency of MWs in this year is likely due to the increasing number of firms that began to comply with the ICOFR provisions of SOX 404. The number of restatement announcements is also highest in year 2005. The table also shows that years 2006, 2007, 2008 have the highest proportion of restatements that were preceded by MW disclosures.

Table 2.3 shows a breakout of restatements by industry groups. The table shows that restatements are highly distributed in the Financial, Manufacturing, and Computers industries. Restatements following MW disclosures as well as unwarned restatements are also highly distributed in these industries. A Chi-square independence test shows that prior MW disclosures and industry groups are not independent (Chi-square= 41.73). Additional analysis also reveals that the unequal distribution across groups is caused by a different concentration of MW- and non-MW-disclosing firms in the Computers (Chi-square= 13.07), Financial (Chi-square= 8.74), Retail (Chi-square= 10.91), and Manufacturing (Chi-square= 8.31) industries.

Table 2.4 reports the number of days between MW disclosures and subsequent restatement announcements. Whether a firm has a prior MW disclosure is captured by three measures. *PRIOR\_MW* refers to a MW disclosed in one of the four quarters prior to the restatement announcement. *RELATED\_MW* refers to a MW that is *related* to the restatement and which was disclosed in any prior period. Finally, *PRIOR\_REL\_MW* refers to a MW in the *PRIOR\_MW* or the *RELATED\_MW* group, that is, it includes

MWs which are disclosed in one of the four quarters prior to the restatement announcement date *and* MWs that are related to restatements in any prior period.

Table 2.4 shows that the average days between the disclosed MW and the subsequent restatement is 150 days, with the minimum (maximum) number of days between the two events equal to 2 (485) days. Additional analysis (not shown here) shows that 125 of the 168 MWs reported in prior reports are *related* to subsequent restatements. The *RELATED\_MW* group identifies restatements that arose out of MW disclosures that were reported 4 days up to 1674 days prior to the restatement that follows. The *PRIOR\_REL\_MW* group includes MWs in the above two categories. Of the 178 disclosures, 43 belong to the *PRIOR\_MW* group only, 10 disclosures belong to the *RELATED\_MW* group only, and 125 disclosures are included in both groups<sup>14</sup>.

### 2.5.2 Descriptive Statistics

Table 2.5 reports the descriptive statistics for the model variables across the two samples. As shown, the abnormal returns are negative, averaging -1.5% for the full sample. Consistent with prior literature, the magnitude of the negative abnormal returns shows a much lesser impact of restatements on market returns than that reported during the pre-SOX period. For example, Byers and Hraniova (2007) documented a negative market return of approximately -1.2% for post-SOX restatements.

Interestingly, table 2.5 shows that firms that made the MW warnings suffer a much more negative market reaction at the time of the restatement compared to firms that did not pre-disclose the MW. In fact, the average mean and median abnormal return for firms that had a prior MW is twice as much as it is for firms that did not disclose a

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<sup>14</sup> In the multivariate analysis shown below, I use these alternative measures to test the paper's hypothesis. As shown later, the results are robust to the use of different measures.

MW. The average magnitude of restatements, measured by the cumulative change in net income scaled by the value of assets, is not significantly different between the two groups. The table also shows that fraud (revenue) restatements account for 2% (19%) in the total sample. A Chi-square test shows that the two groups of firms are not significantly different as to the proportion of either fraud or revenue restatements. As to the persistence of the restatement, restating firms which do not report a MW tend to have restatements that span over much longer periods than do restating firms that pre-disclose a MW. The mean number of account groups affected by a restatement is 1.5 and is equally distributed across the two subsamples. The table also shows that 11.8% of the restatements that are not preceded by an earlier MW are initiated by the SEC while only 5.1% of restatements following MW disclosures are initiated by the SEC. Firms that pre-disclose a MW tend to be much smaller than firms that do not disclose a MW in advance. Finally, highly-leveraged firms are less likely to report a MW beforehand than do firms that are less leveraged, consistent with Costello and Moreman (2010)'s evidence that firms refrain from disclosing MWs that would otherwise lead to higher cost of debt.

### **2.5.3 Univariate Market Reaction Results**

Table 2.6 reports the mean abnormal returns over the three-day window around restatement announcements for the whole restatement sample as well as for the two subsamples. Since a number of restatements have a positive, or no impact, on previously reported income, and therefore, might have less impact on returns (Callen et al. 2006), I separate out restatements that affect income negatively, i.e. adverse restatements, and expect these to have more negative impact on market returns. Since

restatements could also relate to different account groups, I also report the market reaction to different restatement categories. Table 2.6 presents the market returns for the universe of all restatements while table 2.7 reports the results for different restatement categories.

Table 2.6 shows size-adjusted returns of -1.5% around all restatement announcements. The results also show more negative market returns for restatements which have a negative impact on previously reported income. When comparing the market returns for the two subsamples, the table shows that the size-adjusted returns around restatements that were preceded by an earlier MW are significantly more negative than the returns for firms that did not reveal a prior MW.

Table 2.7 reports the distribution of restatements across the two subsamples along with the market returns to each restatement category.

The table shows that adverse restatements account for 86.3% of all restatements in the sample, with a significantly lower proportion of adverse restatements in the MW-disclosing sample than in the non-MW-disclosing group. The finding indicates that the disproportionate distribution of adverse restatements is not the trigger of the greater negative abnormal returns shown for the MW-disclosing sample. Adverse restatements related to core expenses, non-core expenses, and reclassification and disclosure issues appear to be the most common types in the sample, accounting for 41.2%, 36.7%, and 33.9%, respectively. These types of restatements are also the most common in the two subsamples. Table 2.7 also reports that restatements related to revenue recognition, core expenses, underlying events, GAAP changes, fraud as well as other restatements are equally distributed across the two samples. On the other hand, restating firms that do



not pre-disclose a MW report more reclassification and lease restatements but have fewer non-core-expenses restatements than firms that disclose a MW prior to their restatement announcements.

To examine whether the cause for the different market reaction to restatements between the subsamples is associated with any restatement group, table 2.7 reports the (-1,+1) CARs for the different restatement categories. The table shows that the difference in market returns between the two groups is driven mainly by revenue, core-expenses, reclassification and disclosure, and underlying-events restatements. Generally, these are the types of restatements that are most common in the two subgroups of firms. The results generally indicate that the difference in market reaction between the two groups is not attributed to any single category of restatement; rather it is driven by different restatement categories.

#### **2.5.4 Multivariate Results**

Table 2.8 shows the coefficient estimates from the regression model. The regression is run for both the universe of all restatements and the sample of income-decreasing restatements, showing three- and five-day window CARs. The multivariate regression results support the univariate analysis, showing *PRIOR\_REL\_MW* to have a significantly negative impact on returns, indicating that firms that announce a restatement following a MW disclosure tend to experience more negative returns than firms that did not disclose a priori. All other variables exhibit signs in the expected direction with the exception of *PERSIST*, which shows a positive, but insignificant, coefficient estimate. Additional analysis shows that lease misstatements, which appear to have less of a negative impact on market returns than other restatements, are more

likely to persist over longer periods of time (a finding consistent with Scholz 2008) averaging 2.75 years. However, removing lease restatements from the sample does not change the sign of the *PERSIST* coefficient.

All variables perform similarly across return-window specifications, with the exception of *PRIOR\_RETURN*, which has a positively significant impact on the five-day window returns. The high correlation between the two variables is likely due to the overlapping windows, i.e. both variables include returns measured on day -2.

The regression models also show an adjusted  $R^2$  that is greater in magnitude for the adverse restatements sample than it is for the all-restatements sample. The adjusted  $R^2$  is also higher for the three-day window than for the five-day window. Overall, the results shown above lead to the rejection of the hypothesis that restatements following MW disclosures should result in less severe market loss than restatements that were announced without any prior warning.

## **2.6 Robustness Checks**

### **2.6.1 Measurement of Independent Variable**

I test for the robustness of the results by alternatively measuring the variable of interest, *PRIOR\_RELATED\_MW*. Because a number of prior MWs included in the sample might have existed 5 years prior to the restatement, the market reaction to the restatement announcement therefore might be affected by this long horizon between the two events. Therefore, I replicate the multivariate analysis using the alternative measure, *PRIOR\_MW* that limit the sample to only those MWs that were disclosed in any of the four quarters prior to the restatement. In other words, firms that had a related MW that existed beyond the four prior fiscal quarters (10 disclosures) are now moved to

the subsample of restating firms that did not disclose a prior MW, keeping the total sample of restatements unchanged. The results of the multivariate analysis are shown in table 2.9.

As reported in table 2.9, the model coefficients remain unchanged. The results still show a more negative reaction for restating firms that had previously disclosed a MW compared to firms that had not.

### **2.6.2 GAAP-Related and Lease Restatements**

A number of restatements in the sample (25 restatements) are made to correct errors that have been made while adopting a new, or changing to a different accounting principle. Additionally, two restatements are made to prior years' numbers to make them consistent with numbers of later years. In the sample, the combination of these restatements is identified "GAAP-Related restatements".

While these restatements are purely procedural and might not reflect any misapplication of GAAP with the intention to misstate or manipulate earnings, these restatements are all reported along with other restatements that involve a correction of prior misstated financial results. Including GAAP-related restatements in the sample might, however, attenuate the negative market reaction of the more severe restatements, particularly since all of the GAAP-related restatements are included in the no-prior-MW sample (the univariate results in table 2.7 show a significant 1.5% market reaction to GAAP-related restatements). Accordingly, I exclude these restatements from the original sample and re-run the analysis. The multivariate results, shown in Panel (A) of table 2.10 remain unchanged.

Another set of restatements which might also alleviate the negative impact on market reaction is that involving leases. These restatements, dominating mostly in 2005, were made following a clarification letter by the SEC on certain lease-accounting issues. Many of these restatements were prompted voluntarily by firms, and therefore, might be indicative of management being more credible. As shown in table 2.7, these restatements cause less severe market reaction than other types of restatements (-0.6%;  $p\text{-value} < 0.05$ ), and are less likely to be preceded by a MW disclosure. The table, however, shows that lease restatements are not the trigger of the difference in returns between the two groups. In order to avoid any bias introduced by lease restatements on the overall market reaction, I re-run the original multivariate analysis after excluding lease restatements. Panel (B) shows the coefficient on *PRIOR\_RELATED\_MW* remain significantly negative. All other variables retain their significance levels.

### **2.6.3 Restatements Attributed to MW Disclosures**

The above analysis examines the price reaction to restatements which are preceded by a MW and those which are not preceded by a MW. Firms that have not disclosed an earlier MW could either have admitted the existence of a MW concurrent with (or following) the restatement, or not at all.

Some can thus argue that a number of restatements in the no-prior-MW group might not be attributed to a MW. In other words, firms that did not disclose a MW following a restatement might not have believed that a MW disclosure is warranted prior to the restatement. If this reasoning is valid, then the above analysis, which includes *all* restatements regardless of their association to a MW, might be inadequate. Therefore, to ensure that all restatements in the no-prior-MW group are attributed to a

MW, I exclude firms which announce a restatement but have not (concurrently or subsequently) claimed that the restatement was due to a MW in the firm's controls. The argument here is that if management corrects their prior ICOFR disclosures upon restating their financials by reporting a MW that they failed to disclose in advance, then the restatement in question is clearly attributed to a prior, undisclosed MW.

Based on the univariate market reaction tests (table 2.11), the evidence still shows a significantly more negative market reaction to firms that announce their restatements following a prior disclosure of a MW than to firms that announce a restatement followed by a disclosure of a MW. The significant difference in market reaction still holds in the multivariate regression analysis, as well (table 2.12).

### **2.7 Why Does the Market React More Negatively to Warned Restatements?**

The market reaction analysis so far has shown that firms that announce a restatement following disclosures of prior MWs are more penalized by investors than do firms that do not reveal their MWs upfront. Why is that finding surprising?

When a MW precedes the restatement, the information content of the restatement, based on simple information economics, should be reduced. In other words, given two restatements of the same magnitude, the one preceded by a MW should lead to a lower market reaction than the restatement that was not preceded by a MW. To the extent that the initial MW disclosure should have led the market to anticipate a restatement, the market reaction to the subsequent restatement should be more reduced. In addition, a firm that reports the MW early should also be rewarded by a less (negative) reaction to the restatement as managers may wish to signal their credibility by providing more timely disclosures.

While the above arguments suggest that restatements following an earlier MW should elicit lower negative reaction relative to unwarned restatements, there is contradictory evidence particularly with regard to voluntary bad news disclosures. Kaznik and Lev (1995) provide empirical evidence that firms which warn the market about impending negative earnings news suffer greater market reaction than firms that chose not to warn the market. I believe that similar arguments apply to MW disclosures, even though such disclosures are not voluntary in the same sense as earnings forecasts made by management.

If MWs are more serious, they are likely to be discovered quicker. In other words, more serious MWs will be readily apparent so that they can be easily detected and disclosed prior to the restatement. On the other hand, if the MW is less serious, the firm (or external auditor) may discover some misstatements with the financial reports before they become aware of the MW. In these cases, the restatement will likely precede (or not generate) a MW. Accordingly, the *joint* disclosure of a MW and a restatement simply indicates more serious problems for the firm than a restatement that does not involve a MW disclosure. If this reasoning is valid, firms that report an MW prior to a restatement should experience a lower level of financial performance in the future. I therefore hypothesize that firms which issue a MW prior to a restatement should have either a greater litigation risk (as in Skinner 1994) or that they will report lower future operating performance (as in Kaznik and Lev 1995). I test these conjectures in the following sections.

### **2.7.1 Changes in Future Financial Performance**

First, I test the conjecture that firms reporting a MW beforehand might experience more disappointing earnings changes than firms that did not disclose a MW in advance. If MWs serve an early warning of impending future earnings disappointments, then I expect to see more negative earnings changes for firms that pre-disclose a MW than firms whose restatements are not preceded by an earlier MW.

I use two measures to capture the change in the firm's operating performance: average change in earnings per share (EPS) and average change in net income. Mean change in EPS is measured as  $EPS_t - EPS_{t-4}$ , where  $EPS_{t-4}$  is the basic earnings per share before extraordinary items for the quarter prior to the restatement announcement while  $EPS_t$  is the basic earnings per share before extraordinary items for the corresponding fiscal quarter of the following fiscal year. The average change in net income is computed as  $(NI_t - NI_{t-1})/TA_{t-1}$ , where  $NI_{t-1}$  is the net income for the quarter prior to the restatement announcement,  $NI_t$  is the net income for the corresponding fiscal quarter of the following fiscal year, and  $TA_{t-1}$  is the value of total assets measured at the end of the fiscal quarter prior to the restatement announcement.

Panels (A) and Panel (B) of table 2.13 report the change in the operating performance for the total sample and a matched sample, respectively. Panel (A) shows that restating firms that have a prior MW suffer a more long-term reduction in earnings, as measured by changes in both EPS and net income. More specifically, firms that disclose a prior MW warning experience a decline of a \$15.3 compared to an increase of \$0.005 for restating firms that did not disclose a MW in advance. Similarly, the mean change in net income as a percentage of total assets has declined by -1.3% for restating firms that have disclosed a MW upfront while increased by 0.5% for restating firms

whose restatements were not preceded by a MW disclosure. While the above numbers are based on the all-restatements analysis, qualitatively similar results also hold when the sample includes only those restatements that have an adverse impact on the firm's earnings. A closer look at Panel (A) shows that firms that do not reveal their MWs prior to restating their financials are larger than firms that report a MW in advance. As mentioned above, the market reaction to a restatement might be attenuated for larger firms due to the richer information environments in which large firms operate compared to smaller firms. In addition, firm's size could also have an impact on the firm's future operating performance. Therefore, the observed difference in future earnings surprise could arguably be attributed to the impact of the firm's size rather than to the potential problems revealed by the disclosure of an earlier MW.

Panel (B) of table 2.13 matches firms that had a prior MW disclosure to a sample of firms with no prior MW disclosure on both firm's size and the magnitude of a restatement. I measure firm's size as the total value of assets at the end of the fiscal quarter prior to the restatement and the magnitude of the restatement as the quintile-rank of the cumulative change in net income as a percentage of total assets.

Panel (B) shows the mean difference in firm's size is no longer significant. Consistent with the above finding, the analysis still shows that firms that made the bad news warnings experience more permanent reduction in earnings in terms of both their EPS and net income. The results are also consistent for all- and adverse-restatement groups. Finally, based on the three- and five-day window returns, the analysis also shows that the market still reacts to firms with the dual disclosure of MWs and restatements more negatively than to firms that did not reveal their MWs in advance.



Table 2.14 compares the two groups of firms during different periods preceding and following disclosures of MWs and restatements. The window (MW-30, MW-2) estimates the returns over the 29 days prior to the MW disclosure<sup>15</sup>. The table shows that prior to the MW disclosure date, the two subsamples were perceived to have insignificantly different returns (MW-30, MW-2). As the MW was revealed to the market, the disclosing firms began to experience significantly greater abnormal returns relative to firms which were claiming effective ICOFR (MW-1, Rest-2). This pattern of significantly different returns continue to persist for one year following the restatement announcement date after which time the negative returns become insignificantly different between the two groups. Overall, this evidence is also consistent with the argument that the pre-disclosed MWs tend to be more persistent, leading to greater future impairments of financial performance for the disclosing firms.

Overall, the above analysis shows that firms that face greater negative financial consequences are more likely to detect and report a MW prior to a restatement. The market perceives firms that made the bad news disclosures as the ones that have more permanent change in earnings – and therefore are those which are more penalized by the market upon restating their financial statements.

### **2.7.2 Ex-Ante and Ex-Post Litigation as an Explanation of Early Disclosures**

Skinner (1994) suggests that managers have incentives to disclose bad news to potentially reduce the probability of litigation. Kaznik and Lev (1995) also find that firms are more likely to issue warnings if they are a member in a high-technology

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<sup>15</sup> In order to compare how the two subsamples perform prior to the MW disclosure date, I arbitrarily set a MW date for the non-MW disclosing firms based on the mean number of days between the MW disclosure and the subsequent restatement announcement for the disclosing firms. The average difference was 369 days.

industry. Similarly, Sengupta (2004) finds that firms facing higher litigation risk are more likely to disclose earnings relatively early. Based on the above evidence, I expect that managers choose to warn investors of restatements by disclosing a bad news warning (MW) in order to mitigate the high litigation costs that can possibly arise from previously omitted or misleading disclosures.

To test the conjecture that ex-ante litigation risk provides incentives for managers to reveal their firms' MWs earlier, I use the industry-based measure of litigation developed by Sengupta (2004) to examine whether litigation risk varies across the two groups of firms<sup>16</sup>. Ex-ante litigation risk is measured as 1 if the firm is a member in any of the following industries: Drugs (SIC codes 2833–2836), Computers (3570–3577), Electronics (3600–3674), Programming (7371–7379), and R&D Services (8731–8734).

Table 2.15 reports the average ex-ante litigation risk for firms in the subsamples. The table shows that 33% of firms that disclose an earlier MW tend to have a higher likelihood of litigation compared to only 20% of firms that choose not to reveal their MWs in advance (p-value<0.001). The matched-sample analysis also shows consistent results (p-value=0.05)<sup>17</sup>.

While the above evidence indicates greater incentives for high-litigious firms to provide a more timely disclosure of a MW, the bad news warning does not necessarily preclude these firms from being sued. Skinner (1997), for example, finds that firms are

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<sup>16</sup> I also used the industry measure of litigation risk developed by Francis et al. (1994). The results are qualitatively the same for the all-sample design.

<sup>17</sup> Even though *all* the 178 firms could have been matched to another set of firms that do not disclose a prior MW, I used the same (reduced) matched sample that I used for the preceding analysis related to examining future performance behavior. This would make the analysis more comprehensive and meaningful.

more likely to provide voluntary earnings disclosures during quarters that result in litigation than during quarters that do not result in litigation. This could also explain why investors still react more negatively to restatements even if they were preceded by a MW-warning disclosure.

Failing to disclose a MW to warn the market of potential misstatements can potentially lead to allegations for providing misleading disclosures by management. Alternatively, it is also possible that firms that pre-disclose the MW have high expected legal costs which they tend to mitigate by pre-disclosing the bad news (Skinner 1997) - which does not eliminate the litigation altogether. Similarly, admission of a MW that eventually leads to a restatement can also constitute *scienter* against managers, leading to an increased likelihood of litigation.

To examine whether firms which fail to reveal adverse news in advance are targets of shareholder litigation, I measure the cross-sectional variation in the ex-post litigation risk for sample firms using the incidence of class action lawsuits within two calendar years following the restatement announcement date.

Table 2.15 shows that 13% of firms that disclose a prior MW warning were subject to a class action lawsuit within two years after announcing a restatement while 11% of firms that did not reveal their MWs ahead were targets of a lawsuit. The mean proportion difference is indistinguishable, however, across the two subsamples. The evidence suggests that firms disclosing a prior MW and those which did not make an earlier MW disclosure are equally likely to get sued.

## **2.8 Conclusion**

The paper examines how the information content of restatement announcements varies with prior MW disclosures. The paper's hypothesis is based on the PCAOB's premises that a) restatement announcements to correct materially misstated financial statements likely indicate a MW in the firm's controls that led to the restatement in question and b) MW disclosures provide early warning about potential misstatements. Accordingly, I hypothesize that restatement announcements following prior MW disclosures should have a lesser impact on market returns than restatements that were made without a prior MW warning. Based on univariate and multivariate analysis, I find that the firms that have disclosed a prior MW tend to experience more negative market reaction to restatements than do firms that did not reveal a MW upfront. This finding remains unchanged even after excluding restatements by firms which have not claimed a MW concurrent with, or subsequent to their restatements.

Further analysis shows that the above finding is consistent, however, with other empirical evidence in the voluntary disclosure literature. That is, the market reaction to negative earnings surprises are larger if preceded by a (voluntary) disclosure from management that earnings will be lower than expected (Kaznik and Lev 1995). Upon conducting the analysis, I find a similar pattern holds for MW warnings disclosures. More specifically, when comparing the future earnings changes for the two groups of firms, I find that firms that made the earlier bad news disclosures are the ones that have more permanent change in earnings – and therefore, are those which are penalized more by the market. That is, the more severe price reaction to the restatement is magnified by the expectation of adverse future earnings changes that is advanced by a joint disclosure of a MW and then a restatement.

I also find that firms that provide the earlier MW disclosures are more concentrated in high-litigious industries than firms that choose not to. That is, the higher ex-ante litigation risk of these firms provides incentives for managers to reveal their MWs in a timely fashion in order to mitigate the high litigation costs that can possibly arise from previously omitted or misleading disclosures. However, I fail to find evidence of any difference in the proportion of subsequent class action lawsuits across the two subsamples.

## 2.9 References

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## 2.10 Tables for Chapter 2

### Table 2.1 - Sample Selection

Initial restatements announced from August 2002 – December 2009	5,662
Initial restatements for listed firms	2,316
Restatements reflecting GAAP-to-GAAP changes	(1)
Total Sample of Restatements	2,315
Restatements following MW disclosures	327
Less- Restatements announced with a MW disclosure	(110)
Less- Restatements unrelated to MW disclosures reported beyond the four preceding quarters	(33)
Less - Restatements associated with no prior MW disclosure	(6)
Final Sample of restatements following a MW disclosure	178
Final Sample of restatements unpreceded by a MW disclosure	2,137

The table shows the sample selection procedure.

### Table 2.2 - Distribution of MWs and Restatements by Year

Year	No. of MWs	No. of Restatements			% of restatements preceded by MWs
		Prior_Rel _MW =0	Prior_Rel _MW =1	Total	
2002	-	100	-	100	0.00%
2003	4	341	2	343	0.59%
2004	9	372	6	378	1.61%
2005	63	513	30	543	5.85%
2006	51	334	65	399	19.46%
2007	27	240	39	279	16.25%
2008	22	136	25	161	18.38%
2009	2	102	11	113	10.78%
Total	178	2137	178	2315	8.33%

The table shows the distribution of MW disclosures and restatements announcements by year.

**Table 2.3 - Industry Distribution of Sample Firms**

Industry	Prior_Rel_MW =0		Prior_Rel_MW =1		Total Restatements	
	Count	%	Count	%	Count	%
Mining and Construction	60	2.81	3	1.69	63	2.72
Food	41	1.92	1	0.56	42	1.81
Textiles and Printing	67	3.14	7	3.93	74	3.20
Chemicals	40	1.87	4	2.25	44	1.90
Pharmaceuticals	94	4.40	10	5.62	104	4.49
Extractive	73	3.42	6	3.37	79	3.41
Durable manufacturers	348	16.28	44	24.72	392	16.93
Transportation	126	5.90	11	6.18	137	5.92
Utilities	79	3.70	2	1.12	81	3.50
Retail	260	12.17	7	3.93	267	11.53
Services	206	9.64	18	10.11	224	9.68
Computers	311	14.55	44	24.72	355	15.33
Financial	407	19.05	18	10.11	425	18.36
Other	25	1.17	3	1.69	28	1.21
Total	2137	100	178	100	2315	100

Industry groups are determined by SIC codes as follows: Mining and Construction (1000-1999 excluding 1300-1399), Food (2000-2111), Textiles, Printing, and Publishing (2200-2799), Chemicals (2800-2824, and 2840-2899), pharmaceuticals (2830—2836), extractive (2900-2999, 1300-1399), durable manufacturers (3000-3999, excluding 3570-3579 and 3670-3679), computers (7370-7379, 3570-3579, 3670-3679), transportation (4000-4899), utilities (4900-4999), retail (5000-5999), financial (6000-6799), services (7000-8999, excluding 7370-7379).

**Table 2.4 – Time period between MW Disclosure and Restatement Announcements**

	Days between MW and rest				
	N	Mean	Median	Minimum	Maximum
<i>PRIOR_MW</i>	168	150	125	2	485
<i>RELATED_MW</i>	135	188	126	4	1674
<i>PRIOR_REL_MW</i>	178	183	128	2	1674

The table reports the descriptive statistics for the number of days between MW disclosures and restatement announcements. *PRIOR\_MW* refers to MWs disclosed in any of the four quarters prior to the restatement announcement. *RELATED\_MW* refers to MWs that are related to a subsequent restatement and which was disclosed in a prior period. *PRIOR\_REL\_MW* refers to MWs that were disclosed in one of the four quarters prior to the restatement announcement and/or MWs that are related to the subsequent restatement.

**Table 2.5 - Descriptive statistics**

<i>Variables</i>	All Sample N=2315		Prior_MW=0 N=2137		Prior_MW=1 N=178		Test of mean difference
	Mean	Median	Mean	Median	Mean	Median	
CARs (-1,+1)	-0.015	-0.007	-0.014	-0.006	-0.038	-0.021	0.024***
MAG	-0.011	-0.001	-0.011	-0.001	-0.014	-0.001	0.003
FRAUD	0.024	0.000	0.024	0.000	0.022	0.000	0.002
PERSISTENCE	2.070	1.748	2.092	1.748	1.798	1.000	0.294**
PERSAVINESS	1.460	1.000	1.454	1.000	1.528	1.000	-0.074
REVENUE	0.186	0.000	0.186	0.000	0.180	0.000	0.006
SEC	0.113	0.000	0.118	0.000	0.051	0.000	0.067***
LOG_AT	19.772	19.808	19.824	19.897	19.146	19.153	0.678***
PRIOR_RETURN	-0.046	-0.055	-0.044	-0.051	-0.078	-0.096	0.034
LEVERAGE	0.174	0.108	0.176	0.112	0.149	0.056	0.027*

The table reports the descriptive statistics for the model variables for the total sample and the subsamples.

**Table 2.6 Market Reaction to All and Adverse Restatement Announcements**

	All Sample		Prior_MW=0		Prior_MW=1		Test of mean difference	
	All Rest	Adverse Rest	All Rest	Adverse Rest	All Rest	Adverse Rest	All Rest	Adverse Rest
CARs	-0.015	-0.017	-0.014	-0.014	-0.038	-0.046	0.024***	0.031***
p-value	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		
N	2314	1996	2136	1852	178	144		

The table reports the univariate market reaction statistics for the total sample and the subsamples. *PRIOR\_REL\_MW* is an indicator variables that equals to 1 if the MW is disclosed in one of the four quarters prior to and /or related to the subsequent restatement, and 0 otherwise. *CARs(-1,+1)* is the size-adjusted returns over the three-day window around the restatement announcement date.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10% respectively

**Table 2.7 - Market Reaction to Restatement Announcements Partitioned by Restatement Categories**

	All			PRIOR_REL_MW=0			PRIOR_REL_MW=1			Mean Proportion Difference	Mean CARs Difference
	N	%	CARS	N	%	CARS	N	%	CARS		
			(-1,+1)			(-1,+1)			(-1,+1)		
All Rest	2314		-0.015***	2136		-0.014***	178		-0.038***		0.024***
Adverse Rest	1996	86.3	-0.017***	1852	86.7	-0.014***	144	80.9	-0.046***	0.058**	0.031***
<b>Type of Rest</b>											
<b>Revenue</b>											
All	429	18.5	-0.028***	397	18.6	-0.025***	32	18.0	-0.060***	0.600	0.035*
Adverse	387	19.4	-0.030***	358	19.3	-0.027***	29	20.1	-0.067***	-0.800	0.041**
<b>Core Exp.</b>											
All	929	40.1	-0.021***	849	39.7	-0.019***	80	44.9	-0.043***	-5.200	0.025**
Adverse	823	41.2	-0.022***	752	40.6	-0.020***	71	49.3	-0.048***	-8.700	0.028**
<b>Non-Core Exp.</b>											
All	928	40.1	-0.014***	843	39.5	-0.013***	85	47.8	-0.024	-0.083**	0.010***
Adverse	733	36.7	-0.017***	675	36.4	-0.015***	58	40.3	-0.031	-3.900	0.016***
<b>Reclassification</b>											
All	745	32.2	-0.014***	701	32.8	-0.012***	44	24.7	-0.045***	0.081**	0.032**
Adverse	677	33.9	-0.015***	634	34.2	-0.013***	43	29.9	-0.045***	4.300	0.032**
<b>Underlying Events</b>											
All	536	23.2	-0.017***	487	22.8	-0.015***	49	27.5	-0.041***	-4.700	0.027**
Adverse	455	22.8	-0.019***	414	22.4	-0.017***	41	28.5	-0.049***	-6.100	0.032**
<b>GAAP-Related</b>											
All	27	1.2	0.016**	27	1.3	0.0156	0	0	N/A	1.300	N/A
Adverse	20	1.0	0.016*	20	1.1	0.0162	0	0	N/A	1.100	N/A
<b>Lease</b>											
All	341	14.7	-0.006**	328	15.4	-0.006*	13	7.3	-0.020	0.081***	0.014
Adverse	306	15.3	-0.007**	297	16.0	-0.006*	9	6.3	-0.032	9.700	0.025
<b>Other</b>											
All	80	3.5	-0.008	71	3.3	-0.007	9	5.1	-0.017	-1.800	0.010
Adverse	69	3.5	-0.012	61	3.3	-0.011	8	5.6	-0.020	-2.300	0.009
<b>Fraud</b>											
All	56	2.4	-0.054***	52	2.4	-0.058***	4	2.2	-0.009	0.200	-0.059
Adverse	55	2.8	-0.055***	51	2.8	-0.059***	4	2.8	-0.009	0.000	-0.050

The table reports the univariate market reaction statistics for the whole sample and the subsamples by restatement category. *PRIOR\_REL\_MW* is an indicator variables that equals to 1 if the MW is disclosed in one of the four quarters prior to and /or related to the subsequent restatement, and 0 otherwise. *CARS(-1,+1)* is the size-adjusted returns over the three-day window around the restatement announcement date. Adverse refers to the restatements that have a negative impact on the as-first-reported net income for the restated periods.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10% respectively

**Table 2.8 - Regression Model of Size-Adjusted Returns on PRIOR\_REL\_MW**

$$CAR = a + B_1 PRIOR\_RELATED\_MW + B_2 MAG + B_3 FRAUD + B_4 PERSIST + B_5 PERVASIV + B_6 REVENUE + B_7 SEC + B_8 LOG\_AT + B_9 PRIOR\_RETURN + B_{10} LEVERAGE + e$$

Variables	Exp. sign	CARs (-1,+1)				CARs (-2,+2)			
		All Rest		Adverse Restat		All Rest		Adverse Restat	
		Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
<i>Intercept</i>	+/-	-0.010	0.585	0.000	0.980	-0.009	0.664	0.002	0.941
<i>PRIOR_REL_MW</i>	+	-0.023	<.0001	-0.030	<.0001	-0.018	0.006	-0.030	<.0001
<i>MAG</i>	+	0.443	<.0001	0.466	<.0001	0.475	<.0001	0.495	<.0001
<i>FRAUD</i>	-	-0.037	0.001	-0.040	0.000	-0.031	0.014	-0.034	0.010
<i>PERSIST</i>	-	0.001	0.154	0.001	0.222	0.002	0.105	0.002	0.144
<i>PERVASIV</i>	-	-0.003	0.190	-0.002	0.366	-0.003	0.360	-0.002	0.572
<i>REVENUE</i>	-	-0.013	0.003	-0.016	0.001	-0.015	0.004	-0.019	0.001
<i>SEC</i>	-	-0.001	0.825	-0.001	0.802	-0.007	0.239	-0.009	0.165
<i>LOG_AT</i>	+	0.000	0.619	0.000	0.907	0.000	0.775	0.000	0.947
<i>PRIOR_RETURN</i>	-	-0.002	0.747	0.000	0.958	0.014	0.037	0.018	0.019
<i>LEVERAGE</i>	-	-0.016	0.065	-0.023	0.014	-0.012	0.233	-0.020	0.077
<i>Adj R2</i>		5.74%		7.45%		4.49%		6.29%	
<i>N</i>		1639		1389		1639		1389	

The table reports the multivariate results for the regression model of size-adjusted returns on the model variables. *CARs (-1,+1)* is the size-adjusted returns over the three-day window around the restatement announcement date. *CARs (-2,+2)* is the size-adjusted returns over the five-day window around the restatement announcement date. *PRIOR\_REL\_MW* is an indicator variable that equals to 1 if the MW is disclosed in one of the four quarters prior to and /or related to the subsequent restatement, and 0 otherwise. *MAG* is the cumulative change in net income for the restated periods divided by the total value of assets at fiscal-year end prior to the restatement announcement. *FRAUD* is a dummy that equals to 1 if the restatement involves fraudulent actions by management, and 0 otherwise. *PERSIST* refers to the number of years restated. *PERVASIV* measures the number of account groups affected by the restatement. *REVENUE* is an indicator variable that equals to 1 if the restatement is due to revenue-recognition misstatements, and 0 otherwise. *SEC* is a dummy that equals to 1 if the SEC initiates the restatement, and 0 otherwise. *LOG\_AT* is the natural logarithm of total value of assets at the end of the fiscal year prior to the restatement announcement. *PRIOR\_RETURN* is the size-adjusted returns over (-120,-2) days relative to restatement announcement date. *LEVERAGE* is measured as total long-term debt divided by total assets at the end of the fiscal period preceding the restatement announcement date.

**Table 2.9 - Regression Model of Size-Adjusted Returns on PRIOR\_MW**

$$CAR = a + B_1 PRIOR\_MW + B_2 MAG + B_3 FRAUD + B_4 PERSIST + B_5 PERVASIV + B_6 REVENUE + B_7 SEC + B_8 LOG\_AT + B_9 PRIOR\_RETURN + B_{10} LEVERAGE + e$$

Variables	Exp. sign	CARs (-1,+1)				CARs (-2,+2)			
		All Rest		Adverse Restat		All Rest		Adverse Restat	
		Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
<i>Intercept</i>	+/-	-0.009	0.592	0.000	0.996	-0.009	0.670	0.002	0.925
<i>PRIOR_MW</i>	+	-0.022	<.0001	-0.030	<.0001	-0.018	0.007	-0.030	<.0001
<i>MAG</i>	+	0.443	<.0001	0.466	<.0001	0.475	<.0001	0.495	<.0001
<i>FRAUD</i>	-	-0.037	0.001	-0.040	0.000	-0.031	0.014	-0.034	0.010
<i>PERSIST</i>	-	0.001	0.150	0.001	0.216	0.002	0.103	0.002	0.141
<i>PERVASIV</i>	-	-0.003	0.190	-0.002	0.366	-0.003	0.360	-0.002	0.572
<i>REVENUE</i>	-	-0.013	0.003	-0.016	0.001	-0.015	0.004	-0.019	0.001
<i>SEC</i>	-	-0.001	0.839	-0.001	0.818	-0.007	0.244	-0.008	0.170
<i>LOG_AT</i>	+	0.000	0.631	0.000	0.928	0.000	0.783	0.000	0.927
<i>PRIOR_RETURN</i>	-	-0.002	0.761	0.000	0.939	0.014	0.036	0.018	0.018
<i>LEVERAGE</i>	-	-0.016	0.065	-0.024	0.013	-0.012	0.233	-0.020	0.075
<i>Adj R2</i>		5.67%		7.37%		4.46%		6.25%	
<i>N</i>		1639		1389		1639		1389	

The table reports the multivariate results for the regression model of size-adjusted returns on the model variables. *CARs (-1,+1)* is the size-adjusted returns over the three-day window around the restatement announcement date. *CARs (-2,+2)* is the size-adjusted returns over the five-day window around the restatement announcement date. *PRIOR\_MW* is an indicator variable that equals to 1 if the MW is disclosed in one of the four quarters prior to the subsequent restatement, and 0 otherwise. *MAG* is the cumulative change in net income for the restated periods divided by the total value of assets at fiscal-year end prior to the restatement announcement. *FRAUD* is a dummy that equals to 1 if the restatement involves fraudulent actions by management, and 0 otherwise. *PERSIST* refers to the number of years restated. *PERVASIV* measures the number of account groups affected by the restatement. *REVENUE* is an indicator variable that equals to 1 if the restatement is due to revenue-recognition misstatements, and 0 otherwise. *SEC* is a dummy that equals to 1 if the SEC initiates the restatement, and 0 otherwise. *LOG\_AT* is the natural logarithm of total value of assets at the end of the fiscal year prior to the restatement announcement. *PRIOR\_RETURN* is the size-adjusted returns over (-120,-2) days relative to restatement announcement date. *LEVERAGE* is measured as total long-term debt divided by total assets at the end of the fiscal period preceding the restatement announcement date.

**Table 2.10 Regression Model after Excluding GAAP and Lease Restatements**

**Panel (A) Regression Model of Size-Adjusted Returns on PRIOR\_REL\_MW – Excluding GAAP-Related Restatements**

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$$CARCAR = a + B_1 PRIOR\_RELATED\_MW + B_2 MAG + B_3 FRAUD + B_4 PERSIST + B_5 PERVASIV + B_6 REVENUE + B_7 SEC + B_8 LOG\_AT + B_9 PRIOR\_RETURN + B_{10} LEVERAGE + e$$


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Variables	Exp. sign	CARs (-1,+1)				CARs (-2,+2)			
		All Rest		Adverse Restat		All Rest		Adverse Restat	
		Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
<i>Intercept</i>	+/-	-0.009	0.600	0.000	0.982	-0.009	0.663	0.001	0.950
<i>Prior_MW</i>	+	-0.023	<.0001	-0.030	<.0001	-0.018	0.006	-0.030	<.0001
<i>MAG</i>	+	0.450	<.0001	0.473	<.0001	0.483	<.0001	0.504	<.0001
<i>FRAUD</i>	-	-0.037	0.001	-0.040	0.000	-0.031	0.014	-0.034	0.010
<i>PERSIST</i>	-	0.001	0.160	0.001	0.217	0.002	0.098	0.002	0.131
<i>PERVASIV</i>	-	-0.003	0.193	-0.002	0.373	-0.002	0.386	-0.002	0.604
<i>REVENUE</i>	-	-0.013	0.003	-0.016	0.001	-0.015	0.005	-0.019	0.001
<i>SEC</i>	-	-0.001	0.782	-0.002	0.747	-0.007	0.216	-0.009	0.145
<i>LOG_AT</i>	+	0.000	0.632	0.000	0.908	0.000	0.783	0.000	0.947
<i>PRIOR_RETURN</i>	-	-0.002	0.737	0.000	0.962	0.014	0.036	0.018	0.018
<i>LEVERAGE</i>	-	-0.016	0.060	-0.024	0.013	-0.012	0.250	-0.020	0.081
<i>Adj R2</i>		5.78%		7.53%		4.51%		6.36%	
<i>N</i>		1625		1380		1625		1380	

**Panel (B) Regression Model of Size-Adjusted Returns on PRIOR\_REL\_MW – Excluding Lease-Related Restatements**

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Variables	Exp. sign	CARs (-1,+1)				CARs (-2,+2)			
		All Rest		Adverse Restat		All Rest		Adverse Restat	
		Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
<i>Intercept</i>	+/-	-0.025	0.194	-0.014	0.505	-0.024	0.282	-0.012	0.630
<i>Prior_MW</i>	+	-0.023	<.0001	-0.031	<.0001	-0.018	0.009	-0.030	0.000
<i>MAG</i>	+	0.430	<.0001	0.446	<.0001	0.448	<.0001	0.457	<.0001
<i>FRAUD</i>	-	-0.047	<.0001	-0.051	<.0001	-0.042	0.003	-0.045	0.002
<i>PERSIST</i>	-	0.001	0.404	0.001	0.486	0.001	0.383	0.001	0.424
<i>PERVASIV</i>	-	-0.003	0.297	-0.002	0.408	-0.002	0.459	-0.002	0.567
<i>REVENUE</i>	-	-0.013	0.008	-0.016	0.002	-0.014	0.011	-0.018	0.003
<i>SEC</i>	-	0.003	0.546	0.003	0.593	-0.001	0.842	-0.003	0.638
<i>LOG_AT</i>	+	0.001	0.232	0.001	0.470	0.001	0.385	0.001	0.654
<i>PRIOR_RETURN</i>	-	-0.007	0.230	-0.003	0.620	0.011	0.129	0.017	0.034
<i>LEVERAGE</i>	-	-0.016	0.087	-0.023	0.028	-0.012	0.284	-0.020	0.114
<i>Adj R2</i>		5.97%		7.55%		4.18%		5.95%	
<i>N</i>		1393		1169		1393		1169	

**Table 2.11 - Univariate Market Reaction to Firms Announcing Restatements that are Attributed to MWs**

	All Sample		PRIOR_REL_MW=0		PRIOR_REL_MW=1		Test of mean difference	
	All Rest	Adverse Rest	All Rest	Adverse Rest	All Rest	Adverse Rest	All Rest	Adverse Rest
CARs	-0.022	-0.025	-0.0192	-0.0201	-0.038	-0.046	0.018***	0.025***
p-value	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		
N	995	840	817	696	178	144		

The table reports the univariate market reaction to restatement announcements that are attributed to MW disclosures.

**Table 2.12 - Multivariate Market Reaction to Firms Announcing Restatements that are Attributed to MWs**

Variables	Exp. sign	CARs (-1,+1)				CARs (-2,+2)			
		All Rest		Adverse Restat		All Rest		Adverse Restat	
		Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
<i>Intercept</i>	+/-	-0.026	0.3679	0.001	0.9868	-0.022	0.5275	0.007	0.8699
<i>Prior_REL_MW</i>	+	-0.016	0.0107	-0.025	0.0007	-0.010	0.1877	-0.024	0.0062
<i>MAG</i>	+	0.473	<.0001	0.481	<.0001	0.556	<.0001	0.558	<.0001
<i>FRAUD</i>	-	-0.024	0.0698	-0.027	0.0507	-0.013	0.412	-0.016	0.3316
<i>PERSIST</i>	-	0.002	0.1792	0.002	0.2888	0.003	0.0646	0.003	0.1626
<i>PERVASIV</i>	-	-0.005	0.1435	-0.003	0.3637	-0.003	0.3918	-0.002	0.7143
<i>REVENUE</i>	-	-0.013	0.0291	-0.018	0.0085	-0.014	0.0601	-0.020	0.0118
<i>SEC</i>	-	0.000	0.9579	-0.001	0.8562	-0.008	0.3818	-0.011	0.2611
<i>LOG_AT</i>	+	0.001	0.5794	0.000	0.7934	0.000	0.8936	-0.001	0.621
<i>PRIOR_RETUR</i>	-	-0.007	0.4059	-0.005	0.5833	0.001	0.9122	0.003	0.8164
<i>LEVERAGE</i>	-	0.010	0.4297	0.008	0.5748	0.014	0.3789	0.012	0.5073
<i>Adj R2</i>		5.89%		6.80%		4.33%		5.49%	
<i>N</i>		780		649		780		649	

The table reports the multivariate market reaction to restatement announcements that are attributed to MW disclosures. *CARs (-1,+1)* is the size-adjusted returns over the three-day window around the restatement announcement date. *CARs (-2,+2)* is the size-adjusted returns over the five-day window around the restatement announcement date. *Prior\_REL\_MW* is an indicator variables that equals to 1 if the MW is disclosed in one of the four quarters prior to the subsequent restatement, and 0 otherwise. *MAG* is the cumulative change in net income for the restated periods divided by the total value of assets at fiscal-year end prior to the restatement announcement. *FRAUD* is a dummy that equals to 1 if the restatement involves fraudulent actions by management, and 0 otherwise. *PERSIST* refers to the number of years restated. *PERVASIV* measures the number of account groups affected by the restatement. *REVENUE* is an indicator variable that equals to 1 if the restatement is due to revenue-recognition misstatements, and 0 otherwise. *SEC* is a dummy that equals to 1 if the SEC initiates the restatement, and 0 otherwise. *LOG\_AT* is the natural logarithm of total value of assets at the end of the fiscal year prior to the restatement announcement. *PRIOR\_RETURN* is the size-adjusted returns over (-120,-2) days relative to restatement announcement date. *LEVERAGE* is measured as total long-term debt divided by total assets at the end of the fiscal period preceding the restatement announcement date.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10% respectively



**Table 2.13 Future Operating Performance**

<b>Panel (A): All-Sample Design</b>						
<u>Earnings per share</u>	All Restatements		Mean Difference	Adverse Restatements		Mean Difference
	No Prior MW	Prior MW		No Prior MW	Prior MW	
Sample Size	1,508	119		1,296	95	
EPS Mean Change	0.005	-0.153	0.158***	0.001	-0.161	0.162*
Assets	1,926	865	1,061***	1,882	815	1,067***
CAR (-1,+1)	-0.011	-0.027	0.017***	-0.011	-0.032	0.022***
CAR (-2,+2)	-0.012	-0.022	0.010	-0.012	-0.031	0.019***
<u>Net Income</u>						
Sample Size	1,505	118		1,294	94	
Net Income Mean Change	0.003	-0.013	0.016***	0.003	-0.012	0.015***
Assets	1,928	872	1,056***	2,294	718	1,576***
CAR (-1,+1)	-0.010	-0.027	0.016***	-0.011	-0.032	0.021***
CAR (-2,+2)	-0.012	-0.022	0.010	-0.012	-0.031	0.020***

<b>Panel (B): Matched-Sample Design</b>						
<u>Earnings per share</u>	All Restatements		Mean Difference	Adverse Restatements		Mean Difference
	No Prior MW	Prior MW		No Prior MW	Prior MW	
Sample Size	115	115		91	91	
EPS Mean Change	0.021	-0.160	0.181***	0.029	-0.170	0.199***
Assets	1,042	892	150	923	846	77
CAR (-1,+1)	-0.006	-0.028	0.022***	-0.004	-0.034	0.030***
CAR (-2,+2)	-0.007	-0.024	0.017*	-0.003	-0.034	0.030***
<u>Net Income</u>						
Sample Size	114	114		90	90	
Net Income Mean Change	0.005	-0.014	0.020***	0.006	-0.014	0.020***
Assets	1,051	899	152	934	854	79
CAR (-1,+1)	-0.005	-0.028	0.022***	-0.003	-0.034	0.030***
CAR (-2,+2)	-0.008	-0.025	0.017*	-0.005	-0.035	0.030***

Panel (A) and (B) reports the mean change in EPS and net income for all (a matched) sample of restatements. EPS is measured as  $EPS_t - EPS_{t-1}$ , where  $EPS_{t-1}$  is the basic earnings per share before extraordinary items for the quarter prior to the restatement announcement and  $EPS_t$  is the basic earnings per share before extraordinary items for the corresponding fiscal quarter of the following fiscal year. Net income is measured as  $(NI_t - NI_{t-1})/MV$  where  $NI_{t-1}$  is the net income for the quarter prior to the restatement announcement,  $NI_t$  is the net income for the corresponding fiscal quarter of the following fiscal year. Assets is measured as the total value of assets at the end of the fiscal quarter prior to the restatement announcement. All other variables are defined as above.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10% respectively

**Table 2.14 - Returns around MW Disclosures and Restatement Announcements**

Return Windows	Prior_Rel_MW=1		Prior_Rel_MW=0		Difference	
	All Restatements	Adverse Restatements	All Restatements	Adverse Restatements	All Restatements	Adverse Restatements
(MW-30,MW-2) <sup>++</sup>	-0.01	-0.30	0.00	0.00	-0.01	-0.30
(MW-1,Rest-2)	-17.04***	-19.17***	-6.59***	-6.66***	-10.45***	-12.51***
(Rest-180, Rest -2)	-10.17***	-12.18***	-5.25***	-5.41***	-4.90*	-6.76**
(Rest -90, Rest -2)	-6.76***	-8.42***	-2.68***	-2.82***	-4.08**	-5.60***
(Rest -30, Rest -2)	-4.22***	-5.47***	-1.40***	-1.53***	-2.82**	-3.94***
(Rest +2, Rest +365)	-11.93***	-12.75**	-3.24***	-3.25**	-8.72**	-9.51**
(Rest +365, Rest +730)	-7.57***	-7.87***	-3.22	-3.63	-4.35	-4.24

The table reports size-adjusted returns over various windows around MW disclosures and restatement announcements.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10% respectively

<sup>++</sup> For the group of firms that did not disclose a prior MW, the MW date is set based on the mean difference number of days between the MW disclosure date and the restatement date for the other group of firms (=369 days prior to the restatement date).

**Table 2.15 - Ex-Ante and Ex-Post Litigation Risk as an Explanation of Early Disclosures**

	Ex-Ante Mean Litigation Risk				Ex-Post Mean Litigation Risk	
	N	All Sample	N	Matched Sample	N	All Sample
<i>Prior_Rel_MW=1</i>	178	0.33	115	0.33	178	0.13
<i>Prior_Rel_MW=0</i>	2137	0.20	115	0.22	2137	0.11
test of mean difference		0.13***		0.11**		0.02

The table reports the ex-ante and ex-post litigation risk for sample firms. Ex-ante litigation risk is the industry-based measure of litigation developed by Sengupta (2004). Ex-ante litigation risk is measured as 1 if the firm is a member in any of the following industries: Drugs (SIC codes 2833–2836), Computers (3570–3577), Electronics (3600–3674), Programming (7371–7379), and R&D Services (8731–8734). Ex-post litigation risk is measured as the percentage of sample firms that was subject to a class action lawsuit during two calendar years following the restatement announcement date.

\*\*\*, \*\*, \*: significant at 1%, 5%, 10% respectively

## **Chapter 3: State Liability Regimes and Auditors' Reporting Decisions**

### **3.1 Introduction**

The independence of public company auditors is an issue of great importance to academics, regulators and capital market participants. Auditors receive fees from their clients for audit as well as for other non-audit services. If fee revenues from any client are large enough to create an economic bond between auditor and client, then the auditor's independence could potentially be impaired by pressure to retain the client. This potential for impairment of auditor independence – the “economic bonding” problem – has been advanced by the literature since DeAngelo (1981).

Several studies have since examined this issue. Research on auditor's independence has to a large extent focused on testing auditor's impairment hypothesis by examining the relation between audit (or non-audit fees) and various measures of auditor's independence – clients' earnings management (Frankel et al. 2002, Ashbaugh et al. 2003, Chung and Kallapur 2003), clients' propensity of meeting analysts' forecasts (Frankel et al. 2002, Ashbaugh et al. 2003), clients' financial restatements (Kinney et al. 2004), and auditor's GC reporting (DeFond et al. 2002; Reynolds and Francis 2000). The archival literature till date has, however, failed to find robust empirical evidence that economic bonding does indeed impair auditor independence. While Frankel et al. (2002) find evidence that greater non-audit fees are associated with auditors allowing more earnings management, subsequent research has shown that these results are not robust to the measurement of the independent variable (the economic

bond), measurement of the dependent variable (auditor independence) or sample selection. Finally, Reynolds and Francis (2000) find that auditors are actually more stringent with large clients who account for a significant proportion of practice-office revenues, contrary to the economic bonding hypothesis, while Gaver and Paterson (2007) find similar results in the property-casualty industry. Therefore, while some research finds evidence consistent with impairment of independence, a majority of studies do not find evidence consistent with auditors' independence being impaired in practice (DeFond and Francis 2005).

The explanation for these results is that any potential threats to auditor independence created by economic bonding are outweighed by auditors' countervailing incentives to resist client pressure. Negligent or questionable audits lead to the possibility of being litigated against, resulting in potentially huge litigation costs, especially in the United States (Clarkson and Simunic 1994; DeFond and Francis 2005). The threat of litigation and the resulting loss of reputation could, therefore, give auditors strong incentives to maintain their independence (DeFond et al. 2002). While many studies advance this explanation, very few test it directly (Gaver et al. 2009).

I directly test whether the extent of litigation exposure faced by auditors affects their reporting decisions using a novel setting first explored by Gaver et al. (2009). Auditor liability can arise under both federal securities law and common law, which varies from state to state within the US (Baker and Prentice 2008). While federal securities law is the most frequent basis for lawsuits against auditors (Baker and Prentice 2008), there is considerable variation across states in the extent to which auditors are liable to third party non-clients (stockholders, creditors, and other users of

financial statements) for negligence (Pacini et al. 2000a; Pacini et al. 2000b). The number of parties to whom auditors are potentially liable and the resulting expected costs of litigation, therefore, vary depending on the state in which the auditor is sued (Gaver et al. 2009), *i.e.* the state in which the client firm may be domiciled or incorporated<sup>18</sup>. This variation across states allows testing whether auditors' reporting conservatism is affected by the litigation risk faced by the auditor. If the threat of litigation provides auditors with the incentive to maintain independence, then I expect to find stronger evidence of auditors reporting less conservatively for clients from relatively low litigation-risk states.

I assess auditors' litigation exposure using a litigation-risk score that measures the extent to which auditors can be held liable by third parties for negligence (Pacini et al. 2000b, Gaver et al. 2009). I use two measures to evaluate auditors' inclination to report conservatively to clients: (a) the propensity to issue a GC audit opinion and (b) the propensity to issue an adverse ICOFR report (*i.e.* report a MW) prior to restatements of previously issued financial statements.

My first set of tests examines the association between auditor's litigation and the propensity to issue a modified GC opinion using a sample of *ex-ante* distressed firms. I hypothesize that auditors of clients in high litigation-risk states are more likely to issue a GC opinion compared to auditors of clients in low litigation-risk states. I test that relation by including measures of litigation risk based on states in which stakeholders can allege auditors for reporting less conservatively to their clients. Using a sample of GC and non-GC opinions issued by auditors for distressed firms during 2000-2009, I

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<sup>18</sup> According to Johnson (2011), a state court has personal jurisdiction over the firm if the firm is incorporated or has its principal place of business in the state.

find a positive association between auditor's litigation exposure and the likelihood of issuing a modified GC audit opinion.

I further test whether litigation concerns provide incentives for auditors to report diligently on the client's ICOFR. According to Section 404(b) of Sarbanes-Oxley Act (hereafter SOX 404B), auditors are required to provide an annual evaluation of the client's ICOFR and to report whether an adverse opinion should be issued (for example, when the ICOFR has a MW). Following Rice and Weber (2010), I develop a sample of firms that restated their financial statements to test the association between litigation risk and SOX 404 auditor reporting. A restatement by the firm indicates that a MW has existed in the firm's ICOFR (PCAOB 2007) and therefore examining whether a MW has been reported prior to a restatement filing will shed light on whether auditors have litigation incentives to issue an adverse ICOFR opinion. Using a sample of restatement announcements during 2005-2009 to test that hypothesis, I document a positive association between the extent of auditors' litigation exposure and the probability of reporting a MW before the firm announces a restatement.

Finally, I examine the impact of state liability regimes on auditor pricing. That is, I examine whether auditors of clients in high litigation-risk states earn a fee premium to compensate for the heightened litigation-related costs associated with potential third-party allegations for a negligent audit. Using a sample of firms with available fee data from 2000 to 2009, I find that auditors of clients domiciled and/or incorporated in high litigation-risk states earn higher fees compared to clients in low litigation-risk states.

The paper contributes to the literature in several ways. First, this paper can be viewed as a response to DeFond and Francis (2005)'s and Francis (2011)'s call for

research that aims at understanding the impact of legal liability on audit quality. By examining the variation in audit quality across different liability regimes, I provide insights on the direct effects of auditors' risk of litigation on their reporting decisions. Second, I extend prior research on the issue of auditor's independence which, till date, has not been resolved empirically. The independence literature has extensively examined the independence impairment hypothesis by studying the relation between audit fees and different measures for auditor's independence. The literature, however, mostly failed to incorporate the countervailing impact of litigation threats on auditors' reporting decisions. A few exceptions exist. Gaver et al. (2009), for example, examine the relation between auditors' legal liability and the degree of conservatism in the clients' financial reports showing that auditors facing greater litigation risk have less tolerance for loss reserve understatements by insurance clients. I extend Gaver et al. (2009)'s paper by directly examining the impact of legal liability regimes on auditors' reporting. Unlike Gaver et al. (2009) whose measure of auditor's reporting conservatism is based on the bias introduced by the client and allowed by auditor (i.e. extent of earnings management that the external auditor permits), I provide a more direct measure of auditor's influence on client's reporting, that is, the audit opinion rendered by the auditor on the client's financial statements and on the client's ICOFR. Additionally, while Gaver et al. (2009) examine auditors' reporting decisions for their insurance clients, my paper provides evidence on the implications of various liability regimes for auditors' reporting decisions that extend beyond the insurance industry.

My study also relates to Venkataraman et al. (2008) who examine the relation between auditor's litigation risk and client's pre- and post- abnormal accruals as a proxy

for audit quality. Using the change in auditor's litigation exposure, measured as the transition from filing under Securities Exchange Act of 1933 to the less-strict liability regime under the Act of 1934, they find that litigation risk exposure is inversely related to client's abnormal accruals. My study differs from Venkataraman et al., (2008) in that I focus on a broader sample not constrained to firms that went public, allowing for generalization of the results to other settings. Unlike Venkataraman et al., (2008)'s accrual-based measures, which are argued to be noisy and potentially performance biased (DeFond and Francis 2005), my measure of auditor's reporting conservatism more unambiguously and directly captures the extent of auditor's discretion on client's reporting.

My paper proceeds as follows. Section 2 provides the institutional background and develops the paper's hypotheses. Section 3 presents the research design, including samples selection and models specification. I report the results for the main and additional tests in Section 4. Finally, the paper is concluded in Section 5.

## **3.2 Background and Hypotheses**

### **3.2.1 Institutional background**

There has been much debate on whether external auditors report favorably to clients who pay large fee premiums (Hope and Langli 2010). Regulators' concerns that auditors might acquiesce to their clients' reporting practices have resulted in a legislation that bans many of the non-audit services that auditors has once used to provide to their clients. Academics and practitioners, however, have consistently argued that regulators' concerns were based merely on the assumption that auditors compromise their independence in favor of retaining audit fees paid by their clients



(DeFond et al. 2002). The legislation opponents further argue that this assumption fails to consider that auditors have institutional incentives that constrain management's reporting discretion (Ashbaugh et al., 2003, DeFond et al. 2002, Hope and Langli 2010).

Particularly in the US, which is considered one of the most litigious environments toward audit professionals (Clarkson and Simunic 1994; DeFond and Francis 2005), auditors are greatly concerned about litigation costs that commonly follow an alleged audit failure. Supporting that argument, Palmrose (1988) argues that auditors are subject to extreme legal liability and reputation loss which create incentives for them to provide high-quality audits. Further, Hwang and Chang (2010) argue that it is relatively easy and quite normal for shareholders to undertake legal actions against auditors in the US. Accordingly, one would expect to see litigation concerns to impact auditor's incentives to become economically dependent on his/her client. Francis (2011) explains auditors' litigation concerns as follows:

“Beyond the specific institutions of a country, there is also the broader effect of the legal system on the incentives of auditors. The legal system has an important role in defining an audit failure, the parties that can take legal action against auditors when there is an alleged failure, the standard of proof for determining if a failure occurs, and the legal remedy against auditors if there is failure. Auditors generally face more exposure to litigation in common law countries such as the United States and Australia where courts are used to settle disputes. In contrast, auditors generally face less direct legal exposure in code law countries such as Continental Europe because disputes in these countries are more likely to be handled administratively by an SEC-type of government agency (La Porta et al. 2006)”

In the US, auditors can be sued by third party non-clients such as stockholders, creditors and other users of financial statements, under many legal bases. The most frequent basis is the Exchange Act of 1934, for publicly traded client firms, followed by the Securities Act of 1933 for IPOs (Baker and Prentice 2008). In 1995, the Private

Securities Litigation Reform Act (PSLRA) was enacted, reducing the legal liability faced by auditors (Pacini et al. 2000b, Lee and Mande 2003).

While federal securities laws continue to be a major source of litigation against auditors, auditors are liable under these laws only for fraud or gross negligence, and not for ordinary negligence<sup>19</sup>. Auditor liability to third parties for (ordinary) negligence is governed by common law (Chung et al. 2010).

Common law is the accumulated set of legal opinions rendered by judges on the cases they decide (Baker and Prentice 2008). These decisions are used as a reference by judges of state courts in the same jurisdiction when rendering legal opinions on cases which involve similar facts and circumstances. Judges in state courts across the country have applied varying standards for auditors' liability to third parties, creating differing legal precedents across states. Some states have also enacted statutes governing auditors' liability to third parties, and these state laws also exhibit variation (Pacini et al. 2000a).

According to Pacini et al. (2000a, 2000b), states of the US apply one of four legal approaches to determine the third parties to whom accountants owe a duty for negligence. These four approaches are (i) privity, or strict privity (ii) near privity (iii) restatement and (iv) reasonable foreseeability.

#### *Privity of contract doctrine*

Privity, or strict privity, is the most restrictive standard on auditor liability to third parties (Pacini et al. 2000a, 2000b). The strict privity rule requires a contractual

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<sup>19</sup> Thompson and Quinn (1996) defines ordinary negligence as the "failure of the auditor to exercise due professional care, whereas gross negligence is a reckless departure from due care". Orlinski (1993) explains that negligence liability results when the accountant fails to meet the standards of the accounting profession.

relationship to exist between the accountant and a third party for the accountant to be held liable to that party for negligence (Pacini et al. 2000a, 2000b).

#### *Near privity standard*

Under the near privity criterion, a contractual relationship need not exist between the accountant and the third party, but the third party must be one for whose benefit the information is provided (Feinman 2003). In 1985, the New York Court of Appeals established three criteria that must be met for a third party non-client to be able to hold the accountant liable for negligence under the near privity standard: (i) the accountant must have known that the financial statements were to be used for a particular purpose by a known party, (ii) the known party (parties) were intended to be able to rely on those reports, and (iii) there must have been some conduct by the auditor linking him to the third party relying on the reports (Scherl 1995).

#### *Restatement of Torts*

Section 552 of the Restatement of Torts “recognizes that liability should extend not only to those with whom the accountant is in privity or near privity, but also to those persons, or classes of persons, whom he knows and intends will rely on his opinion, or whom he knows his client intends will so rely” (Feinman 2003). While the near privity standard requires the identity of specific third parties to be known to the auditor, the restatement standard does not; it only requires that third parties belong to a limited group *known* to the auditor (Gossman 1988, Pacini et al. 2000a).

*Bily v. Arthur Young* case is an example of applying the Restatement standard in determining the extent of auditor’s liability to third parties. In *Bily v. Arthur Young* case, investors of Osborne Computer Corp. brought a lawsuit against Osborne’s auditor,

Arthur Young, alleging that the auditor issued an unqualified report to Osborne which later filed for bankruptcy. Among the allegations was that Arthur Young was aware of MWs in Osborne's internal controls but failed to disclose or report these weaknesses to management. The California Supreme Court concluded that "*an auditor owes no general duty of care regarding the conduct of an audit to persons other than the client*" (Orlinski 1993), however, the auditor could be liable to those "*who act in reliance upon those misrepresentations in a transaction which the auditor intended to influence*" (Coleman 1993).

#### *Foreseeability*

Under this criterion, the auditor owes a duty of care to all foreseeable users (Baker and Prentice 2008). In *Rosenblum v. Alder* case, for example, the court ruled that the auditor has a duty of care to all users whom the auditor should reasonably foresee as *recipients of and relying on the firm's financial statements* (Pacini et al. 2000a).

### **3.2.2 Auditor's Litigation and Going-Concern Opinions**

According to SAS No. 59 (AICPA 1988), auditors render a GC report when they have a substantial doubt about the client's ability to continue as a GC for a reasonable period of time. In arriving at that decision, auditors need to consider "contrary" and "mitigating" factors (AICPA 1988) which indicate whether a GC opinion is appropriate.

Issuing a GC opinion to a financially distressed client indicates that auditors have exercised due diligence and withstood client's pressure to report otherwise. In making these decisions, auditors often consider independence threats that could make them vulnerable to litigation (Blay 2005) in case they failed to detect issues that warrant rendering a GC report to their clients. However, whether issuing a modified-GC report

reduces auditor's litigation is still a question that has not been resolved empirically (Krishnan and Krishnan 1997; Kaplan and Williams 2011). On one hand, auditors who issue a GC opinion to a financially distressed client are more likely to avoid negligence allegations for providing a substandard audit work. Carcello and Palmrose (1994), for example, find that modified audit opinions are negatively associated with auditors' probability of getting sued. Similarly, Geiger and Raghunandan (2002) and Geiger et al. (2006) find that auditor's litigation exposure is positively associated with the likelihood of issuing a GC report. On the other hand, issuing a GC report to a financially distressed client could also trigger lawsuits against auditors. Blacconiere and DeFond (1998), for example, find higher litigation rates against auditors who have issued GC reports in the year prior to their clients' failures. Similarly, Lys and Watts (1994) find that auditors' litigation is more likely to be preceded by a modified report issued by the client's auditor. Lys and Watts (1994) argue that plaintiffs could allege auditors for failure to discover GC problems in *previous* years.

Building on these arguments, I examine how the variation in the legal regimes within the US impacts the likelihood of issuing a GC opinion to a financially distressed client by the external auditor. As explained above, there is a considerable variation in the probability of suing the auditor, and in turn, in the lawsuit-related outcomes across states of the US. Accordingly, I expect the likelihood of rendering a GC opinion to be contingent on the legal liability regime under which the auditor can be sued. That is, in states where auditors face greater liability for failure to report diligently, I expect to see more GC opinions issued by auditors to financially distressed clients relative to states where allegations for negligence are more difficult to justify.

Based on the above, I propose the first hypothesis as follows:

*H1: The propensity of issuing a GC audit opinion is higher for clients in high litigation-risk states than for clients in low litigation-risk states.*

### **3.2.3 Auditor's Litigation and MW Disclosures**

Pursuant to ICOFR provisions of SOX 302, managers of all public companies should evaluate the effectiveness of their ICOFR and disclose, in their quarterly and annual reports, existing control deficiencies. Section 404, first effective on November 15, 2004, has two sections pertaining to management's and auditor's evaluation of ICOFR. SOX 404A requires managers of large firms "accelerated filers" to conduct an annual evaluation of the firm's ICOFR. This requirement has extended to non-accelerated filers starting with fiscal years ending after December 15, 2007. SOX 404B, on the other hand, applies only to accelerated filers and requires an annual evaluation and attestation by external auditors of the firm's ICOFR.

To test whether auditors have reporting discretion to report a MW when one actually exists, I choose a sample of firms that restate their financial statements (following Rice and Weber 2010). According to the PCAOB guidelines (2007), restatements to correct materially misstated financial statements indicate that a MW has existed during misstatement periods. Reporting a MW during periods of financial misstatements indicates that the auditor has exercised considerable professional judgment upon concluding that the firm's ICOFR is ineffective. If, however, auditors fail to discover and/or attest that a MW exists, stakeholders can sue the firm's auditor for failure to warn them of existing deficiencies prior to the restatement surprise (Ashbaugh et al. 2007). The fear of lawsuits can thus impact auditor's incentives to detect and

report an existing MW which the client might be unwilling to disclose. That is, issuing an adverse ICOFR opinion indicates that auditors exert due diligence, which, in turn, mitigates third parties' allegations that a negligent audit has been performed. Accordingly, I expect a positive association between auditor's litigation and the propensity of issuing an adverse opinion when such opinion is warranted. I therefore phrase the second hypothesis as follows:

*H1: The propensity of issuing an adverse ICOFR opinion prior to a restatement is higher for clients in high litigation-risk states than for clients in low litigation-risk states.*

While my sample is comprised mainly of firms which comply with SOX 404B (i.e. auditor's evaluation and attestation requirement) to examine auditor's discretion in reporting a breach in the ICOFR, I also consider MW reporting made by management in accordance with SOX 404A. Complementing the SOX 404B sample with firms that comply with SOX 404A is warranted on the grounds that most of the disclosed unaudited control deficiencies are detected by auditors (Hammersley et al. 2008) and/or are disclosed after consultation with the firm's auditors (Ashbaugh et al. 2007).

### **3.2.4 Auditor's Litigation and Audit Fees**

Simunic and Stein (1996) argue that audit fees consist of a resource cost component and a potential liability loss component. Included in the future losses component are the potential litigation costs that auditors expect to incur following allegations of a substandard audit. Seetharaman et al. (2002) argue that the legal environment in which the audit firm operates is a major determinant of potential litigation costs that auditors need to consider when pricing their services to the client.

The heightened liability risk will lead to increased audit fees in two possible ways (Seetharaman et al. 2002). First, when facing a high litigation risk, auditors will have greater incentives to increase their audit effort to ensure sufficient audit procedures have been performed, and thus, offset plaintiffs' claims that an audit was negligent. For example, auditors who are exposed to high litigation risk will likely expand the scope of audit tests and gather adequate audit evidence to ensure that rendering a GC opinion to a financially distressed client is warranted. Second, since the potential liability losses that auditors can suffer are higher in certain states, auditors could also charge a fee premium to compensate for the inherent liability risk associated with auditing certain clients. In both situations, I expect audit (and total) fees to vary positively with the extent of litigation exposure faced by auditors. I therefore phrase the audit fees hypothesis as follows:

*H1: Auditors of clients in high litigation-risk states earn higher audit and total fees than do auditors of clients in low litigation-risk states.*

### **3.3 Sample Selection and Model Specification**

#### **3.3.1 Going Concern Analysis**

##### **3.3.1.1 Sample Selection**

The initial GC sample consists of 113,762 firm-year observations identified from the Audit Analytics database during 2000-2009<sup>20</sup>. I drop 8,739 observations for missing data on the business and incorporation state and for firms domiciled or incorporated outside the U.S. The process results in 105,023 firm years for which auditors' litigation scores can be identified. To obtain necessary financial statement

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<sup>20</sup> The Audit Analytics database contains GC data starting from 2000 fiscal year ends.



variables that serve as controls in the GC model, I further merge the sample to the CRSP-COMPUSTAT Merged database. After dropping observations with missing control variables, I obtain a sample of 29,263 observations.

Consistent with prior research (Reynolds and Francis 2000 and DeFond et al. 2002), I restrict the sample to financially distressed firms since auditors do not consider issuing a GC opinion to non-distressed firms. Following McKeown et al. (1991), Mutchler et al. (1997), and Geiger and Raghunandan (2002), I define a firm as stressed if it reports negative net income, operating cash flows, and/or working capital in the current fiscal year. I also limit my analysis to firms in non-financial industries since financial firms have unique financial characteristics that require a distinct model for predicting bankruptcy (Geiger and Raghunandan 2002). Accordingly, I omit 13,897 and 635 observations representing non-stressed and financial firm-years, respectively. The final sample comprises 14,731 firm years, including 1,337 GC opinions. The sample selection procedure for the GC analysis is shown in Panel A of Table 3.1<sup>21</sup>.

To examine whether differences in auditor's reporting conservatism vary with client characteristics and industry, I also employ a matched-pairs sample design in which firms receiving a GC opinion are matched on year, size, and industry (three-digit industry codes) with firms not receiving a GC opinion. For that test, I identify 1,294 GC matched with 1,294 non-GC opinions.

### **3.3.1.2 Measurement of Independent Variable**

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<sup>21</sup> To assess the accuracy of the identified sample, I compare the sample size to that used by prior studies. In my sample, 1,336 firms (134 first GC opinions) were identified for year 2000 compared to 1,158 firms (96 first GC opinions) in DeFond et al. (2002). Similarly, Geiger and Blay (2011) identify 1,479 observations (180 first GC opinions) for their 2004-2006 sample period compared to 1,896 observations (122 first GC opinions) identified in my sample during the same period.

I measure the auditor's exposure to legal liability, my main independent variable, using a liability index scheme (a continuous 9-point scale) developed by Pacini et al. (2000b) and Gaver et al. (2009). These scores vary across states contingent upon the legal and statutory law that governs the auditor's liability to third parties for negligence, i.e. the extent to which auditors can be held liable by third parties. These scores are shown in Appendix 1.

I use *AUDLIT* as a measure of auditor's litigation risk: A higher litigation score indicates greater potential legal liability against the auditor. Following Gaver et al. (2009), I use two measures of *AUDLIT*: a) a variable that measures auditor's litigation risk on a scale from 1 to 9, and b) a dummy variable that equals 1 if the auditor's liability is subject to the stricter liability standards of restatement or foreseeability (i.e. if the litigation score measured on a scale basis is greater than 4), and 0 otherwise. Since auditors can be sued in the state of incorporation or the state of principal place of business, I measure *AUDLIT* as the higher of the two scores assigned to the incorporation and business state. For example, if a firm is operating in New Jersey (litigation score=2.5) but incorporated in Delaware (litigation score=5), then *AUDLIT* equals 5 when measured on a scale basis and equals 1 when measured as a dummy.

### 3.3.1.3 Model Specification

The GC regression model examines the impact of auditor's litigation on the propensity of issuing a GC opinion. I employ the following logistic going-concern model to test the direction and significance of that relation:

$$GC = a + B_1 AUDLIT + B_2 ALT\_SC + B_3 LAG\_LOSS + B_4 LEV + B_5 LEVCH + B_6 LOG\_AGE + B_7 INV + B_8 EQUITY + B_9 DEBT + B_{10} LOG\_AT + B_{11} BIG\_AUDIT + B_{12} R\_LAG + yr + industry + e$$

A categorical audit opinion variable is coded one if the auditor issues a GC report during the current fiscal year, and 0 otherwise. *AUDLIT* is measured as explained above.

Consistent with prior literature, I include contrary and mitigating factors that are identified in SAS No. 59 (AICPA 1988) and which would affect the GC opinion decision. Contrary factors are identified as factors which raises doubts about the client's GC while mitigating factors are those which mitigate the contrary information that questions the firm's continued existence (Mutchler et al.1997, Reynolds and Francis 2005).

I use several measures to capture contrary information that will likely raise doubts about the firm's GC prospects. Since the decision to issue a GC is decreasing in the financial health of the firm, I use Altman's Z-score (Altman 1968), *ALT\_SC*, to measure the financial distress of the firm, where a lower *ALT\_SC* score indicates greater financial distress. Therefore, I expect a negative coefficient for *ALT\_SC*. Consistent with Reynolds and Francis (2000), I also include *LAG\_LOSS* as an additional measure to proxy for financial distress, and is equal to 1 if a firm has a net loss in the prior year, and 0 otherwise. I predict a positive coefficient for *LAG\_LOSS*. Since Mutchler et al. (1997) show evidence that firms receiving a GC opinion are close to debt covenant violations, I use the *LEV* and *LEVCH* to capture the firm's leverage and change in leverage, respectively. Additionally, since younger firms are more prone to bankruptcy (Dopuch et al. 1987), I also include *LOG\_AGE* to measure the number of years the firm has been publicly traded.

Additionally, I control for mitigating factors that offset the auditor's decision to modify his/her opinion. Consistent with DeFond et al. (2002), I include *INV* as a measure of the firm's liquidity, and is equal to cash plus short-term investments scaled by total assets. I also include *EQUITY* and *DEBT* to control for new issuance for equity and debt in the current year as mitigating factors (Mutchler et al. 1997).

I further include *LOG\_AT* to capture the impact of firm's size on issuing a GC opinion. Larger firms have more negotiating power (Reynolds and Francis 2000) and likely have more accessible sources of financing to mitigate bankruptcy. For example, larger firms could have more assets to use as collateral to obtain additional funds compared to smaller firms. Since big audit firms are also more likely to render a GC opinion than small auditors (Mutchler et al. 1997), I include a variable, *BIG\_AUDIT*, that is coded 1 if the client is audited by a big5 audit firm during fiscal years ending 2000, 2001, and 2002 or a big4 audit firm during fiscal years 2003 to 2009. Consistent with McKeown et al. (1991), I also include the number of days between the fiscal-year end and the auditor opinion date, *R\_LAG*, which is expected to be positively associated with a GC audit opinion being issued to the client. Finally, I include two-digit industry SIC codes to control for variation across industries and year dummies to account for inter-temporal variation in auditors' reporting decisions.

### **3.3.2 MW Disclosure Analysis**

#### **3.3.2.1 Sample Selection**

To test the hypothesis that the likelihood of a MW disclosure is increasing in the auditor's litigation risk, I develop two samples of firms that restated their financial

statements during 2005-2009<sup>22</sup>. As explained above, the two samples are: a) firms which comply with SOX 404A *and* firms which comply with both SOX 404A and SOX 404B and b) firms which comply with both SOX 404A and SOX 404B<sup>23</sup>.

To obtain the first sample, I initially identify 7,791 firm-years representing restatement announcements during the sample period. I then drop 4,609 firm-years not subject to any of the SOX404 provisions. Additionally, I drop 147 with missing information on the state where the firm is incorporated or located. After finally omitting 1,018 observations for missing Compustat information, I obtain a final sample of 2,017 firm years, including 334 MW disclosures preceding restatement announcements. The sample selection procedure is summarized in Panel B of table 3.1.

The second sample was obtained in a similar manner except that 5,948 observations are dropped for firms which do not comply with SOX404B during the sample period. I omit 107 observations for missing data needed to measure *AUDLIT*. I finally drop 137 observations for missing Compustat information, resulting in a final sample of 1,599 firm-years with 221 adverse SOX404 opinions. The sample selection procedure is summarized in Panel C of table 3.1.

I hereafter refer to the sample of firms which comply with SOX 404A *and* those which comply with both SOX 404A and SOX 404B as the “SOX404A&A/B” sample. Also, I refer to firms which comply with both SOX 404A and SOX 404B as the “SOX404A/B” sample.

### 3.3.2.2 Model Specification

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<sup>22</sup> The sample period starts from 2005 since auditors were not required to attest to the firm’s ICOFR prior to that date.

<sup>23</sup> According to SOX, a firm that complies with SOX 404B has to comply with SOX 404A. The opposite is not necessarily true, however. The latter is the case for non-accelerated filers.

I use the following logistic regression model to test the hypothesis that auditor's litigation is positively associated with a MW disclosure:

$$\begin{aligned}
 SOX404\_MW = & \quad a + B_1 AUDLIT + B_2 SOX302\_MW + B_3 GOING\_CONCERN \\
 & + B_4 BIG6 + B_5 FIRMLIT + B_6 LOSS + B_7 LOG\_MV \\
 & + B_8 PRIOR\_RESTATE + B_9 FINANCING + B_{10} AUDCHANGE + yr \\
 & + industry + e
 \end{aligned}$$

The model is an extension of Rice and Weber (2010)'s model which examines the determinants of disclosing a MW during misstatement periods. The model is tested separately for each of the two MW samples described above.

In the model, *SOX404\_MW* is a dichotomous variable that is coded 1 if the auditor reports a SOX 404 MW during any of the two years prior to the restatement and 0 otherwise. As in the GC analysis, I use *AUDLIT* as a measure for litigation risk faced by the auditor and is measured using the two proxies identified above. Other variables are included as controls (Rice and Weber 2010) and are defined as follows: *SOX302\_MW* is a dummy that is coded 1 if the firm discloses a prior SOX 302 MW and 0 otherwise; *GOING\_CONCERN* is a dummy that is coded 1 if the firm was issued a GC report by the auditor during the fiscal year covered by the ICOFR report and 0 otherwise; *BIG6* is a dummy that is coded 1 if the firm is audited by a big6 audit firm during the fiscal year covered by the ICOFR report and 0 otherwise<sup>24</sup>; *FIRMLIT* is a dummy that is coded 1 if the firm is operating in a high-litigious industry as identified by Francis et al. 1994 and 0 otherwise<sup>25</sup>; *LOSS* is a dummy that is coded 1 if the firm has a current year loss and 0 otherwise; *LOG\_MV* is the log of the MV of equity at the end

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<sup>24</sup> I use Big6 auditors to provide comparative results with Rice and Weber (2010). The results are unchanged to using BIG4 auditors in the regression, however.

<sup>25</sup> According to Francis et al. 1994, high litigious industries are industries with the following SIC codes: 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374, and 8731-8734.

of the current fiscal year; *PRIOR\_RESTATE* is a dummy that is coded 1 if the firm has a prior restatement and 0 otherwise; *FINANCING* is the sum of cash received from the sale of stock (*SSTK*) and long-term debt (*DLTIS*) minus cash used to repurchase stock (*PRSTKC*), pay off debt (*DLCCH*) and to pay dividends (*DV*) scaled by total assets at the end of the current period; and *AUDCHANGE* is a dummy that is coded 1 if the firm's auditor was changed during the two years prior to the MW disclosure.

### **3.3.3 Audit Fees Analysis**

#### **3.3.3.1 Sample Selection**

To obtain the sample used for the audit fees analysis, I initially obtain a sample of 84,617 Compustat firms with available identifiers on Audit Analytics. I further delete 14,982 for missing Compustat variables; 7,759 for missing fee data; 6,949 for missing state information; and 3,803 for missing information on going concern opinion. The final sample consists of 51,124 (51,095) firm years for the total (audit) fees analysis. Panel D of table 3.1 summarizes the sample selection procedure for the fees analysis.

#### **3.3.3.2 Model Specification**

I estimate the following multiple regression to test the hypothesis that auditor's litigation exposure is positively associated with higher audit/total fees. The model estimates audit and total fees as a function of auditor's litigation risk (*AUDITLIT*), client size (*LOG\_AT*), audit firm size (*BIG\_AUDIT*), client risk (*LEV*, *LOSS*, and *ROA*), audit complexity (*INVENT*, *FOREIGN*, *FIN*, *SPECIAL\_ITEMS*), and audit opinion rendered (*GOING\_CONCERN* and *SOX404\_ICOFR*). The model is run for both audit and total fees specifications.

$$\begin{aligned}
LOG(FEE) = & \quad \alpha + B_1 AUDLIT + B_2 LOG\_AT + B_3 BIG\_AUDIT + B_4 LEV \\
& + B_5 LOSS + B_6 ROA + B_7 INVENT + B_8 FOREIGN + B_9 FIN \\
& + B_{10} SPECIAL\_ITEMS + B_{11} GOING\_CONCERN \\
& + B_{12} SOX404\_ICOFR + yr + industry + e
\end{aligned}$$

As explained above, I use *AUDLIT*, both as a dummy and as a continuous variable running from 1 to 9. I use *LOG\_AT* and *BIG\_AUDIT* to control for client's and audit firm size. Following Choi et al. (2010), I include *LEV*, *LOSS*, and *ROA* (ratio of net income to total assets) to proxy for client specific risk. Audit complexity measures include a) *INVENT*: the proportion of total assets that is included in inventory, b) *FOREGIN*: a dummy equals 1 if the firm pays foreign taxes, and 0 otherwise (Choi et al. 2010), c) *FIN*: a dummy that equals 1 if the percentage increase in long-term debt is at least 20% or the number of common shares outstanding increased by 10% (Ashbaugh et al. 2003), and d) *SPECIAL\_ITEMS*: a dummy that equals 1 if the firm has special items in the current fiscal year (Ashbaugh et al. 2003). Finally, I include *GOING\_CONCERN* and *SOX404\_ICOFR* to control for the extra audit effort associated with rendering a GC and ICOFR opinions, respectively.

### 3.4 Results

#### 3.4.1 Going Concern Analysis

##### 3.4.1.1 Descriptive Statistics

Panel (A) of table 3.1 shows that 9% (1,337) of the sample firms (14,731) receive a GC opinion during the sample period. This is consistent with Reynolds and Francis (2000) and DeFond et al. (2002) who find that 9% and 8% of their samples



receive a GC opinion, respectively. Table 3.2 reports the descriptive statistics for the GC and non-GC samples, both for the full and matched sample.

The *AUDITLIT* dummy has a mean of 0.956 for the GC sample compared with 0.916 for firms receiving a clean audit report. The t-test indicates that the mean *AUDITLIT* dummy is significantly higher for firms that are issued a GC opinion. Similarly, when measured on a scale from 1 to 9, *AUDITLIT* also appears to be significantly higher for the GC sample than in the non-GC sample, with the difference significant at the 5% level. The matched-sample analysis also shows consistent results, with a significantly higher mean litigation risk for the GC sample compared to the non-GC sample. Altogether, the descriptive statistics for auditor's litigation measures are consistent with auditors' GC reporting decisions being more conservative for clients in high-litigation regimes.

The table also compares the means for other variables across the two samples. *ALT\_SC* is significantly lower (p-value<5%) for the non-GC sample than for the matched GC sample, indicating that healthier firms are generally less likely to receive a GC opinion. The table also reports that around 90% of distressed firms that experience negative operating performance in the prior year receive a GC report compared to 60% of firms having a prior-year net loss but receiving a clean audit report. The matched-sample analysis also shows consistent results for the mean *LAG\_LOSS* difference across the two samples. The table also reports that GC sample have a significantly higher leverage (*LEV*) and leverage change (*LEVCH*) than the no-GC sample.

As to firm's age, the analysis shows that younger firms are more likely to receive a GC opinion by auditors compared to aged firms. Distressed firms that have the

ability to obtain cash quickly from their short-term investments are less likely to receive a GC opinion report compared to firms having less-liquid investments. The analysis also reveals that firms that obtain additional sources of equity in the current year mitigate the likelihood of getting a GC opinion. Contrary to expectations, the matched-sample analysis shows that firms which raise debt capital in the current year are more likely to receive a GC opinion than firms that did not obtain additional debt capital.

Larger firms seem to have more negotiating powers and thus less likely to receive a GC opinion. This is shown to be consistent for the two analyses<sup>26</sup>. Big auditors are more likely to issue a GC opinion to their financially-distressed clients compared to small auditors. Finally, due to the extra audit effort associated with GC reports, firms receiving such opinions tend to have longer reporting delays relative to firms not receiving such reports.

### **3.4.1.2 Logit Regression Results**

#### **3.4.1.2.1 Full and Matched Sample Analyses**

Table 3.3 presents the results for the logit regression tests for the full sample of GC and non-GC opinions. The table reports the Chi-square and coefficient estimates for the full sample across alternative measures of *AUDITLIT*. The statistical significance of the estimated coefficients is based on robust standard errors clustered by firm. After controlling for firm's and auditor's size, bankruptcy risk, and other factors specified in the above GC equation, the results show that the coefficients on *AUDITLIT* are significant at the 1% and 5% levels for the dummy and the scale measures, respectively. That is, consistent with the univariate analysis, the full-sample logit analysis shows that

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<sup>26</sup> Even though the matched-pair analyses match firms based on firm's size, year, and industry, the descriptive statistics show that size-matching is not perfect. My approach was to get a non-GC firm that has the closest (but not same) asset's value for each GC firm-year observation.

auditor's litigation is positively associated with reporting a modified GC opinion, indicating that auditors have litigation concerns that affect their GC reporting decisions.

While *AUDITLIT* appears to be significantly related to GC opinion regardless of the litigation measure used, the table shows that *AUDLIT* is more significant when a dummy proxies for litigation. The categorical variable is probably making a clear cut-off point between high- and low-risk states, showing greater power when using a dummy variable. Overall, the results support the first hypothesis that auditors are more likely to issue a GC opinion in states where the likelihood of establishing grounds for negligence is high.

Other variables are shown to have coefficients in the expected direction. One exception is *DEBT* which has a positive loading on the likelihood of a GC opinion. The sign of the coefficients are also consistent with the results reported in the univariate analysis. *ALT\_SC* is significantly negative indicating that firms which are more close to bankruptcy (lower *ALT\_SC*) are more likely to receive a GC report. Firms that report a loss in the previous year (*LAG\_LOSS*) and firms that are highly leveraged (*LEV*) are also more likely to receive a GC opinion. Similarly, younger firms are more prone to bankruptcy and therefore are more likely to receive a GC opinion. Investments in liquid assets (*INV*) and increase in equity (*EQUITY*) act as mitigating factors that lower the likelihood of receiving a modified audit opinion. Small distressed firms are less likely to secure additional sources of finance that would prevent them from bankruptcy, making them more prone to receiving a GC opinion. Big audit firms are also more likely to issue a modified GC opinion. Finally, longer reporting delays are shown to be positively associated with receiving a GC report.

Table 3.4 replicates the above analysis for the matched-sample model. Using a 1,294 GC and 1,294 non-GC opinions, the analysis shows results consistent with those reported for the full sample. In particular, *AUDLIT* is significantly positive at the 1% level both for the dummy and scale measures, lending a strong support for the above finding that auditor litigation is positively associated with the likelihood of issuing a GC report.

#### **3.4.1.2.2 Alternative Sample Designs**

So far, the GC analysis shows evidence consistent with auditors reporting more conservatively when facing high litigation costs arising from negligent reporting decisions. In arriving at the sample used for the above analyses, I included multiple-year GC opinions in the sample. That is, a firm that was issued a GC opinion could have also received a GC opinion in the prior year. Since GC opinions might be correlated across years, the above results could also be driven by a consistent pattern of GC opinions that exist over the sample period. To test the robustness of the results to the above design issue, I re-examine the first hypothesis, restricting the GC sample to *first-time* GC opinions. The results for the full and matched reduced samples are reported in table 3.5.

Consistent with the main results, *AUDLIT* still have a positive coefficient, with p-values of 0.001 and 0.011 for the full and matched samples, respectively. The models' Chi-squares are consistently significant and the models' coefficients retain their expected signs.

As an additional robustness check, I repeat the above tests without restricting the sample to include only distressed firms. In other words, I include all available firm-

years during 2000-2009 in the sample regardless of their financial distress levels. The procedure increases the sample to 29,263 firm-years with 1,352 GC opinions.

As shown in table 3.6, the *AUDLIT* remains significantly positive across the full- and matched-sample designs, indicating that auditors are more likely to issue a GC opinion for clients exposing them to greater litigation risk than for their low litigation-risk counterparts.

### **3.4.2 MW Disclosure Analysis**

#### **3.4.2.1 Descriptive Statistics**

Table 3.7 compares the model variables across groups based on whether a MW was disclosed prior to announcing a restatement. The table shows the results for the SOX404A&A/B and SOX404A/B samples.

Consistent with expectations, the *AUDITLIT* measures are significantly higher for firms whose auditors report a MW compared to firms whose auditors did not provide an advanced disclosure, indicating that the likelihood of a MW disclosure is increasing in the auditor's litigation risk. Around 42% of the SOX 404 disclosures confirm prior adverse SOX 302 MW disclosures while only 11% of the clean SOX 404 disclosures were made following SOX 302 MW disclosures. Big 6 auditors are less likely to report a MW disclosure prior to announcing a restatement compared to non-big6 auditors. Firm's litigation does not appear to play a significant role in auditor's reporting decisions. Auditors are more likely to report a MW for smaller firms and those identified with a current-year loss than for larger firms and those which have not encountered a current-year loss. Consistent with the PCAOB (2007) argument, restatements of previously issued financial misstatements indicate a higher likelihood that a MW has existed. That is why I observe a significantly higher proportion of

restatements in the group of firms whose auditors disclose a MW. Finally, new auditors are more likely to disclose a MW during the two years following the auditor switch than are incumbent auditors.

### **3.4.2.2 Logit Regression Results**

#### **3.4.2.2.1 Main Results**

Table 3.8 reports the regression results for the MW disclosure model for the SOX404A&A/B sample. Supporting the univariate statistics, I find a positive association between auditor's litigation and reporting of a SOX 404 MW, indicated by the significantly positive coefficient on *AUDLIT*. The significantly positive coefficient supports the hypothesis that auditors in high litigation-risk states are more likely to issue an adverse opinion on the effectiveness of the firm's ICOFR prior to restatement announcements.

The table also shows that *SOX302\_MW* and *GOING\_CONCERN* are positively significant, indicating a greater likelihood for auditors to report a SOX 404 MW following a SOX 302 MW and a GC report, respectively. The size of the audit firm is not significant while firm's litigation is negatively significant only at the 10% level. Consistent with the descriptive results reported above, firms reporting a negative income are more likely to have their auditor report a MW. Similar to the Big6 coefficient, firm's size is not significantly associated with reporting of a MW by the auditor. Auditors of firms that have announced prior restatements are more likely to report a SOX 404 MW consistent with the PCAOB (2007) argument. Finally, new auditors are more likely to disclose a MW during the two years subsequent to the switch.

Table 3.9 restricts the sample to firms that comply with the audit attestation requirement of SOX 404 – the SOX404A/B sample. Restricting the sample to 221 firms with MW disclosures and 1,378 firms with no MW disclosures, *AUDLIT* still shows a significantly positive coefficient, but only when measured as a dummy variable. When measured on a scale from 1 to 9, the coefficient is no longer significant (p-value=0.35).

#### **3.4.2.2.2 Alternative Sample Designs**

To further assess the sensitivity of my results to alternative sample designs, I limit the analysis to include only one observation per firm. That is, if a firm has multiple restatements, only the first restatement is included. This will ensure that reporting a MW is rather predictive of a future restatement than to be addressing of a prior restatement. I re-examine the hypothesis using the reduced sample and report the results for both SOX 404 A/B and SOX 404 A& A/B in table 3.10.

Consistent with the above results, *AUDLIT* still have a positive coefficient, with p-values of <0.001 and <0.05 for the two samples, respectively. The models' Chi-squares are consistently significant and the pseudo R<sup>2</sup>'s have improved over those of prior models. Overall, my conclusion that auditors' propensity to issue an adverse audit opinion is positively related to their litigation risk is robust to alternative sample designs. It is noteworthy here that even though the analysis restricts the sample to first-time restatement announcements, the regression results still show *PRIOR\_RESTATE* to be significantly positive, which is mainly due to the impact of prior restatements that were announced prior to 2005. That is, I restrict the sample to include first-time restatements following 2004 but not prior to that.

#### **3.4.3 Audit Fees Analysis**

I now test the hypothesis that auditors with high litigation risk earn higher fees relative to auditors with low litigation risk. Table 3.11 presents the results of estimating the audit-fees model using alternative measures of *AUDITLIT*.

The table reports the coefficient estimates and their significance levels after clustering standard errors by firm. The coefficient of *AUDITLIT* is 0.09, and is positively significant at the 1% level. The magnitude of the *AUDITLIT* coefficient indicates a fee premium of a 9.6% ( $e^{-0.09} - 1$ ) to compensate for the higher litigation liability in states applying the restatement of torts and foreseeability standards. The positive association between auditor's litigation and audit fees, however, holds only when a dummy *AUDITLIT* is used to distinguish between the liability regimes of privity and near privity and the more-strict regimes of restatement of torts and foreseeability.

Table 3.12 estimates the regression of the total fees on the two measures of *AUDITLIT*. Again, the results show a positive association between *AUDITLIT* and total fees, indicating that auditors of high litigation-risk states earn a fee premium to compensate for future litigation costs arising from potential third-party allegations for audit failure. As in the audit-fees analysis, the *AUDITLIT* measure shows a positive association with the total fees only when the dummy variable is used.

### **3.5 Conclusion**

I examine the impact of state liability regimes on auditors' reporting decisions and audit fees. I use a novel approach that exploits variation in the extent to which auditors can be held liable by third parties first developed by Pacini et al. (2000b) and Gaver et al. (2009). That variation allows testing whether auditors' reporting decisions vary depending on the state in which the auditor can be sued.



I hypothesize that auditors in high litigation-risk states are more likely to report more conservatively and to charge higher fees relative to auditors in low litigation-risk states. I use two measures to proxy for auditor's inclination to report conservatively to clients when facing high litigation risk: (a) the propensity to issue a GC audit opinion and (b) the propensity to report a MW during misstatement periods.

Consistent with expectations, I document a positive relation between auditor's litigation risk and a) the likelihood of issuing a modified GC audit opinion and b) the likelihood of issuing an adverse audit opinion on the client's ICOFR. Overall, the above findings indicate that auditors' decisions to report conservatively are greatly impacted by the legal environment in which the auditor can be sued. I also show that auditors of clients in high litigation-risk states earn higher audit fees compared to auditors of clients in low litigation-risk states.

### 3.6 References

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### 3.7 Tables for Chapter 3

**Table 3.1 Sample Selection**

#### **Panel A Going Concern Sample**

Initial Sample identified from Audit Opinion dataset	113,762
Delete observations with missing information on the state in which the firm is incorporated/operating	(8,739)
Delete observations with missing Compustat variables	(75,760)
Delete observations representing firms in financial industries	(635)
Delete observations representing non-stressed firms	(13,897)
Final sample	14,731
Going-concern sample	1,337
Non-going concern sample	13,394

Panel A shows the sample selection procedure for the GC analysis.

#### **Panel B MW (SOX404A & A/B) Sample**

Initial restatement sample identified from Audit Opinion dataset	7,791
Delete observations not subject to SOX 404 requirement	(4,609)
Delete observations with missing state information	(147)
Delete observations with missing Compustat variables	(1,018)
Final sample	2,017
MW disclosures	334
No-MW disclosures	1,683

Panel B shows the sample selection procedure for SOX 404A and 404B analysis.

#### **Panel C MW (SOX404A/B) Sample**

Initial restatement sample identified from Audit Opinion dataset	7,791
Delete observations not subject to SOX 404B requirement	(5,948)
Delete observations with missing state information	(107)
Delete observations with missing Compustat variables	(137)
Final sample	1,599
MW disclosures	221
No-MW disclosures	1,378

Panel C shows the sample selection procedure for SOX 404B analysis

#### **Panel D Audit Fees Sample**

Initial sample identified from Compustat (with available identifiers on Audit Analytics) from 2000-2009	84,617
Delete observations for missing Compustat variables	(14,982)
Delete observations with unavailable fee data	(7,759)
Delete observations with missing state information or for non-US firms	(6,949)
Delete observations with missing going concern opinion	(3,803)
Final sample with available total fees data	51,124
Less - observations with missing audit fees data	(29)
Final sample with available audit fees data	51,095

Panel D shows the sample selection procedure for audit fees analysis



**Table 3.2– Descriptive Statistics for Going Concern Sample Partitioned by  
Opinion**

Variables	Full Sample			Matched Sample		
	GC=0	GC=1	test of mean difference	GC=0	GC=1	test of mean difference
<i>AUDLIT (Dummy)</i>	0.916	0.956	-6.42***	0.913	0.956	-4.46***
<i>AUDLIT (Continuous)</i>	5.049	5.112	-2.00**	4.962	5.114	-3.37***
<i>ALT_SC</i>	0.949	0.904	1.11	1.035	0.902	2.84**
<i>LAG_LOSS</i>	0.595	0.895	-31.57***	0.703	0.896	-12.63***
<i>LEV</i>	0.235	0.453	-9.38***	0.181	0.452	-10.99***
<i>LEVCH</i>	0.015	0.119	-5.00***	0.022	0.119	-4.51***
<i>LOG_AGE</i>	1.609	1.522	4.62***	1.580	1.520	2.31***
<i>INV</i>	0.263	0.221	5.81***	0.325	0.222	9.74***
<i>EQUITY</i>	0.848	0.762	7.05***	0.801	0.761	2.47***
<i>DEBT</i>	0.496	0.508	-0.85	0.359	0.505	-7.58***
<i>LOG_AT</i>	5.285	3.411	36.05***	3.583	3.404	2.63***
<i>BIG_AUDIT</i>	0.757	0.550	14.49***	0.556	0.550	0.36
<i>R_LAG</i>	81.990	101.800	-11.07***	87.749	101.800	-6.58***

The table reports the descriptive statistics for the full and the matched sample partitioned by auditor opinion. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *ALT\_SC* is the Altman's Z-score measure of financial distress. *LAG\_LOSS* is a dummy that equals 1 if the firm reports a loss in the prior fiscal year and 0 otherwise. *LEV* measures the firm's leverage: long-term debt divided by total assets. *LEVCH* measures the change in leverage. *LOG\_AGE* is the log of the number of years that the firm has been publicly traded. *INV* measures the firm's liquidity and is equal to cash plus short-term investments divided by the total assets. *EQUITY* is a dummy that equals 1 if the firm issued equity in the current fiscal year and 0 otherwise. *DEBT* is a dummy that equals 1 if the firm issued debt in the current fiscal year and 0 otherwise. *LOG\_AT* is the log of the firm's total assets. *BIG\_AUDIT* is a dummy that equals 1 if the audit opinion is issued by a big 4 audit firm and 0 otherwise. *R\_LAG* is the number of days between the fiscal year end date and the audit report date.

\*\*\*, \*\*, \* indicates significance at the 1%, 5%, and 10%, respectively

**Table 3.3 – Logistic Regression of Going Concern on Auditor Litigation Risk - Full Sample**

$$GC = a + B_1 AUDLIT + B_2 ALT_{SC} + B_3 LAG\_LOSS + B_4 LEV + B_5 LEVCH + B_6 LOG\_AGE + B_7 INV + B_8 EQUITY + B_9 DEBT + B_{10} LOG\_AT + B_{11} BIG\_AUDIT + B_{12} R\_LAG + yr + industry + e$$

Variables	Exp. Coeff	AUDLIT is a dummy			AUDLIT is a continuous variable		
		Coeff	Wald Chi-Square	p-value	Coeff	Wald Chi-Square	p-value
<i>Intercept</i>	+/-	0.266	0.385	0.535	0.647	2.165	0.141
<i>AUDLIT</i>	+	0.857	18.057	<.0001	0.072	5.172	0.023
<i>ALT_SC</i>	-	-0.273	6.366	0.012	-0.282	6.465	0.011
<i>LAG_LOSS</i>	+	1.272	154.966	<.0001	1.293	160.136	<.0001
<i>LEV</i>	+	1.195	28.852	<.0001	1.182	27.523	<.0001
<i>LEVCH</i>	+	-0.125	0.724	0.395	-0.089	0.377	0.539
<i>LOG_AGE</i>	-	-0.145	4.211	0.040	-0.158	5.101	0.024
<i>INV</i>	-	-2.375	92.047	<.0001	-2.353	90.394	<.0001
<i>EQUITY</i>	-	-0.147	2.282	0.131	-0.141	2.128	0.145
<i>DEBT</i>	-	0.250	8.761	0.003	0.243	8.290	0.004
<i>LOG_AT</i>	-	-0.698	374.268	<.0001	-0.693	373.719	<.0001
<i>BIG_AUDIT</i>	+	0.387	14.657	0.000	0.407	16.360	<.0001
<i>R_LAG</i>	+	0.005	33.880	<.0001	0.005	31.653	<.0001
<i>Year Dummy included</i>							
<i>Industry Dummy included</i>							
Likelihood Ratio			2209.3178	<.0001		2181.5288	<.0001
Pseudo R2			25.10%			24.00%	
N			14,731			14,731	

The table reports the multiple regression results for the going concern model using the full sample. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *ALT\_SC* is the Altman's Z-score measure of financial distress. *LAG\_LOSS* is a dummy that equals 1 if the firm reports a loss in the prior fiscal year and 0 otherwise. *LEV* measures the firm's leverage: long-term debt divided by total assets. *LEVCH* measures the change in leverage. *LOG\_AGE* is the log of the number of years that the firm has been publicly traded. *INV* measures the firm's liquidity and is equal to cash plus short-term investments divided by the total assets. *EQUITY* is a dummy that equals 1 if the firm issued equity in the current fiscal year and 0 otherwise. *DEBT* is a dummy that equals 1 if the firm issued debt in the current fiscal year and 0 otherwise. *LOG\_AT* is the log of the firm's total assets. *BIG\_AUDIT* is a dummy that equals 1 if the audit opinion is issued by a big 4 audit firm and 0 otherwise. *R\_LAG* is the number of days between the fiscal year end date and the audit report date.

**Table 3.4 – Logistic Regression of Going Concern on Auditor Litigation Risk - Matched Sample**

$$GC = a + B_1 AUDLIT + B_2 ALT_{SC} + B_3 LAG\_LOSS + B_4 LEV + B_5 LEVCH + B_6 LOG\_AGE + B_7 INV + B_8 EQUITY + B_9 DEBT + B_{10} LOG\_AT + B_{11} BIG\_AUDIT + B_{12} R\_LAG + yr + industry + e$$

Variables	Exp. Coeff	AUDLIT is a dummy			AUDLIT is a continuous variable		
		Coeff	Wald Chi-Square	p-value	Coeff	Wald Chi-Square	p-value
<i>Intercept</i>	+/-	-1.103	1.212	0.271	-0.970	0.936	0.333
<i>AUDLIT</i>	+	0.855	10.099	0.002	0.125	4.956	0.026
<i>ALT_SC</i>	-	-0.186	3.594	0.058	-0.190	3.496	0.062
<i>LAG_LOSS</i>	+	1.422	102.053	<.0001	1.424	102.240	<.0001
<i>LEV</i>	+	1.741	23.157	<.0001	1.738	23.264	<.0001
<i>LEVCH</i>	+	-0.380	1.958	0.162	-0.360	1.704	0.192
<i>LOG_AGE</i>	-	-0.232	3.824	0.051	-0.237	4.021	0.045
<i>INV</i>	-	-2.033	38.413	<.0001	-1.987	36.888	<.0001
<i>EQUITY</i>	-	-0.116	0.617	0.432	-0.117	0.635	0.426
<i>DEBT</i>	-	0.282	4.394	0.036	0.275	4.165	0.041
<i>LOG_AT</i>	-	-0.210	16.842	<.0001	-0.211	17.207	<.0001
<i>BIG_AUDIT</i>	+	0.519	9.938	0.002	0.529	10.626	0.001
<i>R_LAG</i>	+	0.008	1.587	0.208	0.009	1.681	0.195
<i>Year Dummy included</i>							
<i>Industry Dummy included</i>							
Likelihood Ratio			623.4747	<.0001		612.2623	<.0001
Pseudo R2			17.40%			17.10%	
N			2,588			2,588	

The table reports the multiple regression results for the going concern model using matched sample design. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *ALT\_SC* is the Altman's Z-score measure of financial distress. *LAG\_LOSS* is a dummy that equals 1 if the firm reports a loss in the prior fiscal year and 0 otherwise. *LEV* measures the firm's leverage: long-term debt divided by total assets. *LEVCH* measures the change in leverage. *LOG\_AGE* is the log of the number of years that the firm has been publicly traded. *INV* measures the firm's liquidity and is equal to cash plus short-term investments divided by the total assets. *EQUITY* is a dummy that equals 1 if the firm issued equity in the current fiscal year and 0 otherwise. *DEBT* is a dummy that equals 1 if the firm issued debt in the current fiscal year and 0 otherwise. *LOG\_AT* is the log of the firm's total assets. *BIG\_AUDIT* is a dummy that equals 1 if the audit opinion is issued by a big 4 audit firm and 0 otherwise. *R\_LAG* is the number of days between the fiscal year end date and the audit report date.

**Table 3.5 - Logistic Regression of Going Concern on Auditor Litigation Risk - FIRST GC Opinion**

$$GC = a + B_1 AUDLIT + B_2 ALT_{SC} + B_3 LAG\_LOSS + B_4 LEV + B_5 LEVCH + B_6 LOG\_AGE + B_7 INV + B_8 EQUITY + B_9 DEBT + B_{10} LOG\_AT + B_{11} BIG\_AUDIT + B_{12} R\_LAG + yr + industry + e$$

Variables	Exp. Coeff	ALL SAMPLE			MATCHED SAMPLE		
		Coeff	Wald Chi-Square	p-value	Coeff	Wald Chi-Square	p-value
<i>Intercept</i>	+/-	-0.804	2.892	0.089	-2.303	3.072	0.080
<i>AUDLIT</i>	+	0.697	11.382	0.001	0.701	6.471	0.011
<i>ALT_SC</i>	-	-0.302	6.514	0.011	-0.191	4.751	0.029
<i>LAG_LOSS</i>	+	1.173	88.795	<.0001	1.250	49.740	<.0001
<i>LEV</i>	+	0.743	17.214	<.0001	1.550	13.291	0.000
<i>LEVCH</i>	+	0.158	0.080	0.777	0.951	3.066	0.080
<i>LOG_AGE</i>	-	-0.159	4.700	0.030	-0.250	3.426	0.064
<i>INV</i>	-	-2.369	80.170	<.0001	-2.129	33.084	<.0001
<i>EQUITY</i>	-	-0.106	0.910	0.340	0.100	0.320	0.572
<i>DEBT</i>	-	0.312	9.434	0.002	0.172	1.112	0.292
<i>LOG_AT</i>	-	-0.560	232.156	<.0001	-0.165	8.466	0.004
<i>BIG_AUDIT</i>	+	0.729	40.250	<.0001	0.599	11.464	0.001
<i>R_LAG</i>	+	0.005	30.513	<.0001	0.022	3.559	0.059
<i>Year Dummy included</i>							
<i>Industry Dummy included</i>							
Likelihood Ratio			1026.2751	<.0001		345.5937	<.0001
Pseudo R2			19.10%			18.80%	
N			14,096			1,326	

The table reports the multiple regression results for the going concern model using first-time GC observations. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *ALT\_SC* is the Altman's Z-score measure of financial distress. *LAG\_LOSS* is a dummy that equals 1 if the firm reports a loss in the prior fiscal year and 0 otherwise. *LEV* measures the firm's leverage: long-term debt divided by total assets. *LEVCH* measures the change in leverage. *LOG\_AGE* is the log of the number of years that the firm has been publicly traded. *INV* measures the firm's liquidity and is equal to cash plus short-term investments divided by the total assets. *EQUITY* is a dummy that equals 1 if the firm issued equity in the current fiscal year and 0 otherwise. *DEBT* is a dummy that equals 1 if the firm issued debt in the current fiscal year and 0 otherwise. *LOG\_AT* is the log of the firm's total assets. *BIG\_AUDIT* is a dummy that equals 1 if the audit opinion is issued by a big 4 audit firm and 0 otherwise. *R\_LAG* is the number of days between the fiscal year end date and the audit report date.

**Table 3.6 - Logistic Regression of Going Concern on Auditor Litigation Risk – All Sample  
(Including non-distressed Firms)**

$$GC = a + B_1 AUDLIT + B_2 ALT_{SC} + B_3 LAG\_LOSS + B_4 LEV + B_5 LEVCH + B_6 LOG\_AGE + B_7 INV + B_8 EQUITY + B_9 DEBT + B_{10} LOG\_AT + B_{11} BIG\_AUDIT + B_{12} R\_LAG + yr + industry + e$$

Variables	Exp. Coeff	ALL SAMPLE			MATCHED SAMPLE		
		Coeff	Wald Chi-Square	p-value	Coeff	Wald Chi-Square	p-value
<i>Intercept</i>	+/-	-0.050	0.013	0.909	-2.027	2.738	0.098
<i>AUDLIT</i>	+	0.880	20.798	<.0001	1.054	12.094	0.001
<i>ALT_SC</i>	-	-0.356	9.195	0.002	-0.218	3.075	0.080
<i>LAG_LOSS</i>	+	1.811	327.477	<.0001	1.921	180.978	<.0001
<i>LEV</i>	+	1.237	39.429	<.0001	1.652	17.933	<.0001
<i>LEVCH</i>	+	-0.037	0.036	0.850	-0.267	1.073	0.300
<i>LOG_AGE</i>	-	-0.180	6.895	0.009	-0.241	4.180	0.041
<i>INV</i>	-	-2.272	84.940	<.0001	-1.904	30.456	<.0001
<i>EQUITY</i>	-	-0.209	4.575	0.032	-0.297	3.462	0.063
<i>DEBT</i>	-	0.284	11.896	0.001	0.427	9.046	0.003
<i>LOG_AT</i>	-	-0.740	321.502	<.0001	-0.137	5.329	0.021
<i>BIG_AUDIT</i>	+	0.349	11.893	0.001	0.526	10.133	0.002
<i>R_LAG</i>	+	0.005	35.333	<.0001	0.011	1.543	0.214
<i>Year Dummy included</i>							
<i>Industry Dummy included</i>							
Likelihood Ratio			3516.7792	<.0001		896.6542	<.0001
Pseudo R2			32%			24%	
N			29,263			2,696	

The table reports the multiple regression results for the going concern model using all distressed and non-distressed firm years during the sample period. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *ALT\_SC* is the Altman's Z-score measure of financial distress. *LAG\_LOSS* is a dummy that equals 1 if the firm reports a loss in the prior fiscal year and 0 otherwise. *LEV* measures the firm's leverage: long-term debt divided by total assets. *LEVCH* measures the change in leverage. *LOG\_AGE* is the log of the number of years that the firm has been publicly traded. *INV* measures the firm's liquidity and is equal to cash plus short-term investments divided by the total assets. *EQUITY* is a dummy that equals 1 if the firm issued equity in the current fiscal year and 0 otherwise. *DEBT* is a dummy that equals 1 if the firm issued debt in the current fiscal year and 0 otherwise. *LOG\_AT* is the log of the firm's total assets. *BIG\_AUDIT* is a dummy that equals 1 if the audit opinion is issued by a big 4 audit firm and 0 otherwise. *R\_LAG* is the number of days between the fiscal year end date and the audit report date.

**Table 3.7 – Descriptive Statistics - MW Disclosures Model - SOX 404 A&A/B and SOX 404 A/B**

Variables	SECTION 404 A&A/B			SECTION 404 A/B		
	SOX404_ MW=0	SOX404 _MW=1	test of mean difference	SOX404 _MW=0	SOX404 _MW=1	test of mean difference
<i>AUDLIT (dummy)</i>	0.868	0.970	-8.22***	0.863	0.964	-6.46***
<i>AUDLIT (Continuous)</i>	4.883	5.256	-5.28***	4.883	5.177	-3.48***
<i>SOX302_MW</i>	0.112	0.419	-10.94***	0.089	0.425	-9.83***
<i>GOING_CONCERN</i>	0.078	0.213	-5.74***	0.019	0.045	-1.82*
<i>BIG6</i>	0.733	0.566	5.73***	0.862	0.819	1.56
<i>FIRMLIT</i>	0.218	0.240	-0.89	0.219	0.222	-0.09
<i>LOSS</i>	0.320	0.593	-9.69***	0.255	0.475	-6.18***
<i>LOG_MV</i>	5.805	4.964	6.48***	6.423	6.084	3.28**
<i>PRIOR_RESTATE</i>	0.507	0.734	-8.34***	0.479	0.751	-8.48***
<i>FINANCING</i>	0.343	0.179	0.83	0.001	0.029	-1.23
<i>AUDCHANGE</i>	0.177	0.338	-5.88***	0.131	0.231	-3.33***

The table reports the descriptive statistics for the model variables across the samples depending on whether a SOX404 MW disclosure precedes a restatement. *SOX404\_MW* is a dummy that is coded 1 if the firm discloses a MW during the two years prior to the restatement and 0 otherwise. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *SOX302\_MW* is a dummy that is coded 1 if the firm discloses a MW prior to the *SOX404\_MW* and 0 otherwise. *GOING\_CONCERN* is a dummy that is coded 1 if the firm was given a GC opinion in the current fiscal year and 0 otherwise. *BIG6* is a dummy that equals 1 if the audit opinion is issued by a big 6 audit firm and 0 otherwise. *FIRMLIT* is a dummy that is coded 1 if the firm is a member in any of the high-litigious industries and 0 otherwise. *LOSS* is a dummy that is equal to 1 if the firm has a current-year loss and 0 otherwise. *LOG\_MV* is the log of the market value of equity at the end of the period covered by the internal control report. *PRIOR\_RESTATE* is a dummy that is coded 1 if the firm announces a prior restatement and 0 otherwise. *FINANCING* is measured as the sum of cash received from the sale of stock (SSTK) and long-term debt (DLTIS) minus cash used to repurchase stock (PRSTKC), pay off debt (DLCCH) and to pay dividends (DV) scaled by total assets at the end of the current period. *AUDCHANGE* is a dummy that is coded 1 if the firm had its auditor changed during the two-year period preceding the MW disclosure.

**Table 3.8 – Logistic Regression- MW Disclosures Model - SOX 404 A&A/B**

$$SOX404\_MW = a + B_1 AUDLIT + B_2 SOX302\_MW + B_3 GOING\_CONCERN + B_4 BIG6 + B_5 FIRMLIT + B_6 LOSS + B_7 LOG\_MV + B_8 PRIOR\_RESTATE + B_9 FINANCING + B_{10} AUDCHANGE + yr + industry + e$$

Variables	Exp. Coeff	AUDLIT is a dummy			AUDLIT is a continuous variable		
		Coeff	Wald Chi-Square	p-value	Coeff	Wald Chi-Square	p-value
<i>Intercept</i>	+/-	-2.983	2.851	0.091	-2.523	2.290	0.130
<i>AUDLIT</i>	+	1.424	15.418	<.0001	0.173	8.097	0.004
<i>SOX302_MW</i>	+	1.518	66.248	<.0001	1.506	64.278	<.0001
<i>GOING_CONCERN</i>	+/-	0.466	2.830	0.093	0.430	2.447	0.118
<i>BIG6</i>	+	-0.369	2.073	0.150	-0.383	2.244	0.134
<i>FIRMLIT</i>	+	-0.487	3.005	0.083	-0.416	2.184	0.139
<i>LOSS</i>	+/-	0.746	14.464	0.000	0.760	15.104	0.000
<i>LOG_MV</i>	-	0.004	0.005	0.944	0.004	0.004	0.948
<i>PRIOR_RESTATE</i>	+	0.524	10.424	0.001	0.527	10.344	0.001
<i>FINANCING</i>	-	-0.012	1.756	0.185	-0.011	1.403	0.236
<i>AUDCHANGE</i>	+	0.484	6.204	0.013	0.483	6.188	0.013
<i>Year Dummy included</i>							
<i>Industry Dummy included</i>							
Likelihood Ratio			396.4461	<.0001		384.8698	<.0001
Psuedo R2			21.90%			21.30%	
N			2,017			2,017	

The table reports the results for the regression model for sample firms that disclose a SOX 404 MW pursuant to SOX404A and SOX404 A/B. *SOX404\_MW* is a dummy that is coded 1 if the firm discloses a MW during the two years prior to the restatement and 0 otherwise. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *SOX302\_MW* is a dummy that is coded 1 if the firm discloses a MW prior to the SOX404\_MW and 0 otherwise. *GOING\_CONCERN* is a dummy that is coded 1 if the firm was given a GC opinion in the current fiscal year and 0 otherwise. *BIG6* is a dummy that equals 1 if the audit opinion is issued by a big 6 audit firm and 0 otherwise. *FIRMLIT* is a dummy that is coded 1 if the firm is a member in any of the high-litigious industries and 0 otherwise. *LOSS* is a dummy that is equal to 1 if the firm has a current-year loss and 0 otherwise. *LOG\_MV* is the log of the market value of equity at the end of the period covered by the internal control report. *PRIOR\_RESTATE* is a dummy that is coded 1 if the firm announces a prior restatement and 0 otherwise. *FINANCING* is measured as the sum of cash received from the sale of stock (SSTK) and long-term debt (DLTIS) minus cash used to repurchase stock (PRSTKC), pay off debt (DLCCCH) and to pay dividends (DV) scaled by total assets at the end of the current period. *AUDCHANGE* is a dummy that is coded 1 if the firm had its auditor changed during the two-year period preceding the MW disclosure.

**Table 3.9 –Logistic Regression- MW Disclosures Model - SOX 404 A/B**

$$SOX404\_MW = a + B_1 AUDLIT + B_2 SOX302\_MW + B_3 GOING\_CONCERN + B_4 BIG6 + B_5 FIRMLIT + B_6 LOSS + B_7 LOG\_MV + B_8 PRIOR\_RESTATE + B_9 FINANCING + B_{10} AUDCHANGE + yr + industry + e$$

Variables	Exp. Coeff	AUDLIT is a dummy			AUDLIT is a continuous variable		
		Coeff	Wald Chi-Square	p-value	Coeff	Wald Chi-Square	p-value
<i>Intercept</i>	+/-	-2.884	2.090	0.148	-2.252	1.239	0.266
<i>AUDLIT</i>	+	1.162	7.680	0.006	0.072	0.876	0.349
<i>SOX302_MW</i>	+	1.986	71.088	<.0001	1.983	70.624	<.0001
<i>GOING_CONCERN</i>	+/-	-0.540	0.699	0.403	-0.578	0.794	0.373
<i>BIG6</i>	+	-0.142	0.196	0.658	-0.156	0.236	0.627
<i>FIRMLIT</i>	+	0.101	0.080	0.778	0.167	0.213	0.644
<i>LOSS</i>	+/-	0.583	5.647	0.018	0.627	6.501	0.011
<i>LOG_MV</i>	-	-0.050	0.288	0.592	-0.055	0.343	0.558
<i>PRIOR_RESTATE</i>	+	0.697	13.000	0.000	0.708	13.240	0.000
<i>FINANCING</i>	-	0.947	5.905	0.015	0.961	6.133	0.013
<i>AUDCHANGE</i>	+	0.518	3.720	0.054	0.511	3.521	0.061

*Year Dummy included*

*Industry Dummy included*

Likelihood Ratio	322.4051	<.0001	313.4277	<.0001
Pseudo R2	25.10%		24.40%	
N	1,599		1,599	

The table reports the results for the regression model for sample firms that disclose a SOX 404 MW pursuant SOX404 A/B. *SOX404\_MW* is a dummy that is coded 1 if the firm discloses a MW during the two years prior to the restatement and 0 otherwise. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *SOX302\_MW* is a dummy that is coded 1 if the firm discloses a MW prior to the SOX404 MW and 0 otherwise. *GOING\_CONCERN* is a dummy that is coded 1 if the firm was given a GC opinion in the current fiscal year and 0 otherwise. *BIG6* is a dummy that equals 1 if the audit opinion is issued by a big 6 audit firm and 0 otherwise. *FIRMLIT* is a dummy that is coded 1 if the firm is a member in any of the high-litigious industries and 0 otherwise. *LOSS* is a dummy that is equal to 1 if the firm has a current-year loss and 0 otherwise. *LOG\_MV* is the log of the market value of equity at the end of the period covered by the internal control report. *PRIOR\_RESTATE* is a dummy that is coded 1 if the firm announces a prior restatement and 0 otherwise. *FINANCING* is measured as the sum of cash received from the sale of stock (SSTK) and long-term debt (DLTIS) minus cash used to repurchase stock (PRSTKC), pay off debt (DLCC) and to pay dividends (DV) scaled by total assets at the end of the current period. *AUDCHANGE* is a dummy that is coded 1 if the firm had its auditor changed during the two-year period preceding the MW disclosure.



**Table 3.10 –Logistic Regression- MW Disclosures Model – First Restatement Filing**

$$SOX404\_MW = a + B_1 AUDLIT + B_2 SOX302\_MW + B_3 GOING\_CONCERN + B_4 BIG6 + B_5 FIRMLIT + B_6 LOSS + B_7 LOG\_MV + B_8 PRIOR\_RESTATE + B_9 FINANCING + B_{10} AUDCHANGE + yr + industry + e$$

Variables	Exp. Coeff	First Restatement SECTION 404 A&A/B			First Restatement SECTION 404 A/B		
		Coeff	Wald Chi-Square	p-value	Coeff	Wald Chi-Square	p-value
<i>Intercept</i>	+/-	-3.032	4.410	0.036	-3.931	3.211	0.073
<i>AUDLIT (dummy)</i>	+	1.252	10.524	0.001	0.982	4.644	0.031
<i>SOX302_MW</i>	+	1.508	55.908	<.0001	2.082	61.613	<.0001
<i>GOING_CONCERN</i>	+/-	0.450	2.304	0.129	-0.586	0.872	0.350
<i>BIG6</i>	+	-0.705	6.651	0.010	-0.604	3.160	0.076
<i>FIRMLIT</i>	+	-0.160	0.263	0.608	0.518	1.462	0.227
<i>LOSS</i>	+/-	0.735	13.558	0.000	0.615	6.311	0.012
<i>LOG_MV</i>	-	-0.017	0.088	0.767	-0.086	1.029	0.311
<i>PRIOR_RESTATE</i>	+	0.904	24.530	<.0001	1.216	30.381	<.0001
<i>FINANCING</i>	-	-0.010	0.550	0.458	0.798	3.322	0.068
<i>AUDCHANGE</i>	+	0.376	3.334	0.068	0.438	2.255	0.133
<i>Year Dummy included</i>							
<i>Industry Dummy included</i>							
Likelihood Ratio			257.359	<.0001		290.125	<.0001
Pseudo R2			24.40%			29.30%	
N			1,508			1,189	

The table reports the results for the regression model for sample firms announcing their first post-2004 restatements and comply with SOX 404 A& A/B or SOX404 A/B. *SOX404\_MW* is a dummy that is coded 1 if the firm discloses a MW during the two years prior to the restatement and 0 otherwise. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *SOX302\_MW* is a dummy that is coded 1 if the firm discloses a MW prior to the SOX404 MW and 0 otherwise. *GOING\_CONCERN* is a dummy that is coded 1 if the firm was given a GC opinion in the current fiscal year and 0 otherwise. *BIG6* is a dummy that equals 1 if the audit opinion is issued by a big 6 audit firm and 0 otherwise. *FIRMLIT* is a dummy that is coded 1 if the firm is a member in any of the high-litigious industries and 0 otherwise. *LOSS* is a dummy that is equal to 1 if the firm has a current-year loss and 0 otherwise. *LOG\_MV* is the log of the market value of equity at the end of the period covered by the internal control report. *PRIOR\_RESTATE* is a dummy that is coded 1 if the firm announces a prior restatement and 0 otherwise. *FINANCING* is measured as the sum of cash received from the sale of stock (SSTK) and long-term debt (DLTIS) minus cash used to repurchase stock (PRSTKC), pay off debt (DLCCH) and to pay dividends (DV) scaled by total assets at the end of the current period. *AUDCHANGE* is a dummy that is coded 1 if the firm had its auditor changed during the two-year period preceding the MW disclosure.

**Table 3.11 – Multiple Regression- Audit Fees Model**

$$\begin{aligned}
 \text{LOG}(FEE) = & a + B_1 \text{AUDLIT} + B_2 \text{LOG\_AT} + B_3 \text{BIG\_AUDIT} + B_4 \text{LEV} + B_5 \text{LOSS} + B_6 \text{ROA} \\
 & + B_7 \text{INVENT} + B_8 \text{FOREIGN} + B_9 \text{FIN} + B_{10} \text{SPECIAL\_ITEMS} \\
 & + B_{11} \text{GOING\_CONCERN} + B_{12} \text{SOX404\_ICOFR} + \text{yr} + \text{industry} + e
 \end{aligned}$$

Variables	Exp. Coeff	AUDLIT is a dummy			AUDLIT is a continuous variable		
		Coeff	t-value	p-value	Coeff	t-value	p-value
<i>Intercept</i>	+/-	-3.880	-66.000	<.0001	-3.830	-63.600	<.0001
<i>AUDITLIT</i>	+	0.091	4.380	<.0001	0.006	1.170	0.240
<i>LOG_AT</i>	+	0.382	85.840	<.0001	0.381	85.790	<.0001
<i>BIG_AUDIT</i>	+	0.508	33.340	<.0001	0.512	33.530	<.0001
<i>LEV</i>	+	0.001	2.190	0.029	0.001	2.190	0.029
<i>LOSS</i>	+	0.198	19.180	<.0001	0.201	19.420	<.0001
<i>ROA</i>	-	0.000	-4.680	<.0001	0.000	-4.680	<.0001
<i>INVENT</i>	+	0.229	5.040	<.0001	0.225	4.970	<.0001
<i>FOREIGN</i>	+	0.463	30.490	<.0001	0.464	30.490	<.0001
<i>FIN</i>	+	0.035	4.830	<.0001	0.035	4.880	<.0001
<i>SPECIAL_ITEMS</i>	+	0.200	22.800	<.0001	0.201	22.900	<.0001
<i>GOING_CONCERN</i>	+	0.336	17.820	<.0001	0.337	17.900	<.0001
<i>SOX404_ICOFR</i>	+	0.463	32.830	<.0001	0.463	32.780	<.0001
Adj R2				82.06%			82.01%
N				51,095			51,095

The table reports the multiple regression of audit and total fees on auditor's litigation risk. *FEE* is measured as audit fees in the current year. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *LOG\_AT* is the log of the firm's total assets. *BIG\_AUDIT* is a dummy that equals 1 if the audit opinion is issued by a big 4 audit firm and 0 otherwise. *LEV* measures the firm's leverage: long-term debt divided by total assets. *LOSS* is a dummy that is equal to 1 if the firm has a current-year loss and 0 otherwise. *ROA* is the firm's return on assets and is measured as net income divided by total assets. *INVENT* is the proportion of firm's assets in inventory. *FOREIGN* is a dummy that equals to 1 if the firm reports a foreign tax income and 0 otherwise. *FIN* is a dummy that equals 1 if the percentage increase in long-term debt is at least 20% or the number of common shares outstanding increased by 10%. *SPECIAL\_ITEMS* is a dummy that equals 1 if the firm has special items in the current fiscal year. *GOING\_CONCERN* is a dummy that is coded 1 if the firm was given a GC opinion in the current fiscal year and 0 otherwise. *SOX404\_ICOFR* is a dummy that equals 1 if the firm is subject to auditor attestation of ICOFR and 0 otherwise.

**Table 3.12 – Multiple Regression- Total Fees Model**

$$\begin{aligned}
 \text{LOG}(FEE) = & a + B_1 \text{AUDLIT} + B_2 \text{LOG\_AT} + B_3 \text{BIG\_AUDIT} + B_4 \text{LEV} + B_5 \text{LOSS} + B_6 \text{ROA} \\
 & + B_7 \text{INVENT} + B_8 \text{FOREIGN} + B_9 \text{FIN} + B_{10} \text{SPECIAL\_ITEMS} \\
 & + B_{11} \text{GOING\_CONCERN} + B_{12} \text{SOX404\_ICOFR} + \text{yr} + \text{industry} + e
 \end{aligned}$$

Variables	Exp. Coeff	AUDLIT is a dummy			AUDLIT is a continuous variable		
		Coeff	t-value	p-value	Coeff	t-value	p-value
<i>Intercept</i>	+/-	-3.817	-64.750	<.0001	-3.759	-62.110	<.0001
<i>AUDITLIT</i>	+	0.087	4.100	<.0001	0.003	0.670	0.505
<i>LOG_AT</i>	+	0.415	90.990	<.0001	0.415	90.880	<.0001
<i>BIG_AUDIT</i>	+	0.532	34.750	<.0001	0.536	34.940	<.0001
<i>LEV</i>	+	0.001	2.230	0.026	0.001	2.230	0.026
<i>LOSS</i>	+	0.183	17.620	<.0001	0.186	17.860	<.0001
<i>ROA</i>	-	0.000	-4.710	<.0001	0.000	-4.710	<.0001
<i>INVENT</i>	+	0.150	3.280	0.001	0.147	3.210	0.001
<i>FOREIGN</i>	+	0.484	31.620	<.0001	0.485	31.630	<.0001
<i>FIN</i>	+	0.068	9.170	<.0001	0.068	9.220	<.0001
<i>SPECIAL_ITEMS</i>	+	0.222	24.590	<.0001	0.223	24.690	<.0001
<i>GOING_CONCERN</i>	+	0.323	16.880	<.0001	0.325	16.960	<.0001
<i>SOX404_ICOFR</i>	+	0.313	22.260	<.0001	0.313	22.240	<.0001
Adj R2				81.75%			81.73%
N				51,124			51,124

The table reports the multiple regression of audit and total fees on auditor's litigation risk. *FEE* is measured as the sum of audit and non-audit fees in the current year. *AUDLIT* measures the auditor's litigation risk based on the state in which the firm is operating and incorporated and is measured as a dummy or on a scale from 1 to 9. *LOG\_AT* is the log of the firm's total assets. *BIG\_AUDIT* is a dummy that equals 1 if the audit opinion is issued by a big 4 audit firm and 0 otherwise. *LEV* measures the firm's leverage: long-term debt divided by total assets. *LOSS* is a dummy that is equal to 1 if the firm has a current-year loss and 0 otherwise. *ROA* is the firm's return on assets and is measured as net income divided by total assets. *INVENT* is the proportion of firm's assets in inventory. *FOREIGN* is a dummy that equals to 1 if the firm reports a foreign tax income and 0 otherwise. *FIN* is a dummy that equals 1 if the percentage increase in long-term debt is at least 20% or the number of common shares outstanding increased by 10%. *SPECIAL\_ITEMS* is a dummy that equals 1 if the firm has special items in the current fiscal year. *GOING\_CONCERN* is a dummy that is coded 1 if the firm was given a GC opinion in the current fiscal year and 0 otherwise. *SOX404\_ICOFR* is a dummy that equals 1 if the firm is subject to auditor attestation of ICOFR and 0 otherwise.

**Appendix 1 State Liability Indices as developed by Pacini et al. (2000b) and Gaver et al. (2009)\***

State	Liability Index	State	Liability Index
Alabama	1994-2001: (5)	Montana	1993-2001: (3)
Alaska	1993-2001: (4)	Nebraska	1993-2001: (2)
Arizona	1993-2001: (5)	Nevada	1993-2001: (5)
Arkansas	1995-2001: (1.5)	New Hampshire	1993-2001: (5)
California	1993-2001: (4)	New Jersey	1996-2001: (2.5)
Colorado	1993-2001: (5)	New Mexico	1993-2001: (5)
Connecticut	1998-2001 (3.5)	New York	1993-2001: (2.5)
Delaware	1993-2001: (5)	North Carolina	1993-2001: (5)
District of Columbia	1993-2001: (2)	North Dakota	1993-2001: (5)
Florida	1993-2001: (5)	Ohio	1993-2001: (4.5)
Georgia	1993-2001: (5)	Oklahoma	1993-2001: (5)
Hawaii	1993-2001: (5)	Oregon	1993-2001: (5)
Idaho	1993-2001: (2.5)	Pennsylvania	1993-2001: (1)
Illinois	1993-2001: (3.5)	Rhode Island	1993-2001: (5)
Indiana	1993-2001 (2.5)	South Carolina	1993-2001: (5)
Iowa	1993-2001: (5)	South Dakota	1993-2001: (5)
Kansas	1993-2001: (2.5)	Tennessee	1993-2001: (5)
Kentucky	1993-2001: (5)	Texas	1993-2001: (7.5)
Louisiana	1993-2001: (5)	Utah	1993-2001: (2.5)
Maine	1993-2001: (5)	Vermont	1993-2001: (5)
Maryland	1993-2001: (2.5)	Virginia	1993-2001: (1)
Massachusetts	1993-2001: (4)	Washington	1998-2001: (6)
Michigan	1996-2001: (4)	West Virginia	1993-2001: (5)
Minnesota	1993-2001: (7)	Wisconsin	1993-2001: (8)
Mississippi	1993-2001: (9)	Wyoming	1995-2001: (3)
Missouri	1993-2001: (5)		

The appendix shows the litigation scores assigned based on the extent of auditor's liability to third parties for negligence (Pacini et al. 2000 and Gaver et al. 2009). A higher litigation score indicates a higher potential legal liability against the auditor (moving from the privity standard towards foreseeability).

\* Pacini et al. (2000b) and Gaver et al. (2009) develop litigation indices for 1993 through 2001. In some states the liability index changes over time. I include in this table only the most recent indices since they are the most relevant to my sample period.

**CURRICULUM VITAE**

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09/1980	Born in Cairo, Egypt
09/1994	Attended Al-Ahmadia Secondary School, Tanta, Egypt
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