THE MARKET'S PERCEPTION OF THE REGULATORY CHANGE FROM
AUDITING STANDARD NO. 2 TO AUDITING STANDARD NO. 5

by

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TABLE OF CONTENTS

ABSTRACT

I investigate the stock market's reaction to events related to the Public Company

Accounting Oversight Board's (PCAOB) development and enactment of Auditing

Standard No. 5 (AS 5). The change from Auditing Standard No. 2 (AS 2) to AS 5 was

debated in the business press at length. The PCAOB stated that the goal of AS 5 was to

reduce the prohibitive costs of the Sarbanes-Oxley Act of 2002 – Section 404 and AS 2

(Krishnan et al. 2008) while maintaining the effectiveness of the internal control audits

required by those policies. However, there was concern that internal control audit quality

would decrease under AS 5. My study examines how investors perceived this change by

considering stock market reaction around 10 event dates related to PCAOB and Securities

and Exchange Commission (SEC) actions with regard to the development and enactment

of AS 5. I find evidence that the market's reaction to key AS 5 events was significantly

negative, which is consistent with investors perceiving AS 5 as a significant decrease in

internal control audit quality. I also study these investor reactions cross-sectionally to

further examine the two potential effects of AS 5 (decrease in compliance costs and

decrease in internal control audit quality) and how they relate to firm characteristics (size,

complexity, litigation risk, and fraud risk). I find evidence consistent with my main

finding: investors' perceived increase in information risk under AS 5 is apparent when

considering firm characteristics. Finally, I consider ex-post financial reporting quality

under AS 5 and find no significant change in financial reporting quality compared to

under AS 2.   This study contributes to accounting research by being the first to study the

stock market's perception of this significant policy change archivally and the first to

consider the effectiveness of AS 5 with regard to financial reporting quality.

1. INTRODUCTION

When the Sarbanes-Oxley Act of 2002 was first introduced, arguably the most controversial section was Section 404 regarding internal control regulation. This legislation along with Auditing Standard No. 2 (AS 2) (issued by the Public Company Accounting Oversight Board (PCAOB) in 2004) imposed strict internal control regulations on the management of public companies and their external auditors, both of which were largely self-regulated with regard to internal controls up to this point. AS 2 was also widely criticized as an example of "regulatory overreach" (SEC 2005). Auditing Standard No. 5 (AS 5) was issued by the PCAOB in 2007 to replace AS 2. The PCAOB's main goal of this regulation was to increase the efficiency of the internal control audit[1] while maintaining its effectiveness. However, there was significant concern regarding a new internal control audit regulation, specifically among investors and investor advocates. Doogar et al. (2010) found that the efficiency of internal control audits was increased under AS 5 (audit fees decreased). The question then becomes: how did investors perceive the development and enactment of AS 5, and did AS 5 maintain the effectiveness of internal control audits? My study sheds light on the stock market's perception of AS 5 as well as provides evidence regarding the effectiveness of the regulation. In other words, I study how this regulatory change affected *perceived* and *actual* internal control audit quality.

In this study, I examine the stock market's reaction to event dates related to the development and enactment of AS 5. Did the stock market perceive this regulation as a

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[1] For the sake of brevity, I refer to an internal control audit over financial reporting as "internal control audit" throughout the paper.

potential decrease in compliance costs or as a potential decrease in internal control audit quality (which indirectly affects the information used by the market)? If both were perceived by investors as aspects of AS 5, which aspect dominated their perception? I also examine the actual effectiveness of AS 5 in terms of financial reporting quality. In other words, did the PCAOB's goal for AS 5 come to fruition?

I test the U.S. stock market reaction to event dates related to the development of AS 5 by calculating abnormal returns using non-U.S.-traded foreign returns as the benchmark for normal U.S. returns, similar to the method used by Zhang (2007). Because AS 5 affected all accelerated filers in the U.S., I need a benchmark for U.S. normal returns as if they were not influenced by AS 5 events. I also test these returns cross-sectionally in order to help determine the dominant force influencing investors: potential compliance cost decreases vs. potential decreases in internal control audit quality. Finally, I test financial reporting quality pre- and post-AS 5 using a model similar to Nagy (2010). I proxy for financial reporting quality using financial statement restatements and discretionary accruals.

I find that the stock market had a significant negative reaction to eight events that increased the likelihood that AS 5 would be approved by the PCAOB and the Securities and Exchange Commission (SEC) as the internal control regulation replacing AS 2. This result supports the notion that investors' concerns for the potential decrease in internal control audit quality under AS 5 outweighed their positive perception of a decrease in compliance costs. I also find that actual financial reporting quality was maintained under

AS 5. This result suggests that the PCAOB's claim that AS 5 would increase the efficiency of internal control audits while maintaining their effectiveness appears valid.

This study makes several significant contributions to accounting literature. First, to my knowledge, this is the first research study to consider the impact this change in internal control regulation had on the stock market. This evidence should be of interest to the PCAOB, as it sheds light on the market's perception of one of the most important standards the PCAOB has issued to date. Also, the PCAOB has an interest in the point of view of investors, evidenced by the establishment of their own Investor Advisory Group. Second, this study provides evidence of the actual effectiveness of AS 5 with regard to financial reporting quality. This should again be of interest to the PCAOB, as it suggests that AS 5 was effective in the way the organization intended it to be. This result would also be of interest to financial statement users who have a vested interest in the quality of the information provided to them through the financial statements of public companies.

The remainder of the paper is organized as follows. Section 2 discusses the institutional setting regarding the timeline of events that occurred beginning with SOX 404 and ending with the approval of AS 5 by the SEC. This section then describes the event dates related to the development and enactment of AS 5. Section 3 reviews the relevant prior academic literature. Section 4 provides motivation for this study and develops the predictions tested in the paper. Section 5 explains my sample and research design. Section 6 presents my empirical results. Section 7 offers concluding remarks.

2. BACKGROUND

2.1 Foreign Corrupt Practices Act of 1977

Internal control regulation for U.S. companies began with the Foreign Corrupt Practices Act of 1977 (USDOJ 2004). It required that an adequate system of internal controls be devised and maintained, but made little mention of specific regulation or enforcement with respect to a company's internal controls. Regardless of the level of regulation put forth by this Act, it is evidence that regulators have long had their eye on internal controls in addition to financial statement regulation.

2.2 Sarbanes-Oxley Act of 2002

The Sarbanes-Oxley Act of 2002 was passed by Congress on July 25, 2002 (Congress 2002). This bill was legislated largely in response to the financial scandals that were discovered in late 2001, the most significant of which was Enron. With regard to auditors, this Act changed the landscape of public accounting. Section 101 establishes the PCAOB to "oversee the audits of public companies in order to protect investors and the public interest by promoting informative, accurate, and independent audit reports" (PCAOB 2011a). The PCAOB has gone on to establish several Auditing Standards, some of which I will discuss later.

Section 302 (SOX 302) addresses disclosure controls. Among other things, it requires that the signing officers produce a report regarding their conclusions about the effectiveness of the firm's internal controls. However, there is no external auditor requirement in this section. Specific to internal control regulation, Section 404 (SOX

404) specifies new requirements for management with respect to firms' internal controls.

Subsection A states that management is responsible for maintaining an adequate internal

control structure and procedures for financial reporting, and is required to produce an

assessment of this structure and these procedures. Subsection B extends subsection A by

requiring management to retain the company's external auditor to attest to and report on

management's assessment of internal control. These requirements were more specifically

addressed by the PCAOB with the issuance of AS 2.

2.3 Auditing Standard No. 2

AS 2 was issued by the PCAOB on March 9, 2004 to provide specific guidance to

auditors implementing SOX 404 (PCAOB 2004). This standard provided requirements

for the external auditor, and by extension, management of the public companies being

audited. AS 2 referenced requirements for management taken from underlying laws and

SEC regulations. A separate framework was provided for management (published by the

Committee of Sponsoring Organizations ("COSO")) to follow in order to conduct an

assessment of the company's internal controls. This framework provided some guidance

for management regarding their responsibilities during the internal control audit and what

was required in the related written representation. It also provided guidance to

management regarding how to report on their assessment of internal controls and what

related certifications were required. AS 2 required auditors to issue an independent

opinion on management's assessment of internal controls, as well as an independent

opinion on the adequacy of the firm's internal control structure and procedures. AS 2

provided guidance to the auditor regarding opinion formulation; topics covered were the auditor's objective in an internal control audit, materiality considerations, fraud considerations, audit performance guidance, and auditor reporting guidance. Due to the detailed and specific testing guidance in AS 2, the PCAOB considered the approach of this standard to be a bottom-up coverage-based approach. This standard was approved by the SEC on June 17, 2004 (SEC 2004). It became effective for firms with fiscal years ended November 15, 2004 or later (PCAOB 2004).

There were significant compliance costs related to the implementation of SOX 404 and AS 2. Krishnan et al. (2008) investigate these costs and identify three categories of compliance costs: internal labor costs, external consulting and technology expenses, and auditor attestation charges. They find that firms' total compliances costs had a mean (median) of $2.2 million ($1.2 million) from January 2003 to September 2005. The mean (median) net sales for these firms were $657 million ($188 million). They also find that these costs tended to be higher for larger firms, firms with internal control weaknesses, and firms with new CEOs, and lower for firms in regulated industries and firms raising new financing. Thus, these costs were considered prohibitive and the regulations inefficient. Less than one year into AS 2 compliance, plans were being made to replace AS 2 with a more efficient auditing standard.

2.4 Auditing Standard No. 5

Several events occurred from 2005 to 2007 relating to the development of AS 5. On April 13, 2005, the SEC and PCAOB held roundtable discussions on internal control

reporting requirements. The highlight of these discussions was a speech by the PCAOB Chairman, William McDonough, who stated that the SOX 404 audits under AS 2 were "excessive" (Reason 2005). A second roundtable discussion was held on May 10, 2006 (Taub 2006). This discussion included issuers, auditors, investors, and other interested parties. On May 17, 2006, following the roundtable discussions with the SEC, the PCAOB announced a four-point plan to improve implementation of internal control reporting requirements. These points included amending AS 2 and improving auditor efficiency (PCAOB 2006a). On July 11, 2006, in response to the roundtable discussions in May, the SEC issued a Concept Release regarding additional guidance for management in the form of several questions firms should consider when formulating their continued compliance with SOX 404 (Leone 2006).

On November 30, 2006, the Committee on Capital Markets Regulation also called for changes to SOX 404 and AS 2 (Shaw 2006). The Committee's report also discussed compliance problems that this stricter regulatory regime imposed on the U.S. equity market. The PCAOB and SEC reacted to these calls for change. On December 19, 2006, the PCAOB voted unanimously to propose for public comment a new standard to replace AS 2 (PCAOB 2006b). Almost in concert, on December 13, 2006, the SEC announced the proposal of new interpretive guidance for management with regard to improvements to SOX 404 implementation (Gordon 2006).

On May 24, 2007, the PCAOB approved AS 5 (PCAOB 2007a). AS 5 made three significant changes to the practice of internal control audits. First, auditors no longer need to report on management's assessment of their internal controls. This requirement

under AS 2 was ultimately considered to be a redundant process as auditors were already opining on their client's internal control structure and procedures. Second, AS 5 requires auditors to use greater professional judgment when assessing auditee fraud risk and incorporate this risk assessment into their choice of audit procedures when conducting the internal control audit. Third, AS 5 requires auditors to restructure their internal control audits from a bottom-up, coverage-based approach (under AS 2) to a top-down, risk-based approach (PCAOB 2007b). Under this new approach, auditors begin by examining entity-level controls and identifying high-risk areas in the firm's controls. The results of this examination and assessment drive the planning of the audit procedures. Under AS 2, auditors tested most of the auditees' controls (using a "coverage-based" approach). Under AS 5, the goal is for auditors to better focus their testing on the firm's identified risk areas. This puts more emphasis on auditor judgment in determining what areas of a client's controls to test.

There were several additional minor changes made by AS 5. Another regulatory change under AS 5 was a change to the materiality threshold for control deficiencies and material weaknesses. Under AS 2, an account-balance level of materiality was used in planning the internal control audit. This materiality level was lower than the financial-statement materiality level, leading to more internal control testing. Under AS 5, auditors use the same financial-statement materiality level as is used in the financial statement audit, adding to the audit's increased efficiency but not necessarily its effectiveness. AS 5 also put an emphasis on the link between internal control compliance and financial reporting. Testing of non-financial-reporting-related controls is considered out of the

scope of the internal control audit under AS 5. Finally, AS 5 increased flexibility with

regard to using the work of others during the internal control audit. Again, this change

could increase the efficiency of the audit, with an unknown effect on the audit's quality.

Overall, the PCAOB's goal of AS 5 was to reduce compliance costs to firms while

maintaining the effectiveness of the internal control audit. The stock market's reaction to

these changes could relate to the potential increase in efficiency (positive reaction) or to

the uncertainty regarding a possible decrease in effectiveness (negative reaction). I will

explore this further in Section 4.

The SEC made similar changes to SOX 404. On May 23, 2007, the SEC

unanimously approved its new guidance for management's assessment of internal

controls over financial reporting (Johnson 2007a). Subsequently, the SEC issued official

guidance for management and officially approved AS 5. On July 25, 2007, the SEC

officially approved AS 5 (PCAOB 2007c). AS 5 became effective for firms with fiscal

years ending November 15, 2007 or later (PCAOB 2007b). Appendix A summarizes the

dates of the events in the developmental process that ultimately resulted in AS 5. As

these event dates all increase the probability of AS 5 being enacted, I expect the market

to react consistently across the dates the market perceives as the most important in AS 5's

development.

There are three key dates to which I expect the stock market to react. First, I expect

the market to have a significant reaction to the PCAOB's announcement of a four-point

plan regarding changes to internal control provisions under SOX 404 and AS 2 (event 3).

Event 3 is the first instance in which the PCAOB provides details to the public regarding

such a plan. I also expect the market to react significantly to the PCAOB's official approval of AS 5 (event 9). Event 9 is the date on which investors learned that AS 5 would be definitively enacted. Finally, I expect the market to have a significant reaction to the SEC's approval of AS 5 (event 10). Some investors may not consider the PCAOB's actions when making investment decisions, and instead react to the actions of the SEC. In other words, investors may be more concerned with an announcement that affects a public company's management rather than the company's external auditor.

3. RELEVANT ACADEMIC LITERATURE

3.1 Internal Controls

There has been extensive prior research done on the link between the information quality of firms and internal control weaknesses. Krishnan (2005) examines the association between audit committee quality and internal control quality. Proxying for audit committee quality with size, independence, and expertise, she finds that internal control material weaknesses and reportable conditions occur less often for firms with more independent and expert audit committees. More recently, Naiker and Sharma (2009) study the association between SOX 404 internal control deficiencies (ICDs) and audit partners (both affiliated and unaffiliated with the firm's current external auditor) on the audit committee. They find that having both types of former audit partners on the audit committee is associated with more effective monitoring of internal controls and financial reporting (evidence by a lower frequency of ICDs).

Other prior papers consider firm characteristics associated with and determinants (both internal and external) of internal control weaknesses. Ge and McVay (2005) study firm characteristics associated with internal control weaknesses (post-SOX). They find several firm characteristics that are associated with material weaknesses: less resources committed to accounting controls, deficient revenue recognition policies, lack of segregation of duties, deficiencies in the reporting process and accounting policies, and inappropriate account reconciliations. They also find that material weaknesses most often relate to current accrual accounts, such as accounts receivable and inventory, and complex accounts, such as derivatives and taxes. Finally, they find that material

weaknesses are positively associated with business complexity and firm size, and negatively associated with firm profitability. Doyle et al. (2007) study the determinants of material weaknesses. Examining a sample of firms with material weaknesses, they find that firms with entity-wide material weaknesses are relatively smaller, younger, and financially weaker, while firms with account-specific material weaknesses are relatively financially healthier, more complex, more diversified, and more rapidly changing.

As SOX 404 and AS 2 were implemented, the internal control literature continued to evolve. In the first of a series of three related papers, Ashbaugh-Skaife et al. (2007) examine the economic factors that expose firms to control failures and the incentives for management to discover and report these failures. First, they find that firms with ICDs have more complex operations, recent organizational changes, increased accounting risk, more auditor resignations, and fewer internal control resources available. They also find that these firms have more prior SEC enforcement actions, more restatements, are more likely to use a dominant audit firm, and have more concentrated institutional ownership. From these results, they develop a model that predicts how likely a firm is to report an ICD. In the second related paper, Ashbaugh-Skaife et al. (2008) study internal control quality as it relates to accruals. They find that ICD firms have lower quality accruals than non-ICD firms, and accruals (both positive and negative) that are larger in magnitude. Firms that remediate their ICDs show increases in accrual quality, leading the authors to the overall conclusion that the quality of a firm's internal controls affects accrual quality. In the third related paper, Ashbaugh-Skaife et al. (2009) study internal control quality as it relates to firm risk and cost of equity. They find that ICD firms have

higher idiosyncratic and systematic risk, as well as increased cost of equity. Firms that improve their internal controls experience a decrease in cost of equity. Thus, these three papers examined the relationship between various firm characteristics and their internal control quality. Specifically, the authors show a link between a firm's risk and the quality of their internal controls. My study considers the effect of a potential change in market risk (due to a shock to the regulatory environment related to internal controls) on the stock market.

Internal control literature also examines how audit fees were associated with internal control deficiencies. Hogan and Wilkins (2008) investigate how auditors respond to higher levels of control risk experienced by firms subsequently disclosing ICDs. They find that firms respond by testing more (as evidence by charging higher audit fees), and that these fees are incrementally higher based on the severity of the ICD. They also find that ICD firms have higher levels of inherent risk and information risk. In a related study, Hoitash et al. (2008) examine audit fee changes for ICD firms pre- and post-SOX 404. They find that firms reporting an ICD under SOX 302 have higher audit fees the following year even if no ICD is found under SOX 404. Also, similar to Hogan and Wilkins, they find that fees vary based on the severity of the ICD. My study extends this literature stream by considering how a potential significant decrease in internal control audit fees (under AS 5) effects the stock market's perception of internal control audit quality.

Most recently, Nagy (2010) studies the association between SOX 404 compliance and financial reporting quality. Nagy examined financial statement restatements for

accelerated vs. non-accelerated filers (accelerated filers are required to comply with SOX 404, non-accelerated filers are not) and found that SOX 404 did improve the quality of financial reporting. However, Nagy's sample was only in the AS 2 time period. My study will extend this research by considering financial reporting quality under AS 2 vs. AS 5: did actual financial reporting quality change based on the changes to internal control audits set forth by AS 5?

3.2 Related Market Reaction Studies

Several prior studies examine the stock market reaction to internal control-related issues, both at the market level and the firm level. At the market level, two papers examine the market's reaction to key dates leading up to the passage of SOX. Jain and Rezaee (2006) were the first to do this, finding a positive (negative) reaction to events that increased (decreased) the likelihood of the passage of SOX. They conclude that these results support the notion that SOX is wealth-increasing overall, with the expected benefit outweighing the expected compliance costs of this legislation. The second paper (Zhang 2007) also looks at the market reaction to key dates leading up to the passage of SOX, but presents different findings. Using concurrent non-U.S. returns to estimate normal U.S. returns on these event dates, Zhang finds a consistent negative market reaction to key SOX event dates. Zhang addresses the reasons for her conflicting findings compared to Jain and Rezaee (2006), explaining that their results are due to some methodology issues (their set of event dates is incomplete, they have overlapping event windows and omitted correlated variables).

At the firm level, two papers study the stock market reaction to the disclosure of ICDs. Beneish et al. (2008) study the market reaction to SOX 302 and SOX 404 ICD disclosures. For voluntary SOX 302 ICD disclosures, the stock market reacts negatively and the firm's cost of equity increases. These results are driven by smaller firms and are attenuated if the firm's auditor is of higher quality. For SOX 404 ICD disclosures (i.e. larger firms), no significant results were found. Overall they conclude that ICD disclosures are more informative for smaller firms who have more information uncertainty. A related study, Hammersley et al. (2008) also examine the market's reaction to SOX 302 ICD disclosures. They find that the market reacts negatively to ICDs, and that the information content of the ICD depends on the severity of the deficiency. They also find that ICD severity, management's conclusion regarding their controls, the firm's auditability, and the vagueness of the disclosures are all informative to the stock market. Overall, these studies show that investors respond to disclosures about a firm's internal control quality. My study contributes to this literature stream by considering the market level effects of a comprehensive change in internal control regulation. Also, my study considers the effects of overall internal control audit regulation while these prior papers examine firm specific consequences.

3.3 Recent Auditor Regulation

There has been little prior research on the regulatory change from AS 2 to AS 5. Doogar et al. (2010) examine the impact of AS 5 on audit fees. They find that, under AS 5, audit fees are aligned with fraud risk: fees are higher (lower) for high (low) fraud risk

auditees. They also find that overall audit fees are lower under AS 5 compared to AS 2.

Overall, this is evidence of auditors using a more risk-based approach in their internal

control audits under AS 5. Smith (2012) finds that, when considering a change from a

bottom-up coverage-based approach for auditing internal controls (i.e. AS 2) to a top-

down risk-based approach (i.e. AS 5), investors perceive a decrease in audit quality and

thus anticipate a decrease in management's investment in internal controls and a decrease

in the quality of the information produced by the firm. My study extends this stream of

literature to consider the stock market's perception of AS 5 in an archival setting.

4. MOTIVATION AND HYPOTHESIS DEVELOPMENT

4.1 Motivation

Based on an extensive stream of prior literature (Krishnan 2005; Ge and McVay, 2005; Jain and Rezaee, 2006; Zhang 2007; Doyle et al. 2007; Ashbaugh-Skaife et al. 2007; Ashbaugh-Skaife et al. 2008; Hogan and Wilkins, 2008; Hoitash et al. 2008; Beneish et al. 2008; Hammersley et al. 2008; Ashbaugh-Skaife et al. 2009; Naiker and Sharma, 2009; Nagy 2010; Doogar et al. 2010; Smith 2012), internal control quality is important to investors, regulators, creditors, and other stakeholders who rely on the financial information produced by public companies. My study adds to this stream of literature by empirically testing the stock market's perception of internal control audit quality under AS 5. More specifically: does the stock market perceive the attempted increase in internal control audit efficiency by the PCAOB as a decrease in compliance costs (positive market reaction), a decrease in internal control audit quality (negative market reaction), or both? If both, which reaction dominates? I also study if there was an actual change in financial reporting quality going from AS 2 to AS 5 by examining how often firms made financial statement restatements under AS 2 versus under AS 5. In other words, did the PCAOB achieve its goal of increased efficiency and maintained effectiveness of internal control audits under AS 5 regulation?

When considering this type of regulatory change, it is important to consider how the change affects both actual and perceived audit quality. I define audit quality as the "market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach." (DeAngelo 1981). Thus, the

audit quality of a company directly relates to the quality of the information produced by the company. If the quality of the audit is high, the quality of the financial statement disclosures is high, and the financial statements are therefore more reliable.

Several prior studies examine a change in auditor behavior due to a regulation change and how this change relates to actual audit quality. For example, Zimbelman (1997) and Glover et al. (2003) study the introduction of Statement on Auditing Standards (SAS) No. 82 (AICPA 1997), which required auditors to document a separate assessment of fraud risk. Zimbelman (1997) finds that, under SAS 82, auditors spend more time assessing fraud cues and concludes that this change will likely increase audit quality. Glover et al. (2003) extend the Zimbelman (1997) paper by comparing pre- and post-SAS 82 auditor planning judgments and find that post-SAS 82 judgments are more sensitive to fraud risk factors, leading to enhanced audit plans and a likely increase in audit quality. Carpenter (2007) and Brazel et al. (2010) similarly test SAS No. 99 (AICPA 2002), which superseded SAS 82 with regard to considering fraud when planning a financial statement audit. Among other things, SAS 99 requires audit teams to hold brainstorming sessions to help auditors detect fraud during the audit. These studies suggest SAS 99 improved actual audit quality. While these studies address actual audit quality, little work has been done on perceived audit quality. My study considers investor-perceived audit quality by examining market reaction to key event dates leading up to the passage of a change in auditor regulation.

A perceived change in internal control audit quality affects all the stakeholders in a firm, as it could be perceived as changing the quality of the information produced by the

firm. Doogar et al. (2010) study the perception of internal control audit quality pre- and post-AS 5 (by considering changes in audit fees) from the point of view of management, the auditor, and the audit committee. They find that, under AS 5, overall audit fees are lower compared to audit fees under AS 2. They also find that audit fees are aligned with fraud risk: fees are higher (lower) for high (low) fraud risk auditees. As audit fees change, management and/or the audit committee may perceive a change in audit quality. For example, increased audit fees likely mean more audit work is being done. Thus, a logical conclusion for management and the audit committee would be a perceived increase in audit quality. Missing from this stream of literature, however, is the effect this regulatory change had on investors' perceptions.

Investors are the primary end users of the financial statements of public companies. If there is a significant change in internal control audit quality or compliance costs due to this regulation change, investors would be directly affected. The PCAOB values the stock market's point of view, evidenced by the inclusion of several investor advocates on the PCAOB's Standing Advisory Group (SAG) (PCAOB 2011b). The PCAOB also has an additional advisory group: the Investor Advisory Group (IAG), which "provides views and advice to the Board on broad policy issues and other matters that affect investors and are related to the work of the PCAOB" (PCAOB 2011c). Thus, my study is of interest to the PCAOB as it provides information regarding the stock market's perception of a significant regulatory change made by the PCAOB.

Thus the question becomes: how will investors react to this change in auditor regulation? There were three significant changes to auditor regulation established by AS

5: auditors no longer need to report on management's assessment of internal controls, auditors put more emphasis on fraud risk during the internal control audit, and auditors employ a top-down risk-based approach instead of a bottom-up coverage-based approach to the internal control audit. Therefore, there are two potential significant effects of these changes. First, compliance costs were expected to decrease significantly, as auditors no longer need to report on management's assessment and were expected to decrease testing under the new approach. Krishnan et al. (2008) documented the significant costs that SOX 404 burdened firms with under AS 2. Also, post-AS 5, Doogar et al. (2010) provide evidence of a decrease in audit fees under AS 5. Prior literature also shows investors react to regulatory changes that have a significant impact on costs to firms. Jain and Rezaee (2006) and Zhang (2007) study the stock market reaction to key dates leading to the passage of SOX, legislation that significantly increased firms' compliance costs. These studies find a significantly positive (negative) market reaction to an expected decrease (increase) in net costs due to this regulatory change. Thus, I expect investors to react positively to events leading up to the adoption of AS 5, as it was expected to significantly decrease compliance costs for firms.

A question arises when considering this change in compliance costs: is the large compliance cost increase related to AS 2 and identified in Krishnan et al. (2008) due to "learning curve" effects? Was this increase due to the auditors' "learning curve" related to the implementation of unfamiliar internal control audit tests, etc.? Relatedly, was the decrease in audit fees under AS 5 (Doogar et al. 2010) simply related to the diminution of this "learning curve"? Doogar et al. (2010) conclude that the decrease in fees they

identify is not part of an on-going trend; therefore, they rule out the "learning curve" of auditors as an explanation for the fee decrease.

The PCAOB's expectation for AS 5 was that compliance costs would decrease while the effectiveness of the internal control audit would be maintained. However, an alternative outcome of the change to AS 5 would be a potential decrease in internal control audit quality and accordingly, a decrease in the quality of the information produced by public companies. After the difficulties and inefficiencies associated with AS 2, there was much uncertainty regarding this regulatory change. There is anecdotal evidence in the business press of the uneasiness of investors and public company executives regarding yet another change in internal control regulation after the significant compliance costs imposed on firms with the passage of SOX 404 and AS 2. Some conjectured that giving auditors more latitude in professional judgment through the use of the top-down risk-based approach while lowering the fees they collect (due to less testing being performed) would incorrectly incentivize them to perform a less effective internal control audit (Johnson 2007b). Others were concerned that AS 5 would cause confusion rather than clarification regarding how to increase efficiency but still maintain effectiveness in the internal control audits (Johnson 2007c). Speaking with current Big 4 audit partners, I gained additional insight into the uncertainty regarding AS 5 as it was being considered by the PCAOB and the SEC. One partner stated that his clients were happy about the reduction in testing expected under AS 5, but still had concerns about the new standard, as they were "gun-shy" after the problems (exorbitant compliance costs, communication issues with management) experienced under AS 2. Another partner

stated that AS 5 seemed good in theory, but impractical in practice. He felt that the level of rigor on entity-level control testing under AS 5 put too much of a burden on management, and a burden they weren't prepared for. Thus, there is anecdotal evidence corroborated by my discussions with current Big 4 audit partners detailing the concerns of yet another change in auditing standards under AS 5. This anecdotal evidence supports the notion that the stock market would react negatively to key dates related to the development and enactment of AS 5.

Prior literature also provides evidence of investors reacting to potential changes in the quality of information produced by a firm. Lambert, Leuz, and Verrecchia (2007) study the relationship between accounting information, disclosure, and the cost of capital. They find that disclosure can affect the market's perception of a firm's systematic risk. Thus, if AS 5 reduces the perceived quality of the disclosure in a firm's financial statements, it could affect investors' perceptions of a firm's systematic risk. This supports the notion that the stock market reacts to a perceived change in the quality of information produced by a firm. Also, Smith (2012) studies the change from AS 2 to AS 5 with an experiment and finds that, when considering a change from a bottom-up coverage-based approach for auditing internal controls (i.e. AS 2) to a top-down risk-based approach (i.e. AS 5), investors perceive a decrease in audit quality.

Studying investors' perceptions of this regulatory change is an ex-ante approach to examine the expected effects of this change. The second part of my study considers the outcomes ex-post: did the expected effects of this change actually occur? Doogar et al. (2010) find that two of the three significant changes under AS 5 were effective: audit fees

were lower under AS 5, and fees were directly related to the fraud risk of the firm being audited. In other words, the PCAOB's goals of increased efficiency and emphasis on fraud risk were apparently achieved. However, the third change under AS 5 (from a bottom-up coverage-based approach to a top-down risk-based approach) and how it impacted the effectiveness of the internal control audit is yet to be documented. Nagy (2010) studies financial reporting quality pre- and post-SOX 404. He finds that SOX 404 did improve the quality of financial reporting. However, his sample only includes post-SOX 404 information under AS 2. I will consider the effects of the change to AS 5 on financial reporting quality in order to determine if there was a change in internal control audit effectiveness under the new regulation.

This study contributes to accounting literature in several ways. First, as previously noted, the effect this regulatory change had on investors has largely been unaddressed in prior literature. As investors are important end-users of the financial statements, the capital market effects of this change are important to consider, as they imply the economic impact of this regulatory change. Second, AS 5 made three significant changes to how auditors audit a firm's internal controls. Doogar et al. (2010) show that two of those changes appear to have worked as intended by the PCAOB. On average, audit fees decreased under AS 5. However, audit fees increased (decreased) for higher (lower) fraud risk auditees (implying an increased emphasis on fraud risk under AS 5). Left unaddressed is the increased responsibility AS 5 gave to auditors and management regarding the assessment of internal control risks. My study investigates this question by providing evidence regarding the expected (via investor perception) and actual (via

financial reporting quality) effectiveness of this change. Third, this is the first research study to provide archival evidence of investors' perceptions of the change from AS 2 to AS 5. It has been thoroughly documented in prior literature that there are inherent limitations to experimental studies using individual judgment to predict capital market reaction (Kachelmeier and King 2002). Thus, archivally studying this research question provides insight into investors' perceptions of the change to AS 5 beyond Smith (2012). My study also provides insight into the magnitude of this capital markets reaction. I examine this research question in an archival setting which provides additional insight into the capital market reaction to this change as well as the magnitude of this reaction.

Fourth, this is the first research study to provide evidence of the actual effectiveness of AS 5 in terms of financial reporting quality. Fifth, understanding investors' ex-ante perception of prior auditing standards would be useful to the PCAOB and other policymakers when developing future regulations. Finally, the "jury is still out" on AS 5, as little academic research has examined the effects of this regulatory change. By providing evidence of the ex-ante perception of AS 5 from the point of view of investors as well as the ex-post consideration of how effective AS 5 was in terms of financial reporting quality, this study adds insight to a largely untapped research area.

4.2 Hypothesis Development

There is evidence suggesting the possibility of a positive or negative market reaction to the events that led to the enactment of AS 5. I expect a positive investor reaction to the potential decrease in compliance costs under AS 5: similar to the logic used by Zhang

(2007), a significant decrease in costs for a firm is a positive signal to investors. On the

contrary, if investors expect a decrease in audit quality and information quality, I expect a

negative investor reaction. This is consistent with Lambert, Leuz and Verrecchia (2007),

who find that the market reacts negatively to a decline in information quality (i.e. a

perceived increase in systematic risk). Thus, a perceived decrease in information quality

is a negative signal to the market. There are compelling reasons to believe both reactions

may occur. However, I expect the magnitude of the negative reaction to outweigh the

positive reaction. Doogar et al. (2010) find that audit fees under AS 5 decreased only 4%

compared to audit fees under AS 2. The reaction by the business press and the findings

of Smith (2012) suggest a significant negative investor perception of this regulatory

change. Therefore, I expect my results to be consistent with this logic:

> **HYPOTHESIS 1:** *The overall market reaction to key event dates leading up the enactment of AS 5 was significantly negative.*

To garner additional evidence of the market's net reaction to this regulatory change, I

will test several cross-sections. First, large-accelerated, accelerated, and non-accelerated

filers have different compliance requirements with regard to SOX 404 and AS 5. Much

debate has occurred regarding the need for non-accelerated filers to comply with SOX

404. For instance, Kinney and Shepardson (2011) study the need for small public

companies to comply with SOX 404(b). They find that small firms complying with SOX

404(b) and similar firms exempt from the requirement had similar material weakness

disclosure rates, concluding that "management internal control reports and traditional

financial statement audits may be a cost-effective disclosure alternative" for smaller

firms. Specifically for relatively smaller firms, SOX 404 compliance costs were especially high relative to SOX 404's perceived benefits. Thus, AS 5 was partly designed to allow smaller firms to be in compliance while making compliance costs more manageable. Non-accelerated filers also had not yet complied with AS 2, meaning: 1) their compliance learning curve would be much larger (complying with AS 2) than that of accelerated filers who complied with AS 2 beginning in 2004, and 2) non-accelerated filers would go from no internal control audit previously to an internal control audit under AS 5. Going from no regulation to AS 5 instead of to AS 2 decreases the anticipated compliance costs for these firms, lessening their compliance burden. These are additional reasons a change from AS 2 to AS 5 would be beneficial to non-accelerated filers.[2] Thus, I expect investors in non-accelerated filers to react less negatively to AS 5 than investors in accelerated and large-accelerated filers:

> **HYPOTHESIS 2:** *Non-accelerated filers had a less negative market reaction to key dates leading to the enactment of AS 5 compared to accelerated and large-accelerated filers.*

Ge and McVay (2005) find that disclosing a material weakness is positively associated with business complexity. Therefore, if there is investor perception that AS 5 will cause a decrease in audit quality (Smith 2012), the market should react more negatively to more complex firms. When making investment decisions, investors would likely consider the financial reporting quality of more complex firms to be of higher

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[2] Despite the fact that non-accelerated filers are now indefinitely exempt from complying with AS 5 (due to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010), at the time AS 5 was being developed, these firms were anticipating imminent compliance with this regulation. Thus the potential SOX 404 exemption of these firms should not affect investors' reactions around AS 5 event dates.

concern than a decrease in compliance costs. Therefore, if financial reporting quality is

of high concern to investors and they perceive a potential decrease in this quality under

AS 5, I expect this force to dominate for complex firms:

> **HYPOTHESIS 3:** *More complex firms will have a more negative market reaction to key dates leading to the enactment of AS 5 compared to less complex firms.*

Several prior studies have found that the litigation risk of a firm is directly related to

the quality of information produced by that firm (Skinner 1994, Francis et al. 1994,

Skinner 1997). Specifically, shareholders have been found less likely to sue if the

information quality of the firm is higher (Skinner 1994, Skinner 1997). Thus, similar to

the logic in H3, investors would likely consider the financial reporting quality of firms

with higher litigation risk as more important when making investment decisions. In other

words, the financial reporting quality of riskier firms matters more to investors than a

decrease in compliance costs for those firms. Therefore, if financial reporting quality is

of higher concern to investors and they perceive a potential decrease in this quality under

AS 5, I expect this force to dominate for firms with higher litigation risk.

> **HYPOTHESIS 4:** *Firms with higher litigation risk will have a more negative market reaction to key dates leading to the enactment of AS 5 compared to firms with lower litigation risk.*

Consistent with the reasoning stated in the development of H3 and H4, investors

would likely be more concerned about the financial reporting quality of firms with higher

fraud risk, and thus would react more negatively to AS 5 event dates when investing in

high fraud-risk firms. Also, Doogar et al. (2010) find that AS 5 audit fees are more

aligned with auditee fraud risk than AS 2 audit fees. Specifically, relative to AS 2

benchmark levels, AS 5 audit fees are lower for lower-fraud-risk auditees and higher for

higher-fraud-risk auditees.   Therefore, since AS 5 put more of an emphasis on fraud

risk, I expect low-fraud-risk firms to have a less negative market reaction to AS 5 events

than high-fraud-risk firms (in anticipation of lower relative audit fees identified by

Doogar et al. 2010).

HYPOTHESIS 5: *High-fraud-risk firms will have a more negative market reaction to key dates leading to the enactment of AS 5 compared to low-fraud-risk firms.*

Up to this point, I have tested *perceived* internal control audit quality under AS 5. In

my last hypothesis, I test if *actual* internal control audit quality changed under AS 5.

Nagy (2010) studies financial reporting quality pre- and post-SOX 404 and finds that

financial reporting quality improved under SOX 404. However, his sample only covers

the AS 2 regime. The PCAOB claims AS 5 will increase internal control audit efficiency

without affecting internal control audit effectiveness. If this claim is correct, financial

reporting quality should not significantly change under AS 5:

HYPOTHESIS 6: *There is no change in financial reporting quality under AS 5 relative to financial reporting quality under AS 2.*

Similar to Nagy (2010), I use occurrence of financial statement restatements affecting

the financial reporting period being regulated by AS 2 vs. AS 5 as my proxy for financial

reporting quality. Alternatively, I use discretionary accruals as a financial reporting

quality proxy to confirm that my initial results are robust across differing financial

reporting quality proxies.

5. SAMPLE AND RESEARCH DESIGN

5.1 Market Reaction Testing

Since the regulatory change from AS 2 to AS 5 affects every listed U.S. firm[3], I

investigate abnormal returns for all firms around the AS 5 event dates I identified and

discussed earlier. However, changes in the returns of U.S.-listed firms are affected by

other contemporaneous economic news as well as AS 5 events. Thus, it is necessary to

control for normal U.S. stock market returns absent the impact of AS 5. Similar to Zhang

(2007), I use foreign firm returns to evaluate the impact of other contemporaneous news

on U.S. returns. As discussed in Zhang (2007), prior finance literature (Eun and Shim

1989, Hamao et al. 1990) finds that all firms, both U.S. and non-U.S., are subject to

substantially common economic news. However, non-U.S. firms were not directly

affected by AS 5 (my sample of non-U.S. firms are not registered with the SEC), and thus

can be used as a benchmark for normal U.S. returns in my analysis.

Thus, I examine stock returns for U.S. firms (data acquired from CRSP) and 22 major

developed foreign stock markets (data acquired from Compustat Global Securities Daily

and Compustat North America Securities Daily). Similar to Zhang (2007), I exclude

U.S.-listed foreign firms, as they would have to comply with U.S. regulations such as AS

5. The cross-listing information is obtained from the Bank of New York Depositary

Receipt Directory. I also exclude stocks with a price of less than one unit of local

currency at the beginning of each year to avoid the small price effect found in prior

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[3] Despite the fact that non-accelerated filers are now indefinitely exempt from complying with AS 5 (due to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010), at the time AS 5 was being developed, these firms were anticipating imminent compliance with this regulation. Thus the potential SOX 404 exemption of these firms should not affect investors' reactions around AS 5 event dates.

literature (Blume and Stambough 1983). Exchange rates are obtained from the

Compustat Global Exchange Rate Daily file.

   As Zhang (2007) points out, comparing returns across countries is complicated by

time zone differences. Thus, I use the following regression model to estimate the relation

between U.S. and foreign returns. By including the European and Asian returns from one

day ahead, this captures the relationship between U.S. returns on day t and global returns

on day t+1 that is caused by time zone differences. Due to the significant correlation

between U.S. and Canadian returns (reported in Zhang (2007) and shown in Table 1,

Panel B), I use the regression stated in equation (1b) as an alternative to equation (1a):

$$US\_Ret_t = a_0 + a_1 CAN\_Ret_t + a_2 EU\_Ret_t + a_3 EU\_Ret_{t+1}$$
$$+ a_4 ASIA\_Ret_t + a_5 ASIA\_Ret_{t+1} + e_t \qquad (1a)$$

$$US\_Ret_t = b_0 + b_1 CAN\_Ret_t + e_t \qquad (1b)$$

Where:

US_Ret_t = U.S. stock market returns on day t
CAN_Ret_t = stock returns of non-U.S.-traded firms in Canada on day t
EU_Ret_t = stock returns of non-U.S.-traded firms in Europe on day t
$ASIA\_Ret_t$ = stock returns of non-U.S.-traded firms in Asia, Australia, and New Zealand
        on day t

   I refer to this method as the Zhang method. For each variable, stock returns on day t

are value-weighted based on the market value of equity reported on day t-1. The

estimation period for Equations (1a) and (1b) is the fiscal year ended before the offset

period. The offset period starts on the first day of the first full calendar month before the

event date. For example, for event 1 (April 13, 2005), the offset period is March 1, 2005

– April 12, 2005 and the estimation period is March 1, 2004 – February 28, 2005. The

parameter estimates from these models are then used to predict normal U.S. returns, and

the abnormal returns are computed as the prediction errors in these equations. For

example, using equation (1b): $AbRet_t = US\_Ret_t - (\widehat{b_0} + \widehat{b_1}CAN\_Ret_t)$. My

cumulative abnormal returns are compounded and computed using the following formula:

$CAR_t = \exp(\sum_t \ln(1 + AbRet_t)) - 1$. I calculate abnormal returns using 3-day (-1, 1)

event windows around each of the ten event dates shown in Appendix A.

As a robustness check of my results, I also use a method based on Armstrong et al.

(2010). Their study considers the market reaction to events related to the adoption of

IFRS. In order to calculate a market-adjusted European return to those events, they take

their event window raw returns and subtract the corresponding event-window returns of

the Dow Jones STOXX Global 1800 Index excluding the 600 European firms in the

index. Similarly, I market-adjust my U.S. raw returns by subtracting the STOXX 1800

Global 1800 ex Americas Index (obtained from Bloomberg). I then calculate a t-statistic

to determine if the mean market-adjusted return across events is significantly different

from zero. I refer to this method as the Armstrong method.

5.2 Multivariate Model

My cross-sectional model is based on the model used in Zhang (2007):

$$CAR_i = \sum_j a_{0j} Ind_{ij} + a_1 Accel_i + a_2 Busi_{lines_i} + a_3 Foreign_i +$$
$$a_4 Fraud\_Risk_i + a_5 Accr_i + a_6 Shumway_i + a_7 Acq_i + a_8 MTB_i +$$
$$a_9 ROA_i + a_{10} Pre\_Ret_i + a_{11} Size_i \tag{2}$$

CAR_i is the cumulative abnormal return and is calculated using the market model and replacing the U.S. market returns on the right-hand side of the market model equation with the variables on the right-hand side of equation (1a). Industry dummy variables (Ind_{ij}) are defined as in Zhang (2007), page 101, footnote 23. $Size_i$ is represented by the total assets of firm i[4]. See Appendix B for the remaining variable definitions.

H2 examines the effect of the firm being a non-accelerated filer (firms with less than $75 million of market capitalization at fiscal year-end) versus an accelerated or large-accelerated filer on the firm's market reaction to AS 5 dates. Consistent with H2, I expect a_1 to be negative and significant. H3 considers the effect of a firm's complexity on its market reaction to AS 5 dates. I measure firm complexity with two variables, *Busi_lines* and *Foreign*. *Busi_lines* measures the number of four-digit SIC industries represented by a firm's segments (this data is obtained from the Compustat Segment file), while *Foreign* is a dummy variable to determine if the firm is involved in foreign transactions or has foreign operations. Consistent with H3, I expect a_2 and a_3 to be negative and significant. H4 examines the effect of a firm's litigation risk on its market reaction to AS 5 dates. Lys and Watts (1994) find that litigation risk is determined by four aspects of a firm: likelihood of bankruptcy, likelihood of being acquired, accruals, and whether a qualified opinion has been issued. The following three variables test three of these aspects. The likelihood of bankruptcy (*Shumway*) is measured in my model with the model developed by Shumway (2001) and is calculated with the following formula:

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[4] I do not use a log transformation of total assets due to multicollinearity issues (multiple variance inflation factors greater than 10). I use White (1980) standard errors to control for potential heteroskedasticity.

$$1 - 1/(1 + \exp(-7.811 - \left(6.037 * \frac{NI}{AT}\right) + 4.068 * \frac{LT}{AT} - .158 * \frac{ACT}{LCT} + .307 *$$
$$\ln(age))) \tag{3}$$

The variables in this formula represent Compustat variables (NI=Net Income,

AT=Total Assets, LT=Total Liabilities, ACT=Current Assets, LCT=Current Liabilities)

except for *age*, which represents firm age, calculated using the start date of price data

from the CRSP Stock Names dataset. The probability of being acquired variable is *Acq*,

which is a dummy variable equal to 1 if the firm was subsequently acquired (data

acquired from the Compustat Company file). The accruals variable is *Accr*, which is

measured using the modified Jones (1991) model. Consistent with H4, I expect a_5, a_6,

and a_7, to be negative and significant.

H5 considers the effect of a firm's level of fraud risk on the market's reaction to AS 5

dates. *Fraud_Risk* is measured using the fraud risk variable used in Doogar et al. (2010)

and developed by Dechow et al. (2011). This F-Score is computed with the following

equation:

$$\frac{e^{PV}}{[.00345(1 + e^{PV})]} \tag{4}$$

Where:

$$PV = -6.789 + .817 * Rsst\_acc + 3.230 * \Delta Rec + 2.436 * \Delta Inv + .122 * \Delta CS -$$
$$.992 * \Delta Earn + .972 * Issue \tag{5}$$

See variable definitions in Appendix B.

Following the recommended cutoff of Dechow et al. (2011), a firm has a high level of fraud risk if this F-Score calculation is greater than one. Consistent with H5, I expect a_4 to be negative and significant.

Consistent with the model in Zhang (2007), I include several controls. *Size* and *MTB* are included because alternative reasons for a differential market reaction could be a firm's size or investment opportunities. *ROA* and *Pre_Ret* are included to control for firm performance.

5.3 Financial Reporting Quality

Using H6, I examine the change in actual financial reporting quality going from AS 2 to AS 5. Nagy (2010) examines financial reporting quality pre- and post-SOX 404 and finds that financial reporting quality increased post-SOX 404. In order to test if there was a change in financial reporting quality going from AS 2 to AS 5, I start with the Compustat universe of firms that had fiscal years ending November 15, 2006 through November 14, 2008. AS 5 became effective for fiscal years ending November 15, 2007 or later. Thus, by using the above time period, I capture the last year firms' auditors were regulated by AS 2 and the first year firms' auditors were regulated by AS 5. I delete those observations that are non-accelerated filers (less than $75 million market capitalization), as they are exempt from complying with AS 2 and AS 5. I also delete firms that are categorized as financial institutions (SIC code in the 6000s), as they have fundamentally different operating characteristics. Finally, I delete those observations that are missing the necessary data to calculate all of my regression variables. This leaves me

with a sample of 6,211 firm-year observations. To test H6, I use the following regression

model (similar to Nagy (2010)):

$$MISST_{i,t} = \beta_0 + \beta_1 AS5 + \beta_2 MW_{i,t-1} + \beta_3 FreeC_{i,t} + \beta_4 FinRaised_{i,t} +$$
$$\beta_5 EPSGrowth_{i,t-1} + \beta_6 LOSS_{i,t-1} + \beta_7 LEV_{i,t} + \beta_8 SIZE_{i,t} + \varepsilon_{i,t} \qquad (6)$$

Industry fixed effects (using two-digit SIC codes) are used in this logistic regression.

Consistent with H6, I expect β_1 to be insignificant. *MISST* is obtained from the

Restatement file in AuditAnalytics. This is my proxy for financial reporting quality. See

Appendix B for the remaining variable definitions.

My controls are derived from Aier et al. (2005) which identifies important

determinants of restatements. Previous research finds a negative relationship between

prior ICDs and financial reporting quality (Ashbaugh-Skaife et al. 2008). Thus, I control

for this by including *MW* which is obtained from the SOX 302 and SOX 404 data files in

AuditAnalytics. Dechow et al. (1996) find that the demand for financing is an incentive

for earnings management, which may lead to a financial statement misstatement. Thus, I

include *FreeC* and *FinRaised* to control for this potential cause of restatements.

EPSGrowth and *LOSS* are included to control for the incentives managers have to

manipulate earnings to meet earnings targets and performance goals, respectively (Aier et

al. 2005). *LEV* is included to control for the possibility that managers are managing

earnings to avoid violating their debt covenants (Aier et al. 2005). *SIZE* is included to

control for firm size effects.

Alternatively, I proxy for financial reporting quality with discretionary accruals

using a model based on Doyle et al. (2007):

$$DisAccr_{it} = \alpha_0 + \alpha_1 AS5 + \alpha_2 Loss\_prop_{it} + \alpha_3 Sales\_vol_{it} + \alpha_4 CFO\_vol_{it} +$$
$$\alpha_5 Log\_at_{it} + \alpha_6 Log\_opcycle_{it} + \alpha_7 Log\_age_{it} + \alpha_8 Log\_seg_{it} +$$
$$\alpha_9 Exsalesgrowth_{it} + \alpha_{10} Restructure_{it} + \varepsilon_{it} \qquad (7)$$

Industry fixed effects (using two-digit SIC codes) are used in this OLS regression.

Consistent with H6, I expect α_1 to be insignificant. *Log_age* is defined as the natural log

of firm age (see previous description in equation 3). See Appendix B for the remaining

variable definitions.

6. RESULTS

6.1 Market Reaction Results

Panel A of Table 1 presents a breakdown of the 22 countries that are represented in my estimation regression models. Japan, Canada, and the United Kingdom have the largest representation in the sample. The data presented in Table 1, Panel A is from the estimation period for event 1, and is qualitatively similar to the other estimation periods I use.

Panel B of Table 1 reports the correlation of the estimation regression variables during the estimation periods. This data includes all the estimation periods with no duplicate dates. $ASIA\_Ret_{t+1}$ is most highly correlated with US_Ret_t with a correlation coefficient of .3805. All variables in the regression are significantly correlated with U.S. returns except for European returns on day t. Due to the time difference, EU_Ret_t (EU_Ret_{t+1}) largely reflects news in U.S. returns of day t-1 (t). Thus, this result appears reasonable. Also, using regression model (1b) as an alternative to model (1a) appears reasonable as CAN_Ret_t is significantly correlated with U.S. returns on day t.

Panels C and D of Table 1 show the regression results for models (1a) and (1b), respectively, for each of the estimation periods used for all of the event dates. In Panel C, the results for model (1a) show that $ASIA\_Ret_{t+1}$ significantly explains U.S. returns on day t, consistent with the correlation results in Panel B. Adjusted R^2 for the estimation periods ranges between 11 and 26%. In Panel D, the results for model (1b) show consistent significance for CAN_Ret_t in explaining U.S. returns on day t. Adjusted R^2 for the estimation periods ranges between 1 and 9%. Compared with the results in Zhang

(2007), these R^2 statistics are lower. I believe this is due to Zhang using international data from Datastream (where daily stock returns are provided) compared to my use of Compustat Global, in which I manually calculate daily stock returns from daily price data. This adds noise to my data, specifically for European and Canadian returns (based on my results). However, my models are still highly significant with respect to explaining U.S. returns, and thus a valid estimate of normal U.S. returns.

Table 2, Panel A reports value-weighted raw and abnormal U.S. returns around the AS 5 event dates I identify in section 2.4. On April 13, 2005 (event 1) when the first roundtable discussions were held regarding potential changes to SOX 404 and AS 2, the abnormal return estimated using models (1a) and (1b) is -1.03% and -1.47%, respectively. This was the first official meeting between the SEC and the PCAOB in which they discussed making changes to SOX 404 and AS 2. This result is consistent with investors reacting to the possibility of new internal control regulation. This may be due to concern regarding potentially more compliance costs related to new regulation and/or a potential decrease in audit quality as the discussions related to less internal control audit work being done under new regulation.

Consistent with the market reaction to event 1, investors again reacted negatively (abnormal returns of -0.55% and -1.60% using models (1a) and (1b), respectively) around May 10, 2006 (event 2), when the second roundtable discussion on SOX 404 and AS 2 changes was held. A week later, on May 17, 2006 (event 3), the PCAOB announced a 4-point plan to improve internal control provisions under SOX 404 and AS 2. Consistent with my prior expectations, the market reacted negatively (abnormal returns of -2.47%

and 2.52% using models (1a) and (1b), respectively), which is evidence of another significant change in investors' expectations regarding the likelihood of a change to SOX 404 and AS 2. This supports the notion that the information provided by the PCAOB on their 4-point plan caused concern of a decrease in internal control audit quality under the new regulation. The SEC issued a Concept Release on changes to internal control regulation related to the PCAOB's 4-point plan on July 11, 2006 (event 4). This confirmed for investors an expected change in internal control regulation for public companies, associated with a significant and negative market reaction around that date (abnormal returns of -0.23% and -0.83% using models (1a) and (1b), respectively).

There was a marginally significant negative market reaction to events 7 (abnormal returns of -0.56% and 0.61% using models (1a) and (1b), respectively)and 9 (abnormal returns of -0.54% and 0.67% using models (1a) and (1b), respectively), related to the PCAOB's approval of AS 5. Much more significant was the market reaction to the SEC actions related to the approval of AS 5 – events 8 (abnormal returns of -1.38% and 1.21% using models (1a) and (1b), respectively) and 10 (abnormal returns of -2.90% and 4.20% using models (1a) and (1b), respectively). Overall, these results are consistent with H1 and inconsistent with the PCAOB's claims. These results are also consistent with the theory that investors pay more attention to the actions of the SEC than to the actions of the PCAOB. In general, the market responded negatively to the events that signaled increases in the likelihood that this change in internal control regulation would be passed. This is consistent with the theory that the stock market was concerned with the perception that the quality of internal control audits would decrease under AS 5, and this effect

outweighed the stock market's perception that AS 5 would decrease compliance costs to firms.

Using the Armstrong method, I am unable to analyze the significance of the market-adjusted returns for each event date separately. However, comparing the signs of the event date returns in Panel A and Panel B of Table 2, the results are generally consistent across the event dates. Also, the overall results shown in Panel B show that the market's reaction was significantly negative to the AS 5 events using this alternative methodology.

6.2 Cross-Sectional Results

Table 3 presents descriptive statistics for the variables used in my cross-sectional regression model (equation (2)). Panel A reports descriptive statistics for the 2,399 firms in the cumulative sample (regression results shown in the first column of Table 4). Panel B reports the correlation matrix for these variables. My descriptive statistics appear reasonable based on a sample that has a significant portion of larger firms. The relationships shown in my correlation results also appear reasonable. Specifically, accelerated and large accelerated filers are more complex, have higher fraud risk, are less likely to be acquired, are more profitable and are larger. More complex firms are more likely to go bankrupt, less likely to be acquired, more profitable, and larger. Firms with higher fraud risk are more likely to go bankrupt, more profitable, and have higher market-adjusted returns over the prior year. Firms with higher abnormal accruals are less likely to go bankrupt and have higher market-adjusted returns over the prior year. Firms more likely to go bankrupt are less profitable, have higher market-adjusted returns over the

prior year, and are larger. Firms more likely to be acquired have more investment opportunities and are smaller. Profitable firms have higher market-adjusted returns over the prior year, and are larger. Due to the large number of statistically significant correlations in my model, I calculate variance inflation factors (VIF) to assess potential multicollinearity problems. The largest VIF is 8.26, and all but two VIFs are less than 4. Kennedy (2003) suggests that if VIFs are less than 10, multicollinearity is unlikely to be problematic.

Table 4 presents the results of my OLS cross-sectional regression. Similar to Zhang (2007), the first column cumulates the returns over the five event dates that had consistent and significant negative returns in Table 2. The following columns show each date separately. I use cumulative abnormal returns calculated using equation (1a) as discussed earlier.

The coefficients for Accel are negative and significant across three of the five event dates as well as the cumulative column. This result supports H2 – the stock market reaction to non-accelerated filers around AS 5 event dates was significantly less negative than to accelerated and large-accelerated filers. The cumulative coefficient for *Busi_lines* is negative and significant. This result is also found for two of the five event dates. Thus, there is some support for H3 – investor reaction to more complex firms around AS 5 event dates is significantly more negative than to less complex firms. The coefficient for *Fraud_Risk* is negative and significant for the cumulative regression as well as four of the five event dates. This result supports H5 – the stock market reaction to higher fraud risk firms around AS 5 dates is significantly more negative than to lower fraud risk firms.

The coefficient for *Shumway* is negative and significant for the cumulative regression as well as three of the five event dates. This result provides some support for H4 – the stock market reaction around AS 5 dates to firms with higher litigation risk is significantly more negative than to firms with lower litigation risk.

Overall, these results support the notion that investors were concerned about a decrease in internal control audit quality when considering the potential change to AS 5. When investors considered cross-sections of firms in which they were particularly concerned about the quality of the information disclosed by these firms, the effect of the potential decrease in internal control audit quality was dominant in the market's reaction to these firms around AS 5 dates. These findings should be of interest to the PCAOB. Despite efforts by the PCAOB to market AS 5 as an increase in internal control audit efficiency coupled with no change in internal control audit effectiveness, the stock market still perceived this change to be a decrease in internal control audit quality, especially for firms with characteristics that made investors more concerned about their financial reporting quality.

6.3 Financial Reporting Quality Results

Table 5 presents descriptive statistics for the variables used in my financial reporting quality regression (equation (6)). Panel A reports descriptive statistics separately for accounting misstatement and non-misstatement firms. There are 5,596 (615) non-misstatement (misstatement) firm-years in my sample. Non-misstatement firms were less likely to report material weaknesses, had more available free cash flow, issued less new

debt and equity during the year, had more growth and profitability, and were larger.

These differences appear reasonable based on findings in prior literature (Aier et al. 2005,

Nagy 2010). Panel B presents the correlation matrix for these variables. These results

confirm the conclusions drawn from Panel A. Firms reporting a material weakness have

less free cash flow, issue more new debt and equity, have less growth and profitability,

and are smaller. The negative correlation between *FreeC* and *FinRaised* show that firms

with less free cash flow issue more new debt and equity during the year. Also, firms with

more free cash flow have more growth and profitability, are less leveraged, and are

larger. Firms that issued more new debt and equity during the year have less growth and

profitability, and are more leveraged and smaller. The higher growth firms in my sample

are more profitable, more leveraged, and larger. The firms in my sample that reported a

loss are more leveraged and smaller. Finally, the firms in my sample with higher

leverage are also larger. Due to the large number of statistically significant correlations

in my model, I calculate variance inflation factors (VIF) to assess potential

multicollinearity problems. The largest VIF is 1.86. Kennedy (2003) suggests that if

VIFs are less than 10, multicollinearity is unlikely to be problematic. Overall, my

correlation results appear reasonable based on my priors and on prior literature.

Table 6 presents the results of my logistic regression used to test the relation between

firms affected by AS 5 and accounting misstatements. *AS5* is insignificant, which

supports the prediction of H6. This result lends support to the notion that, despite the

stock market's perception of the enactment of AS 5 leading to a decrease in internal

control audit quality, the PCAOB's claim that AS 5 would reduce compliance costs to firms while keeping the effectiveness of internal control audits constant is supported.

Maintained or increased internal control audit quality is a reasonable notion. Under AS 5, auditors no longer need to issue an opinion on management's assessment of their internal controls, and only need to issue an opinion on their client's internal control structure and procedures. This change may have allowed auditors to put more focus on auditing the internal controls over financial reporting, thus possibly increasing the quality of the audit. Also, the change in approach to a top-down risk-based audit approach under AS 5 allowed auditors to focus their efforts on the key risks of their client's internal controls. This also could contribute to a potential increase in internal control audit quality.

The positive and significant coefficient for *MW* suggests that a company disclosing a material weakness in year t-1 is more likely to issued materially misstated financial statements in year t. The remainder of my significant coefficients suggests that firms with misstated financial statements have less growth and are smaller. These results are consistent with my descriptive results.

Similar results are found in Tables 7 and 8. Due to the large number of statistically significant correlations in my model (see Table 7), I calculate variance inflation factors (VIF) to assess potential multicollinearity problems. The largest VIF is 1.45. Kennedy (2003) suggests that if VIFs are less than 10, multicollinearity is unlikely to be problematic. Overall, my correlation results appear reasonable based on my priors and on prior literature. In Table 8, using discretionary accruals as a proxy for financial

reporting quality, the *AS5* coefficient is again insignificant, supporting the theory stated in H6.

The implications of these findings should be of interest to the PCAOB. This result lends support to the notion that the PCAOB's goal of increased efficiency and maintained effectiveness of the internal control audit under AS 5 was realized.

6.4 Robustness Tests

I performed several robustness tests to confirm the validity of my results. I searched the business press for confounding events that could have occurred within my event windows, thus affecting the market reaction on those dates, and found nothing of economic significance. I also performed robustness checks of my models in equations (1a) and (1b). I ran my tests including only Asian companies (due to the high correlations noted in Table 1, Panel B) as well as only firms found in the United Kingdom, and found my results remained qualitatively unchanged. For my cross-sectional model, I eliminated insignificant variables from my model, and cumulated all 10 event dates to see if my results changed. Again, they remained qualitatively the same.

7. CONCLUSION

My study examines the stock market's perception of the regulatory change to AS 5 as well as the effectiveness of this regulation in terms of financial reporting quality. I find that the market's perception of AS 5 was largely negative. This suggests that from the stock market's point of view, the expected decrease in internal control audit quality dominates the expected decrease in compliance costs to firms. This notion is supported by my event study and cross-sectional results. Also, my results support the notion that, in terms of financial reporting quality, the actual effectiveness of internal control audits under AS 5 was maintained compared to internal control audits under AS 2. This supports the claim of the PCAOB that AS 5 would increase the efficiency and maintain the effectiveness of the internal control audit. This study contributes to accounting literature by providing insight into the stock market's perception of this regulatory change. It also is the first study to provide evidence of the actual effectiveness of internal control audits under AS 5 in terms of financial reporting quality. These results should be of particular interest to the PCAOB and end-users of financial statements. To extend this work, I plan to further disentangle the cash flow effects versus the risk effects of this regulatory change by examining changes in cost of capital pre- and post-AS 5.

APPENDIX A: AS 5 EVENT DATE DESCRIPTIONS

Event	Dates	Description of Events
1	April 13, 2005	Roundtable discussions occur. PCOAB chief states that internal control audits under AS 2 are "excessive".
2	May 10, 2006	SEC and PCAOB roundtable discussions take place.
3	May 17, 2006	PCAOB announces a four-point plan to improve internal control provisions under SOX 404 and AS 2.
4	July 11, 2006	SEC issues a Concept Release regarding additional internal control regulation guidance for management.
5	November 30, 2006	Committee on Capital Markets Regulation releases a report in support of changes to AS 2 and SOX 404.
6	December 13, 2006	SEC announces the proposal of new interpretive guidance for management with regard to improvements to SOX 404 implementation.
7	December 19, 2006	PCAOB votes unanimously to propose a new auditing standard to replace AS 2.
8	May 23, 2007	SEC unanimously approves its new guidance for management's assessment of internal controls over financial reporting.
9	May 24, 2007	PCAOB officially approves AS 5.
10	July 25, 2007	SEC officially approves AS 5.

APPENDIX B: VARIABLE DEFINITIONS

Item	Quantitative Definition
$Accel_i$	1 if firm i is an accelerated filer or large-accelerated filer; 0 otherwise
$Busi\_lines_i$	# of four-digit SIC industries represented by the segments of firm i
$Foreign_i$	1 if foreign currency adjustment (FCA) for firm i is non-zero; 0 otherwise
$Fraud\_Risk_i$	1 if firm i has a high level of fraud risk as defined in Doogar et al. (2010); 0 otherwise
$Accr_i$	residual from the modified Jones (1991) model for firm i
$Shumway_i$	calculated value from Shumway (2001) bankruptcy prediction model for firm i
Acq_i	1 if firm i was subsequently acquired; 0 otherwise
MTB_i	market-to-book ratio: [(CSHO*PRCC_F)/CEQ]
ROA_i	return on assets: [IBC/avg (AT)]
Pre_Ret_i	cumulative market-adjusted returns for the year calculated using CRSP
$Rsst\_acc$	$[(WC_t - WC_{t-1}) + (NCO_t - NCO_{t-1}) + (FIN_t - FIN_{t-1})] / [0.5(AT_t + AT_{t-1})]$
WC	[Current Assets (ACT) – Cash and Short-term Investments (CHE)] – [Current Liabilities (LCT) – Short-term Debt (DLC)]
NCO	[Total Assets (AT) – Current Assets (ACT) – Long-term Investments (IVAO)] – [Total Liabilities (LT) – Current Liabilities (LCT) – Long-term Debt (DLTT)]
FIN	[Short-term Investments (IVST) + Long-term Investments (IVAO)] – [Long-term Debt (DLTT) + Short-term Debt (DLC) + Preferred Stock (PSTK)]
ΔRec	$[(RECT_t - RECT_{t-1})] / [0.5(AT_t + AT_{t-1})]$
ΔInv	$[INVT_t - INVT_{t-1}] / [0.5(AT_t + AT_{t-1})]$
ΔCS	$(CS_t - CS_{t-1} / CS_{t-1}) * 100$

APPENDIX B, continued
VARIABLE DEFINITIONS

Item	Quantitative Definition
CS	Sales (SALE) – (RECT$_t$ – RECT$_{t-1}$)
$\Delta Earn$	$[IB_t / AT_t] – [IB_{t-1} / AT_{t-1}]$
$Issue$	1 if the firm issued securities during the year (SSTK>0 or DLTIS>0); 0 otherwise
$MISST_{i,t}$	1 if firm i issued materially misstated financial statements during year t; 0 otherwise
$AS5$	1 if financial statements were issued under AS 5; 0 otherwise
$MW_{i,t-1}$	1 if firm i reported an internal control material weakness during year t-1; 0 otherwise
$FreeC_{i,t}$	Operating cash flows (OANCF) – Average Capital Expenditures $[(CAPX_t – CAPX_{t-1})/2]$ / Total Assets (AT) for firm i in year t
$FinRaised_{i,t}$	[Stock Issued (SSTK) + Long-term Debt Issued (DLTIS)] / Total Assets (AT) for firm i in year t
$EPSGrowth_{i,t-1}$	1 if firm i had at least four quarters of continuous earnings per share growth in year t-1; 0 otherwise
$LOSS_{i,t-1}$	1 if Net Income (NI) < 0 for firm i in year t-1; 0 otherwise
$LEV_{i,t}$	[Current Debt (DLC) + Long-term Debt (DLTT)] / Total Assets (AT) for firm i in year t
$SIZE_{i,t}$	ln[Total Assets (AT)] for firm i in year t
$DisAccr$	Discretionary Accruals as defined in Doyle et al. (2007) - footnote 11
$Loss\_prop$	The ratio of the number of years of losses in the past five years of data
$Sales\_vol$	The standard deviation of sales (SALE) over the past five years, scaled by average total assets (AT)

APPENDIX B, continued
VARIABLE DEFINITIONS

Item	Quantitative Definition
CFO_vol	The standard deviation of cash from operations (OANCF) over the past five years, scaled by average total assets
Log_at	Same definition as *SIZE*
Log_opcycle	The natural log of [(SALE/.360)/(Avg. RECT) + (COGS/.360)/(Avg INVT)]
Log_cseg	The natural log of *Busi_lines*
Exsalesgrowth	1 if year-over-year sales growth is in the top quintile; 0 otherwise
Restructure	The aggregate restructuring charges (RCP*-1) scaled by market capitalization (CSHO*PRCC_F)

APPENDIX C

TABLES

TABLE 1
Relation Between Returns of U.S. Firms and Non-U.S.-Traded Foreign Firms

Panel A: Distribution of non-U.S.-traded foreign firms by their home country

	# Of Firms	% of Total
Europe		
Austria	90	0.75%
Belgium	151	1.25%
Denmark	199	1.65%
Finland	116	0.96%
France	759	6.30%
Germany	806	6.68%
Ireland	50	0.41%
Italy	255	2.11%
Luxembourg	47	0.39%
Netherlands	190	1.58%
Norway	260	2.16%
Portugal	35	0.29%
Spain	171	1.42%
Sweden	344	2.85%
Switzerland	266	2.21%
United Kingdom	1399	11.60%
North America		
Canada	1904	15.79%
Asia		
Hong Kong	377	3.13%
Japan	3831	31.77%
Singapore	105	0.87%
Oceania		
Australia	628	5.21%
New Zealand	74	0.61%
Total	12057	100.00%

TABLE 1, Continued
Relation Between Returns of U.S. Firms and Non-U.S.-Traded Foreign Firms

Panel B: Correlation between returns of U.S. and non-U.S. traded foreign firms

	US_Ret_t	CAN_Ret_t	EU_Ret_t	EU_Ret_{t+1}	$ASIA\_Ret_t$
CAN_Ret_t	0.2050				
	(<.0001)***				
EU_Ret_t	0.0510	-0.0052			
	(.1488)	(.8827)			
EU_Ret_{t+1}	0.0695	0.0083	0.0615		
	(.0490)**	(.8145)	(.0812)*		
$ASIA\_Ret_t$	0.1303	0.1270	-0.0015	0.0615	
	(.0002)***	(.0003)***	(.9655)	(.0812)*	
$ASIA\_Ret_{t+1}$	0.3805	0.0854	0.0331	0.0430	0.0693
	(<.0001)***	(.0155)**	(.3480)	(.2234)	(.0494)**

Panel C: Regressions of returns of U.S. firms on returns of non-U.S.-foreign firms - Model (1a)

	Coefficients (t-stats)						
Event Date(s)	Intercept	CAN_Ret_t	EU_Ret_t	EU_Ret_{t+1}	$ASIA\_Ret_t$	$ASIA\_Ret_{t+1}$	Adj. R^2
4/13/2005	0.0006	0.1121	0.0257	0.0043	0.0634	0.2366	24.26%
	(1.53)	(4.48)***	(3.20)***	(0.31)	(1.61)	(6.05)***	
5/10/2006, 5/17/06	0.0004	0.0380	-0.0130	0.0218	0.0378	0.1559	11.23%
	(0.84)	(2.18)**	(-1.24)	(2.11)**	(0.97)	(4.15)***	
7/11/2006	0.0003	0.0347	-0.0205	0.0201	0.0507	0.1216	11.65%
	(0.61)	(2.10)**	(-2.73)***	(2.05)**	(1.38)	(3.38)***	
11/30/2006, 12/13/06, 12/19/06	0.0007	0.0373	-0.0083	0.0153	0.0454	0.1921	16.84%
	(1.68)*	(2.27)**	(-1.04)	(1.45)	(1.38)	(5.93)***	
5/23/07, 5/24/07	0.0007	0.0286	0.0057	0.0068	0.0809	0.3103	25.97%
	(1.65)*	(1.70)*	(0.58)	(0.71)	(2.11)**	(8.12)***	
7/25/2007	0.0009	0.0243	0.0037	0.0071	0.0825	0.3278	26.33%
	(2.16)**	(1.51)	(0.41)	(0.78)	(2.15)**	(8.51)***	

TABLE 1, Continued
Relation Between Returns of U.S. Firms and Non-U.S.-Traded Foreign Firms

Panel D: Regressions of returns of U.S. firms on returns of non-U.S.-foreign firms - Model (1b)

| Event Date(s) | Coefficients | | Adj. R^2 |
	Intercept	CAN_Ret $_t$	
4/13/2005	0.0007	0.1302	8.78%
	(1.51)	(4.80)***	
5/10/2006, 5/17/06	0.0006	0.0492	2.70%
	(1.53)	(2.74)***	
7/11/2006	0.0006	0.0437	2.32%
	(1.46)	(2.56)**	
11/30/2006, 12/13/06, 12/19/06	0.0009	0.0484	2.82%
	(2.00)**	(2.79)***	
5/23/07, 5/24/07	0.0006	0.0526	2.94%
	(1.23)	(2.81)***	
7/25/2007	0.0008	0.0449	2.14%
	(1.75)*	(2.46)**	

This table reports the distribution of non-U.S.-traded foreign firms by their home country, the correlation between U.S. and foreign returns in the estimation period, and the estimation results of models (1a) and (1b) on the relation between U.S. and foreign returns.

Panel A reports the distribution of non-U.S.-traded foreign returns by their home country. The U.S.-listed or U.S.-traded foreign firms and firms with a price of less than one unit of local currency are excluded. The U.S.-listing information is obtained from the Bank of New York Depositary Receipt Directory.

Panel B reports the cumulative correlation between value-weighted U.S. and foreign returns in the estimation periods. US_Ret_t represents the value-weighted raw return of the U.S. portfolio on day t U.S. time. CAN_Ret_t, EU_Ret_t, and $ASIA\_Ret_t$ denote value-weighted returns of non-U.S.-traded firms in Canada, Europe, Asia (including Australia and New Zealand) on day t local time. The market capitalization of each stock in U.S. dollars on day $t-1$ is used to compute the weight of returns on day t. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests); p-values are in parentheses.

Panel C presents the estimation results of regression equations for model (1a). ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests); t-values are in parentheses.

Panel D presents the estimation results of regression equations for model (1b). ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests); t-values are in parentheses.

TABLE 2

Raw, Abnormal, and Market-Adjusted U.S. Market Returns Around Events Leading to the Enactment of Auditing Standard No. 5

Panel A: Abnormal returns using Zhang method

Event	Date	Description	Event Window	VWRET	t-stat	AbRetA	t-stat	AbRetB	t-stat
1	4/13/2005	Roundtable discussions held; PCAOB chief: some 404 audits are "excessive"	4/12 - 4/14	-0.0180	-1.29	-0.0103	-2.95***	-0.0147	-3.81***
2	5/10/2006	SEC and PCAOB roundtable discussions take place	5/9 - 5/11	-0.0141	-1.10	-0.0055	-1.61	-0.0160	-4.41***
3	5/17/2006	PCAOB announces 4-point plan to improve IC provisions under SOX 404 and AS 2	5/16 - 5/18	-0.0254	-2.00**	-0.0247	-7.24***	-0.0252	-7.00***
4	7/11/2006	SEC issues a Concept Release regarding additional internal control regulation guidance for management	7/10 - 7/12	-0.0065	-0.52	-0.0023	-0.69	-0.0083	-2.39***
5	11/30/2006	Committee on Capital Markets Regulation releases a report in support of changes to AS 2 and SOX 404	11/29 - 12/1	0.0087	0.69	0.0023	0.66	0.0073	1.90**
6	12/13/2006	SEC announces the proposal of new interpretive guidance for management with regard to improvements to SOX 404 implementation	12/12 - 12/14	0.0068	0.54	0.0026	0.75	0.0043	1.12
7	12/19/2006	PCAOB votes unanimously to propose a new auditing standard to replace AS 2	12/18 - 12/20	-0.0040	-0.31	-0.0056	-1.60*	-0.0061	-1.58*

TABLE 2, continued

Raw, Abnormal, and Market-Adjusted U.S. Market Returns Around Events Leading to the Enactment of Auditing Standard No. 5

Event	Date	Description	Event Window	VWRET	t-stat	AbRetA	t-stat	AbRetB	t-stat
8	5/23/2007	SEC unanimously approves its new guidance for management's assessment of internal controls over financial reporting	5/22 - 5/24	-0.0114	-0.93	-0.0138	-3.84***	-0.0121	-2.92***
9	5/24/2007	PCAOB officially approves AS 5	5/23 - 5/25	-0.0056	-0.46	-0.0054	-1.51*	-0.0067	-1.60*
10	7/25/2007	SEC officially approves AS 5	7/24 - 7/26	-0.0419	-3.50***	-0.0290	-8.29***	-0.0420	-10.35***
		Mean Return Across Events		-0.1114	-7.90***	-0.0917	-6.50***	-0.1195	-8.48***

TABLE 2, continued
Raw, Abnormal, and Market-Adjusted U.S. Market Returns Around Events Leading to the
Enactment of Auditing Standard No. 5

Panel B: Market-adjusted returns using the Armstrong method

Event	Date	Description	Event Window	VWRET	STOXX1800	MARET
1	4/13/2005	Roundtable discussions held; PCAOB chief: some 404 audits are "excessive"	4/12 - 4/14	-0.0180	-0.0145	-0.0035
2	5/10/2006	SEC and PCAOB roundtable discussions take place	5/9 - 5/11	-0.0141	-0.0023	-0.0118
3	5/17/2006	PCAOB announces 4-point plan to improve IC provisions under SOX 404 and AS 2	5/16 - 5/18	-0.0254	-0.0317	0.0063
4	7/11/2006	SEC issues a Concept Release regarding additional internal control regulation guidance for management	7/10 - 7/12	-0.0065	-0.0142	0.0077
5	11/30/2006	Committee on Capital Markets Regulation releases a report in support of changes to AS 2 and SOX 404	11/29 - 12/1	0.0087	0.0206	-0.0119
6	12/13/2006	SEC announces the proposal of new interpretive guidance for management with regard to improvements to SOX 404 implementation	12/12 - 12/14	0.0068	0.0121	-0.0053
7	12/19/2006	PCAOB votes unanimously to propose a new auditing standard to replace AS 2	12/18 - 12/20	-0.0040	0.0029	-0.0069
8	5/23/2007	SEC unanimously approves its new guidance for management's assessment of internal controls over financial reporting	5/22 - 5/24	-0.0114	0.0022	-0.0136
9	5/24/2007	PCAOB officially approves AS 5	5/23 - 5/25	-0.0056	-0.0040	-0.0016
10	7/25/2007	SEC officially approves AS 5	7/24 - 7/26	-0.0419	-0.0405	-0.0014
		Mean Return Across Events		-0.0111	-0.0069	-0.0042
		t-statistic				-2.98***

This table reports the raw, abnormal, and market-adjusted returns in the U.S. around events leading up to the enactment of Auditing Standard No. 5. In Panel A, VWRET represents value-weighted raw returns. Abnormal returns (*AbRetA* or *AbRetB*) are computed as the difference between the raw value-weighted U.S. returns and the expected returns computed based on models (1a) and (1b), respectively. In Panel B, *STOXX1800* represents the STOXX 1800 ex Americas index returns over each respective event window. *MARET* represents the market-adjusted returns (*VWRET* – *STOXX1800*). The t-statistics for each individual event are computed using the standard deviation of raw returns or the standard deviation of the prediction errors in the estimation period. In both panels, the t-statistics for the Mean Return across Events is calculated using the standard deviation of the distribution of the daily portfolio returns of the days

TABLE 2, continued
Raw, Abnormal, and Market-Adjusted U.S. Market Returns Around Events Leading to the
Enactment of Auditing Standard No. 5

included in all event windows across events. All raw returns are winsorized at 1 and 99%. ***, **, * indicate
significance at 1%, 5%, and 10% levels, respectively (one-tailed tests

TABLE 3
Descriptive Statistics – Cross-Sectional Model

Panel A: Descriptive Statistics - Cross-Sectional Model

Variable	Obs.	Mean	Lower Quartile	Median	Upper Quartile	Std Dev
Accel	2,399	0.83	1.00	1.00	1.00	0.37
Busi_lines	2,399	1.59	1.00	1.00	2.00	0.94
Foreign	2,399	0.16	0.00	0.00	0.00	0.37
Fraud_Risk	2,399	0.71	0.00	1.00	1.00	0.45
Accr	2,399	1.15	-0.06	0.06	0.75	4.12
Shumway	2,399	0.62	0.57	0.69	0.76	0.22
Acq	2,399	0.16	0.00	0.00	0.00	0.37
MTB	2,399	3.42	1.56	2.34	3.70	18.74
ROA	2,399	0.01	-0.01	0.04	0.09	0.21
Pre_Ret	2,399	0.16	90.51	0.05	0.33	0.70
Size	2,399	3501.45	90.50	368.17	1557.20	13348.84

TABLE 3, continued
Descriptive Statistics – Cross-Sectional Model

Panel B: Correlation Matrix

	Accel	Busi_lines	Foreign	Fraud_Risk	Accr	Shumway	Acq	MTB	ROA	Pre_Ret
Busi_lines	0.1281									
	(<.0001)***									
Foreign	0.0516	0.0525								
	(.0115)**	(.0102)**								
Fraud_Risk	0.0803	-0.0059	0.0279							
	(<.0001)***	(.7742)	(.1715)							
Accr	-0.0269	-0.0349	0.0488	-0.0380						
	(.1876)	(.0873)*	(.0169)**	(.0628)*						
Shumway	0.0147	0.1614	0.0149	0.0585	-0.0417					
	(.4730)	(<.0001)***	(.4647)	(.0042)***	(.0411)**					
Acq	-0.0421	-0.0968	-0.0246	0.0244	0.0267	-0.0299				
	(.0392)**	(<.0001)***	(.2293)	(.2318)	(.1910)	(.1438)				
MTB	0.0094	0.0150	-0.0074	0.0175	-0.0184	0.0099	0.0363			
	(.6464)	(.4628)	(.7178)	(.3907)	(.3677)	(.6275)	(.0755)*			
ROA	0.1127	0.1009	0.0373	0.1796	-0.0336	-0.0661	-0.0116	0.0148		
	(<.0001)***	(<.0001)***	(.0675)*	(<.0001)***	(.0997)*	(.0012)***	(.5692)	(.4688)		
Pre_Ret	-0.0066	0.0196	-0.0052	0.0464	-0.0627	0.0446	-0.017	0.0290	0.1173	
	(.7486)	(.3368)	(.8008)	(.0230)**	(.0021)***	(.0289)**	(.4052)	(.1552)	(<.0001)***	
Size	0.1161	0.2745	0.1171	-0.0042	0.0232	0.1032	-0.074	-0.0088	0.0548	-0.0399
	(<.0001)***	(<.0001)***	(<.0001)***	(.8377)	(.2552)	(<.0001)***	(.0003)***	(.6654)	(.0073)***	(.0506)*

This table shows the descriptive statistics and correlations for the cross-sectional regression model variables. Variable definitions can be found in Appendix B. Panel A displays the descriptive statistics for the variables in the cross-sectional regression model – equation (2). Panel B displays the correlations between the variables in the regression model. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests); p-values are in parentheses.

TABLE 4
Cross-Sectional Test of the Market Reaction to AS 5 Events

	Predict	Cumulative	Key Event Dates				
			4/13/05	5/10/06	5/17/06	7/11/06	7/25/07
Accel	-	-0.0609	0.0057	-0.0217	0.0044	-0.0195	-0.0162
		(-7.42)***	(1.93)*	(-6.80)***	(1.34)	(-6.46)***	(-5.12)***
Busi_lines	-	-0.0095	-0.0009	-0.0016	-0.0044	-0.0006	-0.0044
		(-2.61)***	(-0.64)	(-1.16)	(-3.08)***	(-0.45)	(-3.18)***
Foreign	-	-0.0078	0.0025	-0.0009	-0.0078	0.0003	0.0010
		(-0.88)	(0.75)	(-0.26)	(-2.18)**	(0.09)	(0.31)
Fraud_Risk	-	-0.0173	-0.0080	-0.0058	-0.0064	-0.0082	0.0027
		(-2.49)**	(-3.17)***	(-2.21)**	(-2.40)**	(-3.34)***	(1.04)
Accr	-	0.0005	0.0006	0.0001	-0.0006	0.0003	-0.0007
		(0.55)	(2.52)**	(0.17)	(-2.60)***	(1.21)	(-0.53)
Shumway	-	-0.0579	-0.0272	-0.0051	-0.0115	-0.0035	-0.0201
		(-4.16)***	(-5.32)***	(-0.96)	(-2.10)**	(-0.70)	(-3.94)***
Acq	-	0.0079	0.0060	-0.0067	0.0043	-0.0045	0.0075
		(0.90)	(2.24)**	(-2.25)**	(1.41)	(-1.59)	(2.34)**
MTB	-	0.0001	0.0001	0.0001	-0.0004	0.0001	-0.0001
		(0.10)	(0.26)	(0.15)	(-4.72)***	(1.03)	(-0.70)
ROA		0.0747	0.0183	0.0282	0.0281	0.0227	-0.0062
		(4.35)***	(3.70)***	(4.35)***	(4.23)***	(3.73)***	(-1.15)
Pre_Ret		-0.0104	-0.0158	-0.0079	-0.0116	-0.0135	-0.0110
		(-2.24)**	(-8.96)***	(-3.50)***	(-5.01)***	(-6.24)***	(-4.34)***
Size		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
		(2.52)**	(0.75)	(1.91)*	(1.77)*	(1.35)	(2.12)**
N		2,399	2,972	2,815	2,811	2,786	2,774
Adj. R^2		57.94%	15.95%	31.25%	22.30%	26.21%	35.44%
Industry fixed effects		Yes	Yes	Yes	Yes	Yes	Yes

This table presents the estimation results of regression equation (2) to examine the cross-sectional variation in market reaction to the key events leading to AS 5. In the Cumulative column, CAR_i is the cumulative abnormal return of firm *i* over the six key AS 5 dates identified in the analysis of Table 2. Abnormal returns are estimated in the same way as the *AbRetA* column in Table 2. Other variables definitions can be found in Appendix B. 3-Day event windows were used in this regression. The remaining columns present the regression results for each of the five key AS 5 dates noted above. The coefficients on industry dummies (Ind_{ij}) are not reported. *T*-statistics presented in parentheses are calculated using heteroskedasticity-adjusted standard errors (White 1980). ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests); t-statistics are in parentheses.

TABLE 5
Descriptive Statistics – Financial Reporting Quality Test Using Restatements

Panel A: Descriptive Statistics - Financial Reporting Quality Model

Variable	Obs.	Mean	Lower Quartile	Median	Upper Quartile	Std Dev
Non-Misstatement Firms:						
AS5	5,596	0.49	0.00	0.00	1.00	0.50
MW	5,596	0.08	0.00	0.00	0.00	0.28
FreeC	5,596	-0.01	-0.03	0.03	0.09	0.26
FinRaised	5,596	0.17	0.01	0.05	0.21	0.34
EPSGrowth	5,596	0.57	0.00	1.00	1.00	0.50
LOSS	5,596	0.26	0.00	0.00	1.00	0.44
LEV	5,596	0.22	0.01	0.17	0.34	0.35
SIZE	5,596	6.65	5.26	6.52	7.91	1.93
Misstatement Firms:						
AS5	615	0.45	0.00	0.00	1.00	0.50
MW	615	0.19	0.00	0.00	0.00	0.39
FreeC	615	-0.03	-0.05	0.02	0.07	0.27
FinRaised	615	0.21	0.01	0.06	0.27	0.36
EPSGrowth	615	0.44	0.00	0.00	1.00	0.50
LOSS	615	0.33	0.00	0.00	1.00	0.47
LEV	615	0.23	0.01	0.19	0.35	0.25
SIZE	615	6.18	5.07	6.14	7.31	1.71

TABLE 5, continued
Descriptive Statistics – Financial Reporting Quality Test Using Restatements

Panel B: Correlation Matrix

	MISST	AS5	MW	FreeC	FinRaised	EPSGrowth	LOSS	LEV
AS5	-0.0235							
	(.0636)*							
MW	0.1067	-0.0233						
	(<.0001)***	(.0661)*						
FreeC	-0.0218	0.0126	-0.0356					
	(.0865)*	(.3191)	(.0050)***					
FinRaised	0.0333	-0.0038	0.0275	-0.4840				
	(.0087)***	(.7653)	(.0304)**	(<.0001)***				
EPSGrowth	-0.0746	0.0298	-0.1154	0.2845	-0.1402			
	(<.0001)***	(.0189)**	(<.0001)***	(<.0001)***	(<.0001)***			
LOSS	0.0473	-0.0147	0.1362	-0.3849	0.1741	-0.6337		
	(.0002)***	(.2483)	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***		
LEV	0.0087	0.0109	-0.0066	-0.2924	0.2308	0.6337	0.0548	
	(.4948)	(.3917)	(.6058)	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	
SIZE	-0.0740	0.0489	-0.0766	0.3468	-0.1828	0.3496	-0.3809	0.1290
	(<.0001)***	(.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***

The table shows the descriptive statistics and correlations for the financial reporting quality model variables. Variable definitions can be found in Appendix B.
Panel A displays the descriptive statistics in the financial reporting quality model – equation (6).
Panel B displays the correlations between the variables in the regression model. . ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests); p-values are in parentheses.

TABLE 6
Logistic Regression of Misstatement on AS 2 vs. AS 5 and Control Variables

Variable	Prediction	Coefficient	t-stat
Intercept	none	-10.14	-0.19
AS5	none	-0.12	-1.39
MW	+	0.80	6.70***
FreeC	-	0.29	1.36
FinRaised	+	0.17	1.40
EPSGrowth	-	-0.32	-2.87***
LOSS	+	-0.10	-0.78
LEV	+	0.10	1.00
SIZE	none	-0.13	-4.31***
Generalized R^2	7.57%		
Number of observations	6,211		
Industry fixed effects	Yes		

This table presents the logistic regression show in equation (6). Variable definitions can be found in Appendix B. T-statistics presented in parentheses are calculated using heteroskedasticity-adjusted standard errors (White 1980). ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests).

TABLE 7
Descriptive Statistics – Financial Reporting Quality Test Using Discretionary Accruals

Panel A: Descriptive Statistics

Variable	Obs.	Mean	Lower Quartile	Median	Upper Quartile	Std Dev
DisAccr	4,852	0.13	-0.05	0.03	0.21	1.66
AS5	4,852	0.48	0.00	0.00	1.00	0.50
Loss_prop	4,852	0.24	0.00	0.00	0.40	0.32
Sales_vol	4,852	0.20	0.09	0.15	0.26	0.18
CFO_vol	4,852	0.05	0.02	0.04	0.06	0.06
Total Assets (in millions)	4,852	7425.92	263.79	951.87	3844.21	27337.45
Operating Cycle	4,852	135.49	29.39	43.18	90.76	595.46
Firm Age	4,852	20.42	8.00	14.00	28.00	17.71
Segments	4,852	1.72	1.00	1.00	2.00	1.09
ExSalesGrowth	4,852	0.15	0.00	0.00	0.00	0.35
Restructure	4,852	0.01	0.00	0.00	0.01	0.53

TABLE 7, continued
Descriptive Statistics – Financial Reporting Quality Test Using Discretionary Accruals

Panel B: Correlation Matrix

	DisAccr	AS5	Loss_prop	Sales_vol	CFO_vol	Log_at	Log_opcycle	Log_age	Log_seg	Exsalesgrowth
AS5	0.0236									
	(.0999)*									
Loss_prop	-0.0466	-0.0556								
	(.0012)***	(.0001)***								
Sales_vol	0.0517	-0.0183	-0.0509							
	(.0003)***	(.2017)	(.0004)***							
CFO_vol	-0.0121	-0.0286	0.3638	0.1970						
	(.3997)	(.0463)**	(<.0001)***	(<.0001)***						
Log_at	0.0878	0.0585	-0.3888	-0.1547	-0.3754					
	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***					
Log_opcycle	0.0383	-0.0052	-0.0440	0.1466	0.0209	0.0356				
	(.0076)***	(.7178)	(.0022)***	(<.0001)***	(.1447)	(.0132)**				
Log_age	0.0214	0.0046	-0.2339	-0.1137	-0.1559	0.2639	-0.1108			
	(.1370)	(.7475)	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***			
Log_seg	0.0744	0.0151	-0.2231	-0.0706	-0.1843	0.3893	-0.0504	0.2908		
	(<.0001)***	(.2937)	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	(.0004)***	(<.0001)***		
Exsalesgrowth	-0.0749	0.0038	0.1910	0.1358	0.1656	-0.1484	-0.0069	-0.1857	-0.0969	
	(<.0001)***	(.7910)	(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***	(.6292)	(<.0001)***	(<.0001)***	
Restructure	-0.0037	-0.0208	0.0264	-0.0027	0.0028	0.0090	0.0091	0.0144	-0.0007	-0.0042
	(.7973)	(.1478)	(.0656)*	(.8496)	(.8483)	(.5288)	(.5279)	(.3159)	(.9587)	(.7684)

The table shows the descriptive statistics and correlations for the financial reporting quality model variables. Variable definitions can be found in Appendix B.
Panel A displays the descriptive statistics in the financial reporting quality model – equation (7).
Panel B displays the correlations between the variables in the regression model. . ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests); p-values are in parentheses.

TABLE 8
OLS Regression of Discretionary Accruals on AS 2 vs. AS 5 and Control Variables

Variable	Prediction	Coefficient	t-stat
Intercept	none	-0.39	-0.88
AS5	none	0.05	1.03
Loss_prop	none	-0.24	-2.56**
Sales_vol	+	0.39	1.69*
CFO_vol	+	-0.64	-1.30
Log_at	-	-0.01	-0.02
Log_opcycle	none	-0.02	-0.67
Log_age	-	-0.01	-0.07
Log_seg	+	0.10	1.86*
Exsalesgrowth	none	-0.30	-3.83***
Restructure	none	-0.01	-2.01**
Adjusted R^2	20.99%		
Number of observations	4,852		
Industry fixed effects	Yes		

This table presents the logistic regression show in equation (7). Variable definitions can be found in Appendix B. *T*-statistics presented in parentheses are calculated using heteroskedasticity-adjusted standard errors (White 1980). ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests).

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