

# **An Investigation of the Change in the Likelihood of Auditor Litigation due to Fraud in the Post-SOX Section 404 Era**

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*Using 629 observations of firms with frauds we investigate the change in auditor litigation in the Post-SOX 404 era. The likelihood of fraud heightens when internal controls are inadequate or non-existent. Failure to detect timely financial statement fraud exposes auditors to litigations since regulators may attribute the failure to a lack of due care. We find the probability of auditor litigation due to fraud increases in the Post-SOX 404 era. Interestingly, we find no evidence of further increase in auditor litigation when misappropriation of assets also occurs. The results suggest an enhanced enforcement of accountability by the SEC.*

## **INTRODUCTION**

Sarbanes Oxley Act of 2002 (SOX) was enacted to protect investors. The requirement to achieve the purpose of SOX stated in Section 404 – Management Assessment of Internal Controls, requires the SEC under Section 404(a), to prescribe rules requiring that each annual report filed with the SEC under the 1934 *Securities Exchange Act* “contain an internal control report, which shall-

(1) state the responsibility of management for establishing and maintaining an adequate internal control structure and procedures for financial reporting; and

(2) contain an assessment, as of the end of the most recent fiscal year of the issuer, of the effectiveness of the internal control structure and procedures of the issuer for financial reporting” (U.S. House of Representatives, 2002).

In addition, Section 404(b) specifies,

“With respect to the internal control assessment required by subsection (a), each registered public accounting firm that prepares or issues the audit report for the issuer shall attest to, and report on, the assessment made by the management of the issuer” (U.S. House of Representatives, 2002).

Regulators and standard setters have issued various pronouncements with respect to internal controls. The Public Company Accounting Oversight Board (PCAOB) notes in the Auditing Standard No. 5 (*An Audit of Internal Control Over Financial Reporting That Is Integrated with An Audit of Financial Statements*) that internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment, breakdowns resulting from human failures, circumvention by collusion or improper management override. The PCAOB requires auditors to consider

whether a firm's internal controls sufficiently address risk of material misstatement due to fraud and risk of management override of other controls.

Auditing standards have long recognized the significance of internal control in auditing. Prior to SOX, auditors were required to understand clients' internal controls, and test internal controls when the auditor planned to rely on them. The enactment of SOX enhanced the former internal control requirements by requiring auditors to evaluate and report on the effectiveness of internal controls and to evaluate management's assertion about the effectiveness of internal controls. Therefore, it is likely the audit procedures for testing and evaluating internal control are substantially different in the post-SOX period than in the pre-SOX period (Raghunandan and Rama, 2006).

Prior literatures suggest an inverse relation between internal control and fraud (Barra, 2010, and Caplan, 1999). When fraud occurs, it implies an opportunity existed, and the opportunity was taken advantage of by the perpetrator(s). The opportunity can be the result of the absence of internal controls or the ineffectiveness of internal control. The interaction between the absence of internal control or the lapse in internal control, and the occurrence of a fraudulent act that results in material financial statement misstatement is of interest in this study. Thus, for the purpose of this study internal control fraud is narrowly defined as an intentional act which results in material misstatement in audited financial statements when internal controls are nonexistent or ineffective.

The auditor has the responsibility to plan and perform an audit to obtain reasonable assurance as to whether the financial statements are free of material misstatements regardless of whether the material misstatements are due to fraud or error (AICPA, 2002). A material misstatement resulting from fraud may not be detected due to the nature of audit evidence obtained, the nature of a fraud, and/or the nature of audit procedures performed. An audit failure resulting from any of the above circumstances exposes the auditor to potential litigation.

Using a sample of U.S. listed firms with internal control frauds this study investigates the change in auditor litigation due to internal control fraud during the period 2000 to 2006. Data of firms with internal control fraud was obtained from Accounting and Auditing Enforcement Releases (AAERs). We find an increase in the likelihood of auditor litigation due to internal control fraud in the post-SOX 404 era. This increase in the likelihood of auditor litigation due to internal control fraud mostly relates to SOX 404 accelerated filers.

The results of this study may be informative to law-makers as they seek to address the ills affecting the economic sector. To the extent firms perceive value in government's involvement; the government may face less opposition when making enactments which they presume will encourage good business practices and deter fraudulent practices. Regulators may find this paper useful because it may assist in further evaluation of the effect of SOX as it provides empirical evidence of increased scrutiny of auditors' work. External auditors may find the study helpful since, the suggested increase in the likelihood of auditor litigation in the post-SOX era should motivate auditors towards more attention to fraud risk, especially since users of financial reports may have a different perception of what auditors' responsibilities are with respect to fraud (McEnroe and Martens, 2001).

Prior literature (Hogan and Wilkins, 2008, and Patterson and Smith, 2007) shows a significant change in accounting practice since the enactment of SOX. Additionally, prior literature indicates auditors do evaluate internal controls and risk (including litigation risk and fraud risk) in their audit procedures (Hwang and Chang, 2010, and Pratt and Stice, 1994). However, limited information exists on how SOX has affected auditor litigation.

## LITERATURE REVIEW AND HYPOTHESES

Prior literature (Wilks and Zimbelman, 2004, Schroth and Shah, 2000, and Adler, 1980) on attribution theory suggests people are inclined to attribute others' behavior to dispositional tendencies rather than to situational circumstances, on the basis of how similar people would act in a similar situation. If similar people under similar circumstances act differently, the behaviors are attributed to dispositional tendencies; whereas if similar people under similar circumstances act in like manner, the behaviors are

attributed to situational tendencies. Therefore, following attribution theory, regulators may be inclined to infer audit failures as dispositional tendency on the auditor's part when they believe other auditors would have acted differently under the same circumstances (Bonner, et. al., 1998). In effect, audit failures due to improper professional conduct will be attributed to the auditors since auditors are expected to adhere to the generally accepted auditing standards. Research has shown auditors are not habitually named as defendants (Fuerman, 1999). However, substandard financial statements, substandard audits, and noncompliance with relevant legal standards are bases for meritorious claims against auditors (Palmrose, 1997).

Regulators evaluate auditors' professional conduct on the basis of the generally accepted auditing standards. As such, auditors' professional conducts are considered by regulators as a basis to attribute negligence which may lead to litigation. With respect to auditor litigation, procedural justice relates to auditors being aware of the requirements of GAAS, but choosing to ignore them in the course of an audit engagement. In such a situation, auditors are held meritoriously accountable for failing to adhere to GAAS. Legal proceedings as implied by the procedural justice theory relates to fairness of the procedure (Schroth and Shah, 2000, and Buckless and Peace, 1993).

Auditors are concerned about litigation risk and they respond in part to this risk by including in the audit fees a component for litigation risk and a component for audit services (Dye, 1993). In the post-SOX era, auditors adapted audit procedures and increased audit fees (Hogan and Wilkins, 2008, Patterson and Smith, 2007, and Raghunandan and Rama, 2006) in response to the increase in audit internal control requirements under SOX 404.

Firms' control environments have been shown to affect firms' operations and the possibility of fraud (Krishnan, 2005, and Daily and Dalton, 1994). The negative association between internal control and fraud (Patterson and Smith, 2007) suggested by prior research and the additional requirement under SOX 404 has further heightened the concern about litigation risk for auditors. The SOX 404 requirement is more urgent since, in the post-SOX era auditors were placed in the spotlight and the scope of the possible basis for litigation against auditors widened.

Since the primary intent of the SEC is to enforce regulations and thereby protect investors, we predict, that in the post-SOX 404 era, the likelihood is greater the SEC will litigate auditors for professional misconducts involving internal control fraud and material misstatements of audited financial statements. Thus, we hypothesize:

*H1: In the post-SOX 404 era, auditors are more likely to be litigated due to internal control fraud.*

The Association of Certified Fraud Examiners (ACFE) has shown misappropriation of assets occurs more frequently than financial reporting fraud even though misappropriation of assets involves less monetary loss (ACFE, 2010). This suggests auditors are more likely to be exposed to litigation from financial reporting fraud than from misappropriation of assets due to the higher financial loss associated with financial reporting fraud. Additionally, the auditing literature supports the likelihood of auditor litigation increases when frauds are frequent in nature (Bonner, et. al., 1999). Thus, auditors are expected to heighten their investigation when misappropriation of assets occurs frequently because this situation would suggest a deficient internal control system and may lead to financial reporting fraud detection.

Failure to detect financial reporting fraud due to professional misconduct attributed to the auditors may lead to litigation. However, we posit that the likelihood of auditor litigation increases when instances of misappropriation of assets occur with financial reporting fraud. Also, the type of accounts usually involved in misappropriation of assets (e.g. cash, inventory) combined with the level of judgment needed in testing these accounts makes them more auditable than other accounts involved in financial reporting fraud (e.g. revenue). Hence, in a situation where an audit failure is associated with the occurrence of both misappropriation of assets and financial reporting fraud, an increase in the likelihood of auditor litigation is expected since the attribution theory suggests regulators most likely would believe other auditors would have acted differently under similar circumstances. Thus, we hypothesize:

*H2: In the post-SOX 404 era, the likelihood of auditor litigation is further increased in the presence of misappropriation of assets.*

## **METHODOLOGY**

### **Research Design**

This study uses the pooled cross-sectional logit model. The logit model examines how the independent variables affect the probability of the dependent variable, and the pooled cross-sectional analysis is “an effective way of analyzing the effects of a new government policy... since it examines how a key relationship has changed over time” (Wooldridge, 2006, p. 10). One assumption about pooled cross sectional is independence of observations across time, although this assumption may not always be valid.

In this study, for some firms, the observations of fraud are consecutive across years. The fraud occurrence in each year was different but related to the fraud occurrence in a preceding or subsequent year. This suggests a non-independence of such observations and may imply a correlation of the error terms within firms. Therefore, observations were clustered by firms’ CIK (Central Index Key used on the SEC’s system to identify corporations) numbers and the standard errors of the estimates are thus robust to within cluster correlation.

### **Independent Variables**

Each independent variable is a dummy variable. For testing H1, the likelihood of more auditor litigation due to internal control fraud in the post-SOX 404 era, we used a dummy variable to represent the post-SOX era. Since Section 404 became effective November 15, 2004 for accelerated filers, the first year for adoption of Section 404, began November 15, 2004. The periods included in the study as post-SOX 404 for accelerated filers, are all fiscal year-ends from November 15, 2004 to December 31, 2004, and all fiscal year-ends for the calendar years 2005 and 2006. For non-accelerated filers, post-SOX 404 era began July 15, 2005.<sup>1</sup> The pre-SOX era includes all fiscal year-ends for the calendar years 2000 up to July 30, 2002. The period from the enactment of SOX (July 30, 2002) to the effective date of Section 404 (November 15, 2004) is the transition era for accelerated filers, and the transition era extends to July 14, 2005 for non-accelerated filers. We include a dummy variable in the model to represent the transition era.

For testing H2, the likelihood of further increase in auditor litigation due to internal control fraud in the presence of misappropriation of assets, in the post-SOX 404 era, we include a dummy variable for misappropriation of assets. The sample of firms used in this study includes firms with financial reporting fraud.<sup>2</sup> Hence, the dummy variable for misappropriation of assets represents firms that have both financial reporting fraud and misappropriation of assets. In effect, this variable is an interaction between financial reporting fraud and misappropriation of assets.

### **Control Variables**

The different compliance dates for accelerated and non-accelerated filers were established because non-accelerated filers may experience difficulty in evaluating their internal control over financial reporting because they may lack a formal and well-structured system of internal control over financial reporting.<sup>3</sup> Prior literature (Ge and McVay, 2005) found a negative association between firms’ resources and internal control ineffectiveness. This suggests firms with more resources are more likely to have effective internal controls than firms with limited resources. The inverse relation between firm resources and internal control ineffectiveness suggest accelerated filers are more likely to have effective internal controls, and thus, less likely to be associated with auditor litigation due to internal control fraud. As such, we include a dummy variable for accelerated filers in the model.

Under section 404(b), auditors are required to attest to the effectiveness of internal control. To comply with this requirement, auditors must perform audit procedures that will provide adequate evidence about internal controls, and support their attestation (PCAOB, 2007). If an auditor’s report indicates the absence of deficiencies, it implies internal controls are adequate in the normal course of firm’s functions,

to prevent or detect and correct financial statements misstatements on a timely basis (PCAOB, 2007). The report about internal control over financial reporting is a core “product” of auditing firms. Since auditors are required (SOX Section 201) and perceived to be independent, stakeholders are deemed to perceive such reports as more reliable and valid than similar reports from management. The likelihood of auditor litigation may increase when an auditor’s internal control report is unqualified, and internal control fraud is subsequently discovered. Therefore, we include a dummy variable to control for auditor’s report on internal control.

SOX 302 requires management to establish internal controls and periodically evaluate and report on the effectiveness of internal controls. Management disclosures are voluntary, and auditors have no responsibilities under Section 302 beyond the typical skeptical examination of information received during an audit (AICPA, 2002). The absence of management’s disclosure related to internal control or management’s disclosure related to ineffective internal control may increase the likelihood of auditor litigation when internal control frauds are discovered after the auditor’s report. Thus, we include a dummy variable to control for management’s voluntary disclosures about internal control.

The research model includes a set of control variables that prior literature has shown to be associated with auditor litigation. Heninger (2001) shows auditor type is negatively associated with auditor litigation. However, since the SEC focuses on enforcement and ensuring investor protection, their motivation is not necessarily based on audit firms’ size and resources, but more of responsibility and accountability. As such, we include a dummy variable for auditor type, but we make no prediction about direction.

Firm size is negatively associated with auditor litigation relating to financial reporting and disclosures (Bonner, et. al., 1998). We include a variable for firm size measured as natural log of total assets similar to Krishnan and Zhang (2005). Prior studies suggest a negative association between financial condition and auditor litigation (Fureman, 1997, and Palmrose, 1987), and a positive association between financial loss and internal controls (Ashbaugh, et. al., 2007). Thus, we include a variable for financial condition measured as return on assets following Krishnan and Visvanathan (2007).

The technology and financial industries have been shown to have higher litigation rates than other industries (Bonner, et. al., 1998, and Martin, et. al., 1996). This study controls for technology and financial industries by including two sets of dummy variables to indicate the technology and financial industries following Bonner, et. al. (1998). Also, stock exchange listing is negatively associated with auditor litigation (Bonner, et. al., 1998). Since, the NYSE is the largest in the U.S., the variable for stock exchange (NYSE) is included in the study.

Auditor litigation is positively associated with public companies (Bonner, et. al., 1998), and auditor litigation is higher for public companies in comparison to non-public companies (St. Pierre and Anderson, 1984). However, there exist differences within public companies as to their status of being closely held or widely held. Therefore, we control for firm status using a dummy variable. Also, IPO firms are positively associated with fraud (Krishnan, 2005) and are high litigation risk engagements (Colbert, et. al., 1996). Therefore, we include a dummy variable to control for IPO firms. To be an IPO firm, the firm had an IPO within three years of the first year of fraud (Bonner, et. al., 1998), and the SEC in the AAERs associated the IPO with the fraud.

### Research Model

$$\Pr(\text{AUDLIT} = 1) = F(\beta_0 + \beta_1\text{Trans} + \beta_2\text{Post} + \beta_3\text{MOA} + \beta_4\text{MOATrans} + \beta_5\text{MOAPost} + \beta_6\text{Accel} + \beta_7\text{Aud404} + \beta_8\text{DC302} + \beta_9\text{AUD} + \beta_{10}\text{LNSIZE} + \beta_{11}\text{FINCOND} + \beta_{12}\text{Technology} + \beta_{13}\text{Financial} + \beta_{14}\text{NYSE} + \beta_{15}\text{CloselyHeld} + \beta_{16}\text{IPO})$$

Where;

AUDLIT = indicator for auditor litigation; equals one for presence of auditor litigation and zero otherwise;

F(.) = cumulative distribution function;

- Trans = indicator variable equals one for era between SOX enactment and SOX 404 effective date, and zero otherwise;
- Post = indicator variable equals one for era from SOX 404 effective date, and zero otherwise;
- MOA = interaction variable for misappropriation of asset and financial reporting fraud; equals one if fraud includes both and equals zero if fraud is FRF only;
- MOATrans = interaction variable for misappropriation of asset and transitional era; equals one if MOA occurred in the transitional era and zero otherwise;
- MOAPost = interaction variable for misappropriation of asset and post era; equals one if MOA occurred in the post era and zero otherwise;
- Accel = indicator variable equals one for accelerated filers, and zero otherwise;
- Aud404 = indicator variable equals one when auditor's internal control report is unqualified and equals zero when the report does not exist or is qualified;
- DC302 = indicator variable equals one when voluntary disclosures indicate effective internal control, and equals zero when no disclosure exists or disclosures indicate ineffective internal control;
- AUD = indicator variable for auditor type, equals one for Big 4, and zero otherwise;
- LNSIZE = natural log of total assets;
- FINCOND = financial condition, measured as return on assets (operating income scaled by average total assets).
- Technology = indicator variable for technology industry, equals one for firm in technology industry, and zero otherwise;
- Financial = indicator variable for financial industry, equals one for firm in financial industry, and zero otherwise;
- NYSE = indicator variable for stock exchange, equals one for NYSE, and zero otherwise;
- Closely held = indicator variable for firm status, equals one for widely held, and zero for closely held;
- IPO = indicator variable for IPO firm; equals one for firm with IPO within three years of fraud and SEC association of fraud to IPO, and zero otherwise.

## ANALYSIS

### Sample Determination and Description

The study covers the period 2000 to 2006. The sample is from 261 firms with internal control fraud, and the firms were subject to SEC legal action published in the AAERs<sup>4</sup> from 2000 to the second quarter of 2011. The search extended beyond 2006 because of the time lag between when internal control fraud occurs and when SEC publishes them. From the 261 firms with internal control fraud, 16 firms were eliminated because the cases were not financial statement related and 33 firms were eliminated because they were not publicly traded firms. Of the remaining 212 firms, 3 were deleted because their CIK number was not identified. The final sample includes 209 firms.

The sample of 209 firms comprises 629 observations (Table 1). The decreases in observed instances of internal control fraud in the transition and the Post-SOX 404 eras are attributed to the effect of firms' preparations to comply with SOX 404 during the transition era, and the subsequent compliance with the requirements of SOX 404, after the effective date. The 629 observations include a total of nine industries based on the two-digit SIC. Table 2 reports the sample of firms by industry. Manufacturing industry has the highest internal control fraud cases, and agriculture industry has the least internal control fraud cases.

**TABLE 1**  
**DISTRIBUTION OF SAMPLE OBSERVATIONS WITH INTERNAL CONTROL FRAUD, BY YEAR**

Years	Fraud Observations	Percentage
2000	116	18%
2001	137	22%
2002	116	18%
2003	92	15%
2004	76	12%
2005	57	9%
2006	35	6%
Total	629	100%

**TABLE 2**  
**DISTRIBUTION OF SAMPLE OBSERVATIONS WITH INTERNAL CONTROL FRAUD, BY INDUSTRY**

Industries	SIC Codes	Column A	Column B	Column C	Column D
		Entire Sample	Pre-SOX	Transition	Post-SOX
		(n = 629)	(n = 269)	(n = 235)	(n = 125)
Agriculture	01	6	1	3	2
Construction	15-17	24	9	10	5
Finance, Insurance, and Real Estate	60-68	72	33	25	14
Manufacturing	20, 26-28, 30, 33-38	261	107	101	53
Mining	10, 13, 14	54	11	20	23
Retail Trade	53-56, 59	18	7	8	3
Services	72-76, 78-80, 87, 89	127	63	47	17
Transportation, Communications, Electric, and Gas	42, 45, 48, 49	47	30	12	5
Wholesale Trade	50, 51	20	8	9	3

### Descriptive Statistics

The descriptive statistics for the variables are shown in Table 3. Also, in Table 3 is shown the test of differences between firms with auditor litigation and firms without auditor litigation. Firms with auditor litigation had 34 percent and 21 percent observations in the transition (Trans) and Post-SOX 404 (Post) eras, respectively, suggesting higher auditor litigation after the enactment of SOX. However, the t-test

does not show significant differences between firms with auditor litigation and firms without auditor litigation during the transition (Trans) and Post-SOX 404 (Post) eras.

The higher mean of misappropriation of assets (MOA) for firms with auditor litigation suggests auditor litigation is more likely when both misappropriation of assets and financial reporting fraud occur, than when only financial reporting fraud occurs, however, the t-test does not show significant difference for misappropriation of assets (MOA). Further, though the lower means for accelerated filers (Accel), for firms with auditor litigation suggests auditor litigation is less likely for accelerated filers (Accel), relative to non-accelerated filers, the t-test does not show a significant difference for accelerated filers (Accel).

The lower means for auditors' report on internal control (Aud404) and managements' report on internal control (DC302) for firms with auditor litigation suggests auditor litigation is more likely when auditor's internal control report is qualified, and when management's voluntary disclosures indicate ineffective internal control. The t-tests indicate significant differences in the auditors' internal control report (Aud404) and managements' voluntary disclosures about internal control (DC302), between firms with auditor litigation and firms without auditor litigation.

**TABLE 3**  
**DESCRIPTIVE STATISTICS FOR FIRMS WITH AUDITOR LITIGATION**  
**(n = 67) AND FIRMS WITHOUT AUDITOR LITIGATION (n = 562)**

Variable	Column A		Column B		t-test	p-value
	Firms with auditor litigation		Firms without auditor litigation			
	Mean	Standard deviation	Mean	Standard deviation		
Trans	0.343	0.478	0.377	0.485	0.548	0.585
Post	0.209	0.410	0.198	0.398	0.217	0.829
MOA	0.478	0.503	0.169	0.375	4.860	6.273
Accel	0.119	0.327	0.461	0.499	7.567	1.408
Aud404	0.045	0.208	0.112	0.316	2.343	0.021**
DC302	0.299	0.461	0.432	0.496	2.228	0.029**
AUD	0.522	0.503	0.877	0.328	5.630	3.158
SIZE*	683.171	3370.000	270.211	1160.000	0.997	0.322
LNSIZE	5.952	2.703	7.201	1.085	3.747	0.000***
FINCOND	-0.365	1.551	-0.026	0.766	1.760	0.083*
Technology	0.179	0.386	0.153	0.360	0.526	0.600
Financial	0.119	0.327	0.109	0.311	0.259	0.797
NYSE	0.209	0.410	0.509	0.500	5.522	3.140
Closely Held	0.567	0.499	0.813	0.390	3.894	0.000***
IPO	0.075	0.265	0.018	0.132	1.731	0.088*

\* SIZE is in millions of dollars.

\*, \*\*, \*\*\* indicate two tail significance at .10, .05, and .01 levels, respectively.



For firms with auditor litigation, the lower mean return on assets (FINCOND) and the higher mean for closely held firms, suggest a greater likelihood of auditor litigation for firms with weaker financial condition and for closely held firms relative to firms with stronger financial condition and widely held firms, respectively. The t-tests also show significant differences for financial condition (FINCOND) and closely held firms.

Table 4 presents the pairwise correlations for the variables. The significant positive correlations between management's voluntary disclosure under Section 302 (DC302) and the transitional era (Trans) between Post-SOX 404 era (Post) and accelerated filers (Accel) and between auditor's report on internal control over financial reporting (Aud404) and Post-SOX 404 era (Post) reflect compliance with Sections 302 and 404 from their effective dates.

The significant positive correlation between management's voluntary disclosure on internal control (DC302) and accelerated filers (Accel) shows accelerated filers (Accel) are heavily traded. While the significant positive correlation between auditor type (AUD) and size (LNSIZE) and between size (LNSIZE) and NYSE indicate larger firms are mostly audited by the Big 4 auditors, and larger firms are mostly listed on the NYSE,<sup>5</sup> respectively.

**TABLE 4**  
**CORRELATIONS MATRIX**

	AUDLIT	Trans	Post	MOA	MOATrans	MOAPost	Accel	Aud404
AUDLIT	1.0000							
Trans	-0.0216	1.0000						
Post	0.0088	-0.3846***	1.0000					
MOA	0.2371***	-0.0119	0.0175	1.0000				
MOATrans	0.1010**	0.3637***	-0.1399***	<b>0.5585***</b>	1.0000			
MOAPost	0.1303***	-0.1636***	<b>0.4252***</b>	<b>0.4210***</b>	-0.0595	1.0000		
Accel	-0.2131***	0.3806***	0.4590***	-0.1115***	0.0306	0.1038**	1.0000	
Aud404	-0.0678*	-0.2323***	<b>0.6485***</b>	-0.0430	-0.0962**	0.1834***	0.3672***	1.0000
DC302	-0.0837***	<b>0.5513***</b>	0.2402***	0.0313	0.2447***	0.1067**	<b>0.6153***</b>	0.3829***
AUD	-0.2982***	0.0245	-0.1294***	-0.2331***	-0.1433***	-0.2278***	0.1829***	0.0367
LNSIZE	-0.2749***	-0.0191	0.0115	-0.1817***	-0.1342***	-0.0627	0.1768***	0.0821**
FINCOND	-0.1177***	-0.0337	0.0392	-0.0889**	-0.1222***	-0.0528	0.1325***	0.0613
Technology	0.0222	-0.0237	-0.0052	-0.0632	-0.0870*	-0.0477	0.0302	-0.0040
Financial	0.0107	-0.0292	0.0037	-0.0118	-0.0595	-0.0241	0.0073	0.0624
NYSE	-0.1853***	0.0192	0.0429	-0.1711***	-0.0848**	-0.0923**	0.2103***	0.0989**
Closely Held	-0.1853***	-0.0155	-0.0036	-0.1155***	-0.0626	-0.1197***	0.1797***	0.0768*
IPO	0.1149***	-0.0561	-0.0517	0.0252	-0.0439	-0.0331	-0.0710**	-0.0535

Note 1: \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively.

Note 2: Using a cut-off of 0.4 (absolute), all significant correlations equal to or greater than 0.4 (absolute) are in bold.

**TABLE 4 (Continued)**  
**CORRELATIONS MATRIX**

	DC302	AUD	LNSIZE	FINCOND	Technology	Financial	NYSE	Closely Held	IPO
DC302	1.0000								
AUD	0.0020	1.0000							
LNSIZE	0.0062	<b>0.4611***</b>	1.0000						
FINCOND	0.0091	0.2772***	0.1755***	1.0000					
Technology	0.0180	0.0924**	-0.0741*	0.0205	1.0000				
Financial	0.0119	0.0427	0.2052***	0.0393	-0.1508***	1.0000			
NYSE	0.0746*	0.3570***	<b>0.4393***</b>	0.1581***	-0.2523***	0.0926**	1.0000		
Closely Held	0.0238	0.2801***	0.2995***	0.1708***	-0.0120	0.1578***	0.3647***	1.0000	
IPO	-0.0691**	-0.0168	-0.0937**	-0.0057	0.1627***	-0.0549	-0.1075***	-0.0205	1.0000

Note 1: \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively.

Note 2: Using a cut-off of 0.4 (absolute), all significant correlations equal to or greater than 0.4 (absolute) are in bold.

## Results

Table 5 presents the results of the cross-sectional logit analysis and the marginal effects. The Wald Chi-squared statistic (Table 5) is statistically significant at the p-value < 0.01 level. The coefficients and marginal effects of the transition (Trans) and Post-SOX 404 (Post) eras are positive and statistically significant. The marginal effects for the transition (Trans) and Post-SOX 404 (Post) eras mean the probability of auditor litigation increases by 11.23 and 21.13 percentage points in the transition (Trans) and Post-SOX 404 eras, respectively, relative to the Pre-SOX era. Therefore, suggesting that in the Post-SOX 404 era the likelihood of auditor litigation due to internal control fraud is higher (H1).

The coefficient and the marginal effect of misappropriation of assets (MOA) are positive and statistically significant. The marginal effect estimate means relative to instances where only financial reporting fraud occurs, the probability of auditor litigation (AUDLIT) increases further by 9.1 percentage points when both financial reporting fraud and misappropriation of assets occur. The results for the interaction variables, misappropriation of asset in the transition era (MOATrans) and misappropriation of asset in the Post-SOX 404 era (MOAPost), suggest misappropriation of assets (MOA) has a smaller effect on the probability of auditor litigation in the transition (Trans) and Post-SOX 404 (Post) eras, than on the probability of auditor litigation in the Pre-SOX 404 era. Therefore, in the Post-SOX 404 era, the likelihood of auditor litigation is not further increased in the presence of misappropriation of assets (H2).

The coefficient and marginal effect of accelerated filers (Accel) are negative and statistically significant. The marginal effect estimate means the probability of auditor litigation (AUDLIT) decreases by 13.61 percentage points for accelerated filers (ACCEL) relative to non-accelerated filers. Also, the estimated coefficient and marginal effect of management voluntary disclosures relating to internal control (DC302) are negative and statistically significant. The marginal effect estimate for management voluntary disclosures relating to internal control (DC302) implies, relative to firms with management voluntary disclosures indicating ineffective internal controls, the probability of auditor litigation (AUDLIT) decreases by 6.1 percentage points for firms with management voluntary disclosures indicating effective internal controls (DC302).

The coefficient and marginal effect of size (LNSIZE) are negative and statistically significant. The marginal effect of firm size (LNSIZE) implies a 1 percent increase in firm size (LNSIZE) results in a 1.4 percent decrease in the probability of auditor litigation (AUDLIT). Also, the coefficient and the marginal effect for IPO firms are positive and statistically significant. The marginal effect estimate implies the

probability of auditor litigation (AUDLIT) increases by 13.26 percentage points for IPO firms, relative to non-IPO firms.

**TABLE 5**  
**RESULTS FROM CROSS-SECTIONAL LOGIT MODEL**

Variable	Expected Sign	Estimated Coefficient	p-value	Marginal Effect	p-value
Trans	+/-	1.3615	0.014**	0.1123	0.047*
Post	+	1.9884	0.005***	0.2113	0.021**
MOA	+	1.1496	0.007***	0.0911	0.007***
MOATrans	+	-0.3308	0.695	a	a
MOAPost	+	-0.1407	0.878	a	a
Accel	-	-2.0748	0.000***	-0.1361	0.000***
Aud404	+	-0.1640	0.861	-0.0116	0.855
DC302	-	-0.9128	0.061*	-0.0610	0.046**
AUD	+/-	-0.7029	0.092*	-0.0597	0.142
LNSIZE	-	-0.1908	0.073*	-0.0141	0.062*
FINCOND	-	-0.0011	0.988	-0.0001	0.988
Technology	+	0.4222	0.296	0.0339	0.327
Financial	+	0.7337	0.130	0.0635	0.189
NYSE	-	-0.0831	0.831	-0.0061	0.831
Closely Held	-	-0.2886	0.424	-0.0224	0.446
IPO	+	1.2924	0.025**	0.1326	0.085*
Constant		-0.5713	0.446		
N	629				
Wald Chi-squared statistic	93.51				
p-value	0.0000				
Pseudo R <sup>2</sup>	0.2409				

\*, \*\*, \*\*\* indicate two tail significance at .10, .05, and .01 levels, respectively.

<sup>a</sup> Estimating margin effects for an interaction variable is not possible. Marginal effect estimate of an interaction variable is the marginal estimate of the component variables. Hence, marginal effect is not reported for any interaction variable.

### Supplementary Analysis

Firms and auditors made changes to comply with SOX 404 before the effective date. An indication of these changes is observed in the decreased instances of internal control fraud in the transition and Post-SOX 404 eras (Table 2). This section presents the result of an alternative specification, when the era after SOX (After) includes the transition and Post-SOX 404 eras. Investigating this alternative specification aids in determining the effect of SOX since its enactment on auditor litigation.

The Wald Chi-squared statistic (Table 6) is statistically significant at the p-value < 0.01 level. The estimates from the alternative specification are mostly consistent with those from the research model, and

hence, the conclusions about the variables appear robust to the alternative specification. The results show the probability of auditor litigation increases in the era after SOX, relative to the era before SOX. Also, relative to instances when only financial reporting fraud occurs, the probability of auditor litigation (AUDLIT) increases further when both financial reporting fraud and misappropriation of assets occur.

The probability of auditor litigation (AUDLIT) decreases for accelerated filers (Accel) relative to non-accelerated filers, and also decreases for firms with management voluntary disclosures indicating effective internal controls (DC302), relative to firms with no voluntary disclosures, or voluntary disclosures indicating ineffective internal controls. Similarly, the probability of auditor litigation (AUDLIT) decreases for Big 4 firms (AUD) relative to non-Big 4 firms. Also, a 1 percent increase in firm size (LNSIZE) results in a 1.4 percent decrease in the probability of auditor litigation (AUDLIT), and relative to non-IPO firms, the probability of auditor litigation (AUDLIT) increases for IPO firms.

**TABLE 6**  
**SUPPLEMENTARY ANALYSIS**

Variable	Expected Sign	Estimated Coefficients	p-value	Marginal Effects	p-value
After	+	1.4408	0.006***	0.1132	0.014**
MOA	+	1.1438	0.008***	0.0942	0.006***
MOAAfter	+	-0.1939	0.791	a	a
Accel	-	-1.8310	0.001***	-0.1214	0.001***
Aud404	+	0.2443	0.737	0.0193	0.752
DC302	-	-0.9955	0.040**	-0.0673	0.029**
AUD	+/-	-0.8235	0.045**	-0.0720	0.088*
LNSIZE	-	-0.1846	0.078*	-0.0137	0.067*
FINCOND	-	0.0060	0.935	0.0004	0.935
Technology	+	0.4452	0.252	0.0360	0.285
Financial	+	0.7145	0.145	0.0618	0.204
NYSE	-	-0.0686	0.859	-0.0051	0.859
Closely Held	-	-0.3371	0.345	-0.0264	0.372
IPO	+	1.3222	0.027**	0.1371	0.091*
Constant		-0.4908	0.506		
N		629			
Wald Chi-squared statistic		96.98			
p-value		0.0000			
Pseudo R <sup>2</sup>		0.2367			

\*, \*\*, \*\*\* indicate two tail significance at .10, .05, and .01 levels, respectively.

<sup>a</sup> Estimating margin effects for an interaction variable is not possible. Marginal effect estimate of an interaction variable is the marginal estimate of the component variables. Hence, marginal effect is not reported for any interaction variable.

## CONCLUSIONS

This study examines the change in auditor litigation due to internal control fraud, using 629 observations of fraud firms from 2000 through 2006. Prior studies have examined auditor litigation, but few, if any, have investigated the change in auditor litigation since SOX 404. The results show an increase in the likelihood of auditor litigation due to internal control fraud in the Post-SOX 404 era. This increase relates mostly to non-accelerated filers. Further, our evidence shows further increases in the likelihood of auditor litigation when instances of misappropriation of assets exist along with financial reporting fraud, but, not in the Post-SOX 404 era.

Regulators may find these results relevant when evaluating the effect of SOX 404. The results suggest a continued increase in the enforcement of accountability through SEC's oversight activities. Also, auditors may find the study relevant as it further emphasizes the need for professional skepticism, and adequate attention to internal control fraud. The increase in the likelihood of auditor litigation related to internal control frauds, as reflected herein should motivate auditors towards performing more thorough audits.

This study makes several contributions to literature. First, the study extends the literature on SOX by providing some insight to how the likelihood of auditor litigation due to internal control fraud has changed since SOX 404. Second, procedural justice theory, is used in framing the theoretical structure of this study. Prior to this study, very little literature utilizing procedural justice theory have investigated auditor litigation. Third, this study shows the need for auditors to reassess their audit procedures to ensure loopholes in the assessment of internal control over financial reporting are eliminated.

Data for this study is limited by time since the investigation of some of the fraud cases observed are still ongoing. Also, from data review, there exists a time lapse between fraud occurrence and litigation of firms, auditors, or both by the SEC. As such, not all instances of fraud within the relevant period have been made public by an SEC enforcement. Nonetheless, a statute of limitations exists for lawsuits. According to SOX, Section 804, the statute of limitations is either two years after the violation is discovered, or five years after the violation. Since data was collected from 2000 to 2011 (second quarter), the period covered is at the end of the five years after a violation, for violations in 2006.

The sample includes U.S. listed firms. Some of these firms trade in foreign markets and the requirements of stock exchanges across the globe differ. Though some countries have established their country's SOX, which maybe adaptations of the U.S. SOX, the results of this study may not be generalizable globally. Also, certain events occurred around the enactment of SOX, which may have impacted auditors during the relevant timeframe. For example, a then Big 5 audit firm collapsed. The effect (e.g. training) of the collapse of a Big 5 firm on other audit firms cannot be easily measured and was not captured in this study's model. Nonetheless, given the results from our investigation, we encourage research on internal control fraud pervasiveness since it will enhance the understanding of the effect of fraud severity on the likelihood of auditor litigation.

## ENDNOTES

1. The Dodd-Frank Act of 2010 section 989(G) amended SOX 404(b) by exempting non-accelerated filers. (<http://www.gpo.gov/fdsys/pkg/PLAW-111publ203/html/PLAW-111publ203.htm> [Accessed May 15, 2013]). However, the years covered in this study are prior to this amendment.
2. Audit quality becomes public concern and public information when legal actions relating to audited financial statements are brought against an audit firm. Data for this study was obtained from AAERs. According to the SEC, the AAERs is a listing of "financial reporting related enforcement actions concerning civil lawsuits brought by the Commission in federal court and notices and orders concerning the institution and/or settlement of administrative proceedings" (<http://www.sec.gov/divisions/enforce/friactions.shtml> [Accessed December 21, 2012]). We identified firms with fraud from the AAERs. According to Bonner et al. (1998, 505), the "SEC enforcement actions are an objective criterion for identifying companies with fraudulent financial reporting, ... SEC enforcement actions appear to capture the majority of fraudulent financial reporting for companies with auditor

litigation,...and finally, the SEC often describes in an AAER the nature of the fraud.” The descriptions of the nature of the fraud were necessary for identifying internal control fraud, and fraud cases involving both financial reporting fraud and misappropriation of assets.

3. SEC.2004. Final Rule: Management’s Report on Internal Control over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports. Available at: [www.sec.gov/rules/final/33-8392.htm](http://www.sec.gov/rules/final/33-8392.htm) [Accessed October 1, 2010].
4. Internal control fraud observations were identified from SEC references to Sections of the Securities Exchange Act of 1934 in the AAERs. Examples of the references include Sections 10(b), 13(b)(5), Rules 10b-5 and 13b2-1. Also, auditor litigations were identified from the AAERs when auditors were named as defendants.
5. The assets and equity test is one of the options to satisfy the NYSE financial standards requirement in listing process. The assets and equity test requires firms have: (i) at least \$150,000,000 in global market capitalization, and (ii) at least \$75,000,000 in total assets together with at least \$50,000,000 in stockholders’ equity. Source: Section 1: The Listing Process; Listed Company Manual. <http://nysemanual.nyse.com> [Accessed January 15, 2012].

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