

The Impact of SOX on Auditor Resignations and Dismissals

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ABSTRACT: Audit and client business risk factors expose auditors to litigation and losses in engagement profitability. Audit risk is the risk that an auditor issues an unqualified opinion on financial statements that are materially misstated and client business risk is the risk that a client's financial condition will deteriorate. When audit and client business risks increase, auditors can respond by adjusting their client portfolios by resigning from and refusing to accept new risky clients. The Sarbanes-Oxley Act of 2002 (SOX) includes regulations related to internal controls and auditor independence, factors affecting audit risk. I expect that auditors have heightened sensitivity to audit and client business risk in the post-SOX environment. To test whether audit and client business risks motivate auditors to change their client portfolios, I examine a sample of auditor changes prior and subsequent to SOX. To examine the determinants of auditor changes, I test whether auditor tenure, non-audit service fees, audit service fees and internal control deficiencies are associated with client dismissals of auditors versus auditor resignations and whether these associations have changed post-SOX. To examine the consequences of auditor changes, I test the impact of SOX on successor auditor quality and market reaction to SEC Form 8-K auditor change disclosures.

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1. Introduction

The collapse of Enron in November of 2001 and numerous subsequent accounting scandals shattered investor confidence and precipitated heightened scrutiny over firms' financial disclosures. The accounting scandals ultimately led to the passage of the Sarbanes-Oxley Act of 2002 (SOX). SOX was implemented to restore user confidence by improving the accuracy and completeness of information disclosed in financial statements and increasing compliance with securities laws. SOX requires the implementation of regulations including those related to corporate governance, internal controls and public disclosure.

I expect that auditors have a heightened sensitivity to audit and client business risk in the post-SOX environment. Audit risk is the risk that an audit firm issues an unqualified ("clean") opinion on financial statements that are materially misstated and client business risk is the risk that a client's financial condition will deteriorate. Factors impacting audit risk include firm-auditor disagreements, reliability issues, going concern opinions, and auditor independence and objectivity. Factors impacting client business risk include financial distress and internal control deficiencies. Both audit and client business risk can expose auditors to audit business risk, the risk an audit firm will suffer a loss either by litigation or engagement profitability (AICPA 1983). When client and audit risks increase, auditors can respond by adjusting their client portfolio by resigning from risky clients and refusing to accept new risky clients.

SOX provisions include annual and quarterly SEC report certifications by the principal officers, new responsibilities for audit committees,¹ annual management reports on internal control over financial reporting, prohibition on loans to executive officers and directors, disclosure requirements, certain prohibitions on non-audit services from the audit firm,² auditor independence rules, mandatory audit partner rotation every five years, auditor requirement to report to audit committee, and prohibition on auditing a company if its CEO, controller, CFO, or chief accounting officer was employed by the audit firm and participated in the audit of the company within the prior year.

In response to SOX requirements regarding non-audit service fees, audit firms are providing fewer services to the firms they audit. In response to SOX requirements for internal controls, firm managers and auditors have been increasingly discovering and reporting deficiencies concerning internal control over financial reporting. Specifically, this increase can be attributed to the internal control testing and documentation work done in conjunction with the SOX Section 404 internal control report³.

There exist both proponents and opponents to the requirements of SOX Section 404 “Internal Controls.” Barry Minkow, the schemer behind the ZZZZ Best fraud, says of the SOX requirements:

¹ The audit committee members must be independent, defined as not receiving, other than for service on the board, any fees from the firm, and as not being an affiliated person of the issuer or any subsidiary. The firm must disclose whether at least one audit committee member is a financial expert. The audit committee is directly responsible for hiring the audit firm, approving fees paid to the audit firm and pre-approving of services to be provided by the audit firm.

² Non-audit services prohibited include: bookkeeping; financial information systems design and implementation; appraisal or valuation services, fairness opinions, or contribution-in-kind reports; actuarial services; internal audit outsourcing services; management functions or human resources; broker or dealer, investment adviser, or investment banking services; and legal services and expert services unrelated to the audit.

³ The SOX Section 404 internal control report and auditor opinions are required to be filed with financial statements for fiscal years subsequent to November 15, 2004 for accelerated filers.

“Let me tell you why this legislation is brilliant. Sarbox hit at a common denominator of corporate fraud: bypassing systems of internal controls. I would not have been able to perpetrate the ZZZZ Best fraud if I had not been able to bypass the system of internal controls. And you know who are heroes now – the internal auditors and the Public Company Accounting Oversight Board. Unless you’re a perpetrator, you don’t know how good these moves are.” (CFO Magazine, 2005)

However, SOX Section 404 has been criticized by many public companies who claim the costs far exceed the benefits. Companies have spent in excess of \$1 million per \$1 billion in revenues to comply with SOX Section 404 (Compliance Week 2004). SEC Commissioner Cynthia Glassman says, “I repeatedly heard, and I continue to hear, that the demands of 404 have caused companies and auditors to put business initiatives on hold and focus excessively on the details of financial systems – missing the proverbial forest for the trees, so to speak.” (Compliance Week 2005). There have also been reports of disagreements between auditors and firm managers regarding the existence and severity of internal control problems.

Due to the resource constraints placed on auditors by the SOX Section 404 requirements, auditors are likely to resign from and refuse to accept new risky clients. Disagreements between auditors and clients regarding internal control deficiency existence can also cause auditor dismissals and resignations. Survey results in a recent General Accounting Office report (2003) indicate these changes in auditors have economic impacts as 96% of the Big 4 audit firms state that initial year audit costs are expected to be 20% greater than subsequent year audit costs because the auditors need to gain knowledge over client operations, financial reporting processes and systems. Additionally, there are societal costs from auditor changes when risky firms that are most in need of a high quality auditor are dropped by high quality auditors. Regulators, in

their assessment of the costs and benefits of SOX regulations, are likely to be interested in the impact of SOX on auditor resignations and subsequent auditor quality, including associations with internal control quality, auditor tenure, audit and non-audit service fees, and market reaction.

Prior studies have shown a significant positive association between client risk and the probability of an auditor change [Krishnan and Krishnan (1997) and Shu (2000)]. Lee et al. (2004) find the likelihood of engaging a lower quality successor auditor after an auditor change increases when the audit committee is not fully independent. Prior studies have also found a negative market reaction to auditor resignations (DeFond et al 1997). In a post-SOX environment, auditors are likely more sensitive to client risk factors including the existence of internal control deficiencies and more sensitive to the appearance of having compromised objectivity and independence, including the provision of non-audit services and long auditor tenure. I examine the impact of SOX on risk factors associated with auditor resignations and subsequent auditor quality to assess auditor sensitivity to risk factors.

I address three research questions. First, I examine whether auditor resignation firms differ from auditor dismissal firms and whether subsequent auditor quality differs along dimensions of audit and client risk. Specifically, I examine associations with audit and client business risk factors including internal control deficiencies, severity of internal control deficiencies, type of internal control deficiencies, auditor tenure, non-audit service fees, and audit fees. Second, I examine whether there is a change in these risk factor associations post-SOX. Third, I examine the impact of SOX on market reaction to 8-K auditor change disclosures.

This paper contributes to the auditor change and internal control literature by examining the impact of SOX on auditor resignation and client acceptance decisions. Due to the debate on whether SOX Section 404 internal control audits, non-audit service regulations and proposed audit tenure regulations have benefits outweighing the costs, it is interesting to examine the impact of SOX on auditor resignations and dismissals. Prior research finds a positive association between auditor resignations and 8-K reportable events (Lee et al. 2004) and contemporaneous research finds an association between auditor resignations and internal control quality (Krishnan 2005). I add to the literature by isolating internal control problems by severity and type and then examining their association with auditor resignations. Contemporaneous research by Griffin and Lont (2005) examines the impact of SOX on whether firms pay more or less for their audits around auditor dismissals and resignations. I extend their line of research by examining the impact of SOX on auditor resignations and subsequent auditor quality along the following dimensions: internal control problems, auditor tenure, non-audit service fees, and other client business and audit risk factors. As pre-SOX research finds no market reaction to internal control deficiencies reported in auditor change disclosures (Whisenant et al. 2003), I examine whether SOX impacts market reaction to internal control deficiencies reported in auditor change disclosures.

Section 2 discusses the institutional background for changes in auditors and internal controls. Section 3 discusses prior research and develops the hypotheses. Section 4 discusses sample selection procedures. Section 5 provides results and Section 6 provides concluding remarks.

2. Institutional background on changes in auditors and internal control disclosure requirements

2.1 Changes in auditors

The SEC Form 8-K discloses corporate changes and unscheduled material events, including auditor changes. SEC Accounting Series Release No. 165 (SEC 1976) requires registrants to report the following information related to auditor changes on SEC Form 8-K: the date of auditor change, any disagreements with the auditor for a period of up to two years prior to the change, and information about adverse, qualified or going concern opinions for the previous two years. Auditors must also provide a letter to the SEC verifying the company's assertions regarding the auditor change. SEC Financial Reporting Release No. 31 (SEC 1988) requires firms to disclose on the SEC Form 8-K whether any "reportable events" existed in the previous two years. The SEC describes reportable events as those "where the accountant has advised the registrant that it questions the accuracy or reliability of the registrants: (i) financial statements, (ii) management's representations, (iii) internal controls⁴ or (iv) prior audits." See Appendices A and B for a sample SEC Form 8-K auditor change disclosure and auditor response letter.

2.2 Internal controls

The Committee of Sponsoring Organizations (COSO) Internal Control Integrated Framework defines internal control as a "process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: (i) reliability of

⁴ Reports of material weaknesses and significant deficiencies, but not less severe control deficiencies, are required to be disclosed under "reportable events."

financial reporting, (ii) effectiveness and efficiency of operations, and (iii) compliance with applicable laws and regulations.”

Internal control deficiencies are grouped into three categories in increasing order of severity: control deficiencies, significant deficiencies (also known as reportable conditions) and material weaknesses. A control deficiency “exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis” (Public Company Accounting Oversight Board [PCAOB] 2004). A significant deficiency is a “control deficiency, or combination of control deficiencies, that adversely affects the company’s ability to initiate, authorize, record, process, or report external financial data reliably in accordance with generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of the company’s annual or interim financial statements that is more than inconsequential will not be prevented or detected” (PCAOB 2004). A material weakness is “a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected” (PCAOB 2004). Figure 1 displays the impact of materiality and the likelihood of a misstatement on internal control deficiency severity.

The SEC adopted the final rules for SOX Section 404, “Management Assessment of Internal Controls” on June 5, 2003. SOX Section 404, effective for publicly traded firms with fiscal year-ends subsequent to November 15, 2004,⁵ requires an annual management report on internal controls over financial reporting to be filed with the SEC

⁵ Effective date for non-accelerated filers under Rule 12b-2 of the Exchange Act is for fiscal years ending on or after November 15, 2005.

10-K annual report⁶. See Appendix C for a sample management report on internal control over financial reporting. The management report must be accompanied by an auditor attestation report by the registered public accounting firm that audited the company's financial statements. The auditor attestation report includes both the auditor's opinion on management's assessment of internal controls and the auditor's opinion on the effectiveness of the company's internal control over financial reporting (KPMG 2004). See Appendices D and E for a sample auditor attestation report and auditor report on internal control over financial reporting.

Prior to SOX, the only required public disclosures of internal control problems occurred when a firm changed auditors. Material weaknesses and reportable conditions in internal controls have been required to be disclosed in SEC Form 8-K change of auditor disclosures since 1988 (SEC 1988). Subsequent to SOX, SEC registrants are required to disclose in their quarterly and annual certifications conclusions regarding the effectiveness of the firm's disclosure controls and procedures and corrective actions taken regarding material weaknesses and significant deficiencies. All material weaknesses must be identified in the SOX Section 404 internal control reports. See Table 1 for a summary timeline of required internal control disclosures.

The types of internal control problems disclosed include deficiencies with financial systems and reporting, personnel, documentation, IT and other deficiencies. Financial systems and reporting deficiencies include revenue recognition, inventory,

⁶ The SEC amended Regulation S-K to add Item 308 "Internal Control Over Financial Reporting". SEC Item 308 requires the management's annual report on internal control over financial reporting to include "management's assessment of the effectiveness of the internal control over financial reporting as of the end of the most recent fiscal year, including a statement as to whether or not internal control over financial reporting is effective. This discussion must include disclosure of any material weakness in the registrant's internal control over financial reporting identified by management."

account reconciliations, non-routine transactions, inadequate accounting processes, closing processes, timely reporting, international monitoring of staff, consolidation of foreign subsidiaries, transfers between subsidiaries and foreign currency translations. Personnel issues include lack of segregation of duties, lack of training, and insufficient supervision. Documentation issues include lack of documentation for certain transaction approvals, lack of support for accounting transactions and inadequate documentation to assure timely reporting of transactions. IT issues include inadequate security, implementation of new systems, monitoring of the IT function, system compliance with sales terms, and system tracking of fixed assets. Other deficiencies include the application of industry standards or regulations, Foreign Corrupt Practices Act compliance, and audit committee practices. See a summary of internal control deficiency types in Table 2.

3. Prior research and hypothesis development

3.1 Determinants and consequences of auditor changes

Prior literature documents determinants of auditor changes and discriminates between auditor resignations and dismissals including: client-auditor disagreements (DeFond et al. 1997), discretionary accruals (DeFond and Subramanyam 1998), financial distress [Krishnan and Krishnan (1995), Schwartz and Soo, (1995)], agency costs (DeFond 1992), corporate take-overs (Anderson et al. 1993), litigation risk [Shu (2000), Krishnan and Krishnan (1997)], fraud (Bockus and Gigler 1995), reporting lags (Schwartz and Soo 1996), corporate governance (Lee et al 2004) and reportable events (Whisenant et al. 2003).

There is limited prior research on the association between internal control characteristics and auditor changes. Using a pre-SOX sample of resignation firms matched to dismissal firms based on year, industry, and type of auditor, Lee, Mande and Ortman (2004) find that the disclosure of a “reportable event” in the 8-K auditor change disclosure is significantly related to auditor resignations. As discussed in Section 2.1, a reportable event is either an indication of an internal control weakness or a reliability issue related to financial statements, management representation or prior audits. Krishnan (2005) examines the association between audit committee quality and internal control quality using SEC Form 8-K disclosures of changes in auditors between 1994 and 2000 to identify firms with internal control deficiencies. She compares these firms to a matched sample based on industry and exchange who also report a change in auditors on Form 8-K with no internal control deficiencies. She finds that auditor resignations are positively associated with internal control problems. I add to the literature on auditor resignations and internal controls by examining whether internal control problems, including the problems’ severity and type, auditor tenure, non-audit service fees and audit service fees are associated with auditor resignations and subsequent auditor quality and whether SOX has impacted these associations.

Prior literature examines consequences of auditor changes including: market reaction to the disclosure of a change [DeFond et al. (1997), Johnson & Lys (1990)]; subsequent auditor quality (Lee et al. 2004); and successor auditor audit fees (Griffin and Long 2005). In this paper, I examine whether internal control problems, including the problems’ severity and type, auditor tenure, non-audit service fees and audit service fees are associated with a decrease in subsequent auditor quality and whether SOX has

impacted these associations. I also examine market reaction to disclosures of auditor resignations, internal control deficiencies, severity of internal control deficiencies and type of internal control deficiencies in 8-K auditor change disclosures.

Regulators express concern whether auditor tenure impairs auditor independence which hence affects audit quality (GAO 2003). However, the audit profession claims that audit quality is improved with auditor tenure because more information is known to the auditor regarding client-specific risks. (PricewaterhouseCoopers 2002). Prior literature has mixed findings regarding auditor tenure. Johnson et al. (2002) find that firms with shorter auditor tenure have larger and less persistent accruals than firms with longer tenure, consistent with shorter auditor tenure being associated with lower audit quality. However, Davis et al. (2002) find firms with longer auditor tenure have greater reporting flexibility and lower forecast errors, consistent with lower audit quality.

Prior literature on the association between audit service fees and auditor changes include Griffin and Long (2004) who examine whether companies pay more or less for their audits around the event of an auditor dismissal or resignation. They find audit fee discounting around dismissals and audit fee premiums around resignations. Prior literature has mixed results regarding the relation between non-audit service fees and auditor independence. Frankel et al. (2002) find non-audit fees are positively associated with proxies for earnings management whereas Ashbaugh et al. (2003) do not find such association. Kinney et al. (2004) compare restatement companies against non-restatement companies and do not find an association between restatements and fees for either financial information systems design or internal audit services but do find an

association between restatements and unspecified non-audit services. They find a negative association between tax service fees and restatements.

3.1.1 Auditor Resignations

Based on auditor sensitivity to client risk, I expect that auditors are more likely to resign from clients with poor internal controls and that auditor resignations will be associated with the severity and type of internal control problem. I examine but do not predict whether characteristics that can impact auditor independence and objectivity (auditor tenure, non-audit service fees, and audit fees) are associated with auditor resignations and dismissals. I expect subsequent auditors will be of lower quality when the previous auditor resigned.

Hypothesis (1a), in the alternative form:

Auditor resignation firms differ from client dismissal firms along dimensions of internal control deficiencies, severity of internal control deficiencies, type of internal control deficiencies, auditor tenure, non-audit service fees, audit fees and subsequent auditor quality.

To test H1(a), I estimate:

$$\begin{aligned}
 \text{RESIG} = & \beta_0 + \overset{(+)}{\beta_1}\text{ICD}_i + \overset{(+)}{\beta_2}\text{ICD_MW}_i + \overset{(+)}{\beta_3}\text{ICD_REV}_i + \beta_4\text{ICD_FSR}_i + \beta_5\text{ICD_PERS}_i + \\
 & \beta_6\text{ICD_DOC}_i + \beta_7\text{ICD_IT}_i + \beta_8\text{TEN_SHORT}_i + \beta_9\text{TEN_LONG}_i + \\
 & \beta_{10}\text{NAS_RATIO}_i + \beta_{11}\text{AUDFEE}_i + \overset{(+)}{\beta_{12}}\text{AQ_DECR}_i + \overset{(+)}{\beta_{13}}\text{RELIABLE}_i + \\
 & \overset{(+)}{\beta_{14}}\text{DISAGREE}_i + \overset{(+)}{\beta_{15}}\text{GC}_i + \overset{(+)}{\beta_{16}}\text{LOSS}_i + \overset{(-)}{\beta_{17}}\text{ROA}_i + \overset{(+)}{\beta_{18}}\text{LEV}_i + \beta_{19}\text{SIZE}_i \\
 & + \overset{(+)}{\beta_{20}}\text{GROWTH}_i + \beta_{21}\text{MSHARE}_i + \overset{(+)}{\beta_{22}}\text{BUSY_FYE}_i + \beta_{23}\text{IND}_i + \beta_{24}\text{SOX}_i + \varepsilon_i
 \end{aligned}$$

Where:

RESIG = 1 if the auditor resigned or did not stand for reelection, 0 if the client dismissed the auditor, 0 otherwise.

ICD =	1 if the company reported either a material weakness or a significant deficiency in its internal controls, 0 otherwise.
ICD_MW =	1 if the company reported a material weakness in internal controls on SEC Form 8-K or another SEC filing, 0 otherwise.
ICD_REV =	1 if the company reported an internal control reportable event related to revenue recognition, 0 otherwise.
ICD_FSR =	1 if the company reported an internal control reportable event related to financial systems and reporting issues other than revenue recognition, 0 otherwise.
ICD_PERS =	1 if the company reported an internal control reportable event related to personnel issues, 0 otherwise.
ICD_DOC =	1 if the company reported an internal control reportable event related to documentation issues, 0 otherwise.
ICD_IT =	1 if the company reported an internal control reportable event related to IT issues, 0 otherwise.
TEN_SHORT =	1 if the predecessor auditor audited the firm for 3 or less years, 0 otherwise.
TEN_LONG =	1 if the predecessor auditor audited the firm for 9 or more years, 0 otherwise.
NAS_RATIO =	non-audit service fees as a percent of total fees paid to the auditor for the fiscal year preceding the change in auditor.
AUDFEE =	audit service fees as a percent of firm assets for the fiscal year preceding the change in auditor.
AQ_DECR =	1 if subsequent auditor quality decreased from a Big 4 to a second tier or small auditor or from a second tier to a small auditor, 0 otherwise.
RELIABLE =	1 if the company reported one of the following reportable events on the SEC Form 8-K where the accountant has advised the registrant that it questions the accuracy or reliability of their: i) financial statements; ii) management representation; or iii) prior audits, 0 otherwise.
DISAGREE =	1 if the SEC Form 8-K indicates a disagreement between the company and the auditor, 0 otherwise.
GC =	1 if a going concern opinion issued in the year preceding the auditor change, 0 otherwise.
LOSS =	1 if net income less than zero in the year preceding the auditor change, 0 otherwise.
ROA =	Return on assets in the year preceding the auditor change (NI before extraordinary items, [data #13] divided by total assets [data#6]).
LEV =	Ratio of debt (data #9 + data #34) to total assets (data #6) in the year preceding the auditor change.
SIZE =	Log of total sales in the year preceding the auditor change.
GROWTH =	Percent increase in sales in the year preceding the auditor change from the prior year.

MSHARE = Predecessor auditor's industry market share of audit revenue in a particular industry.
BUSY_FYE = 1 if the firm's fiscal year end is in December, January, February or March, 0 otherwise.
IND = Firm's two-digit SIC industry code.

The internal control regressor in the model, ICD, indicates an internal control problem disclosed in the 8-K auditor change disclosure or another SEC filing. In prior research, Whisenant et al. (2003) find that items disclosed in the auditor change 8-K including reports of reportable events, disagreements (DISAGREE), and going concern opinions (GC) discriminate between auditor resignations versus dismissals. I separately examine two of the reportable event components: disclosure of internal control problems (ICD) and reliability issues (RELIABLE). Because I predict that auditors resign from firms with high audit risk, I predict the coefficients on all of the above risk variables to be positive. I predict the association between internal control problems and auditor resignations to be more significant when the problem disclosed is more severe, i.e. a material weakness (ICD_MW). As prior literature finds revenue recognition issues are associated with fraud (Beasley 2000), I predict that reports of internal control deficiencies associated with revenue recognition (ICD_REV) will be positively associated with auditor resignations. I do not make directional predictions for the remaining types of internal control deficiencies.

Auditor independence and objectivity variables included in the model are TENURE_SHORT, TENURE_LONG NAS_RATIO and AUDFEE. TENURE_SHORT indicates the predecessor auditor audited the firm for three years or less. TENURE_LONG indicates the predecessor auditor audited the firm for nine years or greater. The remaining variables indicate the break-out of fees paid to the auditing firm.

NAS_RATIO indicates the percent of non-audit service fees paid to the audit firm divided by total fees paid to the audit firm. AUDFEE indicates audit service fees paid to the audit firm as a percent of firm assets. Other client financial risk variables included in the model are LOSS, ROA, LEV and GROWTH. As firms with losses, high leverage and high growth pose a greater financial risk to the auditor, I expect the coefficients on these variables to be positive and, conversely, the coefficient on ROA to be negative.

Based on auditors' sensitivity to risk, I expect subsequent auditor quality to be lower when the predecessor auditor resigned, i.e. auditors are less likely to accept new risky clients. I proxy for subsequent auditor quality, AQ_DECR, as equal to one if the subsequent auditor quality decreases. Consistent with prior research (Shu 2000), I proxy for auditor quality based on auditor size. The highest level of auditor quality is one of the Big 4 accounting firms. The second highest level of auditor quality is one of the "Second-Six" national firms⁷ and the lowest auditor quality includes all other audit firms.

Auditor market share in an industry, MSHARE, is included to control for a specialist auditor's tendency to resign from risky engagements for reputational concerns. BUSY_FYE is included to control for firms with fiscal year ends during December through March. Two other control variables are included to control for client size and industry effects: SIZE and IND.

3.1.2 Client acceptance decisions by auditors

Based on auditor heightened sensitivity to audit and client business risk post-SOX, I expect that auditors are more likely to refuse to accept new clients associated with audit and client business risk factors:

⁷ The "Second Six" audit firms include: BDO Seidman; BKD; Crowe, Chizek and Company; Grant Thornton; McGladrey and Pullen; and Moss Adams.

Hypothesis (1b), in the alternative form:

Firms with a decrease in auditor quality following an auditor change differ from firms that do not have a decrease in subsequent auditor quality along dimensions of internal control deficiencies, severity of internal control deficiencies, type of internal control deficiencies, auditor tenure, non-audit service fees, audit fees and whether the previous auditor resigned.

To test H1(b), I estimate:

$$\begin{aligned} \text{AQ_DECR} = & \beta_0 + \overset{(+)}{\beta_1}\text{ICD}_i + \overset{(+)}{\beta_2}\text{ICD_MW}_i + \overset{(+)}{\beta_3}\text{ICD_REV}_i + \beta_4\text{ICD_FSR}_i + \beta_5\text{ICD_PERS}_i \\ & + \beta_6\text{ICD_DOC}_i + \beta_7\text{ICD_IT}_i + \beta_8\text{TEN_SHORT}_i + \beta_9\text{TEN_LONG}_i \\ & + \beta_{10}\text{NAS_RATIO}_i + \overset{(+)}{\beta_{11}}\text{AUDFEE}_i + \overset{(+)}{\beta_{12}}\text{RESIG}_i + \overset{(+)}{\beta_{13}}\text{RELIABLE}_i \\ & + \overset{(+)}{\beta_{14}}\text{DISAGREE}_i + \overset{(+)}{\beta_{15}}\text{GC}_i + \overset{(+)}{\beta_{16}}\text{LOSS}_i + \overset{(-)}{\beta_{17}}\text{ROA}_i + \overset{(+)}{\beta_{18}}\text{LEV}_i + \beta_{19}\text{SIZE}_i \\ & + \overset{(-)}{\beta_{20}}\text{GROWTH}_i + \overset{(+)}{\beta_{21}}\text{MSHARE}_i + \beta_{22}\text{BUSY_FYE}_i + \beta_{23}\text{IND}_i + \beta_{24}\text{SOX}_i + \varepsilon_i \end{aligned}$$

Variable descriptions are the same as above in H1(a). Variable directional predictions are the same as in H1(a) with the exception of GROWTH. Because high growth firms have the propensity to need additional auditing services, I expect subsequent auditor quality to increase.

3.2 The impact of SOX on auditor resignations and client acceptance decisions

Prior and contemporaneous literature document the impact of SOX on the audit profession including changes in fees paid to auditors. Asthana et al. (2004) examine the impact of the fall of Enron, the demise of Arthur Andersen and the passing of SOX on the fees paid by clients for audits and the movement from one auditor to another. They find that audit fees increased and the frequency of voluntary switches (i.e. client dismissals of

audit firms) within the Big 4 audit firms decreased over the time period from the fall of Enron to the demise of Andersen to the period subsequent to SOX. Hoitash et al. (2004) examine fees paid to auditors for audit and non-audit services and the fees' association with discretionary accruals from 2000 to 2003. They do not find an association between non-audit service fees and discretionary accruals subsequent to SOX but do find such association pre-SOX. Griffin and Lont (2005) examine whether companies pay more or less for their audits around the event of an auditor dismissal or resignation. They find that SOX does not appear to have affected discounting around a dismissal but find that SOX appears to have increased the fee premium around a resignation.

In this paper, I examine the additional effects of SOX legislation on auditor resignation and dismissal samples and subsequent auditor quality samples. Specifically, I examine the impact of SOX on the association between auditor changes and the existence of internal control problems, auditor tenure, non-audit service fees, audit service fees and audit and client business risk factors. Because auditors are likely more sensitive to litigation risk and reputational concerns post-SOX, I predict SOX will impact auditor change associations with risk factors:

Hypothesis 2(a), in the alternative form:

The association between internal control deficiencies, auditor tenure, non-audit service fees, audit service fees, and subsequent auditor quality for auditor resignation firms has changed subsequent to SOX.

To test H2, I partition the sample between auditor resignations and dismissals and examine univariate changes in test variables from pre- to post-SOX. I also perform multivariate tests between resignation and dismissal firms for the pre-SOX, post-SOX and combined periods with SOX interactions using the equation in H1(a) above.

I predict the association between auditor resignations and the audit risk variables to be more significant post-SOX. I also predict that subsequent auditor quality decreases for resignation firms post-SOX. I do not have directional predictions for how SOX impacts client dismissal associations with risk factors.

Additionally, because auditors are likely more sensitive to litigation risk and reputational concerns post-SOX, I predict SOX will impact subsequent auditor quality associations with risk factors:

Hypothesis 2(b), in the alternative form:

The association between subsequent auditor quality and internal control deficiencies, auditor tenure, non-audit service fees, audit service fees, and auditor resignations has changed subsequent to SOX.

To test H2(b), I partition the sample between auditor firms with a subsequent decrease in auditor quality following and auditor and change and firms without a subsequent decrease in auditor quality and examine univariate changes in test variables from pre- to post-SOX. I also perform multivariate tests between the subsequent auditor quality firms for the pre-SOX, post-SOX and combined periods with SOX interactions using the equation in H1(b) above.

3.3 Market reaction to disclosure of auditor changes

Extensive research has been performed on the market reaction to auditor changes including the examination of voluntary auditor changes (Johnson and Lys 1990), auditor resignations [DeFond et al. (1997), Wells and Loudder (1997), Shu (2000)], auditor-firm disagreements [Smith and Nichols (1982), DeFond and Jiambalvo (1993), Dhaliwal et al. (1993)], changes from a Big 8 to non-Big 8 audit firm (Smith and Nichols 1982),

nondisclosure of successor auditor on SEC Form 8-K (Smith 1988), auditor resignation conveying private information and the relation of litigation risk to Form 8-K market reaction (Shu 2000), and examination of market reaction to continuing audit clients of audit firms resigning (Beneish et al. 2001) . The studies find a negative market reaction to disclosures of auditor resignations, auditor-firm disagreements, changes from a Big 8 to a non-Big 8 audit firm, and non disclosure of the successor auditor. Johnson and Lys (1990) do not find a significant market reaction to disclosures of client initiated auditor changes. Shu (2000) finds the magnitude of market reaction to SEC Form 8-K auditor resignations varies cross-sectionally with litigation risk. Beneish et al. (2001) find significant abnormal returns for poorly performing clients of audit firms in the same industry as firms from which the auditor resigned. Sankaraguruswamy and Whisenant (2004) examine market reaction to the disclosure of verifiable and non-verifiable realignment disclosures in SEC Form 8-Ks.

Whisenant et al. (2003) examine market reaction to disclosures of reportable events related to auditor changes on SEC Form 8-K for a sample of 1264 auditor changes from 1993 to 1996. Using an event study examining abnormal returns, they find that the market reacts negatively to disclosures of reportable events, disagreements and auditor resignations in Form 8-K auditor change filings. However, when isolating the reportable event to internal control reportable events, they do not find a significant negative reaction. Krishnan (2002) examines the market reaction to the timing of the SEC Form 8-K auditor change disclosure and the filing of auditor exhibit letter with the SEC Form 8-K. She finds a significant negative market reaction to reportable events disclosed in Form 8-K filings of auditor changes when the auditor exhibit letter is not filed

concurrently with the initial Form 8-K filing but does not find a significant reaction when the auditor exhibit letter is concurrently filed with the initial Form 8-K filing. This paper extends Whisenant et al.'s and Krishnan's research by further examining the market reaction to internal control reportable events including examining the severity and type of the internal control reportable event reported.

I conjecture that disclosures of internal control deficiencies contain negative information. The potential for negative market reaction to control deficiency disclosures arises because the presence of internal control problems in a firm can affect the reliability of its financial reporting, the efficiency and effectiveness of its operations, and its compliance with laws and regulations. Due to investors' heightened recognition of internal control problems as result of SOX regulations, I expect that market reaction to disclosures of internal control problems in auditor change 8-K disclosures in a post-SOX period will be significant:

Hypothesis 3(a), in the alternative form:

The cumulative abnormal returns surrounding SEC Form 8-K announcements of auditor changes are negatively associated with the existence of an internal control deficiency post-SOX, a reliability reportable event, a firm-auditor disagreement and an auditor resignation.

To test H3(a), I estimate:

$$CAR_i = \beta_0 + \overset{(-)}{\beta_1} ICD_i + \overset{(-)}{\beta_2} RELIABLE_i + \overset{(-)}{\beta_3} DISAGREE_i + \overset{(-)}{\beta_4} RESIG_i + \varepsilon_i$$

Where:

CAR = Cumulative abnormal return measured over three-day (-1,+1) intervals around the SEC Form 8-K public release date (trading day following the 8-K filing date). Abnormal return is the actual rate of return on the common stock of the firm less the market rate of return.

To examine whether the market reacts negatively to internal control deficiency disclosures, I use an event study to examine the cumulative abnormal return over a three-day and seven-day period surrounding the auditor change announcement date for a subsample of the firms who reported an internal control deficiency on SEC Form 8-K.

I regress cumulative abnormal returns on an internal control reportable event variable, a reliability reportable event variable, an auditor disagreement variable and an auditor resignation variable. Consistent with results in Whisenant et al. (2003), I predict the coefficients on the reliability reportable event variable, auditor disagreement variable and the auditor resignation variable will be negatively related to cumulative abnormal returns. Although Whisenant et al. (2003) do not do not find significant results for disclosures of internal control reportable events, I predict this variable will be negatively related to cumulative abnormal returns in the post-SOX period given auditors' potential heightened sensitivity to client risk.

Consistent with prior research, the three-day (-1, 1) cumulative abnormal return (CAR) is centered on the day after the initial SEC Form 8-K is filed on Edgar.⁸ The abnormal return is calculated as the difference between the market and the firm returns.

I predict the market reaction to internal control problems reported in Form SEC 8-K filings to be more significant both when the reported problem is more severe and when the more severe problem is reported post-SOX:

Hypothesis 3(b), in the alternative form:

The cumulative abnormal returns surrounding SEC Form 8-K announcements of auditor changes are negatively associated with the existence of material weaknesses, reliability reportable events, firm-auditor disagreements and auditor resignations.

⁸ In August 2004, the reporting period for filing an SEC Form 8-K related to an auditor change was accelerated to four days from five days.

To test H3(b), I estimate:

$$CAR_i = \beta_0 + \beta_1^{(-)}ICD_i + \beta_2^{(-)}ICD_MW_i + \beta_3^{(-)}RELIABLE_i + \beta_4^{(-)}DISAGREE_i + \beta_5^{(-)}RESIG_i + \varepsilon_i$$

I predict the market reaction to internal control problems disclosed in auditor change SEC Form 8-K filings will differentiate by the type of internal control problem disclosed:

Hypothesis 3(c), in the alternative form:

The cumulative abnormal returns surrounding SEC Form 8-K announcements of auditor changes are negatively associated with revenue-related internal control deficiencies, reliability reportable events, firm-auditor disagreements and auditor resignations.

To test H3(c), I estimate:

$$CAR_i = \beta_0 + \beta_1^{(-)}ICD_i + \beta_2^{(-)}ICD_REV_i + \beta_3^{(-)}ICD_FSR_i + \beta_4^{(-)}ICD_PERS_i + \beta_5^{(-)}ICD_DOC_i + \beta_6^{(-)}ICD_IT_i + \beta_7^{(-)}RELIABLE_i + \beta_8^{(-)}DISAGREE_i + \beta_9^{(-)}RESIG_i + \varepsilon_i$$

As Beasley et al. (2000) find fraud is related to revenue recognition, I predict the ICD_REV variable will be negatively related to cumulative abnormal returns as poor internal controls related to revenue recognition may facilitate the occurrence of fraud.

4. Sample and descriptive statistics

The pre-SOX sample consists of publicly traded companies reporting a change of auditor between January 1, 2001 and December 31, 2001. From a sample of 1167 auditor changes identified in 2001 in the Audit Analytics database, I exclude 771 firms with no

fee data and 139 firms with no Compustat data. The final 2001 sample includes 256 firms. The pre-SOX sample is chosen to incorporate the auditor fee disclosures required in proxy statements in 2001 (SEC 2000). The post-SOX sample consists of publicly traded companies reporting a change of auditor between January 1, 2004 and December 31, 2004. From a sample of 2000 auditor changes identified in 2004 in the Audit Analytics database, I exclude 421 firms with no fee data and 893 firms with no Compustat data. The final 2004 sample includes 685 firms. To examine auditor resignations, I compare firms where the auditor resigned against firms that dismissed their auditors rather than against firms that did not change auditors.⁹ To examine subsequent auditor quality, I compare firms where there is a decrease in auditor quality against firms where there is not a decrease in auditor quality. From the post-SOX sample of 685 firms, the market reaction sample excludes 295 firms with no CRSP data, primarily over-the-counter traded securities, resulting in a sample of 390 firms. Test variables are obtained from Compustat, CRSP, Audit Analytics and hand collected from SEC Form Def 14A proxy statements and SEC Form 8-K auditor change disclosures using 10-K Wizard. Information is obtained from the most recent year-end prior to the reporting of the auditor change.

Table 3 includes the two-digit industry classification of firms changing auditors pre- and post-SOX. The business services industry has the highest concentration of auditor changes in both the pre- (17%) and post- (15%) SOX samples. Table 4 includes predecessor and successor auditor distribution for the auditor resignation and client-initiated dismissal sample. As expected, firms with Big 4 predecessor auditors switch to

⁹ Krishnan and Krishnan (1997) also compare resignation firms against dismissal firms, rather than against firms that did not change auditors, in a study of litigation risk and auditor resignations.

Big 4 auditors less often for resignation firms compared to client-initiated dismissals. Only 18% of the resignation firms with Big 4 auditors switched to Big 4 auditors whereas 47% of the client-initiated dismissal firms switched to Big 4 auditors. Figure 2 includes the distribution of resignations and dismissals pre- and post-SOX. As shown, auditor resignations as a percent of total changes increased post-SOX. Figure 3 includes the distribution of subsequent auditor quality pre- and post-SOX. As shown, the percent of auditor changes to a reduced quality auditor increased post-SOX.

5. Results

Variable definitions are summarized in Table 5. Table 6 contains univariate results for the pre-SOX auditor change sample compared to the post-SOX auditor change sample including p-values from difference in mean and median tests. The auditor change sample is further broken down into the following sub-samples: auditor resignations, client-initiated dismissals of auditors, subsequent auditor quality decrease and no decrease in subsequent auditor quality.

5.1 Auditor resignation decisions and acceptance of new clients results

I conjecture that auditors are concerned with risk factors both in determining whether to resign from a client and whether to accept a new client. H1 (a) and H1 (b) results in Table 7 compare resignation firms to dismissal firms and subsequent auditor quality decrease firms to non-auditor decrease firms. Results indicate that both auditor resignations and subsequent auditor quality decreases are associated with loss firms ($p = .02$ and $.12$, one tailed, respectively) and firms with busy fiscal year-ends ($p = .08$ and $.18$, respectively). Auditor resignation firms are associated with internal control deficiencies ($p = .01$) whereas subsequent reduced auditor quality is not. Surprisingly,

material weaknesses, the most severe type of internal control deficiency, and internal control issues dealing with revenue problems are negatively associated with resignations ($p = .15$ and $.09$, respectively). Long auditor tenure is negatively associated with auditor resignations ($p = .02$). This indicates that auditors are potentially not concerned with long tenure causing the appearance of impaired independence in their resignation decisions. Prior auditor long tenure is positively associated with an auditor quality decrease ($p = .00$). Non-audit services fees as a percent of total fees paid to auditor are negatively associated with subsequent auditor quality ($p = .00$) indicating that auditors are not as concerned about the appearance of a lack of independence and that they are likely to accept clients when they earn a higher percentage of fees from less risky, non-audit work. As predicted an auditor quality decrease is associated with resignations ($p = .00$). Reliability issues are significant for resignations ($p = .01$) but not for reduced subsequent auditor quality firms. Surprisingly, leverage has a significant negative association with subsequent reduced auditor quality. This could be due to auditor requirements by the banks of highly levered firms. Smaller firms are associated with reduced subsequent auditor quality ($p = .01$) as expected. Growth is positively associated with resignations ($p = .09$) and negatively associated with reduced subsequent auditor quality ($p = .02$). It appears that auditors resign due to risks associated with growth while high growth firms switch to higher quality audit firms to prepare for additional auditor needs.

5.2 The impact of SOX on auditor resignations

Univariate results for changes between pre- and post-SOX auditor resignation and dismissal variables are included in Table 6. The disclosure of internal control

deficiencies increased from 5% pre-SOX to 15% post-SOX for the entire sample. The disclosure of a material weakness severity of internal control deficiency also increased from 3% to 11% post-SOX. Common significant changes for auditor resignations and client initiated dismissals are as follows: increase in material weakness internal control disclosures; decrease in non-audit service fees; decrease in non-audit services fees as a percent of total fees; increase in reduced subsequent auditor quality and decrease in median total assets. For resignation firms, audit fees decreased significantly, but there was no significant change to audit fees scaled by assets. There were more significant post-SOX changes for dismissal firms including the following: increase in internal control deficiencies; increase in financial systems and reporting internal control deficiencies; increase in personnel internal control deficiencies; increase in documentation internal control deficiencies, increase in IT internal control deficiencies; increase in short auditor tenure; decrease in moderate auditor tenure, increase in audit fees and increase in audit fees scaled by total assets; decrease in total fees; increase in reliability issues; increase in going concern opinions; increase in loss firms; decrease in return on assets; increase in leverage; decrease in growth; and decrease in the percent of firms with a busy fiscal year-end.

Multivariate results for pre- and post-SOX variable associations with auditor resignations are included in Table 8. Common significant associations with auditor resignations in both pre and post-SOX samples are as follows: subsequent decrease in auditor quality and loss firms. Significant pre-SOX associations with auditor resignations that are not significant post-SOX are as follows: positive association with short auditor tenure; negative association with audit fees as a percent of assets; positive

association with going concern opinions; and positive association with leverage. Significant post-SOX associations with auditor resignations that are not significant pre-SOX are as follows: negative association with short auditor tenure; negative association with long tenure; positive association with reliability issues; negative relation with firm size, positive association with growth; and positive association with busy fiscal year-ends.

Significant impact of SOX on resignations include that short auditor tenure is less associated with auditor resignations. Surprisingly, the following are also significant impacts of SOX on auditor resignations: audit service fees as a percent of total assets are more positively associated with resignations; going concern opinions are more negatively associated with resignations; and leverage is more negatively associated with resignations.

5.3 Impact of SOX on subsequent auditor quality

Univariate results for changes between pre- and post-SOX subsequent auditor quality variables are included in Table 6. Common significant changes from pre to post-SOX for subsequent reduction in auditor quality and subsequent non-reduction in auditor quality are as follows: increase in internal control deficiencies, increase in internal control deficiencies related to material weaknesses, personnel, and financial systems and procedures; increase in resignations; increase in reliability issues; and decrease in growth. Subsequent auditor quality decrease firms also had the following significant changes from pre- to post-SOX: increase in internal control deficiencies related to revenue; decrease in moderate auditor tenure; increase in long auditor tenure; increase in audit fees though no significant increase in audit fees as a percent of assets; increase in non-audit

service fees but no significant change in the non-audit fee as a percent of total fees ratio; increase in total fees; and increase in predecessor market share.

Multivariate results for pre- and post-SOX variable associations with subsequent auditor quality are included in Table 9. Common significant associations with subsequent auditor quality decreases in both pre and post-SOX samples are that the market share of the predecessor auditor is positively associated with auditor quality decreases.

Significant pre-SOX associations with subsequent auditor quality decreases that are not significant post-SOX are as follows: positive association with material weaknesses in internal control deficiencies; negative association with non-audit service fee ratios; positive association with going concern opinions; and negative association with firm size. Significant post-SOX associations with subsequent decreased auditor quality that are not significant pre-SOX are as follows: positive association with long auditor tenure; positive association with resignations; positive association with loss firms; negative association with highly levered firms; and positive association with busy fiscal year-ends.

Significant impact of SOX on decreased auditor quality include: a more positive association with internal control deficiencies ($p = .18$, one tailed); a more positive association with non-audit service fees as a percent of total fees ($p = .01$); pre-SOX, low audit fees were associated with auditor quality decreases whereas post-SOX there is no significant association resulting in a SOX effect of a positive increase in the association with audit fees ($p = .05$); a more positive association with losses ($p = .08$); and a negative association with leverage ($p = .05$). Pre-SOX size association with subsequent auditor

quality, but not post-SOX. Therefore the SOX impact is that size is less of a factor in subsequent auditor quality decreases (positive association at $p = .00$). This is most likely due to larger companies changing to a lower quality auditor post-SOX because a change to a lower quality auditor does not have as bad of a signaling effect as pre-SOX.

5.4 Market Reaction to Disclosures of Auditor Changes

Table 10 reports regression results for the market reaction sample. Results indicate that the market reacts negatively to disclosures of internal control deficiencies and auditor resignations. I do not find significant results for disclosures of reliability issues and disagreements. Surprisingly, although the market reacts negatively to internal control deficiencies, there are no significant results for disclosures of more severe deficiencies or revenue-related deficiencies. This indicates that investors react negatively to disclosures of internal control deficiencies in auditor change 8-K filings, but do not discriminate between the severity or type of deficiency.

6. Concluding Remarks

In this paper, I examine risk characteristics associated with auditor resignations and subsequent auditor quality. Further, I examine the impact of SOX on these associations. Specifically, I examine associations along the following dimensions: severity and type of internal control deficiencies, auditor tenure, non-audit service fees, audit fees and other control variables for audit and client business risk. Finally, I examine market reaction to disclosures of the severity and type of internal control deficiencies disclosed in SEC Form 8-K auditor change filings.

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Table 1: Required Disclosure of Internal Control Deficiencies:

Date	Regulation	Required communication	To Whom information is communicated
1978	AICPA SAS 20 “Required Communications of Material Weaknesses in Internal Accounting Control”	Material weaknesses	Management and Board of Directors
1988	AICPA SAS 60 “Communication of Internal Control Structure Related Matters Noted in an Audit”	Reportable conditions (significant deficiencies) and material weaknesses	Audit Committee and Board of Directors
1988	SEC FRR #31 “Disclosure amendments to Regulation S-K, Form 8-K and Schedule 14A regarding changes in accountants and potential opinion shopping situations”	Reportable Events (either an indication of an internal control weakness or a reliability issue related to financial statements, management representation or prior audits)	Public on SEC Form 8-K
2002	SOX Section 302 “Corporate responsibility for financial reports”	Principal officer certification including assurances of: (i) internal control over financial reporting, (ii) disclosure controls and procedures and (iii) disclosure to audit committee and external auditors of significant deficiencies and material weaknesses and any fraud that involves management or employees who have a significant role in the internal control over financial reporting.	(i) To Audit Committee and auditors: significant deficiencies and material weaknesses (ii) To public: assurances in 10-Q and 10-K certifications
2003	SEC “ Final rule: management’s reports on internal control over financial reporting and certification of disclosure in exchange act periodic reports”	Amends Regulation S-K to add Item 307. Requires disclosure of: (i) conclusions about the effectiveness of the firm’s disclosure controls and procedures and (ii) whether or not there were significant changes in internal controls subsequent to their evaluation, including any corrective actions with regard to significant deficiencies and weaknesses.	Public in quarterly 10-Q and annual 10-K SEC filing certifications
2004	SOX Sec. 404 “Management Assessment of Internal Controls”	Requires an annual management report on internal controls over financial reporting, accompanied by an auditor attestation report and auditor report on controls over financial reporting, to be filed with the annual report.	Public in annual 10-K SEC filings
2004	SEC “ Final rule: management’s reports on internal control over financial reporting and certification of disclosure in exchange act periodic reports”	Amends Regulation S-K to add Item 308. Requires the management’s annual report on internal control over financial reporting to include management’s assessment as of the end of the most recent fiscal year, including a statement as to whether or not internal control over financial reporting is effective. Material weaknesses must be disclosed.	Public in annual 10-K SEC filings

Table 2: Types of Internal Control Deficiencies

Financial systems and procedures	Personnel	Documentation	IT	Other
<ul style="list-style-type: none"> • Revenue recognition • Inventory processes • Non-routine transactions • Inadequate accounting processes • Financial close processes • Account reconciliations • Timely reporting • International monitoring of staff • Consolidation of foreign subsidiaries • Transfers between subsidiaries • Foreign currency translations 	<ul style="list-style-type: none"> • Lack of segregation of duties • Inadequate staffing • Lack of training • Insufficient supervision 	<ul style="list-style-type: none"> • Lack of documentation for transaction approvals • Lack of support for accounting transactions • Inadequate documentation to assure timely reporting of transactions 	<ul style="list-style-type: none"> • IT security • System implementation • IT monitoring • Sales terms compliance • Fixed asset tracking 	<ul style="list-style-type: none"> • Application of industry standards or regulations • Foreign Corrupt Practices Act compliance • Audit committee practices

Table 3: Industry classification of firms changing auditors

SIC	Name	Pre-SOX	%	Post-SOX	%
01	Agricultural Products	0	0.0	2	0.3
10	Metal mining	1	0.4	7	1.0
13	Oil and gas extraction	5	2.0	28	4.1
15	Building construction	3	1.2	1	0.1
16	Heavy construction, except building	1	0.4	2	0.3
17	Special trade contractors	2	0.8	3	0.4
20	Food and kindred products	0	0.0	10	1.5
21	Tobacco manufacturers	0	0.0	1	0.1
22	Textile mill products	1	0.4	0	0.0
23	Apparel and other products	1	0.4	4	0.6
24	Lumber and wood products	1	0.1	3	0.4
25	Furniture and fixtures	2	0.8	3	0.4
26	Paper and allied products	3	1.2	4	0.6
27	Printing and publishing	2	0.8	5	0.7
28	Chemical and allied products	10	3.9	54	7.9
29	Petroleum and coal products	2	0.8	3	0.4
30	Rubber and misc. plastic products	3	1.2	6	0.9
31	Leather and leather products	0	0.0	2	0.3
32	Stone, clay, & glass products	1	0.4	1	0.1
33	Primary metal industries	2	0.8	3	0.4
34	Fabricated metal products	3	1.2	7	1.0
35	Industrial machinery and equipment	9	3.5	40	5.8
36	Electronic and other equipment	20	7.8	58	8.5
37	Automotives	5	2.0	19	2.8
38	Instruments & related products	14	5.5	41	6.0
39	Miscellaneous manufacturing industries	1	0.4	6	0.9
40	Railroad transportation	1	0.4	0	0.0
42	Trucking & warehousing	2	0.8	4	0.6
45	Transportation by air	1	0.4	0	0.0
46	Pipelines, except natural gas	0	0.0	1	0.1
47	Transportation services	0	0.0	2	0.3
48	Communications	13	5.1	24	3.5
49	Electric, gas & sanitary services	6	2.3	12	1.7
50	Wholesale trade – durable goods	8	3.1	12	1.7
51	Wholesale trade – non-durable goods	2	0.8	6	0.9
52	Building materials & hardware	1	0.4	0	0.0
53	General merchandise stores	2	0.8	3	0.4
54	Food stores	2	0.8	3	0.4
55	Automotive dealers and gas services	0	0.0	3	0.4
56	Apparel and accessory stores	1	0.4	4	0.6
57	Home furniture stores	0	0.0	1	0.1
58	Eating & drinking places	4	1.6	16	2.3
59	Miscellaneous retail	3	1.2	8	1.2
60	Depository institutions	30	11.7	54	7.9
61	No depository credit institutions	3	1.2	12	1.7
62	Security and commodity brokers	5	2.0	7	1.0
63	Insurance carriers	7	2.7	8	1.2
64	Insurance agents, brokers & services	1	0.4	0	0.0
65	Real estate	1	0.4	5	0.7
67	Holding & other investment offices	4	1.6	23	3.4

SIC	Name	Pre-SOX	%	Post-SOX	%
70	Hotels & Motels	1	0.4	3	0.4
72	Personal services	0	0.0	2	0.3
73	Business services	44	17.2	101	14.7
75	Automotive repair services	0	0.0	2	0.3
76	Miscellaneous repair services	1	0.4	0	0.0
78	Motion pictures	1	0.4	4	0.6
79	Amusement & recreation services	0	0.0	7	1.0
80	Health services	7	2.7	9	1.3
82	Educational services	1	0.4	2	0.3
83	Social services	0	0.0	2	0.3
86	Membership organizations	1	0.4	0	0.0
87	Engineering & other services	8	3.1	12	1.7
89	Miscellaneous services	0	0.0	1	0.1
99	Unclassified	3	1.2	13	1.9

Table 4: Auditor Changes by Type of Audit Firm

Panel A: Auditor resignation sample

Successor Predecessor	Big 4/5	Second Six	Small Audit Firm	Row Total
Big 4	30 (18%)	75 (46%)	59 (36%)	164 (100%)
Second 6	1 (4%)	3 (12%)	21 (84%)	25 (100%)
Small	1 (1%)	3 (5%)	61 (94%)	65 (100%)
Total	32 (13%)	81 (32%)	141 (56%)	254 (100%)

Panel B: Client-initiated dismissal sample

Successor Predecessor	Big 4/5	Second Six	Small Audit Firm	Row Total
Big 4	221 (47%)	137 (29%)	115 (24%)	473 (100%)
Second 6	18 (24%)	12 (16%)	45 (60%)	75 (100%)
Small	22 (16%)	16 (12%)	101 (73%)	139 (100%)
Total	261 (38%)	165 (24%)	261 (38%)	687 (100%)

Table 5: Variable Definitions

Variable	Definition
RESIG	1 if the auditor resigned or did not stand for reelection, 0 if the client dismissed the auditor.
ICD	1 if the company reported either a material weakness or a significant deficiency in its internal controls, 0 otherwise.
ICD*MW	1 if the company reported a material weakness in internal controls on SEC Form 8-K or another SEC filing, 0 otherwise.
ICD*REV	1 if the company reported an internal control reportable event related to revenue recognition, 0 otherwise.
ICD*FSR	1 if the company reported an internal control reportable event related to financial systems and reporting issues other than revenue recognition, 0 otherwise.
ICD*PERS	1 if the company reported an internal control reportable event related to personnel issues, 0 otherwise.
ICD*DOC	1 if the company reported an internal control reportable event related to documentation issues, 0 otherwise.
ICD*IT	1 if the company reported an internal control reportable event related to IT issues, 0 otherwise.
TEN_SHORT	1 if the predecessor auditor audited the firm for 3 or less years, 0 otherwise.
TEN_LONG	1 if the predecessor auditor audited the firm for 9 or more years, 0 otherwise.
NAS_RATIO	Non-audit service fees as a percent of total fees paid to the auditor for the fiscal year preceding the change in auditor.
AUDFEE	Audit service fees as a percent of firm assets for the fiscal year preceding the change in auditor.
AQ_DECR	1 if subsequent auditor quality decreased from a Big 4 to a second tier or small auditor or from a second tier to a small auditor, 0 otherwise.
RELIABLE	1 if the company reported one of the following reportable events on the SEC Form 8-K where the accountant has advised the registrant that it questions the accuracy or reliability of their: i) financial statements; ii) management representation; or iii) prior audits; 0 otherwise.
DISAGREE	1 if the SEC Form 8-K indicates a disagreement between the company and the auditor, 0 otherwise.
GC	1 if a going concern opinion issued in the year preceding the auditor change, 0 otherwise.
LOSS	1 if net income less than zero in the year preceding the auditor change, 0 otherwise.
ROA	Return on assets in the year preceding the auditor change (NI before extraordinary items, [data #13] divided by total assets [data#6]).
LEV	Ratio of debt (data #9 + data #34) to total assets (data #6) in the year preceding the auditor change.
SIZE	Log of total sales in the year preceding the auditor change.
GROWTH	Percent increase in sales in the year preceding the auditor change from the prior year.
MSHARE	Auditor's industry market share of audit revenue in a particular industry.
BUSY_FYE	1 if the firm's fiscal year end is in December through March, 0 otherwise.
IND	Firm's two-digit SIC industry code.
SOX	1 if the auditor change occurred post-SOX, 0 otherwise.

Table 6: Univariate Analysis

Variable	Sample	Mean			Median		
		Pre-SOX	Post-SOX	p-value	Pre-SOX	Post-SOX	p-value
		(n=256)	(n=685)		(n=256)	(n=685)	
ICD	Auditor change	0.05	0.15	.00***	0.00	0.00	.00***
	Resignation	0.11	0.21	.21	0.00	0.00	.38
	Dismissal	0.05	0.13	.00***	0.00	0.00	.00***
	AQ Decrease	0.08	0.20	.01**	0.00	0.00	.01**
	AQ No Decrease	0.04	0.10	.02**	0.00	0.00	.02**
ICD_MW	Auditor change	0.03	0.11	.00***	0.00	0.00	.00***
	Resignation	0.04	0.14	.12*	0.00	0.00	.12*
	Dismissal	0.03	0.09	.00***	0.00	0.00	.00***
	AQ Decrease	0.05	0.14	.04**	0.00	0.00	.04**
	AQ No Decrease	0.02	0.07	.01**	0.00	0.00	.01**
ICD_Rev	Auditor change	0.02	0.04	.16*	0.00	0.00	.16*
	Resignation	0.00	0.04	..31	0.00	0.00	.31
	Dismissal	0.02	0.04	.24	0.00	0.00	.24
	AQ Decrease	0.01	0.05	.16*	0.00	0.00	.16*
	AQ No Decrease	0.02	0.02	.85	0.00	0.00	.85
ICD_FSR	Auditor change	0.04	0.11	.00***	0.00	0.00	.00***
	Resignation	0.07	0.13	..39	0.00	0.00	..39
	Dismissal	0.03	0.10	.00***	0.00	0.00	.00***
	AQ Decrease	0.05	0.13	.05*	0.00	0.00	.05*
	AQ No Decrease	0.03	0.07	.03**	0.00	0.00	.03**
ICD_Per	Auditor change	0.02	0.09	.00***	0.00	0.00	.00***
	Resignation	0.04	0.13	.14	0.00	0.00	.14
	Dismissal	0.02	0.08	.00***	0.00	0.00	.00***
	AQ Decrease	0.01	0.12	.01**	0.00	0.00	.01**
	AQ No Decrease	0.02	0.07	.03**	0.00	0.00	.03**
ICD_Doc	Auditor change	0.00	0.03	.03**	0.00	0.00	.03**
	Resignation	0.04	0.03	.89	0.00	0.00	.90
	Dismissal	0.00	0.02	.02**	0.00	0.00	.02**
	AQ Decrease	0.00	0.02	.17	0.00	0.00	.17
	AQ No Decrease	0.01	0.03	.09*	0.00	0.00	.09*
ICD_IT	Auditor change	0.00	0.02	.03**	0.00	0.00	.03**
	Resignation	0.00	0.01	.62	0.00	0.00	.62
	Dismissal	0.00	0.02	.02**	0.00	0.00	.02**
	AQ Decrease	0.00	0.01	.30	0.00	0.00	.31
	AQ No Decrease	0.00	0.02	.05*	0.00	0.00	.05*

Table 6 (cntd.)

Variable	Sample	Mean			Median		
		Pre-SOX	Post-SOX	p-value	Pre-SOX	Post-SOX	p-value
ICD_Other	Auditor change	0.00	0.01	.22	0.00	0.00	.22
	Resignation	0.00	0.01	.62	0.00	0.00	.62
	Dismissal	0.00	0.02	.21	0.00	0.00	.21
	AQ Decrease	0.01	0.01	.68	0.00	0.00	.69
	AQ No Decrease	0.00	0.02	.07*	0.00	0.00	.07*
Tenure_Short	Auditor change	0.33	0.41	.02**	0.00	0.00	.02**
	Resignation	0.43	0.41	.86	0.00	0.00	.88
	Dismissal	0.32	0.41	.02**	0.00	0.00	.02**
	AQ Decrease	0.36	0.35	.97	0.00	0.00	.97
	AQ No Decrease	0.32	0.48	.00***	0.00	0.00	.00***
Tenure_Moderate	Auditor change	0.43	0.31	.00***	0.00	0.00	.00***
	Resignation	0.39	0.37	.79	0.00	0.00	.83
	Dismissal	0.43	0.29	.00***	0.00	0.00	.00***
	AQ Decrease	0.45	0.30	.01**	0.00	0.00	.01**
	AQ No Decrease	0.21	0.22	.90	0.00	0.00	.97
Tenure_Long	Auditor change	0.25	0.28	.34	0.00	0.00	.46
	Resignation	0.18	0.22	.61	0.00	0.00	.71
	Dismissal	0.25	0.31	.17	0.00	0.00	.17
	AQ Decrease	0.20	0.35	.01***	0.00	0.00	.01***
	AQ No Decrease	0.27	0.20	.07*	0.00	0.00	.07*
NAS_RATIO	Auditor change	36.28	22.12	.00***	33.11	17.52	.00***
	Resignation	32.73	20.53	.00***	27.24	16.85	.02**
	Dismissal	36.72	22.90	.00***	33.99	18.00	.00***
	AQ Decrease	23.37	22.21	.64	19.16	19.04	.90
	AQ No Decrease	41.73	22.01	.00***	43.14	16.50	.00***
Audit Fees	Auditor change	301,408	408,525	.32	141,693	135,000	.48
	Resignation	437,091	272,267	.09*	162,940	127,613	.41
	Dismissal	284,745	475,615	.17	139,733	139,677	.80
	AQ Decrease	126,432	254,685	.00***	99,900	160,850	.00***
	AQ No Decrease	375,287	581,953	.27	175,776	98,446	.00***
Audit Fees to Assets	Auditor change	0.0048	0.0293	.00***	0.0014	0.0038	.00***
	Resignation	0.0038	0.0304	.31	0.0018	0.0053	.01***
	Dismissal	0.0049	0.0287	.00***	0.0011	0.0032	.00***
	AQ Decrease	0.0066	0.0136	.29	0.0042	0.0041	.18
	AQ No Decrease	0.0040	0.0469	.00***	0.0009	0.0035	.00***
Non-audit Fees	Auditor change	529,636	221,992	.02**	78,750	29,832	.00***
	Resignation	1,406,278	104,032	.00***	83,111	26,524	.04**
	Dismissal	421,979	280,073	.30	78,750	33,253	.00***
	AQ Decrease	58,977	100,347	.08	24,000	41,500	.05
	AQ No Decrease	728,359	359,126	.09*	150,165	17,516	.00***

Table 6 (cntd.)

Variable	Sample	Mean			Median		
		Pre-SOX	Post-SOX	p-value	Pre-SOX	Post-SOX	p-value
Total Fees	Auditor change	831,044	629,885	.34	239,500	179,319	.00***
	Resignation	1,843,369	376,299	.00***	322,690	164,632	.12
	Dismissal	706,724	754,744	.85	236,751	181,500	.01***
	AQ Decrease	185,410	353,850	00***	139,205	207,000	00***
	AQ No Decrease	1,103,646	941,079	.66	318,340	126,271	00***
AQ_Decr	Auditor change	0.30	0.53	.00***	0.00	1.00	.00***
	Resignation	0.46	0.62	.11*	0.00	1.00	.11*
	Dismissal	0.28	0.49	.00***	0.00	0.00	.00***
Resignation	AQ Decrease	0.17	0.39	.00***	0.00	0.00	.00***
	AQ No Decrease	0.08	0.27	.00***	0.00	0.00	.00***
Reliable	Auditor change	0.00	0.07	.00***	0.00	0.00	.00***
	Resignation	0.04	0.11	.24	0.00	0.00	.24
	Dismissal	0.00	0.05	.00***	0.00	0.00	.00***
	AQ Decrease	0.00	0.09	.01***	0.00	0.00	.01***
	AQ No Decrease	0.01	0.05	.01***	0.00	0.00	.01***
Disagree	Auditor change	0.04	0.05	.44	0.00	0.00	.78
	Resignation	0.07	0.05	.61	0.00	0.00	.85
	Dismissal	0.03	0.05	.35	0.00	0.00	.35
	AQ Decrease	0.05	0.04	.66	0.00	0.00	.66
	AQ No Decrease	0.03	0.05	.19	0.00	0.00	.19
Going Concern	Auditor change	0.11	0.21	.00***	0.00	0.00	.00***
	Resignation	0.32	0.24	.34	0.00	0.00	.34
	Dismissal	0.08	0.19	.00***	0.00	0.00	.00***
	AQ Decrease	0.22	0.20	.58	0.00	0.00	.58
	AQ No Decrease	0.06	0.22	.00***	0.00	0.00	.00***
Loss	Auditor change	0.45	0.57	.00***	0.00	1.00	.00***
	Resignation	0.68	0.66	.88	1.00	1.00	.90
	Dismissal	0.43	0.52	.02**	0.00	1.00	.02**
	AQ Decrease	0.51	0.59	.22	1.00	1.00	.22
	AQ No Decrease	0.43	0.54	.01**	0.00	1.00	.01**
ROA	Auditor change	-0.07	-1.13	.00***	0.00	-0.04	.00***
	Resignation	-0.14	-1.19	.31	-0.09	-0.09	.50
	Dismissal	-0.06	-1.11	.00***	0.01	-0.01	.00***
	AQ Decrease	-0.10	-0.43	.17	-0.01	-0.04	.48
	AQ No Decrease	-0.05	-1.93	.00***	0.01	-0.02	.00***
LEV	Auditor change	0.24	0.27	.11	0.16	0.17	.31
	Resignation	0.34	0.28	.27	0.27	0.17	.55
	Dismissal	0.23	0.27	.05**	0.15	0.17	.22
	AQ Decrease	0.25	0.23	.54	0.18	0.12	.59
	AQ No Decrease	0.23	0.32	.00***	0.15	0.25	.02**

Table 6 (cntd.)

Variable	Sample	Mean			Median		
		Pre-SOX	Post-SOX		Pre-SOX	Post-SOX	
Total assets (in millions)	Auditor change	1,135.67	2,836.89	.51	120.79	37.54	.00***
	Resignation	419.78	259.52	.34	93.71	27.60	.02**
	Dismissal	1,223.58	4,105.92	.38	131.30	47.30	.00***
	AQ Decrease	154.50	257.37	.30	30.19	41.89	.16
	AQ No Decrease	1549.94	5744.85	.34	212.30	34.41	.00***
Growth	Auditor change	0.45	0.26	.06*	0.11	0.03	.00***
	Resignation	0.51	0.44	.85	0.06	0.03	.66
	Dismissal	0.44	0.17	.00***	0.12	0.03	.00***
	AQ Decrease	0.40	0.15	.10*	0.09	0.01	.05**
	AQ No Decrease	0.47	0.38	.50	0.12	0.05	.00***
Predecessor Market Share	Auditor change	0.23	0.16	.05*	0.16	0.17	.30
	Resignation	0.23	0.14	.00***	0.19	0.15	.01***
	Dismissal	0.23	0.17	.19	0.15	0.17	.89
	AQ Decrease	0.17	0.21	.03**	0.17	0.21	.01**
	AQ No Decrease	0.25	0.09	.01***	0.15	0.00	.00***
MShare >20%	Auditor change	0.36	0.38	.52	0.00	0.00	.59
	Resignation	0.46	0.35	.24	0.00	0.00	.24
	Dismissal	0.35	0.40	.19	0.00	0.00	.19
	AQ Decrease	0.41	0.53	.06*	0.00	1.00	.06*
	AQ No Decrease	0.34	0.22	.00***	0.00	0.00	.02**
BUSY_FYE	Auditor change	0.83	0.78	.07*	1.00	1.00	.07*
	Resignation	0.86	0.82	.65	1.00	1.00	.65
	Dismissal	0.83	0.76	.03**	1.00	1.00	.03**
	AQ Decrease	0.83	0.80	.59	1.00	1.00	.58
	AQ No Decrease	0.83	0.75	.04**	1.00	1.00	.04**

Notes: See Table 5 for variable definitions.

- *** Significant at the 1% level (one-tailed for directional predictions, two-tailed otherwise)
- ** Significant at the 5% level (one-tailed for directional predictions, two-tailed otherwise)
- * Significant at the 10% level (one-tailed for directional predictions, two-tailed otherwise)

Following is the number of firms included in each sub-sample:

Sample	Pre-SOX (n=256)	Post-SOX (n=685)
Auditor change (n=941)	256	685
Resignation (n=254)	28	226
Dismissal (n=687)	228	459
AQ_Decr (n= 439)	76	363
AQ No Decrease (n= 502)	180	322

Table 7: Logistic Regression Results for Risk Associations with Resignations and Subsequent Auditor Quality

	Model 1		Model 2		
	Resignations vs. Dismissals		Subsequent Auditor Quality Decrease vs. No Decrease		
		Coeff. Est.	p-value	Coeff. Est.	p-value
Intercept		-2.37	.000***	-1.12	.002***
ICD	+	1.55	.008***	0.67	.265
ICD_MW	+	-0.66	.150	0.25	.592
ICD_REV		-1.00	.047**	-0.03	.957
ICD_FSR		-0.794	.092*	0.04	.930
ICD_PER		0.04	.919	-0.04	.924
ICD_DOC		0.68	.264	-0.70	.235
ICD_IT		-1.38	.112	-0.60	.396
TEN_SHORT		-0.24	.190	-0.06	.752
TEN_LONG		-0.52	.018**	0.67	.001***
NAS_RATIO		-0.21	.608	-1.27	.000***
AUDFEE	-	-0.24	.834	-1.64	.315
AQ_DECR	+	0.64	.000***		
RESIG	+			0.57	.001***
RELIABLE	+	0.98	.008***	0.23	.538
DISAGREE	+	-0.35	.399	-0.01	.987
GC	+	0.12	.570	0.27	.214
LOSS	+	0.44	.018*	0.26	.122*
ROA	-	0.01	.814	0.07	.114
LEV	+	0.17	.542	-0.59	.032
SIZE	-	-0.11	.265	-0.24	.010**
GROWTH	+/-	0.09	.087**	-0.14	.018**
MSHARE		-0.16	.396	1.22	.000***
BUSY_FYE	+	0.36	.083**	0.25	.175*
IND		-0.00	.499	0.00	.309
SOX	+	1.18	.000***	0.69	.000***
Pseudo R ²		12%		16%	
Likelihood ratio		126.6		205.3	
p-value		.000		.000	
N		939		939	

Notes: For Model 1, the dependent variable is coded 1 for resignations and 0 for dismissals. For Model 2, the dependent variable is coded 1 for a decrease in subsequent auditor quality and 0 for no decrease in subsequent auditor quality. See Table 5 for definitions of independent variables.

- *** Significant at the 1% level (one-tailed for directional predictions, two-tailed otherwise)
- ** Significant at the 5% level (one-tailed for directional predictions, two-tailed otherwise)
- * Significant at the 10% level (one-tailed for directional predictions, two-tailed otherwise)

Table 8: Logistic Regression Results for Resignations versus Dismissals

	Model 1 Pre-SOX		Model 2 Post-SOX		Model 3 Full Sample		Model 4 Full Sample	
	Coeff. Est.	p-value	Coeff. Est.	p-value	Coeff. Est.	p-value	Coeff. Est.	p-value
Intercept	-4.24	.000***	-0.91	.015**	-2.34	.000***	-3.43	.004***
ICD	+ 1.00	.375	0.71	.072**	0.73	.046**	1.09	.322
ICD*MW	+ -1.15	.474	-0.43	.339	-0.55	.199	-1.19	.458
TEN_SHORT	0.97	.085*	-0.36	.075*	-0.25	.175	0.78	.148
TEN_LONG	0.14	.823	-0.61	.010**	-0.53	.016**	0.06	.920
NAS_RATIO	-0.86	.397	-0.14	.747	-0.09	.823	-0.81	.420
AUDFEE	- -128.51	.082*	.06	.955	-0.09	.934	-137.42	.066*
AQ_DECR	+ 0.76	.163*	0.69	.000***	0.65	.000***	0.61	.247
RELIABLE	+ 47.46	1.00	0.83	.024**	0.88	.014**	0.95	.009**
DISAGREE	+ 0.85	.460	-0.48	.272	-0.28	.491	0.80	.468
GC	+ 1.54	.035**	-0.02	.933	0.13	.540	1.65	.025**
LOSS	+ 1.22	.075*	0.34	.084*	0.41	.025**	1.17	.076**
ROA	- 0.70	.752	0.01	.802	0.01	.762	1.28	.556
LEV	+ 2.04	.026**	-0.00	.993	0.16	.562	1.82	.042**
SIZE	- 0.03	.936	-0.17	.096*	-0.15	.123*	-0.13	.724
GROWTH	+ -0.01	.943	0.11	.063**	0.09	.080**	-0.02	.893
MSHARE	0.47	.324	-0.29	0.149	-0.13	.482	0.37	.435
BUSY_FYE	+ 0.50	.453	.372	.086*	0.36	.079**	0.54	.410
IND	0.00	.991	-0.00	.527	-0.00	.496	-0.00	.478
SOX	+ 1.18	.000***					2.53	.035**
ICD*SOX	+ -0.39						.738	
ICD*MW*SOX	+ 0.73						.659	
TEN_SHORT*SOX							-1.14	.048**
TEN_LONG*SOX							-0.68	.310
NAS_RATIO*SOX							0.66	.548
AUDFEE*SOX	- 137.5						.066	
AQ_DECR*SOX	+ 0.09						.879	
DISAGREE*SOX							-1.32	.268
GC*SOX	+ -1.67						.030	
LOSS*SOX	+ -0.82						.233	
ROA*SOX	- -1.2777						.558	
LEV*SOX	+ -1.83						.053	
SIZE*SOX	- -0.04						.911	
GROWTH*SOX	+ 0.13						.461	
MSHARE*SOX							-0.65	.201
BUSY_FYE*SOX	+ -0.17						.808	
Pseudo R ²	21%		7%		11%		13%	
Likelihood ratio	37.2		57.0		116.15		140.52	
p-value	.005		.000		.000		.000	
N	256		685		941		941	

Notes: The dependent variable is coded 1 for resignations and 0 for dismissals. See Table 5 for definitions of independent variables.

- *** Significant at the 1% level (one-tailed for directional predictions, two-tailed otherwise)
- ** Significant at the 5% level (one-tailed for directional predictions, two-tailed otherwise)
- * Significant at the 10% level (one-tailed for directional predictions, two-tailed otherwise)

Table 9: Logistic Regression Results for Subsequent Auditor Quality Decrease versus No Subsequent Auditor Quality Decrease

Variable	Model 1 Pre-SOX		Model 2 Post-SOX		Model 3 Full Sample		Model 4 Full Sample	
	Coeff. Est.	p-value	Coeff. Est.	p-value	Coeff. Est.	p-value	Coeff. Est.	p-value
Intercept	1.93	.021**	-1.16	.002***	-1.12	.002***	1.53	.033**
ICD	+ -0.93	.356	0.54	.211	0.42	.263	-0.92	.360
ICD*MW	+ 2.66	.052**	0.04	.930	0.31	.497	2.58	.056**
TEN_SHORT	-0.09	.828	0.01	.947	-0.05	.764	-0.10	.793
TEN_LONG	0.14	.746	0.89	.000***	0.67	.001***	0.15	.724
NAS_RATIO	-2.64	.001***	-0.44	.314	-1.26	.001***	-2.63	.001***
AUDFEE	+ -38.89	.035	-1.04	.499	-1.73	.294	-37.96	.039 ^b
RESIG	+ 0.37	.488	.64	.001***	0.57	.001***	0.34	.520
RELIABLE	+		0.35	.381	0.30	.424	0.26	.502
DISAGREE	+ 0.77	.376	-0.18	.684	-0.02	.66	0.81	.343
GC	+ 1.01	.074*	0.07	.787	0.26	.224	0.99	.081*
LOSS	+ -0.42	.427	0.53	.008***	0.25	.136*	-0.45	.393
ROA	- 0.61	.711	0.05	.222	0.07	.117	0.6	.709
LEV	+ 0.64	.382	-0.78	.014	-0.559	.033	0.74	.306
SIZE	- -11.22	.000***	-0.13	.219	-0.25	.005***	-1.22	.000***
GROWTH	- -0.11	.388	-0.13	.049**	-0.13	.018**	-0.10	.438
MSHARE	0.78	.028**	1.47	.000***	11.24	.000***	0.81	.023**
BUSY_FYE	+ 0.04	.919	0.31	.137*	0.26	.151*	0.06	.888
IND	-0.00	.649	.00	.251	0.00	.292	0.00	.413
SOX					0.67	.000***	-2.61	.001***
ICD*SOX	+						1.48	.176*
ICD*MW*SOX	+						-2.53	.079
TEN_SHORT*SOX							0.11	.804
TEN_LONG*SOX							0.73	.144
NAS_RATIO*SOX							2.19	.014**
AUDFEE*SOX	+						36.98	.045**
RESIG*SOX	+						0.30	.593
DISAGREE*SOX							0.97	.310
GC*SOX	+						-0.92	.135
LOSS*SOX	+						0.98	.084**
ROA*SOX	-						-0.57	.731
LEV*SOX	+						-1.52	.054
SIZE*SOX	-						1.10	.000
GROWTH*SOX	-						-0.03	.850
MSHARE*SOX							0.67	.099*
BUSY_FYE*SOX	+						0.26	.602
Pseudo R ²	23%		16%		16%		20%	
Likelihood ratio	72.1		149.0		202.6		262.1	
p-value	.000		.000		.000		.000	
N	256		685		941		941	

Notes: The dependent variable is coded 1 for a decrease in subsequent auditor quality and 0 for no decrease in subsequent auditor quality. See Table 5 for definitions of independent variables.

- *** Significant at the 1% level (one-tailed for directional predictions, two-tailed otherwise)
- ** Significant at the 5% level (one-tailed for directional predictions, two-tailed otherwise)
- * Significant at the 10% level (one-tailed for directional predictions, two-tailed otherwise)

Table 10: Market reaction to disclosure of severity and type of internal control deficiency

$$CAR = \beta_0 + \beta_1 ICD + \beta_2 MW_ICD + \beta_3 ICD_REV + \beta_4 ICD_FSR + \beta_5 ICD_PER + \beta_6 ICD_DOC + \beta_7 ICD_DOC + \beta_8 RELIABLE + \beta_9 DISAGREE + \beta_{10} RESIG + \varepsilon$$

	Model 1		Model 2		Model 3	
	Coeff. Est.	p-value	Coeff. Est.	p-value	Coeff. Est.	p-value
Intercept	-0.00	.565	-0.00	.569	-0.00	.507
ICD	-0.03	.008***	-0.04	.056**	-0.04	.090**
ICD_MW	-		0.01	.663		
ICD_REV	-				0.02	.406
ICD_FSR					0.01	.781
ICD_PER					-0.01	.797
ICD_DOC					0.01	.837
ICD_IT					0.03	.254
RELIABLE	-0.01	.647	-0.01	.659	-0.00	.832
DISAGREE	0.02	.206	0.02	.217	0.02	.243
RESIG	-0.02	.017***	-0.02	.019***	-0.02	.028**
Adjusted R ²	3.2%		3.0%		2.6%	
F (p value)	4.21 (.002)		3.4 (.005)		2.1 (.026)	
N	390		388		390	

Notes: Dependent variable, CAR, is the cumulative abnormal return from day -1, day 0, and day +1. See independent variable definitions in Table 5.

- *** Significant at the 1% level (one-tailed for directional predictions, two-tailed otherwise)
- ** Significant at the 5% level (one-tailed for directional predictions, two-tailed otherwise)
- * Significant at the 10% level (one-tailed for directional predictions, two-tailed otherwise)

Table 11: Correlations

		A	B	C	D	E	F	G	H	I	J	K	L
RESIG	A	1.00											
ICD	B	0.13	1.00										
ICD_MW	C	0.10	0.81	1.00									
ICD_REV	D	0.00	0.49	0.41	1.00								
ICD_FSR	E	0.08	0.81	0.66	0.39	1.00							
ICD_PER	F	0.11	0.75	0.59	0.38	0.57	1.00						
ICD_DOC	G	0.05	0.38	0.31	0.27	0.41	0.36	1.00					
ICD_IT	H	-0.03	0.30	0.17	0.14	0.30	0.33	0.25	1.00				
ICD_OTHER	I	-0.02	0.27	0.26	0.16	0.23	0.17	0.21	0.27	1.00			
TEN_SHORT	J	0.03	0.05	0.02	0.00	0.02	0.06	-0.02	0.05	0.07	1.00		
TEN_MOD	K	0.04	-0.03	-0.01	-0.02	-0.01	-0.03	0.01	-0.06	-0.03	-0.58	1.00	
TEN_LONG	L	-0.07	-0.01	-0.01	0.02	-0.02	-0.03	0.02	0.02	-0.04	-0.48	-0.44	1.00
NAS_RATIO	M	-0.11	-0.03	-0.02	-0.02	-0.04	-0.03	-0.01	-0.02	-0.05	-0.08	-0.05	0.14
AUDFEE	N	0.03	0.01	0.03	-0.02	0.00	0.02	0.03	-0.02	0.02	0.09	0.00	-0.10
AQ_DECR	O	0.17	0.14	0.13	0.05	0.11	0.09	0.00	-0.01	-0.01	-0.07	-0.04	0.12
RELIABLE	P	0.14	0.35	0.35	0.18	0.34	0.25	0.07	0.02	0.12	0.01	-0.05	0.05
DISAGREE	Q	0.02	0.23	0.18	0.14	0.20	0.12	0.16	0.02	0.13	0.00	0.02	-0.02
GG	R	0.11	0.07	0.04	0.04	0.03	0.08	0.05	0.00	0.01	0.05	0.01	-0.06
LOSS	S	0.16	0.11	0.09	0.05	0.07	0.09	0.06	0.03	0.03	0.13	0.01	-0.16
ROA	T	-0.03	0.03	0.02	0.03	0.04	0.02	0.00	0.02	0.00	-0.07	-0.02	0.10
LEV	U	0.04	0.01	0.02	-0.04	0.04	0.00	0.00	0.02	-0.02	0.02	0.02	-0.03
SIZE	V	-0.14	0.05	0.03	0.06	0.09	0.05	0.05	0.09	0.03	-0.16	-0.06	0.25
GROWTH	W	0.06	0.00	0.02	0.03	-0.03	0.01	-0.02	-0.02	0.00	0.10	-0.02	-0.09
MSHARE	X	-0.02	0.06	0.07	-0.01	0.06	0.01	-0.03	-0.03	0.01	-0.11	0.00	0.12
BUSY_FYE	Y	0.05	0.00	0.03	-0.02	0.04	-0.01	-0.04	-0.04	0.05	0.02	0.03	-0.05
IND	Z	-0.03	0.01	0.00	0.02	0.00	0.00	0.00	-0.04	0.01	0.00	0.09	-0.10

		M	N	O	P	Q	R	S	T	U	V	W	X	Y
AUDFEE	N	-0.17	1.00											
AQ_DECR	O	-0.14	-0.09	1.00										
RELIABLE	P	0.01	-0.04	0.09	1.00									
DISAGREE	Q	0.03	-0.01	0.01	0.25	1.00								
GG	R	-0.14	0.23	0.05	0.03	0.03	1.00							
LOSS	S	-0.15	0.16	0.07	-0.01	0.02	0.32	1.00						
ROA	T	0.17	-0.78	0.10	0.04	0.02	-0.28	-0.19	1.00					
LEV	U	-0.05	0.31	-0.10	0.02	-0.04	0.26	0.17	-0.29	1.00				
SIZE	V	0.36	-0.28	-0.06	0.06	0.04	-0.35	-0.41	0.28	-0.09	1.00			
GROWTH	W	0.01	-0.05	-0.08	0.03	0.03	0.03	0.11	0.03	-0.04	-0.07	1.00		
MSHARE	X	0.09	-0.12	0.26	-0.01	-0.05	-0.10	-0.09	0.13	-0.13	0.27	-0.04	1.00	
BUSY_FYE	Y	0.01	-0.01	0.03	0.04	-0.01	-0.02	0.01	-0.01	-0.01	0.05	0.02	0.00	1.00
IND	Z	-0.01	0.15	0.01	-0.05	-0.04	0.00	-0.02	-0.11	-0.03	0.00	-0.03	0.03	0.06

Note: See Table 5 for variable definitions.

Figure 1: Severity of Internal Control Deficiency

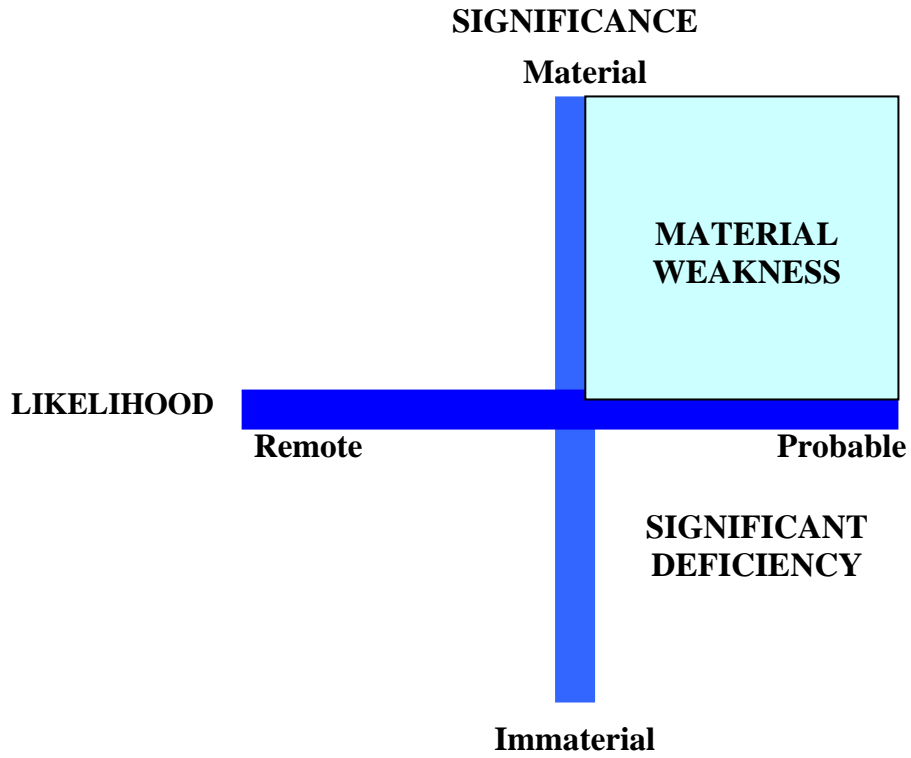


Figure 2: Auditor Resignations and Dismissals: Pre-SOX and Post-SOX

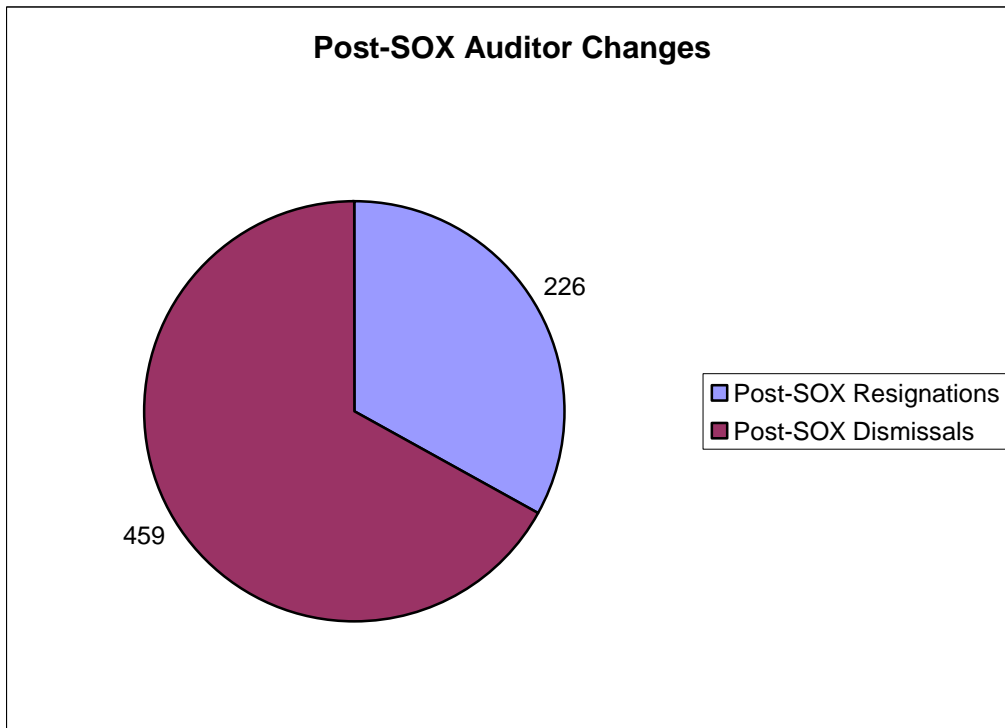
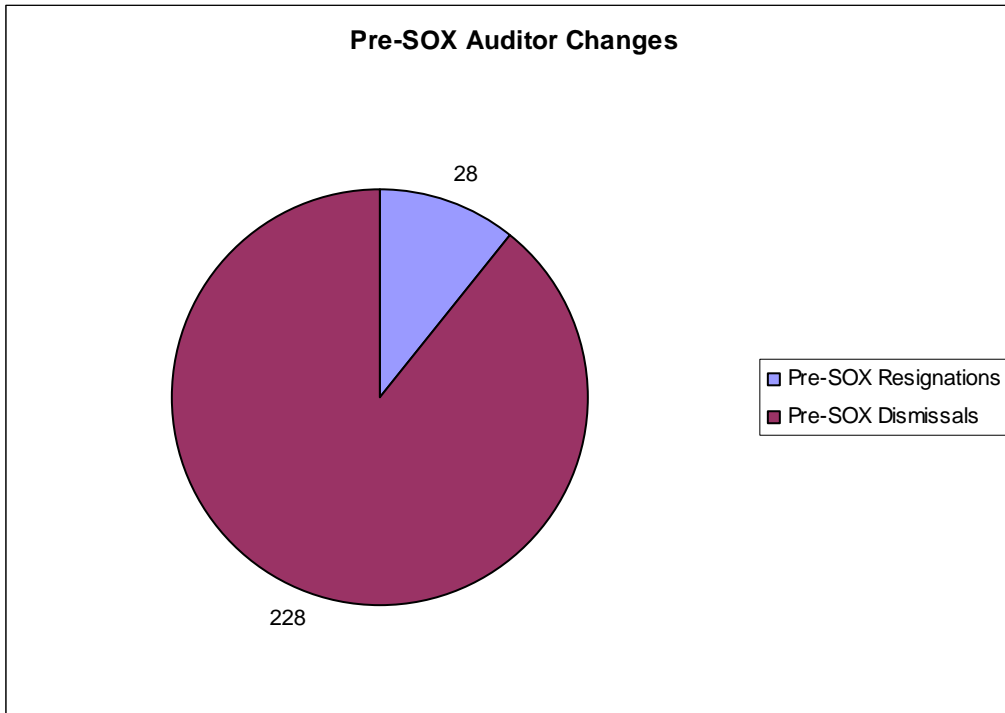
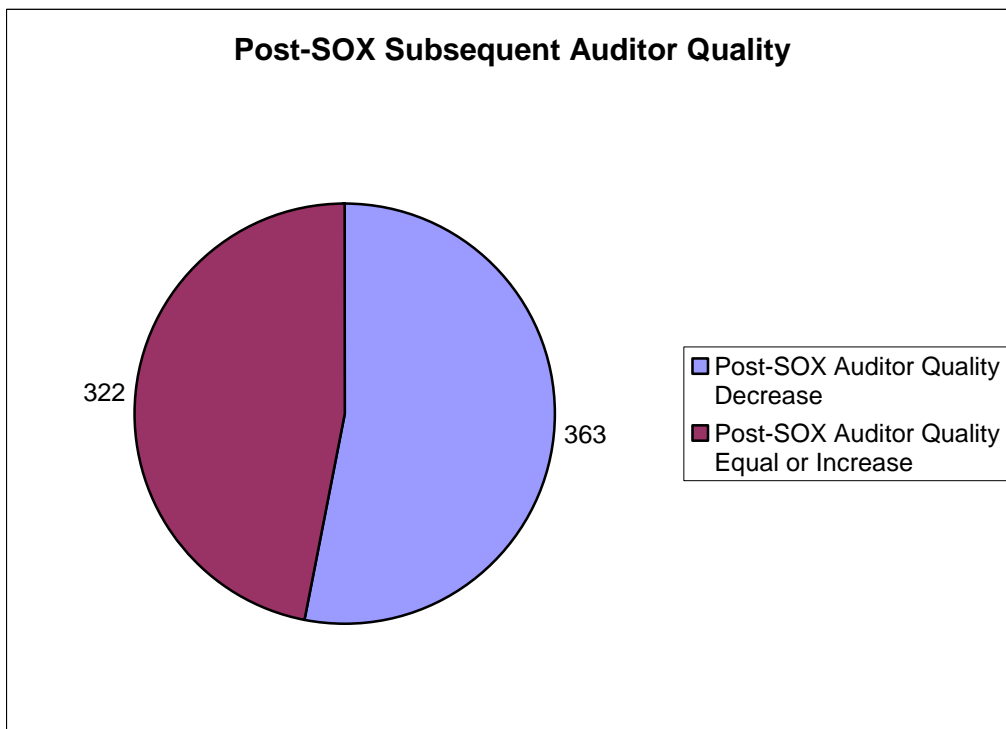
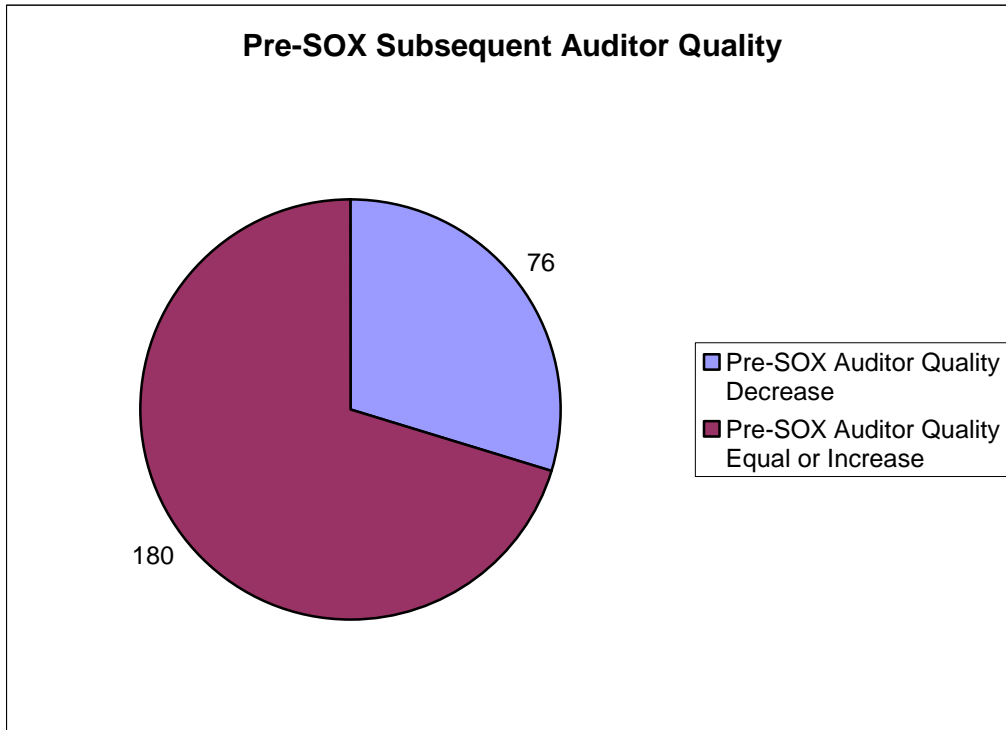


Figure 3: Subsequent Auditor Quality: Pre-SOX and Post-SOX



Appendix A: Sample 8-K auditor change disclosure from Alaska Air Group Inc (8/13/04):

ITEM 4. Changes in Registrant's Certifying Accountant

On August 10, 2004, Alaska Air Group (Air Group) determined for itself and on behalf of its subsidiaries, Alaska Airlines, Inc. (Alaska) and Horizon Air Industries, Inc. (Horizon), to **dismiss its independent auditors**, Deloitte & Touche LLP (Deloitte) and to select KPMG LLP (KPMG) to serve as its new independent auditors for the year ending December 31, 2004. As of the date of this report, KPMG LLP has accepted the engagement. On August 10, 2004, Deloitte was notified of their dismissal.

Deloitte's report on Alaska's financial statements for each of the years ended December 31, 2003 and December 31, 2002 **did not contain an adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope or accounting principles, except the report contained explanatory paragraphs** relating to the adoption of Statement of Financial Accounting Standards No. 142, "Goodwill and Other Intangible Assets" and the revision to the financial statements discussed in the notes thereto.

During the years ended December 31, 2003 and 2002 and the interim period between December 31, 2003 and the date of Deloitte's dismissal, **there were no disagreements between Alaska and Deloitte** on any matter of accounting principles or practices, financial statement disclosure or auditing scope or procedure which, if not resolved to Deloitte's satisfaction, would have caused them to make reference to the subject matter of the disagreement in connection with their report for such years; and **there were no reportable events as defined in Item 304(a)(1)(v) of Regulation S-K, except as follows:**

- In connection with its audit of Alaska's financial statements for the year ended December 31, 2003, Deloitte advised the Audit Committee of one matter related to its internal controls that Deloitte considered to be **reportable conditions** under standards established by the American Institute of Certified Public Accountants. Deloitte noted that although the company reconciles its balance sheet accounts regularly, and those reconciliations are reviewed by someone other than the preparer, the Company should improve its process of analyzing the underlying account detail.
- In connection with its audit of Alaska's financial statements for the year ended December 31, 2002, Deloitte advised the Audit Committee of one matter that Deloitte considered to be a reportable condition. Deloitte noted design deficiencies specific to password controls in the Peoplesoft application software and the security configuration of the Peoplesoft Financials application.

Alaska believes that the **reportable conditions** described above have been corrected.

Alaska has authorized Deloitte to fully respond to the inquiries, if any, of Alaska's successor independent accountants concerning the matters described above. **Alaska**

requested that Deloitte furnish Alaska with a letter, as promptly as possible, addressed to the Securities and Exchange Commission, stating whether they agree with the statements made in this Item 4, and if not, stating the respects in which they do not agree. The required letter from Deloitte with respect to the above statements made by the Registrant is filed as Exhibit 16 hereto.

During the years ended December 31, 2003 and 2002 and through the date of this Form 8-K, Alaska nor anyone acting on the Company's behalf consulted KPMG LLP with respect to the application of accounting principles to a specified transaction, either completed or proposed, or the type of audit opinion that might be rendered on Alaska's financial statements, or any other matters or reportable events listed in Items 304(a)(2)(i) and (ii) of Regulation S-K.

Appendix B: Deloitte and Touche letter response to Alaska Air Group's 8-K filed as an exhibit to Alaska Air Group's 8-K.

Exhibit 16

August 13, 2004

Securities and Exchange Commission
Mail Stop 11-3
450 5th Street, N.W.
Washington, D.C. 20549

Dear Sirs/Madams:

We have read Item 4 of Alaska Airlines Inc.'s Form 8-K dated August 13, 2004, and have the following comments:

1. We agree with the statements made in the fourth sentence of paragraph 1, paragraph 2, paragraph 3 and the first two sentences of paragraph 5.
2. We have no basis on which to agree or disagree with the statements made in the first three sentences of paragraph 1, paragraph 4, the third sentence of paragraph 5 and paragraph 6.

Yours truly,

Deloitte & Touche

Appendix C: Alaska Airlines Group Management Report on Internal Control Over Financial Reporting (12/31/04)

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO Framework). **Based on our evaluation under the COSO Framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2004.**

Our management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2004 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report which is included herein.

Appendix D: Sample Auditor Attestation Report for Alaska Air Group Subsequent to Effective Date of SOX Section 404

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Alaska Air Group, Inc.:

We have audited the accompanying consolidated balance sheet of Alaska Air Group, Inc. as of December 31, 2004, and the related consolidated statements of operations, shareholders' equity and cash flows for the year then ended. In connection with our audit of the consolidated financial statements, we also have audited financial statement schedule II. These consolidated financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and financial statement schedule based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Alaska Air Group, Inc. as of December 31, 2004, and the results of their operations and their cash flows for the year then ended, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of Alaska Air Group, Inc.'s internal control over financial reporting as of December 31, 2004, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 22, 2005 expressed an unqualified opinion on management's assessment of, and the effective operation of, internal control over financial reporting.

KPMG LLP

Seattle, Washington
February 22, 2005

Appendix E: Auditor Report on Alaska Air Group's Internal Control Over Financial Reporting

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Alaska Air Group, Inc.:

We have audited management's assessment, included in the accompanying Management's Report on Internal Control over Financial Reporting, that Alaska Air Group, Inc. maintained effective internal control over financial reporting as of December 31, 2004, based on criteria established in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Alaska Air Group, Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express an opinion on management's assessment and an opinion on the effectiveness of Alaska Air Group, Inc.'s internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, management's assessment that Alaska Air Group, Inc. maintained effective internal control over financial reporting as of December 31, 2004, is fairly stated, in all material respects, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Also, in our opinion, Alaska Air Group, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2004, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of Alaska Air Group, Inc. as of December 31, 2004, and the related consolidated statements of operations, shareholders' equity and cash flows for the year then ended, and our report dated February 22, 2005 expressed an unqualified opinion on those consolidated financial statements.

KPMG LLP

Seattle, Washington
February 22, 2005