

Relevant but Delayed Information in Negotiated Audit Fees

Karl Hackenbrack^a, Nicole Thorne Jenkins^a and Mikhail Pevzner^b

^aOwen School of Management, Vanderbilt University

^bGeorge Mason University, School of Management

First Draft: May 2010

Current Draft: April 2011

Abstract: Audit fee negotiations conclude the first quarter of the year under audit, yet the audit fee is not disclosed until the first quarter of the following year. We conjecture that negotiated audit fees impound consequential auditor, private, client-specific knowledge about events investors will eventually learn. We demonstrate that year-to-year changes in audit fees have an economically meaningful positive association with proxies for idiosyncratic risk—future negative stock performance (crashes, skewness, and volatility), debt downgrades and lawsuits. The results suggest that negotiated audit fees contain information meaningful to investors that if promptly disclosed would reduce information asymmetry.

JLE classification: M41, M42

Keywords: Audit fees, disclosure, private information, idiosyncratic risk

Data: Available from public sources identified in the text.

Corresponding author: Tel (615) 343-0553 office; Fax (615) 343-7177 (Nicole Thorne Jenkins)

E mail addresses: Karl.Hackenbrack@vanderbilt.edu (Karl Hackenbrack)
Nicole.Jenkins@vanderbilt.edu (Nicole Thorne Jenkins)
MPevzner@gmu.edu (Mikhail Pevzner)

We appreciate the comments received by participants at George Mason University, 2011 Auditing Section Midyear Meeting in Albuquerque, University of Illinois Symposium on Auditing Research and Washington DC Area Accounting Research Symposium. Special thanks to Michael Kimbrough, Bill Kinney, Dick Larsen, and Scott Vandervelde. We acknowledge comments from Karla Johnstone, Keith Jones, Bill Kinney, Gopal Krishnan, Ariel Markelevich, Suresh Radhakrishnan, and Ryan Wilson. Pevzner gratefully acknowledges special support of the George Mason University Provost Office's Summer Research Grant and George Mason University's Accounting Advisory Council's Summer Research Grant. The authors thank Anirudh Jonnavitula for his valuable research assistance.

I. Introduction

Information opaqueness occurs. For example, Kothari, Shu and Wysocki (2009) document that managers withhold bad news from investors up to a certain threshold. When such accumulated bad news reaches a “tipping point”, the company experiences an extreme negative stock price return—a crash (Jin and Myers, 2006; Hutton, Marcus and Tehranian, 2009; Kim, Li and Zhang 2010). The revelation of bad news is a shock to investors, but it is less likely to surprise a company’s auditor because she has access to a broad array of client-specific information well before investors.

The auditor’s private, client-specific information is impounded in the negotiated audit fee (Hribar, Kravet and Wilson 2010). Her private information affects the negotiated fee in two ways. First, changes in a client are central to estimating the amount and mix of labor needed to complete the engagement. Second, when changes in client conditions cannot be adequately addressed by altering the amount or mix of labor, she price protects by increasing the risk premium component of the audit fee.¹ The more significant the change in a client’s circumstances, the more pronounced the change in the negotiated audit fee.

The auditor and client conclude their audit fee negotiation and sign an engagement letter the first quarter of the fiscal year to be audited, typically before the prior year’s earnings release date (see figure 1).² The engagement letter is a fixed fee contract. The negotiated audit fee can only be changed in response to significant changes in the scope of work performed, such as work associated with an unexpected acquisition or internal control issue; and only by mutual

¹ For example, no amount of auditing can protect an auditor should the financial viability of a client be threatened by heightened suspicion that ongoing research and development projects are not likely to generate future positive cash flows.

² Auditing standards (AU311) require that auditors document their understanding of the terms of an engagement in a contract called an engagement letter.

agreement of the auditor and the client. For this reason, auditors spend a great deal of time in consultation with their clients considering the influence of new developments in the literature, client's operations, client industry, and in the economy on the scope of the audit and, consequently, the audit fee included in the engagement letter. As a result, the negotiated fee impounds a wealth of private information.

Market participants learn the audit fee paid retrospectively in the first quarter of the fiscal year following the year audited.³ As a result, roughly a year lapses between the auditor-client fee negotiation and investors learning the audit fee. Should the negotiated fee reflect the accumulation of the auditor's private, client-specific knowledge, then significant changes in the negotiated audit fee might be diagnostic of a fundamental change in the client which is not yet publicly known, but economically meaningful to investors.

In this paper, we empirically examine the relation between year-to-year changes in the audit fee and stock price crashes that occur over the roughly 12 months between the negotiation and disclosure of the audit fee. The year-to-year change in the audit fee is a measure of company-specific opacity, where fee changes embody the auditors' private, client-specific knowledge, knowledge that eventually is revealed to investors through existing channels. Stock price crashes represent investors' response to companies reaching a "tipping point" and proxies for the market realization of idiosyncratic risk (Hutton et al. 2009). Should year-to-year changes in the audit fee (company-specific opacity) be related to stock price crashes (realization of idiosyncratic risk), then prompt disclosure of the negotiated audit fee would decrease the level of

³ As of February 5, 2001, companies are required to disclose fees paid to the incumbent auditor for services (audit and non-audit) rendered the prior fiscal year in their proxy statement. The fee information is incorporated by reference into Part III of the company's 10K. Effective for fiscal years ending after December 15, 2003, if the proxy is not filed within 120 days of the company's year-end, the fee disclosure must be separately stated in the 10K. Proxies are governed by Regulation 14a of the General Rules and Regulations promulgated under the SEC Act of 1934.

company-specific opacity and result in more timely communication of the information buildups that lead to “tipping points”.

We find in a large sample of public company annual audits for the period 2001 through 2009 that the change in audit fees is positively associated with measures of idiosyncratic risk realized over the roughly 12 months between the negotiation and disclosure of the audit fee. The mean year-to-year percentage change in industry-adjusted audit fees is 16%. After controlling for client changes generally associated with increases in audit effort, we find companies that experience a stock price crash can expect its auditor to negotiate a 5 percentage point increase in the industry-adjusted audit fee in advance of the crash event. We obtain similar results using two traditional proxies for the realization of company-specific bad news: credit rating downgrades and the filing of a class action security lawsuit. Thus, auditors appear to predict the future informational “tipping points” and engage in a form of price protection.

Only managers and auditors know the negotiated audit fee prior to the realizations of the idiosyncratic risk measures examined. Investors learn the audit fee paid in the definitive proxy statement filed after the observed realizations of idiosyncratic risk. Consequently, company-specific opacity is greater than perhaps necessary and the market is precluded from assimilating timely, consequential information embedded in the negotiated audit fee simply because the current mandate is to disclose audit fee information essentially one year after it is known by insiders. Information processing costs or lack of a timely disclosure mechanisms are not a barrier to timely disclosure as the negotiated audit fee is objective, stated in the engagement letter, and known when the definitive proxy statement is filed the first quarter of the year under audit. What we do not know is how timely disclosure would complicate the auditor-auditee fee negotiation process, and more generally relationship.

The remainder of the paper proceeds as follows. Section two discusses the prior literature in the area as well as our research design. Our sample selection and descriptive statistics are presented in section three. The multivariate results are presented in section 4 and our additional analysis is in section five. Section six contains concluding remarks.

II. Prior Literature and Research Design

2.1 Disclosure and Information Asymmetry

Both the theoretical and empirical research posit that the more relevant and higher the quality of information that is available to shareholders the better. Increased disclosure quality has been theoretically linked to decreases in both information asymmetry and cost of capital and to an increase in liquidity (Diamond and Verrecchia 1991, Kim and Verrecchia 1994, Lambert et al., 2007). Empirically, increased disclosure quality has also been linked to increases in liquidity and analyst following (Botosan 1997; Sengupta 1998, Healy and Palepu 2001; Botosan and Plumlee 2002; Lang and Lundholm 1996; Pevzner, 2007) and decreases in cost of capital (Frankel et al. 1995; Welker, 1995; Heflin et al. 2005; Botosan 1997; Lang and Lundholm 2000 and Botosan and Plumlee 2002). These findings are consistent with the notion that greater levels of disclosure quality reduce the risk associated with estimating future cash flows, thus lowering the return demanded by investors. Moreover, increased disclosure quality is thought to decrease information asymmetry by aligning the information that investors have with that of managers. To the extent that the negotiated audit fee impounds client-specific information known to managers but not investors, prompt disclosure of the negotiated audit fee will reduce manager/investor information asymmetry and, consequently, benefit stakeholders.

Information asymmetry is akin to the concept of opacity. In Jin and Myers' (2006) model, less transparent or equivalently more opaque companies are more likely to experience significant

stock price crashes. Their proxy for opacity is the development level of the financial system in the country where a company is domiciled. They find that companies residing in countries with less well developed financial systems are more likely to experience crashes in their stock price. Hutton, Marcus and Tehranian (2009) also examine the relation between opacity and stock price crashes. They use earnings management, as proxied by discretionary accruals, as an indicator of opacity and find that opaque companies are better able to conceal company-specific information than non-opaque companies, i.e., have higher levels of information asymmetry and idiosyncratic risk. Their results demonstrate that companies that engage in earnings management are able to stock pile bad news up to a “tipping point” that, when crossed, results in a stock price crash. Recent work by Kim, Li, and Zhang (2010) provides additional evidence of the relation between opacity and idiosyncratic risk by showing that tax avoidance is positively related to stock price crash risk.

Our investigation is most similar to Hutton et al. (2009) and Kim et al. (2010). We add to this developing literature by studying the relation between a new proxy for opacity (change in audit fees) and proxies for idiosyncratic risk (emphasizing stock price crash). The unique aspect of examining audit fees as a proxy for opacity is that audit fees are determined by a third party which is put at risk because of a company’s operating results and disclosure choices. Our method presumes changes in audit fees not explained by publicly available information represent an auditor’s private, client-specific information—idiosyncratic information known by management and the auditor, but unknown to investors. Should unexplained changes in audit fees be positively correlated with realizations of bad news events that occur between the negotiation and disclosure of the audit fee, then prompt disclosure of the negotiated audit fee would decrease the level of company-specific opacity and result in more timely communication of the information

buildups that lead to “tipping points”.

2.2 The Codification of the Auditor’s Private Knowledge in the Negotiated Audit Fee

Generally Accepted Auditing Standards (GAAS) require auditors to alter the nature and extent of audit procedures performed and/or engagement staffing in response to client circumstances. For example, an auditor will alter the amount and mix of labor in response to the client engaging in a new set of complex transactions. No amount of audit work fully protects an auditor’s financial exposure or reputation from some types of client events; for example, declines in client market share, client loss of a significant customer, lawsuits against the client, etc. An auditor’s only recourse is to price protect herself by charging a risk premium in anticipation of such events.

O’Keefe, Simunic and Stein (1994) document that hours worked and the labor mix are sensitive to client operations and that audit fees paid are higher for riskier clients. Pratt and Stice (1994) and Johnstone and Bedard (2001) examine how client risk factors affect bid pricing, and find that accepted bids contain risk premia for both error and fraud risk after controlling for planned audit hours. These and many other papers are prima facie evidence that auditors utilize their forward-looking, client-specific, private information when negotiating audit fees. Or conversely, that negotiated audit fees impound auditors’ client-specific, private information.

There is scant academic research documenting the fee negotiation process used during the sample period.⁴ So, we conducted formal interviews with several audit partners from three of the four Big 4 audit firms. The specific questions asked and a summary of their responses are presented in Appendix A. In short, the audit partners concur with the description of the fee negotiation process used throughout this paper and stated unanimously and unambiguously their

⁴ Palmrose (1989) documents that both fix and variable audit fee contracts were used in the 1970s and 1980s.

inability to increase negotiated fees unless the audit firm and client agree to supplement the negotiated fee for unexpected, client-necessitated cost overruns. The partners indicated an aversion to being viewed as trying to “milk” their clients for additional fees and a general practice to avoid renegotiating their fees for fear of jeopardizing multi-period relationships. This perspective is consistent with Hackenbrack and Hogan’s (2005) result that realization rates are significantly lower on engagements marred by client imposed delays, i.e., it is hard for firms to pass on unexpected costs. Consequently, the negotiated audit fee is, *de facto*, disclosed as the audit fee paid one year later, making the audit fee paid a reasonable proxy for the audit fee negotiated.

2.3 *Idiosyncratic Risk*

Idiosyncratic risk is the risk that leads to a stock price change due to circumstances that are unique to a specific company as opposed to the market as a whole. The type of idiosyncratic risk that leads to increases in negotiated audit fees are those risks which are expected to result in negative outcomes—a decline in stock price, reduction in operating performance, lawsuit, etc. In general, investors can virtually eliminate idiosyncratic risk by forming a diversified portfolio. Such diversification is a challenge for an audit firm because it cannot simply pick and choose clients from the population of companies. Each practice office and individual partner therein have profit and loss responsibility for a portfolio of audit clients which, at that level, is restricted by industry, geography, expertise, existing client base, and so on. Consequently, client acceptance and continuation decisions and fee negotiation are in large part made at the office and partner level, resulting in service and pricing decisions resembling more of a client-by-client decision making process than an investor portfolio approach. As a result, audit pricing decisions are a function of the labor an auditor anticipates expending to render an opinion and a risk

premium that compensates her for idiosyncratic risk.

2.4 *Baseline Empirical Model*

We examine the association between year-to-year changes in audit fees, proxies for idiosyncratic risk, and select company-specific characteristics in the following ordinary least squares regression:

$$\% \Delta Fees_Ind, = \gamma_0 + \gamma_1 * Idiosyncratic Risk + \sum \gamma_i CONTROLS + e \quad (1)$$

where % Δ Fees is calculated as the percentage change in audit fees from year t to t-1 divided by the t-1 audit fee.⁵ We then median adjust this percentage based on the annual two digit SIC code to arrive at % Δ Fees_Ind. The industry-adjustment mitigates the potentially spurious effects of macro-changes in audit fees, such as significant industry-specific changes in financial reporting regulations.⁶ We winsorize the continuous variables at the 1st and 99th percentiles. Our t-statistics are estimated using cluster-adjusted robust standard errors as prescribed in Petersen (2009), specifically we cluster on firm and year.

2.5 *Proxies for Idiosyncratic Risk*

We focus on stock price crash (CRASH) and consider two tradition proxies for idiosyncratic risk, credit rating downgrades (DOWNGRADE) and securities related lawsuits filed against the company (LAWSUIT). Since the audit fee is negotiated in the first quarter of the year under audit, all measures of idiosyncratic risk are computed from the end of the first quarter

⁵ We use the revised audit fees file from Audit Analytics database per Markelevich and Rosner (2009).

⁶ The variable ‘percentage change in audit fees’ is akin the abnormal audit fees used in related work (Hribar et. al, 2010 and Picconi and Reynolds, 2009). Those papers estimate a model to capture expected audit fees while we use prior year audit fees as our measure for expected audit fees. We control for the known operational and structural changes of the firm within our main regression. The benefit of this approach is that we do not force the auditor’s response to operational and structural changes to be the same for all of their clients, which introduces measurement error into the change variable. Rather, we use a random walk approach and control for expected company-specific changes within the regression itself.

of the year under audit through the end of the first quarter of the following year.⁷

CRASH: This variable captures significant declines in stock price. It is estimated as in Hutton et al. (2009), equaling one when $W_{it} = \log(1+u_{it})$ is more than 3.2 standard deviations below the annual mean for all firms in the same fiscal year and zero otherwise.⁸ The weekly residual stock return u_{it} is estimated as follows:

$$R_{it} = a_0 + a_1 * R_{m,t-2} + a_2 * R_{m,t-1} + a_3 * R_{m,t} + a_4 * R_{m,t+1} + a_5 * R_{m,t+2} + u_{it} \quad (2)$$

where R_{it} is a company's total raw cumulative weekly stock return for week t , $R_{m,t}$ is the cumulative value-weighted weekly stock return from CRSP (value-weighted return is reported daily and cumulated each week). We require at least 36 weeks of available data to estimate equation (2).⁹

Like Kim and Zhang (2010), we also consider two variables closely related to the CRASH—skewness of residual returns (NSKEW) and the volatility of negative and positive idiosyncratic returns (DUVOL). NSKEW is calculated as the third moment of each company's weekly return over the entire fiscal year (Hutton et al. 2009). It measures the tendency of a company to disproportionately experience negative weekly stock returns over positive weekly stock returns. The distribution of weekly returns for companies with negative skewness would have a longer left tail if a company is more likely to experience negative stock returns. $NSKEW = -SKEW(W_{it})$, where SKEW is the conditional skewness of a company's estimation period idiosyncratic weekly returns' distribution. In particular,

$$NSKEW_{it} = -[n(n-1)^{3/2} \sum W_{it}^3] / (n-1)(n-2)(\sum W_{it}^2)^{3/2} \quad (3)$$

where n is the sample size. DUVOL is a measure of the relative volatility of idiosyncratic returns

⁷ The tenor of our results is unaffected by measuring our proxies for idiosyncratic risk from end of the first quarter through the end of the fourth quarter of the fiscal year under audit.

⁸ Our tenor of our results is unaffected when CRASH is executed on the firm specific level.

⁹ The tenor of our results is unaffected estimating equation (2) using size decile returns.

above its annual mean relative to volatility of idiosyncratic returns below its annual mean (Chen et al. 2001 and Kim and Zhang 2010). That is,

$$DUVOL_{it} = \log\left(\frac{\sigma(W_{it} | W_{it} < E(W_{it}))}{\sigma(W_{it} | W_{it} \geq E(W_{it}))}\right) \quad (4)$$

where σ is the standard deviation operator, and $E(W_{it})$ denotes a mean of the annual distribution of W_{it} . The larger this measure, the more influence negative returns have on the company.

DOWNGRADE: Standard & Poor's rates publicly traded debt. The extant literature has documented that these ratings are sticky, changing only when the accumulation of information reaches a "tipping point" (Jiang 2008). DOWNGRADE equals one when companies experience a long-term credit rating downgrade and zero otherwise. We obtain the S&P credit ratings from Compustat.

LAWSUIT: Auditors are generally viewed as having "deep pockets" and are frequently named in securities-related lawsuits filed against their audit clients. Consequently, an auditor's exposure increases in tandem with a client's exposure to securities related class-action lawsuits (Palmrose 1999). LAWSUIT is an indicator variable equal to one if the company is subject to a new securities class-action litigation during the year under audit (based on the lawsuit filing date) as reported in the Stanford Class-Action Clearinghouse database and zero otherwise.

2.6 *Control Variables*

We include several control variables in the regression which prior work has documented as being common determinants of audit fees.¹⁰ These controls are particularly important for us since they capture the likely increases in audit fees due to higher anticipated effort which we want to isolate from changes in idiosyncratic risk. Because the model that we are estimating is a

¹⁰ Simunic (1980), Craswell et al. (1995), Ashbaugh et al. (2003), Whisenant et al. (2003), and Larker and Richardson (2004), to name a few.

change specification, many of the control variables identified in prior literature as determinates of the level of audit fees are not relevant, such as Big N auditor and auditor tenure.¹¹

A client's financial condition significantly affects audit fees (Pratt and Stice 1994). Consequently, we control for the known changes in a company's operating performance with variables that represent the percentage change in the company's assets ($\% \Delta \text{ASSETS}_t$), sum of receivables and inventory ($\% \Delta \text{INVREC}_t$), earnings ($\% \Delta \text{EARN}_t$), level of income from foreign operations ($\% \Delta \text{FGN}_t$), market-to-book ratio ($\% \Delta \text{MTB}_t$), leverage ($\% \Delta \text{LEV}_t$), special items ($\% \Delta \text{SPEC}_t$), and the percentage change in reported segments ($\% \Delta \text{SEGM}_t$). We also control for structural or operational changes that the auditor might be aware of because such events require incremental audit effort: the issuance of a modified or qualified audit opinion (MOD_OP_t), the occurrence of a merger or acquisition during the year (ACQ_t), significant accounting irregularities (IRREG_t), material internal control weaknesses (WEAK_t), and stock issuances (ISSUE_t).¹² Detailed definitions of the control variables are presented in appendix B.

III. Sample selection and summary statistics

3.1 Sample selection

The sample selection process is tabulated in Table 1 and originates with data collected from Audit Analytics. Audit Analytics provides systematic coverage beginning in 2000 of audit fee data and characteristics of auditors. Because we require two years of observable audit fee data and characteristics of auditors. Because we require two years of observable audit fee data to calculate a percentage change, our sample period is 2001 to 2009. We begin with all available audit fee change data from Audit Analytics for which a matching CIK number is available in Compustat. This process yields 51,738 observations. The sample is further reduced

¹¹ Un-tabulated tests indicate that the tenor of our results is unchanged after including controls for years of auditor tenure and an indicator variable for Big N status.

¹² Untabulated tests indicate that controlling for error-type restatements does not affect the tenor of our results.

when we calculate CRASH, leaving 40,601 observations. After requiring data needed to estimate the variables included in equation (1) from CRSP and Compustat, our sample is reduced to 33,658 observations. We eliminate all first year audit engagements because we are unable to calculate a percentage change in audit fees. Our final sample contains 32,367 observations.

3.2 *Descriptive Statistics*

Table 2 summarizes the descriptive statistics for all variables used in the analyses. Consistent with Ghosh and Pawlewitz (2009), the mean (median) $\% \Delta \text{Fees}$ and $\% \Delta \text{Fees_Ind}$ is 0.29 (0.10) and 0.16 (0.00) respectively. Similar to the Hutton et al. (2009) sample, twenty percent of our observations have at least one crash event. The plot presented in Figure 2 indicates that the crash event is associated with mean abnormal residual returns of approximately -30%. Consistent with Kim and Zhang (2010), the mean (median) NSKEW_t is -0.06 (-0.07), and highly correlated with DUVOL_t . We document that 16% of the firms in our sample experience a downgrade in their credit rating (DOWNGRADE_t) which is similar to that reported in Lucas and Lonski (1992). Like Brown et al (2005), we find that 2% of our sample experiences lawsuits.

Our control variables further describe the companies in our sample. Acquisitions (ACQ_t) occur in 9% of our observations while stock issuances (ISSUE_t) occur 4% of the time.¹³ An internal control weakness (WEAK_t) is reported for 4% of the sample and an accounting irregularity (IRREG_t) occurs 1% of the time.¹⁴ An audit opinion other than a clean opinion (MOD_OP_t) is issued 46% of the time.¹⁵ Assets ($\% \Delta \text{ASSET}_t$), inventory and receivables ($\% \Delta \text{INVREC}_t$), and leverage ($\% \Delta \text{LEV}_t$) are increasing on average while earnings ($\% \Delta \text{EARN}_t$)

¹³ The average season equity offerings (SEO) announcement effect documented in numerous studies is -2% (Ritter, 2003). Thus, given that CRASH is defined by presence of very extreme negative stock returns which average -30% (see Figure 2), SEO announcement effects are not confound our results.

¹⁴ The identification of material weaknesses came about as a result of the Sarbanes Oxley Act (2002) This section of the Act did not become effective until August of 2003; therefore, this variable does not exist prior to 2004. To address this we set all missing data prior to the effective date equal to zero.

¹⁵ Only six of the opinions in our sample are qualified, disclaimer, or adverse.

and foreign income ($\% \Delta FGN_t$) appears to be declining.

3.3 *Additional descriptive statistics*

Table 3 presents additional descriptive statistics for $CRASH_t$, our primary test variable and the change in audit fees ($\% \Delta Fees$ and $\% \Delta Fees_{Ind}$). Panel A reports that crashes occur evenly over the sample period. Panel B finds that crashes occur more often in the Chemicals & Allied Products (2800), Electronic & Other Electrical Equipment (3600), and the Services (7300) industries.¹⁶ These three industries individually represent in excess of 10% of our sample individually. In our main analysis we industry median adjust our dependent variable as a control for industry clustering. This procedure ensures that our variables of interest are only explaining the abnormal movement in the change in audit fees in excess of the industry median. In addition, the tenor of our results is unchanged when we use the unadjusted percentage change in audit fees ($\% \Delta fees_t$) and include industry-level fixed effects as a control.

Table 3 Panel C presents descriptive statistics for changes in the percentage of audit fees ($\% \Delta Fees$) and industry adjusted audit fees ($\% \Delta Fees_{Ind}$) by year. The directional movement in the fee percentages through time is similar for both the adjusted and unadjusted rates. It is apparent that fees in general are increasing through time and that the increase accelerated in 2004 and then returned to normal levels in 2007. The acceleration observed in 2004 is most likely due to the implementation of the Sarbanes Oxley Act of 2002 (SOX) which led to significant increases in the amount of audit related work performed. The bulk of this work was performed in one year and requires updating in subsequent periods. Therefore implementation led to a spike in fees for a few years followed by a decline to normal levels. Because of the significant

¹⁶ The industry clustering that is documented in Panel B of Table 3 mirrors the industry clustering contained in Audit Analytics prior to our sample construction. Therefore we have not reason to believe that the sample selection process is leading to the industry clustering that is observed.

implementation costs of SOX (2002) in terms of increased audit fees we estimate our main analysis for the full sample and for two sub samples. In the subsamples we treat 2003-2006 as the SOX period sample and the time periods surrounding 2003-2006 as the non-SOX sample. Decomposing our sample helps us to ensure that our results are not driven by the increase in audit fees precipitated by the implementation of SOX (2002).

3.4 Pearson Correlations

Table 4 summarizes the pairwise Pearson correlations of all variables used in the study. CRASH is positively correlated ($p < .001$) with the alternative test variables $NSKEW_t$ (21%), $DUVOL_t$ (21%), $DOWNGRADE_t$ (22%), and $LAWSUIT_t$ (9%); suggesting that CRASH and the other variables are measuring the revelation of varying types of company-specific bad news. In our empirical analysis we consider each of these variables independently to determine if negotiated audit fees are sensitive to different aspects of company specific bad news.

IV. Empirical results

4.1 Primary Analysis

Table 5 reports the estimation of equation (1) for CRASH (Model 1), $NSKEW$ (Model 2) and $DUVOL$ (Model 3). In Panel A we report the results for all the years in our sample period (2001-2009); in Panel B we re-estimate equation (1) exclude 2003 through 2006 in an effort to remove the spike in audit fees associated with the SOX (2002). Hence, we report the empirical results for a sub-sample of non-SOX firm years (2001 through 2002 and 2007 through 2009) separately to eliminate any confounding effects of the adoption of SOX on audit fees.

The variables of interest are significantly positive and economically meaningful for the full sample (Panel A) and the non-SOX sample (Panel B) (p -value = 0.01). The coefficient on the $CRASH_t$ variable in Panel A (Panel B) is 0.05 (0.06), indicating that a crash event is associated

with a 5% (6%) increase in the industry-adjusted audit fee. We obtain similar results for the variables NSKEW and DUVOL. The control variables included in the analysis behave in a manner consistent with conventional wisdom and the extant audit fee literature and are consistent with the notion that increases in the size and complexity of companies lead to increases in audit fees, client characteristics that would result in the auditor performing additional audit work.¹⁷ The fact that the majority of these variables load suggests that our control for changes in audit effort are explaining significant portions of the change in fees. Table 6 reports the results using the alternate proxies for increases in idiosyncratic risk—downgrades in credit ratings and the filing of security-related lawsuits. The results are consistent with those reported for CRASH in the Table 5. Specifically, downgrades and lawsuits are associated with increased abnormal fees of 4% (5%) and 11% (16%) in the full (non-SOX) sample. The magnitude of the relation documented indicates that the auditor prediction is economically significant. Taken together, the results reported in Tables 5 and 6 are consistent with auditors predicting future informational “tipping points” and engaging in a form of price protection.

V. Additional Tests and Robustness Analysis

5.1 Demise of Arthur Andersen

During our sample period, Arthur Andersen, one of the Big N auditing firms failed. Chaney and Philipich (2002) and Krisnamurthy et al. (2006) provide evidence that Arthur Andersen clients experienced significant reputational losses that were manifested in stock price declines. In addition, Krishnan (2005) indicates that clients of the Houston office of Arthur Andersen were systematically less conservative in their accounting choices, which could make them more susceptible to stock price crashes. We reexamine our main results after excluding the

¹⁷ See, for example, Whisenant et al. (2003), Raghunandan and Rama (2006), Hribar et al. (2010), Ashbaugh et al. (2003), Krishnan et al. (2009) for levels models and Ferguson et al. (2007) for change models.

561 Arthur Andersen observations and find that the tenor of our results is not affected.

V. Conclusion

Market participants learn the audit fee paid retrospectively in the first quarter of the fiscal year following the year audited. As a result, roughly a year lapses between the auditor and the client fee negotiation and investors learning the audit fee. Audit fees for the current year contain potentially valuable information about company-specific risks. We empirically examine the relation between year-to-year changes in the audit fee paid and stock price crashes that occur over the 12 months between the negotiation and disclosure of the audit fee. Our analysis addresses the question of whether more timely disclosure of the negotiated audit fee would decrease the level of company-specific opacity, thereby reducing the build-up of undisclosed bad news that leads to crashes.

We find that the change in the negotiated audit fee is positively related to the occurrence of a stock price crash after controlling for factors that affect changes in planned audit effort. On average, companies that experience a stock price crash can expect its auditor to negotiate a 5% increase in the audit fee in advance of the crash event. Thus, auditors appear to predict future information “tipping points” and engage in a form of price protection. This result holds for several alternative measures, additional control variables, and model specifications.

Company-specific opacity is greater than perhaps necessary as a result of the timing of the audit fee disclosure. Our results suggest that prompt disclosure of the negotiated audit fee would decrease the level of company-specific opacity and result in a decline in the frequency of “tipping points” being reached. Lack of prompt disclosure cannot be attributed to the information not being available or the absence of a vehicle through which the information can be disclosed. The negotiated audit fee is objective, stated in the engagement letter, and known when the

definitive proxy statement is filed the first quarter of the year under audit. Our empirical findings are the first step in documenting the economically relevant information contained in negotiated fees and demonstrating that auditors price protect in response to their understanding of the risks and rewards their clients face. The analysis does not address the trade-offs between the economic benefits documented and the potential costs like making a currently cooperative negotiation process more contentious. Future work is needed to understand these trade-offs.

Appendix A: Survey of Big 4 partners on the audit fee negotiation process

Question posed to the partner:	Partner Comments Summarized
How are audit fees set? Is the negotiated audit fee adjusted subsequent to the signing of the engagement letter on the basis of realized work hours and a client's changing circumstances?	<p>In developing an audit plan, typically the auditor will review the amount of time spent in prior audits, consider new developments in both the accounting literature and operations of the client (new acquisition, etc.) and determine if there are certain additional areas where the auditor would like to examine in more depth or with an expanded scope. Most firms consider new risks with the client, the industry, and the economy as a whole in determining what areas they may want to audit and incorporate that time in the fee.</p> <p><i>In my experience, most audit fees are generally fixed fee contracts with certain additional services being approved by the audit committee either in advance (example defined tax services up to a certain amount) or new fees are negotiated if there is an unusual transaction or event that occurs.</i></p> <p><i>Typically the fixed audit fee includes some estimate of amounts to pay for unforeseen circumstances that inevitably occur during the course of the audit. Most audit committees, especially after SOX, do not want to be nickel and dimed by requests for small adjustments to the original fee. Since most audit fees are now discounted from standard rates, most variances from the original audit plan and the final amount determined by multiplying the standard rates by the number of hours, are reflected in an adjustment to the realization percentage rather than additional fees.</i></p>
What is the relative prevalence of fixed vs. "cost + adjustment" (essentially variable fees) contracts?	<p><i>Cost plus fee arrangements are very rare and are clearly not the general rule. Most audit fees are fixed fee contracts with some room for negotiation for clearly demonstrated unforeseen circumstances.</i></p>

The questions were posed to a recently retired national-level senior partner from a Big 4 accounting firms. These responses were reviewed by and concurred by regional senior partners and a managing partner of other Big 4 firms. The consensus view of all partners is that 1) audit fees contracts are based on fixed costs; 2) audit fees adjustments during the year are warranted only for events that expand the scope of an audit; 3) it is uncommon for auditors to ask for fee increase since doing so would show bad faith and potentially harm the auditor's reputation.

Appendix B: Definition of Control Variables

$\% \Delta \text{Fees}_t$ The percentage change in audit fees from year t to t-1 divided by the t-1 audit fee (Audit Analytics Audit_Fees)

$\% \Delta \text{Fees_Ind}_t$ Industry median adjusted $\% \Delta \text{Fees}_t$ based on the annual two digit SIC code.

CRASH_t Equaling one when $W_{it} = \log(1 + u_{it})$ is more than 3.2 standard deviations below the annual mean for all firms in the same fiscal year and zero otherwise. The weekly residual stock return u_{it} is estimated as follows:

$$R_{it} = a_0 + a_1 * R_{m,t-2} + a_2 * R_{m,t-1} + a_3 * R_{m,t} + a_4 * R_{m,t+1} + a_5 * R_{m,t+2} + u_{it}$$

where R_{it} is a company's total raw cumulative weekly stock return for week t, $R_{m,t}$ is the cumulative value-weighted weekly stock return from CRSP (value-weighted return is reported daily and cumulated each week).

NSKEW_t Equals $-\text{SKEW}(W_{it})$, where SKEW is the conditional skewness of a company's estimation period idiosyncratic weekly returns' distribution. In particular:

$$\text{NSKEW}_{it} = -[n(n-1)^{3/2} \sum W_{it}] / (n-1)(n-2) (\sum W_{it})^{3/2} \quad (3)$$

W is defined above in the definition for CRASH_t

DUVOL_t
$$\text{DUVOL}_{it} = \log\left(\frac{\sigma(W_{it} | W_{it} < E(W_{it}))}{\sigma(W_{it} | W_{it} \geq E(W_{it}))}\right)$$

W is defined above in the definition for CRASH_t where σ is the standard deviation operator, and $E(W_{it})$ denotes a mean of the annual distribution of W_{it} . The larger this measure, the more influence negative returns have on the company.

DOWNGRADE_t An indicator variable equal to 1 when companies experience a long-term credit rating downgrade and zero otherwise (Compustat SPDR).

LAWSUIT_t An indicator variable equal to one if the company is subject to a new securities class-action litigation (based on the lawsuit filing date) as reported in the Stanford Class-Action Clearinghouse database and zero otherwise.

ACQ_t An indicator variable equal to 1 if the company acquired a company in fiscal year t (Compustat, AQS).

ISSUE_t An indicator variable equal to 1 if the company issued stock in fiscal year t per SDC database.

WEAK_t An indicator variable equal to 1 if the auditor found internal controls to be ineffective (Audit Analytics 404 Opinion file, IC_OP_TYPE='N').

IRREG_t An indicator variable equal to 1 if during the period (1) 2000-2006 the company experiences a restatement that meets the definition of an irregularity per Hennes et al.

(2008) (The restatement classification scheme is available at <http://sbaleone.bus.miami.edu/>).

MOD_OP _t	An indicator variable equal to 1 if the audit report is adverse, qualified, or unqualified with explanatory language and zero otherwise (Compustat, AUOP).
%ΔASSET _t	Annual percentage change in assets (Compustat, AT)
%ΔINVREC _t	Annual percentage change in the sum of receivables and inventory (Compustat, RECT+INVT).
%ΔEARN _t	Annual percentage change in earnings (Compustat, IB).
%ΔFGN _t	Annual percentage change in foreign income (Compustat, PIFO).
%ΔMTB _t	Annual percentage change in the market-to-book ratio (Compustat, PRCC_F*CSHO/CE).
%ΔLEV _t	Annual percentage change in total dollar amount of liabilities (Compustat, LT).
%ΔSPEC _t	Annual percentage change in special items (Compustat, SPI)
%ΔSEGM _t	Annual percentage change in the number of reported segments (Compustat Segment Database, BUSSEG).

References

- Ashbaugh-Skaife, H., R. LaFond, and B. Mayhew. 2003. Do non-audit services compromise auditor independence: Further Evidence. *The Accounting Review*, 78 (3): 611-639.
- Botosan, C. 1997. Disclosure Level and the Cost of Equity Capital. *The Accounting Review*, 72, (3): 323-349.
- Botosan, C. and M. Plumlee. 2002. A Re-Examination of Disclosure Level and the Expected Cost of Equity Capital. *Journal of Accounting Research*, 40(1): 21-40.
- Brown, S., S. Hillegeist, and K. Lo. 2005. Management forecasts and litigation risk. Working paper. University of Maryland.
- Chaney, P. and K. Philipich. 2002. Shredded reputation: the cost of audit failure. *Journal of Accounting Research*, 40(4): 1221-1245.
- Chen, J., H. Hong, J. Stein (2001). Forecasting crashes: trading volume, past returns, and conditional skewness in stock prices. *Journal of Financial Economics*, 61, 345-381
- Craswell, A. T., Francis, J. R., & Taylor, S. L. 1995. Auditor brand name reputations and industry specialization. *Journal of Accounting and Economics* 20(3): 297-322.
- Diamond, D. and R. Verrecchia. 1991. Disclosure, liquidity and cost of capital. *Journal of Finance*, 46(4): 1325-1359.
- Ferguson, A., C. Lennox, and S. Taylor. 2007. A dynamic model of audit fees changes. Working Paper. University of New South Wales.
- Frankel, R. M. McNichols, and P. Wilson. 1995. Discretionary disclosure and external financing. *The Accounting Review*, 70(1): 135-150.
- Ghosh, A. and R. Pawlewitz. 2009. The Impact of Regulation on Auditor Fees: Evidence from the Sarbanes-Oxley Act. *Auditing: Journal of Practice and Theory*, 28(2): 171-197.
- Gul, F., B. Srinidhi, and T. Shieh. 2002. The Asian Financial Crisis, Accounting Conservatism and Audit Fees: Evidence from Hong Kong. Working Paper. City University of Hong Kong.
- Hackenbrack, K. and C. Hogan. 2005. Client retention and engagement-level pricing. *Auditing: Journal of Practice and Theory*, 24(1): 7-20.
- Healy, P. and C. Palepu. 2001. Information asymmetry, corporate disclosure and capital markets. *Journal of Accounting and Economics*, 31: 405-440.

- Heflin, F., K. Shaw and J. Wild. 2005. Disclosure quality and market liquidity: the effect of depth quotes and order sizes. *Contemporary Accounting Research*, 22(4): 829-865.
- Hennes, K., A. Leone, and B. Miller. 2008. The Importance of Distinguishing Errors from Irregularities in Restatement Research: The Case of Restatements and CEO/CFO Turnover. *The Accounting Review*, 83(6): 1487-1519.
- Hribar, P., T. Kravet, and R. Wilson. 2010. A new measure of accounting quality. Working Paper. University of Iowa.
- Hutton, A., Marcus, A.J., Tehranian, H. 2009. Opaque financial reports, R^2 , and crash risk. *Journal of Financial Economics* 94: 67-86.
- Jiang, J. 2008. Beating earnings benchmarks and the cost of debt. *The Accounting Review* 83 (2): 377-416.
- Jin, L. and Myers, S.C. 2006. R^2 around the world: new theory and new tests. *Journal of Financial Economics* 79: 257-292.
- Johnstone, K, Bedard, J. 2001. Engagement planning, bid pricing and client response: The effects of risk and market context in initial attest engagements *The Accounting Review* 76: 199-220.
- Khan, M. and R. Watts. 2009. Estimation and empirical properties of a firm-year measure of accounting conservatism. *Journal of Accounting and Economics*, 48(2): 132-150.
- Kothari, S.P, S. Shu, and P. Wysocki. 2009. Do managers withhold bad news? *Journal of Accounting Research*, 47(1): 241-276.
- Kim, O. and R. Verrecchia. 1994. Market liquidity and volume around earnings announcements. *Journal of Accounting and Economics*, 17: 41-67.
- Kim, J., Y. Li, and L. Zhang. 2010. Corporate tax avoidance and stock price crash risk: firm-level analysis. *Journal of Financial Economics* forthcoming.
- Kim, J. and L. Zhang. 2010. Does accounting conservatism reduce stock price crash risk? Firm level evidence. Working Paper. City University of Hong Kong.
- Kothari, S. P., A. Leone, and C. Wasley. 2005. Performance-matched discretionary accruals. *Journal of Accounting and Economics*, 39(1): 163-197.
- Krishnan, G. 2005. Did Houston clients of Arthur Andersen recognize publicly available bad news in a timely fashion? *Contemporary Accounting Research*, 22(1): 165-204.
- Krisnamurthy, S. J. Zhou, and H. Zhou. 2006. Auditor reputation, auditor independence, and the

- stock-market impact of Andersen's indictment on its client firms. *Contemporary Accounting Research*, 23(2): 265-490.
- Krishnan, G., P. Sengupta, and M. Pevzner. 2009. How do auditors view managers' disclosure strategy? A case of management earnings forecast. Working Paper. George Mason University.
- Lambert, R., C. Leuz, and R. Verrecchia. 2007. Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45(2): 385-420.
- Lang, M. and R. Lundholm. 1996. Corporate disclosure policies and analyst behavior. *The Accounting Review*, 71(4): 467-492.
- Lang, M. and R. Lundholm. 2000. Voluntary disclosure and equity offerings: reducing information asymmetry or hyping the stock? *Contemporary Accounting Research*, 17(4): 623-662
- Larcker, D.F. & S.A. Richardson. 2004. Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research*, 42(3): 625-658.
- Lucas, D. and J. Lonski. 1992. Changes in corporate credit quality 1970-1990. *Journal of Fixed Income*, 1(4): 7-14.
- Markevich, A. and R. Rosner. 2010. Original and revised auditor fee data. Working Paper. Suffolk University.
- O'Keefe, T., D. Simunic and M. Stein. 1994. The production of audit services: evidence from a major public accounting firm. *Journal of Accounting Research*, 32(2), 241-261.
- Palmrose, Z., 1999. *Empirical Research on Auditor Litigation: Considerations and Data*. Studies in Accounting Research #33, American Accounting Association: Sarasota, FL.
- Picconi, M. and J.K. Reynolds. 2009. Audit fee theory and estimation: A consideration of the log-log audit fee model. Indiana University working paper.
- Petersen, M.A. 2009. Estimating standard errors in finance panel data sets: comparing approaches. *Review of Financial Studies* 22(1): 435-480.
- Pevzner, M. 2007. Management earnings forecasts, information asymmetry, and liquidity: An empirical investigation. Unpublished working paper. George Mason University.
- Pratt, J., and J. Stice. 1994. The effects of client characteristics on auditor litigation risk judgments, required audit evidence. *The Accounting Review*, 69 (4): 639-656.
- Raghunandan, K., and D. Rama. 2006. SOX section 404 material weakness disclosures and audit fees. *Auditing: Journal of Practice and Theory*, 25(1): 99-114.

- Ritter, Jay R., 2003. Investment banking and securities issuance. *Handbook of the Economics of Finance*, edited by G.M. Constantinides, M. Harris, and R. M. Stulz 255-306. North Holland, England. Elsevier.
- Sengupta, P. 1998. Corporate disclosure quality and the cost of debt. *The Accounting Review*, 73(4): 459-474.
- Simunic, D. and M. Stein. 1996. The impact of litigation risk on audit pricing: A review of the economics and the evidence. *Auditing: Journal of Practice and Theory*, 15: 119-134
- Simunic, D. 1980. The pricing of audit services: theory and evidence, *Journal of Accounting Research*, 18: 161-90.
- Welker, M. 1995. Disclosure Policy, information asymmetry and liquidity in equity markets. *Contemporary Accounting Research*, Spring, 11(2): 805-827.
- Whisenant S., S. Sankaraguruswamy, and K. Raghunandan. 2003. Evidence on the joint determination of audit and non-audit fees. *Journal of Accounting Research* 41 (4): 721–744.

Table 1
Sample Selection

The sample period spans 2001-2009 and is based on all available data from Compustat, Audit Analytics, CRSP, and Stanford Class-Action Securities Litigation Database. All continuous variables are winsorized at 1st and 99th percentiles.

Sample Selection Process	
(1) Company years covered by Audit Analytics Revised Audit Fee file with available industry-adjusted audit fees changes and a matching CIK number in Compustat	51,738
(2) CRSP Coverage and availability of CRASH	40,601
(3) Availability of Compustat controls	33,658
(4) First year Engagements	32,367

Table 2
Descriptive Statistics

Table reports the descriptive statistics for 32,367 firm year observations from 2001-2009. The sample selection process is described in Table 1. All variables are defined in the Appendix B.

VARIABLE	N	MEAN	STD	Q1	MEDIAN	Q3
%ΔFees_t	32,367	0.3	0.66	-0.04	0.1	0.37
%ΔFees_Ind_t	32,367	0.16	0.61	-0.13	0	0.22
CRASH_t	32,367	0.2	-	-	-	-
NSKEW_t	32,018	-0.06	0.82	-0.52	-0.09	0.34
DUVOL_t	32,016	-0.06	0.37	-0.3	-0.07	0.17
DOWNGRADE_t	9,501	0.16	-	-	-	-
LAWSUIT_t	32,367	0.02	-	-	-	-
ACQ_t	32,367	0.09	-	-	-	-
ISSUE_t	32,367	0.04	-	-	-	-
WEAK_t	32,367	0.04	-	-	-	-
IRREG_t	32,367	0.01	-	-	-	-
MOD_OP_t	32,367	0.46	-	-	-	-
%ΔASSET_t	32,367	0.11	0.37	-0.05	0.05	0.17
%ΔINVREC_t	32,367	0.15	0.62	-0.09	0.05	0.23
%ΔEARN_t	32,367	-0.22	3.87	-0.7	-0.04	0.4
%ΔFGN_t	32,367	-0.02	1.09	0	0	0
%ΔMTB_t	32,367	0.12	0.98	-0.3	-0.03	0.28
%ΔLEV_t	32,367	0.18	0.62	-0.08	0.04	0.22
%ΔSPEC_t	32,367	0.3	7.15	-1	-0.52	0
%ΔSEGM_t	32,367	-0.12	0.28	-0.33	0	0

Table 3
Additional Descriptive Statistics for CRASH and Percentage of Audit Fees

Table reports the descriptive statistics for 32,367 firm year observations from 2001-2009. Panel A (B) reports the frequency of sample observations with at least one CRASH on an annual (industry) basis. Panel C summarizes the annual mean and median raw and industry adjusted percentage change in audit fees. The sample selection process is described in Table 1. All variables are defined in Appendix B.

Panel A: Annual Distribution of Companies with At Least One CRASH vs. Annual Distribution of All Observations in the Sample

Year	Obs. with at Least One CRASH	%	All Observations	%
2001	502	8%	2,581	8%
2002	681	10%	3,075	10%
2003	747	11%	3,849	12%
2004	798	12%	3,883	12%
2005	809	12%	3,820	12%
2006	793	12%	3,848	12%
2007	765	12%	3,769	12%
2008	829	13%	3,908	12%
2009	612	9%	3,634	11%
Total	6,536	100%	32,367	100%

Table 3, continued
Additional Descriptive Statistics for CRASH and Percentage of Audit Fees

Panel B: Number and percentage of observations with at least one CRASH by industry

2 digit SIC code	Industry	Obs. With at Least One CRASH	%	All Obs.	%
1-9	Agricultural/Fishing, Hunting and Trapping	8	0.12%	101	0.31%
10	Metal Mining	84	1.29%	351	1.08%
12	Coal Mining	8	0.12%	75	0.23%
13	Oil and Gas Extraction	159	2.43%	1,078	3.33%
14	Non Metallic Minerals, Except Fuels	10	0.15%	78	0.24%
15	General Building Contractors	25	0.38%	143	0.44%
16	Heavy Construction, Ex. Building	23	0.35%	107	0.33%
17	Special Trade Contractors	17	0.26%	75	0.23%
20	Food and Kindred Products	70	1.07%	652	2.01%
21	Tobacco Products	5	0.08%	48	0.15%
22	Textile Mill Products	20	0.31%	82	0.25%
23	Apparel and Other Textile Products	56	0.86%	267	0.82%
24	Lumber and Wood Products	19	0.29%	140	0.43%
25	Furniture and Fixtures	20	0.31%	183	0.57%
26	Paper and Allied Products	32	0.49%	275	0.85%
27	Printing and Publishing	46	0.70%	342	1.06%
28	Chemicals and Allied Products	847	12.96%	2,874	8.88%
29	Petroleum and Coal Products	10	0.15%	229	0.71%
30	Rubber & Mis. Plastics Products	56	0.86%	291	0.90%
31	Leather and Leather Products	14	0.21%	124	0.38%
32	Stone, Clay and Glass Products	29	0.44%	156	0.48%
33	Primary Metal Industries	50	0.76%	402	1.24%
34	Fabricated Metal Products	54	0.83%	358	1.11%
35	Industrial Machinery & Equipment	386	5.91%	1,816	5.61%
36	Electronic & Other Electric Equipment	757	11.58%	2,743	8.47%

Table 3, continued
Additional Descriptive Statistics for CRASH and Percentage of Audit Fees

Panel B: Number and percentage of observations with at least one CRASH by industry

2 digit SIC code	Industry	Obs. With at Least One CRASH	%	All Obs.	%
37	Transportation Equipment	78	1.19%	624	1.93%
38	Instruments Related Products	555	8.49%	2,106	6.51%
39	Misc. Manufacturing Industries	60	0.92%	243	0.75%
40	Railroad Transportation	2	0.03%	89	0.27%
41	Local Interurban Passenger Transit	3	0.05%	13	0.04%
42	Trucking and Warehousing	25	0.38%	214	0.66%
44	Water Transportation	35	0.54%	232	0.72%
45	Transportation by Air	53	0.81%	224	0.69%
46	Pipelines, Except Natural Gas	1	0.02%	42	0.13%
47	Transportation Services	16	0.24%	108	0.33%
48	Communications	211	3.23%	1,142	3.53%
49	Electric Gas & Sanitary Services	37	0.57%	1,046	3.23%
50	Wholesale Trade-durable Goods	135	2.07%	680	2.10%
51	Wholesale Trade-Nondurable Goods	57	0.87%	345	1.07%
52	Building Materials & Garden Supplies	3	0.05%	47	0.15%
53	General Merchandise Stores	17	0.26%	169	0.52%
54	Food Stores	11	0.17%	123	0.38%
55	Automotive Dealers & Service Stations	21	0.32%	139	0.43%
56	Apparel and Accessory Stores	55	0.84%	299	0.92%
57	Furniture and Home Furnishings Stores	27	0.41%	115	0.36%
58	Eating and Drinking Places	51	0.78%	434	1.34%
59	Miscellaneous Retail	124	1.90%	539	1.67%

Table 3, continued
Additional Descriptive Statistics for CRASH and Percentage of Audit Fees

Panel B: Number and percentage of observations with at least one CRASH by industry

2 digit SIC code	Industry	Obs. With at Least One CRASH	%	All Obs.	%
60	Depository Institutions	160	2.45%	776	2.40%
61	Nondepository Institutions	83	1.27%	341	1.05%
62	Security and Commodity Brokers	55	0.84%	464	1.43%
63	Insurance Carriers	104	1.59%	1,074	3.32%
64	Insurance Agents, Brokers & Service	29	0.44%	162	0.50%
65	Real Estate	37	0.57%	235	0.73%
67	Holding & Other Investment Offices	113	1.73%	1,423	4.40%
70	Hotels and Other Lodging Places	8	0.12%	114	0.35%
72	Personal Services	15	0.23%	93	0.29%
73	Business Services	1,135	17.37%	3,816	11.79%
75	Auto Repair, Services, and Parking	12	0.18%	59	0.18%
76	Miscellaneous Repair Services	1	0.02%	8	0.02%
78	Motion Pictures	26	0.40%	101	0.31%
79	Amusement & Recreation Services	56	0.86%	291	0.90%
80	Health Services	115	1.76%	542	1.67%
81	Legal Services	0	0.00%	6	0.02%
82	Educational Services	24	0.37%	105	0.32%
83	Social Services	12	0.18%	61	0.19%
87	Engineering & Management Services	165	2.52%	656	2.03%
99	Nonclassifiable	4	0.06%	77	0.24%
Total		6,536	100.00%	32,367	100.00%

Table 3, continued
Additional Descriptive Statistics for CRASH and Percentage of Audit Fees

Panel C: Annual Distribution of Unadjusted and Adjusted percentage change in Audit Fees.

Year	Number of Observations	% Δ Fees _t		% Δ Fees_Ind _t	
		Mean	Median	Mean	Median
2001	2,581	0.19	0.09	0.1	0.01
2002	3,075	0.34	0.19	0.16	0.02
2003	3,849	0.33	0.18	0.17	0.02
2004	3,883	0.80	0.47	0.39	0.07
2005	3,820	0.48	0.15	0.31	0.02
2006	3,848	0.24	0.09	0.13	-0.01
2007	3,769	0.17	0.05	0.1	-0.01
2008	3,908	0.08	0.03	0.04	0
2009	3,634	-0.01	-0.03	0.02	0
Total	32,367	0.3	0.1	0.16	0

Table 4
Pearson Correlations

The Table presents the correlation Pearson correlations between the variables examined in our analyses. Correlations of 10% and higher and significant at the 0.05 level are bolded. Table reports the descriptive statistics for 32,367 firm year observations from 2001-2009. The sample selection process is described in Table 1. All variables are defined in Appendix B.

		1	2	3	4	5	6	7	8	9	10	11
1	% Δ Fees _t	-										
2	% Δ Fees_Ind _t	0.97	-									
3	CRASH _t	0.03	0.02	-								
4	NSKEW _t	0.04	0.04	0.24	-							
5	DUVOL _t	0.04	0.04	0.25	0.96	-						
6	DOWNGRADE _t	0	0.02	0.23	0.02	0.01	-					
7	LAWSUIT _t	0.04	0.04	0.11	0.09	0.11	0.05	-				
8	ACQ _t	0.13	0.14	-0.01	0.02	0.02	-0.02	0.02	-			
9	ISSUE _t	0.05	0.03	-0.05	0.03	0.03	-0.02	0.04	0.02	-		
10	WEAK _t	0.17	0.17	0.04	0.04	0.04	0.04	0.05	0.01	0	-	
11	IRREG _t	0.08	0.08	0.03	0.04	0.04	0.07	0.09	-0.01	0	0.11	-
12	MOD_OP _t	-0.04	-0.02	0.02	0.02	0.02	0.03	0.01	0.04	-0.03	0.07	0.03
13	% Δ ASSET _t	0.21	0.2	-0.06	-0.02	-0.02	-0.09	-0.02	0.28	0.06	0.01	-0.02
14	% Δ INVREC _t	0.14	0.13	-0.02	-0.02	-0.02	-0.07	-0.01	0.15	0.03	0.01	-0.02
15	% Δ EARN _t	0.03	0.02	-0.02	-0.2	-0.02	-0.06	-0.02	0.01	0	-0.01	0
16	% Δ FGN _t	0.02	0.01	-0.02	0	0	-0.05	-0.01	0	0	-0.01	0
17	% Δ MTB _t	-0.02	-0.02	0.01	-0.16	-0.14	0.02	-0.02	-0.03	-0.03	-0.03	0
18	% Δ LEV _t	0.18	0.18	0.01	-0.01	-0.01	0.01	0	0.27	0.02	0.02	-0.01
19	% Δ SPEC _t	0.01	0.01	0.04	0.02	0.02	0.05	0.02	0.03	0	0.01	0.01
20	% Δ SEGM _t	0.1	0.06	-0.03	0.01	0.01	-0.05	0.01	0.05	0.03	0	0.01

		12	13	14	15	16	17	18	19
12	MOD_OP _t	-							
13	% Δ ASSET _t	-0.05	-						
14	% Δ INVREC _t	-0.03	0.46	-					
15	% Δ EARN _t	0.01	0.05	0.03	-				
16	% Δ FGN _t	0	0.04	0.02	0.05	-			
17	% Δ MTB _t	-0.01	-0.06	0	0	0	-		
18	% Δ LEV _t	-0.02	0.64	0.41	0.03	0.02	0.01	-	
19	% Δ SPEC _t	0.02	-0.03	-0.02	-0.02	-0.04	-0.01	0.01	-
20	% Δ SEGM _t	-0.03	0.09	0.06	0.02	0.03	-0.01	0.06	-0.02

Table 5
The Association of Audit Fees Changes and Stock Price Crash Risk

The models presented report t-statistic estimated using standard errors cluster-adjusted by company and years per Petersen (2009). All continuous variables are winsorized at 1st and 99th percentiles *, **, *** denote two-tail significance levels of 0.1, 0.05, and 0.01, respectively. All variables are defined in Appendix B.

Panel A: All years, including SOX implementation

Variables	Model 1		Model 2		Model 3	
	Coefficient Estimate	t-stat	Coefficient Estimate	t-stat	Coefficient Estimate	t-stat
<i>CRASH_t</i>	0.05***	5.51				
<i>NSKEW_t</i>			0.03***	5.94		
<i>DUVOL_t</i>					0.06***	6.6
<i>ACQ_t</i>	0.16***	12.04	0.16***	11.78	0.16***	11.8
<i>ISSUE_t</i>	0.03	1.37	0.01	0.79	0.01	0.79
<i>WEAK_t</i>	0.47***	17.07	0.46***	17.02	0.46***	17.01
<i>IRREG_t</i>	0.40***	5.14	0.39***	5.09	0.39***	5.1
<i>MOD_OP_t</i>	0	-0.48	-0.01	-0.88	-0.01	-0.91
<i>%ΔASSET_t</i>	0.19***	11.74	0.19***	11.6	0.19***	11.56
<i>%ΔINVREC_t</i>	0.03***	3.82	0.03***	4.12	0.03***	4.14
<i>%ΔEARN_t</i>	0	1.31	0	1.38	0	1.42
<i>%ΔFGN_t</i>	0	0.81	0	0.48	0	0.47
<i>%ΔMTB_t</i>	-0.01***	-3.8	-0.01***	-2.89	-0.01***	-2.8
<i>%ΔLEV_t</i>	0.06***	6.61	0.06***	6.81	0.06***	6.82
<i>%ΔSPEC_t</i>	0.00**	2.62	0.00**	2.5	0.00**	2.48
<i>%ΔSEGM_t</i>	0.02*	1.68	0.02	1.34	0.02	1.37
INTERCEPT	0.06***	6.12	0.07***	7.64	0.07***	7.85
N	32,367		32,018		32,016	
R-sq	0.11		0.11		0.11	

Table 5, continued
The Association of Audit Fees Changes and Stock Price Crash Risk

The models presented report t-statistic estimated using standard errors cluster-adjusted by company and years per Petersen (2009). All continuous variables are winsorized at 1st and 99th percentiles *, **, *** denote two-tail significance levels of 0.1, 0.05, and 0.01, respectively. All variables are defined in Appendix B.

Panel B: Exclude SOX Implementation Years

Variables	Model 1		Model 2		Model 3	
	Coefficient Estimate	t-stat	Coefficient Estimate	t-stat	Coefficient Estimate	t-stat
<i>CRASH_t</i>	0.06***	6.55				
<i>NSKEW_t</i>			0.02***	4.00		
<i>DUVOL_t</i>					0.04***	4.27
<i>ACQ_t</i>	0.11***	7.51	0.11***	7.33	0.11***	7.36
<i>ISSUE_t</i>	0.04	2.44**	0.04	2.01**	0.04	2.05**
<i>WEAK_t</i>	0.20***	6.1	0.21***	6.39	0.21***	6.39
<i>IRREG_t</i>	0.64***	3.81	0.64***	3.79	0.64***	3.8
<i>MOD_OP_t</i>	0	0.2	0	0.12	0	0.08
<i>%ΔASSET_t</i>	0.19***	9.6	0.17***	9.01	0.18***	8.94
<i>%ΔINVREC_t</i>	0.04***	4.05	0.04***	4.34	0.04***	4.35
<i>%ΔEARN_t</i>	0	0.2	0	0.15	0	0.17
<i>%ΔFGN_t</i>	0	0.14	0	-0.08	0	-0.09
<i>%ΔMTB_t</i>	-0.01*	-1.71	-0.01*	-1.74	-0.01*	-1.72
<i>%ΔLEV_t</i>	0.05***	5.02	0.06***	5.36	0.06***	5.41
<i>%ΔSPEC_t</i>	0.00***	3.18	0.00***	3.35	0.00***	3.34
<i>%ΔSEGM_t</i>	0	-0.16	-0.01	-0.51	-0.01	-0.48
INTERCEPT	0.05***	5.92	0.07***	7.72	0.07***	7.84
N	16,967		16,848		16,846	
R-sq	0.09		0.09		0.09	

Table 6**The Association of Audit Fees Changes and Alternative Test Variables**

All models include cluster-adjusted company-level standard errors year fixed effects per Petersen (2009). All continuous variables are winsorized at 1st and 99th percentiles. *, **, *** denote two-tail significance levels of 0.1, 0.05, and 0.01, respectively. The sample selection process is described in Table 1. All variables are defined in Appendix B.

Panel A: All years, including SOX implementation

Variables	Model 1		Model 2	
	Coefficient Estimate	t-statistic	Coefficient Estimate	t-statistic
<i>DOWNGRADE_t</i>	0.04***	2.88		
<i>LAWSUIT_t</i>			0.11***	3.94
<i>ACQ_t</i>	0.08***	3.73	0.16***	11.96
<i>ISSUE_t</i>	0.01	0.39	0.02	0.92
<i>WEAK_t</i>	0.30***	6.84	0.47***	17.12
<i>IRREG_t</i>	0.29***	3.06	0.38***	4.94
<i>MOD_OP_t</i>	0.01	1.18	0	-0.54
<i>%ΔASSET_t</i>	0.34***	6.6	0.19***	11.52
<i>%ΔINVREC_t</i>	0.06***	3.37	0.03***	3.93
<i>%ΔEARN_t</i>	0	-0.43	0	1.28
<i>%ΔFGN_t</i>	-0.01	-1.46	0	0.74
<i>%ΔMTB_t</i>	0.01	1.26	-0.01***	-3.67
<i>%ΔLEV_t</i>	0.06	1.55	0.06***	6.87
<i>%ΔSPEC_t</i>	0.00**	2.03	0.00**	2.69
<i>%ΔSEGM_t</i>	0.02	0.97	0.02	1.47
INTERCEPT	0.05**	3.08	0.06***	6.62
N	9,501		32,367	
R-sq	0.12		0.11	

Table 6 continued**The Association of Audit Fees Changes and Alternative Test Variables**

All models include cluster-adjusted company-level standard errors year fixed effects per Petersen (2009). All continuous variables are winsorized at 1st and 99th percentiles. *, **, *** denote two-tail significance levels of 0.1, 0.05, and 0.01, respectively. The sample selection process is described in Table 1. All variables are defined in Appendix B.

Panel B: Excluding SOX implementation Years

Variables	Model 1		Model 2	
	Coefficient Estimate	t-statistic	Coefficient Estimate	t-statistic
<i>DOWNGRADE_t</i>	0.05***	3.28		
<i>LAWSUIT_t</i>			0.16***	4.77
<i>ACQ_t</i>	0.07***	2.68	0.11***	7.36
<i>ISSUE_t</i>	0.04**	2.02	0.03*	1.9
<i>WEAK_t</i>	0.15**	2.45	0.20***	6.27
<i>IRREG_t</i>	0.23	1.05	0.61***	3.67
<i>MOD_OP_t</i>	0.02**	1.96	0	0.23
<i>%ΔASSET_t</i>	0.33***	5.72	0.17***	9.14
<i>%ΔINVREC_t</i>	0.04*	1.83	0.04***	4.16
<i>%ΔEARN_t</i>	0	-1.49	0	0.12
<i>%ΔFGN_t</i>	0	-0.99	0	0.23
<i>%ΔMTB_t</i>	0.01	0.72	-0.01*	-1.85
<i>%ΔLEV_t</i>	0.04	0.86	0.06***	5.45
<i>%ΔSPEC_t</i>	0.00*	1.85	0.00***	3.26
<i>%ΔSEGM_t</i>	0.02	0.82	-0.01	-0.43
INTERCEPT	0.04***	2.49	0.06***	6.53
N	4,854		16,967	
R-sq	0.12		0.09	

Figure 1: Timeline of setting Audit Fees

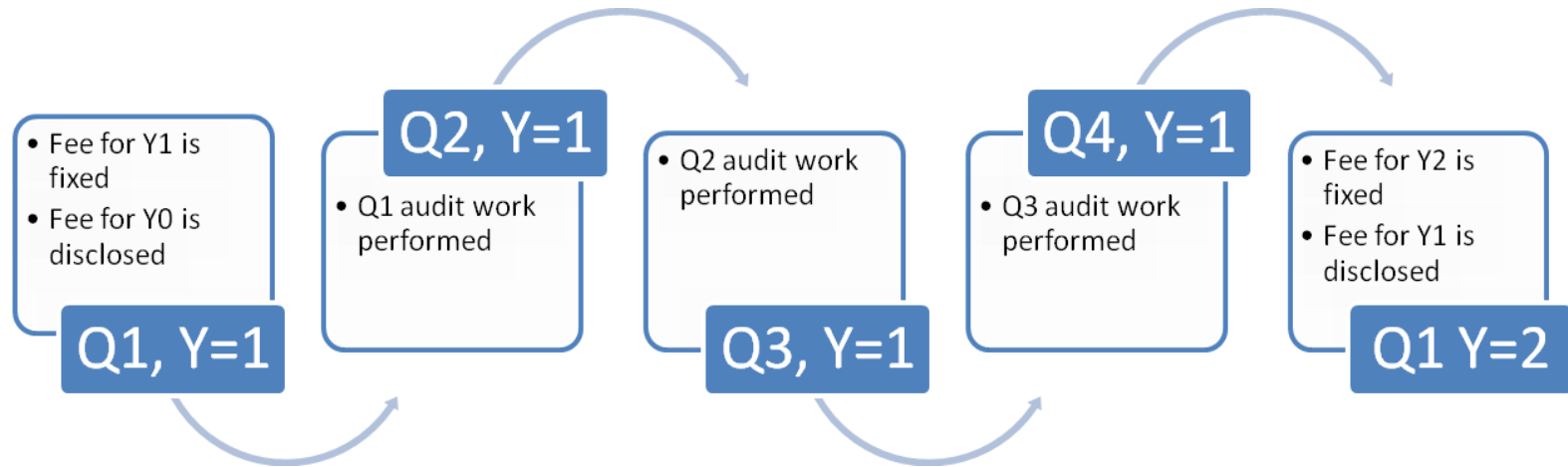


Figure 2: Average Residual Weekly Stock Returns Relative to the Week of a CRASH event

A CRASH is a significant negative price decline that is more than 3.2 standard deviations from the firm's annual mean price reaction. CRASH is a proxy for the accumulated negative firm-specific information that suddenly becomes publicly available.

