

YOU GET WHAT YOU PAY FOR:
AN EXAMINATION OF AUDIT QUALITY WHEN AUDIT FEE IS LOW

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Abstract

We contribute to the long-standing debate among various capital market participants on whether auditing industry practices low-balling (charging low fees) which in turn compromises auditor independence and audit quality. Using a large sample representing years 2000-2006, we first estimate unexpected (abnormal) audit fee as residuals from a regression of audit fee on several determinants of audit fee. Next, we run a regression of going concern opinions and other audit quality measures on unexpected audit fee and control variables. Our results suggest that audit quality is lower when unexpected audit fee is negative, i.e., actual audit fee is less than the expected fee. Further, there is no evidence that audit quality is impaired when unexpected audit fee is positive. These findings are consistent with the notion that when auditors earn excess fees they are mindful of the perceived threat to their independence in appearance and take steps to preserve their reputation capital.

Keywords: Auditor independence, audit quality, earnings management, audit fees, going concern.

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I. INTRODUCTION

The relation between fees paid to the auditor and audit quality has received attention both in popular press as well as in academic research (Frankel et al. 2002; Ashbaugh et al. 2003; Schroeder 2002; and Schneider et al. 2006). Much of the extant audit research focuses on the impact of excess fees paid to the auditors on audit quality and by and large, there is no consistent evidence that excess fees impair audit quality. There is some anecdotal evidence that audit quality is impaired when audit fee is low, i.e., below the level of normal (expected) fee based on observable client characteristics. For example, Kaplan (2005) reports that Arthur Andersen considered WorldCom to be its “Crown Jewel” and viewed its relationship with WorldCom as long term and wanted to be considered as a committed member of WorldCom’s team. Andersen underbilled WorldCom for audit work and justified the lower charges as a continuing investment in its WorldCom relationship. Lynn Turner, former Chief Accountant of the SEC expressed concern that relative to the size of the audit client audit fees are low in some cases suggesting lower audit quality (Glass Lewis & Co 2005). For example, among Fortune 500 firms that had the highest revenues for 2003, six out of the top ten were missing from the list of largest audit fees, suggesting that audit fees as a percent of total revenue is quite low for these firms. Another example comes from Fannie Mae, a company that figured prominently in the sub-prime mortgage crisis and was accused by its chief regulator of improper accounting. Fannie, with assets in excess of \$1 trillion paid \$2.7 million for its 2003 audit.¹ Randi Schultz, an analyst at Glass

¹ In contrast, Freddie Mac, with assets of \$803.4 billion paid \$46.1 million for its 2003 audit. Similarly, Citigroup, which had \$1.3 trillion paid \$39.8 million for its 2003 audit.

Lewis & Co states, “I think it’s crazy that anybody could expect Fannie to get a quality audit for that amount of money.” (Weil 2004). He posits that when the auditor is underpaid, the auditor would resort to taking a lot of shortcuts and could make mistakes or miss important steps in the audit process. Finally, Daniel Goelzer, a member of the PCAOB expressed concern that the pressure to keep audit fees low had led auditors to place more emphasis on risk-based auditing, which had contributed to the erosion of trust in auditing (Goelzer 2003). Are Fannie Mae and WorldCom anomalies or is there a systematic relationship between audit quality and under payment of audit fee? The objective of this study is to provide empirical evidence on whether audit quality is impaired when audit fee is below the level of expected fee.

There are reasons to believe that low-balling might have an adverse impact on audit quality and consequently on financial reporting quality. First, audit activity is organized in the private sector and auditors operate to make a profit from each engagement they undertake. Thus, when audit fee is low an auditor might expend lower effort on the audit as a natural response to low-balling. Assuming that a certain minimum effort is required to do a quality audit, lower audit effort can be expected to negatively impact audit quality. Second, as in WorldCom the auditor might be willing to keep a client that pays below normal audit fee to sell high-margin non-audit services (i.e., tax services) or/and to attract other clients in the same or other industry. This bonds the auditor with the client and therefore, could negatively impact audit quality.

Using a sample of 23,372 firm-year observations representing years 2000-2006, we first estimate unexpected (abnormal) audit fee as residuals from a regression of audit fee on

auditor type (Big 5 vs. non-Big 5 auditor), client size, merger and financing activities, market-to-book ratio, leverage, return on assets, accounts receivable and inventory as proportion of total assets, loss, special items, and year and industry effects. The adjusted R^2 for our audit fee model is 73.06%. Next, we run a regression of audit quality measures on unexpected audit fee and control variables. Our primary measure of audit quality is going concern opinions issued by the auditor (DeFond et al. 2002 and Lim and Tan 2008). We use four additional measures of audit quality that are commonly used in extant research – abnormal discretionary accruals estimated from the modified Jones model after controlling for prior or current year's operating performance (Kothari et al. 2005), accrual estimation errors (Dechow and Dichev 2002 and McNichols 2002), beating benchmark earnings targets (Phillips et al. 2003), and auditor-initiated restatements.

We estimate the models for the pooled sample as well as separately for firm-year observations with positive abnormal audit fee, i.e., actual audit fee is more than the expected fee and negative abnormal audit fee (actual audit fee less than the expected fee). When we estimate a probit model of going concern opinions for a pooled sample of financially distressed observations we find that abnormal audit fee is positively associated (significant at the 0.01 level) with the propensity to issue going concern opinions. However, this result goes away for the positive abnormal audit fee partition. For the negative abnormal audit fee partition, the coefficient on the absolute value of abnormal audit fee is -0.560 and significant at the 0.01 level (two-tailed test), indicating that the likelihood of issuing a going concern opinion decreases as the abnormal audit fee becomes more negative.

For abnormal accruals, our second measure of audit quality, once again, we find that abnormal audit fee is not significant for the positive abnormal audit fee partition. For the negative abnormal audit fee partition, the coefficient on the absolute value of abnormal audit fee is positive and significant at the 0.05 level, indicating that as abnormal audit fee becomes more negative, abnormal accruals are higher. Similarly, we find that as abnormal audit fee becomes more negative, accrual quality deteriorates (significant at the 0.01 level) and this finding holds only for the negative abnormal audit fee partition.

With regard to beating of earnings benchmarks, we examine scaled earnings (earnings scaled by beginning market value of equity in the range of 0 to 0.02) and scaled earnings changes (change in earnings scaled by beginning market value of equity in the range of 0 to 0.01). We find a positive (significant at the 0.01 level) association between absolute abnormal audit fee and the two benchmarks. This is consistent with the notion that as abnormal audit fee becomes more negative, there is a greater tendency to engage in benchmark beating behavior. But again, this finding holds only for the negative abnormal audit fee partition.

Finally, we find that auditors are unlikely to initiate a restatement of financial statements when abnormal audit fee is negative (significant at the 0.01 level). Overall, results from various proxies of audit quality *consistently* suggest that audit quality is lower for client-observations where abnormal audit fee is negative. Further, there is no evidence that audit quality is impaired for positive abnormal audit fee observations. In summary, our findings are consistent with the popular maxim “you get what you pay for” when it comes to the quality of audits. We believe that the findings of our study are potentially informative to

a variety of participants, such as regulators who are concerned about auditor independence, auditors, managers, members of the audit committee, investors, and others.

The remainder of this paper is organized as follows. Section II summarizes the prior literature on the relation between low-balling and auditor independence and audit quality. Section III explains our proxies for audit quality and the empirical models. Section IV describes the sample selection procedure. Section V presents the findings, and Section VI concludes.

II. PRIOR RESEARCH

Since SEC Chairman Arthur Levitt's famous "Numbers Game" speech investor advocates have relentlessly argued for the high quality and integrity of financial reporting as "lifeblood" of capital markets (Levitt 1998 and 1999). Audit quality, a key component of quality and integrity in financial reporting, works to enhance the sanctity and purity of financial information publicly reported by the managers (Levitt 2000). Although, auditors have a franchise that is guaranteed by law, they operate as private profit-making entities and are subject to price competition just like any other business.

The fact that auditing industry engages in price competition through "low-balling" has been documented in popular business press (Andreder 1979; Berstein 1978; Berton 1985; and Weil 2004), many blue ribbon commission reports (AICPA 1978) and academic research (Simunic 1980; Francis 1984; and Palmrose 1986). Law makers, regulators (U.S. Senate Report on the Accounting establishment 1977, Securities Act Release No. 33-5869 1977) and others have consistently claimed that "low-balling" adversely impacts audit quality through impaired auditor independence. In 1978, the Commission on Auditors'

Responsibilities (AICPA 1978), also known as the Cohen Commission, noted that “public accounting firms appear to be engaged in intensive price competition that often takes the form of pricing practices that could reduce the quality of audits” (1978, p. 121). The Commission further noted that “accepting an audit engagement with the expectation of offsetting early losses or lower revenues with fees to be charged in future audits creates the same threat to independence [as created by unpaid audit fees from the past year]” (1978, p. 121). Similarly, in the O’Malley Panel’s Report on Audit Effectiveness, issued in late 2000, again echoed these concerns by concluding that some of the largest public accounting firms “treat the audit negatively—like a commodity” (Public Oversight Board 2000).

Prior academic research has only studied low-balling through either analytical models or in an experimental setting. DeAngelo (1981) examines whether low-balling impairs auditor independence by developing an analytical model of “inter-temporal audit pricing when incumbent auditors possess cost advantages over competitors in future audits of a given client.” She concludes that low-balling does not impair auditor independence; rather it is a competitive response to the expectation of future quasi-rents to incumbent auditors. Magee and Tseng (1990) extend DeAngelo’s model to find client-specific conditions that may impair auditor’s independence in the presence of low-balling. They find that auditor independence is not compromised in the presence of low-balling when there is consensus among auditors on a particular interpretation of the GAAP. Since this provides auditors with bargaining power over clients, the client has nothing to gain.

Schatzberg (1990) examines the low-balling phenomenon in a laboratory experiment setting using a two-period model and finds that no low-balling occurs in markets with zero

transaction costs but in the positive transaction cost markets, the sellers low ball in period 1 to earn sufficient profits in period 2 to recover their aggregated two-period costs. In another experimental methods research study, Dopuch and King (1996) find that low-balling did not materially and adversely affected the service quality of verifiers in their experiment, especially when the subjects interacted in competitive markets. However, low-balling did have material effect on service quality under the “combined conditions of a high degree of low-balling, and no competitive market for the services” (p. 45).

Elitzur and Falk (1996) examine the low-balling phenomenon in an auction-model setting enabling them to examine multi-period aspects of auditor bidding. They find evidence of low-balling in the presence of competition among audit service providers. Although, they find that an auditor’s initial bid may provide some information about auditor’s initial cost function, auditors are capable of under-estimating the expected audit costs which can subsequently reduce the client’s audit quality.

Kanodia and Mukherji (1994) construct “an economic model of audit pricing which shows how equilibrium audit prices would sustain rents and low-balling even when clients have most or all of the bargaining power and are free to change auditors every period” (p. 593). They show that “low-balling and auditor turnover could arise solely due to efficient pricing concerns, even in the absence of such attestation pressures” (p. 607). Coate and Loeb (1997) develop a two-period model of audit pricing where all bidders in the first period have symmetrical information but the incumbent auditor gains an informational advantage in the second period based on the actual costs of doing the audit during the first period. They demonstrate that in spite of suffering a loss a non-incumbent auditor who wins the

engagement through low-balling does not deliver a low quality audit. Lee and Gu (1998) “construct a dynamic multi-agent moral hazard model” to study interactions between low-balling, legal liability and auditor independence. They show that low-balling does not impair auditor independence and conclude that regulators’ negative view of low-balling is unjustified (p. 533).

Our study differs from prior research in a number of ways. First, while prior research primarily used analytical modeling or experiments to study the effect of low-balling on auditor independence, we use archival methodology and use publicly available audit fee data covering seven years for a large sample of firms. It is important to study low-balling using alternate approaches to better understand how low-balling impacts audit quality. Second, while a number of archival studies have examined the relation between audit fee and earnings management and other measures, they have not specifically examined low-balling (see for example, DeFond et al. 2002 and Ashbaugh et al. 2003). We examine the relation between audit quality and abnormal positive audit fee and negative audit fee separately. We do so because results based on the pooling of observations could mask or dilute the underlying relation between abnormal audit fee and auditor independence. Third, we use a more comprehensive set of audit quality measures, including auditor-initiated restatements to study the relation between low-balling and audit quality.

III. RESEARCH DESIGN

Our goal is to study the relation between negative unexpected audit fee, i.e., below normal audit fee and measures of audit quality. Therefore, our first step is to estimate a model that generates expected (normal) audit fee. Next, by comparing the actual fee with

the expected fee we determine whether the auditor was under or over paid. We follow prior research in developing our baseline model (Firth 1997 and Ashbaugh et al. 2003). Prior research finds that audit fee is positively associated with auditor type (Big 5 vs. non-Big 5), client size, merger or acquisition activities, leverage, return on assets, the proportion of total assets represented by accounts receivable and inventory, losses, and special items. Similarly, audit fee is negatively associated with financing activity and market-to-book ratio. Thus, we first estimate unexpected (abnormal) audit fee as a residual from the following audit fee model.²

$$AFEE = \gamma_0 + \gamma_1 BIG5 + \gamma_2 LMV + \gamma_3 MERGER + \gamma_4 FINANCE + \gamma_5 MB + \gamma_6 LEV + \gamma_7 ROA + \gamma_8 ARINV + \gamma_9 NEGROA + \gamma_{10} SPI + \nu \quad (1)$$

where:

- AFEE* = The natural log of audit fee in millions of dollars;
- BIG5* = An indicator variable that equals 1 if the firm is audited by Arthur Andersen, Deloitte & Touche, Ernst & Young, KPMG, or PricewaterhouseCoopers, and 0 otherwise;
- LMV* = The natural log of the firm's market value of equity at fiscal year-end measured in millions of dollars;
- MERGER* = An indicator variable that equals 1 if the firm is engaged in a merger or acquisition, and 0 otherwise;
- FINANCE* = An indicator variable that equals 1 if the firm-year issues equity or debt in the subsequent year, and 0 otherwise;
- MB* = The firm's market-to-book ration defined as its market value of equity divided by book value of its equity;
- LEV* = The firm's total assets less its equity divided by its total assets;

² We consider several additional cost drivers, such as the proportion of foreign sales and the number of segments. Results based on an expanded set of cost drivers are discussed under sensitivity analysis.

<i>ROA</i>	=	The firm's return-on-assets calculated as net income before extraordinary items divided by beginning of the year total assets;
<i>ARINV</i>	=	The sum of the firm's receivables and inventory divided by its total assets;
<i>NEGROA</i>	=	An indicator variable that equals 1 if the firm's ROA is negative, and 0 otherwise;
<i>SPI</i>	=	An indicator variable that equals 1 if the 1 if the firm reports special items, and 0 otherwise;

We estimate model (1) by industry and year. We also replace audit fee with total fee and estimate abnormal total fee as an alternate measure of abnormal fee.

Measures of Audit Quality

Our primary measure of audit quality is going concern opinions issued by the auditor. Unlike accruals which are jointly determined by the managers and the auditor, the decision to issue a going concern opinion is a decision made by the auditor and thus, is a direct and unambiguous measure of audit quality. DeFond et al. (2002) find that the likelihood of a going concern opinion is positively associated with *ZSCORE*, *VOL*, *LLOSS*, *BIG5*, and *REPLAG* and negatively associated with *RETURN* and *INVEST*. In addition, Lim and Tan (2008) find that *LEV* is positively associated with going concern opinion and *CFO* and *ASSET* are negatively associated with going concern opinion.³ Both studies include several other controls that are found to be insignificant. We estimate the following probit model:

$$\begin{aligned}
 OPINION = & \beta_0 + \beta_1 ZSCORE + \beta_2 ASSET + \beta_3 AGE + \beta_4 BETA + \beta_5 RETURN \\
 & + \beta_6 VOL + \beta_7 LEV + \beta_8 CLEV + \beta_9 LLOSS + \beta_{10} INVEST \\
 & + \beta_{11} FINANCE + \beta_{12} BIG5 + \beta_{13} CFO + \beta_{14} REPLAG + \beta_{15} ABAFEE + \varepsilon
 \end{aligned} \tag{2}$$

where:

³ Lim and Tan (2008) find that *REPLAG* is negatively associated with going concern opinion.

<i>OPINION</i>	=	An indicator variable that equals 1 for firm-years with going concern audit opinions, and 0 otherwise;
<i>ZSCORE</i>	=	Altman's (1968) Z-score calculated as: $4.3 - 4.5 \times \text{net income scaled by total assets} + 5.7 \times \text{total liability scaled by total assets} - 0.004 \times \text{current assets / current liability}$. We code <i>ZSCORE</i> as 2 if the score is < 1.81 , 1 if the score is between 1.81 and 3, and 0 if the score is more than 3 (Lim and Tan 2008);
<i>ASSETS</i>	=	The natural log of total assets;
<i>AGE</i>	=	The natural log of age of the company;
<i>BETA</i>	=	The firm's beta estimated using a market model over the fiscal year;
<i>RETURN</i>	=	The firm's stock return over the fiscal year;
<i>VOL</i>	=	Variance of the residual from the market model;
<i>CLEV</i>	=	Change in <i>LEV</i> during the year;
<i>LLOSS</i>	=	An indicator variable that equals 1 if the firm reports a net loss in the prior year, and 0 otherwise;
<i>INVEST</i>	=	Short- and long-term investment securities deflated by total assets at year-end;
<i>CFO</i>	=	Cash flow from operations scaled by beginning of year total assets;
<i>REPLAG</i>	=	Number of days between fiscal year-end and earnings announcement date;
<i>ABAFEE</i>	=	Abnormal audit fee, the residual from model (1).

We also include thirteen industry-dummy variables to represent fourteen industry classifications (see Table 1) and six year-dummy variables to represent years 2000 through 2006. We estimate model (2) for the pooled sample as well as separately for firm-year observations with positive abnormal (above normal) audit fee and negative abnormal (below

normal) audit fee. A positive coefficient on *ABAFEE* for the positive abnormal audit fee partition is consistent with excess audit fee having a favorable impact on audit quality.

We use several other measures of audit quality that are commonly used in extant research: abnormal discretionary accruals estimated from the modified Jones model after controlling for performance (Kothari et al. 2005), accrual estimation errors (Dechow and Dichev 2002 and McNichols 2002), beating benchmark earnings targets (Phillips et al. 2003), and auditor-initiated restatements. We describe the empirical models used to test the association between the above proxies and abnormal audit fee below.

We estimate the following model to test the association between abnormal discretionary accruals and abnormal audit fee (Ashbaugh et al. 2003). Following Dechow and Dichev (2002) and Francis et al. (2004) we include three additional variables to control for innate factors that are associated with attributes of earnings: length of the operating cycle, variability in sales, and variability in cash flow. As before, we estimate model (3) for the pooled sample as well as separately for firm-year observations with positive abnormal (above normal) audit fee and negative abnormal (below normal) audit fee.

$$\begin{aligned}
 ABDAC = & \chi_0 + \chi_1 BIG5 + \chi_2 LMV + \chi_3 MERGER + \chi_4 FINANCE + \chi_5 MTB + \chi_6 LEV \\
 & + \chi_7 LOSS + \chi_8 LITIGATN + \chi_9 CFO + \chi_{10} LACCRUAL + \chi_{11} INTHOLD \\
 & + \chi_{12} OPCYCLE + \chi_{13} VOLCFO + \chi_{14} VOLSALE + \chi_{15} ABAFEE + \varepsilon
 \end{aligned} \tag{3}$$

where:

ABDAC = Abnormal discretionary accruals estimated from the modified Jones model with prior year's ROA included as a control;⁴

⁴ We estimate the following model (4):

$$TA_{it} = \beta_0 + \beta_1 \left(\frac{1}{Assets_{it-1}} \right) + \beta_2 (\Delta SALES_{it} - \Delta AR_{it}) + \beta_3 PPE_{it} + \beta_4 ROA_{it-1} + \varepsilon_{it}$$

- LOSS* = An indicator variable that equals 1 if the firm reports a loss in the current year, and 0 otherwise;
- LITIGATN* = An indicator variable that equals 1 if the firm operates in a high litigation industry, and 0 otherwise. High-litigation industries are industries with SIC codes of 2833-2836, 3570-3577, 3600-3674, 5200-7370;
- LACCRUAL* = Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortization minus operating cash flows scaled by beginning of year total assets;
- INTHOLD* = Annual mean institutional share holdings;
- OPCYCLE* = Log of operating cycle, measured by account receivable cycle and inventory cycle ($360 \times \text{averages of account receivables} / \text{sales} + 360 \times \text{average of inventories} / \text{cost of goods sold}$ and each cycle is truncated at 360 days);
- VOLCFO* = Standard deviation of cash flow from operations deflated by average total assets over year t-4 to year t;
- VOLSALE* = Standard deviation of sales deflated by average total assets over year t-4 to year t;

Other variables are the same as previously defined. See the appendix for a list of variables used.

[Insert Appendix About Here]

As before, model (3) is estimated with thirteen industry-dummy variables and six year-dummy variables. Consistent with prior research, we expect a positive coefficient on

where *TA* is total accruals, calculated as income before extraordinary items less cash flow from operations scaled by total assets at the end of year t-1; $\Delta SALE$ is change in sales from the prior year to the current year; ΔAR is change in accounts receivable from the prior year to the current year; *PPE* is property, plant, and equipment; and other variables are the same as defined before. All variables are scaled by assets at the beginning of the year.

MERGER, *FINANCE*, *MTB*, *LOSS*, *LITIGATN*, *OPCYCLE*, *VOLCFO*, *VOLSALE* and a negative coefficient on *BIG5*, *LMV*, *LEV*, *CFO*, *LACCRUAL*, and *INTHOLD*.

Our next measure of audit quality is a measure of accrual quality (Dechow and Dichev 2002 and McNichols 2002). We estimate the following model (5) to test the relation between accrual estimation error and abnormal audit fee:

$$\begin{aligned}
 SRESID = & \chi_0 + \chi_1 BIG5 + \chi_2 LMV + \chi_3 MERGER + \chi_4 FINANCE + \chi_5 MTB + \chi_6 LEV \\
 & + \chi_7 LOSS + \chi_8 LITIGATN + \chi_9 CFO + \chi_{10} LACCRUAL + \chi_{11} INTHOLD \\
 & + \chi_{12} OPCYCLE + \chi_{13} VOLCFO + \chi_{14} VOLSALE + \chi_{15} ABAFEE + \varepsilon
 \end{aligned} \tag{5}$$

where:

SRESID = Accrual quality measure where a higher value denotes lower audit quality.⁵

Other variables are the same as previously defined.

Our next measure of audit quality examines whether auditors constrain beating of earnings benchmarks by managers. We use a model developed by Phillips et al. (2003) to test whether abnormal audit fee is related to the tendency to beat two earnings targets: scaled earnings and scaled earnings changes (defined below). We estimate the following probit model:

⁵ We estimate the following model:

$$\Delta WC = \beta_0 + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta REV_t + \beta_5 PPE_t + \varepsilon \tag{6}$$

Where ΔWC is changes in working capital, and cash flow from operations (CFO) is the proxy for cash flows related to accruals. Following McNichols (2002) we also include the current year change in sales (ΔREV) and the current year level of property, plant, and equipment (PPE). Variables are scaled by beginning total assets. We estimate the regression cross-sectionally, by year, within each of the two-digit SIC industry classifications. We aggregate the residuals by firm and calculate the standard deviation of residuals (*SRESID*), by firm, requiring minimum of five years of data out of the seven years. The residuals from the regression reflect the accruals that are unrelated to cash flow realizations, and the standard deviation of these residuals is a firm-level measure of accrual quality, where higher standard deviation denotes lower quality.

$$EM = \alpha_0 + \alpha_1 ABACCFL + \alpha_2 \Delta CFO + \alpha_3 CFO + \alpha_4 ABAFEE + \varepsilon \quad (7)$$

where:

EM = Earnings target 1 or 2 defined as follows. Earnings target 1 equals 1 if the change in net income from year t-1 to t divided by the market value of equity at the end of year t-2 is ≥ 0 and < 0.01 , and 0 if the change in net income ≥ -0.01 and < 0 . Earnings target 2 equals 1 if net income divided by the market value at the end of year t-1 ≥ 0 and < 0.02 , and 0 if net income ≥ -0.02 and < 0 ;

ABACCFL = Abnormal accruals computed using the forward-looking Jones Model (Dechow et al. 2002);⁶

ΔCFO = The change in cash flows from continuing operations from year t-1 from t, scaled by total assets at the end of year t-1.

Other variables are the same as previously defined.

Our fifth and final measure of audit quality is restatement of financial statements that were initiated by the auditor. Like going concern opinions, auditor-initiated restatements are a direct measure of audit quality because these restatements are driven by the auditor rather than the client. We estimate the following logistic regression:

$$RESTATE = \psi_0 + \psi_1 BIG5 + \psi_2 ASSETS + \psi_3 ROA + \psi_4 LEV + \psi_5 ABAFEE + \varepsilon \quad (9)$$

where:

RESTATE = An indicator variable that equals 1 if the restatement was initiated by the auditor, and 0 otherwise. Other variables are the same as defined before.

⁶ It is the difference between total accruals and forward-looking normal accruals. Forward-looking model normal accruals are estimated as:

$$TA_{it} = \beta_0 + \beta_1 (\Delta SALES_{it} - (1 - k)\Delta AR_{it}) + \beta_2 PPE_{it} + \beta_3 TA_{it-1} + \beta_4 GR_Sales_{it+1} + \varepsilon_{it} \quad (8)$$

Where k is the slope coefficient from a regression of ΔAR on $\Delta SALES$, and GR_Sales_{it+1} is the change in sales from year t to t+1, scaled by year t sales.

As before, we estimate model (9) for the pooled sample as well as separately for firm-year observations with positive abnormal (above normal) audit fee and negative abnormal (below normal) audit fee. We describe our sample in the next section.

IV. SAMPLE SELECTION

We obtain audit fee data from *Audit Analytics* for the years 2000 to 2006. The initial sample consists of 84,815 firm-year observations and 22,211 firms. We delete 7,862 observations representing firms in the financial services industry and 53,581 firm-years that lack the necessary data on *Compustat* to estimate the audit fee models. We also require at least 20 observations for each two-digit industry-year to estimate the audit fee model. Thus, the number of observations available to estimate abnormal audit fee is 23,372. However, the number of financially distressed observations available to estimate model (2) (going concern opinion) is 6,253. The number of observations available to estimate other audit quality proxies varies from 23,182 for auditor-initiated restatements (*RESTATE*) to 5,331 for accrual quality measure (*SRESID*).

Panels A and B of Table 1 report respectively, distribution by industry and year for the number of observations available to estimate abnormal audit fee (model 1). The top-three industry categories for our sample are, respectively, machinery, scientific instruments and miscellaneous manufacturing (two-digit SIC 35-39), lodging, business and other services (SIC 70-79), and chemicals, stone, and concrete products (SIC 28-32).

[Insert Table 1 About Here]

Descriptive statistics for variables in the audit fee model and the going concern model (model 2) appear respectively, in panels A and B of Table 2. The mean values of unlogged audit fee and total fee are, respectively, \$1.298 million and \$2.099 million. More than 76 percent of the firm-year observations are audited by a Big 5 auditor. About 41% of the observations report a negative return on assets. Nearly 64% of the observations report a special item. The mean values of abnormal audit and total fees are zero by construction. Turning to panel B, 7% percent of the 6,253 financially distressed observations available to estimate model (2) received the going concern qualification from the auditor.⁷

[Insert Table 2 About Here]

V. RESULTS

Estimation of Unexpected Audit Fee

Recall that we estimate model (1) by two-digit SIC code and year. For the sake of simplicity we report the results for the pooled sample in Table 3. The signs on the coefficients of the ten determinants of audit fee are consistent with prior research and all the variables are statistically significant at the 0.05 level or better. Similarly, all the ten variables are significant at the 0.01 level for the total fee model. The adjusted R^2 for the audit fee and total fee models are, respectively, 73.06% and 74.10%.⁸ Overall, these findings are consistent with Ashbaugh et al. (2003).⁹ To address the concern that audit fee and nonaudit fee might be jointly determined we estimate a variation of model (1) where we include nonaudit fee as an additional control and use the abnormal audit fee from this

⁷ Lim and Tan (2008) also report a 7% rate for their sample of financially distressed firms.

⁸ The mean and median adjusted R^2 for the audit fee model estimated by two-digit SIC code and year are, respectively, 77.54% and 78.83%.

⁹ The adjusted R^2 for audit fee and total fee reported by Ashbaugh et al. (2003) are, respectively, 66.0% and 68.0%.

specification in model (2). Our results are not sensitive to the inclusion of nonaudit fee in model (1). Next, we discuss the results of the association between going concern opinions, our primary measure of audit quality and abnormal audit fee.

[Insert Table 3 About Here]

Association Between Unexpected Audit Fee and Going Concern Opinions

Results of model (2) are in Table 4.¹⁰ We present results for the pooled sample as well as for observations partitioned on positive (above normal) and negative (below normal) abnormal audit fee. In general, the signs on the control variables are consistent with prior research. For the pooled sample, *ZSCORE*, *ASSET*, *RETURN*, *VOL*, *LEV*, *LLOSS*, *INVEST*, *FINANCE*, *CFO*, and *REPLAG* are significant at the 0.10 level or better. The variable of interest, *ABAFEE* is positive and significant at the 0.01 level. However, note that *ABAFEE* is not significant for the positive abnormal audit fee group. For the negative abnormal audit fee group, the coefficient on $|ABAFEE|$ is -0.560 and significant at the 0.01 level.¹¹ The marginal effect of a one unit decrease in the abnormal audit fee decreases the odds of issuing a going-concern opinion by about 4%. When we replace *ABAFEE* with the expected fee, i.e., predicted values from model (1), the coefficient on expected fee is not significant for both positive and negative abnormal audit fee observations (results not tabulated). In other words, when the audit fee is consistent with the expected effort on an assignment it is not associated with the propensity to issue a going concern opinion. Thus, this finding provides

¹⁰ Our results are qualitatively similar when use a logit model. When we estimate model (2) on a sample of healthy and distressed firms (13,265 observations) and we find that *ABAFEE* is not significant for the positive abnormal audit fee group. For the negative abnormal audit fee group, the coefficient on absolute *ABAFEE* is -0.491 and significant at the 0.01 level.

¹¹ To mitigate the effect of cross-sectional and serial correlations, we use Proc Surveyreg routine in SAS to obtain cluster standard errors by firm and year. For a sample of distressed firms, we find that *ABAFEE* is not significant for the positive abnormal audit fee observations. For the negative abnormal audit fee group, $|ABAFEE|$ is negative and significant with a corrected *t*-statistic of -5.32.

some support for the notion that our measure of unexpected fee reasonably captures the extent of overpayment or underpayment of fee to the auditor. Overall, results in Table 4 indicate that the results obtained for the pooled sample is driven by observations with negative abnormal audit fee and support the notion that the likelihood of issuing a going concern opinion decreases as the abnormal audit fee becomes more negative. The findings also underscore the importance of separating positive and negative abnormal audit fee observations. Note that the results based on the pooled model indicate that the likelihood of issuing a going concern opinion increases with abnormal audit fee. In summary, the findings suggest that negative abnormal audit fee is associated with lower audit quality.¹²

[Insert Table 4 About Here]

Association Between Unexpected Audit Fee and Abnormal Accruals

Results of model (3) on the association between abnormal accruals estimated from modified Jones model (see footnote 3) and abnormal audit fee are in Table 4. For the pooled sample, the following control variables are significant at the 0.05 level or better: *BIG5*, *MERGER*, *FINANCE*, *LEV*, *LOSS*, *CFO*, *LACCRUAL*, *OPCYCLE*, and *VOLSALE*. *ABAFEE*, the variable of interest is negative and significant at the 0.01 level, indicating that higher abnormal accruals are negatively associated with abnormal audit fee. However, when the model is estimated separately for positive and negative abnormal fee, *ABAFEE* is not significant for the positive abnormal audit fee partition. For the negative abnormal audit fee partition, the absolute value of *ABAFEE* is positively associated with abnormal accruals, i.e., as abnormal audit fee becomes more negative, abnormal accruals are higher, i.e., greater

¹² We also control for additional cost drivers in estimating unexpected audit fee and those results are discussed under sensitivity analysis.

earnings management. Overall, these findings are consistent with the results obtained for the going concern model and support the notion that audit quality is impaired when abnormal audit fee is negative.

[Insert Table 5 About Here]

Association Between Unexpected Audit Fee and Accrual Quality

Results of the association between accrual quality (*SRESID*), our next measure of audit quality and abnormal audit fee (model 5) are in Table 6. Recall that a higher value of accrual quality indicates lower audit quality. For the pooled model, the following control variables are significant at the 0.10 level or better: *BIG5*, *LMV*, *FINANCE*, *MTB*, *LOSS*, *LITIGATN*, *CFO*, *LACCRUAL*, *INTHOLD*, *OPCYCLE*, *VOLCFO*, and *VOLSALE*. The variable of interest, *ABAFEE* is negative and significant at the 0.01 level for the pooled model. Once again, *ABAFEE* is not significant for the positive abnormal audit fee partition but significant at the 0.01 level for the negative abnormal audit fee partition. These findings indicate that as abnormal audit fee becomes more negative, accrual quality deteriorates, suggesting lower audit quality.

[Insert Table 6 About Here]

Association Between Unexpected Audit Fee and Meeting or Beating Earnings Benchmarks

Results of the association between meeting or beating earnings benchmarks and abnormal audit fee (model 7) are in Table 7. Columns two and three relate to our first measure of earnings benchmark (earnings target 1), scaled earnings changes. Recall that earnings target 1 equals 1 (0) if a firm's change in net income from year *t-1* to *t* over market

value of equity at the end of year $t-2$ is greater than or equal to zero and less than 0.01 (greater than or equal -0.01 and less than 0). Results for the second measure of earnings benchmark (earnings target 2), scaled earnings appear in columns four and five. For scaled earnings, the dependent variable equals 1 (0) if a firm's net income for year t over beginning market value of equity is at least 0 and less than 0.02, and 0 if greater than or equal to -0.02 and less than 0. After controlling for abnormal total accruals and cash flow from operations, the coefficient on absolute value of abnormal audit fee is positive and significant at the 0.01 level for negative abnormal audit fee observations. Results are not significant for the positive abnormal audit fee observations. These results are consistent with the results obtained for other proxies of audit quality and suggest that beatings of earnings benchmark are likely to occur when audit fee is below normal.

[Insert Table 7 About Here]

Association Between Unexpected Audit Fee and Auditor-Initiated Restatements

Our final measure of audit quality is restatements that are initiated by the auditor. We identify a list of firms where the auditor initiated restatements from GAO (2002). Auditor-initiated restatements are particularly relevant to our objective of examining the association between audit fee and audit quality because the auditor took the lead and prevailed over the client to restate the financial statements. Results of model (9) are in Table 8. There is some evidence that Big 5 auditors, particularly when abnormal fees are positive are more likely to initiate restatements than the non-Big 5 auditors. The variable of interest, *ABAFEE* is positive and significant at the 0.01 level for the positive abnormal fee partition and *ABAFEE* is not significant for the negative abnormal fee partition. In other words, these results

indicate that auditors are likely to initiate restatements when the abnormal fee is above the normal level of audit fee. This is consistent with the notion that the market-based economic incentives, i.e., protecting their reputation capital and mitigating the risk of litigation motivate auditors to detect and report restatements. We also estimate an alternate specification (see column 5 of Table 8) of model (9) where we substitute *ABAFEE* with a dummy variable that equals 1 for negative abnormal audit fee and 0 for positive abnormal audit fee. The coefficient on this dummy variable is -1.049 (significant at the 0.01 level), indicating that auditor is unlikely to initiate restatements when abnormal audit fee is negative.

[Insert Table 8 About Here]

Supplemental Analyses

We conduct several supplemental analyses to further probe the relation between audit quality and abnormal audit fee and we discuss those results below.

1. Additional cost drivers in the audit fee model:

We include three additional cost drivers in the audit fee model – proportion of foreign sales over total sales, square of business segments, and decile rank of *ZSCORE*. The first two measures represent expected effort due to the client’s complexity and the last measure represents client’s financial and business risk. We lose 918 observations or about 15% of the sample due to missing data and the number of observations available to estimate model (2) is 5,335. We find that *ABAFEE* is not significant for the positive abnormal audit fee observations but $|ABAFEE|$ is -0.516 and significant at the 0.01 level for negative abnormal audit fee observations. This is similar to -0.560 reported in Table 4 for negative abnormal

audit fee observations and indicates that our results to robust to controlling for additional drivers of audit effort.

2. Most negative abnormal audit fee observations:

We identify a sub-sample of observations where the auditor is significantly underpaid, indicating a greater likelihood of low-balling relative to other observations. We partition the 3,004 firm-year observations with negative abnormal audit fee (see Table 4) into three equal groups of about 1,000 observations. When we estimate model (2) separately for each of the three groups, we find that *ABAFEE* is significant only for the partition with the most negative abnormal audit fee, suggesting that impairment to audit quality occurs when the auditor is significantly underpaid relative to other observations.

3. Two-stage going concern model:

We consider a two-stage probit model to separate the probability of observing a going concern opinion into first, the probability that the client is identified as a likely recipient of a going concern opinion based on its observable characteristics, and second, the probability that the auditor issues a going concern opinion, given that the client is expected to receive a going concern opinion (see Krishnan and Krishnan 1996 and Fargher and Jiang 2008). This approach attempts to explicitly model the economic trade-off faced by the auditor: the opportunity cost of losing the client due to issuing a going concern opinion vs. the potential litigation risk and harm to reputation capital when a going concern opinion is not issued. Following Fargher and Jiang (2008), we first estimate the value of the linear predictor *PGC** from a probit regression of going concern opinions on current ratio, leverage, loss, cash over total assets, inventory over total assets, receivables over total assets, age of the firm, log of

total assets, beta, stock return, *ZSCORE*, *BIG5*, year, and industry dummy variables. Next, we estimate a probit regression of *PGC* on the above variables where *PGC* equals 1 if $PGC^* > 0$ and *PGC* = 0 if $PGC^* \leq 0$. Our second-stage model is a probit regression of $GC|PGC$ on log of total assets, *ZSCORE*, market-to-book ratio, financing activities, prior year audit opinion, *BIG5*, change in auditor, year and industry dummy variables, and *ABAFEE*. $GC|PGC$ equals 1 if a going concern opinion was actually issued by the auditor given that a likely going concern qualification was identified from the first-stage ($PGC = 1$), and 0 otherwise. In other words, the dependent variable in the second-stage equals 1 only if the auditor determines that a going concern qualification is appropriate (based on observable client characteristics) and actually issues one. We find that for a sample of financially distressed observations the coefficient on *ABAFEE*, the variable of interest, for positive abnormal audit fee observations is 0.379 (significant at the 0.05 level). The coefficient on $|ABAFEE|$ for negative abnormal audit fee observations is -0.393 (significant at the 0.05 level). These results indicate that auditors' propensity to issue a going concern qualification for clients that are financially stressed is positively associated with excess audit fee, suggesting higher audit quality. More importantly, the absolute value of abnormal audit fee is negatively associated with going concern opinions, suggesting lower audit quality. Thus, our primary finding presented in Table 4 continues to hold. Our results are qualitatively similar when use both financially stressed and healthier observations.

4. Abnormal total fee:

Next, we replace abnormal audit fee with abnormal total fee and re-estimate the models. We summarize the results for the negative abnormal total fee partition below. The absolute value of abnormal total fee is negatively associated (significant at the 0.01 level)

with going concern opinions (results not tabulated). Similarly, the absolute value of abnormal total fee is positively associated with abnormal accruals and accrual estimation errors (both are significant at the 0.01 level). The two measures of benchmark beating behavior are also positively associated with the absolute value of abnormal total fee (significant at the 0.01 level). These results are consistent with the results based on abnormal audit fee.

5. Arthur Andersen clients:

We exclude firm-year observations audited by Arthur Andersen and estimate the models using the remaining observations. Those results are consistent with the results based on the full sample.

6. Change from positive to negative abnormal audit fee:

We re-estimate model (2) using a sample of observations that have a negative abnormal audit fee in the current year and a positive abnormal audit fee in the prior year. If negative abnormal audit fee is indicative of poor audit quality then the propensity to issue a going concern opinion should be lower for those observations that changed from a positive abnormal audit fee in the prior year to a negative abnormal audit fee in the current year. Consistent with this conjecture, untabulated results indicate that abnormal audit fee is negatively associated (significant at the 0.10 level for a two-tailed test) with going concern opinions. Results for a distressed sample consisting of 3,988 observations are significant at the 0.10 level for a one-tailed test.

7. Auditor tenure:

Prior research suggests lower financial reporting quality for short tenure clients relative to longer tenure clients (Johnson et al. 2002). We examine whether the relation between low-balling and audit quality is conditioned on auditor tenure. Following prior research, we re-estimate model (2), with the following additional variables: a dummy for short tenure (two or three years) observations, a dummy for long tenure (nine or more years), and interactions of short and long with $|ABAFEE|$. For the negative abnormal audit fee partition, neither interaction is significant, suggesting that the relation between low-balling and going concern opinions is not due to short or long auditor tenures.

8. Abnormal audit fee and measures of aggressive financial reporting:

Finally, we examine the relation between abnormal audit fee and two measures of aggressive financial reporting, use of operating leases and a measure of fraud risk. The greater use of operating leases relative to capital leases is consistent with aggressive financial reporting because the non-capitalization of operating leases overstates net income and return on equity (Imhoff et al. 1997). Similarly, Ge (2006) finds that increases in operating lease activities lead to lower earnings persistence and lower future stock returns. The results are in Table 9. We first discuss the results in panel A where the dependent variable is the present value of the next five years' minimum rent commitment under operating leases, discounted at 10% and scaled by the sum of long term debt and operating lease (Ge et al. 2008). We include three controls that are commonly used in prior research – *SIZE* (log of total assets), *ROA*, and *MTB*. As before, results are presented for the full sample consisting of 19,506 observations as well as for the positive and negative abnormal audit fee partitions. All the three controls are significant at the 0.01 level across the three

columns. *ABAFEE* is negative and significant at the 0.01 level for the pooled sample and the positive abnormal audit fee partition. $|ABAFEE|$ is not significant for the negative abnormal audit fee partition. These results indicate that the use of operating leases is lower when the auditor receives above normal audit fee.

We follow Dechow et al. (2009) in estimating an aggregate measure of fraud risk. A firm with a fraud score of 2.00 has twice the likelihood of being a fraud firm as a randomly selected firm from the population. Results of fraud score are in panel B. We find that *ABAFEE* is negatively associated with fraud score (significant at the 0.01 level) for the positive abnormal audit fee partition, indicating that fraud risk is lower for above normal audit fee observations. We find an opposite relation for below normal audit fee partition: $|ABAFEE|$ is positively associated with fraud score (significant at the 0.01 level). This finding is consistent with increased fraud risk when audit fee is below normal.

[Insert Table 9 About Here]

VI. SUMMARY AND CONCLUSIONS

The issue of whether auditors' independence is compromised as a result of the economic bond between the auditor and the client is a long-standing debate in the academic and professional accounting literature (Mautz and Sharaf 1961). We contribute to this literature by examining archival data for a set of firms that have not been closely examined – firms that pay their auditor below the expected level of audit fee. Using a variety of proxies for audit quality, our results suggest that audit quality is lower when audit fee is below the level of expected fee. More importantly, there is no evidence that audit quality is impaired when audit fee is more than the normal level of audit fee. These findings are consistent with

the notion that when auditors earn excess fees they are mindful of the perceived threat to their independence in appearance and take steps to preserve their reputation capital.

The findings of our study have policy implications for regulators such as the Securities and Exchange Commission (SEC) and the Public Company Accounting Oversight Board (PCAOB). The PCAOB can use the findings of this study to help it select registrants for possible inspections. Since the PCAOB uses the “risk-based” inspection model to identify the clients to inspect, lower abnormal audit fees can be one of the red-flags or risk factors to consider when developing an inspection sample.

Our findings also have implications for audit committee members and senior management when hiring auditors. Although, it is tempting to award an engagement to a low-bidder, the audit committee should be cognizant of the fact that the audit firm has a certain cost structure and it expects to make a certain level of profit on the engagement. In the absence of sufficient contribution margin on the engagement, there is a high likelihood that the audit firm may cut corners to stay within budget and thereby adversely impacting the audit quality leading later to sub-standard financial reporting for their company. Given that the “duty of care” of the board members comes now with increased legal liability, cutting corners on the audit fees may be “penny-wise and pound foolish” when later the board is sued if a restatement were to be issued. Similarly the senior management of the firm should also realize that financial audit is their life-blood to the capital markets and under paying the external auditors could actually cost the firm more in the long term in terms of less credible financial statements.

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Appendix A: Variable Definitions

Variables in model (1)

<i>AFEE</i>	=	The natural log of audit fee in millions of dollars;
<i>BIG5</i>	=	An indicator variable that equals 1 if the firm is audited by Arthur Andersen, Deloitte & Touche, Ernst & Young, KPMG, or PricewaterhouseCoopers, and 0 otherwise;
<i>LMV</i>	=	The natural log of the firm's market value of equity at fiscal year-end measured in millions of dollars;
<i>MERGER</i>	=	An indicator variable that equals 1 if the firm is engaged in a merger or acquisition, and 0 otherwise;
<i>FINANCE</i>	=	An indicator variable that equals 1 if the firm-year issues equity or debt in the subsequent year, and 0 otherwise;
<i>MB</i>	=	The firm's market-to-book ration defined as its market value of equity divided by book value of its equity;
<i>LEV</i>	=	The firm's total assets less its equity divided by its total assets;
<i>ROA</i>	=	The firm's return-on-assets calculated as net income before extraordinary items divided by beginning of the year total assets;
<i>ARINV</i>	=	The sum of the firm's receivables and inventory divided by its total assets;
<i>NEGROA</i>	=	An indicator variable that equals 1 if the firm's ROA is negative, and 0 otherwise;
<i>SPI</i>	=	An indicator variable that equals 1 if the 1 if the firm reports special items, and 0 otherwise;

Variables in model (2)

<i>OPINION</i>	=	An indicator variable that equals 1 for firm-years with going concern audit opinions, and 0 otherwise;
<i>ZSCORE</i>	=	Altman's (1968) Z-score calculated as: $4.3 - 4.5 \times \text{net income scaled by total assets} + 5.7 \times \text{total liability scaled by total assets} - 0.004 \times \text{current assets/current liability}$. We code <i>ZSCORE</i> as 2 if the score is < 1.81 , 1 if the score is between 1.81 and 3, and 0 if the score is more than 3;
<i>ASSET</i>	=	The natural log of total assets;
<i>AGE</i>	=	The natural log of age of the company;
<i>BETA</i>	=	The firm's beta estimated using a market model over the fiscal year;
<i>RETURN</i>	=	The firm's stock return over the fiscal year;
<i>VOL</i>	=	Variance of the residual from the market model;
<i>CLEV</i>	=	Change in <i>LEV</i> during the year;
<i>LLOSS</i>	=	An indicator variable that equals 1 if the firm reports a net loss and 0 otherwise;
<i>INVEST</i>	=	Short- and long-term investment securities deflated by total assets at year-end;
<i>CFO</i>	=	Cash flow from operations scaled by beginning of year total assets;
<i>REPLAG</i>	=	Number of days between fiscal year-end and earnings announcement date;
<i>ABAFEE</i>	=	Abnormal audit fee, the residual from model (1).

Variables in model (3)

<i>ABDAC</i>	=	Abnormal discretionary accruals estimated from the modified Jones model with prior year's ROA included as a control;
<i>LOSS</i>	=	An indicator variable that equals 1 if the firm reports a loss in the current year, and 0 otherwise;
<i>LITIGATN</i>	=	An indicator variable that equals 1 if the firm operates in a high litigation industry, and 0 otherwise. High-litigation industries are industries with SIC codes of 2833-2836, 3570-3577, 3600-3674, 5200-7370;
<i>LACCRUAL</i>	=	Last year's total current accruals equal to net income before extraordinary items plus depreciation and amortization minus operating cash flows scaled by beginning of year total assets;
<i>INTHOLD</i>	=	Annual mean institutional share holdings;
<i>OPCYCLE</i>	=	Log of operating cycle, measured by $\text{account receivable cycle} + \text{inventory cycle}$ ($360 \times \text{averages of account receivables} / \text{sales} + 360 \times \text{average of inventories} / \text{cost of goods sold}$) and each cycle is truncated at 360 days;

- VOLCFO* = Standard deviation of cash flow from operations deflated by average total assets over year t-4 to year t;
VOLSALE = Standard deviation of sales deflated by average total assets over year t-4 to year t;

Variables in model (5)

- SRESID* = Accrual quality measure where a higher value denotes lower audit quality and other variables are the same as previously defined.

Variables in model (7)

- EM* = Earnings target 1 or 2 defined as follows. Earnings target 1 equals 1 if the change in net income from year t-1 to t divided by the market value of equity at the end of year t-2 is ≥ 0 and < 0.01 , and 0 if the change in net income ≥ -0.01 and < 0 . Earnings target 2 equals 1 if net income divided by the market value at the end of year t-1 ≥ 0 and < 0.02 , and 0 if net income ≥ -0.02 and < 0 ;
- ABACCFL* = Abnormal accruals computed using the forward-looking Jones Model (Dechow et al. 2002);
- ΔCFO = The change in cash flows from continuing operations from year t-1 from t, scaled by total assets at the end of year t-1.

Variables in model (9)

- RESTATE* = An indicator variable that equals 1 if the restatement was initiated by the auditor, and 0 otherwise. Other variables are the same as defined before.

TABLE 1
Panel A: Industry Distribution

2-digit SIC code	Industry	Number of firm-year observations	%
10-14	Agriculture and mining	1189	5.09
15-16	Construction and plumbing	144	0.62
20-21	Food and kindred products and cigarettes	619	2.65
23	Textile mill products and apparel	245	1.05
24-27	Lumber , furniture, paper, and printing	782	3.35
28-32	Chemicals, petroleum, rubber, leather, stone, clay, glass, and concrete products	3,201	13.70
33-34	Metal	829	3.55
35-39	Machinery, electrical and computer equipment, scientific instruments, miscellaneous manufacturing	6,050	25.89
40-48	Railroads, motor freight, transportation, communications	1,955	8.36
49	Utilities	1,065	4.56
50-52	Wholesale goods, building material, hardware retail	961	4.11
53-59	Stores merchandise, auto dealers, apparel, home furniture stores, eating and drinking, misc. retail	1,493	6.39
70-79	Lodging services, business services, other services	3,638	15.57
80-99	Other	1,201	5.14
	Total	23,372	100.00

Panel B: Distribution By Year

Year	Number of observations	%
2000	2,295	9.82
2001	3,303	14.13
2002	3,818	16.34
2003	3,894	16.66
2004	3,777	16.16
2005	3,526	15.09
2006	2,759	11.80
Total	23,372	100.00

This table shows the industry distribution for the number of observations used to estimate abnormal audit fee (model 1).

TABLE 2
Panel A: Descriptive Statistics for Audit Fee Model
(N = 23,372)

Variable	Mean	Standard Deviation	Median	Min	Max
<i>Audit Fee</i> (in millions)	1.298	2.591	0.378	0.021	17.000
<i>Total Fee</i> (in millions)	2.099	4.334	0.610	0.025	28.710
<i>Big5</i>	0.766	0.424	1.000	0.000	1.000
<i>LMV</i>	5.458	2.544	5.544	-8.000	12.992
<i>MERGER</i>	0.269	0.443	0.000	0.000	1.000
<i>FINANCE</i>	0.157	0.364	0.000	0.000	1.000
<i>MB</i>	2.584	6.113	1.891	-23.461	37.193
<i>LEV</i>	0.701	0.800	0.561	0.075	6.495
<i>ROA</i>	-0.159	0.688	0.021	-5.056	0.428
<i>ARINV</i>	0.262	0.201	0.224	0.000	1.000
<i>NEGROA</i>	0.408	0.491	0.000	0.000	1.000
<i>SPI</i>	0.637	0.481	1.000	0.000	1.000
<i>ABAFEE</i> (audit fee)	0.000	0.673	-0.002	-4.840	6.055
<i>ABAFEE</i> (total fee)	0.000	0.703	-0.006	-1.116	6.125

Panel B: Descriptive Statistics for Going-Concern Model for a Sample of Distressed Firms (N = 6,253)

Variable	Mean	Standard Deviation	Median	Min	Max
<i>Opinion</i>	0.070	0.255	0.000	0.000	1.000
<i>ZSCORE</i>	0.001	0.040	0.000	0.000	2.000
<i>ASSET</i>	5.337	1.998	5.175	-1.152	12.248
<i>AGE</i>	2.541	0.682	2.398	1.609	4.394
<i>BETA</i>	1.075	0.779	1.033	-3.409	5.342
<i>RETURN</i>	-0.000	0.807	-0.149	-1.112	16.952
<i>VOL</i>	0.050	0.066	0.034	0.003	1.417
<i>LEV</i>	0.594	0.412	0.559	0.013	13.335
<i>CLEV</i>	0.028	0.278	0.011	-5.045	7.701
<i>LLOSS</i>	0.690	0.463	1.000	0.000	1.000
<i>INVEST</i>	0.300	0.346	0.161	0.000	1.962
<i>FINANCE</i>	0.781	0.413	1.000	0.000	1.000
<i>Big5</i>	0.787	0.410	1.000	0.000	1.000
<i>CFO</i>	-0.033	0.293	0.026	-6.119	0.859
<i>REPLAG</i>	60.347	37.609	55.000	-237.000	858.000
<i>ABAFEE</i> (audit fee)	0.040	0.660	0.026	-2.164	3.219
<i>ABAFEE</i> (total fee)	0.024	0.672	0.011	-3.125	2.995

TABLE 3
Results of Determinants of Audit Fee and Total Fee

Variables	Coefficient (<i>t</i> -statistics)	
	Audit Fee	Total Fee
<i>Intercept</i>	10.231 (304.91)***	10.087 (292.92)***
<i>BIG5</i>	0.570 (38.67)***	0.592 (39.11)***
<i>LMV</i>	0.407 (144.68)***	0.456 (157.77)***
<i>MERGER</i>	0.301 (18.11)***	0.323 (18.97)***
<i>FINANCE</i>	-0.157 (-7.86)***	-0.124 (-6.04)***
<i>MB</i>	-0.010 (-12.19)***	-0.011 (-12.50)***
<i>LEV</i>	0.165 (21.64)**	0.162 (20.58)***
<i>ROA</i>	0.262 (27.96)***	0.256 (26.63)***
<i>ARINV</i>	0.736 (23.20)***	0.718 (22.06)***
<i>NEGROA</i>	0.258 (20.07)***	0.266 (20.16)***
<i>SPI</i>	0.393 (35.58)***	0.417 (36.75)***
Year effect	Yes	Yes
Industry effect	Yes	Yes
Adjusted R ²	73.06%	74.10%
N	23,372	23,372

We include thirteen industry-dummy variables to represent the fourteen industry classifications reported in Table 1 and six year-dummy variables to represent years 2000 through 2006. *** and ** indicate significance levels at the 0.01 and 0.05 levels, respectively for a two-tailed test.

TABLE 4
Results of Probit Regression of Going Concern Opinion on Abnormal Audit Fee and Controls
for a Sample of Financially Stressed Firms

Variables	Coefficient (<i>chi-square</i>)		
	All firms	Firms with positive abnormal fees	Firms with negative abnormal fees
<i>Intercept</i>	-1.638 (41.71)***	-1.916 (32.79)***	-1.835 (15.58)***
<i>ZSCORE</i>	0.800 (3.45)*	-2.584 (0.00)	1.960 (5.25)**
<i>ASSET</i>	-0.143 (36.54)***	-0.126 (17.72)***	-0.111 (6.65)***
<i>AGE</i>	-0.081 (2.51)	-0.011 (0.03)	-0.169 (3.47)*
<i>BETA</i>	-0.030 (0.58)	-0.040 (0.63)	-0.023 (0.12)
<i>RETURN</i>	-0.314 (30.40)***	-0.413 (24.21)***	-0.204 (6.88)***
<i>VOL</i>	2.071 (32.61)***	3.911 (24.41)***	1.400 (8.74)***
<i>LEV</i>	0.230 (9.87)***	0.161 (2.80)*	0.400 (11.38)***
<i>CLEV</i>	0.031 (0.09)	0.208 (2.26)	-0.217 (1.62)
<i>LLOSS</i>	0.403 (27.49)***	0.393 (16.04)***	0.448 (11.51)***
<i>INVEST</i>	-1.233 (70.41)***	-1.268 (42.88)***	-1.342 (29.02)***
<i>FINANCE</i>	-0.409 (29.21)***	-0.494 (27.50)***	-0.227 (2.63)
<i>BIG5</i>	0.034 (0.21)	0.033 (0.12)	0.047 (0.13)
<i>CFO</i>	-1.238 (100.27)***	-1.317 (55.90)***	-1.143 (39.60)***
<i>REPLAG</i>	0.005 (60.53)***	0.005 (45.34)***	0.009 (21.14)***
<i>ABAFEE</i>	0.263 (27.49)***	0.086 (0.88)	
<i> ABAFEE </i>			-0.560 (10.92)***
Year effect	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes
Likelihood Ratio	-1071.71	-670.11	-371.25
N	6,253	3,249	3,004

We include thirteen industry-dummy variables to represent the fourteen industry classifications reported in Table 1 and six year-dummy variables to represent years 2000 through 2006. ***, **, and * indicate significance levels at the 0.01, 0.05, and 0.10 levels, respectively for a two-tailed test.

TABLE 5
Results of Regression of Abnormal Accruals from Modified Jones Model on Abnormal Audit Fee and Controls

Variables	Coefficient (t-statistics)		
	All Observations	Firm-year Observations with Positive Abnormal Fees	Firm-year Observations with Negative Abnormal Fees
<i>Intercept</i>	-0.045 (-5.65)***	-0.055 (-5.08)***	-0.035 (-2.92)***
<i>BIG5</i>	-0.010 (-3.73)***	-0.003 (-0.75)	-0.017 (-4.10)***
<i>LMV</i>	-0.000 (-0.01)	-0.000 (-0.06)	-0.003 (-0.40)
<i>MERGER</i>	0.007 (3.21)***	0.005 (1.78)*	0.003 (2.79)***
<i>FINANCE</i>	0.013 (5.77)***	0.005 (1.85)*	0.020 (6.06)***
<i>MTB</i>	0.000 (1.54)	0.000 (0.90)	0.000 (1.10)
<i>LEV</i>	0.021 (4.82)***	0.023 (3.84)***	0.017 (2.74)***
<i>LOSS</i>	-0.028 (-12.62)***	-0.029 (-9.68)***	-0.027 (-8.29)***
<i>LITIGATN</i>	0.001 (0.34)	-0.001 (-0.44)	0.003 (0.78)
<i>CFO</i>	-0.013 (-5.55)***	-0.012 (-4.03)***	-0.014 (-3.97)***
<i>LACCRUAL</i>	0.096 (31.04)***	0.085 (21.71)***	0.108 (22.19)***
<i>INTHOLD</i>	0.000 (0.43)	0.001 (0.46)	0.000 (0.31)
<i>OPCYCLE</i>	0.014 (10.98)***	0.015 (8.30)***	0.014 (7.19)***
<i>VOLCFO</i>	-0.002 (-0.69)	-0.001 (-0.22)	-0.012 (-1.36)
<i>VOLSALE</i>	0.005 (2.07)**	0.001 (0.35)	0.010 (2.63)***
<i>ABAFEE</i>	-0.006 (-4.59)***	-0.003 (-0.92)	
<i> ABAFEE </i>			0.008 (2.53)**
Year Effect	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes
Adjusted R ²	11.30%	11.24%	11.55%
N	16,834	8,298	8,536

We include thirteen industry-dummy variables to represent the fourteen industry classifications reported in Table 1 and six year-dummy variables to represent years 2000 through 2006. ***, **, and * indicate significance levels at the 0.01, 0.05, and 0.10 levels, respectively for a two-tailed test.

TABLE 6
Results of Regression of Accrual Estimation Error on Abnormal Audit Fee and Controls

Variables	Coefficient (<i>t</i> -statistics)		
	All Observations	Firm-year Observations with Positive Abnormal Fees	Firm-year Observations with Negative Abnormal Fees
<i>Intercept</i>	0.055 (10.37)***	0.058 (7.05)***	0.051 (7.25)***
<i>BIG5</i>	-0.008 (-4.59)***	-0.011 (-4.03)***	-0.005 (-1.92)*
<i>LMV</i>	-0.004 (-8.41)***	-0.002 (-3.53)***	-0.005 (-8.35)***
<i>MERGER</i>	0.001 (0.93)	0.003 (1.15)	0.000 (0.17)
<i>FINANCE</i>	0.004 (2.60)***	0.005 (2.11)**	0.003 (1.58)
<i>MTB</i>	0.000 (1.78)*	0.000 (1.28)	0.000 (1.71)*
<i>LEV</i>	0.003 (0.97)	-0.008 (-1.64)	0.009 (2.60)***
<i>LOSS</i>	-0.003 (-2.18)**	-0.002 (-0.78)	-0.004 (-2.11)**
<i>LITIGATN</i>	0.008 (5.19)***	0.007 (2.93)***	0.009 (4.29)***
<i>CFO</i>	-0.016 (-5.87)***	-0.018 (-4.22)***	-0.013 (-3.79)***
<i>LACCRUAL</i>	-0.012 (-3.27)***	-0.014 (-2.51)**	-0.010 (-1.99)**
<i>INTHOLD</i>	-0.009 (-3.05)***	-0.014 (-3.15)***	-0.005 (-1.33)
<i>OPCYCLE</i>	0.003 (3.91)***	0.002 (1.78)*	0.004 (3.40)***
<i>VOLCFO</i>	0.114 (25.41)***	0.112 (15.41)***	0.113 (19.25)***
<i>VOLSALE</i>	0.016 (11.28)***	0.014 (7.86)***	0.020 (8.04)***
<i>ABAFEE</i>	-0.005 (-4.24)***	0.000 (0.20)	
<i> ABAFEE </i>			0.008 (3.84)***
Year Effect	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes
Adjusted R ²	31.79%	30.50%	32.77%
N	5,331	2,331	3,000

Accrual estimation errors are estimated from model (6) (Dechow and Dichev 2002). We include thirteen industry-dummy variables to represent the fourteen industry classifications reported in Table 1 and six year-dummy variables to represent years 2000 through 2006. ***, **, and * indicate significance levels at the 0.01, 0.05, and 0.10 levels, respectively for a two-tailed test.

TABLE 7
Results of Probit Regression of Earnings Targets on Abnormal Audit Fee and Controls

Variables	<i>Earnings Target 1: Scaled Earnings Changes</i>		<i>Earnings Target 2: Scaled Earnings</i>	
	Positive Abnormal Audit Fee	Negative Abnormal Audit Fee	Positive Abnormal Audit Fee	Negative Abnormal Audit Fee
Intercept	-0.890 (113.64)***	-0.936 (128.17)***	-1.775 (185.70)***	-1.901 (239.30)***
<i>ABACCFL</i>	0.172 (5.47)**	0.165 (7.06)***	0.540 (15.43)***	0.325 (9.27)***
<i>ΔCFO</i>	-0.009 (0.00)	-0.049 (0.24)		
<i>CFO</i>			0.605 (14.27)***	0.512 (19.39)***
<i> ABAFEE </i>	-0.065 (2.56)	0.128 (9.83)***	-0.024 (0.20)	0.185 (11.96)***
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
Log Likelihood	-3106.16	-3535.10	-1533.87	-1650.37
N	8,086	8,240	8,086	8,240

We include thirteen industry-dummy variables to represent the fourteen industry classifications reported in Table 1 and six year-dummy variables to represent years 2000 through 2006. ***, **, and * indicate significance levels at the 0.01, 0.05, and 0.10 levels, respectively for a two-tailed test.

TABLE 8
Results of Logistic Regression of Auditor-Initiated Restatements on Abnormal Audit Fees and Controls

Variables	Coefficient (<i>chi-square</i>)			
	All Observations	Firm-year Observations with Positive Abnormal Fees	Firm-year Observations with Negative Abnormal Fees	All Observations with a Dummy for Negative Abnormal Fees
<i>Intercept</i>	-7.075 (119.36)***	-6.469 (76.94)***	-8.947 (42.21)***	-6.708 (104.29)***
<i>BIG5</i>	0.538 (2.45)	0.689 (3.19)*	0.035 (0.00)	0.453 (1.76)
<i>ASSETS</i>	0.029 (0.26)	-0.036 (0.32)	0.230 (3.45)*	0.058 (1.07)
<i>ROA</i>	0.215 (0.55)	0.178 (0.34)	0.639 (0.43)	0.180 (0.43)
<i>LEV</i>	0.081 (0.04)	-0.401 (0.58)	1.412 (3.38)*	0.112 (0.07)
<i>ABAFEE</i>	0.740 (33.74)***	0.671 (13.92)***		
<i> ABAFEE </i>			-0.172 (0.11)	
<i>NABAFEE</i>				-1.049 (19.57)***
Year Effect	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes
Likelihood Ratio	128.50	80.61	51.12	120.88
N	23,182	11,490	11,692	23,182

NABAFEE equals 1 if the abnormal audit fee is negative and 0 if the abnormal audit fee is positive. We include thirteen industry-dummy variables to represent the fourteen industry classifications reported in Table 1 and six year-dummy variables to represent years 2000 through 2006. ***, **, and * indicate significance levels at the 0.01, 0.05, and 0.10 levels, respectively for a two-tailed test.

TABLE 9
Results of Operating Leases and Fraud Scores on Abnormal Audit Fees and Controls

Panel A: Operating Leases			
Variables	Coefficient (t-statistics)		
	All Observations	Firm-year Observations with Positive Abnormal Fees	Firm-year Observations with Negative Abnormal Fees
<i>Intercept</i>	0.543 (46.82)***	0.576 (36.94)***	0.519 (29.58)***
<i>SIZE</i>	-0.029 (-31.08)***	-0.032 (-27.05)***	-0.025 (-16.79)***
<i>ROA</i>	0.012 (6.56)***	0.007 (3.15)***	0.018 (6.15)***
<i>MTB</i>	0.002 (9.93)***	0.001 (3.58)***	0.003 (9.40)***
<i>ABAFEE</i>	-0.024 (-7.32)***	-0.036 (-5.38)***	
<i> ABAFEE </i>			0.002 (0.21)
Year Effect	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes
Adjusted R ²	16.57%	17.96%	15.41%
N	19,506	9,905	9,601

Panel B: Fraud Score			
Variables	Coefficient (t-statistics)		
	All Observations	Firm-year Observations with Positive Abnormal Fees	Firm-year Observations with Negative Abnormal Fees
<i>Intercept</i>	0.838 (6.37)***	0.733 (4.15)***	0.983 (4.96)***
<i>SIZE</i>	0.052 (4.97)***	0.078 (5.81)***	0.013 (0.83)
<i>ROA</i>	-1.396 (-69.02)***	-1.586 (-63.28)***	-1.148 (-35.37)***
<i>MTB</i>	0.001 (0.47)	-0.011 (-2.47)**	0.008 (2.09)**
<i>ABAFEE</i>	-0.183 (-5.09)***	-0.227 (-3.00)***	
<i> ABAFEE </i>			0.316 (3.84)***
Year Effect	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes
Adjusted R ²	20.10%	29.34%	12.39%
N	21,095	10,340	10,755

We include thirteen industry-dummy variables to represent the fourteen industry classifications reported in Table 1 and six year-dummy variables to represent years 2000 through 2006. ***, **, and * indicate significance levels at the 0.01, 0.05, and 0.10 levels, respectively for a two-tailed test. *SIZE* is log of total assets. Operating leases are the present value of the next five years' minimum rent commitment under operating leases, discounted at 10% and scaled by the sum of long term debt and operating lease. See Dechow et al. (2008) for definition of and fraud scores.