A Re-examination of the Pricing of Litigation Risk in Audit Fees: Evidence from U.S. Publicly Held Firms

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ABSTRACT

This study examines the effect of litigation risk from shareholders and lenders on audit fees since it is important that such risk should be sufficiently priced to ensure the survival of the profession. I use four proxies for shareholder litigation risk and report that firms with more shareholders, more shares traded, lower or more volatile stock return have higher audit fees. For litigation risk from lenders, I use a dummy for all-equity firms and a dummy for firms with public debt. Consistent with the fact that all-equity firms have litigation risk from owners alone, I report that such firms have lower audit fees than levered firms. Furthermore, I find that firms with public debt have higher audit fees. Thus, using the two proxies, firms with higher litigation risk from lenders have higher audit fees. Results of additional analyses suggest that financial health of the firms (proxied by Altman's Z score) should be controlled for when leverage proxies are used. These results are robust to various sensitivity tests.

Keywords: Audit fees, litigation risk, investment loss, all-equity firms, public debt, leverage

Data Availability: Data are publicly available from sources identified in the paper.

1 INTRODUCTION

Auditors receive audit fees for their audit services. In their audits, auditors examine financial statements prepared by their clients and are liable to pay damages to those who suffer investment loss because of their reliance on audited financial statements. Hence, audit fees include an expected liability loss component to protect the auditors ex ante. In the history of auditing in the United States, rising auditors' liability has been regarded as a threat to the survival of the profession (Arthur Andersen et al., 1992). In November 1990, Laventhol and Horwath, the seventh largest audit firm at the time, declared bankruptcy, claiming that it had more than 100 pending lawsuits with claims of nearly $2 billion (Pae, 1990).[1] Though the Private Securities Litigation Reform Act of 1995 reduces auditors' litigation exposure, the accounting profession is still paying huge sum of money on litigation.[2] Thus, it is important that expected liability loss is sufficiently priced in audit fees.

Prior studies (e.g., Simunic (1980), Turpen (1990) and Beatty (1993)) on pricing of litigation risk in audit fees provide mixed and weak results.[3] In a review of the evidence, Simunic and Stein (1996) conclude that the U.S. evidence of audit firms' pricing litigation risk in their fees is not strong while it is difficult to generalise the non-U.S. evidence because of small sample size and different measurements of audit fees used in prior studies. Simunic and Stein (1996) further suggest that prior research's inability to document evidence of pricing litigation risk may be due to the lack of control of ownership dispersion and they report that publicly held firms (versus closely held firms) and highly levered firms have higher audit fees because of the higher chances of lawsuit against the auditors. However, later studies on audit fees (e.g., Firth (1997), Gul and Tsui (1997), Craswell and Francis (1999), Seetharaman et al. (2002) and Whisenant

et al. (2003)) do not include ownership dispersion in the audit fees model. In addition, the results of leverage on audit fees are still mixed.[4] Hence, not much progress has been made on the relationship between litigation risk and audit fees, and more work is necessary to shed light on the issue.

In this paper, I utilise a larger and more recent sample than in prior studies to re-examine the pricing of litigation risk in audit fees. Starting from 5 February 2001, U.S. listed firms are required to disclose audit fees in their proxy statements filed with the Securities and Exchange Commission (SEC) if they also pay non-audit fees to their incumbent auditors. This sample fulfils the two necessary ingredients (a litigious environment and the disclosure of audit fees) suggested by Seetharaman et al. (2002) for a proper examination of the pricing of litigation risk in audit fees, and is important for two reasons. First, it is not easy to interpret an association (in the prediction direction) of audit fees with litigation risk proxies by litigation risk in studies using non-U.S. data because non-U.S. environment is not very litigious. Second, given a litigious environment like the U.S., research could be focussed on risk proxies that determine audit fees.

To examine this issue, I use four (two) risk proxies for shareholder (lender) litigation. The four proxies are (a) number of shareholders, (b) number of shares traded, (c) average stock return and (d) volatility of stock return (measured by its standard deviation). I expect that firms with more shareholders, more shares traded, lower and more volatile stock return have higher likelihood of shareholder litigation and hence higher audit fees. (See Section 2 for discussion of these proxies.) For lender litigation, the two proxies are (a) a dummy for all-equity firms and (b) a dummy for firms with public debt. (See Section 4 for definition.) I expect that all-equity firms have lower

audit fees because they do not have litigation risk from lenders. In addition, I expect that firms with public debt have higher audit fees since they have more lenders relying on audited financial statements and who do not directly monitor the management.

My results, using the above proxies, support my expectation that firms with higher shareholder or lender litigation risk have higher audit fees. In addition, additional tests suggest that leverage proxies may pick up financial distress because they are significant in regressions of audit fees only when financial distress (proxied by Altman's Z score) is controlled for. Moreover, results of sensitivity analyses suggest that firm size and other factors (e.g., specialist auditor and auditor change) are not likely to be driving the results. Thus, this paper contributes to the literature in two ways. First, it expands the audit fees model by showing that litigation risk proxies are important variables that affect audit fees. Second, this paper provides evidence which suggests that prior mixed results of leverage are likely due to the lack of control for firms' financial distress.

The next section of the paper develops the hypotheses. The research method is then discussed, followed by a description of the sample selection. The last two sections discuss the results, including sensitivity analyses, and the conclusions of the paper.

2 HYPOTHESES

Audit fees represent returns to auditors for their audit services. Prior studies (e.g., Simunic (1980), Francis and Simon (1987) and Craswell et al., (1995)) suggest that audit fees include a resource cost and an expected liability loss component. The resource cost represents the auditors' effort level and could be correctly priced in audit fees because auditors have precise knowledge of their own effort level. The literature (e.g.,

Simunic (1980), Chung and Lindsay (1988) and Anderson and Zeghal (1994)) suggests that effort level is related to the size, complexity, riskiness and other characteristics of the auditees. The expected liability loss component relates to the auditors' assessment of future loss arising from litigation against them. This component, however, could not be accurately priced in audit fees because of the vague liability regime under which auditors perform their work and the fact that parties who sue the auditors always have the benefit of hindsight that the auditors do not have. Nevertheless, it is important that the expected liability loss component is sufficiently priced because audit fees could not be adjusted ex post to cover actual loss.

Litigation against the auditors is brought by those who rely on audited financial statements. Mainly, they are shareholders and lenders of long-term loan.[5] Shareholders who suffer investment loss or lenders who could not recover their loan upon the bankruptcy of the auditees may sue the auditors. Although auditors could not estimate accurately the likely claims for damages by the parties ex ante, they should at least assess the likelihood of lawsuits against themselves brought by shareholders and lenders if they want to price-protect themselves beforehand. Hence, auditors' expected liability loss component in audit fees is positively related to the likelihood of lawsuits from shareholders and lenders. While deferring the discussion of proxies for such likelihood, I formulate the following hypotheses.

Hypothesis 1 (H_1): Firms with a higher likelihood of lawsuits from shareholders have higher audit fees.

Hypothesis 2 (H_2): Firms with a higher likelihood of lawsuits from lenders have higher audit fees.

2.1 Proxies for Shareholder Litigation Risk

I measure the likelihood of shareholder litigation by four variables. As discussed in Section 1, Simunic and Stein (1996) report that publicly held firms have higher audit fees than closely held firms because they have more dispersed ownership. In this paper, I measure ownership dispersion by two variables. The first is the number of common shareholders of a firm at the year end. Firms with more shareholders have more users relying on audited financial statements. The second measure is the trading volume of common shares during the year. Firms with higher trading volume of shares have higher volatility of shareholders (past and present) relying on audited financial statements. While the number of shareholders is a static measure of ownership dispersion at a point in time, the trading volume of shares is a more dynamic measure.

The next two measures of shareholder litigation risk are derived from studies on auditor litigation (e.g., Stice (1991) and Lys and Watts (1994)). These studies report that auditors of firms with negative stock return and / or a high volatility of stock return are more likely involved in litigation because it is easier for the plaintiff shareholders to support a case in court.[6] Hence, I suggest that auditors of those firms would assess a higher expected liability loss for those clients and charge them higher audit fees. In this paper, I measure stock return by the average monthly stock return during the year, and the volatility of stock return by the standard deviation of the monthly return during the year.

2.2 Proxies for Lender Litigation Risk

Prior studies (e.g., Gul and Tsui (1997), Craswell and Francis (1999) and Seetharaman et al. (2002)) use leverage to proxy for litigation risk from lenders but the mixed results would suggest that leverage is not a good proxy.[7] In this paper, I suggest

that the debt structure (or the type of debt) of the firms may matter. Specifically, I suggest that all-equity firms (as defined in Section 4) have lower audit fees. Holding constant the likelihood of lawsuits from shareholders, all-equity firms impose a lower overall likelihood of lawsuits against the auditors than levered firms because the likelihood of lawsuits by lenders is zero since they do not have debt. Therefore, the auditors' expected litigation loss component may be lower for all-equity firms than for levered firms, resulting in lower audit fees for all-equity clients.[8] Further, I expect that firms with debentures (or firms with public debt, as defined in Section 4) have higher audit fees. These firms are likely to have higher likelihood of lawsuits from lenders for several reasons. First, the number of lenders relying on audited financial statements is large. Second, the lenders are more distant from the firms and hence could not easily negotiate with the firms to protect themselves. Third, the aggregate amount of money involved is large. Thus, the auditors' expected liability loss component may be higher for firms with public debt, resulting in higher audit fees for such firms. Overall, using all-equity firms and firms with public debt as proxies for litigation risk from lenders, I expect that firms with higher likelihood of lawsuits from lenders have higher audit fees.

3 RESEARCH METHOD

To test the hypotheses, I use the following audit fees model.

$$\begin{aligned} LAF = {} & a_0 + a_1 LTA + a_2 CATA + a_3 QUICK + a_4 ROI + a_5 MODIFY + \\ & a_6 ELOSS + a_7 BIG5 + a_8 SEGNUM + a_9 ZS + a_{10} BETA + \\ & a_{11} CHSALE \end{aligned} \tag{1}$$

where

LAF	=	natural logarithm of audit fees (in thousands)
LTA	=	natural logarithm of total assets (in millions)
CATA	=	ratio of current assets to total assets

QUICK	=	ratio of current assets minus inventories, to current liabilities
ROI[9]	=	earnings before extraordinary item divided by the total of long-term debt and book value of preferred stock and common equity, and expressed in percentage
MODIFY	=	1 if the firm receives modified audit opinion in year t, or 0 otherwise
ELOSS	=	1 if the firm has a reported loss in year t or year t - 1, or 0 otherwise
BIG5	=	1 if the firm's auditor in year t is a Big 5 auditor, or 0 otherwise
SEGNUM	=	number of business segments
ZS	=	Altman's Z score
BETA	=	COMPUSTAT beta
CHSALE	=	ratio of sales in year t minus sales in year t - 1, to sales in year t – 1

In line with prior studies, I expect a_1 to be positive because larger firms (LTA), being more complex, necessitate greater audit effort (Simunic, 1980). More current assets in the firms' asset composition (CATA) increase audit risk (Turpen, 1990) and a_2 is expected to be positive. As firms with less liquid assets (QUICK) are more risky (Francis, 1984), I expect a_3 to be negative. The higher the accounting return (ROI), the more the risk sharing between auditor and client, and hence the lower the audit fees (Craswell and Francis, 1999). Thus, I expect a_4 to be negative. Firms with modified audit opinion (MODIFY) and firms with reported loss (ELOSS) increase the audit firms' litigation risk (see Simunic and Stein (1996) for a review of the literature).[10] Hence, I expect a_5 and a_6 to be positive. In addition, Big 5 (now Big 4) audit firms (BIG5) charge higher audit fees for their higher quality audits (Craswell et al., 1995) and I expect a_7 to be positive. Firms with more business segments (SEGNUM) are more complex (Carcello et al., 2002) and I expect a_8 to be positive also. The last three variables are used by studies on auditor litigation to distinguish firms with which auditors are sued from other firms (Stice, 1991; Lys and Watts, 1994; and Krishnan and Krishnan, 1997). Auditors of firms with higher financial distress (lower Z

score) are more likely to be sued because of going concern problems. Hence, I expect a_9 to be negative. In addition, auditors of firms with higher systematic risk (BETA) are more likely to be associated with litigation since these firms are more risky. Therefore, I expect a_{10} to be positive. Firms with high growth in sales (CHSALE) may have weaker internal control leading to higher likelihood of misstatement in financial statements (Lys and Watts, 1994). Hence, I expect a_{11} to be positive also.

To investigate H_1, I run ordinary least squares regression on the basic model with four additional variables as defined below.

LNSH	=	natural logarithm of the number of common shareholders (in thousands)
LTRAVOL	=	natural logarithm of the number of shares traded during the fiscal year (in millions)
MRET	=	Mean of the monthly stock return during the fiscal year[11]
SRET	=	standard deviation of the monthly stock return during the fiscal year

As discussed in Section 2, I expect LNSH, LTRAVOL and SRET to be positive, and MRET to be negative. To investigate H_2, I add two indicator variables in the basic model. ALLEQ takes the value of 1 for all-equity firms, or 0 for levered firms. I expect ALLEQ to be negative. PUBDEBT takes the value of 1 for firms with public debt, or 0 for other firms. I expect PUBDEBT to be positive.

4 SAMPLE

Data on audit fees are obtained from Standard and Poor Corporation and proxy statements available from the Edgar database. All other data are obtained from COMPUSTAT. The sample period is from 2000 to 2001.

I began the sample selection from COMPUSTAT. I first identified all-equity firms and firms with public debt from the sample. A firm was designated as an all-

equity firm if it had zero long term-debt in 2000 and 2001. (In section 5.2, I explore an alternative definition of all-equity firms.) Hence, I deleted firms with zero long-term debt in either 2000 or 2001. These firms were likely to be in the process of reissuing or retiring long-term debt. Firms with non-zero long-term debt in 2000 and 2001 were designated as levered firms. From the levered firms, I designated firms with non-zero (zero) debentures in long-term debt in both 2000 and 2001 as firms with (without) public debt. Firms with non-zero debentures in long-term debt in either 2000 or 2001 were deleted from the sample. Then, I calculated the other variables except audit fees for estimating equation (1). Next, I used audit fees data available from Standard and Poor Corporation and if not available, I collected the data from proxy statements available from the EDGAR database. After deleting observations with missing data and observations that were more than four standard deviations from the means of the variables, I had a sample of 4368 firm-year observations. Of these, 831 observations pertain to all-equity firms and 675 observations pertain to firms with public debt. In addition, 1782 observations come from year 2000.[12]

4.1 Descriptive Statistics

Table 1 provides selected descriptive statistics of the sample partitioned by shareholder litigation risk proxies. In panel A, the means and standard deviations of the continuous variables are shown. Firms with more shareholders and higher trading volume (above the median of LNSH and LTRAVOL respectively) have higher audit fees. In addition, firms with lower stock return (below the median of MRET) have higher audit fees. Although firms with more volatile stock return (above the median of SRET) have lower (instead of higher) audit fees, the overall results from these proxies of shareholder litigation risk support H_1 that auditors charge higher audit fees for higher litigation risk clients. The other continuous variables are also significantly

different across the sample partitioned by the risk proxies. In panel B, the number and proportion of firms with characteristics designated by the categorical variables are shown. There is no systematic evidence that suggests that firms with higher litigation risk from shareholders are either all-equity firms or firms with public debt. Hence, these results suggest no interaction effect between shareholder litigation risk proxies and the debt structure of the firms.

(Insert Table 1 here)

Table 2 provides selected descriptive statistics of the sample partitioned by debt. In panel A, the means and standard deviations of the continuous variables are shown. All-equity firms are significantly different from levered firms. First, firms with public debt have significantly higher level of debt (DE) than firms without such and all-equity firms. These results suggest that the criteria of designating all-equity firms and firms with public debt can distinctly classify the firms. Second, all-equity firms are smaller (LTA) and less profitable (ROI) and have more liquid resources (CATA and QUICK) than all other firms. Furthermore, firms with public debt have more dispersed ownership (LNSH), higher trading volume of shares (LTRAVOL) but lower and less volatile stock return (MRET and SRET respectively). Finally and more importantly, all-equity firms have lower audit fees and firms with public debt have higher audit fees than other firms.[13] These results are consistent with H_2. In panel B, the number and the proportion of firms that have modified opinion (MODIFY), reported loss in the last or current years (ELOSS) and Big 5 auditors (BIG5) are provided. There is a smaller (higher) proportion of all-equity firms that have modified opinion (reported loss) than levered firms. Moreover, there is a smaller proportion of all-equity firms with Big 5 auditors than levered firms.

(Insert Table 2 here)

Table 3 shows the industry (defined by each two-digit Standard Industry Code (SIC)) distribution of the sample. There are 22 industries in which there are only levered firms but no industries in which there are only all-equity firms.[14] In addition, 14 industries have only firms without public debt and one industry has only firms with public debt.[15] Except for business services (two-digit SIC being 73), there is no large clustering of the firms.[16]

(Insert Table 3 here)

The correlation matrix of the variables is provided in Table 4. Most of the correlation coefficients are significant but small. One exception is that between audit fees (LAF) and firm size (LTA). This result suggests that firm size is an important determinant of audit fees. (However, as reported below, my results are not driven by firm size.) In addition, the directions of the correlations involving audit fees and the shareholder litigation risk proxies are consistent with the results in Table 1. Furthermore, LAF is smaller for all-equity firms (ALLEQ) but higher for firms with public debt (PUBDEBT). These correlations are consistent with my hypotheses.[17]

(Insert Table 4 here)

4.2 Firm Size

As larger firms may have more common shareholders (LNSH) and higher volume of shares traded (LTRAVOL), the results that these proxies are increasing in audit fees may be driven by firm size. To assess this possibility, I divide the sample independently into quartiles by firm size and at the median of LNSH. Then, I compare, for each quartile of firm size, audit fees of firms above the median of LNSH

with the same below the median. The results (available from the author) show that only for firms in the top quartile of firm size, firms above the median of LNSH have higher audit fees than firms below the median. These results are reasonable because for small firms, there may not be sufficient variation in the number of shareholders (i.e., ownership dispersion) to allow difference in audit fees to be detected. Hence, after controlling for firm size, litigation risk from shareholders also determines audit fees. I repeat similar procedures for the volume of shares traded. The results (available from the author) show that for firms in the top and bottom quartiles of firm size, firms above the median of LTRAVOL have higher audit fees than firms below the median. Thus, firm size does not have a systematic effect on the results. Once again, these results suggest that firms with higher litigation risk from shareholders have higher audit fees.

Similarly, the results that all-equity firms have lower audit fees and firms with public debt have higher audit fees may be driven by firm size. To assess whether this is the case, I partition the sample into quartiles by firm size (LTA) and compare for each group, audit fees of all-equity firms versus levered firms and audit fees of firms with public debt versus those without. The results (available from the author) show that for each of the quartiles, all-equity firms have significantly lower audit fees than levered firms and that for the top two quartiles, firms with public debt have higher audit fees than other firms. Hence, firm size is not likely to be driving my results.

5 RESULTS AND DISCUSSION

5.1 Results of Shareholders' Litigation Risk Proxies

To control for the effect of other variables on audit fees, I run ordinary least squares regressions on equation (1). The results using shareholder litigation risk

proxies are reported in Table 5. The results of the control variables are consistent across the regressions that use different risk proxies. Except for change in sales (CHSALE), the results of which I do not have an explanation, and also BETA, other control variables are in the predicted direction and significant. For the risk proxies, three of them (LNSH, LTRAVOL and SRET) are significant. These results indicate that firms with more shareholders, higher trading volume and more volatile stock return have higher audit fees. The results of SRET are not consistent with the results in Table 1 but I regard results here in Table 5 as more reliable since the regression controls for the effect of other variables. Thus, firms with higher likelihood of shareholder litigation are charged higher audit fees and H_1 is supported.

(Insert Table 5 here)

To investigate the issue further, I add all four risk proxies in the model and re-run the regression. I find that LNSH, LTRAVOL and SRET are positive and significant as in Table 5. In addition, MRET is negative and significant ($p = 0.074$). This result suggests that firms with lower stock return have higher audit fees. The results of all other variables remain substantially unchanged.[18] Hence, H_1 is again supported.

As a sensitivity test, I use market adjusted return (firm return minus market return which is proxied by the S&P 500 index) to measure MRET and SRET. I re-run the analyses and find that the results are substantially unchanged.

5.2 Results of Debt Proxies

Table 6 reports the results of regressions using debt proxies. In model (1), the dummy ALLEQ is negative and significant, suggesting that all-equity firms have lower audit fees. The results of all the control variables are substantially the same as

in Table 5. In model (2), the dummy PUBDEBT is positive and significant. This result suggests that firms with public debt have higher audit fees. In model (3), I add both ALLEQ and PUBDEBT in the regression. The results are substantially unchanged.[19] In model (4), I delete all-equity firms from the sample. The dummy PUBDEBT is also positive and significant. Thus, as compared with levered firms without public debt, firms with public debt have higher audit fees. All these results support H_2.

(Insert Table 6 here)

A possible explanation of the above results is that differences in audit fees are due to additional audit efforts on debts. To assess this possibility, I consider the magnitude of audit effort and the shift in audit fees in the regressions.[20] First, audit effort of long-term debt is likely to be lower because of (a) lower audit risk (as compared with more risky assets like inventories) and (b) lower volume of transactions (as compared with sales and purchases which are of higher volume). Hence, I expect that additional audit fees due to auditing long-term debt to be small. Second, the shift in the intercept term that affects audit fees in the fitted model is given by $e^z - 1$, where z is the mean parameter value of the dummy variable in the fitted regression model (see Craswell et al. (1995)). Using model (3) of Table 6, the results suggest that, on average, audit fees of all-equity firms are 4.4 per cent lower and audit fees of firms with public debt are 6.9 per cent higher than other firms. These magnitudes of changes in audit fees suggest that audit effort could not be driving my results.

Another possible explanation of the results is that differences in audit fees are due to agency conflict between shareholders and debt holders in levered firms. This

shareholder-debt holder conflict may result in actions of the firms that benefit shareholders at the expense of debt holders. One such action is payment of dividends. By paying dividends, firms transfer wealth from debt holders to shareholders because fewer resources are left in the firms to satisfy the claims of debt holders (see Smith and Warner (1979)). Hence, I collected from COMPUSTAT dividend payout ratio for the sample firms, and match all-equity firms with levered firms on the bases of two-digit SIC industry and dividend payout ratio. Due to missing data for dividend payout ratio, the match produces 830 pairs of observations. In this sample, all-equity firms do not have significantly different dividend payout ratio from levered firms (results are available from the author). I re-run the analysis as in model (1) of Table 6, and find that the results are substantially unchanged. Hence, using dividend payout ratio as a proxy for shareholder-debt holder conflict, I find that the results are robust.

Next, as a sensitivity test, I re-define all-equity firms as firms that do not have debt (long-term and short-term) in the sample period. This definition caters for the effect of short-term debt on classifying firms as all-equity firms versus levered firms. There are 585 all-equity firm-year observations in the sample period out of a total firm-year observations of 4442.[21] I re-run the analyses as in model (1) and model (3) of Table 6 and obtain substantially the same results. Hence, the results are robust.

As a second test, I delete from the sample, firms with very small level of debt or debentures (defined arbitrarily as firms with less than 0.1 per cent of long-term debt or debentures in total assets).[22] Such firms may in practice be regarded as all-equity firms or firms without public debt. I re-run model (3) of Table 6 and find that the results are substantially unchanged.

5.2.1 Leverage Proxies

Although leverage is frequently used as a proxy for lender litigation risk in prior audit fees studies, the mixed results would suggest that leverage is not a good one. For example, leverage is significant in Craswell and Francis (1999) and Whisenant et al. (2003) but not in Firth (1997), Gul and Tsui (1997) and Seetharaman et al. (2002). The mixed results could not possibly be explained by the different countries involved and different definitions of leverage. First, the insignificant results of leverage span across different countries (e.g., Norway (Firth, 1997), Hong Kong (Gul and Tsui, 1997) and the U.K. or the U.S. (Seetharaman et al., 2002)). Second, studies using the same measurement of leverage do not produce consistent results. One widely used measurement of leverage is the ratio of long-term debt to total assets (see, e.g., Craswell et al. (1995), Gul and Tsui (1997) and Seetharaman et al. (2002)). However, leverage as defined is significant in Craswell et al. (1995) but not in Gul and Tsui (1997) and Seetharaman et al. (2002). Another measurement of leverage is total debt over total assets (e.g., Firth (1997) and Whisenant et al. (2003)).[23] Likewise, leverage as measured is significant in Whisenant et al. (2003) but not in Firth (1997).[24]

While this paper may not address the issue fully, it is reasonable to suggest that the leverage proxies may be picking up financial distress of the firms. The correlation coefficient (available from the author) between DE (long-term debt over total assets) and ZS (Z score) is -0.3173 and is in the expected direction. To investigate this possibility, I add DE in equation (1) and re-run the regression. I find that DE is negative but insignificant. Then I drop ZS and repeat the analysis. Once again, DE is insignificant but it is less negative. Next, I divide the sample at the median of ZS and run regressions (without ZS) for each sub-sample. The results

(available from the author) show that DE is positive and significant only for firms above the median (p = 0.039). Thus, leverage is a good proxy for lender litigation risk only when financial distress is controlled for.

I also explore the effect of defining leverage as total debt over total assets (called LEV thereafter) on the results. To tally with the new definition, I use the sample of 4442 observations that comes from the alternative definition of all-equity firms. With the addition of LEV in equation (1) while retaining ZS, I find that LEV is positive but insignificant. However, with the deletion of ZS, LEV is significantly positive (p = 0.031). Hence, different definitions of leverage may not be driving the results.

5.3 Additional Analyses

To check the robustness of my results, I perform additional analyses to investigate the following: (1) non-audit fees, (2) specialist auditor, (3) discretionary accruals and (4) auditor change.

5.3.1 Non-audit Fees

Prior studies (e.g., Palmrose (1986) and Craswell et al. (1995)) find that non-audit fees are positively related to audit fees. However, using a system of simultaneous equations, Whisenant et al. (2003) report no relation between audit and non-audit fees. Without going into the issue of joint determination of audit and non-audit fees, I include non-audit fees[25] in the audit fees model in equation (1) just for the sake of checking robustness of my results. I re-run the analyses and find that my results in Table 5 and Table 6 remain substantially unchanged except that the dummy BIG5 and LTRAVOL[26] become insignificant. Hence, my results are robust.

5.3.2 Specialist Auditor

Specialist auditors charge higher audit fees for their specialised knowledge (see Craswell et al. (1995)). As a check on the robustness of my results, I include in the audit fees model a dummy for firms that have specialist auditor. Similar to Craswell et al. (1995), I define a specialist auditor in the sample period as an auditor that has in any year at least ten per cent of market share (in terms of the net sales of clients)[27] in an industry (defined by each two-digit SIC) with 50 firms or more.[28] I collected from COMPUSTAT the necessary data[29] for identifying industry specialist and designated the dummy of specialist auditor for the sample firms accordingly.[30] I re-run the analyses as in Table 5 and Table 6 and find that the specialist dummy is positive and significant while the dummy BIG5 is insignificant but the results of all other variables are substantially unchanged.[31]

5.3.3 Discretionary Accruals

Gul et al. (2003) suggest that firms with higher discretionary accruals are more likely to have more misstatements and hence higher audit fees either because of the inherent risk of accounts comprising accruals (e.g., accounts receivable and inventories) or intentional manipulation. To examine whether discretionary accruals affect my results, I include the absolute value of discretionary accruals in the audit fees model.[32] First, I collected from COMPUSTAT the necessary data for estimating on a year by year basis, discretionary accruals using the Jones' (1991) model and the modified Jones' model of Dechow et at. (1995) for industries (defined by each two-digit SIC) that had at least eight firms.[33] The estimation yielded 11598 firm-year observations in my sample period. Then, I matched the sample of discretionary accruals with my sample firms, and was able to have discretionary accruals for 4242 observations. I re-run the analyses as in Table 5 and Table 6 and find that

discretionary accruals are insignificant while the results of all other variables are substantially unchanged. Thus, my results are robust.

5.3.4 Auditor Change

When firms change auditors, they may be charged higher or lower audit fees. Possible reasons include (a) the search for auditors that charge lower fees, (b) re-alignment to auditors that provide the appropriate services and (c) low-balling by auditors. Without distinguishing these reasons and possibly others, I include in the regression model a dummy for auditor change,[34] and re-run the analyses as in Table 5 and Table 6. I find that my results are robust to the inclusion of the auditor change dummy which is significantly negative.

6 CONCLUSION

In this paper, I investigate the pricing of expected liability loss by auditors in audit fees. I suggest that such expected loss is positively related to the likelihood of lawsuits by users of audited financial statements (i.e., shareholders and lenders). I use four variables to proxy for the likelihood of shareholder litigation. They are the number of shareholders, the number of shares traded, stock return and its standard deviation. My results support the hypothesis that firms with a higher likelihood of shareholder litigation have higher audit fees. In addition, I use two dummies for the likelihood of lender litigation: one for all-equity firms and the other for firms with public debt. My results suggest that all-equity firms have lower audit fees and firms with public debt have higher audit fees than other firms. Thus, firms with higher likelihood of lender litigation have higher audit fees. Further analyses suggest that prior mixed results using leverage proxies may be due to the lack of control for firms' financial distress which the proxies pick up.

I suggest that future research could examine the auditors' adjustment of audit fees to reflect latest assessment of expected liability loss after litigation. When litigation occurs, auditors may discover that their previous expected litigation loss is not adequate to cover the actual loss. One way is to resign from the engagement while another is not to take up risky new clients. Yet a third possibility is to increase in general audit fees of all clients. This could happen because auditors may review their previous assessment of liability risk and increase their ex ante price protection in audit fees.

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Table 1

Selected Descriptive Statistics of the Variables of the Sample by Shareholder Litigation Risk Proxies

Panel A: Mean and standard deviation (beneath) of continuous variables with t-tests performed on the difference between means

	(a) below median of LNSH	(b) above median of LNSH	(c) below median of LTRAVOL	(d) above median of LTRAVOL	(e) below median of MRET	(f) above median of MRET	(g) below median of SRET	(h) above median of SRET
LAF	5.107***	5.813***	4.958***	5.963***	5.496**	5.425**	5.735***	5.185***
	(0.841)	(1.187)	(0.825)	(1.086)	(1.123)	(1.050)	(1.162)	(0.930)
LTA	4.760***	6.184***	4.400***	6.545***	5.515	5.430	6.137***	4.808***
	(1.590)	(2.028)	(1.498)	(1.764)	(2.030)	(1.879)	(1.923)	(1.754)
CATA	0.544***	0.469***	0.522***	0.491***	0.494***	0.518***	0.441***	0.571***
	(0.242)	(0.234)	(0.238)	(0.243)	(0.242)	(0.239)	(0.227)	(0.237)
QUICK	2.529***	2.011***	1.946***	2.593***	2.235	2.305	1.697***	2.842***
	(3.200)	(2.630)	(2.307)	(3.428)	(3.037)	(2.839)	(1.929)	(3.593)
ROI	-11.270***	-4.064***	-9.017*	-6.315*	-12.080***	-3.250***	4.452***	-19.780***
	(56.304)	(46.617)	(56.019)	(47.190)	(57.579)	(44.881)	(25.079)	(66.678)
SEGNUM	1.942***	2.558***	2.099***	2.402***	2.288	2.213	2.587***	1.914***
	(1.368)	(1.721)	(1.447)	(1.698)	(1.612)	(1.556)	(1.731)	(1.342)
ZS	4.735	4.700	3.481***	5.955***	3.707***	5.728***	4.372***	5.064***
	(7.922)	(6.793)	(5.883)	(8.434)	(6.303)	(8.193)	(4.734)	(9.287)
BETA	0.973**	0.922**	0.723***	1.172***	1.002***	0.893***	0.678***	1.217***
	(0.916)	(0.678)	(0.739)	(0.808)	(0.789)	(0.820)	(0.469)	(0.967)
CHSALE	0.162	0.177	0.111***	0.228***	0.120***	0.219***	0.091***	0.248***
	(0.721)	(0.694)	(0.644)	(0.762)	(0.642)	(0.765)	(0.435)	(0.894)

Panel B: Number and proportion (beneath) of firms having categorical variable designated as 1 with chi-square tests performed on the difference between proportions

	(a) below median of LNSH	(b) above median of LNSH	(c) below median of LTRAVOL	(d) above median of LTRAVOL	(e) below median of MRET	(f) above median of MRET	(g) below median of SRET	(h) above median of SRET
MODIFY	352	418	323	447	405	365	381	389
	(0.161)***	(0.191)***	(0.148)***	(0.205)***	(0.185)	(0.167)	(0.175)	(0.178)
ELOSS	1184	862	1138	908	1123	923	617	1429
	(0.542)***	(0.395)***	(0.521)***	(0.416)***	(0.514)***	(0.423)***	(0.283)***	(0.654)***
BIG5	1864	1999	1765	2098	1931	1932	1988	1875

	(0.854)***	(0.915)***	(0.808)***	(0.961)***	(0.884)	(0.885)	(0.910)***	(0.859)***
ALLEQ	501	330	411	420	414	417	285	546
	(0.230)***	(0.151)***	(0.188)	(0.192)	(0.190)	(0.191)	(0.130)***	(0.250)***
PUBDEBT	168	507	255	420	363	312	553	122
	(0.077)***	(0.232)***	(0.117)***	(0.192)***	(0.166)**	(0.143)**	(0.253)***	(0.056)***

*, **, *** designate 2-tailed statistical significance at the 0.10, 0.05 and 0.01 level respectively.
The sample size for below (above) median of LNSH is 2183 (2185). The unequal sample size is due to ties. The sample size for all other partitions is 2184 for both below and above the median.
The variables are defined as follows:
LNSH = natural logarithm of the number of common shareholders (in thousands)
LTRAVOL = natural logarithm of the number of shares traded during the fiscal year (in millions)
MRET = mean of the monthly stock return during the fiscal year
SRET = standard deviation of the monthly stock return during the fiscal year
LAF = natural logarithm of audit fees (in thousands)
LTA = natural logarithm of total assets (in millions)
CATA = ratio of current assets to total assets
QUICK = ratio of current assets minus inventories, to current liabilities
ROI = earnings before extraordinary item divided by the total of long-term debt and book value of preferred stock and common equity, and expressed in percentage
SEGNUM = number of business segments
ZS = Altman's Z score
BETA = COMPUSTA beta
CHSALE = ratio of sales in year t minus sales in year t - 1, to sales in year t - 1
MODIFY = 1 if the firm receives a modified audit opinion in year t, or 0 otherwise
ELOSS = 1 if the firm has a reported loss in year t or year t - 1, or 0 otherwise
BIG5 = 1 if the firm's auditor in year t is a Big 5 auditor, or 0 otherwise
ALLEQ = 1 (0) if the firm does not have (has) long-term debt in year 2000 and year 2001
PUBDEBT = 1 (0) if the firm has (does not have) debentures in year 2000 and year 2001

Table 2

Selected Descriptive Statistics of the Variables of the Sample by Debt

Panel A: Mean and standard deviation (beneath) of continuous variables with t-tests performed on the difference between means

	(a) All-equity firms (n = 831)	(b) Levered firms (n = 3537)	(c) Firms with public debt (n = 675)	(d) Firms without public debt (n = 3693)	(e) Firms with public debt (n = 675)	(f) Levered firms without public debt (n = 2862)	(g) Firms with public debt (n = 675)	(h) All-equity firms (n = 831)
LAF	4.866***	5.600***	6.375***	5.293***	6.375***	5.417***	6.375***	4.866***
	(0.812)	(1.097)	(1.216)	(0.974)	(1.216)	(0.982)	(1.216)	(0.812)
LTA	4.366***	5.733***	7.238***	5.150***	7.238***	5.377***	7.238***	4.366***
	(1.546)	(1.952)	(1.877)	(1.791)	(1.877)	(1.794)	(1.877)	(1.546)
CATA	0.701***	0.460***	0.383***	0.529***	0.383***	0.479***	0.383***	0.701***
	(0.192)	(0.228)	(0.186)	(0.243)	(0.186)	(0.233)	(0.186)	(0.192)
QUICK	4.170***	1.823***	1.298***	2.447***	1.298***	1.947***	1.298***	4.170***
	(4.232)	(2.328)	(1.464)	(3.103)	(1.464)	(2.473)	(1.464)	(4.232)
ROI	-12.880***	-6.441***	3.545***	-9.715***	3.545***	-8.796***	3.545***	-12.880***
	(55.877)	(50.731)	(17.917)	(55.575)	(17.917)	(55.463)	(17.917)	(55.877)
SEGNUM	1.631***	2.396***	3.233***	2.071***	3.233***	2.199***	3.233***	1.631***
	(1.087)	(1.647)	(1.769)	(1.480)	(1.769)	(1.553)	(1.769)	(1.087)
ZS	9.397***	3.618***	3.270***	4.982***	3.270***	3.701***	3.270***	9.397***
	(11.519)	(5.453)	(2.513)	(7.924)	(2.513)	(5.935)	(2.513)	(11.519)
BETA	1.182***	0.892***	0.731***	0.987***	0.731***	0.930***	0.731***	1.182***
	(0.928)	(0.765)	(0.455)	(0.849)	(0.455)	(0.816)	(0.455)	(0.928)
CHSALE	0.179	0.167	0.116**	0.179**	0.116**	0.179**	0.116**	0.179
	(0.859)	(0.667)	(0.690)	(0.710)	(0.690)	(0.661)	(0.690)	(0.859)
LNSH	-0.037***	0.485***	1.583***	0.166***	1.583***	0.225***	1.583***	-0.037***
	(1.589)	(1.755)	(1.843)	(1.624)	(1.843)	(1.629)	(1.843)	(1.589)
LTRAVOL	2.927	2.996	3.640***	2.863***	3.640***	2.844***	3.640***	2.927***
	(2.019)	(2.046)	(2.068)	(2.013)	(2.068)	(2.011)	(2.068)	(2.019)
MRET	1.713	1.791	1.175***	1.886***	1.175***	1.936***	1.175**	1.713**
	(6.530)	(6.303)	(3.6000)	(6.722)	(3.6000)	(6.777)	(3.600)	(6.530)
SRET	25.152***	20.145***	13.614***	22.465***	13.614***	21.685***	13.614***	25.152***
	(15.969)	(14.260)	(7.020)	(15.348)	(7.020)	(15.076)	(7.020)	(15.969)

DE	0.000*** (not applicable)	0.227*** (0.173)	0.258*** (0.150)	0.170*** (0.199)	0.258*** (0.150)	0.220*** (0.200)	0.258*** (0.150)	0.000*** (not applicable)

Panel B: Number and proportion (beneath) of firms having categorical variable designated as 1 with chi-square tests performed on the difference between proportions

	(a) All-equity firms (n = 831)	(b) Levered firms (n = 3537)	(c) Firms with public debt (n = 675)	(d) Firms without public debt (n = 3693)	(e) Firms with public debt (n = 675)	(f) Levered firms without public debt (n = 2862)	(g) Firms with public debt (n = 675)	(h) All-equity firms (n = 831)
MODIFY	93 (0.112)***	677 (0.191)***	144 (0.213)***	626 (0.170)***	144 (0.213)	533 (0.186)	144 (0.213)***	93 (0.112)***
ELOSS	442 (0.532)***	1604 (0.454)***	197 (0.292)***	1849 (0.501)***	197 (0.292)***	1407 (0.492)***	197 (0.292)***	442 (0.532)***
BIG5	719 (0.865)*	3144 (0.889)*	631 (0.935)***	3232 (0.875)***	631 (0.935)***	2513 (0.878)***	631 (0.935)***	719 (0.865)***

*, **, *** designate 2-tailed statistical significance at the 0.10, 0.05 and 0.01 level respectively.

The variables are defined as follows:

LAF = natural logarithm of audit fees (in thousands)

LTA = natural logarithm of total assets (in millions)

CATA = ratio of current assets to total assets

QUICK = ratio of current assets minus inventories, to current liabilities

ROI = earnings before extraordinary item divided by the total of long-term debt and book value of preferred stock and common equity, and expressed in percentage

SEGNUM = number of business segments

ZS = Altman's Z score

BETA = COMPUSTA beta

CHSALE = ratio of sales in year t minus sales in year t - 1, to sales in year t - 1

LNSH = natural logarithm of the number of common shareholders (in thousands)

LTRAVOL = natural logarithm of the number of shares traded during the year (in millions)

MRET = mean of the monthly stock return during the fiscal year

SRET = standard deviation of the monthly stock return during the fiscal year

DE = ratio of long-term debt to total assets

MODIFY = 1 if the firm receives a modified audit opinion in year t, or 0 otherwise

ELOSS = 1 if the firm has a reported loss in year t or year t - 1, or 0 otherwise

BIG5 = 1 if the firm's auditor in year t is a Big 5 auditor, or 0 otherwise

Table 3
Industry Distribution of the Sample

2-digit SIC	Description of industry	Number of firms (Percentage)			
		All-equity firms	Levered firms	Firms with public debt	Firms without public debt
1	Agriculture Production-Crops		17 (0.48)		17 (0.46)
2	Agriculture Production-Livestock Animal Spec		2 (0.06)	2 (0.30)	
7	Agricultural Services		2 (0.06)		2 (0.05)
9	Fishing, Hunting & Trapping		1 (0.03)		1 (0.03)
10	Metal Mining		16 (0.45)	6 (0.89)	10 (0.27)
12	Coal Mining		3 (0.08)	1 (0.15)	2 (0.05)
13	Oil and Gas Extraction	17 (2.05)	148 (4.18)	28 (4.15)	137 (3.71)
14	Mining, Quarry Non-metal Minerals	2 (0.24)	8 (0.23)	6 (0.89)	4 (0.11)
15	Building Construction-Gen Contr or Bldr		7 (0.20)	2 (0.30)	5 (0.14)
16	Heavy Construction-Not Building Construction	2 (0.24)	15 (0.42)	1 (0.15)	16 (0.43)
17	Construction-Special Trade		14 (0.40)	2 (0.30)	12 (0.32)
20	Food and Kindred Products	8 (0.96)	107 (3.03)	33 (4.89)	82 (2.22)
21	Tobacco Products		5 (0.14)		5 (0.14)
22	Textile Mill Products	2 (0.24)	21 (0.59)	3 (0.44)	20 (0.54)
23	Apparel & Other Finished Products	5 (0.60)	41 (1.16)	13 (1.93)	33 (0.89)
24	Lumber and Wood Products, Ex Furniture	6 (0.72)	23 (0.65)	12 (1.78)	17 (0.46)
25	Furniture and Fixtures	4 (0.48)	36 (1.02)	15 (2.22)	25 (0.68)
26	Paper and Allied Products	2 (0.24)	52 (1.47)	22 (3.26)	32 (0.87)
27	Printing, Publishing and Allied Products	6 (0.72)	64 (1.81)	21 (3.11)	49 (1.33)
28	Chemicals and Allied Products	88 (10.59)	325 (9.19)	76 (11.26)	337 (9.13)
29	Petroleum Refining and Related Industries		21 (0.59)	11 (1.63)	10 (0.27)
30	Rubber and Misc Plastics Products	6 (0.72)	64 (1.81)	15 (2.22)	55 (1.49)
31	Leather and Leather Products	6 (0.72)	22 (0.62)	2 (0.30)	26 (0.70)
32	Stone, Clay, Glass, Concrete Products	2 (0.24)	27 (0.76)	8 (1.19)	21 (0.57)
33	Primary Metal Industries	2 (0.24)	80 (2.26)	36 (5.33)	46 (1.25)
34	Fabr Metal, Ex Machinery, Trans Equipment	7 (0.84)	81 (2.29)	36 (5.33)	52 (1.41)

35	Industrial, Commercial Machinery, Computer Equipment	65 (7.82)	252 (7.12)	59 (8.74)	258 (6.99)
36	Electr, Oth Elec Eq, Ex Cmp	105 (12.64)	298 (8.43)	35 (5.19)	368 (9.96)
37	Transportation Equipment	15 (1.81)	95 (2.69)	27 (4.00)	83 (2.25)
38	Meas Instr;Photo Goods;Watches	100 (12.03)	236 (6.67)	34 (5.04)	302 (8.18)
39	Misc Manufacturing Industries	8 (0.96)	41 (1.16)	3 (0.44)	46 (1.25)
40	Railroad Transportation	2 (0.24)	16 (0.45)	6 (0.89)	12 (0.32)
42	Motor Freight Trans, Warehouse	4 (0.48)	46 (1.30)	6 (0.89)	44 (1.19)
44	Water Transportation		14 (0.40)	2 (0.30)	12 (0.32)
45	Transportation by Air		38 (1.07)	16 (2.37)	22 (0.60)
46	Pipe Lines, Ex Natural Gas		1 (0.03)		1 (0.03)
47	Transportation Services	4 (0.48)	9 (0.25)		13 (0.35)
48	Communications	5 (0.60)	114 (3.22)	17 (2.52)	102 (2.76)
50	Durable Goods-Wholesale	18 (2.17)	109 (3.08)	13 (1.93)	114 (3.09)
51	Nondurable Goods-Wholesale	13 (1.56)	50 (1.41)	16 (2.37)	47 (1.27)
52	Building Materials, Hardware, Garden-Retail	2 (0.24)	13 (0.37)	4 (0.59)	11 (0.30)
53	General Merchandise Stores	1 (0.12)	24 (0.68)	8 (1.19)	17 (0.46)
54	Food Stores	2 (0.24)	21 (0.59)	6 (0.89)	17 (0.46)
55	Auto Dealers, Gas Stations		31 (0.88)	1 (0.15)	30 (0.81)
56	Apparel and Accessory Stores	27 (3.25)	47 (1.33)	7 (1.04)	67 (1.81)
57	Home Furniture & Equipment Stores	7 (0.84)	30 (0.85)	2 (0.30)	35 (0.95)
58	Eating and Drinking Places	7 (0.84)	95 (2.69)	6 (0.89)	96 (2.60)
59	Miscellaneous Retail	18 (2.17)	94 (2.66)	7 (1.04)	105 (2.84)
60	Depository Institutions		2 (0.06)		2 (0.05)
67	Holding, Other Investment Offices		1 (0.03)		1 (0.03)
70	Hotels, Other Lodging Places		24 (0.68)	7 (1.04)	17 (0.46)
72	Personal Services		12 (0.34)	2 (0.30)	10 (0.27)
73	Business Services	222 (26.71)	355 (10.04)	14 (2.07)	563 (15.25)
75	Auto Repair, Services, Parking		10 (0.28)	2 (0.30)	8 (0.22)
76	Misc Repair Services		2 (0.06)		2 (0.05)
78	Motion Pictures	2	11		13

		(0.24)	(0.31)		(0.35)
79	Amusement and Recreation Services	3 (0.36)	55 (1.55)	10 (1.48)	48 (1.30)
80	Health Services	8 (0.96)	76 (2.15)	10 (1.48)	74 (2.00)
81	Legal Services	1 (0.12)	2 (0.06)		3 (0.08)
82	Educational Services	7 (0.84)	13 (0.37)		20 (0.54)
83	Social Services		14 (0.40)		14 (0.38)
87	Engr, Acc, Resh, Mgmt, Rel Services	20 (2.41)	82 (2.32)	4 (0.59)	98 (2.65)
99	Nonclassifiable Establishment		2 (0.06)		2 (0.05)
Total		831 (100)	3537 (100)	675 (100)	3693 (100)

Table 4

Pearson Correlation Matrix of the Variables of the Sample
(n = 4368)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) LAF	1.000									
(2) LTA	0.838***	1.000								
(3) CATA	-0.276***	-0.401***	1.000							
(4) QUICK	-0.252***	-0.163***	0.386***	1.000						
(5) ROI	0.107***	0.225***	-0.087***	-0.032**	1.000					
(6) MODIFY	0.119***	0.101***	-0.111***	-0.061***	-0.067***	1.000				
(7) ELOSS	-0.187***	-0.321***	0.118***	0.101***	-0.370***	0.103***	1.000			
(8) BIG5	0.330***	0.360***	-0.073***	-0.000	0.037**	0.066***	-0.057***	1.000		
(9) SEGNUM	0.401***	0.338***	-0.213***	-0.175***	0.089***	0.048***	-0.123***	0.089***	1.000	
(10) ZS	-0.110***	0.005	0.263***	0.493***	0.149***	-0.114***	-0.155***	0.041***	-0.127***	1.000
(11) BETA	0.051***	0.035**	0.178***	0.139***	-0.217***	-0.026*	0.190***	0.090***	-0.096***	0.057***
(12) CHSALE	-0.077***	-0.032**	0.004	0.143***	-0.012	-0.013	0.041***	-0.025	-0.061***	0.128***
(13) ALLEQ	-0.265***	0.274***	0.392***	0.313***	-0.049***	-0.082***	0.062***	-0.029*	-0.190***	0.307***
(14) PUBDEBT	0.360***	0.386***	-0.218***	-0.141***	0.093***	0.042***	-0.151***	0.067***	0.265***	-0.084***
(15) LNSH	0.455***	0.491***	-0.181***	-0.092***	0.085***	0.056***	-0.166***	0.114***	0.246***	-0.001
(16) LTRAVOL	0.572***	0.663***	-0.062***	0.101***	0.017	0.078***	-0.109***	0.294***	0.111***	0.189***
(17) MRET	-0.072***	-0.068***	0.065***	0.025	0.091***	-0.023	-0.050***	-0.022	-0.053***	0.157***
(18) SRET	-0.244***	-0.352***	0.244***	0.171***	-0.282***	0.022	-0.368***	-0.089***	-0.189***	-0.016

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(11) BETA	1.000							
(12) CHSALE	0.058***	1.000						
(13) ALLEQ	0.141***	0.007	1.000					
(14) PUBDEBT	-0.115***	-0.032**	-0.207***	1.000				
(15) LNSH	-0.036**	-0.001	-0.118***	0.295***	1.000			
(16) LTRAVOL	0.339***	0.096***	-0.013	0.138***	0.408***	1.000		
(17) MRET	-0.109***	0.074***	-0.005	-0.041***	-0.036**	0.007	1.000	
(18) SRET	0.290***	0.082***	0.133***	-0.217***	-0.192***	0.060***	0.440***	1.000

*, **, *** designate 2-tailed statistical significance at the 0.10, 0.05 and 0.01 level respectively.
The variables are defined as follows:
LAF = natural logarithm of audit fees (in thousands)
LTA = natural logarithm of total assets (in millions)
CATA = ratio of current assets to total assets
QUICK = ratio of current assets minus inventories, to current liabilities
ROI = earnings before extraordinary item divided by the total of long-term debt and book value of preferred stock and common equity, and expressed in percentage
MODIFY = 1 if the firm receives a modified audit opinion in year t, or 0 otherwise
ELOSS = 1 if the firm has a reported loss in year t or year t - 1, or 0 otherwise
BIG5 = 1 if the firm's auditor in year t is a Big 5 auditor, or 0 otherwise
SEGNUM = number of business segments
ZS = Altman's Z score
BETA = COMPUSTA beta
CHSALE = ratio of sales in year t minus sales in year t - 1, to sales in year t - 1
ALLEQ = 1 (0) if the firm does not have (has) long-term debt in year 2000 and year 2001
PUBDEBT = 1 (0) if the firm has (does not have) debentures in year 2000 and year 2001
LNSH = natural logarithm of the number of common shareholders (in thousands)
LTRAVOL = natural logarithm of the number of shares traded during the year (in millions)
MRET = mean of the monthly stock return during the fiscal year
SRET = standard deviation of the monthly stock return during the fiscal year

Table 5

Audit Fees Regression Model for Shareholders' Litigation Risk Proxy
(Dependent Variable is Natural Logarithm of Audit Fees, LAF)

(n = 4368)

Variable	Predicted Sign	Parameter Estimate (p value) Litigation Risk Proxied by LNSH (+)	LTRAVOL (+)	MRET (-)	SRET (+)
Intercept	not applicable	2.346 (0.000)***	2.375 (0.000)***	2.288 (0.000)***	2.227 (0.000)***
LTA	+	0.466 (0.000)***	0.454 (0.000)***	0.478 (0.000)***	0.483 (0.000)***
CATA	+	0.663 (0.000)***	0.640 (0.000)***	0.671 (0.000)***	0.661 (0.000)***
QUICK	-	-0.047 (0.000)***	-0.049 (0.000)***	-0.047 (0.000)***	-0.048 (0.000)***
ROI	-	-0.001 (0.000)***	-0.001 (0.001)***	-0.001 (0.000)***	-0.001 (0.001)***
MODIFY	+	0.045 (0.052)*	0.041 (0.077)*	0.046 (0.050)**	0.042 (0.071)*
ELOSS	+	0.157 (0.000)***	0.152 (0.000)***	0.157 (0.000)***	0.141 (0.000)***
BIG5	+	0.103 (0.000)***	0.090 (0.001)***	0.093 (0.001)***	0.093 (0.001)***
SEGNUM	+	0.082 (0.000)***	0.086 (0.000)***	0.084 (0.000)***	0.085 (0.000)***
ZS	-	-0.008 (0.000)***	-0.009 (0.000)***	0.008 (0.000)***	-0.007 (0.000)***
BETA	+	0.005 (0.634)	-0.016 (0.184)	0.003 (0.790)	-0.010 (0.414)
CHSALE	+	-0.032 (0.009)***	-0.038 (0.004)***	-0.032 (0.011)**	-0.034 (0.008)***
Risk proxy		0.026 (0.000)***	0.030 (0.000)***	0.001 (0.383)	0.003 (0.000)***
F value for the model (p value)		1154.86 (0.000)***	1154.20 (0.000)***	1146.78 (0.000)***	1153.68 (0.000)***
Adjusted R-squared		0.760	0.760	0.759	0.760

*, **, *** designate 2-tailed statistical significance at the 0.10, 0.05 and 0.01 level respectively.
p value is based on t statistic adjusted for heteroscedasticity (White 1980).
The variables are defined as follows:
LAF = natural logarithm of audit fees (in thousands)
LNSH = natural logarithm of the number of common shareholders (in thousands)
LTRAVOL = natural logarithm of the number of shares traded during the year (in millions)
MRET = mean of the monthly stock return during the fiscal year
SRET = standard deviation of the monthly stock return during the fiscal year
LTA = natural logarithm of total assets (in millions)
CATA = ratio of current assets to total assets
QUICK = ratio of current assets minus inventories, to current liabilities
ROI = earnings before extraordinary item divided by the total of long-term debt and book value of preferred stock and common equity, and expressed in percentage

MODIFY = 1 if the firm receives a modified audit opinion in year t, or 0 otherwise
ELOSS = 1 if the firm has a reported loss in year t or year t - 1, or 0 otherwise
BIG5 = 1 if the firm's auditor in year t is a Big 5 auditor, or 0 otherwise
SEGNUM = number of business segments
ZS = Altman's Z score
BETA = COMPUSTA beta
CHSALE = ratio of sales in year t minus sales in year t - 1, to sales in year t - 1

Table 6

Audit Fees Regression Model for Type of Debt
(Dependent Variable is Natural Logarithm of Audit Fees, LAF)

Variable	Predicted Sign	Parameter Estimate (p value) Model (1) (n = 4368)	(2) (n = 4368)	(3) (n = 4368)	(4) (n = 3537)
Intercept	not applicable	2.296 (0.000)***	2.301 (0.000)***	2.305 (0.000)***	2.233 (0.000)***
LTA	+	0.476 (0.000)***	0.473 (0.000)***	0.471 (0.000)***	0.484 (0.000)***
CATA	+	0.689 (0.000)***	0.673 (0.000)***	0.689 (0.000)***	0.821 (0.000)***
QUICK	-	-0.047 (0.000)***	-0.047 (0.000)***	-0.047 (0.000)***	-0.063 (0.000)***
ROI	-	-0.001 (0.000)***	-0.001 (0.001)***	-0.001 (0.000)***	-0.001 (0.001)***
MODIFY	+	0.045 (0.052)*	0.046 (0.047)**	0.046 (0.049)**	0.038 (0.132)
ELOSS	+	0.156 (0.000)***	0.158 (0.000)***	0.157 (0.000)***	0.148 (0.000)***
BIG5	+	0.095 (0.001)***	0.098 (0.001)***	0.100 (0.001)***	0.090 (0.005)***
SEGNUM	+	0.084 (0.000)***	0.082 (0.000)***	0.082 (0.000)***	0.080 (0.000)***
ZS	-	-0.007 (0.000)***	-0.007 (0.000)***	-0.007 (0.000)***	-0.008 (0.000)***
BETA	+	0.004 (0.721)	0.005 (0.639)	0.007 (0.539)	0.002 (0.873)
CHSALE	+	-0.032 (0.009)***	-0.031 (0.011)**	-0.032 (0.009)***	-0.030 (0.058)*
ALLEQ	-	-0.048 (0.034)**		-0.045 (0.049)**	
PUBDEBT	+		0.069 (0.009)***	0.066 (0.013)**	0.045 (0.093)*
F value for the model (p value)		1147.99 (0.000)***	1149.22 (0.000)***	1061.72 (0.000)***	947.09 (0.000)***
Adjusted R-squared		0.759	0.759	0.760	0.763

Models (1), (2) and (3) use the whole sample while model (4) uses only levered firms.
*, **, *** designate 2-tailed statistical significance at the 0.10, 0.05 and 0.01 level respectively.
p value is based on t statistic adjusted for heteroscedasticity (White 1980).
The variables are defined as follows:
LAF = natural logarithm of audit fees (in thousands)
LTA = natural logarithm of total assets (in millions)
CATA = ratio of current assets to total assets
QUICK = ratio of current assets minus inventories, to current liabilities
ROI = earnings before extraordinary item divided by the total of long-term debt and book value of preferred stock and common equity, and expressed in percentage
MODIFY = 1 if the firm receives a modified audit opinion in year t, or 0 otherwise
ELOSS = 1 if the firm has a reported loss in year t or year t - 1, or 0 otherwise

BIG5 = 1 if the firm's auditor in year t is a Big 5 auditor, or 0 otherwise
SEGNUM = number of business segments
ZS = Altman's Z score
BETA = COMPUSTA beta
CHSALE = ratio of sales in year t minus sales in year t - 1, to sales in year t - 1
ALLEQ = 1 (0) if the firm does not have (has) long-term debt in year 2000 and year 2001
PUBDEBT = 1 (0) if the firm has (does not have) debentures in year 2000 and year 2001

Endnotes

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[1] Lai and Gul (2004) report evidence that is consistent with Laventhol and Horwath's claim that its demise is due to the perception of itself being a "deep pocket" but not poor professional performance.

[2] PricewaterhouseCoopers pays more than 57 million Euros to settle a class-action lawsuit brought by shareholders of MicroStrategy Inc. (Weil, 2001).

[3] For example, the receipt of a "subject to" opinion by the auditee is found to be significant in Simunic (1980) but not in Turpen (1990) and Beatty (1993). The auditee's reported loss is significant in Simunic (1980) and Turpen (1990) but not in Chung and Lindsay (1988) and Francis (1984) that use Canadian and Australian data respectively. Leverage is significant in Craswell et al. (1995) but not in Francis (1984).

[4] See discussion in Section 5.2.1.

[5] In Section 5.2, I examine the effect of short-term loan on audit fees and find that my results are robust.

[6] These studies also use financial statement variables to distinguish auditors whom are sued from those whom are not. However, financial statement variables may also capture inherent risks of the firms which are also reflected by variables in the audit fees model. In contrast, market measures would not suffer from such a construct validity problem.

[7] In Section 5.2.1, I explore this issue further.

[8] The lower audit fees of all-equity firms may also be due to less audit effort required for the audit. I investigate this possibility in Section 5.2 and find that my results are not likely to be driven by audit effort.

[9] This variable is obtained from COMPUSTAT.

[10] As discussed in note 3, audit opinion and reported loss do not produce consistent results in prior studies. I use them merely as controls in the regressions.

[11] In order to have an efficient estimation of MRET and SRET, I require at least eight months' data of stock return of the firms.

[12] Adding a year dummy for year 2000 does not change substantially the results in Table 5 and Table 6.

[13] The mean audit fees (found by taking the inverse logarithm of LAF) are: (a) \$0.13 million for all-equity firms, (b) \$0.27 million for levered firms, (c) \$0.587 million for firms with public debt, (d) \$0.199 million for firms without public debt and (e) \$0.225 million for levered firms without public debt.

[14] I delete observations in the 22 industries in which there are only levered firms and re-run the analyses as in model (1) of Table 6, and obtain substantially the same results. Hence, industry effect is not likely to be driving the results.

[15] I delete observations in the 15 industries and re-run the analyses as in model (2) and model (4) of Table 6, and obtain substantially the same results. Hence, again industry effect is not likely to be driving the results.

[16] I delete observations in the business services industry and re-run the analyses as in Table 5 and Table 6. The results are substantially the same except that for model (4) of Table 6, PUBDEBT is positive and significant at ten per cent for a one-tailed test (t statistic being 1.615).

[17] To control for the effect of firm size on the correlations, I run partial correlations involving audit fees and the shareholder and lender litigation risk proxies. The results (available from the author) show that the partial correlation between audit fees and volatility of stock return (SRET) is positive and significant while other results remain substantially unchanged.

[18] The results of MRET (both on its own and when other shareholder litigation risk proxies are added in the regression) do not change when ROI is deleted from the regression. Hence, ROI and MRET capture their different constructs as discussed in the paper.

[19] The coefficient of PUBDEBT is significantly larger than that of ALLEQ ($p = 0.001$).

[20] Ideally, I need audit hour in the regression model, which, however, is not publicly available.

[21] The number of observations is larger than the original 4368 observations because observations previously that are deleted as they could not be classified as levered firms are now classified as such following the alternative definition of all-equity firms.

[22] I obtain results without substantial change in inference by using one per cent as the cut-off point.

[23] There are some other measurements of leverage in prior studies. For example, Francis (1984) measures leverage as equity-to-debt ratio. However, this measurement is less direct in interpretation than debt over total assets as a proxy for litigation risk from lenders. Leverage is also measured as total liabilities over total assets in some studies (e.g., Simunic and Stein (1996) and Ashbaugh et al. (2003)). Such a measurement, however, is not used in this paper because including liabilities that are not debts does not tally with my focus on litigation risk from lenders of money.

[24] Firth (1997) does not use the word "total" in defining debt. However, as there is no distinction between short-term debt and long-term debt, I take debt as defined as including all debts.

[25] As some firms report zero non-audit fees (and positive audit fees, which is not mandated for disclosure), I take the natural logarithm of one plus non-audit fees in defining the variable.

[26] LTRAVOL is positive and marginally significant at ten per cent for a one-tailed test (t statistic being 1.258).

[27] As data on audit fees are not available for all the firms in the sample period, I use the auditees' net sales as a proxy for quasi-rents accruing to the auditors (see Stice (1991)).

[28] Craswell et al. (1995) use Australian data and report that a threshold of 30 firms per industry is the most appropriate for estimating auditors' industry specialisation. As the U.S. audit market is larger than the Australian audit market, a larger threshold may be more appropriate. The threshold of 50 is merely arbitrary. In addition, I use two-digit SIC instead of four-digit SIC to define an industry because the auditors are likely to develop expertise in related industries.

[29] The data are annual sales, four-digit SIC, auditor identity and the ticker symbol.

[30] Unidentified auditors (coded "9" by COMPUSTAT) are not regarded as specialists.

[31] Another way of defining auditor specialisation is auditor portfolio share. Following Kwon (1996), I designate an auditor as a specialist in the sample period in its three largest audit revenue (proxied by net sales of clients) generating industries across its portfolio of clients. I collected from COMPUSTAT the necessary data (see note 29) for identifying specialist and designated the dummy of specialist auditor for the sample firms with identified auditors accordingly. I find that the portfolio specialist dummy is negative and significant but the results of all other variables remain substantially the same.

[32] The use of absolute value of discretionary accruals follows Gul et al. (2003).

[33] The Jones' (1991) model differs from its modified version by the omission of the term CHREC from the following equation.

$$TA = b + c(CHSALES - CHREC) + dPPE$$

where

TA	=	Total accruals in year t, measured as the change in current assets minus the change in current liabilities, minus the change in cash and cash equivalent, plus the change in debt included in current liabilities, and minus depreciation and amortisation expense.
CHSALES	=	Sales revenue in year t minus sales revenue in year t-1
CHREC	=	Net receivable in year t minus net receivable in year t-1
PPE	=	Gross property, plant and equipment in year t
b, c, d	=	Parameters to be estimated by regression

All the terms are scaled by the preceding year's total assets to reduce the problem of heteroscedasticity.

Discretionary accruals are then estimated by the difference between actual total accruals and expected total accruals calculated by the estimated parameters.

[34] The sample excludes firms where their auditors are classified as others in two consecutive years by COMPUSTAT. The sample consists of 3367 observations for column (4) of Table 6 and 4151 observations for all other models in Table 5 and Table 6.