

An Empirical Examination of Auditor Liability Cap Companies

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ABSTRACT: There has been a call for auditor liability reform around the world. A frequent recommendation is to place a ceiling, or cap, on auditors' potential liability. The primary argument for liability caps is that the audit market has only four remaining major audit firms, and the collapse of one of these firms could have serious consequences for the capital market system. Despite the interest in liability caps, a lack of publicly-available data has precluded researchers from studying these agreements. We examine a sample of 155 companies receiving auditor liability caps between 2002 and 2006. Our analysis reveals three key results. First, companies that receive liability caps are riskier than a benchmark sample of Big N clients not receiving liability caps. This finding suggests that auditors respond to client risk by implementing liability caps. Second, audit firms reduce the audit fees of liability cap companies. This finding is consistent with an "insurance" view of pricing the audit, in which audit clients receiving liability caps are charged less because caps limit the auditor's exposure. Third, liability cap companies are also somewhat riskier than non-Big N clients, suggesting that a liability cap may alter the supply and concentration in the audit market.

Keywords: auditor liability, audit risk, audit fees, auditor independence

Data Availability: Data are available from public sources indicated in the text.

I. INTRODUCTION

Many now think that the public company auditing profession is in a crisis. A recent Symposium on Auditing Research at the University of Illinois (October 2008) brought together academic researchers and professionals from the large international accounting firms. The opening session was a discussion of the topic “The Viability of Public Company Auditing in the 21st Century.” Disparate views were proposed, with one panelist even suggesting that it was just a matter of time until the “final four” go under. His views are somewhat supported by the concerns of the Subcommittee on Concentration and Competition (Levitt and Nicolaisen 2008), who examined the potential impact of catastrophic risk and suggested that no auditing firm is too big to fail. The Subcommittee also voiced concerns regarding the systemic repercussions to the global capital markets that would follow from a failure of the auditing firms.

Concerns about the viability of the auditing profession have been elevated by recent events such as disastrous accounting scandals, the collapse of Arthur Andersen, and the potential for liability stemming from the credit and subprime mortgage crisis. Additionally, some have even noted that the enactment of the Sarbanes-Oxley Act of 2002 (SOX) appears to create additional risks to audit firms (Palmrose 2005).¹ Furthermore, Palmrose (1991) suggests that auditors' reputations are harmed merely by participation in trials, regardless of the outcomes. A concern is that litigation exposure and not brand name reputation protection drives perceived audit quality (Khurana and Raman 2004).

This heightened concern has led worldwide regulatory agencies to discuss ways to improve the quality of audits for financial statements while reducing the probability of

¹ Palmrose (2005) suggests SOX creates new uncertainties that further complicate the ability to regulate auditor conduct with appropriate sanctions, including regulatory enforcement actions and private civil litigation.

potentially cataclysmic losses from lawsuits against audit firms.² Auditor liability is part of a larger framework that is concerned with the overall quality of auditing and includes the internal system of risk management in companies and audit firms, and the system of regulation of audit quality. Audit firms certainly have strong incentives to continually assess the quality of services they provide. These decisions about how audit quality is provided can have important implications for latent litigation exposure.

The concerns about audit quality and liability involve several key issues, including the failure of an audit firm, the impact on auditor concentration, and the impact on the client selection process. The primary concern of the proponents of auditor liability reform is the collapse of another international accounting firm, which would affect the supply of auditing services available to the market (McCreevy 2008). Some believe auditor liability reform could prevent the collapse of another firm. Auditor liability reform could also affect audit market concentration. For example, excessively high auditor liability levels discourage smaller audit firms from entering the audit market for publicly traded companies. With liability reform, smaller audit firms may be more likely to provide auditing services, thereby increasing the supply. Liability reform could also encourage firms to keep clients they might otherwise discard because the liability from retaining the client has been lowered. Further, liability reform could provide protection for auditing firms that feel pressure to settle cases in which they have a strong defense, as a jury verdict is unpredictable and potentially catastrophic.

In response to these concerns, many countries limit auditor liability in some form. For example, in the U.S., the Private Securities Litigation Reform Act of 1995 (PSLRA) and the related Securities Litigation Uniform Standards Act of 1998 (SLUSA) altered the liability of audit firms from joint-and-several to proportional liability in an attempt to reduce frivolous

² Discussion of auditor liability and potential remedies and consequences is an ongoing issue, see O'Malley (1993).

attempts to sue the “deep pockets” of the firms and their related insurance carriers. Another method to limit audit firm exposure is to cap their liability. Liability caps already exist in many countries in Europe.

Given the importance of these issues, this paper provides evidence related to one form of auditor liability reform – auditor liability caps. We investigate various forms of liability caps disclosed in public filings by U.S. companies. In particular, we study 155 companies that publicly disclosed an auditor liability cap that was in effect during the time period between 2002 and 2006. The liability cap arrangements include: alternative resolution dispute procedures, a limit or exclusion of punitive damages, agreements to indemnify the auditor, and various other provisions. The liability caps vary by size of company, industry, and stock exchange. Two of the Big 4 audit firms are involved in most of the liability cap arrangements.

Our tests examine how liability caps are related to risk, engagement pricing, and auditor supply. The results indicate that liability caps are associated with risky companies, lead to adjustments in pricing the audit, and potentially influence the supply and concentration of auditors. Specifically, we first find that liability cap companies have greater litigation risk, report more internal control weaknesses, and are more likely to have a recent change in auditor, as compared with a benchmark sample of non-liability cap Big N clients. Overall, these results suggest that liability cap companies are riskier engagements.

Next, we study the relation between audit fees and liability caps. We compare liability cap companies with our benchmark sample and investigate the change in audit fees from the year preceding the liability cap to the year of the liability cap. We find that liability cap companies receive a comparably lower audit fee adjustment than our benchmark sample. This result is consistent with liability caps providing a form of insurance to the audit firms issuing them. In

other words, audit firms are willing to price the audit below market value because they have reduced exposure on the engagement.

Finally, we find that liability caps may impact the potential supply or concentration of audit firms. Specifically, we test if liability cap companies are riskier than non-Big N clients. While Big N clients typically would be expected to drop clients with greater risk, our results reveal that liability cap companies (all of which are Big N clients) are riskier than non-Big N clients on some dimensions. One explanation for why the Big N still retain these clients is that they have effectively reduced their overall risk by instituting a liability cap, and hence can now retain the client due to the lessened risk. While the evidence from this test is mixed and requires further analysis, it appears that the presence of a liability cap may increase the willingness of auditors to serve certain risky clients.

This paper responds to the call for more liability-related research (DeFond and Francis 2005; Nussbaum 2007).³ We contribute to the literature on auditor liability by being the first study to empirically examine auditor liability caps. With the potential adoption of International Financial Reporting Standards (IFRS) forthcoming for U.S. companies, our study adds to the discussion about whether a global set of accounting rules should be accompanied by a global standard for auditor liability. Since IFRS are more principles-based and arguably require more judgment, auditor liability caps may emerge as a partial solution to shielding auditors against increased litigation risk (Burns 2008). We also extend the auditor risk management literature by showing another method by which auditors respond to client risk – by limiting their liability on that client. Further, we broaden the audit fee literature by showing that liability cap companies have relatively lower audit fees. Finally, we extend the audit market literature by showing that

³ Grant Thornton's CEO recently identified audit firm liability as one of the top 10 areas in need of further research (Nusbaum 2007).

auditors may alter their client acceptance and retention calculus if they can place caps on their liability. This, in turn, influences the potential supply and concentration of audit firms for publicly traded companies.

The paper proceeds as follows. The next section provides a background of auditor liability. Section III develops our hypotheses. Section IV describes the data and research design. Section V presents the empirical results and Section VI concludes.

II. BACKGROUND

Auditor Liability Crisis

Audit firms are liable under common law to both clients and to third parties. The tort system is designed to create incentives for auditors to take appropriate actions to minimize the issuance of misleading financial statements and to compensate users (plaintiffs) for their recoverable losses (Palmrose 2005). Auditors face business risks that are comprised of at least three factors: acceptable audit risk, residual litigation risk, and non-litigation risk (Houston, Peters and Pratt 2005). However, audit firms have limited ability to manage these risks (Palmrose 2005). Auditor compensation provides incentives to encourage quality auditing services, potentially provide insurance for investor losses, and encourage firms to bear risks associated with factors that extend beyond the conduct of the audit, sometimes referred to as client misconduct risk. Antle (1982) shows that auditors prefer this risk sharing relationship if the compensation is proportional to the risk accepted. However, Morgan and Stocken (1998) show that setting fees at levels that fully reflect the auditor's business risk is difficult. In this complex setting, involving a myriad of risks for audit firms, potential litigation damages against audit firms have reached staggering proportions.

According to a report issued by the Advisory Committee on the Auditing Profession, the six largest auditing firms are currently defendants in 90 lawsuits pertaining to audits of both private and public companies (Levitt and Nicolaisen 2008). Potential damage claims in excess of \$100 million arise from each case. Seven cases seek damages of over \$10 billion, 27 cases seek damages in excess of \$1 billion, and 37 cases seek damages in excess of \$500 million. An exacerbating condition is that audit firms cannot purchase insurance to mitigate the damages from these potential claims (Turley 2007). Deloitte Touche Tohmatsu's CEO (William Parrett) states, "The cost of our audits was never built for insuring the capital markets ... I don't think we're saying we shouldn't have any liability, but it has to be in proportion to our participation in any problem." (Reilly 2006b)

A major concern that has arisen is whether or not the large, international accounting firms can survive (Lewis 2008).⁴ Recent events leading up to the credit and subprime crisis expose audit firms to additional litigation dealing with financial statements that are perceived to be misleading (Fannie Mae, Lehman Brothers, AIG, etc.). As Jim Petersen, an attorney previously associated with Arthur Andersen, notes "It's not that the Big Four are 'too big to fail' ... [T]hey can fail, and there is nothing on the table to save them." (Lewis 2008).

Liability Caps

In response to these concerns many organizations are investigating ways to limit auditor liability. These include the Securities and Exchange Commission (SEC), a panel of business executives, a U.S. Chamber of Commerce committee, and the Big 4 firms (Labaton 2007). One

⁴ Based on public figures provided by the Big N firms, total revenues for 2007 were approximately \$100 billion. According to Audit Analytics, \$18 billion of this was from audit and professional services fees to clients traded on US stock exchanges. These audit fees were for clients with a total market capitalization of \$29 trillion. More specific examples include the market capitalization of Lehman Brothers of \$33 billion at the end of 2007. The audit fee paid to Ernst & Young was \$30 million. This indicates that for publicly traded companies, the ratio of audit fees to market capitalization ranges between 0.06% and 0.10%. To put these statistics in perspective, E&Y would need 1,000 clients with fees the size of Lehman's to cover the potential cost of one catastrophic claim.

specific recommendation is to place a cap on audit firm liability. In the U.S., two groups view liability caps as part of a broader competitiveness issue. The Committee on Capital Markets Regulation (2006) recommends auditor liability caps as one solution to improve the efficiency and competitiveness of the U.S. capital markets (Reilly 2006a).⁵ The Bloomberg-Schumer report also identifies changes that could potentially help maintain U.S. competitiveness in a global market for financial capital.⁶ The report argued for litigation reform and specifically for a cap on auditors' damages.

The concerns regarding auditor liability are not constrained to the U.S. In late 2006, the European Union's international market commissioner asked for a liability cap for audit firms (Buck 2006). Consistent with other groups investigating liability caps, the Commissioner voiced concerns over having only four firms, the impact on the markets if one firm collapsed, and the level of insurance available to the firms. A more recent report from the EU appears to fully support auditor liability caps (European Union 2008). Liability caps currently exist in five EU member countries (Buck 2006).

Arguments for Liability Caps

The Final Report of the Advisory Committee on the Auditing Profession to the U.S. Department of the Treasury (Levitt and Nicolaisen 2008) provides a useful discussion of the arguments for and against the implementation of liability caps on litigation losses from the provision of auditing services. A consensus was not reached in this report regarding liability caps, alluding to the contentious nature of the discussion.

⁵ The committee identifies themselves as an independent, bipartisan committee comprised of leaders from the investment arena. The Committee also recommends other changes related to the regulatory process, the Sarbanes-Oxley Act, enforcement, and shareholders' rights.

⁶ The report was written by the offices of Mayor Michael Bloomberg and Senator Charles Schumer (both of New York). The report's official title is "Sustaining New York's and the US' Global Financial Services Leadership." It is available at http://www.nyc.gov/html/om/pdf/ny_report_final.pdf.

Committee members supporting the implementation of liability caps note that auditing firms are often forced to settle cases which lack merit and for which they have a strong defense. The case is settled because a potential calamitous loss in a jury trial could destroy the firm. In these settings, the inability to obtain insurance coupled with the magnitude of the potential claim essentially holds the audit firm hostage in the tort process. Echoing earlier committee reports that link caps to the competitiveness of the economy, the report by the Advisory Committee on the Auditing Profession states “It is not acceptable to leave the health of our economy or the competitiveness of our capital markets to the unfettered discretion of any of dozens of claimants and their counsel” (Levitt and Nicolaisen 2008).⁷

The large international accounting firms are in favor of some form of liability cap for auditors. They link the importance of a cap to the forthcoming adoption of a global set of accounting standards, especially considering that IFRS has more principles-based guidance as opposed to agreed-upon rules. Vincent Coleman, the U.S. national office professional practice leader for PricewaterhouseCoopers LLP, said “it would be helpful to have regulators acknowledge that there may be more than one right answer to complex accounting or auditing questions, and to protect accounting professionals from unreasonable second-guessing” (Burns 2008). Randy Fletchall, vice chairman of professional practice and risk management at Ernst & Young adds, “Accountants want clarity, not a free pass” (Burns 2008). He also mentions that the move to IFRS will be constrained without some resolution of liability exposure.

⁷ Given recent history, this argument may have merit. For example, a jury recently found BDO Seidman to be grossly negligent in a failed audit and handed down a judgment for \$521 million in total damages (Reilly 2007). According to court documents, BDO’s 2006 partner distribution was \$170 million but the firm itself had only a \$40 million net worth. There was no mention of their insurance coverage. Talley (2006) correctly points out that “cataclysmic liability” can occur from a few significant cases, from many moderate cases, or from a combination of both.

Arguments for liability caps also are predicated on the notion that firms already have many incentives to enhance and to maintain their audit quality. Audit firms are concerned with retaining their reputation for high quality services and will invest appropriately to ensure this (DeAngelo 1981). Auditors have many incentives provided by professional standards, PCAOB inspections and fines, SEC enforcement actions, etc. to ensure high quality auditing services, even if potential losses are moderated via a cap on liability.

Arguments against Liability Caps

Those opposing liability caps fear that reducing liability exposure and the related financial costs of audit failure will lead to a reduction in the quality of auditing. Even if a quality reduction was tempered by other considerations, investor confidence in audited financial statements would be negatively affected (Coffey 2008). Venkataraman, Weber, and Willenborg (2008) suggest that audit quality improves with increased litigation exposure suggesting that reduced liability will lead to lower audit quality. Others contend that auditing firms can control their liability exposure by providing high quality auditing services and believe that the risk of the demise of another large auditing firm is overstated (Levitt and Nicolaisen 2008).

In particular, Coffey (2008) is critical of any attempts to reduce auditor liability. He asserts that the last attempt to mitigate auditor liability, the passage of the PSLRA and the related Securities Litigation Uniform Standards Act of 1998 (SLUSA), were precursors to the financial debacles of the early twenty-first century. To the extent that these regulatory changes led firms to reduce procedures to cut costs in the highly competitive environment before the passage of the Sarbanes-Oxley Act of 2002 (SOX), it might have contributed to these failures.⁸ Providing some support for Coffey's ideas, Geiger et al. (2006) shows that the likelihood of receiving a going

⁸ Of course, these are only Coffey's conjectures. The market for audit services was qualitatively different during the mid-1990s than in the post-SOX Act era. For instance, prior to the SOX Act audits services were often priced at or below costs to provide access to more profitable non-audit service fees.

concern opinion declined after the passage of the PSLRA. Further, Lee and Mande (2003) found that the Big 6 firms were less conservative after the PSLRA (as measured by the change in income-increasing discretionary accruals). Their findings suggest that the reduced exposure from the PSLRA might have led auditors to increase their utility via less conservative auditing.

Furthermore, liability caps could influence the other parties to the audit process. Antle (1980) shows that restricting available penalties against auditors creates a setting where at least one of the investor/owner, manager, or auditor must be worse off. If audit firms are protected, it follows that either the owner or manager will suffer loss. However, as noted earlier, audit firms have difficulty adequately pricing risk, so the tradeoffs between participants are difficult to determine. If unmitigated risk leads to excessive audit fees, financial statement users and managers are paying a premium to inoculate the audit firm from risk. Since risk is difficult to price, a reduction in risk should reduce price inefficiencies.

Liability Caps and Auditor Independence

An additional concern with the implementation of liability caps is that they may impede auditor independence based on current professional standards and guidance provided by the SEC. Liability caps exist in a variety of forms, such as indemnification clauses, alternative dispute resolution procedures, and jury trial waivers. AICPA ethics rulings state that indemnification clauses in engagement letters do *not* impair independence (AICPA ET Section 191, ¶.188). Additionally, alternative dispute resolution procedures are *not* considered to impair the auditor's independence (¶.191). However, commencement of an alternative dispute resolution proceeding could impair independence if it was "sufficiently similar to litigation" (¶.193). Furthermore, if an audit firm indemnifies a client (note that the audit firm is doing the indemnifying in this scenario), then this would impair independence (¶.204-.205).

However, the SEC's Office of the Chief Accountant has published FAQs (frequently asked questions) which state "when an accountant and his or her client, directly or through an affiliate, enter into an agreement of indemnity which seeks to provide the accountant immunity from liability for his or her own negligent acts, whether of omission or commission, the accountant is not independent."⁹ This position appears to contradict the AICPA ethics rulings noted previously. Perhaps in response to this apparent conflict, the AICPA recently issued an additional ethics interpretation, which states that auditors must follow the guidelines of regulatory bodies (AICPA ET Section 501, ¶ .09). The SEC has not commented on other specific types of liability caps, leaving the issue still somewhat open to the profession and its clients.

III. HYPOTHESIS DEVELOPMENT

Prior research documents many ways that audit firms can respond to client engagement risk. Bedard et al. (2008) categorize the approaches as risk management before, during, and after the engagement. Several papers have studied the auditor's risk response before the engagement starts. Early research in this area found client acceptance decision differences between the big audit firms (Huss and Jacobs 1991). Johnstone (2000) found that partners choose client avoidance as a response to client risk (as opposed to adjusting fees). Johnstone and Bedard (2003) showed reluctance by one CPA firm to accept risky clients.¹⁰

Once the decision is made to retain a client, the audit firm has other alternatives. Options include adjusting fees and adjusting audit effort by varying the time and expertise of the audit

⁹ These FAQs are available at <http://www.sec.gov/info/accountants/ocafaqauidind121304.htm>.

¹⁰ Auditors understanding and responding to client risk continues to be a current development. For example, the AICPA recently issued new "risk assessment" standards that focus on the auditor's risk assessment process.

team (Bell, Landsman, and Shackelford 2001).¹¹ Additionally, audit firms could try to alter the liability related to the audit engagement. Bedard and Johnstone (2004) find that one audit firm adjusted its effort and billing rates in response to risk. Bedard et al. (2008) refers to these decisions as risk management *during* the engagement. Bedard et al. (2008) add that auditors could also manage their risk during the engagement using decision aids, having specialized consultations within the firm, and by having whistle-blower mechanisms.¹² Clearly, auditors are responding to client risks.

Liability Caps as a Response to Client Engagement Risk

In the environment of inconsistent guidance regarding liability caps, some audit firms are currently attempting to limit their liability from audits of U.S. publicly traded companies. Our discussions with partners at several public accounting firms indicate that liability caps are also widely implemented on non-public company clients. Having a liability cap agreement with the client is one additional risk response that has not been studied.

If effective, a liability cap would reduce the costs of business failure for an auditing firm. Prior research has identified numerous determinants of business risk that potentially lead to audit failure. For example, the presence of internal control weaknesses, restated financial statements, increased leverage, geographically dispersed operations, reduced levels of liquidity, and more complex operations. Overall, companies in poor financial condition have increased levels of litigation risk (Pratt and Stice 1994). To respond to increased risk we expect audit firms to request a liability cap from clients that exhibit more characteristics of risk. Our first hypothesis, stated in the alternative form, is as follows:

¹¹ The decision to raise or charge higher fees in response to risk could also be made as part of the client acceptance process (i.e., before the engagement period).

¹² Bedard et al (2008) points out that risk management following the engagement can include inspections and quality reviews.

H1: Companies receiving a liability cap exhibit more characteristics of risk than comparable companies without liability caps.

Audit Fees as a Response to Client Risk

Prior research notes that one potential auditor response to risk might be to adjust the fees. Numerous papers have shown that audit fees are associated with audit risk. Early work in this area includes the seminal model of Simunic (1980) and Simunic and Stein (1996) who find that auditors have strong incentives to minimize actual damages and to incorporate expected damages into the audit fee. More recently, Maher and Lyon (2005) find that auditors assess and price business risk at the client level, with litigation risk driving higher fees (Taylor and Simon 1999; Venkataraman et al 2008). Choi, Kim, Liu, and Simunic (2008) find that a country's litigation environment is an important factor in determining auditor effort and audit fees. Bell et al. (2001) suggest that client specific risk adjusted fees derive from an increase in the number of audit hours priced at standard, not risk adjusted rates. This implies that firms perform additional procedures in the presence of increased risk. They note a definite correlation between audit effort, fees, and business risk.

If audit fees include an insurance component, as suggested by Willenborg (1999), a reduction in the auditor's potential liability could have an effect on audit fees. As noted earlier, Antle (1980) shows that bounding liability reduces the resources to allocate between the owner, manager, and auditors. It appears reasonable that to protect their interest, owners and managers will expect reduced audit fees. This creates an interesting situation. By reducing their potential liability, audit firms must be willing to accept reduced audit fees. However, this may align with their interest to reduce their overall portfolio business risk from all clients. The imposition of a liability cap might help to reduce the information asymmetry in bidding, allowing the audit fee to

more clearly reflect procedures required and not be overly influenced by the difficulty in pricing risk (Morgan and Stocken 1998).

A question that has been repeatedly asked, particularly in the medical profession, is whether the current tort system sends too strong a signal, resulting in excessive medical costs to avoid malpractice claims (Studdert et al. 2005). For the auditing market, similar incentives might lead to “over-auditing,” with auditors performing, in effect, a defensive and more costly audit.

Based on this discussion, we expect clients that cap their auditor’s liability to pay lower audit fees. Our second hypothesis, stated in the alternative form, is as follows:

H2: Companies receiving liability caps have lower audit fees than comparable companies without liability caps.

Audit Market

Liability caps already exist in five EU member countries (Buck 2006). An apparent consequence is a significantly less concentrated auditing market. In Germany, where auditor exposure is capped at 4 million Euros, 67 of the largest 300 listed companies are audited by non-Big N audit firms (Economist.com 2004).¹³ In Greece, where the audit liability cap is set at five times the salary of the president of the Supreme Court, 27 of the 60 companies listed on the Athens stock exchange are audited by non-Big N audit firms (Economist.com 2004). This anecdotal evidence suggests that auditor liability caps may be related to market supply issues.

Auditor liability also influences many other aspects of the auditing market. Potentially catastrophic damages affect which audit firms can participate in the market for audit services of large publicly traded companies. Liability creates barriers to the supply of audit services as smaller firms simply cannot risk the litigation damages that might occur. Add this to their

¹³ According to Gietzmann and Quick (1998) Germany introduced caps on auditor liability as early as 1931.

inability to purchase professional liability insurance and you create a very concentrated supply in the auditing market. In effect only auditors with “deep pockets” can accept the risk of auditing large public companies (Economist.com 2004).¹⁴

However, increased liability discourages these same auditors from accepting risky clients. This is discussed as a “demand displacement” from high to low quality auditors by Simunic and Stein (1996). Prior research (e.g., DeFond, Ettredge, and Smith 1997; Krishnan and Krishnan 1997; Shu 2000) finds that Big N audit firms are less likely to accept risky clients, with these companies moving to non-Big N audit firms. As high quality auditors increase their fees in response to increased risk, companies may choose to purchase services from less costly, yet potentially lower quality, auditors.

Alternatively, there might be a shift to Big N auditors in the presence of liability caps. First, the reduced liability allows Big N auditors to accept engagements as business risks are reduced. Second, the clients will use quality and reputation as a screening device, instead of the audit firm’s “deep pockets” (Weber, Willenborg, and Zhang 2008).

As noted previously, anecdotal evidence suggests that liability caps can potentially alter the supply of auditors. For example, Germany and Greece both have liability caps and both of these countries exhibit less concentration in their audit markets. The implication is that the presence of a liability cap for auditors alters participant behavior in the auditing market. The prior discussion supports both arguments that liability caps can increase, or reduce, the availability of high quality auditing firms for clients with greater risk. Therefore the following hypothesis is not stated in directional form.

H3: The presence of a liability cap will influence the quality of auditor engaged by clients that have more risk characteristics.

¹⁴ Note that resignations from clients assessed as high risk can significantly reduce the availability of high quality firms to this segment of the auditing market.

IV. METHOD

Sample Selection

In order to identify clients that entered into liability cap agreements with their auditors, we developed a list of common liability cap phrases from financial press articles.¹⁵ Common text strings included “alternative dispute resolution procedures,” “exclusion of punitive damages,” “indemnify and hold harmless,” and variations of each of these. We then used the Advanced Search feature within the SEC’s EDGAR website to collect a list of firms publicly disclosing a liability cap arrangement.¹⁶ Our search spanned two years of company filings, beginning with August 1, 2005 and ending on July 31, 2007.¹⁷ This search produced 189 companies that disclosed some form of liability cap effective during the five year period from 2002 to 2006. The majority of these companies (133 of 189) disclosed the liability cap in their annual proxy statement. They also commonly appear in registration statement filings (25) and Form 10-K and Form 10-Q filings (20). Appendix 1 provides examples of liability cap disclosures for two sample firms, Accenture and Diedrich Coffee.

Table 1 outlines the sample selection process for the liability cap sample and the control sample of non-liability cap companies. Of the 189 liability cap companies, we removed 18 companies that are not listed on Compustat and 14 companies that do not have all of the data requirements needed to complete the empirical analysis. Of the 157 remaining companies, we delete two companies with a non-Big N auditor. A final sample of 155 companies with liability cap arrangements is the focus of our study. Our control sample is drawn from the entire population of 2005 Compustat companies. We remove our initial sample of 189 companies that publicly disclose an auditor liability cap. We also delete the companies with a non-Big N

¹⁵ As an example, see Rapoport 2006.

¹⁶ This site is located at: http://searchwww.sec.gov/EDGARFSCClient/jsp/EDGAR_MainAccess.jsp.

¹⁷ We expanded our search to include periods prior to August 2005 and found no additional liability cap disclosures.

auditor. Finally, we require control sample companies to have values for total assets and book value of equity, as well as complete data for the empirical analysis. After these eliminations, our control sample consists of 4,738 companies. Table 1 also shows the final sample numbers for testing Hypothesis 2 (which requires audit fee data). After eliminating companies without audit fee data, there are 152 liability cap companies and 4,306 control sample companies.

Variable Definitions

To isolate the risk differences between companies with and without liability caps, we select five measures that have been shown by prior studies to be associated with increased risk. They include:

Litigation Risk: LIT_RISK is an indicator variable used to capture industries with potentially higher risk. We code the following industries as high risk: 2833-2836 (pharmaceuticals), 3570-3577 and 7370-7374 (computers), 3600-3669 (manufacturing), 3670-3674 (computers), 5200-5961 (retail), and 8731-8734 (services). This approach is consistent with prior research (Francis et al. 1994; Geiger et al. 2006).

Internal Control Weaknesses: ICW captures the risk related to companies that have had internal control problems. Hogan and Wilkins (2008) suggest that reported internal control deficiencies are related to increased client risk as evidenced by increased audit fees. *ICW* is composed of two components. The first component equals 1 for a Section 302 material weakness in the liability cap year or in the year preceding the liability cap year and 0 otherwise. The second component equals 1 for a Section 404 material weakness in the liability cap year or in the year preceding the liability cap year and 0 otherwise. *ICW* has a minimum value of 0 and a maximum value of 2.

Financial Statement Restatements: *RESTATE* captures whether a company has restated their financial statements and is coded as 1 if the firm reports a financial statement restatement in the liability cap year or in the year preceding the liability cap year, otherwise 0.

Auditor Changes: *AUDCHG* measures whether the company has switched its auditor and is coded 1 if there was an auditor change in the liability cap year or in the year preceding the liability cap year, otherwise 0.

Total Accruals: *TAC* is a measure of a company's earnings quality (Sloan 1996). We define this variable as current assets less current liabilities, scaled by total assets.¹⁸

We use several other variables to control for profitability, leverage, complexity, and size. Return on equity (*ROE*) is a proxy for profitability and is defined as net income before extraordinary items divided by average common stockholders' equity. *LEVERAGE* is a proxy for capital structure composition and is defined as average total liabilities divided by average common stockholders' equity. *SEGMENTS* is a proxy for complexity and is defined as the natural logarithm of the number of operating segments. Finally, *TA* is a proxy for size and is defined as the natural logarithm of average total assets.

Research Design

We expect the aforementioned risk characteristics to influence the decision to cap auditor liability. To test this, we develop a logistic regression model with a dependent variable, *LCAP*, coded 1 if the company received a liability cap and 0 otherwise. Our empirical specification for Hypothesis 1 is as follows:

$$LCAP_i = \alpha_0 + \alpha_1 LIT_RISK_i + \alpha_2 ICW_i + \alpha_3 RESTATE_i + \alpha_4 AUDCHG_i + \alpha_5 TAC_i + \alpha_6 ROE_i + \alpha_7 LEVERAGE_i + \alpha_8 SEGMENTS_i + \alpha_9 TA_i + \varepsilon_i$$

¹⁸ We also define *TAC* as net income - less cash flow from operations, scaled by lagged total assets, with qualitatively similar results.

To determine whether audit fees are affected by liability caps, we add an audit fee variable to the model. As stated in H2, we expect clients that cap their auditor's liability will pay lower audit fees. The variable *AFCHG* captures the change in firms' audit fees from the year preceding the liability cap to the year of the liability cap. Our empirical specification for Hypothesis 2 is as follows:

$$LCAP_i = \alpha_0 + \alpha_1 LIT_RISK_i + \alpha_2 ICW_i + \alpha_3 RESTATE_i + \alpha_4 AUDCHG_i + \alpha_5 TAC_i + \alpha_6 ROE_i + \alpha_7 LEVERAGE_i + \alpha_8 SEGMENTS_i + \alpha_9 TA_i + \alpha_{10} AFCHG_i + \varepsilon_i$$

V. RESULTS

Descriptive Statistics

Table 2 presents descriptive data for the liability cap sample. Panel A documents frequently occurring types of auditor liability caps. The majority of companies have more than one liability cap clause within their disclosures. For example, while only five companies have a stand-alone alternative dispute resolution procedures clause, 101 companies have an alternative dispute resolution procedures clause in addition to another type of liability cap clause. An exception is companies disclosing indemnify and hold harmless clauses, which are discrete. Panel B summarizes the liability cap disclosures by year. The liability cap year (LCAP year) represents the first year that a liability cap was instituted. Nearly two-thirds of the sample have an LCAP year of 2005, which led us to choose it as the reference year for our control sample. It is interesting to observe that many of these liability caps immediately follow the public calls for caps in the United States, which suggests that audit firms decided to implement their own version of a liability cap regardless of what regulators chose to do.

Panel C reveals the breakout of liability cap companies by size (divided into quintiles). Over 16 percent of the liability cap companies are in the largest quintile (Quintile 5), with more

than \$5 billion in total assets. Thus, liability caps are not just being used on the smaller engagements (who presumably may have less bargaining power with their auditors). Panel D shows that liability cap companies show up in almost every industry. Furthermore, liability cap companies are more concentrated in historically higher risk industries (to include computers, pharmaceuticals, and services). This is consistent with our *LIT_RISK* variable. Panel E shows that a slightly higher proportion of liability cap companies are listed on the NYSE and NASDAQ exchanges than the corresponding control sample. Finally, Panel F shows that while each of the Big 4 firms had clients with liability caps, two of the Big 4 firms (Ernst & Young and KPMG) are involved in 97 percent of the liability cap agreements. The years in which liability caps are most concentrated (2005 and 2006) followed a period of intense scrutiny and investigation into tax sheltering abuses at E&Y and KPMG, which may be an explanation for their movement to liability cap arrangements.¹⁹

Table 3 presents the descriptive statistics for the liability cap sample and the control sample. The mean, standard deviation, and median are tabulated for each variable in the logistic regression model. In order to compare the two samples, a t-statistic for the differences in means is presented in the far right column. Relative to the control sample of non-liability cap companies, liability cap companies are more concentrated in high litigation risk industries, report more internal control weaknesses, have fewer earnings restatements, change auditors with greater frequency, have a higher level of total accruals, and smaller audit fee changes. In terms of the control variables, liability cap companies are smaller than the control sample of Big N audit clients.

¹⁹ See related discussion at: <http://www.nyssepa.org/home/2003/0603/4week/article137.htm> (E&Y) and http://www.usdoj.gov/opa/pr/2005/August/05_ag_433.html (KPMG).

We present pair-wise correlations in Table 4, where the coefficients above the diagonal are Pearson product-moment correlations and the coefficients below the diagonal are Spearman rank-order correlations. We discuss the Pearson correlations, but note that the two sets of correlations are generally consistent. As expected, *LCAP* is significantly correlated with four of the five risk variables (exception is *RESTATE*). The largest overall correlation is a significantly positive correlation of 0.459 between *TAC* and *TA*. We also note that the largest correlation among the risk variables is between *ICW* and *RESTATE* (0.452). Further, there are several significant positive and negative correlations between the control variables, with the largest being between *TA* and *SEGMENTS* (0.352) and *TA* and *LEVERAGE* (0.322). The vast majority of the other correlations fall below ± 0.200 , which suggests that the variables selected for our logistic regression capture discrete characteristics of companies' liability cap arrangements.

Results for Risk Test (H1)

The first set of columns in Table 5 presents the regression summary statistics from estimating the logistic regression for Hypothesis 1. The model tests whether liability cap companies exhibit more signs of risk (as compared to a control sample of non-liability cap companies). Overall, the model is significant (likelihood ratio of 432.44, p-value of <0.0001). The results indicate that liability cap companies are more likely to be in high litigation risk industries, are more likely to report internal control weaknesses, and are more likely to have a change in auditor. Surprisingly, liability cap companies are less likely to have a financial statement restatement. This result could be driven by whether the restatement was caused by an intentional or unintentional misstatement (Hennes et al. 2008). In addition, restatements may be the outcome of a change in GAAP. Neither an unintentional misstatement nor a change in

accounting rules would imply higher engagement risk.²⁰ Overall, the results strongly support Hypothesis 1. That is, clients receiving liability caps from their auditors exhibit more characteristics of risk.

Results for Pricing Test (H2)

The second set of columns in Table 5 displays the regression summary statistics for our test of Hypothesis 2. We add an explanatory variable, the percentage change in audit fees (*AFCHG*), to the baseline logistic model. Overall, the model is significant (likelihood ratio of 407.81, p-value of <0.0001). The coefficient magnitudes and statistical significance levels for the risk variables and control variables are consistent with the results from testing Hypothesis 1. The coefficient on the new addition to the model, *AFCHG*, is negative and significant (p-value of 0.017), which suggests that liability cap companies receive smaller audit fee changes than a control sample of comparable companies.²¹ This finding implies that an audit firm's ability to reduce liability exposure through a liability cap leads to reduced audit fees, which is consistent with our second hypothesis.

Results for Audit Markets Test (H3)

We predict that liability caps will influence an audit firm's willingness to engage clients that have more risk characteristics. To test Hypothesis 3, we compare the sample attributes of liability cap companies to a control sample of non-Big N audit clients. In an untabulated analysis of our control sample, we find that non-Big N firms are associated with clients that have fewer assets, increased levels of earnings restatements, more auditor changes, greater total accruals, and fewer business segments when compared to Big N firms' clients. If liability caps

²⁰ Other possible explanations include: (i) restatements disclosed prior to the existence of a liability cap might actually reduce engagement risk; (ii) companies that restated their financial statements are less likely to agree to liability caps, as they do not wish to limit auditor liability going forward.

²¹ The significant coefficient on *AFCHG* is robust to several alternative measures of changes in fees. These include: the change in logged audit fees, the change in the level of total fees, and the change in logged total fees.

are successful in reducing perceived audit risk, Big N firms might be willing to accept riskier clients. We examine if liability cap companies are riskier than non-Big N clients. This would indicate an increased willingness of Big N firms to accept clients outside their normal risk tolerances. It would also support the Weber et al. (2008) view that limiting liability encourages clients to focus more on audit firm reputation.

The results are presented in Table 6. This bivariate comparison indicates that the average liability cap company is more likely to be in an industry with increased levels of litigation risk and to have more internal control weaknesses, fewer restatements, fewer auditor changes, and decreased levels of total accruals than the average non-Big N client. Liability cap companies also have more business segments and are noticeably larger than the average non-liability cap company. This evidence provides some support for Hypothesis 3 by suggesting that liability cap companies have increased risk over non-Big N firm clients, clients that are normally considered to be outside the risk tolerance of Big N firms. One interpretation of the analysis in Table 6 is that by negotiating liability caps, the Big N firms are able to accept (or keep) riskier clients, effectively providing these companies access to larger, and presumably higher quality auditors. Combined with the results from Hypothesis 2, it appears that audit firms are willing to accept clients with more risk at a lower fee when their liability is capped.

VI. CONCLUSION

Many have expressed concern about current auditor liability exposure and have specifically noted the potentially daunting market consequences should a major auditing firm fail. The Committee on Capital Markets Regulation called on Congress to consider auditor liability caps. The intuition supporting this line of reasoning is that the U.S. capital market will be more competitive with liability cap arrangements. Other countries have already adopted

liability caps and a current gap exists in liability exposure for auditors operating in differing countries (Choi et al. 2008). Some have linked the adoption of IFRS and a consistent accounting framework to the adoption of liability caps and a consistent auditor liability framework. Given the importance of liability, it is not surprising that DeFond and Francis (2005)²² called for more liability related research or that Nusbaum (2007) listed audit liability as one of the top ten areas in need of additional research.

We study 155 companies in the United States that disclose a liability cap arrangement with their auditors. To our knowledge, this is the first study to empirically examine auditor liability caps. We find that liability cap companies vary in size and include both very small and very large companies. We also find that although liability caps are concentrated in historically high-risk industries, they are present in almost every industry. We further find that two Big 4 firms were involved in the majority of the liability cap engagements (potentially indicating either a variance in firm policies or a variance in risk management approaches).

Further analysis reveals three major findings related to client risk, the pricing of audits, and the supply of auditors. First, we compare our sample of liability cap companies to a control sample of non-liability cap companies and find that the liability cap companies are more likely to be in higher litigation risk industries, are more likely to have internal control weakness, are more likely to change auditors and have more operating segments. Overall, these results suggest that liability cap companies are riskier engagements and that auditors are responding to such risk by negotiating a liability cap.

Second, we find that liability cap companies have lower audit fees when compared to companies that do not cap their auditors liability. Consistent with an insurance hypothesis, this

²² DeFond and Francis (2005) note that Australia and Canada appear to have effective auditing without imposing such a “brutally litigious” environment.

finding indicates that auditors adjust fees downward in the presence of a liability cap. This is also consistent with client's reducing the audit fee they are willing to pay (Antle 1980).

Third, we examine market supply issues. Many have argued that the presence of a liability cap can alter the supply and concentration of auditors. Support for this argument is seen anecdotally in Greece and Germany. Given that prior research documents that Big N firms normally resign from risky clients, our results show that liability cap companies exhibit some signs of greater risk than non-Big N clients (who would normally be expected to be riskier). Although the results are mixed, there is partial evidence that liability caps could alter the supply and concentration of the auditing market.

Future research could investigate whether liability caps are a precursor to auditor resignations or to other indicators of risk as well as whether liability caps alter the market concentration of auditors. Additionally, the relation between liability caps and audit quality remains an open question – enabling liability caps may create a moral hazard situation in which audit firms take more risks and/or do less thorough audits. Finally, DeFond and Francis (2005) call for more research using cross-country data. An examination of the liability cap policies of various countries (mandatory versus voluntary versus no policy) would be a step in this direction.

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APPENDIX 1
Examples of liability cap disclosures

Liability cap with ‘alternative dispute resolution procedures’, ‘exclude punitive damages’, and ‘other’ provisions

ACCENTURE LTD: Excerpt from DEF 14A proxy statement filed December 21, 2005

“Upon the Audit Committee’s recommendation, the Board has recommended the re-appointment of KPMG LLP as the independent auditors to audit our consolidated financial statements for the fiscal year ending August 31, 2006.

In connection with the audit of our financial statements and internal control over financial reporting for fiscal 2005, we entered into an agreement with KPMG LLP which sets forth the terms by which KPMG LLP will perform audit services for the Company. That agreement is subject to alternative dispute resolution procedures, an exclusion of punitive damages and various other provisions.”

Liability cap with ‘indemnify and hold harmless’ provision

DIEDRICH COFFEE, INC.: Excerpt from Form 10-K filed September 29, 2005

“Diedrich Coffee, Inc. has agreed to indemnify and hold KPMG LLP harmless against and from any and all legal costs and expenses incurred by KPMG LLP in successful defense of any legal action or proceeding that arises as a result of KPMG LLP’s consent to the incorporation by reference of its audit report on Diedrich Coffee, Inc.’s past financial statements incorporated by reference herein.

KPMG LLP (KPMG) was previously our principal accountants. On October 26, 2004, the Audit Committee approved the dismissal of KPMG as our principal accountants upon the acceptance by BDO Seidman LLP of its appointment to serve in such capacity. The decision to change auditors was recommended and approved by the Audit Committee.

The audit report of KPMG on our consolidated financial statements as of and for the fiscal year ended June 30, 2004 did not contain any adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope or accounting principles.”

TABLE 1
Sample selection

	<u>LCAP sample*</u>	<u>Big N Compustat sample**</u>
Initial sample	189	7,780
Less:		
Firms with incomplete data	(32)	(165)
Firms with a non-Big N auditor	(2)	(2,877)
Final sample for test of H1	155	4,738
Less:		
Firms with incomplete fee data	(3)	(432)
Final sample for test of H2	152	4,306

* This sample was formed by reviewing matches of common liability cap phrases from the Advanced Search feature within the SEC's EDGAR search engine. The date range of our search for company filings was the two year period spanning August 1, 2005 through July 31, 2007.

** This sample was formed by downloading all Compustat firms for 2005 and retaining those firms (i) without a liability cap arrangement, (ii) with a Big N auditor, and (iii) with values for total assets (Compustat Data Item 6) and book value of equity (Compustat Data Item 60).

TABLE 2
LCAP sample descriptive statistics

PANEL A: Distribution by type of LCAP disclosure

<u>Type</u>	<u>Total</u>	<u>Individual</u>	<u>Combined</u>
Alternative resolution dispute procedures	106	5	101
Limit or exclude punitive damages	101	2	99
Indemnify and hold harmless	44	44	0
Other provisions	15	3	12

‘Individual’ represents the number of firms disclosing only one type of LCAP. ‘Combined’ represents the number of firms disclosing more than one type of LCAP.

PANEL B: Distribution by LCAP year

<u>LCAP year</u>	<u># of Obs</u>	<u>Percentage</u>
2002	5	3.2%
2003	6	3.9%
2004	16	10.3%
2005	102	65.8%
2006	26	16.8%

LCAP year is the year of the audit for which the liability cap was effective.

PANEL C: Distribution by size in total asset quintiles

<u>Quintile</u>	<u>Total asset range (in millions)</u>	<u># of Obs</u>	<u>Percentage</u>
1	0 – 130	43	27.7%
2	130 – 482	28	18.1%
3	482 – 1,384	32	20.7%
4	1,384 – 5,171	27	17.4%
5	> 5,171	25	16.1%

Break points are determined by sorting the total asset values of all Big N-audited firms in the 2005 Compustat database and evenly dividing these firms into five quintiles.

TABLE 2 (continued)
LCAP sample descriptive statistics

PANEL D: Distribution by industry

<u>Industry</u>	<u>SIC Codes</u>	<u>LCAP sample</u>		<u>Big N Compustat sample</u>	
		<u># of Obs</u>	<u>Percentage</u>	<u># of Obs</u>	<u>Percentage</u>
Chemicals	2800-2824, 2840-2899	1	0.6%	113	2.4%
Computers	3570-3579, 3670-3679, 7370-7379	32	20.6%	606	12.8%
Extractive	1300-1399, 2900-2999	4	2.6%	174	3.7%
Financial/Insurance	6000-6411	21	13.5%	543	11.5%
Food	2000-2111	1	0.6%	92	1.9%
Real Estate	6500-6999	8	5.2%	238	5.0%
Manufacturing	3000-3569, 3580-3669, 3680-3999	17	11.0%	844	17.8%
Mining/Construction	1000-1299, 1400-1999	4	2.6%	150	3.2%
Pharmaceuticals	2830-2836	21	13.5%	318	6.7%
Retail	5000-5999	14	9.0%	408	8.6%
Services	7000-7369, 7380-8999	17	11.0%	367	7.7%
Textiles/Print/Publish	2200-2780	1	0.6%	193	4.1%
Transportation	4000-4899	10	6.5%	365	7.7%
Utilities	4900-4999	4	2.6%	294	6.2%
Other	9000+	0	0.0%	33	0.7%

TABLE 2 (continued)
LCAP sample descriptive statistics

PANEL E: Distribution by stock exchange

<u>Exchange</u>	LCAP sample		Big N Compustat sample	
	<u># of Obs</u>	<u>Percentage</u>	<u># of Obs</u>	<u>Percentage</u>
NYSE	61	39.3%	1,885	39.8%
NASDAQ	79	51.0%	2,056	43.4%
AMEX	7	4.5%	193	4.1%
Other	8	5.2%	604	12.7%

PANEL F: Distribution by independent auditor

<u>Auditor</u>	LCAP sample		Big N Compustat sample	
	<u># of Obs</u>	<u>Percentage</u>	<u># of Obs</u>	<u>Percentage</u>
Deloitte & Touche	2	1.3%	1,137	24.0%
Ernst & Young	73	47.1%	1,324	27.9%
KPMG	77	49.7%	1,064	22.5%
PricewaterhouseCoopers	3	1.9%	1,213	25.6%

TABLE 3
Descriptive statistics for the logistic regression variables

<u>Variable</u>	<u>LCAP sample</u>			<u>Big N Compustat sample</u>			<u>t-statistic^a</u>
	<u>Mean</u>	<u>Std Dev</u>	<u>Median</u>	<u>Mean</u>	<u>Std Dev</u>	<u>Median</u>	
<i>LCAP</i>	1.00	0.00	1.00	0.00	0.00	0.00	–
<i>LIT_RISK</i>	0.41	0.49	0.00	0.28	0.45	0.00	3.50 ***
<i>ICW</i>	0.29	0.63	0.00	0.20	0.54	0.00	2.09 **
<i>RESTATE</i>	0.12	0.33	0.00	0.18	0.38	0.00	–1.72 *
<i>AUDCHG</i>	0.25	0.43	0.00	0.07	0.25	0.00	8.57 ***
<i>TAC</i>	0.31	0.27	0.23	0.26	0.23	0.19	2.92 ***
<i>ROE</i>	0.02	0.56	0.09	0.05	0.58	0.11	–0.64
<i>LEVERAGE</i>	2.55	4.30	1.03	2.70	4.76	1.09	–0.39
<i>SEGMENTS</i>	0.61	0.72	0.00	0.59	0.74	0.00	0.43
<i>TA</i>	6.30	2.15	6.32	6.68	2.14	6.61	–2.15 **
<i>AFCHG</i>	0.36	1.09	0.09	0.50	1.05	0.14	–1.69 *

This table presents descriptive statistics for the dependent and independent variables included in Table 5. All continuous variables are winsorized at 1 percent and 99 percent. Except for *AFCHG*, the values reported above are for the 155 LCAP observations and the 4,738 Big N Compustat observations. *AFCHG* consists of 152 LCAP observations and 4,306 Big N Compustat observations.

^a ‘t-statistic’ is a Student t-test for a difference in means between the two samples.

*, **, *** denotes statistical significance at a probability of <0.10, <0.05, and <0.01, respectively (two-tailed).

Variable definitions:

LCAP is an indicator variable which equals 1 if a firm discloses a liability cap and 0 otherwise.

LIT_RISK is an indicator variable which equals 1 if a firm is in a high litigation industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374, and 8731-8734) and 0 otherwise.

TABLE 3 (continued)
Descriptive statistics for the logistic regression variables

ICW is an internal control weakness index score comprised of two components. The first component equals 1 for a Section 302 material weakness in the liability cap year or in the year preceding the liability cap year and 0 otherwise. The second component equals 1 for a Section 404 material weakness in the liability cap year or in the year preceding the liability cap year and 0 otherwise. *ICW* has a minimum value of 0 and a maximum value of 2.

RESTATE is an indicator variable which equals 1 if a firm reports a financial statement restatement in the liability cap year or in the year preceding the liability cap year and 0 otherwise.

AUDCHG is an indicator variable which equals 1 if a firm changes its independent auditor in the liability cap year or in the year preceding the liability cap year and 0 otherwise.

TAC is total accruals, defined as current assets (Compustat Data Item 2) less current liabilities (Compustat Data Item 3) and scaled by total assets (Compustat Data Item 6).

ROE is return on equity, a control variable for profitability. It is defined as net income before extraordinary items (Compustat Data Item 18) divided by average common stockholders' equity (Compustat Data Item 60).

LEVERAGE is a control variable for capital structure and is defined as average total liabilities (Compustat Data Item 181) divided by average common stockholders' equity (Compustat Data Item 60).

SEGMENTS is a control variable for complexity and is the natural logarithm of the number of operating segments reported in the Compustat segments database.

TA is a control variable for size and is the natural logarithm of average total assets (Compustat Data Item 6).

AFCHG is the percentage change in audit fees from the year preceding a liability cap disclosure to the year of the liability cap disclosure.

TABLE 4
Correlations for the logistic regression variables

	<u>LCAP</u>	<u>LIT_RISK</u>	<u>ICW</u>	<u>RESTATE</u>	<u>AUDCHG</u>	<u>TAC</u>	<u>ROE</u>	<u>LEVERAGE</u>	<u>SEGMENTS</u>	<u>TA</u>
<i>LCAP</i>	–	0.050	0.030	–0.025	0.122	0.042	–0.009	–0.006	0.006	–0.031
<i>LIT_RISK</i>	0.050	–	0.054	0.046	0.013	0.339	–0.152	–0.196	–0.159	–0.292
<i>ICW</i>	0.035	0.052	–	0.452	0.097	–0.034	–0.029	0.012	0.042	–0.013
<i>RESTATE</i>	–0.025	0.046	0.467	–	0.079	–0.066	0.004	0.012	0.036	0.012
<i>AUDCHG</i>	0.122	0.013	0.109	0.079	–	0.032	–0.019	–0.003	–0.014	–0.107
<i>TAC</i>	0.030	0.339	–0.015	–0.046	0.031	–	–0.099	–0.173	–0.187	–0.459
<i>ROE</i>	–0.022	–0.159	–0.114	–0.057	–0.038	–0.086	–	0.048	0.074	0.174
<i>LEVERAGE</i>	–0.007	–0.305	0.013	0.026	–0.010	–0.419	0.111	–	–0.004	0.322
<i>SEGMENTS</i>	0.007	–0.158	0.038	0.034	–0.012	–0.143	0.095	0.127	–	0.352
<i>TA</i>	–0.026	–0.304	–0.029	0.012	–0.104	–0.465	0.262	0.501	0.340	–

This table presents correlation coefficients for the dependent and independent variables included in the logistic regression in Table 5. Pearson product-moment correlation coefficients are above the diagonal. Spearman rank-order correlation coefficients are below the diagonal. Bolded correlations indicate significance at the 0.05 percent level or better (two-tailed). All variables are as defined in Table 3.

TABLE 5
Logistic regression summary statistics: Risk Test (H1) and Audit Fee Test (H2)

Parameter	Risk Test (H1)		Audit Fee Test (H2)	
	Coefficient	p-value	Coefficient	p-value
Intercept	-4.904	<0.0001	-4.548	<0.0001
<i>LIT_RISK</i>	0.857	0.0003	0.902	0.0001
<i>ICW</i>	0.584	0.0003	0.522	0.001
<i>RESTATE</i>	-0.803	0.014	-0.666	0.036
<i>AUDCHG</i>	0.991	0.0004	0.896	0.002
<i>TAC</i>	0.410	0.413	0.152	0.769
<i>ROE</i>	0.191	0.314	0.127	0.515
<i>LEVERAGE</i>	-0.009	0.738	-0.007	0.792
<i>SEGMENTS</i>	0.277	0.061	0.199	0.177
<i>TA</i>	0.039	0.528	0.038	0.536
<i>AFCHG</i>			-0.351	0.017
Number of LCAP firms	155		152	
Number of control sample observations	4,738		4,306	
Likelihood ratio	432.44	<0.0001	407.81	<0.0001

This table presents regression summary statistics for Hypothesis 1 (risk test) and Hypothesis 2 (audit fee test). The risk test model regresses a dichotomous dependent variable, *LCAP*, on a set of risk variables and a set of control variables. The audit fee test model adds the percentage change in audit fees, *AFCHG*, as an independent variable. Indicator variables are included in both models to control for year and industry fixed effects and have not been tabulated above. All variables are as defined in Table 3. The p-values reported are two-tailed.

The regression used to test Hypothesis 1 takes the form:

$$LCAP_i = \alpha_0 + \alpha_1 LIT_RISK_i + \alpha_2 ICW_i + \alpha_3 RESTATE_i + \alpha_4 AUDCHG_i + \alpha_5 TAC_i + \alpha_6 ROE_i + \alpha_7 LEVERAGE_i + \alpha_8 SEGMENTS_i + \alpha_9 TA_i + \varepsilon_i$$

The regression used to test Hypothesis 2 takes the form:

$$LCAP_i = \alpha_0 + \alpha_1 LIT_RISK_i + \alpha_2 ICW_i + \alpha_3 RESTATE_i + \alpha_4 AUDCHG_i + \alpha_5 TAC_i + \alpha_6 ROE_i + \alpha_7 LEVERAGE_i + \alpha_8 SEGMENTS_i + \alpha_9 TA_i + \alpha_{10} AFCHG_i + \varepsilon_i$$

TABLE 6
Descriptive statistics comparing the LCAP sample to the Non-Big N Compustat sample

Variable	LCAP sample			Non-Big N Compustat sample			t-statistic^a
	Mean	Std Dev	Median	Mean	Std Dev	Median	
<i>LCAP</i>	1.00	0.00	1.00	0.00	0.00	0.00	–
<i>LIT_RISK</i>	0.41	0.49	0.00	0.29	0.45	0.00	3.10 ***
<i>ICW</i>	0.29	0.63	0.00	0.19	0.40	0.00	1.89 *
<i>RESTATE</i>	0.12	0.33	0.00	0.19	0.40	0.00	–1.82 *
<i>AUDCHG</i>	0.25	0.43	0.00	0.40	0.49	0.00	–4.12 ***
<i>TAC</i>	0.31	0.27	0.23	1.45	5.91	0.29	–2.41 **
<i>ROE</i>	0.02	0.56	0.09	0.10	2.53	0.07	–0.70
<i>LEVERAGE</i>	2.55	4.30	1.03	2.98	4.92	0.63	–1.30
<i>SEGMENTS</i>	0.61	0.72	0.00	0.27	0.52	0.00	8.25 ***
<i>TA</i>	6.30	2.15	6.32	3.44	2.29	3.25	15.50 ***
N	155			2,749			

This table presents descriptive statistics for the dependent and independent variables included in the risk test (H1) logistic regression in Table 5. The Non-Big N Compustat sample is formed by downloading all Compustat firms for 2005 and retaining those with a non-Big N auditor and values for total assets and book value of equity. Of the 2,877 non-Big N firms, 2,749 have values for all variables tabulated above. All continuous variables are winsorized at 1 percent and 99 percent. See Table 3 for variable definitions.

^a ‘t-statistic’ is a Student t-test for a difference in means between the two samples.

*, **, *** denotes statistical significance at a probability of <0.10, <0.05, and <0.01, respectively (two-tailed).