

The Influence of Auditor Legal Liability on Conservative Financial Reporting in the Property-Casualty Insurance Industry

Jennifer J. Gaver
University of Georgia

Jeffrey S. Paterson
Florida State University

Carl Pacini
Florida Gulf Coast University

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Abstract: We hypothesize that when auditors face greater legal liability they will have less tolerance for loss reserve understatements by their insurance clients. To test this hypothesis, we analyze a sample of 6,033 loss reserve observations from 1993 through 2001. Consistent with Petroni (1992), we find that financially struggling insurers tend to under-reserve. This behavior is attenuated when the insurer is domiciled, headquartered, or licensed in a state which uses either the Restatement of Torts or the reasonable foreseeability standard to determine the auditor's liability to third parties. Compared to the case where the auditor's liability is defined by the legal concept of privity, these standards impose greater legal costs on auditors for ordinary negligence. The results suggest that auditors demand more conservative reporting when they face higher legal costs.

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Corresponding author: Jennifer J. Gaver, J. M. Tull School of Accounting, Terry College of Business, University of Georgia, Athens, GA 30602-6252, jgaver@terry.uga.edu, (706) 542-3630 (fax).

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1. Introduction

DeAngelo (1981) argues that an auditor's economic bond with a client makes the auditor sensitive to client preferences. However, Palmrose (1988) contends that this threat to auditor independence is offset by the potential for costly litigation against the auditor. Although some studies find evidence consistent with independence threats affecting auditor behavior (Frankel, Johnson, and Nelson 2002; Larcker and Richardson 2004; Chang and Hwang 2003; Ferguson, Seow, and Young 2004), others fail to detect any evidence of systematic independence violations (e.g., DeFond, Raghunandan, and Subramanyam 2002; Chung and Kallapur 2003; Ashbaugh, LaFond, and Mayhew 2003; Geiger and Rama 2003). Both Reynolds and Francis (2001) and Gaver and Paterson (2007) find that auditors are more stringent with their economically significant clients, and attribute this behavior to litigation avoidance. However, neither study tests this explanation directly.

Most litigation against auditors involves allegations that clients have artificially inflated earnings or assets (Kellogg 1984; Lys and Watts 1994; Heninger 2001). Auditors can reduce their expected litigation costs by demanding more conservative accounting choices from their clients (Lee and Mande 2003). As defined by Holthausen and Watts (2001), a conservative bias in accounting involves anticipation of losses but not gains. Bushman and Piotroski (2006) argue that if accounting conservatism is driven by litigation pressure, and strong legal/ judicial systems increase the potential litigation costs to firms from overstating economic performance, then conservative reporting practices will be more prevalent in stronger legal/judicial regimes.

To test the association between the legal environment and the degree of conservatism in financial statements, researchers must identify settings where either the auditor's legal liability varies across jurisdictions or cases where a change in the level of legal liability occurs within a jurisdiction. Bushman and Piotroski (2006) take the first approach, investigating the association between litigation costs and accounting conservatism in different countries. The disadvantage of this strategy is that economic and cultural institutions vary across countries along with their legal regimes, and it is difficult to provide adequate experimental controls for these variables. Lee and Mande (2003) limit their sample to U.S. companies and compare financial reports before and after the passage of a major federal securities law that reduced the auditor's legal liability to third parties.¹ Although the single-country sample enables them to hold more features of the overall reporting regime constant, it leaves open the possibility that a simultaneously occurring event other than the legislative event is the source of the results. If the legislation contains provisions that affect stakeholders other than auditors, these influences can also confound the analysis.

In this paper, we provide a new test of the association between the expected litigation costs faced by auditors and the degree of conservatism in client financial reports. We exploit the fact that U. S. courts do not apply a single, nationwide legal standard governing the scope of auditors' liability to third parties for negligence (Chan and Wong 2002). These cases are governed by common law. The result is that an auditor's expected litigation cost depends on the state in which it is sued. This allows us to conduct a cross-sectional study on a sample restricted to U. S. firms. Our research hypothesis is that more conservative reporting will be observed by audit clients that are headquartered, domiciled, or licensed in states with stricter legal standards.

¹ The legislation studied by Lee and Mande (2003) is the Private Securities Litigation Reform Act of 1995, which decreased auditors' expected litigation costs by eliminating joint and several liability. Chan and Pae (1998) show analytically that the elimination of joint and several liability induces auditors to reduce their effort and adopt less conservative auditing procedures.

A stricter legal standard allows more parties to sue an auditor for negligence. The alternative hypothesis is that reputation concerns discipline auditors to demand a uniform level of conservatism, independent of the liability regime.

To test the hypothesis, we focus on a sample of privately-held, property-casualty insurers domiciled in the U.S. This eliminates auditors' exposures to federal securities laws, such as SEC Rule 10b-5, while retaining their exposures to third parties for negligence under common law. Despite being privately-held, insurers are required to provide audited financial reports to regulators and other third parties who may be owed a duty of care under common law. Accounting discretion for insurance companies is concentrated in a single account, the loss reserve, and mandated disclosures unique to the industry allow comparison of loss reserve estimates to ex post outcomes. This gives us an objective measure of accounting conservatism. Petroni (1992) reports that financially struggling insurers tend to inflate their apparent financial position by understating their loss reserves. Auditors that allow this departure from conservatism increase their likelihood of retention by the client, but also increase the chance of audit failure. An auditor's willingness to accept this trade-off depends on the expected cost of audit failure. If this cost differs across insurance clients, so will the auditor's tolerance for reserve understatements.

We sort states according to their legal standards to determine auditor liability to third parties for negligence: privity or near privity, Restatement of Torts, or reasonable foreseeability. As described by Maroney, Pacini, and Hillison (2000), auditor liability to third parties for negligence is lowest in states that follow the privity or near privity doctrine, and highest in states that follow the reasonable foreseeability doctrine. Auditor liability under the Restatement of Torts doctrine lies between privity and foreseeability. We test the hypothesis that auditors are

less likely to allow reserve understatements by struggling insurance clients that are headquartered, domiciled, or licensed in high-liability states, and more likely to allow reserve understatements in low-liability states. The results, based on a sample of 6,033 observations from 1993 through 2001, are consistent with this hypothesis.

Having established a general association between auditor liability and accounting conservatism in our sample, we then consider whether the effect differs between clients of large (Big 6) and small (non-Big 6) audit firms. DeAngelo (1981) posits that audit quality is not independent of audit firm size. The deep pockets of Big 6 firms subject them to greater litigation risk, and predispose them to be more responsive to differences in legal environments. Lee and Mande (2003) and Geiger, Raghunandan and Rama (2006) observe a decrease in conservatism following the passage of the Private Securities Litigation Reform Act of 1995 for auditees of Big 6 firms, but not for auditees of non-Big 6 firms. Similarly, Francis and Wang (2008) report a greater degree of conservatism among firms with Big 4 auditors when a country's investor protection regime gives stronger protection to investors. In contrast, among firms with non-Big 4 auditors, conservatism is largely unaffected by different investor protection regimes. Unlike these prior studies, we do *not* find an auditor size effect in our data. Our main result – less under-reserving by financially weak insurers in more stringent auditor liability states – holds for insurance clients of both large and small audit firms. The finding is also observed when the sample is restricted to cases where the auditor is an insurance expert.

The paper proceeds as follows. Section 2 describes the institutional setting of the study. It explains industry practices unique to property-casualty insurance firms that are important to the study. It also provides background on alternative judicial standards for auditor liability to third parties and explains how these standards differ across states. Section 3 states the

hypotheses. Section 4 describes the sample selection process, defines the variables, and provides descriptive statistics. Section 5 reports the results, and Section 6 concludes.

2. Institutional Setting

2.1. Insurer loss reserves

Insurance firms follow what are known as statutory accounting principles (SAP) for reporting to state insurance commissioners. Under SAP, the loss reserve is the insurance firm's estimated liability for unpaid claims on all losses that occurred by the balance sheet date. The loss reserve is the largest liability on insurer balance sheets, and requires substantial managerial judgment.² Estimation of the reserve is highly subjective because not all claims for current period losses are filed by the balance sheet date. Even when claims are filed in the current period, the ultimate cash settlement is often delayed for several years.

Petroni (1992) contends that the estimate of outstanding claim losses is the most likely account through which insurance managers adjust the reported financial position of their firm. Likewise, Petroni and Beasley (1996) argue that reserves present the greatest risk that a property-casualty insurer's financial reports will contain a material misstatement. Accordingly, while the auditor's overall charge is to evaluate the fairness of the insurer's financial statements in their entirety, the loss reserve is singled out as an account requiring special scrutiny.³ Of particular

² Petroni (1992) reports that claim loss reserves average 44% of total liabilities for a sample taken from 1979-1983. Gaver and Paterson (2004) find that reserves average 53% of total liabilities for a sample taken from 1988 through 1993.

³ Statement on Auditing Standards (SAS) No. 57, issued in 1988, requires the auditor to obtain sufficient competent evidential matter to provide reasonable assurance that management's loss reserve estimate is plausible in the circumstances. SAS No. 47, issued in 1983, requires the auditor to determine the difference between the closest reasonable amount best supported by the audit evidence and management's estimate of the loss reserve. If this difference is not considered reasonable, it is treated as a likely misstatement and aggregated with other likely misstatements. The aggregated misstatements are then evaluated to decide whether adjustments must be made to the accounts before an unqualified audit opinion can be issued (AICPA 1994).

concern is the possibility that the insurer has understated the reserve in an effort to inflate its apparent financial health. Auditors are more sensitive to understatements than overstatements of the loss reserve account, because stakeholders of financially distressed firms that believe they have been misled about the firm's condition are more likely to initiate lawsuits alleging audit failure (Palmrose 1988; Carcello and Palmrose 1994; DeFond and Subramanyam 1998).

The amount of error in the reported reserve is known with certainty only after all claims arising from a given period are settled. However, if managers know the unbiased level of losses when they make their initial estimates, then comparison of the developed reserve to the initial reserve provides an objective gauge of accounting conservatism. Such a comparison is possible because of the extensive disclosure requirements of SAP. Table 1, excerpted from the 1998 Statutory Annual Statement of General Electric Mortgage Insurance Company (GEMIC), provides an example of these disclosures.⁴ The loss reserve nets aggregate estimated losses against cumulative cash payments for current and previous loss years. Thus, the loss reserve reported in the 1993 GEMIC balance sheet reflects the sum of all losses estimated for 1993 and prior years (column 5 of panel A), less the sum of all cash payments for losses incurred in 1993 and earlier (column 5 of panel B). This amount is \$356.923 (\$856.216 - \$499.293) million.

INSERT TABLE 1 HERE

Although cash payments are a matter of record, losses are subject to judgment. At the end of 1993, estimated losses for years up to and including 1993 totaled \$856.216 million. By the end of 1998, the estimate for the same loss period had been increased to \$972.798 million. The difference between the *revised estimate* of cumulative losses (\$972.798 million) and the cumulative cash payments (\$499.293 million) is known as the “developed reserve.” Thus, the

⁴ We present a report from 1998 because disclosures from that year are among those used in the current study. Reports from more recent years use the same format.

1998 developed reserve for 1993 (and earlier) losses is \$473.435 (\$972.728 minus \$499.293) million.

In our study, we use a five-year development period to determine reserve bias, which is consistent with both Petroni (1992) and Gaver and Paterson (2007). For GEMIC, the five-year developed reserve for 1993 is \$473.435 million, and the original 1993 reserve is \$356.923 million. The comparison shows that GEMIC is under-reserved by \$116.512 million in 1993. This makes sense because it is one of the insurers in our study that is categorized as financially weak, and Petroni (1992) finds that weak insurers tend to under-reserve.

2.2. IRIS ratios

State insurance commissions have used IRIS (Insurance Regulatory Information System) ratios since the early nineteen-seventies as an initial screen to identify firms for further regulatory scrutiny. A “usual range” is developed for each ratio, which encompasses results expected from the majority of companies during a normal year. Because economic conditions are not static, the components of each ratio are reviewed annually and revised when deemed necessary (National Association of Insurance Commissioners (NAIC) 1994).

Appendix A provides a definition of each ratio, explains how it is affected by the loss reserve estimate, and states the usual range for the ratio during the sample period. Under-reserving boosts reported policyholder surplus, a statutory account analogous to the combined retained earnings and paid-in capital accounts of a company following generally accepted accounting principles. Eight of the twelve IRIS ratios are improved by understating the loss reserve, and only one ratio (ratio eleven) is worsened through understatement. In the three other cases, reserves either do not affect the ratio (ratios two and five), or the effect is indeterminate

(ratio six). The IRIS system has been a boon to researchers seeking an objective measure of insurer financial health because virtually all property-casualty insurers must participate in the program and ratio definitions and insurer results are publicly available from the NAIC.

2.3. Auditor liability to third parties for negligence

An auditor's duty to third parties (shareholders, creditors, lenders, regulators, and other users of the financial statements) for negligence is governed by common law. Common law cases are decided by precedent, and established precedent differs across states. Maroney, Pacini, and Hillison (2000) describe three basic judicial viewpoints that underlie state liability standards for auditors: privity, Restatement, and reasonable foreseeability. The *privity* rule is the most restrictive standard. *Strict privity*, established in *Landell v. Lybrand* (1919), requires a direct contractual relationship between an accountant and a third party for the latter to be able to sue the practitioner for negligence.⁵ The *near privity* standard, articulated by the New York Court of Appeals in *Ultramares v. Touche* (1931), requires the suing party to be an intended third party beneficiary of the contract between the accountant and the client.⁶

The *Restatement* standard, articulated by a Rhode Island federal district court in *Rusch Factors v. Levin* (1968), holds that an accountant who audits or prepares financial information for a client owes a duty not only to that client, but to any other person or one of a group of persons whom the accountant or client intends the information to benefit.⁷ Under this standard, the third party must justifiably rely on the information in a transaction that the accountant or

⁵ *Landell v. Lybrand*, 107 A. 783 (Pa. 1919).

⁶ *Ultramares v. Touche*, 174 N.E. 441 (N.Y. 1931).

⁷ *Rusch Factors v. Levin*, 284 F. Supp. 85 (D.R. I. 1968).

client intended the information to influence, and such reliance must result in a pecuniary loss for the person. The accountant need not know the exact identity of the non-client to be held liable under the Restatement standard, which is based on Section 552 of the Restatement (Second) of Torts.

Finally, the *reasonable foreseeability* rule was articulated by the New Jersey Supreme Court in *Rosenblum v. Adler* (1983).⁸ The court concluded that accountants have a duty to all those whom they should reasonably foresee as receiving and relying on the accountant's work product. This duty extends only to those users whose decision is influenced by audited statements obtained from the audited entity for a proper business purpose. Under *Rosenblum*, the auditor owes a duty of care to all who obtain a firm's financial statements directly from the audited entity, but owes no such duty of care to those who obtain them from an annual report in a library, government file, or other source.

During our sample period, 21 states do not explicitly specify the auditor's liability to third parties for negligence. However, these states do have case law that describes the third party liability of other information providers, such as appraisers, engineers, lawyers, and real estate agents. For our analysis, we assume that the liability standard faced by these service providers is also applied to auditors. During our sample period, several of the states classified in this manner passed statutes or had a judicial ruling specific to auditors. Our categorizations are generally consistent with the liability standards subsequently established for auditors in these states. Appendix B specifies the liability standard that we assign to each state during each year of the sample period and our rationale for doing so.

⁸ *Rosenblum v. Adler*, 461 A. 2d 138 (N.J. 1983).

A maintained hypothesis in our analysis is that expanding the number of parties who can claim to have been damaged by the auditor's report increases the auditor's expected liability costs. This is consistent with arguments made in the *Restatement (Second) of Torts*:

“the risk of liability to which the supplier subjects himself by undertaking to give the information, while it may not be affected by the identity of the person for whose guidance the information is given, is vitally affected by the number and character of the persons, and particularly the nature and extent of the proposed transaction.” (*Restatement (Second) of Torts* §552, *comment h to subdivision 2*)

Nelson, Ronen, and White (1988) model the expansion in auditor liability implied by a shift from privity to reasonable foreseeability. They show analytically that expanding liability to third parties increases the price of client risk, making auditing mistakes more costly. On an empirical level, Kothari, Lys, Smith, and Watts (1988) report that the number of lawsuits filed against auditors increased sharply after *Rosenblum* instituted the reasonable foreseeability criterion. Thus, increasing the scope of the auditor's liability to third parties increases the number of lawsuits filed against the auditor. It also increases the auditor's litigation costs. Pacini and Sinason (1998) find that, for their sample, the cost of defending against even weak legal claims averaged \$3.7 million and took 3.7 years to conclude.

The accounting profession has argued that any departure from privity increases auditor litigation risk to unacceptable levels (Coalition for the End of Abusive Security Suits 1992). In our analysis, we assume that auditors face higher expected litigation costs when they are sued in a state that follows either the Restatement or the foreseeability standard, and lower litigation risk when litigation is brought in strict privity or near privity states. We further assume that third-party claimants will choose a venue for bringing suit that affords them the greatest chance of prevailing. For example, an auditor that is headquartered in New York might have an insurance client that is domiciled in Wisconsin, but doing business in Illinois. The insurer reports to the

state insurance commissioner in Wisconsin, and therefore litigation brought by the commissioner would be tried that state. However, other third parties have more discretion over the choice of venue and are expected to bring suit in the state (in this case, New York, Wisconsin, or Illinois) with the most expansive litigation standard. Doing so increases their likelihood of being included in the group to whom an auditor owes a duty for negligence.

3. Hypotheses

Weak insurers have incentives to inflate their apparent financial condition by understating their loss reserves (Petroni 1992). Auditors that allow this departure from conservatism enhance their likelihood of retention by the client, but also increase the risk of audit failure. An auditor's willingness to make this trade-off depends on the cost of audit failure, an important component of which is the probability that the auditor will be sued by a third party. We argue that in jurisdictions where the likelihood of third party litigation is high, auditors are more likely to demand more conservative reporting from client firms. In the context of our study, auditors take a conservative position when they oppose reserve understatement by financially struggling insurance clients. This leads to our first hypothesis.

H₁: The magnitude of the reserve understatement by financially weak property-casualty insurers is lower when the insurer is domiciled, headquartered, or licensed to do business in a state that has a higher likelihood of third-party auditor litigation.

Prior research indicates that audit firm size influences the relation between the legal environment and the degree of conservatism in financial reports. Lee and Mande (2003) and Geiger, Raghunandan and Rama (2006) observe a decrease in conservatism following the passage of the Private Securities Litigation Reform Act of 1995 for auditees of Big 6 firms, but not for auditees of non-Big 6 firms. Similarly, Francis and Wang (2008) report a greater degree

of conservatism among firms with Big 4 auditors when a country's investor protection regime gives stronger protection to investors. In contrast, among firms with non-Big 4 auditors, conservatism is largely unaffected by different investor protection regimes. These findings lead to hypothesis two.

H₂: The reduction in reserve understatement by financially weak insurers domiciled, headquartered, or licensed to do business in high-liability states is greater when the auditor is a Big 6 firm.

Krishnan (2003) reports that clients of non-specialist auditors report absolute discretionary accruals that are significantly higher than the discretionary accruals reported by clients of specialist auditors, and concludes that specialist auditors mitigate accrual manipulations. This is likely due to both greater technological expertise on the part of industry experts and greater potential for reputation losses in the event of an audit failure. Petroni and Beasley (1996) argue that auditor expertise is particularly important in the insurance industry because it is regulated. This motivates hypothesis three.

H₃: The reduction in reserve understatement by financially weak insurers domiciled, headquartered, or licensed to do business in high-liability states is greater when the auditor is an insurance industry expert.

4. Data

4.1 Sample selection

We begin with all 24,308 insurer-year observations in the property-casualty database of the NAIC during the years 1993 through 2001.⁹ We begin the analysis in 1993 because it is the first year that the name of the auditor is reported in the statutory annual statement. We end the

⁹ Source: National Association of Insurance Commissioners, by permission. The NAIC does not endorse any analysis or conclusions based upon the use of its data.

analysis in 2001 in order to allow a sufficient loss reserve development period, and also because auditor data must be hand-coded, making data collection for such a large sample costly.

For an observation to be retained for analysis, we require that the insurer is domiciled within the United States and organized as a stock company. The insurer must also have loss reserves subject to managerial discretion. For this reason, we drop observations if the insurer engages in pooling arrangements or cedes all premiums to other insurers. We also delete observations if the insurer writes more than 25% of premiums for surety and credit, accident and health, or workers' compensation.¹⁰ From the remaining set of 9,430 observations, we eliminate 360 observations from publicly-traded insurers. Auditors of public clients face a more stringent liability environment than auditors of private companies because they can be sued under federal and state securities laws that do not apply to privately-held insurers.¹¹ We also delete 2,153 cases where the insurer lacks sufficient data to estimate the models described in section 5, and 884 cases where the insurer is exempt from audit. The final sample consists of 6,033 insurer-year observations. The sample selection process is detailed in Table 2.

INSERT TABLE 2 HERE

¹⁰ These screens are used by Petroni (1992), who explains that in a pooling arrangement, an insurer submits all premiums to an affiliate which then allocates premiums and losses across all insurers in the pool, and dictates reserve levels. Firms that cede all of their premiums do not have reserves. Finally, insurers that specialize in surety and credit, accident and health, or workers' compensation have less discretion in reporting reserves because their estimates tend to be based on well established actuarial tables.

¹¹ For example, section 11 of the 1933 Securities Act provides that third parties may sue the auditor for material misrepresentations or omissions in audited financial statements included in the registration statement of an initial public offering; Rule 10b-5 of the 1934 Securities Exchange Act makes auditors of publicly-traded insurers liable for fraudulent or misleading statements related to the purchase or sale of a security; the Foreign Corrupt Practices Act of 1977 imposes legal liability for recordkeeping and internal control on auditors of public companies; and securities laws in some states impose additional liability on the auditors of public companies.

4.2 Variable definitions and descriptive statistics

Our hypotheses specify four key variables. For each insurer-year we must estimate the loss reserve estimation bias and the insurer's financial health. We must also identify the insurer's auditor and the states where the auditor could be sued. The three possible litigation venues are the insurance client's state of domicile, the state where the insurer is headquartered, and the states where the insurer is licensed to write policies. In this section, we describe the measurement of these variables. Descriptive statistics are reported in table 3.

INSERT TABLE 3 HERE

We use a five-year development period to determine loss reserve bias, which is consistent with Petroni (1992), Petroni and Beasley (1996), and Gaver and Paterson (2007). To compute the loss reserve bias for an observation in 1993, for example, we subtract the original loss reserve reported in the 1993 annual statement from the five-year developed reserve reported in 1998. We then divide the result by the admitted assets reported in the 1992 annual statement to control for variation in insurer size.¹² The bias is *positive* if the manager initially under-reserved, and vice-versa. As reported in Table 3, the median reserve bias (BIAS) is negative (indicating initial overstatement of the reserve), and just under one percent of lagged admitted assets. Gaver and Paterson (2004, 2007) also note a general tendency for property-casualty insurers to overstate reserves.¹³ Beaver, McNichols, and Nelson (2003) explain that the claim loss provision is tax

¹²Prior researchers also scale their data in an effort to reduce problems of heteroskedasticity and generally to improve cross-sectional comparability. Grace (1990) scales by net premiums earned. Petroni (1992) and Beaver et al. (2003) deflate by admitted assets (a statutory accounting concept that excludes less liquid GAAP assets, such as land and buildings), but report that results are not sensitive to the choice of scaling variable. Likewise, our results are not sensitive to the choice of scaling variable.

¹³ Using an earlier time period (1988-1993), Gaver and Paterson (2004) report a median overstatement of 1.62% for their sample, which is significantly different from zero at the 0.0001 level. In their study, 52.7% of observations involve over-reserving, compared to 46.0% of observations with initial under-statements, and 1.3% with accurate reserves. Firms that understate reserves tend to be the weakest financially. A similar effect occurs in the current sample.

deductible. Thus, financially strong insurers have incentives to over-reserve to minimize the present value of tax payments (Gaver and Paterson 1999). Over-reserving also provides a credible signal of insurer financial strength (Petroni 1992), and smooths income in unusually profitable years (Petroni, Ryan, and Whalen 2000).

Appendix A explains that most IRIS ratios are improved by understating the loss reserve. We therefore “back out” the effect of the loss reserve bias on the financial results before computing the ratios. In other words, we restate the financial statement items as if no bias is present, and then compute the IRIS ratios using these “unbiased” financial statement numbers. For example, the 1993 reserve bias for GE Mortgage Insurance Company (based on the 1998 developed reserve) is \$116.512 million. Understated reserves result in understated losses and liabilities. Thus, we compute the *unbiased* losses and liabilities of GEMIC by adding \$116.512 to the reported amounts. Understated reserves affect policyholder surplus on an after-tax basis. We assume a marginal federal tax rate of 34% and compute the unbiased surplus by subtracting $[\$116.512 \times (1 - 0.34)]$ from the reported surplus.¹⁴

We classify an insurer as financially weak (WEAK) if it has more than three (unbiased) ratios outside of the bounds considered normal by the NAIC. We select this cut-off because it usually triggers regulatory attention (Belth 1987; Petroni 1992; NAIC 1994; Troxel and Bouchie 1995; Gaver and Paterson 2004). As shown in Table 3, around nineteen percent of the sample meets this criterion. Consistent with prior research, financial weakness is associated with reserve understatement. Table 3 reports that the mean reserve bias for the 1,141 observations from weak

Both the mean and median reserve bias is significantly negative, with p-values of 0.023 and 0.0001, respectively (untabulated).

¹⁴ We do not consider variations in state tax rates in our analysis because state taxes are based on insurer premiums, which are not affected by loss reserves (Insurance Accounting and Systems Association 2003). Taxes at the federal level are based on insurer net income, and the claim loss provision is therefore tax deductible for federal tax purposes.

insurers is about sixteen percent of lagged admitted assets (indicating under-reserving) and the corresponding mean for the 4,892 observations from healthy firms is a negative four percent (indicating over-reserving). This difference is significant at the 0.0001 level.

The name of the auditor in each of the years 1993 through 2001 is hand collected from either the insurer's statutory annual statement or Best Insurance Reports. We find that Big 6 auditors are used in 4,944 of our 6,033 insurer-years, with non-Big 6 auditors used in the remaining 1,089 cases (untabulated). Petroni and Beasley (1996) report that the three insurance industry leaders in their sample are Ernst & Young, Coopers & Lybrand, and KPMG Peat Marwick.¹⁵ These firms also audit the majority of our sample insurers (3,862 of 6,033 insurer-year observations). Our sample includes 1,222 insurers domiciled in 48 states, with the largest concentrations in Illinois (115 observations), New York (83 observations), and California (81 observations).¹⁶

Pacini, Hillison, and Sinason (2000) construct a liability index to quantify the stringency of the auditor liability standard in each state. This index, which is described in detail in Appendix B, ranges from one (for strict privity, the lowest liability case) to nine (for reasonable foreseeability, the highest liability case). For each insurer-year observation, we determine the set of states where the insurer is domiciled, headquartered, or licensed to write premiums. From this set, we identify the state with the highest liability index. We refer to this as the LITNUMBER for each insurer-year observation. In the full sample, LITNUMBER has a mean of 6.4 and a median of 7.0. The mean and median LITNUMBER for the subsets of weak and healthy observations do not differ significantly from the results for the full sample.

¹⁵ Coopers and Lybrand merged with Price Waterhouse to become PricewaterhouseCoopers in 1998.

¹⁶ No insurers in our sample are domiciled in Montana, Wyoming, or the District of Columbia.

Section five describes our model for testing hypotheses about the association between auditor legal liability and under-reserving by weak insurers. The model includes three control variables intended to capture influences on reserve bias that are unrelated to insurer financial condition or auditor litigation risk. The variables are: OVERxLENGTH, UNDERxLENGTH, and MAL. Although we defer discussion of the control variables until section 5, their descriptive statistics are included in table 3.

INSERT TABLE 3 HERE

5. Results

5.1. *The association between auditor liability and reserve bias*

Under hypothesis one, the magnitude of the reserve understatement by financially weak property-casualty insurers is lower when the insurer is domiciled, headquartered, or licensed in a state where auditors face higher litigation risk. To test this hypothesis, we estimate the following model:

$$\text{BIAS}_i = \beta_0 + \beta_1 \text{WEAK}_i + \beta_2 \text{LITRISK}_i + \beta_3 (\text{WEAK}_i \times \text{LITRISK}_i) + \beta_4 (\text{OVER}_i \times \text{LENGTH}_i) + \beta_5 (\text{UNDER}_i \times \text{LENGTH}_i) + \beta_6 \text{MAL}_i + \varepsilon_i \quad (1)$$

A variant of this model originally appeared in Petroni and Beasley (1996), and was later modified by Gaver and Paterson (2007). Our hypotheses concern the impact of the auditor's liability exposure on under-reserving by weak insurance clients. We test this by examining the relation between reserve error and the interaction between financial weakness in the insurer and liability pressure on the auditor. In order to create a more compact representation of liability, we transform LITNUMBER, described in section 4.2, to a dummy variable (LITRISK) which takes on the value of one if LITNUMBER is equal to or exceeds 4.0 (the high liability case) and is

zero otherwise. We choose 4.0 as our cut-off because it provides a clear demarcation between privity (low liability) and restatement/reasonable foreseeability (high liability).

The control variables (OVER x LENGTH, UNDER x LENGTH, and MAL) are used by both Petroni and Beasley (1996) and Gaver and Paterson (2007). LENGTH is claim loss reserves expressed as a percentage of total liabilities. It is included because the longer the claim cycle, the more difficult it is to forecast total claims. Petroni and Beasley (1996) find that insurers with long-tailed product lines tend to have more pronounced reserve errors of both signs. Following them, we parse LENGTH into two variables: (UNDERxLENGTH) and (OVERxLENGTH). UNDER as an indicator variable that takes on the value of one if the reserve error is positive (indicating initial understatement), and zero otherwise. The companion variable, OVER, takes on the value of one if the reserve error is negative, and zero otherwise. MAL is the percent of net premiums written for malpractice insurance. Both Petroni (1992) and Petroni and Beasley (1996) find that reserve bias is associated with malpractice writings, although the sign of the relationship varies across years.

The test of hypothesis one rests on β_3 , the coefficient on the interaction between financial condition and litigation risk. A significantly negative value means that the tendency of weak insurers to under-reserve is attenuated when the insurer is domiciled, headquartered, or licensed in a state that imposes high litigation risk on the auditor. This would indicate that auditors are more likely to find and less likely to allow reserve understatements by weak insurers in high liability jurisdictions. We make no prediction concerning β_2 , the coefficient on litigation risk. Hypothesis one states that reserve understatement is restricted to firms with the *incentive* to manipulate: in other words, the weak firms. It makes no prediction about the direct relation between litigation risk and reserve error.

Table 4 presents the results of estimating equation (1) for each of the sample years 1993-2001. All of the annual regressions are significant ($p < 0.0001$), with F-statistics ranging from 47.96 to 121.35, and adjusted R^2 values ranging from 0.30 to 0.51. Consistent with Petroni (1992), the coefficient on WEAK is significantly positive in each year, indicating that financially struggling insurers understate their loss reserves. The coefficient on litigation risk (LITRISK), on the other hand, is insignificant in eight of the nine years, indicating that there is no direct relation between insurer reserve bias and auditor liability to third parties.¹⁷ However, the coefficient on the *interaction* between financial condition and LITRISK is significantly negative in six of nine years.¹⁸ For most of our sample years, weak insurers are less likely to under-reserve if their auditor is subject to higher expected litigation costs, a finding that supports hypothesis one. The significant coefficients on the control variables in equation (1) (OVERxLENGTH, UNDERxLENGTH, and MAL) are consistent with the findings of Petroni and Beasley (1996) and Gaver and Paterson (2007).

INSERT TABLE 4 HERE

Hypotheses two and three concern the association between auditor type and the impact of legal liability on under-reserving by weak insurance clients. Hypothesis two posits that the reduction in reserve understatement by financially weak insurers domiciled, headquartered, or licensed in high-liability states is greater when insurers have Big 6 auditors. Hypothesis three predicts that the reduction in reserve understatement by financially weak insurers domiciled, headquartered, or licensed in high-liability states is greater when insurers have auditors who are

¹⁷ The exception is 1999 when the coefficient on LITRISK is significantly positive ($p = 0.005$; two-tailed test).

¹⁸ The coefficient on WEAKxLITRISK is insignificant in 1996, 1997, and 1998 (p -values are 0.324, 0.275, and 0.078, respectively). We also use the Fama and MacBeth procedure to compute the coefficients and p -values (Fama and MacBeth 1973). The Fama and MacBeth results (untabulated) are consistent with the annual regressions. In particular, the coefficient on WEAKxLITRISK is significantly negative.

insurance industry experts. To test these hypotheses, we limit the sample to the 1,141 observations from weak insurers, and estimate equations (2) and (3). In equation (2), used to test hypothesis two, BIG6 takes on the value of one if the auditor is from a BIG6 firm and is zero otherwise. In equation (3), used to test hypothesis three, EXPERT takes on the value of one if the auditor is an insurance industry expert and is zero otherwise. A significantly negative β_3 in either regression supports the associated hypothesis.

$$\text{BIAS}_i = \beta_0 + \beta_1 \text{BIG6}_i + \beta_2 \text{LITRISK}_i + \beta_3 (\text{BIG6}_i \times \text{LITRISK}_i) + \beta_4 (\text{OVER}_i \times \text{LENGTH}_i) + \beta_5 (\text{UNDER}_i \times \text{LENGTH}_i) + \beta_6 \text{MAL}_i + \varepsilon_i \quad (2)$$

$$\text{BIAS}_i = \beta_0 + \beta_1 \text{EXPERT}_i + \beta_2 \text{LITRISK}_i + \beta_3 (\text{EXPERT}_i \times \text{LITRISK}_i) + \beta_4 (\text{OVER}_i \times \text{LENGTH}_i) + \beta_5 (\text{UNDER}_i \times \text{LENGTH}_i) + \beta_6 \text{MAL}_i + \varepsilon_i \quad (3)$$

Columns one and two of table five present the results of the Fama-Macbeth estimates of equations (1) and (2), respectively.¹⁹ In both regressions, β_2 , the coefficient on LITRISK, is significantly negative. This echoes the results in table 4, and implies that under-reserving by weak insurers is mitigated in jurisdiction with stringent auditor liability standards. On the other hand, β_3 , the coefficient on the interaction term, is insignificant in both models. This suggests that, contrary to hypotheses two and three, the degree to which auditor behavior is shaped by liability concerns does not depend on auditor type. Although large auditors provide deep pockets that are vulnerable to lawsuits, smaller auditors are also apparently sensitive to liability concerns. Likewise, the association between auditor liability and under-reserving by weak insurance clients is not related to the auditor's industry expertise. Similar results are noted by Petroni and Beasley (1996), who conclude that under-reserving by weak insurers does not differ significantly between clients of Big 8 and non-Big 8 auditors, or between clients of insurance

¹⁹ Individual annual regressions are estimated in order to generate the mean results reported in table 5. In the interest of brevity, individual annual regressions are not separately reported.

expert and non-expert auditors. In research setting very similar to theirs, we show that the impact of legal liability on accounting conservatism does not differ by auditor type.

5.2. Robustness tests

The principal finding of the paper is that the tendency of weak insurers to under-reserve is attenuated when the insurer is domiciled, headquartered, or licensed in a state that imposes greater legal liability on the auditor. The results are robust to several perturbations in research design. First, the results hold when we allow both mutual and stock insurance firms into the sample. Thus, consistent with Beaver et al. (2003), we find that the insurer's organizational form has little bearing on its reserving behavior. Second, the conclusions are robust to alternative definitions of WEAK, such as three or more unusual IRIS ratios. Petroni (1992) also notes that her results are insensitive to alternative IRIS cut-offs for designating financial distress. Third, we investigate whether our results are sensitive to the scaling factor for BIAS. As noted, Petroni and Beasley (1996) find that when they change the scalar from lagged admitted assets to materiality units, their results become insignificant. Our conclusions are the same regardless of whether loss reserve error is scaled by lagged admitted assets or planning materiality. Finally, we include several additional variables to control for earnings smoothing, tax status, product and geographic concentration, and rate regulation (Harrington 2002; Grace and Leverty forthcoming). Our results are qualitatively unchanged when using this expanded set of variables.

One question is whether auditor oversight in high liability jurisdictions is sufficient to *eliminate* (not just mitigate) under-reserving by weak clients. We address this question by evaluating, for each year 1993-2001, the linear combination $[\beta_1 \text{WEAK} + \beta_3 \text{WEAK} \times \text{LITRISK}]$ with WEAK and LITRISK equal to 1, and β_1 and β_3 equal to their estimated values from the

appropriate column in table 4. The nine point estimates range from 0.0844 (1999) to 0.1628 (1996), and all are significant ($p < 0.0001$). Thus, although increased auditor liability risk is associated with significantly lower under-reserving, most weak insurance clients still under-reserve.

6. Conclusion

Our analysis of a large sample of property-casualty insurers during a nine-year period indicates that, on average, more conservative financial reporting is observed by clients domiciled, headquartered, or licensed in states that impose higher litigation risk on auditors. Our tests are conducted in a single accrual setting where we have an objective measure of bias and strong a priori guidance on where to look for it. The trade-off, of course, is that the analysis is limited to a specific, regulated industry and may not generalize to a broader population of firms. Understanding this, the results reinforce the notion that auditor independence is enforced by the threat of litigation against the auditor. Cross-state differences in auditor liability regimes have an incremental influence on client conservatism, beyond auditor incentives for reputation protection.

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Appendix A: Insurance Regulatory Information System (IRIS) Ratio Definitions, Bounds, and Relation to Loss Reserves^a

Ratio 1: Gross premiums/Surplus. Acceptable bound: not over 9.00.

Gross premiums: the sum of gross premiums written from direct business, reinsurance from affiliates, and reinsurance from nonaffiliates.

Surplus: policyholders' surplus, which is analogous to the stockholders' equity accounts (retained earnings, common stock, preferred stock, and additional paid-in capital) of a company following generally accepted accounting principles.

Discussion: Lower levels of loss reserves decrease (improve) this ratio by increasing the surplus.

Ratio 1A: Net premiums written/Surplus. Acceptable bound: not over 3.00.

Net premiums: Gross premiums reduced by reinsurance ceded to affiliates and reinsurance ceded to non-affiliates.

Discussion: Lower levels of loss reserves decrease (improve) this ratio by increasing the surplus.

Ratio 2: Change in net premiums written. Acceptable bound: not over 0.33 and not less than -0.33.

Change in net premiums written: the increase or decrease in net premiums written, divided by net premiums written in the prior year.

Discussion: Loss reserves do not affect this ratio.

Ratio 3: Surplus aid/Surplus. Acceptable bound: not over 0.15.

Surplus aid: The ratio of commissions on ceded reinsurance to premiums for ceded reinsurance multiplied by the unearned premiums on reinsurance ceded to nonaffiliates.

$$[(\text{Commissions on ceded reinsurance} / \text{Premiums for ceded reinsurance}) \times \text{Unearned premiums on reinsurance ceded to nonaffiliates}]$$

Discussion: Lower levels of loss reserves decrease (improve) this ratio by increasing the surplus.

Ratio 4: Two-year operating ratio. Acceptable bound: not over 1.00.

The two-year operating ratio is the loss ratio, plus the expense ratio, minus the net investment ratio, all measured during a two-year period.

Loss ratio: The numerator is the sum of losses, loss expenses incurred, and policyholder dividends from the current and prior period. The denominator is premiums earned in the current and prior period.

Expense ratio: The numerator is other underwriting expenses and deductions from the current and prior period. The denominator is premiums written in the current and prior period.

Net investment ratio: The numerator is net investment income from the current and prior period. The denominator is premiums earned in the current and prior period.

Discussion: The expense ratio and the net investment ratio are not affected by the level of loss reserves. However, estimating lower loss reserves decreases current period losses, which decreases the loss ratio, and therefore also decreases (improves) the two-year overall operating ratio.

Ratio 5: Investment yield. Acceptable bound: above 4.5%, but not over 10%.

Investment yield: Two times net investment income divided by the average amount of cash and invested assets during the year. Net investment income is the sum of interest, dividends and real estate income (excludes capital gains on sales of investments).

Discussion: Loss reserves do not affect this ratio.

Ratio 6: % Change in surplus. Acceptable bound: not over 50% and not less than -10%.

% Change in surplus: The increase or decrease in policyholders' surplus as a percentage of policyholders' surplus at the end of the prior year, where policyholders' surplus is defined as in ratio 1.

Discussion: Lower levels of loss reserves increase this ratio by increasing the surplus.

Ratio 7: Liabilities/Liquid assets. Acceptable bound: not over 1.05.

Liabilities: Obligations including estimated losses, such as incurred but not reported reserves.

Liquid assets: Cash and other investments (such as bonds), reported at their annual statement (book) value.

Discussion: Under-reserving decreases (improves) the ratio by reducing the numerator.

Ratio 8: Agents' balances/Surplus. Acceptable bound: not over 0.40.

Agents' balances: Agents' balances in the course of collection.

Discussion: Lower levels of loss reserves decrease (improve) this ratio by increasing the surplus.

Ratio 9: One-year reserve development/Surplus_{t-1}. Acceptable bound: not over 0.20.

One-year reserve development: The estimated incurred loss for all years except the current year minus the incurred loss for all years as reported at the end of the prior year.

Surplus_{t-1}: Surplus, as defined in ratio 1, at the end of the prior year.

Discussion: In general, lower loss reserve estimates reduce (improve) this ratio.

Ratio 10: Two-year reserve development/Surplus_{t-2}. Acceptable bound: not over 0.20.

Two-year reserve development: The estimated incurred loss for all years except the current and prior year, minus the incurred loss for all years as reported at the end of the year before the prior year.

Surplus_{t-2}: Surplus, as defined in ratio 1, at the end of the year before the prior year.

Discussion: In general, lower loss reserve estimates reduce (improve) this ratio.

Ratio 11: Current estimated reserve deficiency/Surplus. Acceptable bound: not over 0.25.

Estimated reserves: A forecast of the appropriate level of loss reserves, computed as the current net premium earned multiplied by the average ratio of developed reserves to earned premiums for the last two years.

Current estimated reserve deficiency: The difference between the estimated reserves for the company and the actual reserves reported by the company.

Discussion: Under-reserving increases the surplus (the denominator), which improves the ratio. However, under-reserving also increases the deficiency (the numerator), which worsens the ratio. In general, the numerator effect is stronger than the denominator effect, which means that under-reserving worsens the ratio.

^a Formulas for computing the IRIS ratios are obtained from the 1994 edition of *Using the NAIC Insurance Regulatory Information System: Property and Liability Edition* (NAIC 1994). These definitions are stable throughout the 1993-2001 investigation period. In 2001 the ratios were renumbered from 1, 1a, 2, 3, 4, ...11 (1993-2000) to 1-12 (2001).

Appendix B: The Auditor's Legal Liability to Third Party Claimants

Numerous legal criteria have evolved to define which third parties are owed a duty by accountants for negligent misrepresentation. Ranging from the most restrictive to most expansive, these criteria include (i) privity; (ii) the Restatement (Second) of Torts §552 standard; and (iii) the reasonable foreseeability rule. As the most restrictive standard, privity results in the lowest litigation risk for accountants. It prohibits a tort action for economic loss by a plaintiff who is not in a contractual relationship with the defendant. Both the Restatements approach and the reasonable foreseeability rule result in accountants being held liable to third parties, but to different degrees. The Restatement approach limits liability only to those third parties who the auditor specifically knows will rely on the auditor's report, while the foreseeability rule expands the set of third parties to whom auditors may be found liable.

Pacini, Hillison, and Sinason (2000) analyze third party legal and statutory law by state and array states along a nine-point liability index. Figure B-1 shows the nine-point index as a continuum ranging from privity through reasonable foreseeability. Table B-1 summarizes each state's third-party liability standard for 1993-2001 using state-specific statutes and case law as the basis for state-by-state classification. These statutes and cases are identified and described in the explanatory notes column of table B-1.

Figure B-1
Continuum of Accountant Liability Regimes to Third Parties for Negligence

1	2	3	4	5	6	7	8	9
Privity		Near Privity	Restatement § 552 – restrictive view	Restatement § 552 – typical view		Restatement § 552 – expansive view		Reasonable Foreseeability

Table B-1
Classification of State Accountant Liability Regimes to Third Parties for Negligence (1993-2001)

State	Liability Indices (1-9) ^a	Authority for Liability Index and Explanatory Notes
AL	1993: (3) 1994-2001: (5)	<i>Colonial Bank of Alabama v. Ridley & Schweigert</i> , 551 So. 2d 390 (Ala. 1989); <i>Boykin v. Arthur Andersen & Co.</i> , 639 So. 2d 504 (Ala. 1994). In 1994, the Alabama Supreme Court shifted from the near-privity rule to the Restatement standard in <i>Boykin</i> . Both cases involve accountants.
AK	1993-2001: (4)	<i>Selden v. Burnett</i> , 754 P.2d 256 (Alaska 1988). In a case involving an accountant, the Supreme Court of Alaska adopted the Restatement standard
AZ ^{b,c}	1993-2001: (5)	<i>Hoffman v. Greenberg</i> , 767 P.2d 725 (Ariz. Ct. App. 1988). <i>Standard Chtd. v. Price Waterhouse</i> , 945 P.2d 317 (Ariz. Ct. App. 1996), as corrected Jan. 15, 1997, review denied October 21, 1997. Arizona appellate courts ruled directly on auditor negligence to third parties in 1996 affirming the Restatement standard. Prior to 1996, <i>Hoffman</i> case applied the Restatement to a real estate appraiser.
AR	1993-1994: (3) 1995-2001: (1.5)	Ark. Code Ann. § 16-114-302. <i>Swink v. Ernst & Young</i> , 908 S.W. 2d 660 (Ark. 1995). Statute enacted in 1987 established the near privity standard. In 1995, the Arkansas Supreme Court placed a restrictive interpretation on the statute that virtually eliminates accountant third-party negligence claims.
CA	1993-2001: (4)	<i>Bily v. Arthur Young</i> , 834 P. 2d 745 (Cal. 1992). <i>Bily</i> applied a restrictive application of the Restatement standard to accountants.
CO	1993-2001: (5)	<i>Marquest Medical Products v. Daniel, McKee & Co.</i> , 791 P 2d 14 (Colo. App. 1990); <i>Mehaffy, Rider, Windholz & Wilson v. Central Bank Denver</i> , 892 P.2d 230 (Colo. 1995). Cases involving accountant liability include an appellate court that adopted the Restatement standard in a case of first impression in 1990. That decision was ratified by a state supreme court decision in 1995.
CT	1993-1997: (2.5) 1998-2001 (3.5)	<i>Twin Mfg. Co. v Blum, Shapiro and Co.</i> , 602 A. 2d 1079 (Conn. Super. 1991); <i>Shawmut Bank—Conn. v. Deloitte & Touche</i> , 1995 Conn. Super. LEXIS 1383. <i>Aetna Casualty & Surety v. Price Waterhouse</i> , 1998 Conn. Super. LEXIS 1831; <i>Dudrow v. Ernst & Young</i> , 1998 Conn. Super. LEXIS 3117. In <i>Twin Mfg.</i> , a state trial court applied New York's <i>Credit Alliance</i> approach (near privity) to accountants. In 1998, state trial courts split on the appropriate legal standard. Two courts looked to <i>Credit Alliance</i> for guidance while two other courts followed the Restatement. Thus, in 1998, the index went from 2.5 to 3.5.
DE ^{b,c}	1993-2001: (5)	<i>Guardian Construction Co. v. Tetra Tech Richardson, Inc.</i> , 583 A.2d 1378 (Del. Super. Ct. 1990); <i>Danforth v. Acorn Structures, Inc.</i> , 1991 Del. Super. LEXIS 454, <i>aff'd</i> in other grounds, 608 A. 2d 1194 (Del. 1992); <i>Carello v. PWC</i> , 2002 Del. Super. LEXIS 180. In <i>Guardian Construction</i> , a Delaware court applied the Restatement standard to a claim of a general contractor and subcontractor against a design engineer for negligent misrepresentation. The <i>Danforth</i> case affirmed that the Restatement standard applies to those businesses which supply information to others. In 2002, a Delaware court affirmed that the Restatement rule applied to accountants.

Table B-1, *Continued*
Classification of State Accountant Liability Regimes to Third Parties for Negligence (1993-2001)

State	Liability Indices (1-9) ^a	Authority for Liability Index and Explanatory Notes
DC	1993-2001: (2)	<p><i>Needham v. Hamilton</i>, 459 A. 2d 1060 (D.C. Ct. App. 1983); <i>Hodge v. District of Columbia Housing Finance Agency</i>, 1993 U.S. Dist. LEXIS 14584 (D.C. 1993).</p> <p>The D.C. courts have followed the <i>Ultramares</i> rule when presented with cases brought by third parties not in privity. The <i>Needham</i> case involves legal malpractice. In <i>Hodge</i>, a federal district court indicated that D.C. courts would follow the <i>Ultramares</i> rule as applied in the <i>Needham</i> case.</p>
FL	1993-2001: (5)	<p><i>First Florida Bank v. Max Mitchell & Co.</i>, 558 So.2d 9 (Fla. 1990).</p> <p>The state supreme court adopted the Restatement standard in a case involving accountants.</p>
GA	1993-2001: (5)	<p><i>Badische Corp. v. Caylor</i>, 356 S.E.2d 198 (Ga. 1987).</p> <p>The state supreme court adopted the Restatement standard in a case involving accountants.</p>
HI ^{b,c}	1993-2001: (5)	<p><i>Chun v. Park</i>, 462 P.2d 905 (Haw. 1969); <i>Shaffer v. Earl Thacker Co.</i>, 716 P.2d 163 (Haw. 1986); <i>Kohala Agriculture v. Deloitte & Touche</i>, 949 P. 2d 141 (Haw. Ct. App. 1997).</p> <p>In 1997, an intermediate appellate court adopted the Restatement standard for accountants (<i>Kohala</i>). Prior to this decision, in <i>Chun</i>, the Hawaii Supreme Court held a land title company, employed by the seller only, liable to the buyers and lending institution for negligent misrepresentations in a title search. In <i>Shaffer</i>, in a case involving the sale of real property, the Hawaii Supreme Court held that real estate brokers representing the sellers may be held liable to the buyer for negligent misrepresentation.</p>
ID	1993-2001: (2.5)	<p><i>Idaho Bank & Trust Co. v. First Bancorp.</i>, 772 P.2d 720 (Idaho 1989); <i>Duffin v. Idaho Crop Improvement Association</i>, 895 P.2d 1195 (Idaho 1995).</p> <p>In cases involving accountants, the Idaho Supreme Court adopted the near privity standard in 1989 and then reaffirmed it in 1995.</p>
IL	1993-2001: (3.5)	<p>225 Ill. Comp. Stat. 450/30.</p> <p>The statute was adopted in 1986. In <i>Chestnut v. Pestine Brinati</i>, 667 N.E. 2d 543 (Ill. Ct. App. 1996), the court held that a nonclient may state a valid claim under the statute without a writing. If no writing from the accountant exists, the nonclient must prove the client's intent and the accountant's knowledge of that intent.</p>
IN ^b	1993-2001 (2.5)	<p><i>Essex v. Ryan</i>, 446 N.E.2d 368 (Ind. Ct. App. 1983); <i>Ackerman v. Schwartz</i>, 947 F.2d 841 (7th Cir. 1991); <i>Toro Co. v. Krouse, Kern & Co.</i>, 827 F.2d 155 (7th Cir. 1987); <i>First Community Bank and Trust v. Kelley, Hardesty, Smith and Company, Inc.</i>, 663 N.E. 2d 218 (Ind. Ct. App. 1996).</p> <p>Prior to 1996, in two separate cases, the 7th Circuit concluded that Indiana courts would apply a near privity standard to accountants as it did to a surveyor in <i>Essex</i>. In <i>First Community Bank</i>, an Indiana appellate court stated in dicta that the "<i>Ultramares</i> standard might be acceptable when noncontractual, nonassignee parties seek redress."</p>

Table B-1, *Continued*
Classification of State Accountant Liability Regimes to Third Parties for Negligence (1993-2001)

State	Liability Indices (1-9) ^a	Authority for Liability Index and Explanatory Notes
IA	1993-2001: (5)	<p><i>Ryan v. Kanne</i>, 170 N.W.2d 395 (Iowa 1969); <i>Pahre v. Auditor of State</i>, 422 N.W.2d 178 (Iowa 1988); <i>Eldred v. McGladrey, Hendrickson & Pullen</i>, 468 N.W.2d 218 (Iowa 1991).</p> <p>The state supreme court applied the Restatement standard to an accountant negligence case and has reaffirmed that holding.</p>
KS	1993-2001: (2.5)	<p>Kan. Stat. Ann. § 1-402.</p> <p>The statute establishing near privity took effect in 1987.</p>
KY ^b	1993-2001: (5)	<p><i>Ingram Industries, Inc. v. Nowicki</i>, 527 F. Supp. 683 (E.D. Ky. 1981); <i>Seigle v. Jasper</i>, 867 S.W. 2d 476 (Ky. App. 1993).</p> <p>In <i>Seigle</i>, the Ky. Ct. of Appeals held that an attorney's duty to exercise ordinary care in a title exam for a lender extended to purchasers. The court noted that its holding is consistent with the Restatement rule.</p>
LA ^b	1993-2001: (5)	<p><i>First National Bank of Commerce v. Monco Agency, Inc.</i>, 911 F. 2d 1053 (5th Cir. 1990); <i>Barrie v. V.P. Exterminators, Inc.</i> 625 So. 2d 1007 (La. 1993).</p> <p>Louisiana courts use a duty/risk analysis approach that is compatible with the duty of care under the Restatement standard.</p>
ME ^b	1993-2001: (5)	<p><i>Bowers v. Allied Investment Corp.</i>, 822 F. Supp. 835 (D. Me. 1993); <i>Diversified Foods, Inc. v. First Nat'l Bank</i>, 605 A. 2d 609 (Me. 1992).</p> <p>Maine adopted the Restatement rule for negligent misrepresentation claims. The case did not involve an accountant.</p>
MD ^{b,c}	1993-2001: (2.5)	<p><i>Jacques v. The First National Bank of Maryland</i>, 515 A. 2d. 756 (Ct. App. Md 1986); <i>Council of Co-Owners Atlantis Condominium v. Whiting-Turner Company</i>, 517 A. 2d 336 (Ct. App. Md. 1986); <i>Walpert, Smullian, & Blumenthal, P.A. v. Katz</i>, 762 A. 2d 582 (Md. 2000).</p> <p>Near privity (<i>Credit Alliance</i> test) was adopted for negligent misrepresentation. In <i>Walpert</i>, the state's highest court adopted <i>Credit Alliance</i> in a case involving accountants.</p>
MA ^{b,c}	1993-2001: (4)	<p><i>Craig v. Everett M. Brooks Co.</i>, 222 N.E. 2d 752 (Mass.1967); <i>Page v. Frazier</i>, 445 N.E. 2d 148 (Mass. 1983); <i>Nycal Corp. v. KPMG Peat Marwick</i>, 688 N.E. 2d 1368 (Mass. 1998).</p> <p>Prior to 1998, recovery for negligent misrepresentation was limited to situations where the defendant knew that a particular plaintiff would rely on the defendant's services ("foreseeable reliance"). In <i>Nycal</i>, the state's highest court cited the <i>Bily</i> decision with approval in adopting a restrictive view of the Restatement standard for accountants.</p>

Table B-1, *Continued*
Classification of State Accountant Liability Regimes to Third Parties for Negligence (1993-2001)

State	Liability Indices (1-9) ^a	Authority for Liability Index and Explanatory Notes
MI ^{b,c}	1993-1995: (5) 1996-2001: (4)	<p><i>Law offices of Lawrence J. Stockler, P.C. v. Rose</i>, 436 N.W. 2d 70 (Mich. App. 1989); MICH. COMP. LAWS §600.2962.</p> <p>An accountant liability statute took effect in 1996. A certified accountant may be liable for a negligent act if the “certified public accountant was informed in writing by the client at the time of the engagement that a primary intent of the client was for the ... accounting services to benefit or influence the person bringing the action. The CPA may be held liable only to each identified person, generic group, or class description. The statute shifted the state from a 5 to 4. Prior to the statute, Michigan followed the Restatement standard.</p>
MN	1993-2001: (7)	<p><i>Bonhiver v. Graff</i>, 248 N.W. 2d 291 (Minn 1976); <i>Florenzano v. Olson</i>, 387 N.W. 2d 168 (Minn. 1986); <i>Noram Investment Services, Inc. v. Stirtz Bernards Boyden Sundel & Larter, P.A.</i>, 611 N.W. 2d 372 (Ct. App. Minn. 2000).</p> <p>In 1976, the Minnesota Supreme Court applied the Restatement standard in such a broad fashion that it seems to include a class of third parties almost as wide as the reasonable foreseeability rule. The case involved accountants. The subsequent cases also involve accountants and affirm <i>Bonhiver</i>.</p>
MS	1993-2001: (9)	<p><i>Touche Ross v. Commercial Union Ins. Co.</i>, 514 So.2d 315 (Miss. 1987).</p> <p>This case holds that an auditor is liable to reasonably foreseeable users of the audit who request and receive a financial statement from the audited entity for a proper business purpose.</p>
MO	1993-2001: (5)	<p><i>Aluma Kraft Manufacturing Co. v. Elmer Fox & Co.</i>, 493 S.W.2d 378 (Mo. App. 1973); <i>MidAmerican Bank & Trust Co. v. Harrison</i>, 851 S.W.2d 563 (Mo. App. 1993); <i>Mark Twain Kan. City Bank v. Jackson Brouillette, Pohl, & Kirley, P.C.</i>, 912 S.W. 2d 536 (Mo. App. 1995).</p> <p>The Restatement standard was adopted in <i>Aluma Kraft</i> and has been reaffirmed at least twice since that decision. All of the cases involve accountants.</p>
MT	1993-2001: (3)	<p><i>Thayer v. Hicks</i>, 793 P.2d 784 (Mont. 1990).</p> <p>The <i>Thayer</i> court adopted a modified <i>Credit Alliance</i> test (near privity) for accountants.</p>
NE	1993-2001: (2)	<p><i>Citizens National Bank of Wisner v. Kennedy & Coe</i>, 441 N.W.2d 180 (Neb. 1989); <i>St. Paul Marine & Fire Ins. Co. v. Touche Ross</i>, 507 N.W.2d 275 (Neb. 1993).</p> <p>Nebraska has adopted the <i>Ultramares</i> rule for accountants. Privity is required absent fraud or other facts establishing a duty.</p>
NV ^b	1993-2001: (5)	<p><i>Stremmel Motors, Inc. v. First National Bank of Nevada</i>, 575 P.2d 938 (Nev. 1978); <i>Barmettler v. Reno Air, Inc.</i>, 956 P.2d 1382 (Nev. 1998).</p> <p>In two negligent misrepresentation cases involving non-accountants, the Nevada Supreme Court adopted the Restatement standard.</p>
NH	1993-2001: (5)	<p><i>Spherex, Inc. v. Alexander Grant & Co.</i>, 451 A.2d 1308 (N.H. 1982).</p> <p>Direct ruling by the state supreme court that adopted the Restatement standard for accountants.</p>

Table B-1, *Continued*
Classification of State Accountant Liability Regimes to Third Parties for Negligence (1993-2001)

State	Liability Indices (1-9) ^a	Authority for Liability Index and Explanatory Notes
NJ	1993-1995: (9) 1996-2001: (2.5)	Rosenblum v. Adler, 461 A.2d 138 (N.J. 1983); N.J. Stat. Ann. §2A: 53A-25. The state legislature enacted a statute that moved the state from the reasonable foreseeability standard to the near privity standard beginning in 1996.
NM ^b	1993-2001: (5)	Maxey v. Quintana, 499 P.2d 356 (Ct.App.N.M. 1972); Stotler v. Hester, 582 P.2d 403 (Ct.App.N.M. 1978); Garcia v. Rodey, Dickason, Sloan, Akin & Robb, 750 P.2d 118 (N.M. 1988). The Restatement rule was applied in cases not involving accountants.
NY	1993-2001: (2.5)	Credit Alliance v. Arthur Andersen & Co., 483 N.E.2d 110 (N.Y. 1985); Security Pacific Business Credit v. Peat Marwick Main, 597 N.E.2d 1080 (N.Y. 1992). Credit Alliance is a near privity standard that is as restrictive as Ultramares. These cases directly involve accountants.
NC	1993-2001: (5)	Raritan River Steel v. Cherry et al., 367 S.E.2d 609 (N.C. 1988); Marcus Brothers Textiles, Inc. v. Price Waterhouse, 513 S.E. 2d 320 (N.C. 1999). The Restatement standard was adopted for accountants in a direct ruling by the state supreme court in 1988 and then reaffirmed in 1999.
ND ^b	1993-2001: (5)	Bunge Corp. v. Eide, 372 F.Supp. 1058 (D.N.D. 1974). A federal district court cited with approval the Restatement standard in an accountant liability case. The federal district court predicted that the ND Supreme Court would have applied the Restatement standard.
OH	1993-2001: (4.5)	Haddon View Investment Co. v. Coopers & Lybrand, 436 N.E.2d 212 (Ohio 1982); Banc Ohio National Bank v. Schiesswohl, 515 N.E.2d 997 (Ohio App. 1986). In 1986, an Ohio appellate court ruled that a nonclient must show that an accountant was “manifestly aware that financial statements would be shown to members of a limited class.”
OK ^{b,c}	1993-2001: (5)	Buford White Lumber Co. v. Ogden Properties, 740 F.Supp. 1553 (W.D. Okl. 1989); Securities Processing Services, Inc. v. Plaza Bank and Trust, 653 P.2d 188 (Okl. 1982); Stroud v. Arthur Andersen & Co., 37 P. 3d 783 (Okl. 2001). The Restatement standard was cited with favor in an attorney malpractice case with regard to affirmative representations not omissions. In 2001, the Oklahoma Supreme Court held the Restatement standard applicable to accountant negligent misrepresentation cases.
OR ^b	1993-2001: (5)	Onita Pacific Corp. v. Trustees of Bronson, 843 P.2d 890 (Or. 1992). The Restatement standard is supported for negligence actions for economic losses. The Onita Pacific case stems from a dispute regarding the terms of a real estate development agreement.
PA	1993-2001: (1)	Landell v. Lybrand, 107 A. 783 (Pa. 1919); Raymond Rosen & Co. v. Seidman & Seidman, 579 A.2d 424 (Pa. Super. Ct. 1990). In 1990, a Pennsylvania trial court reaffirmed the privity doctrine as the applicable legal standard for accountants.

Table B-1, *Continued*
Classification of State Accountant Liability Regimes to Third Parties for Negligence (1993-2001)

State	Liability Indices (1-9) ^a	Authority for Liability Index and Explanatory Notes
RI ^b	1993-2001: (5)	<p><i>Rusch Factors v. Levin</i>, 284 F.Supp. 85 (D.R.I. 1968).</p> <p>A federal district court ruled that the Supreme Court of R.I. would apply the Restatement standard in a case involving auditor liability to a third party for negligence.</p>
SC ^{b,c}	1993-2001: (5)	<p><i>South Carolina State Ports Authority v. Booz-Allen & Hamilton</i>, 346 S.E.2d 324 (S.C. 1986); <i>Winburn v. Insurance Co. of North America</i>, 339 S.E.2d 142 (Ct. App. S.C. 1985); <i>M-L Lee Acquisition Fund, L.P. v. Deloitte & Touche</i>, 463 S.E. 2d 618 (S.C. Ct. App. 1995), <i>aff'd</i> 489 S.E.2d 470 (S.C. 1997).</p> <p>Prior to 1995, the Restatement rule was supported in a suit by the Port Authority against Booz-Allen for misrepresentations made about the Port in a report for the Georgia Port Authority. In <i>M-L Lee</i>, an appellate court adopted the Restatement standard for accountant negligence. This decision was upheld by the state supreme court in 1997.</p>
SD ^b	1993-2001: (5)	<p><i>Littau v. Midwest Commodities, Inc.</i>, 316 N.W.2d 639 (S.D. 1982); <i>Aesoph v. Kusser</i>, 498 N.W.2d 654 (S.D. 1993); <i>Mid-Western Electric, Inc. v. DeWild, Grant, Reckert & Associates Co.</i>, 500 N.W.2d 250 (S.D. 1993).</p> <p>In <i>Littau</i>, the state supreme court ruled that an action for negligent misrepresentation will lie where there is knowledge that information is supplied for a serious purpose; that he to whom it is given intends to rely and act upon it; that, if false or erroneous, he will be injured in person or property. Subsequent non-accountant cases affirm the Restatement standard and extend it to plaintiffs recovery for economic damage due to professional negligence.</p>
TN	1993-2001: (5)	<p><i>Bethlehem Steel Corp. v. Ernst & Whinney</i>, 822 S.W.2d 592 (Tenn. 1991); <i>Ritter v. Custom Chemicides, Inc.</i>, 912 S.W.2d 128 (Tenn. 1995).</p> <p>In a direct ruling in a case involving accountants, the state supreme court upheld the use of the Restatement standard in 1991 and then reaffirmed in 1995.</p>
TX	1993-2001: (7.5)	<p><i>Blue Bell, Inc. v. Peat Marwick Mitchell & Co.</i>, 715 S.W.2d 408 (Tex. App. 1986); <i>Brown v. KPMG Peat Marwick</i>, 856 S.W.2d 742 (Tex. App. 1993).</p> <p>In a 1986 case involving accountants, a Texas appellate court decided that “we adopt a less restrictive interpretation of section 552”</p>
UT	1993-2001: (2.5)	<p>Utah Code Ann. §58-26-12.</p> <p>As a result of the passage of a statute in 1990, Utah began following the near privity standard for auditor liability.</p>
VT ^b	1993-2001: (5)	<p><i>Silva v. Stevens</i>, 589 A.2d 852 (Vt. 1991); <i>Kramer v. Chabotz</i>, 564 A.2d 292 (Vt. 1989).</p> <p>The state supreme court cited the Restatement standard with favor in <i>Silva</i>, an action by a homebuyer for negligent misrepresentation against a broker.</p>
VA	1993-2001: (1)	<p><i>Ward v. Ernst & Young</i>, 435 S.E.2d 628 (Va. 1993).</p> <p>A direct ruling by the state supreme court involving accountants.</p>

Table B-1, *Continued*
Classification of State Accountant Liability Regimes to Third Parties for Negligence (1993-2001)

State	Liability Indices (1-9) ^a	Authority for Liability Index and Explanatory Notes
WA ^{b,c}	1993-1997: (5) 1998-2001: (6)	<i>Condor Enters., Inc. v. Boise Cascade Corp.</i> , 856 P.2d 713 (Wash. 1993)); <i>Esca Corp. v. KPMG Peat Marwick</i> , 959 P.2d 651 (Wash. 1998). In a lawsuit against a leasing agent, a Washington appellate court held that the state follows the Restatement standard in negligent misrepresentation cases. In <i>Esca</i> , the state supreme court held that liability is limited to cases where (1) the defendant has knowledge of the specific injured party's reliance; or (2) the plaintiff is a member of a group that the defendant seeks to influence; or (3) the defendant has special reason to know that some member of a limited group will rely on the information. The <i>Esca</i> ruling shifted the state from a 5 to a 6.
WV	1993-2001: (5)	<i>First National Bank of Bluefield v. Crawford</i> , 386 S.E.2d 310 (W.Va. 1989). A direct ruling by the state supreme court upholding application of the Restatement standard in a case involving accountants.
WI	1993-2001: (8)	<i>Citizens State Bank v. Timm, Schmidt & Co.</i> , 335 N.W. 2d 361 (Wisc. 1983). Liability is imposed on auditors for the foreseeable injuries resulting from their negligent acts unless recovery is denied on grounds of public policy.
WY ^{b,c}	1993-1994: (5) 1995-2001: (3)	<i>Duffy v. Brown</i> , 708 P.2d 433 (Wyo. 1985); Wyo. Stat. Ann. §33-3-201. In <i>Duffy</i> , the state supreme court applied the Restatement standard in a case involving a contractor. In 1995, Wyoming enacted an accountant liability statute that adheres to a near privity standard.

- a. In the results reported in the paper, LITRISK is coded one if the liability index is ≥ 4.0 , and is zero otherwise. The 4.0 cutoff distinguishes privity from higher levels of auditor liability to third-parties. The results are robust to using alternative liability index cutoffs (≥ 3.5 ; ≥ 4.5) to code LITRISK.
- b. At the beginning of our sample period (1993), these 21 states did not have a direct appellate court ruling or state statute dealing specifically with accountant liability to third parties for negligence or negligent misrepresentation. For these states, we assume that the liability standard established by case law for non-accountants (such as appraisers, engineers, lawyers, and real estate agents) also applies to accountants.
- c. These ten states have since added either a statute or ruling specifically dealing with accountant liability. In eight cases (AZ, DE, HI, MA, MI, OK, SC, WA), states were classified as applying the Restatement standard both before and after having an accountant-specific standard. Maryland was classified as near privity both before and after its first case involving an accountant. The final state, Wyoming, changed from the Restatement standard to near privity, but only one insurance company is domiciled in Wyoming and that company is not included in our analysis because it does not meet our sample screens.

Table 1
Summary of estimated incurred losses reported at year-end, General Electric Mortgage Insurance Company^a

Panel A: Estimated incurred losses at year-end

Accident Year	1 1989	2 1990	3 1991	4 1992	5 1993	6 1994	7 1995	8 1996	9 1997	10 1998	
1. Prior	\$36,016	\$35,836	\$34,326	\$33,112	\$32,917	\$33,009	\$32,701	\$32,390	\$32,195	\$32,280	\$972,728
2. 1989	89,000	74,412	71,957	71,511	71,020	71,482	71,244	71,138	71,135	71,298	
3. 1990		111,547	105,755	103,545	103,013	105,934	106,083	105,881	105,881	105,962	
4. 1991			159,229	161,700	172,929	182,443	181,444	181,337	181,711	181,727	
5. 1992				205,753	235,764	266,026	262,812	262,838	263,495	263,895	
6. 1993					240,573	328,535	315,037	315,350	317,194	317,566	
7. 1994						298,977	293,768	294,759	299,198	302,826	
8. 1995							354,264	326,590	332,855	338,564	
9. 1996								379,546	299,518	298,099	
10. 1997									348,936	238,211	
11. 1998										289,219	
\$856,216											

Panel B: Cumulative paid losses at year-end

Accident Year	1 1989	2 1990	3 1991	4 1992	5 1993	6 1994	7 1995	8 1996	9 1997	10 1998
1. Prior	\$0	\$25,902	\$30,224	\$31,340	\$32,084	\$32,308	\$32,443	\$32,211	\$32,092	\$32,165
2. 1989	9,603	47,422	63,189	68,300	69,320	70,307	70,882	70,904	70,922	71,212
3. 1990		7,594	53,016	83,575	95,764	102,284	104,399	104,916	105,376	105,543
4. 1991			11,151	76,914	142,787	170,369	176,912	178,985	180,585	181,034
5. 1992				11,698	138,248	228,906	251,917	258,282	261,029	262,698
6. 1993					21,090	202,519	285,561	305,022	313,151	315,053
7. 1994						30,884	195,272	267,486	290,478	296,476
8. 1995							354,264	326,590	332,855	338,564
9. 1996								379,546	299,518	298,099
10. 1997									348,936	238,211
11. 1998										289,219
\$499,293										

- a. Excerpted from schedule P, parts 2 and 3, of the 1998 General Electric Annual Statement, prepared according to Statutory Accounting Principles. All dollar amounts are in thousands.

Table 2
Sample Selection Criteria

Insurers in the 1993-2001 NAIC property-casualty database.....	24,308	
Less:		
Insurers domiciled outside of the U.S.....	244	
Insurers not organized as stock companies.....	6,685	
Insurers with pooling arrangements.....	3,359	
Insurers that cede all premiums to other insurers.....	2,694	
Insurers that write more than 25% of their premiums for surety and credit, reinsurance, accident and health, or workers' compensation.....	1,896	
Insurers with their stock publicly-traded.....	360	
Insurers with insufficient data to estimate equation (1)	2,153	
Insurers lacking auditor data or exempt from audit ^a	884	<u>(18,275)</u>
Final Sample	6,033	

- a. Insurers' auditor data are hand-collected. Following the NAIC's instructions, insurers began identifying their choice of auditor in their 1993 annual reports. Insurers below a certain size are not required to obtain an independent audit. Although the threshold varies somewhat between states, in most cases an audit is not required if direct premiums written in the state are less than \$1,000,000 and the insurer has fewer than 1,000 policyholders.

Table 3
Descriptive Statistics for the Sample of 6,033 Property-Casualty Insurers in 1993-2001^a

Panel A: Results for the full sample

	Mean	Std. Dev.	Median	Lower quartile	Upper quartile
<i>Experimental variables^b</i>					
BIAS	-0.0046	0.1567	-0.0090	-0.0596	0.0261
WEAK	0.1891	0.3916	0	0	0
LITNUMBER	6.4509	2.3820	7.0	5.0	9.0
<i>Control variables^b</i>					
OVERxLENGTH	0.3055	0.3179	0.2119	0	0.5918
UNDERxLENGTH	0.1895	0.2811	0	0	0.4086
MAL	0.0495	0.2061	0	0	0

Table 3, *Continued*
Descriptive Statistics for the Sample of 6,033 Property-Casualty Insurers in 1993-2001^a

Panel B: Results partitioned into weak and non-weak subsamples

			Weak firms (n = 1,141)	Non-Weak Firms (n = 4,892)	p-value ^c
<i>Experimental variables^b</i>					
BIAS	Mean	0.1623	Mean	-0.0435	0.0001
	Median	0.1187	Median	-0.0208	0.0001
	Std. dev.	0.2168	Std. dev.	0.1063	
LITNUMBER	Mean	6.4137	Mean	6.4595	0.5582
	Median	7.0000	Median	7.0000	0.9410
	Std dev.	2.4450	Std. dev.	2.3672	
<i>Control variables^b</i>					
OVERxLENGTH	Mean	0.0596	Mean	0.3629	0.0001
	Median	0.0000	Median	0.3932	0.0001
	Std dev.	0.1784	Std. dev.	0.3159	
UNDERxLENGTH	Mean	0.4737	Mean	0.1232	0.0001
	Median	0.5295	Median	0.0000	0.0001
	Std dev.	0.2742	Std. dev.	0.2380	
MAL	Mean	0.0322	Mean	0.0536	0.0001
	Median	0.0000	Median	0.0000	0.0192
	Std dev.	0.1564	Std. dev.	0.2158	

Table 3, *Continued*
Descriptive Statistics for the Sample of 6,033 Property-Casualty Insurers in 1993-2001^a

- a. The full sample of 6,033 observations includes privately-held insurers domiciled in the U.S., organized as stock companies, and meeting certain data requirements for the years 1993-2001.
- b. Variable definitions:

BIAS in year t is computed by subtracting the original loss reserve reported in year t from the five-year developed reserve reported in year $(t+5)$. The difference is divided by admitted assets at the end of year $(t-1)$. All data are taken from insurers' annual statements.

WEAK is a qualitative variable that takes on the value of one if the insurer has four or more unusual IRIS ratios. IRIS ratios are computed using annual statement data that has been purged of the loss reserve bias. Unusual ratios are those that exceed certain bounds specified by the National Association of Insurance Commissioners. These bounds are described in Appendix A.

LITNUMBER ranges from one (for strict privity, the lowest liability case) to nine (for reasonable foreseeability, the highest liability case), and corresponds to the auditor liability standard in effect in the most stringent state in which the insurer is domiciled, headquartered, or licensed to write policies.

LENGTH is the reported claim loss reserve as a percentage of total liabilities.

UNDER is a dummy variable, taking on the value of one if the reserve estimation error is positive, and is zero otherwise.

OVER is a dummy variable, taking on the value of one if the reserve estimation error is negative, and is zero otherwise.

MAL is the percentage of malpractice premiums written relative to total premiums.
- c. The p -value corresponds to the test of the hypothesis that the difference in means between weak and non-weak samples is zero.

Table 4
Estimated Coefficients and p-values from Annual Regressions of Loss Reserve Bias on Insurer Financial Condition, Auditor Liability
Risk and Control Variables^{a,b,c}

$$\text{BIAS}_i = \beta_0 + \beta_1 \text{WEAK}_i + \beta_2 \text{LITRISK}_i + \beta_3 (\text{WEAK}_i \times \text{LITRISK}_i) + \beta_4 (\text{OVER}_i \times \text{LENGTH}_i) + \beta_5 (\text{UNDER}_i \times \text{LENGTH}_i) + \beta_6 \text{MAL}_i + \varepsilon_i \quad (1)$$

<i>Sample consists of observations from:</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>
Intercept	-0.0246 (0.1380)	-0.0309 (0.0435)	-0.0135 (0.3770)	-0.0081 (0.4964)	-0.0020 (0.8492)	-0.0203 (0.0813)	-0.0461 (0.0001)	-0.0211 (0.0348)	-0.0132 (0.1371)
WEAK (+)	0.2650 (0.0025)	0.2756 (0.0005)	0.4071 (0.0005)	0.1975 (0.0031)	0.1719 (0.0039)	0.2578 (0.0076)	0.2438 (0.0011)	0.2748 (0.0020)	0.2480 (0.0019)
LITRISK	0.0220 (0.1227)	0.0136 (0.3935)	0.0077 (0.5948)	0.0040 (0.7309)	0.0104 (0.3067)	0.0208 (0.0733)	0.0260 (0.0055)	0.0119 (0.1337)	0.0090 (0.1886)
WEAK × LITRISK (-)	-0.1568 (0.0408)	-0.1755 (0.0152)	-0.2713 (0.0147)	-0.0348 (0.3241)	-0.0403 (0.2755)	-0.1537 (0.0782)	-0.1593 (0.0259)	-0.1781 (0.0267)	-0.1599 (0.0351)
OVER × LENGTH (-)	-0.1711 (0.0001)	-0.1383 (0.0001)	-0.1487 (0.0001)	-0.1557 (0.0001)	-0.1520 (0.0001)	-0.1267 (0.0001)	-0.0711 (0.0001)	-0.0977 (0.0001)	-0.1164 (0.0001)
UNDER × LENGTH (+)	0.1226 (0.0001)	0.1403 (0.0001)	0.1083 (0.0001)	0.0827 (0.0003)	0.0576 (0.0004)	0.0810 (0.0001)	0.1339 (0.0001)	0.1194 (0.0001)	0.1347 (0.0001)
MAL (-)	-0.0824 (0.0006)	-0.0398 (0.0443)	-0.0285 (0.1646)	-0.0227 (0.0514)	-0.0221 (0.0828)	-0.0179 (0.1783)	-0.0138 (0.1246)	-0.0178 (0.0746)	0.0114 (0.2180)
Sample size	650	615	596	578	701	597	703	791	802
Adjusted. R ²	0.3027	0.3773	0.4749	0.4390	0.5078	0.5035	0.4934	0.4702	0.4443
F-statistic	47.96	63.00	90.69	76.26	121.35	101.74	114.95	117.86	107.76
p-value ^d	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Table 4, *Continued*
Estimated Coefficients and p-values from Annual Regressions of Loss Reserve Bias on Insurer
Financial Condition, Auditor Liability Risk and Control Variables

- a. The full sample of 6,033 observations includes privately-held insurers domiciled in the U.S., organized as stock companies, and meeting certain data requirements for the years 1993-2001. Sample sizes for annual regressions range from a low of 578 in 1996 to a high of 802 in 2001.
- b. Variable definitions:
BIAS in year t is computed by subtracting the original loss reserve reported in year t from the five-year developed reserve reported in year (t+5). The difference is divided by admitted assets at the end of year (t-1). All data are taken from insurers' annual statements.
WEAK is a qualitative variable that takes on the value of one if the insurer has four or more unusual IRIS ratios. IRIS ratios are computed using annual statement data that has been purged of the loss reserve bias. Unusual ratios are those that exceed certain bounds specified by the National Association of Insurance Commissioners. These bounds are described in Appendix A. LITRISK is coded one if LITNUMBER is equal to or exceeds 4.0 (the high liability case) and is zero otherwise. LITNUMBER ranges from one (for strict privity, the lowest liability case) to nine (for reasonable foreseeability, the highest liability case), and corresponds to the auditor liability standard in effect in the most stringent state in which the insurer is domiciled, headquartered, or licensed to write policies.
LENGTH is the reported claim loss reserve as a percentage of total liabilities.
UNDER is a dummy variable, taking on the value of one if the reserve estimation error is positive, and is zero otherwise.
OVER is a dummy variable, taking on the value of one if the reserve estimation error is negative, and is zero otherwise.
MAL is the percentage of malpractice premiums written relative to total premiums.
- c. The p-values for the annual regressions are based on the White's (1980) heteroscedasticity-corrected covariance matrix. One-tailed p-values are reported for WEAK, WEAKxLITRISK, OVERxLENGTH, UNDERxLENGTH, and MAL. Two-tailed p-values are reported for LITRISK and the intercept.

Table 5
Estimated Coefficients and p-values from Fama-Macbeth Regressions of Loss Reserve Bias on
Auditor Type, Auditor Liability Risk and Control Variables for the Sample of 1,141
Observations from Financially Weak Insurers^{a,b,c}

$$\text{BIAS}_i = \beta_0 + \beta_1 \text{BIG6}_i + \beta_2 \text{LITRISK}_i + \beta_3 (\text{BIG6}_i \times \text{LITRISK}_i) + \beta_4 (\text{OVER}_i \times \text{LENGTH}_i) + \beta_5 (\text{UNDER}_i \times \text{LENGTH}_i) + \varepsilon_i \quad (2)$$

$$\text{BIAS}_i = \beta_0 + \beta_1 \text{EXPERT}_i + \beta_2 \text{LITRISK}_i + \beta_3 (\text{EXPERT}_i \times \text{LITRISK}_i) + \beta_4 (\text{OVER}_i \times \text{LENGTH}_i) + \beta_5 (\text{UNDER}_i \times \text{LENGTH}_i) + \varepsilon_i \quad (3)$$

	<i>Model 2</i>	<i>Model 3</i>
Intercept	0.2534 (0.0001)	0.2556 (0.0001)
BIG6	-0.0267 (0.6822)	
EXPERT		-0.0545 (0.4291)
LITRISK (-)	-0.1553 (0.0001)	-0.1656 (0.0001)
BIG6 × LITRISK (-)	0.0197 (0.6225)	
EXPERT × LITRISK (-)		0.0604 (0.8069)
OVER × LENGTH (-)	-0.2626 (0.0001)	-0.2573 (0.0001)
UNDER × LENGTH (+)	0.1521 (0.0013)	0.1490 (0.0011)
MAL (-)	0.2084 (0.7996)	0.2087 (0.8038)
n ^c	1,141	1,141
Average adj. R ²	0.2143	0.2154

Table 5, *Continued*

Estimated Coefficients and p-values from Annual Regressions of Loss Reserve Bias on Auditor Size, Auditor Liability Risk and Control Variables for the Sample of 1,141 Observations from Financially Weak Insurers^{a,b,c}

- a. The sample consists of 1,141 observations from privately-held insurers domiciled in the U.S., organized as stock companies, meeting certain data requirements for the years 1993-2001, and classified as financially weak. Sample sizes for annual regressions range from a low of 77 in 1998 to a high of 235 in 2001.
- b. Variable definitions:

BIAS in year t is computed by subtracting the original loss reserve reported in year t from the five-year developed reserve reported in year $(t+5)$. The difference is divided by admitted assets at the end of year $(t-1)$. All data are taken from insurers' annual statements.

BIG6 is a qualitative variable that takes on the value of one if the insurer is audited by a Big 6 firm, and is zero otherwise.

EXPERT is a qualitative variable that takes on the value of one if the insurer is audited by an auditor that is an insurance industry expert, and is zero otherwise. In our sample, these firms are Ernst & Young, Coopers & Lybrand, and KPMG Peat Marwick.

LITRISK is coded one if LITNUMBER is equal to or exceeds 4.0 (the high liability case) and is zero otherwise. LITNUMBER ranges from one (for strict privity, the lowest liability case) to nine (for reasonable foreseeability, the highest liability case), and corresponds to the auditor liability standard in effect in the most stringent state in which the insurer is domiciled, headquartered, or licensed to write policies.

LENGTH is the reported claim loss reserve as a percentage of total liabilities.

UNDER is a dummy variable, taking on the value of one if the reserve estimation error is positive, and is zero otherwise.

OVER is a dummy variable, taking on the value of one if the reserve estimation error is negative, and is zero otherwise.

MAL is the percentage of malpractice premiums written relative to total premiums.
- c. The p-values for the annual regressions are based on the White's (1980) heteroscedasticity-corrected covariance matrix. One-tailed p-values are reported for LITRISK, BIG6xLITRISK, EXPERTxLITRISK, OVERxLENGTH, UNDERxLENGTH, and MAL. Two-tailed p-values are reported for BIG6, EXPERT, and the intercept.