

## **The insurance hypothesis: The case of KPMG's audit clients**

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November 2008

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The authors would like thank Bill Baber, Abby Brennan, Melissa DiPietro, Den Patten, Sean Robb, Arnie Wright, Peter Wilson and the participants of the Boston College, University of Arizona and Illinois State University accounting workshops for their contributions to this paper. They also acknowledge the financial support of the Boston College Carroll School of Management.

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### **Abstract**

Although many have argued that independent audits implicitly provide clients with a form of insurance (the “insurance hypothesis”), there is limited empirical evidence to support the existence and magnitude of this function. In August of 2005, after months of intense negotiations and discussions, KPMG entered into a settlement agreement with the Department of Justice, which ended widespread speculation of an impending federal indictment against the audit firm and the notion that the firm would suffer the same fate as Arthur Andersen. We argue that the circumstances surrounding the settlement provide a natural setting to test the insurance value provided by auditors. Our results show that, while BIG 4 non-KPMG client firms earn insignificant abnormal returns, KPMG client firms earn significantly positive abnormal returns during the days surrounding news of the settlement. We show that these positive abnormal returns vary cross-sectionally, and are more pronounced for KPMG client firms in greater financial distress and for those subject to greater litigation risk.

## The insurance hypothesis: The case of KPMG's audit clients

### 1. Introduction

Two bundled characteristics are thought to add value to the audit: *assurance* and *insurance* (Doogar et al. 2003). *Assurance* stems from the primary purpose of the audit: to reduce information asymmetry between stakeholders and firm management. A high quality (i.e., credible) audit increases the reliability of the financial statements and reduces the investors' risk. *Insurance* stems from investors' ability to sue auditors to recover losses related to misstated financial statements.<sup>1</sup> This function of the audit has been referred to as the "insurance hypothesis." While prior research regarding the two functions has produced evidence that the market values the audit, it has been difficult to disentangle these two characteristics and examine either one in isolation (See, e.g., Menon and Williams, 1994; Baber et al., 1995; Chaney and Philipich, 2002). These prior studies concentrate on the bankruptcy or demise of a large CPA firm and conjecture that stock price effects are associated with one of the two functions, or both.

Using a unique setting—KPMG's 2005 deferred prosecution agreement related to the promotion of aggressive tax shelters—this study examines the association between a client's stock price and its auditor's ability to insure against investor losses. Specifically, we examine the security price reactions for KPMG's audit clients during the days surrounding news of their auditor's record-setting \$458 million settlement with the US Department of Justice (DOJ).

Ideally, to directly test the insurance hypothesis, one would need a setting in which there is a *change* in expectations about the audit firm's ability to insure against

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<sup>1</sup> An auditor's liability is typically not affected by the appointment of a "new" successor auditor because the new auditor does not cover losses or assume liability pertaining to the audited financial statements of the "old" predecessor auditor.

investor losses, but no corresponding *change* in expectations about the audit firm's audit quality. We argue KPMG's 2005 settlement with the US DOJ relating to its tax shelter promotions provides such a setting. Under the terms of that settlement, KPMG agreed (1) to limits on the scope of its tax practice and (2) to facilitate prosecutors' efforts to investigate KPMG tax partners and other professionals who worked on the tax shelters.<sup>2</sup> The tax shelter settlement does not address the firm's audit function. In addition, as described in more detail later, even if investors believe audit quality and tax services are not independent, their perception of KPMG's audit quality is unlikely to be revised upward upon the news of the settlement. Thus, in KPMG's case, we have an institutional setting wherein the auditor's viability, and therefore its ability to insure against investor losses, was severely threatened and subsequently restored, without a corresponding change in the firm's audit quality.

Our study contributes to the literature in two important ways. First, as discussed, we examine a setting that allows for a more direct test of the insurance hypothesis. Second, our study examines the insurance hypothesis after the passage of the Private Securities Litigation Reform Act (PSLRA). The PSLRA increases restrictions on private litigation for securities fraud and eliminates the joint and several liability doctrine under which auditors and other parties could be named to lawsuits because of "deep pockets" rather than culpability. Thus, the passage of PLSRA decreases the likelihood that the auditor may be sued by investors thereby potentially reducing the value of the auditor's ability (or need) to insure against investor losses. This allows us an opportunity to

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<sup>2</sup> Though KPMG had discontinued the marketing of the tax shelters in question immediately after the DOJ began its investigation, the agreement required permanent restrictions on KPMG's tax practice, including the termination of specific two practice areas (Rostain 2006). For a copy of all the settlement documents, see: [http://taxprof.typepad.com/taxprof\\_blog/2005/08/kpmg\\_settlement.html](http://taxprof.typepad.com/taxprof_blog/2005/08/kpmg_settlement.html).

consider the existence and magnitude of the insurance function under the more current regime.<sup>3</sup>

Our results provide evidence consistent with the insurance hypothesis. Using an event study, we report significantly positive abnormal returns for KPMG audit clients upon the news of the settlement. In contrast, non-KPMG audit clients did not experience significant abnormal returns in the same window. Further analysis reveals that the abnormal returns are higher for client firms in financial distress and for those subject to higher litigation risk. Our results aid investors, auditors, and law makers in understanding the major roles of the audit function in promoting efficiency and effectiveness in the capital markets.

The remainder of this study is organized as follows: Section 2 provides a review of the literature, background of the KPMG situation, and the development of our hypotheses. In Section 3, we describe our research methods and results of our analyses. In Section 4, we provide conclusions regarding the major findings and their implications.

## **2. Literature review, background and hypotheses development**

When an audit firm is at risk of bankruptcy due to litigation, the litigation is frequently tied to widespread questions of audit quality. Thus, the continued availability of insurance protection for investors is tightly linked to the quality of assurance that the firm has provided to the market. Conversely, in cases where audit quality (the assurance function) is sufficiently questionable, it raises the specter of bankruptcy (and the concomitant loss of insurance protection for investors). It is this link between audit

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<sup>3</sup> See, e.g., Ali and Kallapur (2001) for a discussion of PSLRA and analysis of the market's reaction to the passage of PSLRA.

quality and litigation that makes it difficult to examine the effects of insurance and assurance in isolation.

To identify the incremental contribution of our study we focus on three papers that have examined these two hypotheses in the context of the demise of large CPA firms. The first study, by Menon and Williams (1994), examined the abnormal returns for clients of the auditing firm Laventhal & Horwath (L&H) related to the announcement of the firm's bankruptcy and the simultaneous loss of protection offered to investors through L&H's professional liability insurance. They reported evidence of significant negative cumulative abnormal returns for L&H clients in the days immediately following the bankruptcy announcement. These results are consistent with the insurance hypothesis; that is, investors value the safety net provided by the auditor's "deep pockets."

It is important to note, however, that the study's results are potentially confounded by the assurance hypothesis. Given the inside information possessed by members of L&H partnership, the decision by the partners to file for bankruptcy potentially signals the firm's problems with audit quality. The firm's partners have proprietary knowledge about its audit quality and thus, the likelihood of future litigation and the likelihood of prevailing in that litigation. A declaration of bankruptcy could be interpreted as providing information to the market pertaining to the firm's internal assessment of its own audit quality. As a result, while it is clear that the declaration of bankruptcy provided information about the firm's future ability to protect investors against losses (the insurance hypothesis), the negative market reaction could also be attributable to investors revising downward their perception of the audit firm's audit quality (the assurance hypothesis) or both.

This is consistent with the discussions by Baber et al. (1995), who also examined the stock price reaction of L&H's clients to the announcement of the firm's bankruptcy. Similar to Menon and Williams (1994), they also report a decline in value for L&H clients. Further, they report a larger decline in value for L&H clients who had been financially distressed. They argue that this finding could be consistent with the market punishing riskier clients that had a higher likelihood of bankruptcy (and therefore a greater likelihood of benefiting from the auditor's insurance function). However, the authors also acknowledge that such clients may also have been more likely to pressure the auditor into allowing aggressive accounting in order to manipulate or misrepresent their financial statements (thus calling into question the quality of the assurance function). Consequently, their results again are consistent with both the insurance and assurance effects.

More recently, Chaney and Philipich (2002) find that when Andersen disclosed that members of its Houston office had shredded documents allegedly related to the Enron engagement, the firm's clients experienced significant negative returns, especially its Houston office clients. The authors note that the previous months witnessed multiple disclosures calling Enron's accounting into question and argue that, in the context of such questions, the negative results for Andersen's clients is evidence of the market downgrading its assessment of the quality of assurance provided by Andersen. However, these results are potentially confounded by the insurance hypothesis. In fact, on January 10, 2002, the day information about document shredding was made public, questions were raised about Andersen's future viability (Carpenter 2002). Thus, while Chaney and Philipich (2002) argue that the market reaction was driven by a reassessment of the

credibility of Andersen's audit opinions, one cannot eliminate the possibility that the negative returns experienced by Andersen's clients may also have been driven, at least in part, by the market's assessment of Andersen's diminished chances of survival—the insurance hypothesis.

In summary, Menon and Williams (1994), Baber et al. (1995) and Chaney and Philipich (2002) all provide significant insight into the factors that add value to the audit opinion. Menon and Williams (1994) focus on the insurance hypothesis by examining market reactions around the date of a major CPA firm's bankruptcy announcement—and the implied loss of insurance coverage to protect investors. Chaney and Philipich (2002) focus on the assurance hypothesis by examining the market's response to the announcement that Andersen's Enron audit team shredded documents—thus calling the quality of Andersen's auditing into question. However, as noted, in their settings the two effects tend to occur simultaneously—albeit to different degrees. Thus, one cannot unambiguously attribute the market reaction to either hypothesis. As stated by Baber et al. (1995) in their closing paragraph, “Such results are consistent with either or both of two explanations. (p. 394)”

***Background: The KPMG situation***

To address these potentially confounded results, we turn to the KPMG case. KPMG's tax shelter troubles had been the subject of extensive media coverage dating back to 2002. The firm announced in 2003 that it was under investigation by the U.S. Attorney's office. In June of 2005, it became known that federal prosecutors had built a case against KPMG for the obstruction of justice related to its sale of abusive tax shelters, and that

Department of Justice officials were debating whether to seek an indictment against KPMG (Wall Street Journal, Reuters).<sup>4</sup> Three years earlier, a similar situation—an indictment by the DOJ—led to the collapse of Andersen. Talks between KPMG and the DOJ regarding the indictment continued throughout the summer of 2005, as did speculation about KPMG’s ultimate demise. However, in late August of 2005, KPMG settled the DOJ investigation by signing a deferred prosecution agreement and agreeing to pay an estimated \$456 million. News of the tax shelter settlement ended speculation about KPMG’s future viability or “death sentence.”

We exploit this institutional setting to more directly test the insurance hypothesis. In particular, we focus on the stock price reaction of KPMG client firms to the announcement of the settlement. Our approach differs from prior studies, which focus primarily on the negative market reactions to the initial announcement of auditor troubles, such as the bankruptcy announcement of Laventhol and Horwath (Menon and Williams, 1994; Baber et al., 1995), or more recently, the series of negative events faced by Andersen (Chaney and Philipich, 2002).

The circumstances surrounding the KPMG case provide a unique opportunity to disentangle the confounding effects between the insurance and assurance functions. First, the controversy is related to the sale of tax products rather than the provision of assurance services to corporate audit clients. Neither the KPMG indictment nor the settlement pertained directly to the firm’s audit practice.<sup>5</sup>

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<sup>4</sup> The tax shelters concerned the sale of “Bond Issue Premium Structure” (BLIPS) to high net-worth individuals with large capital gains. The genesis of the DOJ’s case against KPMG began when KPMG, on the grounds of client confidentiality, refused to disclose the list of these individual clients to the Department of Treasury (Rostain 2006).

<sup>5</sup> However, as discussed later in the manuscript, we recognize that, to the extent that threat of a potential indictment might affect investors’ views of the quality of all of KPMG’s client services—including its

Second, by focusing on stock price reactions of KPMG clients to the news of the *settlement*, we are able to further isolate the insurance effect. We assert that a positive reaction, if any, is more consistent with the insurance hypothesis than with the assurance hypothesis. Specifically, the settlement resolved most of the uncertainties about KPMG's future viability, and as a result, investors might be expected to revise upward their assessment of KPMG's ability to survive and insure against investor losses (the insurance hypothesis). However, it is unlikely that signing a deferred prosecution agreement and paying a fine related to the tax practices would cause investors to revise *upward* their perceptions of KPMG's audit quality and lead to a positive, *assurance*-driven market reaction. Stated differently, if, as a result of the revelations about KPMG's abusive tax practices, investors became skeptical about KPMG's audit quality, they are unlikely to revise *upward* their perceptions of the audit quality following the announcement of the deferred prosecution. Overall, the KPMG settlement highlights a situation where an audit firm's survival and investors' ability to recover losses is likely to be viewed as severely diminished and subsequently restored, while the audit quality is likely constant.

### ***Hypothesis development***

As noted previously, KPMG was accused of marketing aggressive tax shelters. Unlike other firms that were accused of similar activities, KPMG did not capitulate and was

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auditing services—the market's perception of the firm's audit quality could also be impaired (see Baber et al. 1995). Thus, the fact that the controversy was related to KPMG's tax practice alone (rather than to audit service) is not sufficient to isolate the insurance effect, even though it mitigates the confounding effects. This is especially true if we were to focus our tests only on the market reaction to the initial announcement of the possible indictment of KPMG where, as we argue, it is difficult to disentangle potential assurance and insurance effects.

viewed by the DOJ as recalcitrant.<sup>6</sup> In June of 2005, it became known that the Department of Justice was debating whether to indict KPMG for its tax sheltering activity—an action which would have put the firm out of business in much the same way that a criminal indictment destroyed Andersen. The Andersen debacle provides clear evidence to the claim that an indictment is the equivalent of a “death sentence” without regard to the outcome of the indictment in a court of law. Indeed, the United States Supreme Court found subsequently that Andersen did no wrong related to the indictment charges, yet, as a practical matter, this decision mattered little as Andersen’s fate was already sealed.

Throughout the summer of 2005, there was widespread speculation over the future of KPMG. Some people viewed an indictment against KPMG as unlikely. For example, Buck, Jopson and Parker (2005) note that European regulators were concerned that an indictment against KPMG would leave too few large audit firms and argued that the SEC was unlikely to indict the firm for that reason. Parker (2005a) claimed that KPMG was increasingly confident that it would avoid indictment and prosecution while Drawbaugh (2005) stated that indictment was unlikely because the firm admitted wrongdoing with respect to the tax shelters.

However, many others held the opposite view. A number of articles in the popular press discussed the possibility of the demise of KPMG. For example, Novera (2005) claimed that KPMG’s transgressions were worse than Andersen’s and that KPMG would suffer the same fate as Andersen. Glater (2005) noted that KPMG’s attorneys

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<sup>6</sup> Although the firm terminated the tax partners involved in the tax shelter sales and openly apologized for the partners’ behavior, they steadfastly refused to directly admit firm-wide wrong doing related to the charges. From the firm’s perspective, the investigation was the result of a “few bad apples” and was not a firm-wide problem. Further evidence of this came to light when (after the settlement news, i.e.) the DOJ aggressively sought charges against the ex-tax partners involved in the sales (Rostain 2006).

were concerned about the likelihood of indictment while Solomon and Gullapalli (2005) noted that the SEC was contemplating a world without KPMG and even cited the head of the PCAOB as stating that no accounting firm is “too big to fail.” In sum, during the summer of 2005, the market view of the fate of KPMG was far from unanimous, and there remained substantial uncertainty regarding the future viability of KPMG and its continued ability to provide implicit insurance value provided to its clients.

Surprisingly, on August 23<sup>rd</sup> and 24<sup>th</sup>, media outlets, including the *Financial Times*, *Dow Jones News*, and *The Times* reported that KPMG was near a deal to settle with the DOJ (Doran 2005, Parker 2005b). This revelation would have removed any cloud that hung over the firm’s continued ability to provide “deep pockets” to protect investors. Thus, if the market placed value on the firm’s insurance function, and if the announcement of the deal was not entirely anticipated, one should expect a positive market reaction for KPMG clients.

*H1: For KPMG audit clients, there should be a positive price reaction to the announcement that the firm would not be indicted by the Department of Justice.*

Note that while a positive market reaction is consistent with the insurance hypothesis, it is less likely to be attributable to the assurance hypothesis. As discussed previously, investors might view the tax-related information to be irrelevant to the perception of audit quality. However, even if investors became skeptical about KPMG’s audit quality as a result of the revelations about KPMG’s abusive tax practices, such concerns should *not* be lessened following the announcement of the deferred prosecution. Consequently, there is no *a priori* reason to believe that the deferred prosecution

agreement would trigger an upward revision in KPMG client stock prices based on the assurance explanation.

In addition to the overall market response, the insurance hypothesis also has predications for the cross-sectional differences in the market reactions. This idea was initially addressed by Baber et al. (1995). As discussed earlier, the implicit value of the insurance function stems from investors' ability to sue auditors and recover losses related to misstated financial statements. Specifically, if the likelihood of litigation against and recovery from the auditor is low, then there is relatively little value to the insurance function provided by the auditor. As a result, to the extent that the market reacts to the reinstatement of insurance protection, we expect more positive market response for clients who have a greater *a priori* likelihood of involving their auditors in litigation.

*H2: The market reaction to the Department of Justice announcement that KPMG would not be indicted by the Department of Justice will be positively associated with the likelihood of future litigation against the auditor.*

We argue that these cross-sectional differences, if any, are more consistent with the insurance hypothesis than with the assurance explanation. That is, regardless of the perceived audit quality of KPMG audits prior to the news of the settlement, it is unlikely that investors would assess a *higher* audit quality to high risk clients (relative to low risk clients) purely based on the signing of a deferred prosecution agreement.

### **3. Method and empirical tests**

#### ***Sample selection***

We use COMPUSTAT to identify firms audited by KPMG in the fiscal period immediately prior to our event period. To be included in our sample, we also require

firms to have CRSP return data sufficient to compute abnormal returns. A firm is required to have non-missing returns in the test window and at least 20 return observations in the estimation period (one year period ending four months prior to the event window). This results in a sample of 899 KPMG clients to be included in the event study. We require additional data for the cross-sectional analysis which results in a smaller sample of 753 firms for this part of the analysis. Sample selection criteria for our main, and additional analyses, are detailed in Table 1.

### ***Announcement period abnormal returns***

Because our event period is clustered in time (around a single calendar date), standard test statistics of abnormal returns around the event day are likely overstated due to the cross-sectional dependence in the distribution of abnormal returns. Following Schipper and Thompson (1983) and Baber et al. (1995), we use a time-series portfolio approach that avoids the cross-sectional correlations. Specifically, we use the following time-series regressions:

$$R_{pt} = \alpha + \beta R_{mt} + \gamma D_t + u_t \quad (1)$$

Where  $R_{pt}$  is the portfolio return of all KPMG clients for day  $t$ ;  $R_{mt}$  is the return on the value-weighted CRSP index on day  $t$ ;  $D_t$  is a dummy variable that is equal to one for our event day, and zero otherwise. The estimate of  $\gamma$  captures the abnormal return on day  $t$ , and the significance level of the abnormal return on day  $t$  is tested based on the significance level of  $\gamma$ . If  $\gamma$  is significantly positive on August 23 or 24, we conclude that KPMG client firms had the value of their auditor insurance function restored and that the

resolution of uncertainty about the availability of this function is impounded into stock prices. The estimation period is from January 1, 2005 to June 30, 2006.

The results of the event study on August 23 and 24 of 2005 are summarized in Table 2. As can be seen in Panel A, the excess return of KPMG clients on August 23 is positive but insignificant. The excess return on August 24, on the other hand, is positive and highly significant. The amount of the excess return is 0.57%. The time-series portfolio t-statistics are significant at conventional levels ( $p \leq .05$ ). These findings support Hypothesis 1.<sup>7</sup>

Since the abnormal returns are market adjusted, it is unlikely that the positive abnormal returns to KPMG clients are driven by general movement in the market (instead of the hypothesized effect of the announced deferred prosecution agreement).

Nevertheless, we conduct the identical event study using all non-KPMG, Big 4 clients. Consistent with expectations, the results displayed in Panel B of Table 2 fail to detect any abnormal returns for these firms over the event window (Schipper and Thompson t-statistics range from 0.644 to 0.995 for the various event windows.).

### *Cross-sectional variations in the abnormal announcement returns*

We next examine whether the positive abnormal returns experienced by KPMG clients vary cross-sectionally, and whether this variation is consistent with the insurance hypothesis. As discussed previously, investors' potential benefits from the insurance function provided by their auditors depend on their ability to sue auditors and recover

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<sup>7</sup> We also examined the returns on August 21 and 22 to test for information leakage. Findings indicate no statistically significant results suggesting the news was a surprise to the market.

losses. We use two variables that potentially capture investors' opportunities and ability to utilize this option.

First, we use a litigation risk index developed by Rogers and Stocken (2005). Investors in high legal exposure firms are more likely to exercise the insurance option, i.e., sue the firms and their auditors to recover their losses. We expect these firms to experience an incrementally positive market reaction upon the restoration of the insurance value. We calculate a firm's litigation risk based on the coefficient estimates obtained in Rogers and Stocken (2005). The explanatory variables used in their model are primarily stock return based variables such as market value, stock turnover, beta, and volatility (Rogers and Stocken, 2005, Appendix B).

Second, as in Baber et al. (1995), we also use financial distress, as measured by Zmijewski (1984), to proxy for the likelihood of client bankruptcy and the ensuing ability to recover losses from the auditor. Financially distressed firms have greater incentives to manage their earnings, and as a result, have a higher chance of financial misstatement. There is a greater likelihood that investors in such companies suffer losses and sue to recover the losses from the auditors. Consequently, we expect a more positive return for financially distressed firms upon announcement of the restoration of the insurance value. Although not tabulated, the two proxies for the insurance value are positively correlated, but the correlation coefficient is only 0.074, mitigating concerns for multi-collinearity.

In order to have the necessary data to compute the two variables, we exclude 133 firms that do not have sufficient data. In addition, thirteen financial firms are deleted

because the Zmijewski score is inappropriate for financial firms (see Table 1).<sup>8</sup> The sample size drops to 753 for the cross-sectional analysis.

Table 3, Panel A provides the univariate results based on the partition of the Rogers and Stocken (1995) litigation index. Firms in the top quartile are those with the greatest legal exposure, while those in the bottom quartile have the least legal exposure. Hypothesis 2 predicts that the insurance value will be the greatest for the riskiest firms (e.g., those in the top quartile). The results are consistent with expectations. For firms in the highest quartile of litigation risk, the abnormal return is 0.94%, highly significant at the 1% level. However, for firms in the lowest risk quartile, the abnormal return is 0.12%, and insignificant at conventional levels.

Panel B provides the univariate results based on the partition of the Zmijewski (1984) financial distress scores. Firms in the top quartile are most financially distressed, whereas firms in the bottom quartile are least distressed. We expect firms in the top quartile (i.e., the most financially distressed firms) to exhibit significantly higher abnormal returns than firms in the bottom quartile (healthy firms), implying that the value of the auditor insurance function is increasing for firms in financial stress. As can be seen in Panel B, KPMG client firms in the top quartile experienced significant abnormal returns of 1.28%, while those in the bottom quartile experienced insignificant abnormal returns. It appears that the negative market reaction observed in the overall sample is driven by the high litigation risk and high distress firms—those that are most likely to involve their auditors in litigation.

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<sup>8</sup> We also conduct the event study in Table 1 based on the reduced sample. The results are qualitatively the same, with the abnormal returns for KPMG clients positive and significant.

Given these univariate results, we also conduct cross-sectional analyses relating the magnitude of the stock market reactions to the potential insurance value provided by the auditor. The dependent variable is the abnormal stock return on the event day for individual client firms. The independent variables include both proxies for the value of the insurance option provided by the auditor, litigation risk and financial distress. We classify high litigation risk firms as those with a Rogers and Stocken (1995) litigation risk index in the top quartile. Similarly, we define high financial distress firms as those with a Zmijewski (1984) z-score in the top quartile. Finally, we also include client size, measured as the natural log of market value, as a control variable. Prior literature (e.g., Lys and Watts, 1994) has shown that client size is positively related to the probability of auditor litigation. In addition, it is commonly known that stock price reactions tend to be more pronounced for small firms than for large firms.

Because of the event day clustering, we employ the portfolio time-series approach in Sefcik and Thompson (1986) to investigate the relation between abnormal returns and the variables described above. Specifically, we construct portfolios by weighting observations so that returns on each portfolio reflect the influence of only one characteristic. This approach controls for heteroscedasticity as well as cross-sectional correlation of residuals as a result of calendar day clustering.<sup>9</sup>

The results of the multiple regression are consistent with earlier analyses. As shown in Table 4, the coefficient on the high litigation variable is positive and significant, suggesting that firms with high legal exposure experience more positive abnormal returns. In addition, the coefficient on the financial distress variable is also positive and highly significant, suggesting that the abnormal return of a KPMG client firm is

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<sup>9</sup> However, this approach does not provide a traditional R-square.

positively related to the client firm's financial distress. The other control variable, Size, is negative and significant at the 10% level.

Taken in total, our empirical results are consistent with the insurance hypothesis. First, KPMG firms experienced positive abnormal returns, consistent with a restoration of the insurance value. Other firms' client portfolios did not experience a similar change during the test period—thus weakening the possibility of results being driven by an omitted variable. This provides support for Hypothesis 1. Secondly, high legal exposure and financially distressed clients--whose potential loss in insurance value would have been the greatest had KPMG met the same fate as Andersen--experienced the highest abnormal returns. These findings provide support for Hypothesis 2.

#### *Additional analyses and competing explanations*

Although our main tests focus on the market reactions on the settlement date, we also conduct similar tests around June 16, 2005, when the WSJ reported the possibility of an indictment against KPMG. Tests for a decline in returns around this window are not significant. Although not tabulated, the abnormal return for the two-day window (0,+1) is 0.18%, and the Schipper and Thompson *t*-statistic is 0.41. The three day abnormal return for the window (-1,+1) is 0.24%, and the Schipper and Thompson *t*-statistic is 0.47. One likely explanation for the finding is that the market may have anticipated the event. KPMG's involvement in the sale of aggressive tax shelters was widely noted in the business press. As reported by Brennan (2005), between early April 2002 and late September 2004, the *WSJ* alone published 66 articles that were directly related to the accounting profession's difficulties regarding the sale of aggressive tax shelters. KPMG

was noted in 51 of the 66 articles and it was the only CPA firm noted in 39 of those articles. In addition, KPMG disclosed in 2003 that it was under investigation by the U.S. Attorney's office. Given the nature and timing of the events, it is not unreasonable to assume that the market was aware of KPMG's difficulties with the DOJ.<sup>10</sup> Moreover, the message contained in the news report was somewhat mixed. On the one hand, it reported that the prosecutors had built a case against KPMG. On the other hand, it mentioned that KPMG and the DOJ were locked in intensive negotiations. Under the circumstances, it is, perhaps, not surprising that we fail to detect negative abnormal market reactions around June 16, 2005. We also conduct sub-sample analysis for high-financial stress and high litigation- risk firms, and find no negative abnormal return for the sub-sample during this window.<sup>11</sup>

### *Competing explanations*

While we detect a positive return for KPMG clients around the announcement of the deferred prosecution agreement and we interpret that finding as support of the insurance hypothesis, it is possible that other factors are at work. As noted previously, the assurance hypothesis has been a potential confound in previous studies. While we think the circumstances surrounding the KPMG case provide a unique opportunity to isolate the insurance effect, we acknowledge that we can not completely rule out presence of the assurance effect.

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<sup>10</sup> Further, KPMG was apparently told weeks before the WSJ article that it could face criminal charges for its aggressive marketing to wealthy individual clients (Reuters News, June 16, 2005). It is possible that this news had already been leaked to the market prior to June 16, 2005.

<sup>11</sup> We also explore a technique employed by Smith (1983) by examining the correlation between the drop in firm stock price and the subsequent rebound. However, we do not find a significant correlation between the two, probably due to the same reasons described above

An alternative explanation for our finding is that acceptance of the deferred prosecution agreement meant that KPMG clients would not be forced to experience the chaotic and costly search for a new audit firm that Andersen clients faced. It is conceivable that avoidance of switching costs may explain a portion of the reported effect. However, we do not believe that it explains a significant portion of our results. After controlling for auditor resignations, client-auditor conflict related switches and up-tier and down-tier replacements, prior research has shown that auditor switches do not elicit a great deal of market reaction (Nichols and Smith 1983, Johnson and Lys 1990). Nevertheless, if the KPMG situation were driven by the market's concern over switching costs, one would expect that all KPMG clients would be affected. However, riskier clients may have more difficulty in engaging an auditor. It is possible that eliminating uncertainty over future switching costs had a greater positive effect on these clients. Yet, as reported in Table 3, the abnormal return of KPMG's client firms in the top distress quartile is close to 1.3%. It seems unlikely that an abnormal return of this magnitude would be driven by the risk premium associated with switching costs. Thus, though possible, auditor-switching-costs seem unlikely to explain our findings.<sup>12</sup>

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<sup>12</sup> It could also be argued that the market is concerned about the audit quality provided by a new auditor—relative to the quality offered by a long tenured auditor. However, the audit literature provides mixed evidence in this area. For example, Geiger and Raghunandan (2002) and Carcello and Nagy (2004), Johnson et al. (2002) and Myers et al. (2003) and Gul et al (2003) find evidence suggesting that earnings quality suffers with shorter tenure. Raghunathan et al. (1994) observe that problem audits are more likely in the first year and when auditor tenure is longer than five years. Similarly, Davis et al. (2008) find evidence consistent with greater earnings management when auditor tenure is less than five or greater than 14 years. However, Dopuch, King and Schwartz (2001) and Casterella, Knechel and Walker (2004) find evidence of a positive relation between tenure and auditor reporting bias while, Myers et al. (2004) find no relation between annual earnings restatements and auditor tenure. Thus, while it is possible that the market would be concerned over the audit quality of a newly-appointed auditor, empirical evidence on this is equivocal.

#### **4. Conclusions**

The KPMG situation in 2005 provides researchers with a unique setting in which to test the notion that an auditor insurance function is impounded in client-firms' stock prices (the insurance hypothesis). Prior research provides significant insight into the value of the audit, yet due to situational constraints, it has been unable to disentangle the insurance hypothesis from the closely related assurance hypothesis. Concentrating on news of the KPMG tax shelter settlement, we assert that the observed positive stock price reaction to such news is consistent with the insurance hypothesis. News of the settlement conveys nothing new about audit quality at KPMG—it does not provide information that would result in a positive shift in the market's perception about the quality of KPMG's audit services.

We provide evidence consistent with an auditor insurance function being impounded in stock prices (the insurance hypothesis). Specifically, we find that KPMG client firms earn significantly positive abnormal returns (.57%) during the days surrounding news of the settlement. To validate this initial result, we examine whether these returns are increasing for firms subject to high risk-of-litigation as measured by Rogers and Stocken (2005) and for firms in financial distress as measured by the firm's Zmijewski (1984) score. As expected, results show that firms in financial distress and firms with high risk of litigation experienced significantly higher abnormal returns. In contrast, Big 4, non-KPMG client firms display abnormal returns not significantly different from zero.

While we detect a positive return for KPMG clients around the announcement of the deferred prosecution agreement and we interpret that finding as support of the

insurance hypothesis, it is possible that other factors are at work. As noted previously, the assurance hypothesis has been a potential confound in previous studies. While we argue the circumstances surrounding the KPMG tax shelter case provide a unique opportunity to isolate the insurance effect, we acknowledge that we can not completely rule out the presence of the assurance effect.

This paper makes an important contribution to the literature. Using a unique institutional setting, we provide more direct empirical evidence regarding the insurance hypothesis. Understanding the role of the auditor insurance function and its association with client stock prices can aid investors in the investment decision process; it can help auditors to better understand the pricing of audit services and it can help lawmakers in assessing the costs and benefits of professional service litigation and of proposed future litigation reform legislation.

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Table 1  
Sample Selection

All KPMG clients on COMPUSTAT:		1125
Less firms insufficient CRSP data for Event Study:	<u>(226)</u>	
Sample used in Event Study (Table 2)		899
Less: Firms with insufficient data:	(133)	
Financial institutions	<u>(13)</u>	<u>146</u>
Sample used in cross-sectional analysis (Tables 3 and 4)		753
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Table 2  
Market reactions to the announcement of KPMG settlement

Panel A: Mean Cumulative Abnormal Returns to KPMG firms (n=899) on Aug 23 and 24, 2005

Window	CAR	Portfolio Time-Series T-stat
08/23	0.14%	0.48
08/24	0.57%	1.96 <sup>**</sup>
(08/23, 08/24)	0.72%	1.722 <sup>*</sup>

Panel B: Mean Cumulative Abnormal Returns to non-KPMG Big-4 firms (n=3109) on Aug 23 and 24, 2005

Window	CAR	Portfolio Time-Series T-stat
08/23	0.23%	0.763
08/24	0.20%	0.644
(08/23, 08/24)	0.43%	0.995

We present the mean abnormal returns of KPMG clients on August 23 and 24, 2005. Abnormal returns are calculated based on the market model. The symbols \* and \*\* denote statistical significance at the 0.10 and 0.05 levels, respectively, using 2-tailed tests. The portfolio time-series approach follows the suggestions of Schipper and Thompson (1983), and corrects for the cross-sectional dependence due to the calendar day clustering.

Table 3  
Abnormal returns of client portfolios based on litigation risk and financial distress  
(n=753)

Panel A		
	Abnormal Return	Portfolio Time-Series T-stat
Top quartile of Litigation index	0.94	2.67***
Quartile 2	0.83	2.25**
Quartile 3	0.53	1.25
Bottom quartile of Litigation index	0.12	0.33
Panel B		
	Abnormal Return	Portfolio Time-Series T-stat
Top quartile of Zmijewski financial distress score	1.28	3.13***
Quartile 2	0.32	1.07
Quartile 3	0.48	1.45
Bottom quartile of Zmijewski financial distress score	0.29	0.545

This table presents the abnormal returns on August 24, 2005 for KPMG clients. Quartiles are formed based on Stocken and Rogers (1995) litigation risk indices and Zmijewski (1984) financial distress scores. The symbols \*, \*\*, and \*\*\* denote statistical significance at the 0.10, 0.05, 0.01 levels, respectively, using 2-tailed tests. The portfolio time-series approach follows the suggestions of Schipper and Thompson (1983), and corrects for the cross-sectional dependence due to the calendar day clustering.

Table 4  
Regression analysis of abnormal returns on KPMG client characteristics

Variable	Coefficient	p-value
Intercept	0.013	0.068
Financial distress	0.009	0.002
High Litigation risk	0.008	0.012
Log Market Cap	-0.002	0.063

We employ the portfolio time-series approach in Sefcik and Thompson (1986) in the cross sectional analysis. We construct portfolios by weighting observations so that returns on each portfolio reflect the influence of only one characteristic. One-tailed p-values are reported in the table. Note R-square is not applicable using this approach.

Bankruptcy probability is calculated as in Zmijewski (1984). The financial distress dummy is one for firms in the top quartile based on the Z-score, and zero otherwise. Size is defined as the natural log of market capitalization. High Litig Risk Dummy is equal to one for firms in the top quartile based on the Rogers and Stocken (2005) litigation risk measure, and zero otherwise. All variables are based on data from fiscal year 2004. Please refer to Section 3 for details.