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## AUDIT FIRM REPUTATION, AUDITOR SWITCHES, AND CLIENT STOCK PRICE REACTIONS: THE ANDERSEN EXPERIENCE

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REACTIONS: THE ANDERSEN EXPERIENCE**

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# AUDIT FIRM REPUTATION, AUDITOR SWITCHES, AND CLIENT STOCK PRICE REACTIONS: THE ANDERSEN EXPERIENCE

## SUMMARY

The financial scandal surrounding the collapse of Enron caused erosion in the reputation of its auditor, Andersen, leading to concerns about Andersen's ability to continue in existence and ultimately its demise. In this paper we investigate the timing of switch by former Andersen's clients. We find that the timing of the switch is related to variables hypothesized to be associated with the cost of switch. Specifically these are client size, auditor industry specialization, provision of non-audit services, auditor tenure, quality of earnings and financial distress. In addition we find that clients with the greatest market losses attributable to disclosures pertaining to Andersen's audit of Enron, and strongest corporate governance were more likely to switch early, while those with the strongest ties to Andersen were more likely to delay switching. We also find that clients switching from Andersen experienced positive abnormal returns during the three-day window surrounding the announcement. Importantly we find this positive return to be greater for clients with greater prior losses.

**Keywords:** *Auditor Reputation, Auditor Change, Arthur Andersen, Enron*

JEL Codes: M420

# AUDIT FIRM REPUTATION, AUDITOR SWITCHES, AND CLIENT STOCK PRICE REACTIONS: THE ANDERSEN EXPERIENCE

## INTRODUCTION

The financial collapse of Enron Corporation during the last quarter of 2001 drew extensive attention to its auditor, Arthur Andersen, from the media, regulators, and the accounting profession. Following its indictment in March 2002, its clients began changing auditors en masse. Andersen was convicted on June 15, 2002 and discontinued its operations soon after, forcing its remaining clients to seek a new audit firm. Unlike a voluntary auditor change where the change is motivated by client cost-benefit considerations, for Andersen clients the change was *involuntary* and driven by an exogenous shock (Barton 2005). In this paper we examine the factors associated with the timing of the switch away from Andersen. Following related research, we argue that net switching costs and loss of wealth suffered by former Andersen clients as factors influencing the timing of auditor changes.

We model switching costs as a function of client size, auditor industry specialization, provision of non-audit services, auditor tenure, quality of earnings and financial distress. Our results suggest that these factors are positively associated with the time taken to find a new auditor. In addition, we find that clients that suffered significant market losses when revelations about Enron occurred are more likely to switch early compared to other clients.<sup>1</sup>

Next, we examine the valuation effects surrounding the auditor changes. Prior research has argued that auditor reputation adds credibility to the client's financial statements (Simunic and Stein 1987; Francis and Wilson 1988), and is therefore impounded in the client's stock price

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<sup>1</sup> Barton (2005) examines the factors associated with the timing of auditor change by Andersen clients. He provides evidence that Andersen clients with "large press coverage, analyst following, institutional ownership, and cash proceeds from recent external financing" changed auditors sooner. We extend Barton (2005) by examining whether the quality of corporate governance and the degree of loyalty to Andersen affected the decision the switch. Blouin et al. (2007) also provide evidence that net switching costs distinguishes between clients that go with the former audit partner and those that change to a new audit firm. Their sample is confined to only those (n=407) for which information about auditor identity is available. We use a much larger population of firms in our study.

(e.g., Beatty 1989; Baber et al. 1995). It follows that, if Andersen lost credibility due to the disclosures surrounding Enron, its clients would suffer a loss in market value, and subsequently recover some of the losses when they move to an auditor with a better reputation. Recent studies have shown (Chaney and Philipich 2002; Callen and Morel 2003; Doogar et al. 2003), and our tests confirm, that Andersen clients lost significant market value during the periods of key negative disclosures about Andersen. To investigate the recovery of firm value, we examine the market reaction to the 937 auditor change announcements made by former Andersen clients. We find the market reaction to the change announcement was positive on average, and higher for clients that were more adversely affected, in terms of market price, to the earlier disclosures pertaining to Andersen's audit of Enron.

This paper is organized as follows. The next section contains motivation and hypotheses development. Section 3 discusses the data, research design and empirical results. Section 4 contains our conclusions.

## **MOTIVATION AND HYPOTHESES DEVELOPMENT**

### **Decision to Change Auditors**

The disclosures about Andersen caused a decline in its reputation and Andersen clients suffered significant loss of market value (Chaney and Philipich 2002). From February 2002 to June 2002, Andersen faced a civil investigation by the SEC, several lawsuits, and was indicted and tried by the Justice Department for, and ultimately found guilty of, obstruction of justice. During this period, disclosures began to appear in the media about Andersen clients changing

auditors.<sup>2</sup> The circumstances surrounding Andersen's demise are unique in that within a short period of time all of their clients had to select a new auditor.

The timing of the decision to change auditors would depend on the net cost associated with switching to a new auditor and the extent to which they suffered due to Andersen's loss of reputation. We conjecture that clients with low switching costs and those with greatest losses in response to the disclosures pertaining to Andersen's audit of Enron would be the first to change auditors because of the incentives associated with the switch. Our hypothesis (stated in alternative form) is:

*H1a: Andersen clients with lower net switching costs were more likely to switch early.*

*H1b: Andersen clients with the greatest losses in response to the disclosures pertaining to Andersen's audit of Enron were more likely to switch early.*

### **Stock Price Reactions to Auditor Switching away from Andersen**

We next investigate the stock price reaction to auditor change announcements. In general, prior research has not found a significant abnormal return for auditor change announcements (Schwartz and Soo 1996a; Nichols and Smith 1983), except for auditor resignations (e.g., Shu 2000). However, we expect that, investors would react positively to the move away from Andersen an auditor with a damaged reputation. Therefore, we test the following hypothesis:

*H2: Andersen clients that publicly disclosed they were changing auditors experienced positive stock price reactions around the announcement date.*

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<sup>2</sup> For example, on January 29, 2002 the Wall Street Journal reported that Delta Airlines was considering changing its auditor. The same article also reported that "several other large companies are now reviewing their relationship with Andersen" (Brannigan and Opdyke 2002).

## DATA, RESEARCH DESIGN AND EMPIRICAL RESULTS

### Sample Selection

We started with 9,861 firms on the 2001 Annual Compustat Tape (PST and Full Coverage). We obtained financial data and auditor identity from Compustat and stock returns from CRSP. We hand collected corporate governance and employee affiliation information (described later) from proxy and 10-K filings, and ownership data from Compact Disclosure. We obtained audit and non-audit fee data from Standard & Poors and proxy filings. As described in table 1 (panel A), we lost 2,561 firms for which returns for the test windows are not available on CRSP. Another 1,321 firms were lost because either the identity of the auditor and/or other required data was missing from Compustat. Finally we dropped 4,045 firms audited by other Big 4 auditors and 997 audited by non-Big 4 auditors, leaving us with a sample of 937 clients audited by Andersen.

[insert table 1 about here]

Panel B provides information on the timing of the auditor switch, during the period February 6, 2002 to October 31, 2002, which we manually obtained from 8-K filings at the SEC website. For clarity, we break up the window by easily identifiable events beginning with the release of the Powers report on February 2, 2002. From the date of the Powers report to the date of Andersen's indictment only 15 of Andersen's 937 clients switched audit firms. The relatively few changes may reflect the fact that clients had not yet realized that Andersen would be unable to continue in existence, and/or the fact that they were unwilling to drop their auditor in the midst of their year end audit.<sup>3</sup> Switches accelerated dramatically after the indictment when it became

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<sup>3</sup> About two-thirds of Andersen's clients had December 31<sup>st</sup> fiscal year ends and consequently their audit would still be going on during this window.

clear that Andersen would be unable to continue and finding a new auditor was inevitable. 261 clients switched between the indictment on March 14 and May 6, the date the trial started, while more than half of Andersen's remaining clients (359) announced their switch during the trial. Of the 937 changes, slightly more than two-thirds (635) occurred prior to Andersen's conviction on June 15, 2002. Almost immediately following the verdict Andersen announced that it would no longer audit public companies (Eichenwald 2002). While the vast majority of these changes were auditor dismissals, there were 13 auditor resignations. Panel C of table 1 provides descriptive information about the industry distribution of Andersen's clients. Table 2 contains definitions of all variables used in our analyses.

[insert table 2 about here]

In table 3, we present market reaction to several negative disclosures about Andersen. Although this is not the main focus of our paper, we do this to establish comparability with recent work (e.g., Chaney and Philipich 2002). We estimate losses in value for five dates by computing the mean cumulative abnormal returns during the three day window (-1,1) surrounding the date. We also examine cumulative abnormal returns for the 13 month window from October 1, 2001 to October 31, 2002.<sup>4</sup> Daily abnormal returns are computed using the four-factor-Carhart (1997) model.

[insert table 3 about here]

The magnitude of the abnormal return in the short windows is significantly different from zero in all five short windows. We see that the return to Andersen clients in the period surrounding the shredding disclosure are significantly negative, -0.46 percent for our sample of

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<sup>4</sup> We deliberately end the window on October 31, 2002 to allow for all of Andersen's clients to announce their switches.



937 firms.<sup>5</sup> The return associated with the disclosure of the Powers report is significantly negative, -0.67 percent, while that associated with Andersen's indictment, -0.21 percent.<sup>6</sup> Using a reduced sample of clients that had not yet announced an auditor change, we find additional significant negative abnormal return of -0.54 percent around the start of Andersen's criminal trial, and -0.23 percent around Andersen's conviction date, both statistically different from zero.<sup>7</sup> Examining the full 13 month window, which encompasses the first doubts about the assurance value of Andersen's audit, Andersen's downfall, and the clients switch from Andersen, we find a significant negative abnormal return of -5.19 percent.

### **Timing of Switch**

We now examine (hypotheses H1a and H1b) whether clients with lower net switching costs and greater losses related to the disclosures pertaining to Andersen's audit of Enron switched relatively early. We conduct using ordinary least squares, ordinal and multinomial logit. We present the OLS model below. The logistical analyses differ only in the dependent variable. For example in the dichotomous model, the dependent variable is coded 0 if the client switches from Andersen between 2/5/2002 and 6/15/2002 (i.e., the preconviction period), and 1 if it switches after 6/15/2002 (the post conviction period); while in the trichotomous model the

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<sup>5</sup> Our mean *CAR*, while statistically significant is smaller in magnitude, i.e., less negative, than that found in Chaney and Philipich (2002), who found abnormal returns of -1.32 percent for their smaller sample of 284 firms. To a large extent we feel the difference between the two samples is driven by the difference in sample. That is, while the average firm in our sample has a market value of slightly more than \$1.7 billion, the average firm in Chaney and Philipich's is thrice that size, with a market value of almost \$5 billion.

<sup>6</sup> Chaney and Philipich (2002) found insignificant abnormal returns on the indictment date.

<sup>7</sup> Krishnan (2005) provides evidence consistent with "aggressive accounting practices" by Andersen's Houston clients. In untabulated analysis we examine whether these abnormal returns are affected by whether the client was audited by Andersen's Houston office and whether the client operated in the same industry as Enron. For example, we find that in the January 10 window the abnormal returns were -1.77 percent for firms operating in Enron's industries and -0.40 percent for all other Andersen clients. While both returns were significantly less than zero, the results indicate a strong and significant industry effect. Comparable differences were also observed for the February 4 window. Similarly we found for the January 10 window the abnormal returns for clients of Andersen's Houston office were much more negative (-2.48 percent) than for Andersen's non-Houston clients (-0.36 percent). While both returns were significantly less than zero, the results show a strong and significant Houston effect. A comparable Houston effect is observed for the May 6 window. No significant industry or Houston effects are detected for the other windows.

dependent variable takes the value of 1 if the client switches from Andersen from 2/5/2002 to 5/6/2002 (the pretrial period); value of 2 if it switches from 5/7/2002 to 6/15/2002 (the trial period); and value of 3 if it switches after 6/15/2002 (the post conviction period).

$$\begin{aligned}
 DELAY = & \beta_0 + \beta_1 LMV + \beta_2 INDSPL + \beta_3 NONAUDIT + \beta_4 DTENURE + \beta_5 ADACCR + \\
 & \beta_6 DISTRESS + \beta_7 PREVCAR1 + \beta_8 PREVCAR2 + \beta_9 SEPARATECHAIR + \beta_{10} BDIR + \\
 & \beta_{11} ACDIR + \beta_{12} BMEET + \beta_{13} ACMEET + \beta_{14} EXPERT + \beta_{15} DFYR + \beta_{16} ROA + \beta_{17} \\
 & DNEWB4 + \varepsilon
 \end{aligned}
 \tag{1}$$

where *DELAY* is the number of days after February 6, 2002 the client announced its switch from Andersen.

### Proxies for Switching Costs

*LMV*, *INDSPL*, *NONAUDIT*, *DTENURE*, *ADACCR*, and *DISTRESS* are all proxies for switching costs and are used to test H1a. *LMV* is the log of the market value of equity. Our expectation is that larger firms may incur greater switching costs, as ex ante they have less of a choice, i.e., they have to stay with the Big 4. Alternatively the larger firms may be viewed as prestige clients and may be aggressively sought after by the remaining Big 4 and thus their switching costs may be lower. Consequently we do not make a prediction on this variable.

*INDSPL* is industry specialization, which is measured as the Andersen's market share, based on the square root of clients' total assets (Ettredge and Greenberg 1990), in the firm's two digit SIC code.<sup>8</sup> Our expectation is that switching costs will be higher and that firms will delay switching the greater Andersen's expertise in their industry. *NONAUDIT* (following Frankel et al. 2002; Ashbaugh et al. 2003; Reynolds et al. 2004) is the ratio of nonaudit fees to total fees paid to Andersen.<sup>9</sup> Our expectation is that the more non audit services provided by Andersen, which by definition, are less of a commodity than audit services, the greater the switching costs.

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<sup>8</sup> Our results are similar when market share is calculated on the basis of sales and total assets.

<sup>9</sup> We also performed a sensitivity test by using the ratio of total client fees to total auditor fees in place of non-audit fees. Our results are qualitatively similar.

*DTENURE* (following Myers et al. 2003) is an indicator variable taking the value of one if Andersen had been the auditor for five or more years and zero otherwise.<sup>10</sup> Our expectation is the longer Andersen's tenure as auditor, the greater the switching costs. *ADACCR* is the absolute value of 2001 discretionary accruals deflated by total assets, calculated using the cross-sectional version of the Jones (1991) model as in DeFond and Jiambalvo (1994) and we use the difference between net income and cash from operations as our measure of total accruals (Hribar and Collins 2002). Our expectation is that higher discretionary accruals, which imply lower earnings quality, will increase switching costs. Lastly, *DISTRESS* is an indicator variable taking the value of 1 if the Altman Z score is less than 1.81 and zero otherwise. Our expectation is that firms with a greater probability of bankruptcy will be less desirable as clients and thus will have higher switching costs.

### **Proxies for Prior Losses due to Andersen's Loss of Reputation**

*PREVCAR1* and *PREVCAR2*, which are the cumulative four-factor-adjusted abnormal returns from the Carhart (1997) model for the (-1, 1) windows around Andersen's admission of shredding of documents on January 10, 2002 and the release of Powers Report on February 2, 2002 respectively, are our test variables for hypothesis H1b. We use these events as prior literature (e.g., Chaney and Philipich 2002) shows a significant market reaction by Andersen clients during these windows. Our expectation is that the greater the loss in firm value to these events the quicker the firm will switch from Andersen.

### **Control Variables**

Since Enron was about more than a breakdown in the audit process, also about a breakdown in the governance process we examine a series of variables suggested by prior research to proxy for good governance which may be used to mitigate the impact of Andersen's

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<sup>10</sup> Our results reported later are qualitatively unchanged when 3, 7, and 9 years are used as cutoffs instead of 5 years.

loss of reputation and accelerate the switch from Andersen. We use several proxies for corporate governance based on prior work (Raghunandan et al. 2001; Raghunandan and Rama 2003; Xie et al. 2003; Bedard et al. 2004): *SEPARATECHAIR*, *BDIR*, *ACDIR*, *BMEET*, *ACMEET*, and *EXPERT*. *SEPARATECHAIR* a dummy variable that takes the value of 1 if the position of CEO and Chairman of the Board are separated, and 0 otherwise; *BDIR* the number of directors on the board; *ACDIR* is the number of directors on the audit committee; *BMEET* the number of board meetings; *ACMEET* the number of audit committee meetings; and *EXPERT* the number of financial experts on the audit committee.<sup>11</sup> In general, a larger value for the variable is associated with better governance. Thus, we predict a negative association between these variables and the delay in switching from Andersen.

We also include the following control variables that might influence the time taken to switch auditors: *ROA*, *DNEWB4*, and *DFYR*. We include *ROA* (return on assets) as we feel the better the firm performance the easier it will have finding a successor auditor, i.e., it will be more desirable. Hence we predict a negative association between delay and *ROA*. We include *DNEWB4* (coded as one if the new auditor is a Big 4 auditor, zero otherwise) because the timing of the change may depend on the kind of successor auditor the client is looking for (Schwartz and Soo 1996b). In particular, if Big 4 auditors are more conservative in their acceptance of clients in the wake of Andersen's problems, it may take longer for the client to obtain a new auditor. On the other hand, familiarity with a Big 4 auditor and the services it provides may make it easier to replace Andersen with another Big 4 auditor. Finally we include *DFYR* a dummy variable that takes the value of 1 if the client's fiscal year end is December, and 0 otherwise to control for the

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<sup>11</sup> To identify the financial experts on audit committees, we use the definition of "accounting financial expertise" in DeFond et al. (2005) which is similar to that suggested in SEC (2002).

possibility that clients are less likely to make an auditor change in the midst of their year end audit. Consequently these clients would be unable to change during the months of February and March, and hence would be more likely to be late switchers.<sup>12</sup>

Table 4 provides descriptive statistics for the variables in our model. Beginning with our switching cost variables we find that firms that switch early are larger, i.e., *LMV* is greater ( $p < 0.01$ ), are less likely to belong to industries where Andersen was a specialist ( $p < 0.01$ ), obtained fewer non audit services from Andersen ( $p < 0.01$ ), and were less likely to be with Andersen for five years ( $p < 0.10$ ). Overall it appears that early switchers have lower switching costs. We do not observe, at least in the univariate sense, any difference between early and late switchers for either the quality of earnings or the probability of financial distress. While we find early switchers had suffered greater losses due to the disclosures pertaining to Andersen, those differences are only marginally significant ( $p < 0.10$ ) and only for second of the windows. We also find some differences in our control variables between early and late switchers. In general early switchers appear to have better governance, as the number of directors (*BDIR*), and number of audit committee members (*ACDIR*), as well as number of meetings for both groups (*BMEET* and *ACMEET*) are greater for early adopters. We also find early switchers are more likely to have a separate board chair. However, we do not find a difference for *EXPERT*. We also find that early switchers have a better, albeit less negative, *ROA*, are less likely to have a Big 4 auditor, and are less likely to have December fiscal year ends.

[insert table 4 about here]

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<sup>12</sup> During our sample period the 10-K had to be filed with the Securities and Exchange Commission within 90 days after the end of the fiscal year. Hence if the fiscal year end was December 31, the 10-K must be filed by March 31<sup>st</sup>. Prior research, e.g., Easton and Zmijewski (1993), finds that most firms file close to that deadline.

Table 5 provides a correlation matrix for the variables used in our analysis. In general the correlations between the variables are low, i.e., the highest is 0.4519, indicating that multicollinearity is not a problem.

[insert table 5 about here] Table 6, provides the regression results for equation (1). The first regression in the table examines switches during the “voluntary” period and uses the continuous variable *DELAY* as the dependent variable. We also incorporate involuntary switches using two discrete specifications to capture delay. In the second regression, the dependent variable is *DELAY2*, a dummy variable that takes the value of 0 if the switch occurs prior to Andersen’s conviction on June 15, 2002, and 1 otherwise. In the third regression the dependent variable *DELAY3* takes the value of 1 if the switch occurs prior to the start of the trial on May 6, 2002, 2 if the switch occurs after the start of the trial but prior to the conviction on June 15, and 3 if the switch occurs after the conviction. Thus the second and third regressions are estimated as binomial logit and ordered logit respectively. We selected these two cut-offs because the beginning of the trial significantly diminished the possibility of a settlement with the Justice Department (Beltran 2002) and the conviction of Andersen on June 15 marked the end of Andersen’s auditing operations.

[insert table 6 about here]

In general, the tenor of the results is consistent across the models. Beginning with our switching cost variables we find that firm size, *LMV*, is negative and strongly significant in the OLS and ordered logits. *INDSPL* is positive and significant in all models indicating that firms in industries where Andersen was a specialist were more likely to delay switching. In contrast, *NONAUDIT* is only significant in the OLS model. *DTENURE* is positive and significant in the OLS and ordinal logit models, providing some evidence that the delay is related to Andersen’s

tenure as auditor.<sup>13</sup> *ADACCR* and *DISTRESS* are both positive and significant in the OLS and ordered logits, consistent with firms that have lower earnings quality and firms in financial distress taking longer to switch. Overall the results support H1A, suggesting that switching costs played a role in the timing of the switch. After controlling for other factors, *PREVCAR2* is significantly positive in the OLS and ordered logits, indicating that clients that had smaller (greater) losses during disclosures pertaining to Andersen's audit of Enron were less (more) likely to switch early.

There is also evidence that the quality of corporate governance played a role in determining the timing of auditor change. Among the variables measuring the quality of corporate governance, the number of board members (*BDIR*), the number of board and audit committee meetings (*BMEET* and *ACMEET*), and CEO separatechair (*SEPARATECHAIR*) are negatively associated with delay (as predicted) in the OLS and ordered logits. The number of financial experts on the audit committee (*EXPERT*) are significantly negative in OLS and two level ordered logit, while the number of directors on the audit committee is significantly negative in the three level ordered logit. Overall the evidence suggests that clients with better governance switched earlier.

Results also show that clients who performed better in terms of *ROA* switched earlier and that those that required the services of a Big 4 auditor (*DNEWB4*) tended to switch later. Finally the coefficient on *DFYR* is positive and significant, which is consistent with clients with December fiscal year ends having to delay their search for a successor auditor/switch until

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<sup>13</sup> To rule out the possibility that the tenure variable may be confounded by age of the company, we re-estimated the models after adding an additional variable, *AGE*, measured as the number of years the company has been publicly traded. The *TENURE* variable continues to be significant.

the completion of their year end audit and hence being unable to switch during February and March.<sup>14</sup>

During the sample period, clients could be leaving Andersen initially due to reputation loss and later due to auditor failure risk. This could lead to changes in the coefficients over time. To test this notion, we run the CATMOD procedure in SAS that directly fits the generalized logit model. For the three-period dependent variable (PERIOD3), the first column of the multinomial logit reports the ratio of period 1 to period 3 and the second column the ratio of period 2 to period 3. Thus, in the first column of the multinomial logit, an insignificant coefficient implies that  $p_1$  is not different from  $p_3$ ; a positive (negative) implies that  $p_1$  is greater (less) than  $p_3$ . Positive coefficients on LMV, INDSPL, BDIR, ACMEET, and DFYR imply that these variables lose explanatory power as time passes. The remaining variables are insignificant.

### **Market Reaction to Switching**

Next we look at the cumulative four-factor-adjusted Carhart (1997) abnormal return (CAR) for the three day window (-1, 1) surrounding the auditor change announcement to test hypothesis H4. To examine the factors that influence the return we use the following cross sectional regression:

$$CAR = \beta_0 + \beta_1 LMV + \beta_2 INDSPL + \beta_3 NONAUDIT + \beta_4 DTENURE + \beta_5 ADACCR + \beta_6 DISTRESS + \beta_7 PREVCAR1 + \beta_8 PREVCAR2 + \beta_9 SEPARATECHAIR + \beta_{10} BDIR + \beta_{11} ACDIR + \beta_{12} BMEET + \beta_{13} ACMEET + \beta_{14} EXPERT + \beta_{15} DFYR + \beta_{16} ROA + \beta_{17} DNEWB4 + \varepsilon \quad (2)$$

where all the variables are as defined above.<sup>15</sup> Hypothesis H2 predicts a negative sign for *PREVCAR1* and *PREVCAR2*, i.e., the larger the prior negative return the larger the positive return to the switch announcement.

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<sup>14</sup> The results are unchanged if we redefine *DFYR* as including all fiscal years ending in November, December, and January.



Table 7, Panel A shows that the average abnormal return around the date of announcement by an Andersen client that it was dismissing its auditor was positive and significant – the mean cumulative abnormal return was 0.51 percent for the three day window, which corresponds to \$7 million increase in market value.<sup>16,17</sup> Panel B contains the regression results for equation (2). While the coefficient on *PREVCAR1* is insignificantly different from zero, the negative coefficient on *PREVCAR2* is consistent with announcements by former clients of Andersen being viewed more positively for those clients that suffered greater losses to the earlier disclosures pertaining to Andersen’s audit of Enron.

[insert table 7 about here]

Turning to our other variables, we see little association with abnormal returns to switching. Of our switching cost variables we see positive and significant associations with auditor tenure (*DTENURE*) and earnings quality (*ADACCR*), indicating that the switch was viewed more favorably when Andersen’s tenure with the client was high and earnings quality was poor. In contrast we find negative and significant associations for two of our governance variables, the number of board meetings (*BMEET*) and the number of financial experts on the board (*EXPERT*). We also find a negative and significant coefficient on *ROA* and a positive and significant coefficient for December fiscal year end companies (*DFYR*).

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<sup>15</sup> We manually check newswires and major newspapers for the ten day period (-7, 2) around the 8-K filing date for concurrent disclosures. We identify 290 such cases out of the sample of 937 firms. As a sensitivity check, we rerun our tests after deleting these 290 firms. Our conclusions are unchanged.

<sup>16</sup> As discussed above, switches, especially the later ones, were probably anticipated by investors. One example is Delta Airlines, whose actual switch in March, was predated by several weeks of discussion in the financial press. Consequently the returns observed in reaction to the switch announcement do not reflect the full benefit of the switch.

<sup>17</sup> In untabulated analysis we find that a comparable announcement by a non-Andersen client during our sample period was met by an insignificant negative market reaction and that the difference in return between Andersen and non-Andersen changes was positive and significant.

## CONCLUSIONS

Prior research has hypothesized that an auditor's reputation influences clients' choice of auditors and is impounded in the stock price of its clients. We examine the effect of Andersen's loss of reputation on the speed of auditor change by its clients, and on firm valuation surrounding the time of the auditor changes. Over the months following the negative disclosures about the audit of Enron in 2001, Andersen's clients began to switch auditors, the majority doing so before June 15, 2002 when Andersen was convicted and its remaining clients were forced to change auditors. We expect that the loss in Andersen's reputation would cause clients to change auditors, particularly those that had the greatest previous loss in value, and those with the best corporate governance. In contrast we expect that clients with the highest switching costs would take longer to find a new auditor. Our findings reflect these expectations. We find that clients with the greatest stock price drop in response to the disclosures pertaining to Andersen's audit of Enron, and clients with better corporate governance were more likely to switch early, whereas those with higher switching costs were more likely to delay switching.

We also examine market reaction to subsequent auditor change announcements by voluntary changers. We expect that the change would cause a positive reaction as firms move from a less to a more reputable auditor. We find this to be the case. For the voluntary changers, we find that the mean cumulative abnormal return during a three-day window surrounding the date of announcement of auditor change was positive and statistically significant.

Our findings add to our understanding of the effects of auditor reputation on the market valuation of their clients. Previous studies provide evidence that a loss of auditor reputation is associated with a loss in client firm value. This evidence of an association between auditor reputation and client value could be further bolstered if these losses are recovered when the

clients move to another auditor. Because auditor changes generally occur for many reasons, it is difficult to isolate situations where the change reflects a change in auditor reputation. Changes in auditor type (Big 8/6/5 non-Big 8/6/5 and vice versa) can broadly be viewed as changes in auditor reputation, but studies that examine market reactions for such changes do not document significant positive reactions to a change from a non-Big 8 auditor to a Big 8 auditor (e.g., Nichols and Smith 1983). This is likely because the change in auditor reputation was confounded by a number of other factors that accompanied the change. By examining the Enron-Andersen context, we are able to focus on auditor changes that involve moves from what is clearly an auditor who has lost reputation to one with a relatively unharmed reputation. The finding that the market reacts positively to changes away from Andersen therefore provides further support for studies that document a positive association between firm value and auditor reputation.

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**TABLE 1**  
**Sample Selection and Distribution**

*Panel A: Sample Selection*

Procedure	Number of Firms
Firms available on 2001 Annual COMPUSTAT Tape (PST and Full Coverage)	9,861
Returns not available on 2002 CRSP tape	<u>(2,561)</u>
	7,300
Either the identity of the auditor or other required data is not available on COMPUSTAT	(1,321)
Big 4 Auditor	(4,045)
Non-Big 4 Auditor	<u>(997)</u>
Andersen clients	937

*Panel B: Distribution of Switching Firms by Delay*

Date	Event	Days after 2/5/2002 †	Firms switching from Andersen after previous event till current event	Firms still with Andersen
2/2/2002 †	Powers Report is released	0 days	n/a	937
3/14/2002	Federal Govt. indicts Andersen	37 days	15	922
5/6/2002	Andersen's criminal trial begins	90 days	261	661
6/15/2002	Andersen found guilty	130 days	359	302
8/31/2002	Andersen ceases practicing	207 days	302	0

† Since the Powers report was released on 2/2/2002 (Saturday), the event date for our abnormal return analysis is 2/4/2002 and our (-1, 1) event window ends on 2/5/2002. Consequently we begin our analysis of switches on 2/6/2002. Note that the first switch we record is on 2/12/2002.



**TABLE 1 (continued)**

*Panel C: Distribution of Switching Firms across Industries*

Industry	Clients
1. Agriculture, Forestry, and Fishing	5
2. Mining	48
3. Construction	10
4. Manufacturing	326
5. Transportation and Utilities	93
6. Wholesale	30
7. Retail	50
8. Financial Services	133
9. Services	172
10. Others	70
Total	937

The industry classification is based on Dopuch et al. (1987), and includes the following SIC codes:

Agriculture, Forestry, and Fishing	100-999
Mining	1000-1499
Construction	1500-1999
Manufacturing	2000-3999
Transportation and Utilities	4000-4999
Wholesale	5000-5199
Retail	5200-5999
Financial Services	6000-6999
Services	7000-8999
Others	< 100 and > 8999

**TABLE 2**  
**Variable Definitions**

Variables	Definition
ACDIR	Number of Directors on the Audit Committee
ACMEET	Number of Audit Committee meetings
ADACCR	Absolute value of discretionary accruals deflated by total assets during fiscal year 2001, calculated using the cross-sectional version of the Jones [1991] model as in DeFond and Jiambalvo [1994] and we use the difference between net income and cash from operations as our measure of total accruals (Hribar and Collins 2002).
BDIR	Number of Directors on the Board
BMEET	Number of Board meetings
CAR	Cumulative four-factor-adjusted Carhart returns of clients for the window (-1, 1) around the respective event date.
DELAY	Number of days after February 6, 2002 the client switched from Andersen.
DFYR	Dummy variable with the value of 1 if fiscal year end is December, and 0 otherwise.
DISTRESS	Dummy variable that has a value of 1 if Altman's Z score (for fiscal year 2001) is less than 1.81, and 0 otherwise.
DNEWB4	Dummy variable with the value of 1 if the new auditor is one of the Big 4, and 0 otherwise.
DTENURE	Dichotomous variable with value of 1 if total years with Andersen as auditor are five or more, and 0 otherwise
EXPERT	Number of Audit Committee members that are financial experts.
INDSPL	Measure of industry specialization of the auditor; measured as the auditor's market share (based on the square root of clients' total assets) during fiscal year 2001 in the 2-digit SIC code
LMV	Natural logarithm of market value of equity (in millions) at the end of fiscal year 2001.
NONAUDIT	Proportion of nonaudit fees (includes tax, system, and other services) to total fees paid to the auditor.
SEPARATECHAIR	Dummy variable with the value of 1 if positions of CEO and chairman of the board are separated, and 0 otherwise.
PERIOD2	Dichotomous variable with value of 0 if client switches from Andersen between 2/5/2002 and 6/15/2002; 1 if it switches after 6/15/2002.
PERIOD3	Trichotomous variable with value of 1 if client switches from Andersen between 2/5/2002 and 5/6/2002; value of 2 if it switches between 5/6/2002 and 6/15/2002; and value of 3 if it switches after 6/15/2002.
PREVCAR1 & PREVCAR2	Cumulative four-factor-adjusted Carhart returns in (-1, 1) windows around two previous events: Andersen's admission of shredding of documents on 1/10/2002 and release of Powers Report on 2/2/2002.
ROA	Return on assets during fiscal year 2001.

**TABLE 3**  
**Cumulative Abnormal Returns**

Date	Event	Andersen Clients	CAR
1/10/2002 ‡	Andersen admits to shredding thousands of Enron related documents. The Department of Justice announces a criminal investigation of Andersen.	937	Mean =***-0.0046 Median = **-0.0021 Minimum = -0.0063 Maximum = 0.5127 Percentage Negative = ***55.24
2/2/2002 †‡	Powers Report, suggesting Andersen's headquarter office in Chicago was aware of problems with Houston office and Enron audit, is released	937	Mean =***-0.0067 Median = *-0.0038 Minimum = -0.5582 Maximum = 0.2733 Percentage Negative = ***56.28
3/14/2002 ‡	Federal Govt. indicts Andersen	922	Mean =*-0.0021 Median = *-0.0022 Minimum = -0.7422 Maximum = 0.3073 Percentage Negative = **53.18
5/6/2002 ‡	Andersen's criminal trial begins	661	Mean = ***-0.0054 Median = *-0.0043 Minimum =-0.6992 Maximum = 0.5756 Percentage Negative = ***55.93
6/15/2002 ‡	Andersen found guilty	302	Mean = *-0.0023 Median = -0.0017 Minimum = -0.7065 Maximum = 0.5381 Percentage Negative = 52.33
Oct 2001 to Oct 2002	Thirteen Month Window	937	Mean = *-0.0519 Median = *-0.0513 Minimum = -0.9061 Maximum = 0.9372 Percentage Negative = ***54.87

See Table 2 for variable definitions. † Since the Powers Report was released on 2/2/2002 (Saturday), the event date is 2/4/2002; ‡ return for (-1, 1) window; \* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level.

**TABLE 4**  
**Firm Characteristics by Timing of Switch**

Variables	Mean Value		Expected Sign	t-Statistics H <sub>0</sub> : (Early=Late)
	Early Switchers (PERIOD2 = 0)	Late Switchers (PERIOD2 = 1)		
DELAY	86.0920	150.8700	-	***-32.94
LMV	5.5246	4.2257	?	***7.36
INDSPL	0.1174	0.1401	-	***-2.74
NONAUDIT	0.3687	0.4492	-	***-4.16
DTENURE	0.6102	0.6568	-	*-1.30
ADACCR	0.0956	0.1074	-	-0.78
DISTRESS	0.2698	0.2797	-	-0.30
PREVCAR1	-0.0054	-0.0030	-	-1.09
PREVCAR2	-0.0084	-0.0032	-	*-1.46
SEPARATECHAIR	0.6412	0.5805	+	**1.67
BDIR	8.1949	6.7458	+	***6.91
ACDIR	3.4873	3.1059	+	***4.67
BMEET	6.9040	5.8771	+	***3.65
ACMEET	4.2175	3.5636	+	***4.20
EXPERT	1.2885	1.2034	+	1.05
DFYR	0.6610	0.6992	-	*-1.28
ROA	-0.0650	-0.1130	?	*1.70
DNEWB4	0.7331	0.7853	?	*-1.66

See Table 2 for variable definitions. \* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. (one-tailed significance levels where signs are predicted, two-tailed otherwise).

**TABLE 5**  
**Pearson Correlation Matrix**

Variables	LMV	INDSPL	NONAUDIT	DTENURE	ADACCR	DISTRESS	PREVCAR1	PREVCAR2	SEPARATECHR	BDIR	ACDIR	BMEET	ACMEET	EXPERT	DFYR	ROA
INDSPL	0.1119															
NONAUDIT	0.3955	0.1056														
DTENURE	0.3189	0.1713	0.1684													
ADACCR	-0.0463	0.1541	-0.0005	-0.0043												
DISTRESS	-0.0230	0.4519	0.0437	0.0589	0.0458											
PREVCAR1	-0.0325	-0.0318	-0.0483	-0.0247	-0.0413	-0.0508										
PREVCAR2	0.0885	-0.0482	0.0570	0.1013	-0.0159	-0.0825	-0.0092									
SEPARATECHAIR	0.1091	0.0620	0.0589	0.0551	0.0077	-0.0044	0.0056	0.0425								
BDIR	0.3539	0.0633	0.2439	0.1676	-0.0782	0.0458	-0.0355	0.0379	0.1057							
ACDIR	0.2772	0.0667	0.2220	0.1753	-0.0673	0.0309	0.0002	0.0306	0.1543	0.2454						
BMEET	0.0343	0.0244	0.1886	-0.0290	-0.0062	0.0787	-0.0188	-0.0642	0.0043	0.2287	0.2549					
ACMEET	0.1962	0.0342	0.1814	0.0225	-0.0130	0.0001	0.0139	-0.0144	-0.0073	0.2784	0.2568	0.2610				
EXPERT	-0.0056	-0.0225	0.0536	-0.1344	0.0624	-0.0059	-0.0081	0.0409	0.0158	0.1267	0.1437	0.0135	0.1182			
DFYR	0.3306	0.0297	0.1515	0.0801	0.0368	0.0490	-0.0229	0.0215	0.0033	0.1246	0.1107	0.0402	0.0170	0.0111		
ROA	0.1128	0.0283	0.0532	0.1658	-0.3720	-0.0187	0.0154	-0.0378	0.0418	0.0967	0.0431	-0.0941	-0.0185	-0.0818	-0.0831	
DNEWB4	0.1977	0.1649	0.2439	0.2626	-0.0217	0.0314	-0.0431	0.0475	0.0188	-0.0106	-0.0017	-0.0977	0.0757	0.0108	0.1944	0.0761

See Table 2 for variable definitions.

**TABLE 6**  
**Timing of Auditor Change by Andersen Clients**

Variables	Exp. Sign	Type of Procedure				
		OLS	ORDINAL LOGIT	ORDINAL LOGIT	MULTINOMIAL LOGIT †	
		Dependant Variable				
		DELAY	PERIOD2	PERIOD3	PERIOD3	
				Log(p <sub>1</sub> /p <sub>3</sub> )	Log(p <sub>2</sub> /p <sub>3</sub> )	
Intercept2				***1.3179		
Intercept1		***146.524	***2.0123	***3.931	***-2.5217	***-1.4957
LMV	+/-	***-5.9285	***-0.3660	***-0.3568	***0.4086	***0.1903
INDSPL	+	**16.5312	**2.2453	*1.1209	*1.7577	**1.9035
NONAUDIT	+	**6.5654	0.1502	0.1440	-0.1605	0.2285
DTENURE	+	***6.3257	*0.0757	***0.3952	-0.2842	0.1855
ADACCR	+	**11.1533	**1.3353	*0.6108	0.3113	0.6943
DISTRESS	+	**5.0029	***0.5588	**0.3063	-0.2607	-0.3021
PREVCAR1	+	13.0165	1.7499	0.6984	0.4029	1.1322
PREVCAR2	+	***33.4788	***3.4866	***2.7258	-1.8637	-1.7401
SEPARATECHAIR	-	*-2.2507	*-0.2725	*-0.2011	0.1178	0.07
BDIR	-	***-2.3483	***-0.1787	***-0.142	***0.1761	**0.1135
ACDIR	-	-0.9932	-0.0728	*-0.1263	-0.0419	-0.1086
BMEET	-	*-0.4160	**0.0656	*-0.0277	0.0497	**0.0695
ACMEET	-	***-2.1980	**0.0997	***-0.1298	*0.0896	0.0054
EXPERT	-	*-1.0785	*-0.1644	-0.0767	0.0193	0.0932
DFYR	+	***12.1664	***0.9252	***0.8654	***0.9521	***0.5555
ROA	+/-	**4.7629	*-0.4252	-0.2134	-0.0216	0.3624
DNEWB4	+/-	***13.9315	***0.9772	***0.8643	-0.6926	-0.0656
Observations		937	937	937	937	
Adj R Square		0.3338				
F Value		<0.0001				
Probability > F						
$\chi^2$ Value			116.3900	199.3358	1837.65	
Prob > $\chi^2$			<0.0001	<0.0001	0.1429	

See Table 2 for variable definitions.

\* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. (one-tailed significance levels where signs are predicted, two-tailed otherwise)

† We do not have any predictions for signs in this analysis.

**TABLE 7**  
**Market Reaction around Disclosure of Auditor Change**

*Panel A: Univariate Analysis*

N	CAR
937	Mean =*0.0051 Median =*0.0024 Percentage Positive=*52.12

*Panel B: Regression Analysis [Dependent Variable = CAR]*

Variables	Exp. Sign	Estimate	t Stat
Intercept		-0.0020	-0.31
LMV	+/-	-0.0001	-0.11
INDSPL	+	0.0089	0.60
NONAUDIT	+	-0.0035	-0.56
DTENURE	+	*0.0047	1.44
ADACCR	+	*0.0042	1.49
DISTRESS	+	-0.0019	-0.53
PREVCAR1	-	0.0064	0.29
PREVCAR2	-	***-0.0559	-2.62
SEPARATECHAIR	-	0.0027	0.91
BDIR	-	0.0002	0.23
ACDIR	-	0.0010	0.55
BMEET	-	*-0.0006	-1.33
ACMEET	-	0.0008	1.14
EXPERT	-	**-0.0029	-1.96
DFYR	+/-	*0.0055	1.70
ROA	+/-	***-0.0152	-2.88
DNEWB4	+/-	-0.0041	-0.95
Observations		937	
Adj-R Sqr		0.0164	
F Value		1.8300	
Prob > F		0.0214	

See Table 2 for variable definitions

\* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level (one-tailed significance levels where signs are predicted, two-tailed otherwise)