DID EARNINGS CONSERVATISM INCREASE FOR FORMER ANDERSEN CLIENTS?

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Abstract

The unexpected fall of Arthur Andersen is an extraordinary event. Though Arthur Andersen was initially convicted in 2002, subsequently, the Supreme Court unanimously threw out the conviction. Was the Department of Justice hasty in shutting down Arthur Andersen? Could the managers and the new auditors of former Andersen clients have restored financial reporting credibility? This study examines whether earnings conservatism has increased for a sample of former Arthur Andersen clients that were forced to switch auditors in year 2002. Relative to control samples consisting of audit clients of remaining brand name auditors that did not switch auditors and those that switched within Big 4 auditors, this study finds that earnings conservatism has increased for former Andersen clients that switched to a Big 4 auditor. Further, the level of conservatism for 2002 for former Andersen clients is even higher than the ones observed for a matched sample of non-Andersen clients that did not switch auditors. These findings suggest that in the post-Andersen world, Big 4 auditors and managers use earnings conservatism as a risk management strategy.

*Key Words***:** Asymmetric timeliness; Big 4; Arthur Andersen; Conservatism; Earnings-return relation; Capital markets.

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1. Introduction

The unexpected fall of Arthur Andersen, a Big 5 accounting firm is an extraordinary event. Though Arthur Andersen was initially convicted in June 2002 of obstructing justice, in May 2005, the Supreme Court unanimously threw out the conviction.[1] The overturned conviction comes too late to save former Andersen partners and employees and raises the question: Was the Department of Justice (DOJ) hasty in shutting down Arthur Andersen? Some have argued that the DOJ should have prosecuted certain individuals rather than the entire firm. Alternatively, could brand-name auditors and managers have restored financial reporting credibility following a high-profile accounting scandal such as Enron? Prior research (Basu 1997, 2000 and Holthausen and Watts 2001) supports the notion that earnings conservatism, a measure of financial reporting transparency is driven by the risk of litigation against auditors. Similarly, managers care about their own reputation and use auditor change to signal their credibility (Barton 2005). Thus, managers and auditors, particularly brand-name auditors, have market-based incentives to enhance earnings conservatism.

The objective of this research is to provide empirical evidence on whether earnings conservatism has increased for a sample of former Arthur Andersen clients that were forced to switch auditors in year 2002. I focus on earnings conservatism, also known as the property of asymmetric timeliness of earnings, i.e., the quicker recognition of bad news in earnings than good news (Basu 1997) because Ball et al. (2000) and Ball (2001) argue that timely

[1] The justices concluded that instructions to the jury failed to convey the requisite consciousness of wrongdoing.

incorporation of economic losses is a fundamental feature of financial reporting.[2] Prior research emphasize that this feature of earnings facilitates effective monitoring of managers and contracts (Watts 2003, Ball and Shivakumar 2005, and Basu 2005).

I use four measures to capture conservatism: earnings skewness (Basu 1995 and Ball et al. 2000), Basu's (1997) asymmetric timeliness of earnings, earnings persistence (Basu 1997), and asymmetric operating accrual-cash flow test (Ball and Shivakumar 2005). My sample consists of 856 former clients of Arthur Andersen that switched auditors in 2002. This includes 91 clients that switched to a non-Big 4 auditor and 44 Houston-based clients. I use two control samples consisting of non-Andersen clients: an industry- and size-matched sample of 841 clients of Big 4 auditors that did not switch auditors and 75 clients that switched within Big 4 auditors during 2002.

There are several key findings. Earnings are more negatively skewed in 2002 relative to 2001 for former clients of Andersen. Following the auditor switch, earnings of former Andersen clients are more than 190% more sensitive to bad news in 2002 than earnings in 2001. Further, the level of conservatism for 2002 for former Andersen clients is even higher than the ones observed for a matched control sample of non-Andersen clients that did not switch auditors.

Prior to the auditor switch, earnings of Houston-based former clients of Andersen were sensitive to good news but not bad news. Following the switch in 2002, the incremental bad news coefficient has increased from 0.006 to 0.920 and the increase is significant at the 0.10 level. These clients are perceived to be more risky than other clients of Andersen because of the

[2] The asymmetric timeliness of earnings has been empirically documented internationally (Pope and Walker 1999, Ball et al. 2000, Giner and Rees 2001, and Ball et al. 2003) and over time in the U.S. (Basu 1997, Pope and Walker 1999, Givoly and Hayn 2000, Holthausen and Watts 2001, and Ryan and Zarowin 2003).

Enron-Andersen affair, and therefore, would have been subject to an intense scrutiny by their new auditors and regulators.

Test for Basu's (1997) persistence of earnings for bad news and the asymmetric operating accrual-cash flow test (Ball and Shivakumar 2005) also suggest that the earnings of former clients of Arthur Andersen have become more conservative in year 2002. In contrast, results of the asymmetric operating accrual-cash flow test are not significant for the control groups consisting of non-Andersen clients that switched within Big 4 auditors and the matched sample of non-Andersen clients that did not switch auditors in 2002. Results for former Andersen clients that switched to a non-Big 4 auditor indicate an increase in conservatism for two measures: earnings skewness and earnings persistence.

While several studies have examined the investor reaction to the Enron-Andersen affair (Chaney and Philipich 2002; Asthana et al. 2003; Doogar et al. 2003), there is limited evidence on the properties of accounting information of former Andersen clients following the auditor change. Cahan and Zhang (2006) find that successor auditors of former Andersen clients require more income reducing accounting choices. I contribute to the growing literature on Enron-Andersen affair (see Benston and Hartgraves 2002, Colaco and Ghosh 2003, Rauterkrus and Song 2003, Willekens and Bauwhede 2003, Eisenberg and Macey 2004, Lazer et al. 2004, Barton 2005, and Krishnan 2005) by providing empirical evidence that earnings conservatism has increased across all measures only for former Andersen clients. These findings suggest that in the post-Andersen world, Big 4 auditors and managers use earnings conservatism as a risk management strategy. The findings are consistent with the notion that market-based incentives faced by auditors and managers, i.e., protecting reputation capital and mitigating the risk of

litigation appears to be effective in restoring earnings conservatism of former Andersen clients to a level that even exceeds the level of conservatism of non-Andersen clients.

The rest of the paper is organized as follows. The next section describes the hypothesis and the empirical models. Section three describes the sample selection process. Results are in section four followed by conclusions.

2. Hypothesis and Empirical Models

The demise of Arthur Andersen has renewed auditors' concern for litigation risk and the importance of preserving reputation capital, particularly for the Big 4 auditors. An audit firm's reputation capital represents its expertise and commitment to a high level of audit quality. A high level of reputation is a competitive advantage – the auditor can attract talented employees, recruit clients away from other auditors, and even charge a premium for services. Conversely, as Arthur Andersen has learned the hard way, impairments to reputation are often associated with litigation and can be very costly for the audit partners.

Investor concern over the quality of financial reporting and auditor credibility has increased another cost for auditors – cost of professional liability insurance. Bray (2002) reports that the premium for professional liability insurance has soared in the wake of the Enron-Andersen affair and large firms may face rate increases of more than 100%. Further, even auditors with a good loss record could see a 20% to 25% reduction in limits and a significant increase in premium. Thus, Big 4 auditors must struggle to get adequate coverage and are effectively self-insured (Aldred 2002).

Thus, the combination of greater scrutiny by regulators and investors and lower liability coverage underscores the need to manage litigation risk, particularly for the Big 4 auditors.[3] One strategy that is likely to mitigate the business risk is to prevail on clients to recognize bad news about future cash flows in a timely fashion, i.e., enhance earnings conservatism. This strategy could be viewed as the first line of defense to ward off potential litigation. Other strategies such as seeking an increase in audit fees to compensate for the growing risk of litigation or issuing modified opinions or even resigning from risky engagements may be more costly, not viable, or simply less effective.

In wake of the Enron-Andersen affair, the risk of potential litigation is likely to be high for former clients of Arthur Andersen. These clients are perceived to be more risky relative to clients of other auditors. Further, the findings in Krishnan (2005) suggest that for the period 1996 through 2000, earnings conservatism is weaker for Andersen's Houston-based clients. Thus, the current auditors, particularly the Big 4, are expected to impose a higher level of earnings conservatism to mitigate potential litigation risk.

Similar to Big 4 auditors, managers of firms formerly served by Arthur Andersen also have incentives to protect their reputation and mitigate the risk of litigation. This is particularly true for managers of firms served by Andersen's Houston office. For example, Barton (2005) examines how managers react if the reputation of their auditor becomes tarnished and finds that clients with more visibility in the capital markets (more analyst and press coverage and institutional ownership) defected from Arthur Andersen for another Big 4 auditor. This finding is consistent with the notion that managers care about their own and/or the firm's reputation and

[3] Khurana and Raman (2004) provide evidence that it is litigation risk rather than reputation protection that drives perceived audit quality in the U.S.

use auditor change to signal their credibility. In summary, both managers and auditors of firms formerly served by Andersen have incentives to increase these firms' earnings conservatism to protect their reputation and mitigate the risk of litigation. This line of reasoning leads to the following hypothesis (in alternate form):

Hypothesis: Earnings conservatism is higher for former clients of Arthur Andersen following the switch to a Big 4 auditor.

I use four measures to capture earnings conservatism. Use of multiple measures would increase confidence in the inferences concerning whether conservatism has increased following the auditor change (Givoly et al. 2004). A number of studies have used earnings skewness to examine earnings conservatism and it is well-known that conservative accounting leads to negatively skewed earnings which contrasts with the positive skew of stock returns (Basu 1995, Ball et al. 2000, Givoly and Hayn 2000, Basu et al. 2001, Lang et al. 2003, and Krishnan 2005). I use earnings skewness as my first measure of conservatism. Following prior research, I compare the differences between mean and median earnings in 2001 and 2002 to see whether earnings of clients of Arthur Andersen are more negatively skewed (i.e., more conservative) following the auditor change in 2002.

Basu's (1997) asymmetric timeliness of earnings is my second measure of conservatism. Following Basu (1997), I estimate model (1) for year 2001 (the last fiscal year as a client of Arthur Andersen) and year 2002 (the first fiscal year under a new auditor) and compare the coefficients for the interaction variable, $R \times DR$, between the two years:

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it} \times DR_{it} \quad (1)$$

where X_{it} is net income per share for firm i in fiscal year t, P_{it-1} is price per share at the beginning of the fiscal year. R_{it} is the fiscal year buy-and-hold return. DR_{it} is a dummy variable that equals 1 if $R_{it} < 0$ and 0 otherwise. I use fiscal year returns because auditors will have access to stock return information at the time of the audit. I also use other measures of returns, including market-adjusted returns and those results are discussed in a later section. In model (1), β_1 (the incremental bad news coefficient) is expected to be greater than β_0 (the good news coefficient), i.e., earnings is more sensitive to bad news than good news. Thus, an increase in β_1 following the auditor switch would be consistent with an increase in earnings conservatism.

A second model pools client-observations from both years, and adds an additional dummy variable *SWITCH* that equals 1 for year 2002 and 0 for year 2001. I interact *SWITCH* with R_{it}, DR_{it}, and $R_{it} \times DR_{it}$. This directly examines whether the contemporaneous association between earnings and negative returns is statistically different in year 2002 compared to year 2001:

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 SWITCH_{it} + \alpha_3 DR_{it} \times SWITCH_{it} + \beta_0 R_{it} + \beta_1 R_{it} \times DR_{it} + \beta_2 R_{it} \times SWITCH_{it} + \beta_3 R_{it} \times DR_{it} \times SWITCH_{it} \quad (2)$$

The variable of interest in model (2) is $R \times DR \times SWITCH$. Thus, observing $\beta_3 > 0$ is consistent with greater asymmetric timeliness of earnings associated with former clients of Arthur Andersen following the switch to a Big 4 auditor. I estimate models (1) and (2) for a constant sample of former Andersen clients or control samples consisting of non-Andersen clients, i.e., the number of client observations is the same for 2001 and 2002.

Two recent studies, Givoly et al. (2004) and Roychowdhury and Watts (2004) evaluate the ability of Basu's (1997) asymmetric timeliness measure to capture conservatism. Givoly et al. (2004) state that Basu's measure is appropriate for certain research designs and problematic in

other settings. For example, they state "studies that compare the degree of conservatism between countries are more susceptible to the concerns raised here (p. 27)." In other words, in single country studies such as this one, issues raised in Givoly et al. (2004) are less of a concern. Further, Givoly et al. (2004) imply that when comparisons are made of the same firm, use of the Basu measure is less problematic. Two features of my research design appear to mitigate concerns raised by Givoly et al. (2004). First, I hold the audit clients constant between 2001 and 2002 for all auditors. Second, when comparisons are made between former Andersen clients and the matched control sample of non-Andersen clients, the portfolio of industries is held constant, i.e., clients are matched by two-digit SIC codes. Finally, following Gigler and Hemmer (2001) and Givoly et al.'s suggestion, I use persistence of earnings and the new asymmetric operating accrual-cash flow test introduced by Ball and Shivakumar (2005) as alternate measures of conservatism.

Roychowdhury and Watts (2004) reach two conclusions on the use of Basu's asymmetric timeliness measure of conservatism. First, Basu's measure *is* better at capturing total conservatism and the Basu measure is a better measure of conservatism than the market-to-book ratio. They recommend that to minimize measurement error, researchers should estimate Basu's asymmetric timeliness measure cumulatively over multiple years, going backward in time. I re-estimate model (2) for former Andersen clients and the two control samples of non-Andersen clients by regressing cumulative earnings and cumulative returns (see Basu 1997, Table 5) and those results are discussed in a later section.

Next, I use the persistence of negative and positive earnings changes as an alternate way to examine earnings conservatism.[4] In a regression of earnings changes on prior-period earnings changes, Basu (1997) finds that positive earnings changes tend to persist, while negative earnings changes tend to reverse. Further, Basu et al. (2000) find that the rate of reversal for negative earnings changes is greater for clients of Big 8 auditors than clients of non-Big 8 auditors, indicating that earnings conservatism is greater for clients audited by Big 8 auditors. I examine whether the rate of reversal for negative earnings is greater for former Andersen clients after the switch to a Big 4 auditor. I estimate the following model:

$$\Delta X_{it} / P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 \Delta X_{it-1} / P_{it-2} + \beta_1 D_{it} \times \Delta X_{it-1} / P_{it-2} \quad (3)$$

where X_{it} is net income per share for firm i in fiscal year t, ΔX_{it} is the change in earnings for firm i for fiscal year t over fiscal year $t-1$. P_{it-1} is price per share at the close of the fiscal year $t-1$. D is a dummy variable that equals 1 if $\Delta X_{it-1}/P_{it-2} < 0$ and 0 otherwise. While both β_0 and β_1 are expected to be negative, Basu (1997, Table 3) finds that β_0 is not significant (because good news in earnings tend to be permanent) while β_1 is greater in magnitude and significant. This is consistent with the tendency of bad news earnings changes to reverse compared to good news earnings changes. Similar to model (2), I estimate a model where I pool client-observations from 2001 and 2002 and examine whether the coefficient on $D_{it} \times SWITCH_{it} \times \Delta X_{it-1} / P_{it-2}$ is negative. This directly examines whether the rate of reversal for negative earnings changes is greater following the auditor switch in 2002.

My final measure of conservatism is the new asymmetric operating accrual-cash flow test introduced by Ball and Shivakumar (2005). Ball and Shivakumar (2005) regress accruals on

[4] Gigler and Hemmer (2001) and Dietrich et al. (2002) recommend this approach to future studies that investigate conservatism of accounting earnings.

positive and negative operating cash flow and argue that the relation between accruals and positive cash flows is negative (Dechow 1994) while the relation between accruals and negative cash flows is positive. This is because of the asymmetry in timely recognition of losses and gains. They emphasize Basu (1997)'s point (see section 3.2 in Basu 1997) that economic losses are more likely to be recognized as unrealized accrued charges while economic gains are more likely to be recognized when realized (cash basis). In other words, accrued losses are more likely to be recorded in periods of negative cash flows. Following Ball and Shivakumar (2005), I estimate the following model to test whether the asymmetric recognition of unrealized gains and losses has increased following the auditor change.

$$ACC_{it} = \beta_0 + \beta_1 DCFO_{it} + \beta_2 SWITCH_{it} + \beta_3 DCFO_{it} \times SWITCH_{it} + \beta_4 CFO_{it} + \beta_5 DCFO_{it} \times CFO_{it} + \beta_6 SWITCH_{it} \times CFO_{it} + \beta_7 SWITCH_{it} \times DCFO_{it} \times CFO_{it} \quad (4)$$

where *CFO* is operating cash flows over total assets at the beginning of the year. $DCFO_{it}$ is a dummy variable that equals 1 if $CFO < 0$ and 0 otherwise. Other variables are the same as defined before. β_4 is expected to be negative and β_5 is expected to be positive. The coefficient of interest here is β_7. A positive β_7 is consistent with an increase in conservatism following the auditor change.

I estimate the four measures of conservatism for the following groups of clients: (a) all former clients of Arthur Andersen, (b) non-Andersen clients that switched *within* Big 4 auditors in year 2002, (c) an industry- and size-matched sample of non-Andersen clients *not* switching auditors during 2002, (d) Houston-based former clients of Arthur Andersen, and (e) former clients of Arthur Andersen that switched to a non-Big 4 auditor.

Examining earnings conservatism of non-Andersen clients that switched within Big 4 auditors, for example a client of KPMG switching to Ernst & Young or vice versa is motivated by the following reason. A comparison of earnings conservatism of two groups of clients concurrently switching auditors – former Andersen clients that were *forced* to switch to other Big 4 auditors and *non*-Andersen clients voluntarily switching *within* Big 4 – can shed light on whether the Big 4 auditors treat the two groups of clients differently or whether managers face different incentives in the post-Andersen world. While examining clients that switched auditors in 2002 is interesting, those clients are the exception rather than the rule. Therefore, I examine a larger, matched sample of non-Andersen clients that did not switch auditors in 2002.

Houston-based former clients of Andersen are of special interest because of the Enron-Andersen affair (Krishnan 2005). These clients are perceived to be riskier than other clients of Andersen and therefore, will be subject to an intense scrutiny by their new auditors, regulators, and investors. Thus, earnings conservatism of these clients is expected to increase the most in year 2002.

Finally, I examine whether earnings conservatism has increased for those former Andersen clients that switched to a non-Big 4 auditor. Prior research finds that Big 6 auditors constrain accruals-based earnings management more than non-Big 6 auditors (Becker et al. 1998 and Francis et al. 1999). Similarly, Basu et al. (2000) find that the asymmetric timeliness of earnings is greater for clients of Big 8 auditors than for clients of non-Big 8 auditors. These findings are consistent with the notion that brand name auditors have more incentives and the expertise than non-brand name auditors in protecting their reputation capital and therefore, prevail on their clients to recognize bad news in a timely fashion or alternatively, face greater liability exposure,

ceteris paribus. Thus, it will be interesting to examine whether earnings conservatism has increased for clients of non-Big 4 auditors as well.

3. Data

I searched the 2003 version of *COMPUSTAT PC PLUS* to identify clients of Arthur Andersen that switched to Big 4 auditors during 2002. Earnings (both net income and income before extraordinary items and discontinued operations) are measured on a per share basis and deflated by beginning stock price (Christie 1987). Annual returns are buy-and-hold stock returns for the fiscal year obtained from *Compustat*. Following Basu (1997), for each calendar year, I exclude observations falling in the top or bottom 1% of price-deflated earnings or stock returns to minimize the effects of extreme observations on regression results. The final sample consists of 856 former clients of Arthur Andersen (for models 1 and 2). This includes 91 clients that switched to a non-Big 4 auditor in 2002 and 44 Houston-based clients. Control samples consisting of non-Andersen clients include 75 clients that switched within Big 4 auditors during 2002 and a matched sample (based on two-digit SIC code and total assets) of 841 non-Andersen clients of Big 4 auditors (for models 1 and 2) that did not switch auditors during 2002. A suitable match could not be found for 15 Andersen clients.[5]

[Insert Table 1 About Here]

Descriptive statistics and test of differences in mean and median values for years 2001 and 2002 for former Andersen clients are presented in panel A of Table 1. Mean and median earnings are higher for former Andersen clients for year 2001 relative to 2002. The differences between mean and median are, -0.090 and -0.148, respectively, for years 2001 and 2002. In

[5] The number of former audit clients of Arthur Andersen with available data to estimate model (3) is 794. The corresponding number for non-Andersen clients who switched (did not switch) auditors during 2002 is 63 (798).

other words, after the switch, earnings are more negatively skewed for former clients of Andersen. For non-Andersen clients switching within Big 4 auditors, the difference between mean and median has declined from -0.153 to -0.119 (not tabulated). For a matched sample of non-Andersen clients not switching during 2002, mean less median is -0.126 and -0.142, respectively, for 2001 and 2002. Earnings are more negatively skewed in 2002 for both former Andersen clients switching to non-Big 4 auditors and the Houston-based former clients of Andersen.[6] Overall, these findings are consistent with the hypothesis that the asymmetric timeliness of earnings, i.e., quicker recognition of bad news in earnings than good news, has increased for former Andersen clients following the switch to a Big 4 auditor.

4. Results

[Insert Table 2 About Here]

4.1 Former Andersen Clients: Year 2001 *vs.* 2002

Panels A and B of Table 2 present the results of model (1) for years 2001 and 2002 respectively (White (1980) *t*-statistics are reported within parentheses). All tests are one-tailed. Panel C presents the results of model (2) that pools client observations from both years. In model (2) *SWITCH* equals 1 for year 2002 and 0 for year 2001. In year 2002, the good news coefficient has become negative and the bad news coefficient has increased significantly. Earnings of former Andersen clients are almost twice as sensitive to bad news in 2002 than earnings in 2001 [(0.689 − 0.062) / (0.261 + 0.067) = 1.91]. Results in panel C show that the increase in the asymmetric timeliness of earnings, captured by β_3 is positive and statistically significant at the 0.01 level. This indicates that following the auditor switch, earnings of former Andersen clients

[6] Mean less median values for clients who switched to non-Big 4 are, -0.109 and -0.284 respectively, for 2001 and 2002. For Houston clients, the corresponding values are, 0.006 and -0.126.

have become more sensitive to bad news about future cash flows, i.e., earnings have become more conservative.[7]

[Insert Table 3 About Here]

4.2 Control Samples of non-Andersen Clients: Years 2001 vs. 2002

Results of model (2) for the control samples consisting of non-Andersen clients that switched from a Big 4 auditor to another Big 4 auditor and a matched sample of non-switching clients are reported, respectively, in panels A and B of Table 3. Consistent with prior research, β_0, the good news coefficient is negative.[8] Notice that β_1, the incremental bad news coefficients for 2001 in panels A and B are considerably higher than the 0.261 for Andersen clients (see panel A of Table 2). This suggests that in year 2001, earnings of Andersen's clients were less sensitive to bad news compared to earnings of non-Andersen clients. However, in contrast to results in panel C of Table 2 (former Andersen clients), β_3, the coefficient of interest is negative and insignificant for both groups of non-Andersen clients. Further, β_2, the incremental good news coefficient for 2002 is positive and significant at the 0.05 level for both control samples. In short, while earnings conservatism has increased for former Andersen clients during 2002, earnings conservatism has decreased for non-Andersen clients, though the decline is not statistically significant.

4.3 Andersen *vs.* Control Samples: Year 2002

I also estimate model (1) for year 2002 separately for former Andersen clients and non-Andersen clients to test whether, following the auditor change, the level of conservatism differs

[7] I also estimate models (1) and (2) using only those clients who switched to a Big 4 auditor and β_3 is significant at the 0.01 level.

[8] Basu (1997) reports that the coefficient for good news is close to zero and insignificant for the period 1983-1990. A similar conclusion is reached by Holthausen and Watts (2001) for the period 1983-1993. Ball et al. (2000) find a negative coefficient for 1990-1995 in some specifications. Ryan and Zarowin (2003) report that for the period 1996-2000 the coefficient has become negative and insignificant. For the same time period, Krishnan (2005) also reports a negative but significant coefficient.

between Andersen and non-Andersen clients. Recall that the incremental bad news coefficient for former Andersen clients in 2002 is 0.689. For non-Andersen clients that switched auditors, the incremental bad news coefficient is 0.662 (1.022 – 0.360). Similarly, β_1 is 0.481 (0.633 – 0.152) for the matched sample of non-Andersen clients that did not switch auditors. I estimate a variation of model (2) where I replace *SWITCH* with *ANDER,* which equals 1 for former Andersen clients and 0 for non-Andersen clients. I interact *ANDER* with $R \times DR$ to test whether the level of conservatism in 2002 is higher for former Andersen clients relative to the matched control sample. This specification is estimated using 1,682 client observations and the variable of interest $R \times DR \times ANDER$ is 0.208 and is significant at the 0.10 level for a one-tailed test. Taken together, the above results along with results from Tables 2 and 3 suggest that earnings conservatism of former Andersen clients has been increased in 2002 to a level that is even higher than that observed for non-switching clients served by other Big 4 auditors.

4.4 Former Andersen Clients that Switched to non-Big 4 Auditors: Years 2001 vs. 2002

Results of model (2) for those former Andersen clients that switched to a non-Big 4 auditor are in panel C of Table 3. Note that prior to the switch, the level of earnings conservatism was high for these clients (0.669 and significant at the 0.01 level). This is higher than the 2001 incremental bad news coefficients for all former Andersen clients (0.261) and matched sample of non-Andersen clients (0.633). This is not surprising because evidence in Barton (2005) indicates that Andersen clients that switched to non-Big 4 auditors were smaller and smaller firms display greater conservatism (Basu et al. 2001 and Giner and Rees 2001). β_3, the coefficient of interest is negative and insignificant. This suggests that there is no significant change in the earnings conservatism from 2001 to 2002 for those former Andersen clients that switched to a non-Big 4 auditor.

[Insert Table 4 About Here]

4.5 Houston-Based Clients: Years 2001 vs. 2002

Of all former clients of Andersen, Houston-based clients are of particular interest because of the Enron scandal. Both Enron and Waste Management were clients of the Houston office. It appears that the Houston disregarded or even misrepresented quality control standards set by the headquarters office (Schmidt 2002). Chaney and Philipich (2002) study the reaction of the stock market to Andersen's admission of shredding of documents and find that the reaction was more negative for those clients served by the Houston office relative to clients served by other offices. Krishnan (2005) documents that for the period 1996 through 2000, earnings of Andersen's Houston-based clients are less timely in reporting bad news about future cash flows relative to a number of control groups, including Houston-based clients audited by other Big 6 auditors. Findings from Chaney and Philipich (2002) and Krishnan (2005) lead to the expectation that Houston-based former clients of Arthur Andersen are likely to face intense scrutiny by their new auditors, regulators, and investors who could demand a high level of earnings conservatism.

Results of models (1) and (2) for the Houston-based clients are in Table 4. There are several key findings here. First, in year 2001 (panel A), the good news coefficient is positive and significant at the 0.05 level. Second, the incremental bad news coefficient is positive but insignificant for year 2001, indicating that earnings of Houston-based clients are not sensitive to bad news.

Third, following the switch to a Big 4 auditor in year 2002 (see panel B), earnings are not sensitive to good news and the bad news coefficient has increased dramatically from 0.006 to 0.920 and this increase is statistically significant (see panel C). An F-test of the sum of $\beta_0 + \beta_1$

in panel B indicates that the sum is significantly different from zero at the 0.05 level. In short, earnings conservatism has increased from year 2001. Finally, the adjusted R^2 has also increased considerably from 3.14% in 2001 to 14.98% in 2002. Overall, these findings suggest that earnings conservatism for Houston-based former clients of Arthur Andersen has increased following the switch to a Big 4 auditor.

[Insert Table 5 About Here]

4.6 Persistence of Earnings for Bad News

Results of model (3) for the five groups of firms are reported in panels A through E of Table 5. Recall that β_1 is expected to be incrementally negative consistent with the expectation that persistence of earnings is lower when there is bad news and β_3 is also expected to be incrementally negative consistent with the expectation that following the auditor change, the persistence of earnings for bad news is even lower. As expected, β_1 is negative in all panels and significant at the 0.10 level or better in all panels except panel C. These findings are consistent with the reversal of negative earnings changes, i.e., bad news is less persistent. Note that the coefficient of interest, β_3 is negative in all panels except panel E but statistically significant in panels A (former Andersen clients), B (non-Andersen clients switching within Big 4 auditors), and D (former Andersen clients switching to non-Big 4 auditors). β_3 is not significant for the matched control sample of non-Andersen clients not switching during 2002. For Andersen's Houston-based clients, β_3 is positive and significant at the 0.01 level. This result is unexpected and could be due to the small sample size.[9] Overall, the findings in Table 5 are consistent with

[9] I use an alternate model of persistence of bad news and good news where I regresses current period earnings on prior period earnings and interacts prior period earnings with a dummy variable for negative stock returns (see Basu 1995 and Price 2005). I examine the persistence of earnings for bad news following the auditor change. Untabulated results for this alternate model indicate that earnings conservatism has increased (significant at the 0.05 level or better) for former Andersen clients as a whole, former Andersen clients who switched to a non-Big 4

the hypothesis that earnings of former clients of Arthur Andersen have become more conservative in year 2002 relative to 2001.

[Insert Table 6 About Here]

4.7 Accrual-Based Test of Loss Recognition

Results of Ball and Shivakumar's (2005) asymmetric operating accrual-cash flow model (model 4) are shown in Table 6. Recall that economic losses are more likely to be recognized as unrealized accrued charges while economic gains are more likely to be recognized when realized (cash basis). In other words, accrued losses are more likely to be recorded in periods of negative cash flows. Therefore, β_4 is expected to be negative and β_5 is expected to be positive. These predictions hold in all panels except panel E (Houston-based clients of Andersen). The coefficient of interest, β_7, is positive only for Andersen clients (see panels A, D, and E). However, the results are marginally significant at 0.10 level (one-tail test) in panel A and highly significant (0.001 level) in panel E. β_7 is not significant for those Andersen clients that switched to a non-Big 4 auditor (panel D). For both non-Andersen clients switching within Big 4 auditors and the matched sample of non-Andersen clients not switching auditors, β_7 is negative but significant only in panel C, indicating that conservatism has declined in 2002 for the matched control sample of non-Andersen clients. Overall, the results in Table 6 particularly, for the Houston-based Andersen clients supports the notion that the asymmetric timely recognition of losses via accruals has increased following the auditor change only for former Andersen clients.

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auditor, and the Houston-based former Andersen clients. There is no evidence of increase in conservatism for non-Andersen clients switching within Big 4 auditors or matched sample of non-Andersen clients not switching auditors.

In summary, earnings conservatism has increased for former Andersen clients following the auditor change across several different measures of asymmetric/news-related/conditional conservatism: Basu's (1997) asymmetric timeliness of earnings, earnings skewness, asymmetric persistence measure (Basu 1997), and the asymmetric accrual-cash flow measure (Ball and Shivakumar 2005). For Houston-based clients, conservatism has increased for all measures except the asymmetric persistence measure. For those Andersen clients that switched to a non-Big 4 auditor in 2002, conservatism has increased for two measures: earnings skewness and the asymmetric persistence measure. In contrast, results are much weaker for the control groups consisting of non-Andersen clients that switched within Big 4 auditors and the matched sample of non-Andersen clients that did not switch auditors in 2002. For the former, conservatism has increased only for the asymmetric persistence measure and for the latter, earnings skewness has slightly become negative and the asymmetric accrual-cash flow measure suggests a decrease in conservatism. Collectively, results based on the four measures support the notion that conservatism has increased in 2002 for Andersen clients.

4.8 Additional tests for robustness of findings

I perform additional tests to examine the sensitivity of the results to alternative variable definitions and omitted variables. To address the issue that the increase in earnings conservatism observed for former Andersen clients could be due to factors other than concern over reputation and the risk of litigation against auditors and managers, I examine whether economic fundamentals have changed between 2001 and 2002. Specifically, I conduct univariate analysis of test of differences in mean and median values between 2001 and 2002 for the following variables: firm size, leverage, and sales growth. Size, leverage, and growth are commonly used controls in empirical research. Size is defined as market value of equity at the end of the fiscal

year. Leverage is long-term debt over book value of total assets. Sales growth is calculated over a two-year period. Untabulated results indicate that both mean and median differences in leverage and sales growth are not significant at the 0.10 level for former clients of Arthur Andersen. The mean difference in size is not significant at the 0.10 level but the median difference is significant at the 0.01 level (the median value of size is lower in 2002 relative to 2001). These results provide some assurance that the observed increase in earnings conservatism is not driven by changes in leverage and growth.

To control for time-series non-stationarity in the earnings and the return process, I redo models (1) and (2) the analysis using market-adjusted returns. The value of the incremental bad news coefficient for former Andersen clients for years 2001 and 2002 are, respectively, 0.334 and 0.794 (both are significant at the 0.01 level). The increase in earnings conservatism from 2001 and 2002 is also statistically significant at the 0.05 level. Overall, these results are consistent with results in Table 2 and mitigate concerns that the findings are sensitive to alternative measures of stock returns.

Gigler and Hemmer (2001) argue that firms operating under less conservative financial reporting regimes are more likely to engage in timely preemptive disclosure than firms in more conservative regimes. Thus, "returns lead earnings" for firms in less conservative regimes as a result of their voluntary disclosures. Gigler and Hemmer state that researchers using Basu's (1997) reverse regression methodology should control for the voluntary disclosures. Gigler and Hemmer recommend using a return window that excludes the market reaction to both the prior year's earnings release as well as the current year's earnings release. To incorporate this approach, I redo model (2) using a shortened fiscal year return calculated over a nine-month

period ending at fiscal year-end. β_3, the coefficient of interest, is 0.371 and significant at the 0.05 level, indicating that earnings of former Andersen clients have become more sensitive to bad news following the switch to a Big 4 auditor. The adjusted R^2 is 9.27%, consistent with results presented in Table 2.

Finally, Roychowdhury and Watts (2004) recommend that researchers estimate the Basu coefficients cumulatively over multiple years, going backward in time. They argue that this approach measures conservatism with less error than the annual single-period coefficients. Following Basu (1997, Table 5) and Roychowdhury and Watts (2004), I re-estimate model (2) for former Andersen clients and the two control samples of non-Andersen clients by regressing cumulative earnings on cumulative returns. Earnings are accumulated for firm *i* during the years *t-3* to year *t* and deflated by price at *t-4*.[10] Similarly, returns are accumulated from year *t-3* to year *t.* β_3, the coefficient of interest for former Andersen clients is 0.424, significant at the 0.05 level. Results for the control samples are not significant at the 0.10 level. In summary, the results from the above tests are consistent with the results reported earlier for former Andersen clients and provide some assurance that the reported results are robust to alternate variable definitions and specifications.

5. Summary and Conclusion

The demise of Arthur Andersen provides a rare opportunity to study the joint determination of earnings properties by managers of firms formerly served by Arthur Andersen and the remaining Big 4 auditors of former Andersen clients. I examine several measures of earnings conservatism for a sample of former clients of Arthur Andersen and two control samples

[10] Roychowdhury and Watts (2004) find that results are not significant when earnings and returns are accumulated beyond three years.

consisting of non-Andersen clients that switched within Big 4 auditors during 2002 and those that did not switch auditors. I find that prior to the switch, earnings of former Andersen clients were less sensitive to bad news relative to earnings of non-Andersen clients. After the auditor switch, earnings conservatism has increased for former Andersen clients but not for the control sample clients. Further, it appears that the managers and the new auditors enhanced earnings conservatism to a level that is even higher than the ones observed for non-switching clients served by Big 4 auditors. Overall, the findings are consistent with the notion that increasing earnings conservatism is one option for both Big 4 auditors and managers to mitigate the litigation risk and preserve the reputation capital. Whether this strategy lowers the incidence of litigation would be a worthwhile follow-up study.

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TABLE 1
Descriptive Statistics for a Sample of Former Clients of Arthur Andersen

Variable	Mean		*t*-statistic	Median		*z*-statistic
	2001	2002		2001	2002	
% of loss firms	41.59%	43.46%	-0.78	--	--	----
% of firms with negative returns	50.12%	66.71%	-7.06[a]	--	--	----
Earnings	-0.070	-0.133	3.04[a]	0.020	0.015	2.29[b]
Annual returns	0.095	-0.155	8.83[a]	-0.002	-0.163	8.38[a]
Firm size	$2,093.280	$1,686.770	1.05	$231.826	$168.052	2.86[a]

Total number of clients in panel A equals 856 for both 2001 and 2002. Client observations falling in the top or bottom 1% of price-deflated earnings or returns in each year are excluded. Earnings is net income per share, deflated by price per share at the beginning of the fiscal year. Annual returns are buy-and-hold returns for the fiscal year obtained from *Compustat*. Firm size is the market value of outstanding shares at fiscal year-end (in millions).

Tests are two-tailed. *t*-statistics are from *t*-tests of the differences in the means and *z*-statistics are from Wilcoxon two-sample tests.

[a, b, and c] indicate significance at the 0.01, 0.05, and 0.10 level.

TABLE 2
Coefficients and Adjusted R^2s from Regressions of Earnings on Returns for Former Clients of Arthur Andersen for Years 2001 and 2002

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it} \times DR_{it} \quad (1)$$

Panel A: **2001**

Variable	Coefficient	*t*-statistic
Intercept	-0.045	-2.04[b]
DR	0.031	0.99
R	0.067	3.08[a]
R×*DR*	0.261	4.45[a]
Adjusted R^2		6.69%

Panel B: **2002**

Variable	Coefficient	*t*-statistic
Intercept	0.009	0.41
DR	0.045	1.13
R	-0.062	-0.91
R×*DR*	0.689	5.54[a]
Adjusted R^2		10.03%

Panel C: **Both Years**

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 SWITCH + \alpha_3 DR_{it} \times SWITCH_{it} + \beta_0 R_{it} + \beta_1 R_{it} \times DR_{it} + \beta_2 R_{it} \times SWITCH_{it} + \beta_3 R_{it} \times DR_{it} \times SWITCH_{it} \quad (2)$$

Variable	Coefficient	*t*-statistic
Intercept	-0.045	-2.04[b]
DR	0.031	0.99
SWITCH	0.055	1.72[b]
DR×*SWITCH*	0.014	0.28
R	0.067	3.08[a]
R×*DR*	0.261	4.45[a]
SWITCH×*R*	–0.130	-1.80[b]
R×*DR*×*SWITCH*	0.428	3.11[a]
Adjusted R^2		9.40%

Total number of client observations in panels A, B, and C are, respectively, 856, 856, and 1,712. Observations falling in the top or bottom 1% of price-deflated earnings or returns in each year are excluded. X_{it} is net income per share for firm *i* in fiscal year *t*, P_{it-1} is price per share at the beginning of the fiscal year. R_{it} is buy-and-hold fiscal year return calculated from *Compustat*. DR_{it} is a dummy variable that equals 1 if $R_{it} < 0$ and 0 otherwise. *SWITCH* equals 1 for year 2002 and 0 for year 2001. White (1980) heteroskedasticity-consistent *t*-statistics are in parentheses.

[a, b, and c] indicate significance at the 0.01, 0.05, and 0.10 level for a one-tailed test.

TABLE 3
Coefficients and Adjusted R^2s from Regressions of Earnings on Returns for Control Group Clients and Former Andersen Clients that Switched to a non-Big 4 Auditor: 2001 *vs.* 2002

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 SWITCH + \alpha_3 DR_{it} \times SWITCH_{it} + \beta_0 R_{it} + \beta_1 R_{it} \times DR_{it} + \beta_2 R_{it} \times SWITCH_{it} + \beta_3 R_{it} \times DR_{it} \times SWITCH_{it} \quad (2)$$

Panel A: **Non-Andersen Clients Switching Within Big 4 Auditors**

Variable	Coefficient	*t*-statistic
Intercept	0.022	0.29
DR	0.053	0.54
SWITCH	-0.051	-0.54
DR×SWITCH	0.094	0.77
R	-0.140	-2.32[b]
R×DR	1.022	3.87[a]
SWITCH×R	0.178	1.68[b]
R×DR×SWITCH	-0.360	-1.06
Adjusted R^2		20.19%

Panel B: **Matched Sample of Non-Andersen Clients Not Switching During 2002**

Variable	Coefficient	*t*-statistic
Intercept	0.079	2.18[b]
DR	-0.095	-2.13[b]
SWITCH	-0.089	-2.21[b]
DR×SWITCH	0.098	1.70[b]
R	-0.273	-2.59[a]
R×DR	0.633	4.79[a]
SWITCH×R	0.264	2.37[a]
R×DR×SWITCH	-0.152	-0.91
Adjusted R^2		6.56%

Panel C: **Former Andersen Clients Switching to Non-Big 4 Auditors**

Variable	Coefficient	*t*-statistic
Intercept	0.096	2.43[a]
DR	-0.089	-0.78
SWITCH	-0.139	-1.06
DR×SWITCH	-0.266	-0.90
R	-0.107	-1.77[b]
R×DR	0.669	2.69[a]
SWITCH×R	-0.292	-1.29[c]
R×DR×SWITCH	-0.094	-0.19
Adjusted R^2		7.05%

Total number of client observations in panels A, B, and C are, respectively, 150, 1,682, and 182. Observations falling in the top or bottom 1% of price-deflated earnings or returns in each year are excluded. X_{it} is net income per share for firm *i* in fiscal year *t*, P_{it-1} is price per share at the beginning of

the fiscal year. R_{it} is buy-and-hold fiscal year return calculated from *Compustat*. DR_{it} is a dummy variable that equals 1 if $R_{it} < 0$ and 0 otherwise. *SWITCH* equals 1 for year 2002 and 0 for year 2001. White (1980) heteroskedasticity-consistent *t*-statistics are in parentheses.

[a, b, and c] indicate significance at the 0.01, 0.05, and 0.10 level for a one-tailed test.

TABLE 4
Coefficients and Adjusted R^2s from Regressions of Earnings on Returns for Houston-Based Former Clients of Arthur Andersen for Years 2001 and 2002

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \beta_0 R_{it} + \beta_1 R_{it} \times DR_{it} \quad (1)$$

Panel A: **2001**

Variable	Coefficient	*t*-statistic
Intercept	-0.040	-0.32
DR	0.155	1.14
R	0.158	2.11[b]
R×*DR*	0.006	0.04
Adjusted R^2		3.14%

Panel B: **2002**

Variable	Coefficient	*t*-statistic
Intercept	0.079	2.42[a]
DR	-0.004	-0.02
R	-0.110	-0.55
R×*DR*	0.920	1.69[b]
Adjusted R^2		14.98%

Panel C: **Both Years**

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 SWITCH + \alpha_3 DR_{it} \times SWITCH_{it} + \beta_0 R_{it} + \beta_1 R_{it} \times DR_{it} + \beta_2 R_{it} \times SWITCH_{it} + \beta_3 R_{it} \times DR_{it} \times SWITCH_{it} \quad (2)$$

Variable	Coefficient	*t*-statistic
Intercept	-0.040	-0.32
DR	0.155	1.14
SWITCH	0.119	0.94
DR×*SWITCH*	-0.159	-0.71
R	0.158	2.11[b]
R×*DR*	0.006	0.04
SWITCH×*R*	–0.269	-1.25
R×*DR*×*SWITCH*	0.914	1.62[c]
Adjusted R^2		15.44%

Total number of client observations in panels A, B, and C are, respectively, 44, 44, and 88. Observations falling in the top or bottom 1% of price-deflated earnings or returns in each year are excluded. X_{it} is net income per share for firm *i* in fiscal year *t*, P_{it-1} is price per share at the beginning of the fiscal year. R_{it} is buy-and-hold fiscal year return calculated from *Compustat*. DR_{it} is a dummy variable that equals 1 if $R_{it} <$ 0 and 0 otherwise. *SWITCH* equals 1 for year 2002 and 0 for year 2001. White (1980) heteroskedasticity-consistent *t*-statistics are in parentheses.

[a, b, and c] indicate significance at the 0.01, 0.05, and 0.10 level for a one-tailed test.

TABLE 5
Coefficients and Adjusted R^2s from Regressions of Earnings Changes on Prior Period Earnings Changes for Years 2001 and 2002

$$\Delta X_{it} / P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \alpha_2 SWITCH_{it} + \alpha_3 D_{it} \times SWITCH_{it} + \beta_0 \Delta X_{it-1} / P_{it-2} + \beta_1 D_{it} \times \Delta X_{it-1} / P_{it-2} + \beta_2 SWITCH_{it} \times \Delta X_{it-1} / P_{it-2} + \beta_3 D_{it} \times SWITCH_{it} \times \Delta X_{it-1} / P_{it-2} \quad (3)$$

Panel A: **Former Andersen Clients**

Variable	Coefficient	*t*-statistic
Intercept	-0.048	-2.63[a]
D	0.124	1.78[b]
SWITCH	0.106	1.32[c]
D ×*SWITCH*	-0.328	-2.86[a]
ΔX_{t-1}	0.001	0.05
$D \times \Delta X_{t-1}$	-0.826	-2.03[b]
$SWITCH \times \Delta X_{t-1}$	0.108	0.80
$D \times SWITCH \times X_{t-1}$	-1.142	-1.99[b]
Adjusted R^2		7.74%

Panel B: **Non-Andersen Clients Switching Within Big 4 Auditors**

Variable	Coefficient	*t*-statistic
Intercept	-0.039	-1.90[b]
D	-0.168	-1.97[b]
SWITCH	0.020	0.81
D ×*SWITCH*	-0.021	-0.18
ΔX_{t-1}	-0.202	-0.61
$D \times \Delta X_{t-1}$	-1.180	-3.14[a]
$SWITCH \times \Delta X_{t-1}$	0.339	1.02
$D \times SWITCH \times X_{t-1}$	-1.188	-2.52[a]
Adjusted R^2		56.90%

Panel C: **Matched Sample of Non-Andersen Clients Not Switching During 2002**

Variable	Coefficient	*t*-statistic
Intercept	-0.022	-2.61[a]
D	0.087	1.84[b]
SWITCH	0.055	0.92[c]
D ×*SWITCH*	-0.140	-1.75[b]
ΔX_{t-1}	-0.099	-2.90[a]
$D \times \Delta X_{t-1}$	-0.485	-0.87
$SWITCH \times \Delta X_{t-1}$	0.142	2.24[b]
$D \times SWITCH \times X_{t-1}$	-0.379	-0.64
Adjusted R^2		4.27%

Panel D: **Former Andersen Clients Switching to Non-Big 4 Auditors**

Variable	Coefficient	*t*-statistic
Intercept	-0.214	-2.01[b]
D	0.375	2.28[b]
SWITCH	0.006	0.04
$D \times SWITCH$	-0.416	-1.51[c]
ΔX_{t-1}	-0.002	-1.63[c]
$D \times \Delta X_{t-1}$	-1.029	-1.42[c]
$SWITCH \times \Delta X_{t-1}$	0.135	1.24
$D \times SWITCH \times X_{t-1}$	-1.943	-1.78[b]
Adjusted R^2		43.37%

Panel E: **Houston-Based Former Andersen Clients**

Variable	Coefficient	*t*-statistic
Intercept	0.009	0.46
D	-0.271	-2.46[a]
SWITCH	-0.211	-2.69[a]
$D \times SWITCH$	0.246	1.52[c]
ΔX_{t-1}	0.087	2.60[a]
$D \times \Delta X_{t-1}$	-4.148	-22.09[a]
$SWITCH \times \Delta X_{t-1}$	-0.063	-1.36[c]
$D \times SWITCH \times X_{t-1}$	2.213	4.83[a]
Adjusted R^2		86.26%

Total number of client observations in panels A, B, C, D, and E are, respectively, 1,588, 126, 1,596, 172, and 80. Observations falling in the top or bottom 1% of price-deflated earnings or returns in each year are excluded. X_{it} is net income per share for firm *i* in fiscal year *t*, ΔX_{it} is the change in earnings for firm *i* for fiscal year *t* over fiscal year *t-1*. P_{it-1} is price per share at the close of the fiscal year *t-1*. *D* is a dummy variable that equals 1 if $\Delta X_{it-1}/P_{it-2} < 0$ and 0 otherwise. *SWITCH* equals 1 for year 2002 and 0 for year 2001. White (1980) heteroskedasticity-consistent *t*-statistics are in parentheses.

[a, b, and c] indicate significance at the 0.01, 0.05, and 0.10 level for a one-tailed test.

TABLE 6
Coefficients and Adjusted R^2s from Regressions of Accruals on Cash Flows for Years 2001 and 2002

$$ACC_{it} = \beta_0 + \beta_1 DCFO_{it} + \beta_2 SWITCH_{it} + \beta_3 DCFO_{it} \times SWITCH_{it} + \beta_4 CFO_{it} + \beta_5 DCFO_{it} \times CFO_{it} + \beta_6 SWITCH_{it} \times CFO_{it} + \beta_7 SWITCH_{it} \times DCFO_{it} \times CFO_{it} \quad (4)$$

Panel A: **Former Andersen Clients**

Variable	Coefficient	*t*-statistic
Intercept	-0.042	-6.78[a]
DCFO	-0.082	-3.61[a]
SWITCH	0.003	-0.32
DCFO × *SWITCH*	0.039	1.13
CFO	-0.439	-9.28[a]
DCFO × *CFO*	0.457	4.25[a]
SWITCH ×*CFO*	0.040	0.61
SWITCH × *DCFO* ×*CFO*	0.279	1.35[c]
Adjusted R^2		12.32%

Panel B: **Non-Andersen Clients Switching Within Big 4 Auditors**

Variable	Coefficient	*t*-statistic
Intercept	-0.093	-2.84[a]
DCFO	-0.036	-0.62
SWITCH	0.053	1.37[c]
DCFO × *SWITCH*	0.023	0.25
CFO	-0.164	-0.84
DCFO × *CFO*	0.538	1.83[b]
SWITCH ×*CFO*	-0.306	-1.11
SWITCH × *DCFO* ×*CFO*	-0.155	-0.32
Adjusted R^2		12.17%

Panel C: **Matched Sample of Non-Andersen Clients Not Switching During 2002**

Variable	Coefficient	*t*-statistic
Intercept	-0.043	-5.61[a]
DCFO	-0.046	-1.22
SWITCH	-0.018	-1.51[c]
DCFO × *SWITCH*	0.034	0.75
CFO	-0.392	-6.55[a]
DCFO × *CFO*	0.681	2.90[a]
SWITCH ×*CFO*	0.135	1.29[c]
SWITCH × *DCFO* ×*CFO*	-0.405	-1.44[c]
Adjusted R^2		7.35%

Panel D: **Former Andersen Clients Switching to Non-Big 4 Auditors**

Variable	Coefficient	*t*-statistic
Intercept	-0.092	-4.31[a]
DCFO	0.007	0.12
SWITCH	0.027	0.81
DCFO × *SWITCH*	-0.031	-0.34
CFO	-0.298	-3.69[a]
DCFO × *CFO*	0.616	3.02[a]
SWITCH ×*CFO*	-0.071	-0.38
SWITCH × *DCFO* ×*CFO*	0.282	0.60
Adjusted R^2		12.43%

Panel E: **Houston-Based Former Andersen Clients**

Variable	Coefficient	*t*-statistic
Intercept	-0.041	-3.46[a]
DCFO	0.052	1.30[c]
SWITCH	0.031	2.11[b]
DCFO × *SWITCH*	0.239	5.83[a]
CFO	-0.426	-10.04[a]
DCFO × *CFO*	-0.734	-2.97[a]
SWITCH ×*CFO*	-0.258	-4.80[a]
SWITCH × *DCFO* ×*CFO*	4.765	19.11[a]
Adjusted R^2		84.26%

Total number of client observations in panels A, B, C, D, and E are, respectively, 1,710, 148, and 1,680, 180, and 88. ACC_{it} is net income before extraordinary items and discontinued operations less cash flow from operations scaled by total assets at the beginning of the year. *CFO* is cash flow from operations over total assets at the beginning of the year. *DCFO* equals 1 if *CFO* < 0 and 0 otherwise. *SWITCH* equals 1 for year 2002 and 0 for year 2001. White (1980) heteroskedasticity-consistent *t*-statistics are in parentheses.

[a, b, and c] indicate significance at the 0.01, 0.05, and 0.10 level for a one-tailed test.