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An Analysis of Forced Auditor Change: The Case of Former Arthur Andersen Clients

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ABSTRACT: This study examines former Arthur Andersen clients and provides evidence on the factors involved in their selection of new auditors after Andersen's collapse. Using a unique dataset that identifies whether former Andersen clients followed their audit team to a new auditor, findings reveal companies with greater agency concerns were more likely to sever ties with their former auditor, whereas those with greater switching costs were more likely to follow their former auditor. We also investigate the effect of the forced auditor change on financial statement quality in an effort to provide insight into the mandatory auditor rotation debate. Using performance-adjusted discretionary accruals as a proxy for reporting quality, our results fail to reveal significant improvements for companies with extreme discretionary accruals that severed ties with Andersen, which is inconsistent with the notion that mandatory rotation improves financial reporting.

Keywords: *auditor selection; mandatory auditor rotation; audit quality; earnings quality; Arthur Andersen.*

Data Availability: *Data are available from public sources.*

I. INTRODUCTION

In this paper, we take advantage of the unique setting created by the collapse of Arthur Andersen (AA) to examine the costs a company faces in selecting a new auditor. While auditing is widely believed to be a means of reducing agency costs, the trade-off among agency and other costs in selecting an auditor is not well understood. In an effort to better

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understand the complex process of selecting a new auditor, we study company attributes that measure the extent of switching costs (e.g., costs incurred by the client in a new audit engagement, including increased risk of audit failure) and agency costs (forgone agency benefits stemming from greater auditor independence) borne by switching companies.[1]

A change in auditor involves two actions: dismissal/resignation of the current audit firm and the selection of a new auditor. Prior auditor change research has been unable to examine the two actions separately and, therefore, has focused on the joint decision (see Nichols and Smith 1983; Francis and Wilson 1988; Shu 2000; Landsman et al. 2006). AA's collapse forced each of its clients to select a new auditor, creating a setting where a large number of companies switched auditors *for the same reason during the same time period.* Therefore, our sample of former AA clients is homogeneous in the requirement to obtain new auditors, enabling us to create more direct tests of the costs involved in the selection of a new auditor than have been possible in past studies that utilize auditor dismissals and/or resignations.

Although Andersen's demise forced our sample to change auditing firms, companies had the opportunity to follow their former audit team to a new auditor. We capitalize on this setting by noting that companies electing to follow AA were likely trying to minimize the costs associated with changing auditors, whereas companies that severed ties with AA did so presumably because the agency benefits obtained through a new independent auditor outweighed the switching costs. We characterize the follow decision based on the prospective employment of the AA audit team. For example, in Casella Waste Systems' Form 8-K filing on June 13, 2002, the company reports:

> As recommended by the audit committee, the Board of Directors on May 20, 2002, decided to no longer engage its independent accountants, Arthur Andersen LLP, and engaged KPMG LLP ("KPMG") to serve as the Company's independent accountants for the fiscal year ending April 30, 2003 and to audit the Company's financial statements for the fiscal year ended April 30, 2002. The Audit Committee's recommendation to engage KPMG was based on the assumption that certain individuals from Arthur Andersen's Boston, Mass. office, including the team auditing the Company, would join KPMG. That event did not occur. As a result, the Audit Committee subsequently reconsidered its recommendation and, as recommended by the Audit Committee, the Board of Directors on June 13, 2002 decided to no longer engage KPMG, and engaged PricewaterhouseCoopers LLP ("PWC") to serve as the Company's independent accountant for the fiscal year ending April 30, 2003 and to audit the Company's financial statement for the fiscal year ended April 30, 2002.

Ultimately, AA's Boston office became part of PWC rather than KPMG. We argue that companies such as Casella Waste Systems did not switch audit teams, but instead simply transferred their existing audit relationship to a new firm (follow companies). Since other companies clearly severed ties with their former AA audit team (non-follow companies), we have identified an interesting quasi-experimental setting in which to study the cost/benefit relationship underlying the selection of a new auditor.

In our sample of 407 former AA clients, we find that companies with greater switching costs were more likely to follow their former AA audit team to the new auditor. Specifically,

[1] Prior research on auditor changes suggests there may be a third cost considered in selection of a new auditor—implicit insurance. Rather than modeling this cost, we hold it constant by only examining switches to the remaining Big 4 auditors, which are likely to provide equivalent implicit insurance.

companies with more aggressive accruals behavior followed their AA team. This is consistent with a company's attempt to limit the costs of switching by maintaining a relationship with the auditor who originally opined on the company's aggressive behavior. In addition, companies were more likely to follow their AA teams when AA had the largest proportion of clients in the state and industry, which suggests that these companies minimized switching costs. Other measures of switching costs, including the length of time AA had been the auditor and size of the company, are not associated with the decision to follow the AA team.

On the other side of the trade-off, we find that companies with greater agency concerns were more likely to sever ties with AA. Our results are consistent with more complex companies (e.g., companies with less transparent earnings and greater geographic diversity) selecting an auditor that mitigates the greater monitoring costs faced by outside shareholders, which implies minimization of their agency costs. In addition, we find companies with outside blockholders were also more likely to sever ties with AA, consistent with a desire by outside stakeholders to ensure an independent audit. However, we find little evidence that governance mechanisms had an effect on the company's auditor selection. Although the presence of a financial expert on the audit committee had a marginal influence on the committee's choice of an auditor, other board characteristics were unassociated with a company's auditor selection.

Overall, we interpret our evidence as suggesting that switching costs are a major consideration in non-forced auditor change environments, which is consistent with the fact most companies change auditors infrequently. At the same time, we illustrate that in our forced change setting, agency benefits exceed the costs saved by following AA for many sample companies. These results are helpful in understanding the costs and benefits weighed by companies in the selection of an auditor, as well as providing some calibration of the costs and benefits involved in the debate over the mandatory rotation of auditors.

Finally, we supplement the cost trade-off analysis by examining whether AA's collapse led to a change in the financial reporting quality of sample companies. Using our forced change setting, we investigate whether the performance-matched discretionary accrual behavior differed between our follow and non-follow companies. We expect non-follow companies with extreme accruals to exhibit the greatest degree of reversion if the change in auditor is effective in improving financial reporting. However, we find that companies with the lowest relative levels of discretionary accruals, in the final year audited by AA, continued to have relatively low accruals following Andersen's failure, regardless of their follow decision. This suggests the change did not improve the reporting for these companies. In addition, we find that non-follow companies with high discretionary accruals continued to exhibit higher discretionary accruals on average in the first year with their new auditor. In contrast, the follow counterparts exhibited reversion in their aggressive accruals behavior during the year after AA's demise. These findings do not suggest financial reporting quality significantly improved for companies selecting an entirely new auditor, providing evidence that mandatory rotation of auditors may not yield an increase in financial statement quality.

The rest of the paper is organized as follows: in Section II of this paper, we develop our hypotheses and present our research design for testing the cost trade-offs in selecting an auditor. Section III summarizes our sample selection and results. In Section IV, we develop and present our tests of changes in financial reporting. Section V presents our conclusions.

II. AUDITOR SELECTION

Hypotheses Development

Although auditing is widely believed to be a means of reducing agency costs, there is no broad theory on how companies choose a new auditor or weigh the cost/benefit trade-off in switching auditors. Many papers investigate auditor switches and company characteristics (e.g., Nichols and Smith 1983; Francis and Wilson 1988; Johnson and Lys 1990; Krishnan and Krishnan 1997; Shu 2000; Hackenbrack and Hogan 2002; Sankaraguruswamy and Whisenant 2004). However, they generally have been unable to isolate the effects of the selection of a new auditor from the dismissal/resignation of the current auditor (e.g., opinion shopping and financial reporting disagreements, fees, risk, etc.).[2] As a result, they investigate costs involved in the joint decision of hiring and firing.

In contrast, the unexpected and rapid collapse of Arthur Andersen provides the opportunity to examine a group of companies that switched auditors for the same reason: their former audit firm was forced to stop practicing. We use this forced change to examine a company's selection of a new auditor. Specifically, we investigate which costs factor into a client's decision to either follow its former AA audit team or choose an entirely new audit firm. Prior research on auditor changes and the debate on mandatory auditor rotation suggest three potential costs involved in the selection of a new auditor: switching, agency, and implicit insurance. We hold the latter constant by only examining switches to the remaining Big 4 auditors, allowing us to focus on switching and agency costs.[3]

Ex ante, the relative weighting of switching and agency costs is difficult to predict. The prior literature often focuses on agency costs with virtually no attention given to switching costs since they are extremely difficult to quantify in a non-forced auditor change environment. The fact that auditor changes occur relatively infrequently is consistent with the notion that switching costs are generally high. Said another way, the sporadic nature of auditor switches suggests that the marginal agency benefit gained from changing auditors is significantly less than the cost of switching to that new independent auditor. However, the fact that all companies in our sample were forced to change auditors alters the cost considerations, but at the same time provides us with a rare opportunity to examine whether switching costs truly play a role in the decision to change auditors and, if so, to what extent.

Switching Costs

We define switching costs as the start-up costs incurred by the client for a new audit engagement. These include: (1) costs incurred by the client in educating the auditor about the company's operations, systems, financial reporting practices, and accounting issues, (2) costs incurred by the client in selecting a new auditor (e.g., time spent listening to and reviewing proposals), and (3) an increased risk of audit failure (AICPA 1978; Palmrose 1987; U.S. General Accounting Office [GAO] 2003; Geiger and Raghunandan 2002; Myers et al. 2003).[4]

All else equal, value-maximizing behavior suggests that companies will seek to minimize switching costs. We hypothesize that companies may try to minimize the cost of

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[2] Schwartz and Menon (1985) is a notable exception that examines factors associated with 35 companies that changed auditors because of bankruptcy-related issues.

[3] This assumes that the relative implicit insurance provided by the remaining Big 4 auditors is in fact reasonably equal. This is consistent with prior literature that examines implicit insurance (i.e., Menon and Williams 1994), and which utilizes a Big N/non-Big N designation to test for differences in insurance values.

[4] The U.S. General Accounting Office (GAO 2003) report estimates that mandatory rotation of auditors will increase initial-year audit costs by at least 17 percent of audit fees. This estimate includes increases in support costs (11 percent of initial-year audit fees) and selection costs (6 percent of initial-year audit fees).

switching auditors by following their AA audit team because they already possess client and industry-specific knowledge:

H1: The greater the switching costs, the more likely a former AA client will follow its AA audit team to a new auditor, *ceteris paribus*.

The assumption maintained throughout our analysis is that, *ceteris paribus*, following AA has lower switching costs than not following. Educating the audit team about the operations of the business is a time-consuming and costly activity (GAO 2003). Following AA would almost certainly reduce these costs even if the prior audit team was not maintained because, at a minimum, the prior engagement personnel are likely to be available for consultation. Consistent with this notion, the GAO found that Tier 1 public accounting firms "generally saw more potential value in having access to the previous audit team and its audit documentation than in performing additional audit procedures and verification of the public company's data during the initial years of the auditor's tenure" (GAO 2003). Furthermore, anecdotal evidence obtained through discussions with Big 4 audit partners and personnel indicates that former AA audit teams were kept largely intact when a client chose to follow AA.

Agency Costs

Consistent with Jensen and Meckling (1976), we define agency costs as monitoring expenditures by the principal, bonding expenditures by the agent, and loss in welfare experienced by the principal due to the agent not acting in the principal's best interest. Auditing is a means of reducing agency costs through the monitoring of the agent by an independent third-party auditor (Jensen and Meckling 1976; Watts and Zimmerman 1983; among others). Further, the greater the agency costs, the greater the demand for high-quality audits (DeAngelo 1981; Dopuch and Simunic 1982).[5]

The decision to change auditors is frequently cast in terms of mitigating agency costs or improving audit quality (Nichols and Smith 1983; Francis and Wilson 1988; Johnson and Lys 1990; DeFond 1992). In our setting, agency conflicts at the individual company level did not change. Instead, the empirical evidence documenting negative market reactions for AA clients upon the collapse of AA (Chaney and Philipich 2002; Krishnamurthy et al. 2006; Asthana et al. 2004) indicates that the perceived quality of the AA audit had suddenly declined. As such, Andersen clients lost some agency benefit inherent in their relationship with their auditor. Further, duration analyses examining cross-sectional differences in the length of time former AA clients took to select a new auditor support the notion that clients were concerned about the perceived quality of AA's audits, and illustrate that companies with greater agency conflicts dismissed AA sooner (Chang et al. 2003; Barton 2005). Given these findings we hypothesize:

H2: The greater the agency conflicts, the more likely a former AA client will not follow its AA audit team to a new auditor, *ceteris paribus*.

Research Design

We model the decision to follow AA personnel as a function of variables that capture the degree of a company's switching and agency costs. To examine this decision, we utilize

[5] Consistent with DeAngelo (1981) and DeFond (1992), we define audit quality as the probability that an audit firm will detect and report "material breaches in the accounting system."

factors suggested in prior literature on auditor changes, mandatory auditor rotation, and corporate governance:

$$\begin{aligned} FOLLOW = {} & \textstyle\sum_I \alpha_I + \gamma_1 FEE\_EXPERT + \gamma_2 CLIENTS + \gamma_3 TENURE + \gamma_4 SIZE \\ & + \gamma_5 TRANSPARENCY + \gamma_6 COMPLEX + \gamma_7 ACCRUAL \\ & + \gamma_8 INSIDER + \gamma_9 LEVERAGE + \gamma_{10} BLOCK + \gamma_{11} INDAUDIT \\ & + \gamma_{12} ACCT\_FE + \gamma_{13} ROA + \gamma_{14} LOSS + \varepsilon \end{aligned} \quad (1)$$

where all variables are measured as of the final year audited by AA and are defined as follows (Compustat data items in parentheses):

FOLLOW = 1 if the client followed AA, 0 otherwise;
FEE_EXPERT = 1 if AA had the greatest total audit fees in an industry and state, 0 otherwise;
CLIENTS = 1 if AA had the most clients in an industry and state, 0 otherwise;
TENURE = number of years audited by AA per Compustat;
SIZE = natural logarithm of total assets (#6);
TRANSPARENCY = descending decile rank of absolute value of residual from regression of annual returns on annual earnings (#18), and changes in annual earnings, both scaled by total assets (#6) and *SIZE*;
COMPLEX = $\sum_{i=1}^{N} \left[\left(LN\left(\frac{TotalSales}{Segment_i} \right) \right) \frac{Segment_i}{TotalSales} \right]$ where *TotalSales* is company sales revenue for 2001 and $Segment_i$ represents the sales for a specific geographic segment of the business per Compustat;
ACCRUAL = performance-adjusted discretionary accruals;
INSIDER = 1 if an insider per Spectrum holds at least 5 percent of the outstanding shares, 0 otherwise;
LEVERAGE = ratio of debt (#9 + #34) to total assets (#6);
BLOCK = 1 if an outside blockholder per Spectrum holds at least 5 percent of the outstanding shares, 0 otherwise;
INDAUDIT = 1 if audit committee at the time the decision was made to dismiss AA had 100 percent outside members, 0 otherwise;
ACCT_FE = 1 if an accounting financial expert was on the audit committee, 0 otherwise;
ROA = return on assets, defined as net income before extraordinary items (#18) divided by ending total assets (#6);
LOSS = 1 if $ROA < 0$, 0 otherwise; and
I = denotes industry as defined in Barth et al. (1998).[6]

We classify a former AA client as following the AA audit team (*FOLLOW* = 1) if the new auditor acquired the AA audit practice corresponding to the office (city) indicated on the client's audit report. For example, KPMG acquired AA's Philadelphia office. If an AA client whose audit opinion was signed "Philadelphia" chose KPMG as its new auditor, then we assume it followed its AA audit team. If a client chose Ernst & Young, we assume

[6] Throughout the paper we utilize the Barth et al. (1998) industry classifications for all calculations.

that it did not follow its AA audit team (*FOLLOW* = 0). We were unable to categorize some large AA offices such as New York, Houston, and Chicago (AA's headquarters) and, therefore, have excluded these offices' clients from our analysis.[7] Although these exclusions mean that we may not be able to generalize our findings to all of AA's former clients, we are unaware of any systematic biases within our sample that influence our results.

Switching Costs

Our first measure of switching costs involves industry expertise, where hiring the industry expert reduces start-up costs for clients. If AA was the industry expert, then we expect switching costs to be reduced by following the AA team to the new audit firm, leading to a positive relation between expertise and following AA. Since auditor industry expertise is unobservable, we utilize two proxies found in prior research (see for example, Palmrose 1986; Hogan and Jeter 1999; Balsam et al. 2003; Francis, Reichelt, and Wang 2005) that measure industry expertise as a function of experience auditing a larger *number* of clients and/or from auditing large clients.

Similar to Francis, Reichelt, and Wang (2005), our first measure, *FEE_EXPERT*, equals 1 if AA had the greatest audit fees in an industry and state, and 0 otherwise. Industries are defined as in Barth et al. (1998), and the state is obtained from the final audit opinion signed by AA. Our second measure, *CLIENTS*, is based on the number of clients rather than audit fees. *CLIENTS* equals 1 if AA had the most clients in an industry and state, and 0 otherwise.[8] We use the Audit Analytics database, which tracks the office signing the audit report along with audit fee-related information, to construct our measures. We anticipate a positive relation between following AA and measures of Andersen's expertise.

TENURE is the number of years AA performed the audit per Compustat. DeAngelo (1981) suggests there may be a relationship-specific investment between auditor and client where, in order to recover start-up costs, the two firms are better off maintaining their relationship, at least in the early years. In addition, Williams (1988) finds that longevity on an engagement is significantly positive in a stepwise logistic analysis of factors associated with a change in auditor. Together these results suggest that companies with shorter *TENURE* will be more likely to follow AA. On the other hand, companies with extended *TENURE* may find it costly to switch since they have developed relations with their auditor over a long period of time (the audit firm has moved to the top of the learning curve). Since the direction of its association with *FOLLOW* is ambiguous, we do not make a sign prediction for this variable.

We predict a positive coefficient on *SIZE,* defined as the natural logarithm of total assets, because switching costs are expected to be higher for larger clients (DeAngelo 1981).[9] Further, *SIZE* may act as a proxy for client complexity and geographic constraints that we expect to be positively correlated with start-up costs associated with switching auditors. *SIZE*, as described below, is also related to agency costs.

All else equal, we anticipate that the more complex a company, the greater the cost of switching auditors. We use two measures to capture the complexity of a company's audit.

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[7] These offices often did not transfer all personnel to a single new audit firm, which made the follow/non-follow designation difficult to make. Further, our attempts to contact firm representatives related to the unclassified offices were not successful.

[8] *CLIENTS* is similar to measures of expertise utilized in Balsam et al. (2003). However, Balsam et al. (2003) defined expertise on a national rather than state basis.

[9] An alternative interpretation of a positive association would be that *SIZE* is a proxy for audit fee potential consistent with Simunic (1980) and, therefore, simply represents the effort of former AA partners to maintain their most lucrative clients.

First, financial reporting transparency is measured as the degree to which a company's accounting summary measures correlate with its economic value. The variable *TRANSPARENCY* is defined as the decile rank (in descending order) of the absolute value of the residual from the following cross-sectional regression estimated for fiscal year 2001:

$$RETURN = \sum_I \alpha_I + \gamma_1 ROA + \gamma_2 CHGNI + \gamma_3 SIZE + \varepsilon \quad (2)$$

where:

RETURN = buy and hold return over the fiscal year utilizing CRSP monthly returns;
ROA = return on assets, defined as net income before extraordinary items (#18) divided by ending total assets (#6);
CHGNI = net income (#18) in current year less net income in prior year divided by ending total assets (#6);
SIZE = natural logarithm of total assets (#6); and
I = denotes industry as defined in Barth et al. (1998).

Observations in the highest decile are those with the highest transparency, while those in the lowest decile are those with the lowest transparency. Consistent with our use of the variable as a measure of company transparency, similar measures are utilized in other studies (Easton and Harris 1991; Bushman et al. 2004; Barth et al. 2005; Lang and Lundholm 1996; Healy et al. 1999) to illustrate that companies with greater transparency have lower costs of capital, greater analyst following, and greater disclosure of management forecasts. We predict a negative coefficient for *TRANSPARENCY* because companies with lower transparency are more difficult to audit and, therefore, should find it less costly to follow their AA team.[10] As described below, *TRANSPARENCY* is also related to agency costs.

Our second proxy for the extent of the company's audit complexity, *COMPLEX*, is measured as:

$$\sum_{i=1}^{N} \left[\left(LN\left(\frac{TotalSales}{Segment_i} \right) \right) \frac{Segment_i}{TotalSales} \right] \quad (3)$$

where *TotalSales* is company sales revenue for 2001 (representing the last year audited by AA) and $Segment_i$ represents the sales for a specific geographic segment of the business per Compustat (Bushman et al. 2002). Chung and Kallapur (2003), Barton (2001), and Palepu (1985) use similar measures to capture segment diversification. *COMPLEX* accounts for the number of geographic segments and the degree of diversity in sales across these segments. While a greater number of geographic segments leads to higher values of *COMPLEX*, companies with relatively equal sales levels across their segments obtain the highest values. This captures the notions that (1) a company with several geographic segments is more difficult to audit than a company with one segment, and (2) a company with relatively equal sales across its geographic segments is more difficult to audit than a company with a similar number of geographic segments, but whose sales occur predominantly in one location. We predict companies with higher values of *COMPLEX* will be more likely to follow AA, since these companies are more challenging to audit and, therefore, have higher switching costs. *COMPLEX* is also related to agency costs, which we describe below.

[10] Inferences are unaltered if we utilize the actual residual value rather than the decile rank.

Our final measure of switching costs is *ACCRUAL,* which is defined as performance-adjusted discretionary accruals. Specifically, we first estimate cross-sectional modified Jones (1991) model regressions on an industry basis, where industry designation follows Barth et al. (1998), for fiscal year 2001 for all companies on Compustat with the necessary data.[11] Companies are then ranked within industries into deciles based on *ROA*. Sample companies' discretionary accruals are adjusted by the median industry-*ROA* decile discretionary accrual (see Francis, LaFond, Olsen, and Schipper 2005).[12] Bradshaw et al. (2001) finds that auditor changes are *less* likely for high accrual companies, suggesting that it is more costly for these companies to voluntarily change auditors. In the current context, we expect companies with higher values of *ACCRUAL* (most aggressive relative to performance-matched companies) to attempt to reduce the costs of switching auditors by following AA, resulting in a positive prediction for the *ACCRUAL* coefficient. Alternatively, DeFond and Subramanyam (1998) finds companies changing auditors have negative discretionary accruals on average and attribute the change to overly conservative accounting required by the incumbent auditor. We expect companies with lower values of *ACCRUAL* (most conservative relative to performance-matched companies) to find it less costly to change auditors, thereby leading to the same positive coefficient prediction.

Agency Costs

SIZE is frequently used as a proxy for agency concerns. Barton (2005) uses company size as a proxy for reputation costs from the AA collapse. He finds that larger AA clients switched to a new auditor earlier than smaller companies and argues that this result is attributable to the fact that larger companies are subject to greater reputation costs. In addition, *SIZE* may also measure the diffusion of ownership and related agency costs. In contrast to our switching cost predictions, if agency costs dominate the decision to switch auditors, we expect *SIZE* to be negatively related to the likelihood of following the AA team.

The inability to perfectly observe the actions of managers by outside parties increases agency costs (Jensen and Meckling 1976). *TRANSPARENCY* and *COMPLEX* capture company financial reporting and audit complexity. As such, they measure the degree of difficulty outside parties have in monitoring management. Companies with lower (higher) values of *TRANSPARENCY* (*COMPLEX*) are less transparent (more complex) and more difficult to monitor, which leads to a greater demand for a high-quality audit and, as such, a greater likelihood of severing ties with AA. We expect *TRANSPARENCY* (*COMPLEX*) to be positively (negatively) associated with the decision to follow AA under the agency hypothesis, which is contrary to our switching cost expectations.

Jensen and Meckling (1976) shows that higher management ownership leads to greater alignment of interests with outside owners and, hence, lower agency conflicts. Using the Thomson Spectrum database, we define *INSIDER* as a dichotomous variable equaling 1 if an insider holds at least 5 percent of the outstanding shares, and 0 otherwise. Findings in prior research on the relation between insider ownership and auditor changes have been mixed. Francis and Wilson (1988) find no significant relation between insider ownership and the quality of the successor auditor, while Simunic and Stein (1987) find a negative

[11] We estimate discretionary accruals as the residual from the regression of total accruals on a constant term, property, plant, and equipment, and the difference between the change in sales and accounts receivable all scaled by total assets.

[12] Performance matching mitigates concerns about bias in the Jones model estimates related to performance documented by Dechow et al. (1995), along with controlling for any potential systematic differences in estimates of discretionary accruals across industries. See Kothari et al. (2005) for further discussion.

association and Eichenseher and Shields (1989) find a positive association.[13] If low insider ownership is indicative of greater agency problems, then we predict a negative relation between *INSIDER* and following AA.

LEVERAGE (debt-to-asset ratio) captures both the degree of agency conflicts between stock and debt holders and the agency costs involved in monitoring by debt holders. DeFond (1992) argues that companies with greater leverage tend to switch to higher-quality audit firms because of the monitoring performed by bondholders. If debt holders view the demise of AA as indicative of low audit quality, then we predict the greater the *LEVERAGE* the less likely companies will be to follow AA.

Costs to monitor and influence management actions are increasing with the diffusion of equity ownership. As such, blockholders' ownership leads to economies of scale in terms of managerial monitoring. However, concentrated share ownership is only needed if there is some reason to believe that managerial monitoring has been inadequate (e.g., a weak board). As such, blockholder ownership is suggestive of the presence of agency issues. Consistent with prior research on auditor changes, we include *BLOCK*, which equals 1 if an outside blockholder per Spectrum holds at least 5 percent of the outstanding shares, and 0 otherwise.[14] An explanation consistent with this agency cost argument is that blockholders may be more likely to force companies to sever ties with AA to ensure the quality/independence of their successor auditor. If blockholder ownership is indicative of greater agency costs, then we expect companies with blockholders to be less likely to follow AA.

Another form of monitoring relates to the independence and financial reporting expertise of companies' audit committees. In *Standards Relating to Listed Company Audit Committees*, the SEC suggests that the audit committee serves a central role in independent review and oversight of a company's independent auditors. Given this, we include two measures of audit committee monitoring as utilized in DeFond et al. (2005). First, *INDAUD* measures the independence of the audit committee and is equal to 1 if all members are independent. Our second measure related to the audit committee, *ACCT_FE*, is a proxy for financial expertise. Consistent with DeFond et al. (2005), we define *ACCT_FE* as equal to 1 if anyone on the audit committee has experience as a public accountant, auditor, principal or chief financial officer, controller, or chief accounting officer. DeFond et al. (2005) illustrates that only companies electing accounting financial experts (as opposed to the more inclusive definition eventually adopted in Sarbanes-Oxley that includes individuals responsible for managing financial experts, among other less stringent criteria) to their audit committees will experience significantly positive cumulative abnormal returns around the announcement of said election.

Although corporate governance is most often utilized in discussions concerning agency conflicts, *a priori*, it is difficult to make a signed prediction on the governance-related variables in our setting. For instance, companies with more independent audit committee members and/or those with financial experts might want to ensure the independence of their auditor and, therefore, select an auditor unaffiliated with AA. Alternatively, these governance indicators might be consistent with audit committee members who have monitored the audit relationship effectively and who, therefore, may be more likely to follow AA in order to minimize the costs associated with obtaining a new auditor. Given these counter arguments, we make no sign predictions for *INDAUD* or *ACCT_FE*.

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[13] In related research, Barton (2005) finds that companies with smaller managerial ownership were more likely to dismiss AA sooner.

[14] Francis and Wilson (1988) and Palmrose (1984) use similar measures, but neither finds a significant relation between diffusion of ownership and choice of auditor.

Control Variables

We include industry-fixed effects, where industry is defined as in Barth et al. (1998) to allow for systematic differences in industries' switching behaviors that are unrelated to our agency and switching cost arguments. We also utilize *ROA* and *LOSS* as control variables. Landsman et al. (2006) and Schwartz and Menon (1985) find that companies with poor financial performance are more likely to change auditors. In our context, this suggests that poorly performing companies may be less likely to follow AA, but classifying this prediction as related to agency or switching costs is difficult. We therefore include *ROA* and *LOSS* as measures of financial performance, but make no predictions as to the sign of the coefficients. Figure 1 summarizes our sign predictions under the two hypotheses for all of the variables.

III. SAMPLE SELECTION AND RESULTS

Sample Selection

In constructing our sample, we used Compustat to identify U.S. companies that were audited in fiscal year 2001 by AA. Next, we reviewed each company's audit report to determine which office (city) had performed the audit. Then we hand-collected information concerning the acquisition of AA offices by other auditors from a variety of sources including audit firm press releases, AA client Form 8-Ks relating to the choice of a new auditor, and representatives from two of the remaining Big 4 audit firms. Through this process we were able to classify 561 former AA clients as either following AA personnel to a new auditor or completely severing ties with their AA audit team. We eliminated 29 observations where the corresponding AA practice was acquired by a non-Big 4 auditor.[15] Another 127 observations with missing data were eliminated leaving us with 407 former AA clients that selected one of the remaining Big 4 auditors. A total of 226 companies are classified as following their AA audit teams and 181 classified as choosing not to follow. Table 1 provides a summary of the sample selection process.

Panel B of Table 1 provides a timeline along with a cumulative frequency count of when companies in our sample switched auditors. Auditor changes in our sample range from February 12, 2002 to August 2, 2002. Most companies in our sample (69 percent) switched between the indictment on March 14, 2002, and the conviction on June 15, 2002, with only 2 percent switching prior to the indictment date and 29 percent switching after the conviction date.

The industry composition for the sample is illustrated in Table 1, Panel C, which also reports the percentage of companies in a given industry on Compustat that were audited by a Big 5 auditor during fiscal year 2001. The panel illustrates that the follow and non-follow samples have very similar industry compositions when compared to each other and to the Compustat sample. Although this implies that any results are not likely to be biased because of systematic movements by any particular industry, we control for industry-fixed effects in our tests.

[15] We have relatively little information concerning AA personnel switches to non-Big 4 auditors, which reduces our ability to generalize to this population. Furthermore, the extant literature suggests that switches to non-Big 4 auditors occur for significantly different reasons than upward or lateral movements (Johnson and Lys 1990). Although Landsman et al. (2006) illustrate downward and lateral changes involving Big N auditors are influenced by similar characteristics, we focus on the Big 4 sample in order to avoid concerns about downward switches biasing our results. Nevertheless, results are unchanged when companies selecting non-Big 4 auditors are included.

FIGURE 1
Hypotheses and Sign Predictions

Variable[a]	Switching Costs	Agency Costs
FEE_EXPERT	+	
CLIENTS	+	
TENURE	?	
SIZE	+	−
TRANSPARENCY	−	+
COMPLEX	+	−
ACCRUAL	+	
INSIDER		+
LEVERAGE		−
BLOCK		−
INDAUDIT	?	?
ACCT_FE	?	?
ROA	?	?
LOSS	?	?

[a] Variable Definitions:

FOLLOW = 1 if a client is designated as following their former AA audit team to a new auditor, 0 otherwise;
FEE_EXPERT = 1 if AA had the greatest total audit fees in an industry and state, 0 otherwise;
CLIENTS = 1 if AA had the greatest number of clients in an industry and state, 0 otherwise;
TENURE = number of years audited by AA per Compustat;
SIZE = natural logarithm of total assets (data6);
TRANSPARENCY = descending rank of the absolute value of the residual from a cross-sectional regression of annual returns on *ROA*, changes in earnings, *SIZE*, and industry-fixed effects;
COMPLEX = geographic sales diversity of a company;
ACCRUAL = performance-matched discretionary accruals utilizing the modified Jones (1991) model and adjusting by the median discretionary accruals for companies in the same industry and *ROA* decile;
INSIDER = 1 if an insider has 5 percent or more of the stock per Spectrum, 0 otherwise;
LEVERAGE = total debt divided by total assets;
BLOCK = 1 if an outside blockholder has 5 percent or more of the stock per Spectrum, 0 otherwise;
INDAUDIT = 1 if the audit committee responsible for making the follow decision was 100 percent independent, 0 otherwise;
ACCT_FE = 1 if the audit committee has an accounting financial expert, 0 otherwise;
ROA = net income before extraordinary items divided by ending total assets; and
LOSS = 1 if *ROA* is less than 0, 0 otherwise.

Results

Univariate

Table 2 provides descriptive statistics for both the companies that followed and those that did not follow their AA audit teams. AA was more likely to be the industry leader in terms of number of clients in a given state for the follow companies (28 percent) than for non-follow companies (14 percent). Companies that chose to follow AA were more transparent with a mean of 5.75 compared to companies that did not follow AA with a mean of 5.10 (p-value 0.02). In addition, companies that followed AA were less complex than

TABLE 1
Sample Selection and Industry Composition

Panel A: Sample Selection

Compustat AA companies		1,086
Less		
Foreign companies	24	
Filing information unavailable	3	
Not audited by AA prior to 10/15/01	16	
	43	
Switch Sample		1,043
Less		
Insufficient information to classify follow or not	480	
Non-Big 4 observations	29	
Missing regression information	127	
	636	
Total Sample		407

Panel B: Timeline of Key Switching Dates and Decision to Change Auditor

Event	Timeline	Cumulative # of Non-Follow Companies that Have Changed	Cumulative # of Follow Companies that Have Changed
Enron announced restatement	10/16/01	0	0
AA disclosed shredding	01/10/02	0	0
AA indicted	03/14/02	1	4
AA convicted	06/15/02	134	153
AA ceased practicing	08/31/02	181	226

Panel C: Industry Composition

	Non-Follow		Follow		Compustat
Industry	**Number**	**Freq. (%)**	**Number**	**Freq. (%)**	**Freq. (%)**
Chemicals	3	1.7	5	2.2	2.1
Computers	40	22.1	45	19.9	16.5
Durables	42	23.2	47	20.8	19.4
Extraction	7	3.9	9	4.0	3.5
Finance	6	3.3	2	0.9	6.1
Food	1	0.5	3	1.3	2.0
Insurance	4	2.2	4	1.8	5.0
Mining	4	2.2	4	1.8	2.4
Other	0	0.0	1	0.4	1.0
Pharmaceuticals	6	3.3	18	8.0	5.9
Retail	19	10.5	19	8.4	9.4
Service	19	10.5	29	12.8	9.5
Textiles	5	2.8	10	4.4	4.2
Transportation	11	6.1	21	9.3	7.9
Utilities	14	7.7	9	4.0	5.1
Total	181	100.0	226	100.0	100.0

(*continued on next page*)

TABLE 1 (continued)

This table provides descriptive statistics concerning the sample selection and industry composition of the sample. Industry membership is determined by primary SIC code as follows: Agriculture (0100–0999), Mining and construction (1000–1999, excluding 1300–1399), Food (2000–2111), Textiles and printing/publishing (2200–2780), Chemicals (2800–2824, 2840–2899), Pharmaceuticals (2830–2836), Extractive (2900–2999, 1300–1399), Durable manufacturers (3000–3999, excluding 3570–3579 and 3670–3679), Computers (7370–7379, 3570–3579, 3670–3679), Transportation (4000–4899), Utilities (4900–4999), Retail (5000–5999), Finance (6000-6411), Insurance (6500-6999), Services (7000–8999, excluding 7370–7379), and Other (> 9000). Data for the "Compustat" column are obtained from Compustat, and are based on all companies for fiscal year 2001 with a Big N auditor.

companies that did not follow AA, with mean values of 0.27 and 0.36, respectively (p-value 0.05). Further, companies following AA had higher performance-adjusted discretionary accruals with a mean of 0.01 than their non-follow counterparts with a mean of −0.04 (p-value 0.00). As stipulated by the listing requirements on the stock exchanges at the time, both samples exhibit relatively high proportions of entirely independent audit committees (87 percent for non-follow and 80 percent of follow companies) with the non-follow companies being marginally more likely to have an entirely independent audit committee (p-value 0.06).

Neither the follow nor non-follow companies appears to have performed very well in the final year audited by AA as indicated by mean *ROA*s (−0.17 and −0.10 for non-follow and follow companies, respectively) and the proportion of loss companies (49 and 46 percent for non-follow and follow companies, respectively). However, the median *ROA*s are small and positive, suggesting a need to control for extreme negative performance.

In unreported analyses, we find significant correlations between *FOLLOW* and *CLIENTS*, *TRANSPARENCY*, *COMPLEX*, *ACCRUAL*, and *INDAUDIT*. All are in the same direction as the univariate tests in Table 2 with *ACCRUAL* exhibiting the largest correlation (0.14 Pearson) in absolute magnitude with *FOLLOW*. Tests of multicollinearity for all variables in Table 2 reveal the highest variance inflation factor is 2.1 for *CLIENTS*, which is well below 10.0, the level designated in Belsley et al. (1980) as cause for concern.

Multivariate

Table 3 presents logistic regression results for our follow/non-follow model. Coefficients on *CLIENTS*, *ACCRUAL*, and *ACCT_FE* are consistent with the switching costs argument presented in H1. The positive coefficient on *CLIENTS* indicates that companies were more likely to follow AA in a state/industry where AA had the greatest number of clients, consistent with clients minimizing switching costs by following the expert. *CLIENTS* also may be capturing a "lack of competition," whereby companies may not have had many alternatives other than to follow AA in areas/industries where AA audited the most clients. This latter interpretation appears appropriate given that the results in Table 3 indicate that the odds of following AA by companies in states/industries where AA had the most clients increase by 264 percent.[16] Under both interpretations, *CLIENTS* captures increased switching costs which, in turn, provide impetus for following the AA team.

The significantly positive coefficient on *ACCRUAL* illustrates that companies with higher performance-matched discretionary accruals were more likely to follow AA, which is consistent with the switching costs hypothesis. The findings indicate a one standard

[16] The unconditional odds of following AA is 1.19-to-1, which is obtained by dividing the frequency of following documented in Table 1 (226) by the frequency of not following (181).

TABLE 2
Descriptive Statistics of Regression Variables

	Non-Follow Sample (n = 181)			Follow Sample (n = 226)			Test of Differences[b]	
Variable[a]	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median
FEE_EXPERT	0.29	0.00	0.43	0.33	0.00	0.45	0.41	0.41
CLIENTS	0.14	0.00	0.33	0.28	0.00	0.41	0.01	0.01
TENURE	10.77	8.00	7.86	10.70	8.00	7.64	0.93	0.63
SIZE	5.63	5.56	1.70	5.66	5.40	1.87	0.87	0.59
TRANSPARENCY	5.10	5.00	2.75	5.75	6.00	2.89	0.02	0.04
COMPLEX	0.36	0.00	0.46	0.27	0.00	0.41	0.05	0.05
ACCRUAL	−0.04	−0.03	0.14	0.01	0.00	0.13	0.00	0.06
INSIDER	0.19	0.00	0.40	0.23	0.00	0.42	0.43	0.43
LEVERAGE	0.17	0.07	0.21	0.20	0.14	0.22	0.12	0.21
BLOCK	0.20	0.00	0.40	0.16	0.00	0.37	0.36	0.36
INDAUDIT	0.87	1.00	0.34	0.80	1.00	0.40	0.06	0.06
ACCT_FE	0.36	0.00	0.48	0.41	0.00	0.49	0.28	0.28
ROA	−0.17	0.01	0.66	−0.10	0.01	0.37	0.16	0.29
LOSS	0.49	0.00	0.50	0.46	0.00	0.50	0.53	0.53

[a] Variable Definitions:

FOLLOW = 1 if a client is designated as following their former AA audit team to a new auditor, 0 otherwise;
FEE_EXPERT = 1 if AA had the greatest total audit fees in an industry and state, 0 otherwise;
CLIENTS = 1 if AA had the greatest number of clients in an industry and state, 0 otherwise;
TENURE = the number of years audited by AA per Compustat;
SIZE = natural logarithm of total assets (data6);
TRANSPARENCY = descending rank of the absolute value of the residual from a cross-sectional regression of annual returns on *ROA*, changes in earnings, *SIZE*, and industry-fixed effects;
COMPLEX = geographic sales diversity of a company;
ACCRUAL = performance-matched discretionary accruals utilizing the modified Jones (1991) model and adjusting by the median discretionary accruals for companies in the same industry and *ROA* decile;
INSIDER = 1 if an insider has 5 percent or more of the stock per Spectrum, 0 otherwise;
LEVERAGE = total debt divided by total assets;
BLOCK = 1 if an outside blockholder has 5 percent or more of the stock per Spectrum, 0 otherwise;
INDAUDIT = 1 if the audit committee responsible for making the follow decision was 100 percent independent, 0 otherwise;
ACCT_FE = 1 if the audit committee has an accounting financial expert, 0 otherwise;
ROA = net income before extraordinary items divided by ending total assets; and
LOSS = 1 if *ROA* is less than 0, 0 otherwise.

[b] Test of Differences presents the associated p-values from the comparison of Non-Follow and Follow companies' mean (t-test) and median (Wilcoxon test) values.

TABLE 3
Logistic Regression of Follow on Measures of Switching and Agency Costs

$$FOLLOW = \sum_I \alpha_I + \gamma_1 FEE\_EXPERT + \gamma_2 CLIENTS + \gamma_3 TENURE + \gamma_4 SIZE + \gamma_5 TRANSPARENCY + \gamma_6 COMPLEX + \gamma_7 ACCRUAL + \gamma_8 INSIDER + \gamma_9 LEVERAGE + \gamma_{10} BLOCK + \gamma_{11} INDAUDIT + \gamma_{12} ACCT\_FE + \gamma_{13} ROA + \gamma_{14} LOSS + \varepsilon$$

	Sign Predictions				
Variable[a]	**Switching**	**Agency**	**Coeff. Est.**	**p-value**	**ΔOdds**[b]
FEE_EXPERT	+		−0.04	0.90	−0.04
CLIENTS	+		1.29	0.00	2.64
TENURE	?		−0.01	0.35	−0.11
SIZE	+	−	0.01	0.96	0.01
TRANSPARENCY	−	+	0.12	0.00	0.39
COMPLEX	+	−	−0.60	0.04	−0.23
ACCRUAL	+		3.29	0.00	0.55
INSIDER		+	0.20	0.47	0.22
LEVERAGE		−	0.52	0.42	0.12
BLOCK		−	−0.52	0.05	−0.41
INDAUDIT	?	?	−0.48	0.12	−0.38
ACCT_FE	?	?	0.41	0.08	0.50
ROA	?	?	0.28	0.34	0.15
LOSS	?	?	−0.29	0.28	−0.25

n Follow	226
n Non-Follow	181
Pseudo R^2	0.20
Hosmer-Lemeshow p-value[c]	0.47
ROC curve statistic[d]	0.74

This table presents binary logistic results modeling the probability that a client followed their former AA audit team to a new auditor (*FOLLOW*) versus the reference category of deciding to sever ties with AA (*NON-FOLLOW*).
Reported p-values are based on two-tailed tests.
The model includes unreported industry-fixed effects.
[a] Variable Definitions:

FOLLOW = 1 if a client is designated as following their former AA audit team to a new auditor, 0 otherwise;
FEE_EXPERT = 1 if AA had the greatest total audit fees in an industry and state, 0 otherwise;
CLIENTS = 1 if AA had the greatest number of clients in an industry and state, 0 otherwise;
TENURE = the number of years audited by AA per Compustat;
SIZE = natural logarithm of total assets (data6);
TRANSPARENCY = descending rank of the absolute value of the residual from a cross-sectional regression of annual returns on *ROA*, changes in earnings, *SIZE*, and industry-fixed effects;
COMPLEX = geographic sales diversity of a company;
ACCRUAL = performance-matched discretionary accruals utilizing the modified Jones (1991) model and adjusting by the median discretionary accruals for companies in the same industry and *ROA* decile;
INSIDER = 1 if an insider has 5 percent or more of the stock per Spectrum, 0 otherwise;
LEVERAGE = total debt divided by total assets;
BLOCK = 1 if an outside blockholder has 5 percent or more of the stock per Spectrum, 0 otherwise;

(*continued on next page*)

TABLE 3 (continued)

INDAUDIT = 1 if the audit committee responsible for making the follow decision was 100 percent independent, 0 otherwise;
ACCT_FE = 1 if the audit committee has an accounting financial expert, 0 otherwise;
ROA = net income before extraordinary items divided by ending total assets; and
LOSS = 1 if *ROA* is less than 0, 0 otherwise.

[b] ΔOdds represents the change in odds of following AA given a standard deviation change in the independent variable of interest for continuous variables and relative to the 0 category for all indicator variables. The unconditional odds of following AA is 1.19-to-1.

[c] The Hosmer-Lemeshow test is a measure of the goodness of fit of the model that is developed by comparing the expected versus observed frequencies across intervals that are determined using the probability estimates obtained from the model. The null hypothesis is that the model has an appropriate fit.

[d] The ROC curve statistic measures the area under the Receiver Operating Characteristics curve, which provides an assessment of the model's ability to discriminate between those subjects that meet the condition of interest versus those that do not. Hosmer and Lemeshow (2000) indicate a statistic of 0.70 or greater indicates acceptable model discrimination.

deviation increase in *ACCRUAL* results in a 55 percent increase in the odds of following AA. This implies that companies that were more aggressive with their financial reporting, relative to their performance- and industry-matched peers, wanted to maintain their relationship with the auditor that originally opined on their reports. Alternatively, those companies whose discretionary accruals were lower than their performance-matched counterparts were more likely to sever ties with AA. In Section IV, we address whether these accrual patterns persist after the forced auditor change.

The presence of an accounting financial expert on the audit committee (*ACCT_FE*) is also marginally associated with a company's proclivity to follow AA (p-value of 0.08). All else equal, companies with an accounting financial expert had increased odds of following AA by 50 percent. This suggests that accounting financial experts did not view quality problems at Andersen to be endemic and, therefore, recognized that companies could minimize switching costs by maintaining relations with their current audit personnel.

In contrast, the signs of the coefficients on *TRANSPARENCY*, *COMPLEX*, and *BLOCK* are consistent with the agency costs hypothesis. The positive (negative) coefficient on *TRANSPARENCY* (*COMPLEX*) is significant, which indicates that less transparent (more complex) companies were more likely to not follow their AA audit team because public perception of the lack of Andersen audit quality was simply too costly, implying that the agency costs outweighed the switching costs. A one standard deviation increase in *TRANSPARENCY* (*COMPLEX*) results in a 39 percent increase (23 percent decrease) in the odds of following AA. These results reinforce the arguments made by Chaney and Philipich (2002) and Krishnamurthy et al. (2006) that investors perceived audit quality issues to be systemic at AA.

Finally, the coefficient on *BLOCK* is negative and significant, suggesting that companies with greater agency issues, as evidenced by the presence of outside blockholders, were more likely to switch away from AA. The ΔOdds indicates that companies with blockholders were 41 percent less likely to follow AA than those without blockholders. This supports the agency costs hypothesis, whereby monitoring by outside blockholders led companies to select more independent successor auditors.

The remaining variables are not significantly different from zero. For variables with indeterminate sign predictions (i.e., *TENURE*, *ROA*, *LOSS*), the lack of significance indicates that auditor tenure and company performance were equally distributed across the

follow and non-follow samples. For those variables with sign predictions for both hypotheses (i.e., *SIZE*) insignificance suggests the relative weighting of agency and switching costs were equal.

Overall, our model appears to appropriately capture variation in the dependent variable as evidenced by the inability to reject the null of an appropriate model fit indicated by the Hosmer and Lemeshow test (p-value 0.47). Similarly, the ROC curve analysis, with a statistic of 0.74, provides evidence that our model exhibits adequate ability to discriminate between the different companies (Hosmer and Lemeshow [2000] suggest a statistic of 0.70 or better indicates acceptable performance).

In an effort to understand whether switching cost motivations exceeded agency cost considerations or *vice versa*, in unreported analyses we standardized all variables reported in Table 3 and estimated whether the summation of the switching cost variables (*CLIENTS*, *ACCRUAL*, and *ACCT_FE*) was significantly different than the sum of coefficients that are consistent with agency costs (*TRANSPARENCY*, *COMPLEX*, and *INSIDER*), appropriately accounting for the signs of the coefficients.[17] The results fail to reject the null that switching and agency costs are equal (p-value 0.27).[18] We interpret this as evidence of switching costs constituting a major consideration in non-forced change environments, which is consistent with the observation that auditor changes are an infrequent occurrence for most companies. At the same time, when forced to change auditors, many companies viewed the agency benefits as outweighing the savings from following AA.

Multinomial Logistic Regression

The above logistic analysis allows us to study only the variation in the dichotomous follow or not-follow decision. However, Barton (2005) and Chang et al. (2003) find that there were systematic differences in former AA clients that varied directly with the length of time between the Enron restatement announcement and the date companies selected a new auditor. The results from these two papers are generally consistent with companies facing greater agency costs switching auditors earlier. If true, then this suggests that our findings could be a reflection of the timing of the switch, where companies with greater agency costs elected to not follow AA simply because they were unaware of which firm the AA team would join. Therefore, we allow companies within a follow designation to vary with the timing of the switch. We employ multinomial logistic regression that distinguishes between following or not, as well as whether a client selected a new audit firm before or after AA's conviction date.[19] If our results are a manifestation of the timing of the switch, then we expect the non-follow companies to be more likely to change auditors in the pre-conviction period. Alternatively, if our results extend beyond the timing of auditor changes studied in Barton (2005) and Chang et al. (2003), then we expect no systematic differences in the pattern of changing auditors pre- and post-conviction across the follow and non-follow groups.[20]

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[17] Standardization refers to subtracting the mean and scaling by the standard deviation of the variable in question, so that all variables have means equal to 0 and standard deviations of 1.

[18] We also estimated separate agency and switching costs regressions utilizing only those variables that were consistent with agency and switching costs, respectively. The adjusted R^2s from these regressions were 0.10 and 0.11, respectively, again indicating the two effects are approximately equal in our setting.

[19] We appreciate the suggestion by an anonymous referee to perform this analysis.

[20] The use of the conviction date to segregate the sample is admittedly arbitrary, but represents a date on which all sample companies knew they would have to change auditors and by which time a majority of the AA offices knew which audit firms they were joining.

Multinomial logit extends the binary logit model to multiple choices, and estimates the probability of a particular alternative relative to the probabilities of all other alternatives. In the current analysis, we utilize four categories: (1) non-follow companies that switched prior to the conviction, *NON-FOLLOW PRE* (n = 134); (2) non-follow companies that switched after the conviction, *NON-FOLLOW POST* (n = 47); (3) follow companies that switched prior to the conviction, *FOLLOW PRE* (n = 153); and (4) follow companies that switched after the conviction, *FOLLOW POST* (n = 73). The multinomial analysis conducted in Table 4 utilizes the *NON-FOLLOW PRE* companies as the comparison group for the other groups. The model provides the probabilities of being in the non-reference category (i.e., a positive coefficient indicates the company is more likely to be in the category indicated by the model rather than the *NON-FOLLOW PRE* category) while utilizing the information provided by all the categories.

Coefficient estimates and p-values for the multinomial logistic regression are presented in Table 4, columns 1 thru 6, while the last column provides tests of differences in the coefficients across the *FOLLOW PRE* and *POST* categories. Table 4, columns 5 and 6, illustrate that the *NON-FOLLOW PRE* and *POST* companies differ only on *SIZE* and *INSIDER*. Similarly, the last column illustrates that *SIZE* is the only significantly different factor across the *FOLLOW PRE* and *POST* groups. These results are consistent with Barton (2005), which finds that larger companies tended to change auditors earlier after the collapse of Enron. However, the fact that the companies that switched prior to the conviction are not significantly different across the *SIZE* dimension (coefficient estimate 0.00, p-value 0.98) indicates our follow designation is not simply a manifestation of the timing of the switch. Further, the lack of other significant differences *within* the follow and non-follow groups indicates the Table 3 results are not attributable to the timing of the switch.

The Table 4 findings further explain some of the results observed in Table 3. For instance, the significance of the coefficients on *CLIENTS* and *BLOCK* is primarily related to the *FOLLOW PRE* group. Further, the coefficient on *ACCT_FE* approaches marginal significance (p-value 0.11) for the *FOLLOW PRE* companies with untabulated results illustrating a significant difference between the *FOLLOW PRE* and *NON-FOLLOW POST* categories (p-value 0.02). Finally, while only the *FOLLOW POST* companies have significantly greater *TRANSPARENCY* than the *NON-FOLLOW PRE* companies (p-value 0.02), untabulated results find that both *FOLLOW* groups have significantly greater *TRANSPARENCY* than the *NON-FOLLOW POST* group (p-values 0.03 and 0.00, for the *FOLLOW PRE* and *POST* categories, respectively). Overall, the results in Table 4 are consistent with Table 3 and help illustrate that switching costs played a role in determining the selection of a new auditor after the collapse of AA regardless of the timing of the switch.

Robustness Tests

In this section, we summarize the results of several sensitivity tests that examine the robustness of our primary results in Tables 3 and 4.

Alternative industry definitions. Several of the variables used in our models (*FEE_EXPERT*, *CLIENTS*, *TRANSPARENCY*, *ACCRUAL*, *HIGHEST*, *LOWEST*, and industry-fixed effects) are a function of industry definitions. Reported results throughout the paper are based on industries as defined in Barth et al. (1998). We investigated the sensitivity of our results to using three alternative industry definitions: two-digit SIC codes, industry groupings in Fama and French (1997), and Francis et al. (1999), which resulted in 54, 44, and 27 industry groupings for our sample, respectively. Repeating our tests from Tables 3 and 4 using each alternative and re-estimating all variables requiring industry classifications,

TABLE 4
Multinomial Logistic Regression of the Follow Decision Pre- versus Post-Conviction Date

	FOLLOW				*NON-FOLLOW*		*FOLLOW*
	Pre-Conviction Date[b] (*PRE*)		Post-Conviction Date[c] (*POST*)		Post-Conviction Date[c] (*POST*)		*PRE*[b] versus *POST*[c]
Variable[a]	Coeff. Est	p-value[d]	Coeff. Est	p-value[d]	Coeff. Est	p-value[d]	p-value[e]
FEE_EXPERT	0.04	0.91	−0.22	0.61	−0.09	0.85	0.54
CLIENTS	1.39	0.00	0.79	0.22	−0.15	0.84	0.30
TENURE	−0.01	0.72	−0.03	0.23	0.01	0.69	0.34
SIZE	0.00	0.98	−0.40	0.00	−0.47	0.00	0.00
TRANSPARENCY	0.07	0.18	0.14	0.02	−0.10	0.19	0.19
COMPLEX	−0.64	0.05	−0.94	0.03	−0.72	0.16	0.48
ACCRUAL	4.41	0.00	3.92	0.00	2.90	0.07	0.71
INSIDER	0.72	0.05	0.47	0.28	1.14	0.01	0.53
LEVERAGE	1.04	0.17	0.41	0.67	1.29	0.26	0.47
BLOCK	−0.82	0.03	−0.57	0.17	−0.53	0.29	0.56
INDAUDIT	−0.47	0.19	−0.25	0.60	0.13	0.84	0.62
ACCT_FE	0.44	0.11	−0.06	0.86	−0.52	0.21	0.13
ROA	0.33	0.35	0.46	0.29	0.56	0.39	0.78
LOSS	−0.32	0.33	−0.66	0.10	−0.36	0.45	0.37
Pseudo R^2	0.37						

(*continued on next page*)

TABLE 4 (continued)

n *FOLLOW PRE*	153
n *FOLLOW POST*	73
n *NON-FOLLOW PRE*	134
n *NON-FOLLOW POST*	47

This table presents results from a single multinomial logistic regression with the sample of Non-Follow companies that switched prior to AA's conviction on June 15, 2002 (*NON-FOLLOW PRE*) serving as the reference category. The model includes unreported industry-fixed effects.
All p-values are two-tailed.
Refer to Figure 1 for hypotheses' sign predictions.
[a] Variable Definitions:

FOLLOW = 1 if a client is designated as following their former AA audit team to a new auditor, 0 otherwise;
FEE_EXPERT = 1 if AA had the greatest total audit fees in an industry and state, 0 otherwise;
CLIENTS = 1 if AA had the greatest number of clients in an industry and state, 0 otherwise;
TENURE = the number of years audited by AA per Compustat;
SIZE = natural logarithm of total assets (data6);
TRANSPARENCY = descending rank of the absolute value of the residual from a cross-sectional regression of annual returns on *ROA*, changes in earnings, *SIZE*, and industry-fixed effects;
COMPLEX = geographic sales diversity of a company;
ACCRUAL = performance-matched discretionary accruals utilizing the modified Jones (1991) model and adjusting by the median discretionary accruals for companies in the same industry and *ROA* decile;
INSIDER = 1 if an insider has 5 percent or more of the stock per Spectrum, 0 otherwise;
LEVERAGE = total debt divided by total assets;
BLOCK = 1 if an outside blockholder has 5 percent or more of the stock per Spectrum, 0 otherwise;
INDAUDIT = 1 if the audit committee responsible for making the follow decision was 100 percent independent, 0 otherwise;
ACCT_FE = 1 if the audit committee has an accounting financial expert, 0 otherwise;
ROA = net income before extraordinary items divided by ending total assets; and
LOSS = 1 if *ROA* is less than 0, 0 otherwise.

[b] Pre-Conviction Date designates those companies that switched prior to AA's conviction on June 15, 2002 (*PRE*).
[c] Post-Conviction Date designates those companies that switched after AA's conviction on June 15, 2002 (*POST*).
[d] Reported p-values are for the reported coefficient estimates.
[e] Reported p-values are for the indicated tests of differences in reported coefficient estimates.

our inferences remained unchanged. However, some industry definitions (i.e., two-digit SIC codes and Fama and French [1997]) result in quasi-complete separation of the data in our Tables 3 and 4 because of the increased number of industry control variables required by these definitions coupled with the small sample size.

Alternative definitions of auditor expertise. Revising the definitions of auditor expertise by requiring AA to have at least 10 percent more audit fees or clients than the next closest competitor in that state and industry does not change our inferences (p-values of 0.84 and 0.01 for *FEE_EXPERT* and *CLIENTS*, respectively in Table 3 analysis, and in Table 4 analysis only the coefficient on *CLIENTS* in the *PRE-FOLLOW* category is significant, p-value of 0.01). We also re-estimated *FEE_EXPERT* and *CLIENTS* on a city-level basis according to the methodology in Francis, Reichelt, and Wang (2005), which utilizes two-digit SIC codes and the U.S. Census Bureau's metropolitan statistical areas. When included in the tests in Tables 3 and 4, the coefficients on the city-level variables were not significantly different from zero, regardless of the industry definition utilized (all p-values > 0.15).[21] Approximately 20 percent of our sample companies experienced a switch in their audit opinion cities after the collapse of AA, implying that city-level measures of expertise are not capable of capturing the competitive landscape for a significant proportion of our sample.

Finally, given the magnitude of the effect of *CLIENTS* on the follow decision documented in Tables 3 and 4, we re-estimated the models excluding this variable. The inferences remain unchanged and the model is still well specified as indicated by the model fit and discrimination statistics (Hosmer and Lemeshow p-value of 0.12, and the ROC Curve statistic of 0.71).

Alternative definitions of *COMPLEX*. Next, we tested the sensitivity of our measure of company and audit complexity, *COMPLEX*. We supplemented the models in Tables 3 and 4 with three alternative measures suggested by prior research (Simunic and Stein 1987): total number of geographic segments, total number of business segments, and a measure equivalent to *COMPLEX* that utilizes business segments rather than geographic segments. In untabulated results, none of the alternatives was incrementally significant (p-values of 0.29, 0.38, 0.56, respectively), nor did their inclusion qualitatively alter any of the reported results.

Additional proxies for agency costs. Prior research on the association between audit quality and agency benefits has included a number of proxies for agency costs (e.g., DeFond 1992; Francis and Wilson 1988). To test the robustness of our findings, we expanded the models in Tables 3 and 4 to include three additional proxies: the need for external financing using Kaplan and Zingales (1997), stock price volatility for the calendar year 2001, and institutional holdings. When the variables were included in the model individually or as a group, the coefficients on each of the additional proxies were not significantly different from zero (p-values of 0.67, 0.23, 0.31 for individual tests, and 0.56, 0.21, 0.34 when included at the same time, respectively) and our inferences remain unaltered.

To augment our agency hypothesis tests, we collected information concerning board of director characteristics commonly used in corporate governance research, including the percentage of independent directors, total number of directors, and whether the Chairman of the Board is also an employee of the company. When added to the models in Tables 3 and 4, none of the additional corporate governance variables was significant (p-values of 0.54, 0.80, 0.65, respectively), nor did they qualitatively alter any of the reported results.

[21] Francis, Reichelt, and Wang (2005) notes that their results are robust to the Barth et al. (1998) industry definitions.

Other sensitivity tests. No change in inferences resulted when we repeated the tests in Tables 3 and 4 and included AA office-fixed effects instead of industry-fixed effects. Furthermore, the inclusion of company-specific, three-day market model abnormal returns surrounding AA's indictment date is not significant (p-value 0.16) and has no effect on any of the reported results. This suggests that the market reaction on the indictment date was a reflection of both agency and switching costs for sample companies. Finally, the Table 3 and 4 results are not sensitive to (1) excluding all observations that switched prior to the announcement of their AA office takeover by another Big 4 audit firm (our primary mechanism for determining the follow designation) and, (2) coding all of these same observations as non-follow regardless of the audit firm they eventually selected.

IV. FINANCIAL STATEMENT QUALITY

Tension between agency benefits and switching costs is at the heart of the debate on mandatory auditor rotation. Proponents of mandatory auditor rotation argue that financial reporting will be improved by forcing companies to periodically change auditors, thereby resulting in agency benefits. In an effort to examine this issue, a number of studies have investigated the relation between auditor tenure and audit/earnings quality, with mixed results. Deis and Giroux (1992) analyzes a sample of small CPA firms auditing independent school districts and found a reduction in audit quality (defined as the probability of detecting and reporting a breach in the client's accounting system) with increased tenure. More recently, Myers et al. (2003) finds a positive relation between auditor tenure and the quality of earnings measured as the absolute value of discretionary accruals. They interpret their findings as being *inconsistent* with mandatory auditor rotation improving financial reporting.

The forced change for AA clients has the potential to be incrementally informative for this debate. Nagy (2005) finds that abnormal accruals were lower in 2002 and 2003 as compared to 2000 and 2001 for all Big 4 audit clients and incrementally lower for former AA clients. He attributes the decline to increased skepticism by the successor auditor. Cahan and Zhang (2006) find that former AA clients had lower levels of abnormal accruals in 2002 relative to other companies audited by the Big 4. They attribute more conservative accounting to the successor auditor compensating for an actual or perceived higher litigation risk for former AA clients. These results suggest that the forced change may have improved financial reporting. However, neither study differentiates companies based on the follow decision. Because financial statements and reported accruals are jointly determined by the client and auditor, our analysis, which considers the client's choice of auditor, provides additional insights on this matter.

Research Design

We expand the discretionary accrual model in Myers et al. (2003) to include our *FOLLOW* variable and indicators for extreme *ACCRUAL* quintiles:[22]

[22] An additional distinction between our analysis and Myers et al. (2003) is that we adjust discretionary accruals for performance. Given our sample size and our control/treatment research design, performance-adjusted discretionary accruals are the most appropriate measures of aggressive behavior in this context (see Kothari et al. 2005).

$$ACCRUAL = \sum_I \alpha_I + \beta_1 FOLLOW + \beta_2 LOWEST + \beta FOLLOW*LOWEST + \beta_4 HIGHEST + \beta_5 FOLLOW*HIGHEST + \beta_6 TENSURE + \beta_7 AGE + \beta_8 SIZE + \beta_9 INDUSTRYGROWTH + \beta_{10} CASHFLOW + \varepsilon \quad (4)$$

where *ACCRUAL*, *FOLLOW*, *TENURE*, *SIZE*, and industry indicator variables are as defined previously. The remaining variables are defined as follows (Compustat data items in parentheses):

LOWEST = 1 if *ACCRUAL* is in the lowest quintile during last year audited by AA, 0 otherwise;
HIGHEST = 1 if *ACCRUAL* is in the highest quintile during last year audited by AA, 0 otherwise;
AGE = number of years for which total assets (#6) was reported in Compustat since 1980;
$INDUSTRYGROWTH = \sum_{i=1}^{N} Sales_{i,t} / \sum_{i=1}^{N} Sales_{i,t-1}$ by industry; and
CASHFLOW = cash flow from operations (#308) divided by ending total assets (#6).

LOWEST and *HIGHEST* distinguish companies in the lowest and highest quintiles of *ACCRUAL* as of the last year audited by AA (i.e., companies in the highest [lowest] quintile in the last year audited by AA, year t, are also coded as highest [lowest] in $t+1$).

We allow the coefficients on the extreme quintiles to vary with *FOLLOW* in order to determine whether discretionary accrual behavior is associated with the decision to sever ties with the AA team. Given that non-follow companies clearly have a new auditor, we expect extreme quintile companies from this sample to have a higher probability of exhibiting reversion behavior (i.e., the coefficients on *LOWEST* and *HIGHEST* are expected to be insignificantly different from zero in the first year of the new auditor). We do not make predictions for the corresponding follow companies since they have essentially only changed the name of their auditor rather than the underlying relationship.

Results

Results are reported in Table 5 for the final year audited by AA (year t) and the first year audited by the new auditor (year $t+1$).[23] Consistent with Myers et al. (2003), *INDUSTRYGROWTH* and *CASHFLOW* are significantly positive and negative, respectively. However, contrary to the findings in Myers et al. (2003), *TENURE*, *AGE*, and *SIZE* are insignificant. The lack of significance is likely attributable to our limited sample size reducing the cross-sectional variation in the estimates.[24]

The insignificance of the *FOLLOW* variable suggests that the middle three quintiles of the *ACCRUAL* variable are not significantly different on average from the corresponding group of non-follow companies in either year. Next, as indicated by the negative coefficient

[23] By design, *HIGHEST* and *LOWEST* are significantly different from zero in year t. This prohibits comparisons of the coefficients across time and explains the relatively high R^2 in year t versus year $t+1$.
[24] In contrast to our sample of 407 companies, Myers et al. (2003) utilize all observations on Compustat with the requisite data yielding 41,250 observations.

TABLE 5
Regressions of Performance-Adjusted Discretionary Accruals on the Follow Decision and Control Variables

$$ACCRUAL = \sum_I \alpha_I + \beta_1 FOLLOW + \beta_2 LOWEST + \beta_3 FOLLOW*LOWEST + \beta_4 HIGHEST + \beta_5 FOLLOW*HIGHEST + \beta_6 TENURE + \beta_7 AGE + \beta_8 SIZE + \beta_9 INDUSTRYGROWTH + \beta_{10} CASHFLOW + \varepsilon$$

	Year t		Year t+1	
Variable[a]	**Coeff. Est.**	**p-value**	**Coeff. Est.**	**p-value**
FOLLOW	0.01	0.55	0.02	0.13
LOWEST	−0.17	0.00	−0.04	0.02
*FOLLOW*LOWEST*	0.03	0.12	0.00	0.93
HIGHEST	0.15	0.00	0.05	0.02
*FOLLOW*HIGHEST*	0.00	0.87	−0.06	0.02
TENURE	0.00	0.53	−0.01	0.58
AGE	0.00	0.57	0.00	0.28
SIZE	0.00	0.84	−0.01	0.08
INDUSTRY GROWTH	0.32	0.00	−0.08	0.55
CASH FLOW	−0.16	0.00	−0.32	0.00
$\beta_2 + \beta_3$	−0.14	0.00	−0.04	0.02
$\beta_4 + \beta_5$	0.15	0.00	−0.01	0.47
n Follow	226		226	
n Non-Follow	181		181	
Adj. R^2	0.75		0.31	

This table presents regressions of performance-adjusted discretionary accruals in the final year audited by AA (year t) and the first year audited by the new auditor (year t+1). Companies are classified as being in the lowest or highest performance-adjusted accrual quintile in year t.
Reported p-values are based on two-tailed tests.
The model includes unreported industry-fixed effects.
[a] Variable Definitions:

ACCRUAL = performance-matched discretionary accruals utilizing the modified Jones (1991) model and adjusting by the median discretionary accruals for companies in the same industry and *ROA* decile;
FOLLOW = 1 if a client is designated as following their former AA audit team to a new auditor, 0 otherwise;
LOWEST = 1 if *ACCRUAL* in year t was in the lowest quintile, 0 otherwise;
*FOLLOW*LOWEST* = interaction of *FOLLOW* and *LOWEST*;
HIGHEST = 1 if *ACCRUAL* in year t is in the highest quintile, 0 otherwise;
*FOLLOW*HIGHEST* = interaction of *FOLLOW* and *HIGHEST*;
TENURE = number of years audited by AA per Compustat;
AGE = number of years the company reported total assets on Compustat since 1980;
SIZE = natural logarithm of total assets;
INDUSTRY GROWTH = total industry sales in the current year divided by total industry sales in the prior year, where industries are defined as in Table 1; and
CASH FLOW = cash flow from operations at the end of the indicated year divided by ending total assets.

on *LOWEST*, non-follow companies in the extreme negative *ACCRUAL* quintile had persistently lower discretionary accruals than the remainder of the sample in both years analyzed. More importantly, the *FOLLOW* companies do not appear to behave differently after

the change in auditors relative to the non-follow companies, as witnessed by the insignificance of the coefficient on *FOLLOW*LOWEST*.

The *HIGHEST* companies also exhibit some persistence with non-follow companies being different on average in both the final year with AA (year t) and the first year audited by the new auditor (year $t+1$). This suggests that the forced auditor change did not serve to rein in this relatively aggressive behavior. The *FOLLOW* companies in the highest quintile, on the other hand, are no longer significantly different on average from the middle three quintiles, implying that their relatively high accrual behavior in the final year of AA was not repeated under the new audit firms.[25]

Overall, we find evidence that companies chose to follow (not follow) AA if they had higher (lower) discretionary accruals. We find no evidence that accrual behavior improved for follow or non-follow clients in the lowest quintile of discretionary accruals. Further, there is no evidence that *NON-FOLLOW* companies in the highest discretionary accrual quintile curbed their discretionary accruals after selecting an entirely new auditor. In contrast, *FOLLOW* companies in the same category no longer exhibited higher performance-adjusted discretionary accruals on average after following AA to a new auditor. Combined, this evidence does not support the contention that mandatory auditor rotation would necessarily improve financial reporting, confirming conclusions reached in Myers et al. (2003).

Ex post, there are several possible causes of the unexpected result for the companies in the highest performance-adjusted discretionary accrual quintile. First, AA partners moving to a new auditor may have been more likely to rein in discretionary accruals given their reduction in wealth and other disutilities while at AA. Second, audit firms taking on AA *clients and personnel* may have subjected the companies to increased levels of scrutiny because of the Enron and WorldCom fiascos or perceived higher litigation risk. Discussions with audit firm partners, both formerly from AA and those who took on AA clients, fail to confirm this latter conjecture, though we have no way of empirically validating this. Finally, as documented in Tables 3 and 4, companies with greater agency concerns are more likely to be non-follow companies, which is consistent with changing auditors in an effort to signal their accrual quality to the market by having new independent auditors opine on the relatively high discretionary accrual behavior.

Robustness Tests

The multinomial tests from Table 4 find that, relative to the pre-conviction non-follow group, all other companies had significantly higher performance-adjusted discretionary accruals on average. Further, companies from the post-conviction period were smaller companies that might exhibit significantly different accrual behaviors. In order to assess the sensitivity of the Table 5 results to the composition of the companies in the highest quintile, we examined the proportion of follow and non-follow companies within the *HIGHEST* category, along with separating them into pre- and post-conviction categories. The results reveal that the relative proportion of follow and non-follow companies and of pre- and post-conviction companies are not statistically different from those observed in the full sample in Table 4. This alleviates concerns that the timing of the switch influenced the accrual results. Also, we re-estimated the analysis in Table 5 utilizing only the pre-conviction groups, and the results hold with only the *HIGHEST* follow companies exhibiting reversion

[25] The incremental coefficient for companies that followed and were in the high accrual quintile is *HIGHEST+FOLLOW*HIGHEST*. Reported statistics are included in the bottom of Table 5.

in their behavior, which provides further assurance that the results in Table 5 are not due to differences in the timing of auditor changes.[26]

In addition, our Table 5 results are not sensitive to alternative industry definitions including two-digit SIC codes, Fama and French (1997), and Francis et al. (1999). Furthermore, we repeated the Table 5 analyses to include AA office fixed-effects as well as utilizing non-performance-matched discretionary accruals with no change in inferences.

V. CONCLUSION

The AA collapse presents a rare opportunity to study the determinants of auditor selection. Ordinarily, researchers are limited to switching decisions that are created by an auditor resignation or client dismissal. Both are events potentially contaminated by other information contained in the decision to change auditors. In the current setting, all AA clients had to find new auditors, thereby mitigating any signaling issues related to the dismissal of AA. We contribute to the auditor change literature by adopting a different methodology that allows us to focus on factors involved in the selection of a new auditor, namely switching and agency costs. We view this methodology and our results as a significant contribution to the literature.

The results indicate that companies consider both switching and agency costs in selecting a new auditor. We find that companies with the most aggressive accruals, with an accounting financial expert on their audit committee and where AA was the industry leader were more likely to follow AA. As such, for some companies the cost of switching auditors outweighed any agency benefits forgone by following AA. On the other side of the trade-off, we find that companies with higher agency concerns, as captured by the existence of an outside blockholder, low financial reporting transparency, and greater geographic diversity, were more likely to sever ties with AA and start a completely new audit firm relationship. This suggests the agency costs borne by following AA outweighed the benefits of reduced switching costs. It also suggests that companies for whom agency concerns are the most acute consider the independence of their auditor, in fact and appearance, in mitigating these costs.

In addition, we find that the companies in the highest quintile of performance-matched discretionary accruals that followed AA curbed their accrual behavior in the year after AA's collapse, while there was no change for those that did not follow AA. This suggests that the mandatory rotation of auditors may not improve financial reporting.

Overall, we conclude that companies trade-off both agency and switching costs in the selection of a new auditor. We interpret this evidence as being consistent with the notion that switching costs in non-forced auditor change settings likely outweigh the agency benefits of changing auditors in many cases, which is consistent with the infrequency of auditor changes for most companies. In our forced auditor change setting, the results illustrate that more complex/less transparent companies do perceive there to be agency benefits to changing auditors but, in many instances, these benefits are not likely to outweigh the savings from maintaining their current audit personnel. Finally, our findings suggest that a mandatory auditor rotation regime would not necessarily improve earnings quality. Our results

[26] We also examined the relative proportions of the remaining Big 4 audit firms represented in the *HIGHEST* category. The results in Cahan and Zhang (2006) indicate only former AA clients that subsequently hired Ernst & Young (EY) experienced significantly lower levels of abnormal accruals. In our sample, the relative proportion of EY clients in the *HIGHEST* portfolio is 32 and 25 percent for the follow and non-follow groups, respectively, indicating the reversal for the follow group is not simply a manifestation of the EY effect documented in Cahan and Zhang (2006).

should be of interest to regulators, standard-setters, and academics who are debating the efficacy of the Sarbanes-Oxley Act of 2002 and mandatory auditor rotation, as well as to those interested in the factors involved in the selection of a new auditor.

REFERENCES

American Institute of Certified Public Accountants (AICPA). 1978. *The Commission on Auditors' Responsibilities: Report, Conclusions and Recommendations*. New York, NY: AICPA.

Asthana, S. C., S. Balsam, and J. Krishnan. 2004. Audit firm reputation, auditor switches, and client stock price reactions: The Andersen experience. Working paper, Temple University, Philadelphia, PA.

Balsam, S., J. Krishnan, and J. S. Yang. 2003. Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory* 22 (September): 71–97.

Barth, M. E., W. H. Beaver, and W. R. Landsman. 1998. Relative valuation roles of equity book value and net income as a function of financial health. *Journal of Accounting and Economics* 25 (February): 1–34.

———, Y. Konchitchki, and W. R. Landsman. 2005. Cost of capital and financial statement transparency. Working paper, Stanford University, Stanford, CA.

Barton, J. 2001. Does the use of financial derivatives affect earnings management decisions? *The Accounting Review* 76 (1): 1–26.

———. 2005. Who cares about auditor reputation? *Contemporary Accounting Research* 22: 549–586.

Belsley, D. A., E. Kuh, and R. E. Welsch. 1980. *Regression Diagnostics: Identifying Influential Data and Sources of Collinearity*. New York, NY: John Wiley.

Bradshaw, M. T., S. A. Richardson, and R. G. Sloan. 2001. Do analysts and auditors use information in accruals? *Journal of Accounting Research* 39 (June): 45–74.

Bushman, R., F. A. Martinez-Jerez, and A. Smith. 2002. How do investors' perceptions of the credibility of accounting information and its governance role affect firms' capital market reactions to the Enron collapse? Working paper, The University of North Carolina at Chapel Hill, NC.

———, Q. Chen, E. Engel, and A. Smith. 2004. Financial accounting information, organizational complexity, and corporate governance systems. *Journal of Accounting and Economics* 37 (2): 167–201.

Cahan, S. F., and W. Zhang. 2006. After Enron: Auditor conservatism and ex-Andersen clients. *The Accounting Review* 81 (1): 49–82.

Chaney, P. K., and K. L. Philipich. 2002. Shredded reputation: The cost of audit failure. *Journal of Accounting Research* 40 (Supplement): 1221–1245.

Chang, C., W. Chi, and C. Liu. 2003. Client characteristics and auditor switch in an audit failure. Working paper, National Chengchi University, Taipei, ROC.

Chung, H., and S. Kallapur. 2003. Client importance, non-audit services, and abnormal accruals. *The Accounting Review* 78 (4): 931–955.

DeAngelo, L. E. 1981. Auditor size and audit quality. *Journal of Accounting and Economics* 3 (December): 183–199.

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70 (2): 193–226.

DeFond, M. 1992. The association between changes in client firm agency costs and auditor switching. *Auditing: A Journal of Practice & Theory* 11 (1): 16–31.

———, and K. R. Subramanyam. 1998. Auditor changes and discretionary accruals. *Journal of Accounting and Economics* 25 (1): 35–68.

———, R. N. Hann, and X. Hu. 2005. Does the market value financial expertise on audit committees of boards of directors? *Journal of Accounting Research* 43 (2): 153–193.

Deis, D., Jr., and G. Giroux. 1992. Determinants of audit quality in the public sector. *The Accounting Review* 67: 462–479.

Dopuch, N., and D. Simunic. 1982. Competition in auditing: An assessment. *Fourth Symposium on Auditing Research*: 401–450.

Easton, P. D., and T. S. Harris. 1991. Earnings as an explanatory variable for returns. *Journal of Accounting Research* 29 (Spring): 19–36.

Eichenseher, J. W., and D. Shields. 1989. Corporate capital structure and auditor "fit." *Advances in Accounting* 1 (Supplement): 39–56.

Fama, E., and K. French. 1997. Industry costs of equity. *Journal of Financial Economics* 43: 153–193.

Francis, J., and E. R. Wilson. 1988. Auditor changes: A joint test of theories relating to agency costs and auditor differentiation. *The Accounting Review* 63 (October): 663–682.

———, D. J. Stokes, and D. Anderson. 1999. City markets as a unit of analysis in audit research and the re-examination of big 6 market shares. *Abacus* 35: 185–206.

———, R. LaFond, P. Olsen, and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39 (2): 295–327.

———, K. Reichelt, and D. Wang. 2005. The pricing of national and city-specific reputations for industry expertise in the U.S. audit market. *The Accounting Review* 80 (January): 113–136.

Geiger, M., and K. Raghunandan. 2002. Auditor tenure and audit reporting failures. *Auditing: A Journal of Practice & Theory* 21 (March): 67–78.

Hackenbrack, K. E., and C. E. Hogan. 2002. Market response to earnings surprises conditional on reasons for an auditor change. *Contemporary Accounting Research* 19 (Summer): 195–223.

Healy, P., A. Hutton, and K. Palepu. 1999. Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research* 16: 485–520.

Hogan, C. E., and D. C. Jeter. 1999. Industry specialization by auditors. *Auditing: A Journal of Practice & Theory* 18 (Spring): 1–17.

Hosmer, D., and S. Lemeshow. 2000. *Applied Logistic Regression*. 2nd edition. Hoboken, NJ: John Wiley & Sons, Inc.

Jensen, M. C., and W. H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3 (October): 305–360.

Johnson, W. B., and T. Lys. 1990. The market for audit services: Evidence from voluntary auditor changes. *Journal of Accounting and Economics* 12: 281–308.

Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29 (Autumn): 193–228.

Kaplan, S. N., and L. Zingales. 1997. Do investment cash-flow sensitivities provide useful measures of financing constraints? *Quarterly Journal of Economics* 112 (February): 169–215.

Kothari, S. P., A. Leone, and C. Wasley. 2005. Performance-matched discretionary accrual measures. *Journal of Accounting and Economics* 39: 163–197.

Krishnamurthy, S., J. Zhou, and N. Zhou. 2006. Auditor reputation, auditor independence and the stock market impact of Andersen's indictment on its clients. *Contemporary Accounting Research* 23 (2): 465–490.

Krishnan, J., and J. Krishnan. 1997. Litigation risk and auditor resignations. *The Accounting Review* 72 (October): 539–560.

Landsman, W. R., K. K. Nelson, and B. R. Rountree. 2006. An empirical analysis of Big N auditor switches: Evidence from the pre- and post-Enron eras. Working paper, The University of North Carolina at Chapel Hill, NC.

Lang, M., and R. Lundholm. 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review* 71: 467–492.

Menon, K., and D. Williams. 1994. The insurance hypothesis and market prices. *The Accounting Review* 69 (April): 327–342.

Myers, J. N., L. A. Myers, and T. C. Omer. 2003. Exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation? *The Accounting Review* 78 (July): 779–799.

Nagy, A. L. 2005. Mandatory audit firm turnover, financial reporting quality, and client bargaining power: The case of Arthur Andersen. *Accounting Horizons* 19 (June): 51–68.

Nichols, D. R., and D. B. Smith. 1983. Auditor credibility and auditor changes. *Journal of Accounting Research* 21 (Autumn): 534–544.

Palepu, K. 1985. Diversification strategy, profit performance and the entropy measure. *Strategic Management Journal* 6 (3): 239–255.

Palmrose, Z-V. 1984. The demand for quality-differentiated audit services in an agency cost setting: An empirical investigation. In *Sixth Symposium on Auditing Research*, edited by A. R. Abdelkhalik and I. Solomon, 229–52. Champaign, IL: University of Illinois.

———. 1986. Audit fees and auditor size: Further evidence. *Journal of Accounting Research* 24 (Spring): 97–110.

———. 1987. Litigation and independent auditors: The role of business failures and management fraud. *Auditing: A Journal of Practice & Theory* 6 (Spring): 90–103.

Sankaraguruswamy, S., and S. Whisenant. 2004. An empirical analysis of voluntarily supplied client-auditor realignment reasons. *Auditing: A Journal of Practice & Theory* 23 (1): 107–121.

Schwartz, K., and K. Menon. 1985. Auditor switches by failing firms. *The Accounting Review* 60 (April): 248–261.

Shu, S. Z. 2000. Auditor resignations: Clientele effects and legal liability. *Journal of Accounting and Economics* 29 (April): 173–205.

Simunic, D. 1980. The pricing of audit services: Theory and evidence. *Journal of Accounting Research* (Spring): 161–190.

———, and M. Stein. 1987. *Product Differentiation in Auditing: Auditor Choice in the Market for Unseasoned New Issues.* Vancouver, Canada: Canadian Certified General Accountants' Research Foundation.

U.S. General Accounting Office (GAO). 2003. *Public Accounting Firms Required Study on the Potential Effects of Mandatory Audit Firm Rotation.* Washington, D.C.: Government Printing Office.

Watts, R., and J. Zimmerman. 1983. Agency problems, auditing and the theory of the firm: Some evidence. *Journal of Law and Economics* 26 (October) 613–633.

Williams, D. 1988. The potential determinants of auditor change. *Journal of Business Finance and Accounting* 15 (Summer) 243–261.