**Trinity University**
## Digital Commons @ Trinity

School of Business Faculty Research — School of Business

Winter 2008

# Competition for Andersen's Clients

Mark Kohlbeck

Brain W. Mayhew

Pamela Murphy

Michael S. Wilkins
*Trinity University*, mike.wilkins@trinity.edu

Follow this and additional works at: https://digitalcommons.trinity.edu/busadmin_faculty

Part of the Business Commons

# Competition for Andersen's Clients[*]

MARK KOHLBECK, *Florida Atlantic University*

BRIAN W. MAYHEW, *University of Wisconsin – Madison*

PAMELA MURPHY, *Queen's University*

MICHAEL S. WILKINS, *Texas A&M University*

## 1. Introduction

We examine the competition among Big 4 firms for Andersen's public clients during and after its demise in 2002. Andersen's failure provides a quasi laboratory to investigate how audit firms compete for new clients. Our analysis focuses primarily on the acquisition by Big 4 firms of some, but not all, of Andersen's individual offices in the United States, and the resulting impact on public clients. The United States Congress expressed concern about the failure of Andersen when it required the GAO to study the competitive nature of audit markets as part of the Sarbanes Oxley Act (GAO 2003). We build on the original GAO study by incorporating office purchases into the analysis of competition for Andersen's public clients.

We use news reports to construct a database that differentiates between Andersen offices that were effectively purchased or not purchased by the surviving Big 4 firms.[1] This database enables us to explore the factors associated with Big 4 office purchases, differences in strategies used to acquire Andersen's clients, and the impact of these different acquisition strategies on audit fees.

We identify 65 Andersen offices that served public clients in 2001. Big 4 firms purchased 39 offices and three local industry practice units from large offices. Based on these data, we consider four types of Andersen client switches: (a) *EARLY_SWITCHERS*: clients who switched prior to the purchase of their Andersen office, or if the office was not purchased, prior to the first Andersen

office purchase on April 15, 2002; (b) *PURCHASE_STAY*: clients who stayed with the office purchaser after the purchase date; (c) *PURCHASE_CHANGE*: clients who changed away from the office purchaser after the purchase date; and (4) *NO_PURCHASE*: clients who changed after April 15, 2002 in cities where the local Andersen office was not purchased.

We find that while all firms competed for Andersen's clients on the open market, Ernst & Young (EY) and KPMG focused on purchasing Andersen offices. Price-waterhouseCoopers (PWC) did not purchase any offices and gained both the fewest clients and the lowest overall fees. Deloitte (DT) used a mixed strategy, acquiring a few Andersen offices while competing on the open market for its remaining gains. EY and KPMG captured more clients than the remaining Big 4 — nearly double the number for PWC and 50 percent more than DT. Audit firms were more likely to purchase Andersen offices when the purchaser had a local market presence, had a lower ratio of Andersen's local clients to the purchaser's clients, and had gained relatively more *EARLY_SWITCHERS*. This evidence suggests that on average, purchasing firms did not use office purchases to establish a local market presence, or to purchase Andersen offices that were significantly larger than the purchaser's local office. Purchasers retain 70 percent of purchased clients and a higher percentage of audit fees. This rate compares favorably with even EY's market leading 26 percent acquisition rate for nonpurchased clients.

We examine the association between audit fee changes and the nature of client acquisition. We apply existing theory (DeAngelo 1981; Dye 1991; Chaney, Jeter, and Shaw 2003) to the Andersen client-switch environment, and predict that open market switch clients experienced low-balling, while clients that moved along with their former Andersen office to a new auditor did not experience low-balling. We find evidence that supports these basic conjectures. *NO_PURCHASE* clients that represent open market switchers in cities where the Andersen office was not purchased received discounted fees. *EARLY_SWITCHERS* and *PURCHASE_STAY* clients neither received a discount nor paid a premium. *PURCHASE_CHANGE* clients paid a statistically significant premium.

We also examine audit fee changes among five client size-based portfolios to investigate the GAO's concern that large clients have relatively few auditor choices after Andersen's demise. Large clients have limited choices compared with small clients because small auditors generally cannot serve large clients.[2] We interact different client size groupings with the type of auditor switch. The size groupings are generally consistent with the overall results, but suggest a subtle size-based impact on competition. Open market switchers (*EARLY_SWITCHERS* and *NO_PURCHASE*) with assets less than $1 billion generally receive significant discounts, but those larger than $1 billion do not. *PURCHASE_STAY* clients with assets greater than $5 billion in assets pay a fee premium while those less than $5 billion do not. Only the *PURCHASE_CHANGE* category does not suggest a size impact as both clients with less than $100 million and those with assets between one and $5 billion paid premiums.

Overall, the results suggest that Big 4 auditors gained market power in market segments where competition is reduced. An office purchase reduced competition

among the Big 4 within a local market. The lack of fee discounting among purchased clients suggests reduced competition for Andersen clients. Our evidence from size-segregated regressions also supports the role of competition in driving discounting. Large clients with greater than $1 billion in assets, who faced limited options when seeking a new auditor, did not receive discounts. In contrast, clients with less than $1 billion in assets who made open market switches and who could be served by a larger number of auditors generally did receive discounts.

Our results differ from Sullivan 2002, who investigates the impact of the 1989 Big 8 mergers. She finds evidence that the mergers increased the efficiency of the newly formed firms, and increased the competitiveness of the new firms especially for large clients. Our results show that when the local office was purchased, Andersen clients who sought a new auditor did not obtain discounted fees. Under the assumption that these clients did not want to be, or could not be, served by the purchasing auditor, this evidence implies that the reduced availability of audit firms decreased market competition, resulting in the absence of fee discounting.

Our research complements existing research by examining how the remaining audit firms competed for Andersen's clients, and how audit fees were affected by this competition. We extend Chaney and Philipich 2002 and Krishnamurthy, Zhou, and Zhou 2006 — who examine the cost to Andersen clients in terms of market reactions — by examining the subsequent cost to clients of finding a new auditor. We extend Barton 2005 — who shows that the timing of Andersen client switches depended on the client's visibility in the capital markets — by documenting the impact of switch timing on client fees. Our paper also complements Blouin, Grein, and Roundtree 2007 who examine the impact of mandatory auditor rotation experienced by Andersen's clients. Whereas Blouin et al. (2007) examine the ramifications of a mandated auditor change on client reporting quality, we examine the implications of a mandated change on client fees and auditor competition. And finally, we extend the GAO's 2003 and Sullivan's 2002 analyses by documenting differences in how the remaining firms competed for Andersen clients and how differences in competitive strategy and local market conditions impacted audit firm client gains and fees.

This study has some limitations. First, the Andersen failure is a unique event. While availability of a large number of switching clients at one time is unusual, we note that different competitive approaches such as purchasing an office have been used in the past, and will likely be used in the future (Healy and Lys 1986). Second, we can only identify the general competitive environment at the city level. There is not any publicly available data on the bidding process for individual Andersen clients. It is likely that some clients that we characterize as open market switchers conducted focused searches for a new auditor and did not seek truly open market bids (Johnstone, Bedard, and Ettredge 2004). Given this shortcoming, the fact that our "on average" analysis finds differences consistent with our conjectures is all the more compelling. Third, we examine fee changes after the Sarbanes-Oxley Act was passed. The new regulation potentially influences part of our results. However, we seek to minimize this possibility by examining the full audit market and controlling for known audit fee determinants. Finally, we cannot track the movement

of specific Andersen personnel. We rely on our office purchase classifications to proxy for a client remaining associated with Andersen.

The remainder of this paper proceeds as follows. In section 2 we discuss background, theory, and our expectations. Then we describe the sample firms in section 3, followed by our research design and empirical analysis of purchased offices in section 4, and changes in audit fees in section 5. In section 6 we summarize our findings and offer concluding remarks.

## 2. Background and theory

In this section we first discuss Andersen's failure. We then outline conjectures about the motivation to purchase Andersen's local offices and use existing theory to make predictions about client fees.

### *Fall of Andersen*

Figure 1 presents a timeline of Andersen's failure. Although Andersen was linked to the financial reporting problems Enron faced in late 2001, there were relatively few client defections until March 2002. Figure 2 presents the number of Andersen clients switching auditors each week between early February and late August 2002. After the indictment of Andersen for obstruction of justice (U.S. District Court 2002), the number of client switches jumps from fewer than 20 total in January and February to 20 to 40 clients per week in March 2002. The switch rate stays fairly constant until the May 7 start of the trial, at which point switches increase to over 40 per week, with a high of 80 switches the week after the trial started. The last burst of changes occurs around the June 15 conviction date (Weil, Barrionuevo, and Bryan-Low 2002). By July 1, Andersen had only 100 public clients remaining, all of whom had to find a new auditor as a result of the conviction.[3] Barton (2005) documents similar timing of Andersen client switches.

The timing of client switches appears to be consistent with several key events, such as the indictment and trial. The timing also supports Barton's 2005 theory that concern about Andersen's declining reputation affected client defections. However, many of Andersen's clients were in the middle of their annual audits during these events. Switching costs during an annual audit are very high, and in most cases it would have been very hard for a new auditor to replace Andersen after the client's year-end.[4] We raise this issue to caution against over interpreting the timing of the switches.

Press reports indicate that DT, EY, and BDO Seidman all entered at one point or another into negotiations with Andersen to purchase its U.S. audit practice. The most serious negotiations occurred with DT in March 2002 around the time of Andersen's indictment (Frank and Pacelle 2002). Nonetheless, Andersen's audit practice was not purchased as a whole. The press stressed that the firms were not willing to risk inadvertently acquiring Andersen's liabilities related to Enron or any other subsequent failure (Frank and Pacelle 2002).

Andersen apparently decided in April 2002 to sell its practice in parts rather than trying to find a buyer for the whole firm. Andersen's international offices merged with different firms around the globe. Andersen sold the majority of its tax

practice to Deloitte and its consulting practice to KPMG (Glater 2002). It sold its internal audit and risk management practice to Robert Half, who renamed it Protiviti (Hedgpeth 2002). Other specialty services such as Human Resource Management were broken off and sold separately. Andersen broke up and sold the U.S. audit practice by local office and in some cases by local industry practice. The first office sale occurred on April 15, 2002 when the Mountain View, California KPMG office bought the Silicon Valley Andersen practice located in Palo Alto. The sale of local offices accelerated in early May and continued through June.

### *Office purchases*

In this section, we explore the motivation for audit firms to purchase Andersen offices. The office purchase analysis is exploratory, so we do not present formal hypotheses. However, we draw on existing theory to help identify potential motivations for office purchases. We consider three broad motivations that could affect the decision to purchase: (a) the potential client and fee gains from purchasing the office; (b) the potential business risk of acquiring high-risk clients, or being associated with an Andersen office closely linked to alleged audit failures; and (c) the need to acquire additional personnel to serve the clients already acquired from Andersen prior to the office purchase.

First, we use intuition from Chaney et al. 2003 to conjecture that purchasing a local Andersen office increases the probability that a purchaser retains the client.

**Figure 1**    Andersen's demise time-line

| Date | Event |
| --- | --- |
| October 16, 2001 | Enron discloses $638 million loss and $1.2 billion reduction to retained earnings |
| November 8, 2001 | Enron provides additional detail concerning $1.2 billion. |
| December 2, 2001 | Enron declares bankruptcy |
| January 10, 2002 | Andersen admits to shredding documents related to Enron and Justice Department confirms investigation concerning criminal wrong-doings |
| February 2, 2002 | Powers Report issued by subcommittee of Enron's board of directors released. The report was very critical of Andersen. |
| March 14, 2002 | Andersen indicted for obstruction of justice |
| May 7, 2002 | Andersen trial begins after jury selection on May 6 |
| June 15, 2002 | Andersen convicted of obstruction of justice |
| August 31, 2002 | Andersen discontinues audits of public companies |
| October 15, 2002 | Andersen sentenced to a $500,000 fine |
| May 31, 2005 | Supreme Court overturns the conviction on the basis that jury instructions were too vague and broad |

Chaney et al. (2003) derive an audit market competition model describing a client's decision to change auditors.[5] Their basic model predicts that clients switch auditors when the incumbent auditor's fees exceed the entrant auditor's fees plus the cost to switch auditors. They assume an incumbent auditor has asymmetric knowledge about his cost and his competitor's cost to audit the client, and that clients face switching costs when they change from the incumbent to an entrant. Chaney et al. (2003) show that switching costs and asymmetric information produce competitive advantages that enable auditors to earn premiums.

We assume that the purchase of an Andersen office affects both switching costs and asymmetric information. An audit firm could reduce the switching costs of former Andersen clients by purchasing the local Andersen office that serviced that client, thereby enabling the Andersen audit team to continue to service that client. A client that retained the same audit team could reduce the following

**Figure 2**    Number of Andersen departures by week
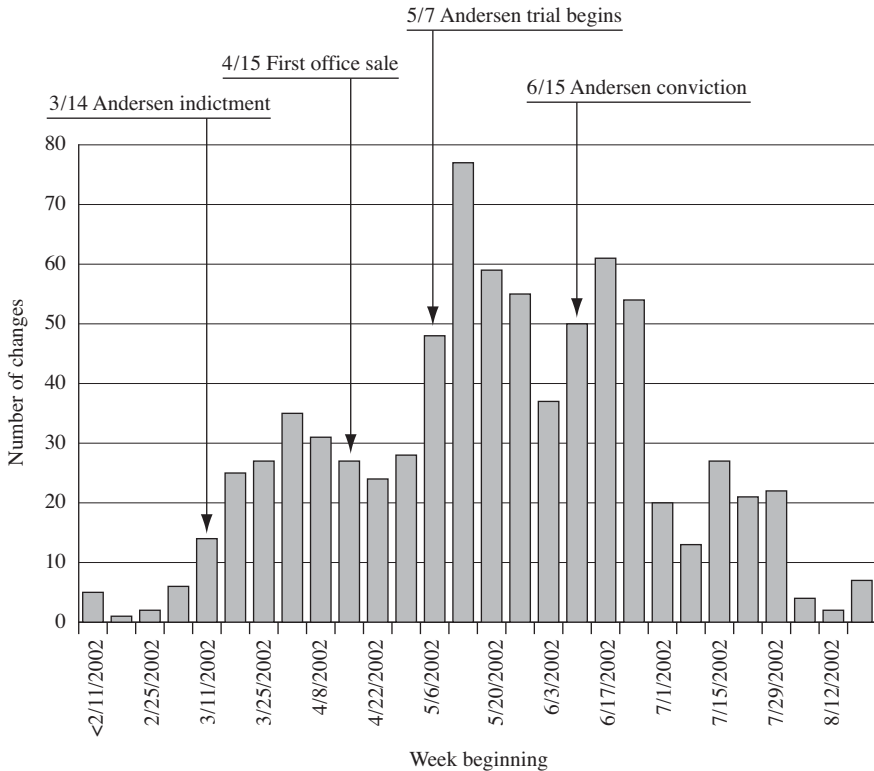


**Notes:**

This graph documents the number of Andersen clients who switched audit firms by week
    from early February to late August 2002. The data for this graph are based on the
    dates of Andersen's client changes per Audit Analytics.

switching costs: (a) the cost to search for a new audit firm; (b) the cost to learn the client's operations and business model; and (c) the cost to learn the client's financial reporting practices and significant reporting issues. The reduced switching costs give the purchasing audit firm an advantage over competitors in retaining purchased clients.

By purchasing an Andersen office, a firm could also gain the client-specific knowledge Andersen possessed about the costs to audit its clients. This intimate cost knowledge potentially creates advantages for the new auditor in setting prices that make entry by a new audit firm difficult. Cheney et al. (2003) outline how the incumbent can set fees that basically remove the incentive for clients to seek alternative bids.

Second, a purchasing firm had to balance the potential client gains from purchasing an office with potential costs. The biggest cost-related concern focused on the potential acquisition of liability related to Andersen's prior audits. PWC expressed this concern as one reason it did not purchase any Andersen offices (Bryan-Low 2002).

Finally, a significant number of Andersen clients switched auditors before the office sales started. Offices that won these *EARLY_SWITCHERS* faced potential staffing shortages. These offices may have targeted Andersen office purchases to acquire the staff necessary to serve their new clients. The Andersen staff had the additional benefit of already being familiar with the clients acquired, thereby decreasing the startup costs for the acquiring audit firms.

As mentioned above, PWC did not purchase any Andersen clients. PWC cited two reasons for this decision: (a) concern about the risk that Andersen's legal problems might be acquired along with any offices, and (b) the difficulty of integrating Andersen's unique culture into PWC's culture. PWC had recently completed a difficult integration of cultures from its 1997 merger. We also note that PWC had the largest market share prior to Andersen's failure, and it may have been concerned about antitrust action resulting from gaining an even greater market share. Indeed, Congress required the GAO to examine competitive issues as part of the Sarbanes-Oxley Act.

### Change in audit fees

In this section, we develop hypotheses regarding the former Andersen clients' audit fees. We use audit fee theory to provide hypotheses based on the audit firm's method of acquisition.

Chaney et al. (2003) show that switching costs and client-specific information give incumbents the advantage in setting fees over entrants. Incumbents do not have to offer fees as low as the fees offered by entrants; they need only provide fees that are slightly lower than the entrant's fees plus switching costs (Chaney et al. 2003). Chaney et al. (2003) predict that this advantage creates quasi rents or fee premiums for incumbents. DeAngelo (1981) predicts that firms will cut fees (i.e., low-ball) in an initial period to gain the incumbency advantage. We predict that auditors used low-balling to capture clients when Andersen's clients sought open market bids.[6] Specifically, audit firms competed for Andersen's *EARLY_SWITCHERS*

and *NO_PURCHASE* clients on the open market. This discussion leads to our first hypothesis in alternative form.

> HYPOTHESIS 1. *Auditors supplied low-ball fees when competing for Andersen's EARLY_SWITCHERS and NO_PURCHASE clients.*

Although we predict that low-balling will occur, there are at least two reasons why it might not occur. First, Dye (1991) argues that with public fee disclosure, auditors will not low-ball because low-balling implies a lack of independence in appearance that clients want to avoid. However, experimental markets research suggests that competition and switching costs lead to low-balling regardless of fee disclosure (Mayhew and Pike 2004). Second, Dye (1991) also predicts that bargaining power will determine whether auditors low-ball. Andersen's failure reduced the number of audit firms, thereby increasing the bargaining power of the remaining firms. Large clients who could only be served by the remaining Big 4 firms lost the most bargaining power because they have fewer auditors to serve them after Andersen's failure. Audit firms with significant bargaining power do not have to offer discount fees.

Open market switchers include *EARLY_SWITCHERS*. Barton (2005) shows that early switchers were larger, more visible firms. Based on Dye's arguments that clients will not accept low-ball fees to avoid the appearance of independence problems, high-profile early switchers may not receive discounted fees.[7]

With respect to *PURCHASE_STAY* clients, we discuss three reasons why purchasers of Andersen offices would not offer discounted fees to those clients. First, the purchasers could decrease the switching costs of clients that remained with the purchaser. Clients that remain with the purchaser significantly reduce switching costs as the new auditor retained the same staff as the old auditor. We do not mean to imply that there were no costs to switching audit firms even when the local Andersen office was purchased. The Andersen auditors had to adopt the acquiring firm's audit methodology, which undoubtedly imposed some cost on the client. Nonetheless, the client incurred less cost in this scenario than if it had to engage an entirely new audit team.

Second, a purchasing auditor could have gained Andersen's client-specific knowledge, thereby giving it an information advantage over the competing firms. Such information asymmetry could make competitors hesitant to bid too aggressively for fear of only winning bids for which they misestimated the cost.[8] As a result, we do not expect to observe low-balling among clients that remained with the auditor that purchased an Andersen office or hired its personnel. Such clients should be willing to pay a small premium up to the level of switching costs that the client would face by changing to a new auditor.

Third, a purchasing auditor faced potential costs in auditing an Andersen client that a new auditor did not face. Specifically, the purchasing auditor had to pay $100,000 to Andersen for each former Andersen partner (*Public Accounting Report* 2002). This cost may have been passed on to the Andersen clients who remained with the purchasing firm. The purchasing auditor also faced uncertainty

with respect to whether any litigation risk would follow the Andersen partners. Clients who remained with the acquiring firm may have been charged the expected cost of litigation. Audit firms that acquired clients through the open market rather than purchasing an Andersen office could avoid both costs. The clients of purchased offices did not have to pay these costs if they switched to a nonpurchasing auditor. In equilibrium, a client only agrees to pay these costs if the switching costs are greater to switch from a purchaser to another auditor.

This discussion leads to our second hypothesis.

HYPOTHESIS 2. *Audit firms that purchased the local Andersen office did not supply discounted fees to PURCHASE_STAY clients.*

Finally, *PURCHASE_CHANGE* clients that switched to a different auditor than the auditor who purchased the local office faced a different competitive market than clients who sought open market bids in a city with no office purchase. In general, *PURCHASE_CHANGE* clients have fewer auditors to choose from, especially if they prefer to hire a Big 4 auditor. The reduction in competition inhibits the incentives for the remaining audit firms to low-ball. Our examination of these clients provides insight into concerns about reduced competition raised by the GAO 2003.

HYPOTHESIS 3. *Auditors did not supply discounted fees to PURCHASE_CHANGE clients.*

It is also possible that the clients that did not follow the purchased Andersen office would have liked to follow but were rejected by the new audit firm as being too risky. We explicitly control for risk in our analysis.

## 3. Classification and sample

### Sample

The sample starts with all clients in the intersection of 2002 Audit Analytics and COMPUSTAT databases. We include all clients rather than just Andersen clients because all of the remaining auditors are potential competitors for Andersen's clients. In cases where Audit Analytics has only partial data for either 2001 or 2002, we hand-collect data directly from Form 8-K filings on Edgar. Table 1 documents the removal from our full sample of 485 clients with missing 2002 audit fee data, 250 foreign audit clients, 749 clients with missing prior year audit information, and an additional 264 observations that lack sufficient financial data. The audit fee analysis sample consists of 4,875 audit clients including 795 former Andersen clients. We then eliminate 121 former Andersen clients in the three offices that we cannot classify — Boston, New York, and St. Louis. Our final sample consists of 4,754 firms, of which 674 are former Andersen clients.

### Andersen office purchases

Our analysis relies on classifying former Andersen offices as purchased or not purchased and the subsequent movement of each client given the office classification.

In this section, we discuss both processes. Our objective is to identify clients who were more likely to continue to receive services from their former Andersen audit partner and/or a significant portion of the Andersen audit team. Unfortunately, there is no direct public data that links audit partners or teams to particular clients. However, office purchases reported in the press provide a reasonable proxy for whether or not the former Andersen staff continues to serve the former Andersen client. It also provides a direct proxy for the purchasing audit firm's access to superior client-specific knowledge. To avoid significant measurement error, we only classify offices or industry practices as purchased when a dominant portion of the partners and staff are purchased.

We use Audit Analytics first to identify the local Andersen offices that served public clients in 2001. We then examine press releases and press articles as our

TABLE 1

Sample determination

| | All firms | Andersen clients |
|---|---|---|
| Firms included in both 2002 Audit Analytics and COMPUSTAT databases | 6,623 | 942 |
| Eliminations: | | |
| Missing 2002 audit fee data | 485 | 30 |
| Foreign clients | 250 | 25 |
| Missing prior year (2001) audit information | 749 | 0 |
| Missing prior year (2001) financial information | 264 | 39 |
| Firms with Andersen as 2002 auditor | | 53 |
| 2002 full sample | 4,875 | 795 |
| Former Andersen clients in Boston, New York, and St. Louis offices | 121 | 121 |
| 2002 auditor sample | 4,754 | 674 |
| Sample composition | | |
| No auditor change | 3,915 | |
| Non-Andersen auditor changes | 165 | |
| Former Andersen clients in 65 offices classifying in the accompanying analyses | 674 | |
| Total sample | 4,754 | |

**Notes:**

This table lists the sample composition based on 2002 clients available on the Audit Analytics and COMPUSTAT databases. We remove all the clients in Andersen's Boston, New York, and St. Louis practices from our analysis because we cannot reliably categorize them as purchased or nonpurchased offices. We also document the number of observations with no change in audit firm from 2001, clients that changed audit firms but did not have Andersen as an auditor in 2001, and Andersen's former clients who all had to change auditors in 2002.

primary evidence to determine the office classifications. Our initial search involves searching databases for key terms such as "Andersen office" and potential purchaser firm names, along with the location of each Andersen office, to identify articles about local office purchases. For Andersen offices that are not identified as purchased in our broad search, we conduct a focused search of the local press for any information related to the Andersen office. Most of the press reports provided some indication as to whether all or most of the audit personnel moved to the purchasing firm.

We validate our final classification by comparing it to the *Public Accounting Report* (*PAR*), a trade newsletter. *PAR* included a fairly extensive office analysis in its June 30, 2002 edition, although it did not cover every Andersen office, and included tax and consulting along with audit purchases. *PAR* covers 50 offices common to our analysis of which we agree with 43 classifications. We are able to reconcile four differences based on other information we gathered. The remaining three office classifications require further discussion.

*PAR* indicates that New York, Boston, and St. Louis had multiple purchasers. We found similar evidence for all three locations, and none appeared to have a dominant purchaser. We exclude these three locations from our analysis because the risk of misclassification is much higher than in other locations with dominant purchasers. Blouin et al. (2007) also exclude clients they could not categorize. They specifically mention New York and Chicago. We agree with excluding New York; however, in our judgement, DT was the dominant Chicago purchaser especially after we segregate EY's purchase of Chicago's financial services (Johnsson 2002).[9]

Table 2 reports our classification of all Andersen offices with public clients in 2001. For each office purchase, we report the approximate date of the sale reported in the press. The acquiring firm did not necessarily purchase the physical Andersen office. Instead, the acquirer hired the Andersen partners and staff. *PAR* (2002) and other press sources reported payments of $100,000 per acquired partner to Andersen to release the partners from their noncompete agreements. In some cases, the purchasing firm agreed to take over the local office leases and support personnel.

Grant Thornton (GT) purchased portions of offices purchased by other Big 4 firms (e.g., Cincinnati) and was the sole acquirer of some small offices (e.g., Charlotte). The press releases, articles, and discussions with GT personnel indicate that these acquisitions were oriented toward the middle market sector serving predominantly private companies. We therefore classified offices where GT was the sole purchaser as *NO_PURCHASE* because GT acquisitions did not focus on public clients. Table 2 shows that very few public clients (9 of 68) remain with GT in offices where GT was a purchaser, thus supporting our decision to classify GT clients as *NO_PURCHASE*.

### Client classifications

We identify four types of switches: *EARLY_SWITCHERS*, *PURCHASE_STAY*, *PURCHASE_CHANGE*, and *NO_PURCHASE*. *EARLY_SWITCHERS* are clients who switched (a) prior to the first sale of an Andersen office on April 15 in cities

TABLE 2

Former Andersen offices

| Office location | State | Number of public clients | Total audit fees (000s) | Acquiring firm* | Announcement date | Early/After announcement[†] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | DT | EY | KPMG | PWC | GT | BDO | Small firm |
| Atlanta[‡] | GA | 17 | 6,616 | DT | 6/19/2002 | 9/8 | 9/8 | | | | | | |
| Chicago | IL | 31 | 36,085 | DT | 5/6/2002 | 12/19 | 5/10 | 4/2 | 1/2 | 2/4 | 0/1 | | |
| Cincinnati | OH | 5 | 1,431 | DT (GT*) | 6/7/2002 | 4/1 | 2/1 | | | 1/0 | 1/0 | | |
| Las Vegas | NV | 7 | 3,652 | DT | 5/21/2002 | 4/3 | 3/3 | | | | | | 1/0 |
| Memphis | TN | 5 | 5,054 | DT | 5/17/2002 | 4/1 | | 1/0 | 3/0 | | | 0/1 | |
| Milwaukee | WI | 23 | 9,474 | DT (GT*) | 6/6/2002 | 11/12 | 7/10 | 2/0 | 1/2 | 1/0 | | | |
| Minneapolis | MN | 28 | 14,272 | DT | 6/11/2002 | 17/11 | 8/7 | 3/1 | 3/3 | 3/0 | | | |
| Phoenix | AZ | 11 | 5,509 | DT | 6/7/2002 | 7/4 | 3/0 | 0/1 | 2/1 | 2/1 | | | 0/1 |
| Deloitte & Touche total | | 127 | | | | 68/59 | 37/39[‡] | 10/4 | 10/8 | 9/5 | 1/1 | 0/1 | 1/1 |
| Atlanta[‡] | GA | 22 | 13,763 | EY | 5/21/2002 | 16/6 | | 7/5 | 5/0 | 3/1 | 1/1 | 1/0 | |
| Baltimore | MD | 7 | 4,997 | EY | 5/16/2002 | 2/5 | 0/1 | 1/4 | | 1/0 | | | |
| Chattanooga | TN | 2 | 367 | EY | 5/21/2002 | 2/0 | | 2/0 | | | | | |
| Chicago (financial services) | IL | 5 | 1,640 | EY | 5/22/2002 | 2/3 | | 1/2 | 1/0 | | | | 0/1 |
| Detroit | MI | 8 | 6,781 | EY | 5/7/2002 | 3/5 | | 0/4 | | 2/1 | | | 1/0 |
| Fort Lauderdale | FL | 7 | 5,244 | EY | 5/23/2002 | 1/6 | 0/1 | 1/3 | 0/1 | | | | 0/1 |
| Grand Rapids | MI | 2 | 679 | EY | 5/7/2002 | 1/1 | | 1/1 | | | | | |

TABLE 2 (Continued)

| Office location | State | Number of public clients | Total audit fees (000s) | Acquiring firm* | Announcement date | Early/After announcement† | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | DT | EY | KPMG | PWC | GT | BDO | Small firm |
| Indianapolis | IN | 7 | 4,804 | EY | 5/31/2002 | 4/3 | 2/0 | 1/2 | | 1/1 | | | |
| Los Angeles (entertainment) | CA | 3 | 3,890 | EY | 5/23/2002 | 2/1 | 1/0 | 1/1 | | | | | |
| Louisville | KY | 6 | 950 | EY | 5/15/2002 | 2/4 | 1/0 | 0/4 | | | | | 1/0 |
| Miami | FL | 10 | 2,809 | EY | 5/23/2002 | 5/5 | | 2/5 | 1/0 | 2/0 | | | |
| Nashville | TN | 8 | 1,682 | EY | 5/15/2002 | 2/6 | | 1/5 | 1/0 | | | | |
| New Orleans | LA | 12 | 2,954 | EY | 6/22/2002 | 3/9 | 0/1 | 2/8 | 1/0 | | | | 0/1 |
| New York (advertising & real estate) | NY | 5 | 7,503 | EY | 6/11/2002 | 3/2 | | 1/1 | 1/0 | 0/1 | | | 1/0 |
| Oklahoma City | OK | 4 | 3,237 | EY | 5/29/2002 | 2/2 | | 2/1 | 0/1 | | | | |
| Pittsburgh | PA | 8 | 2,635 | EY | 5/9/2002 | 2/6 | 1/1 | 0/4 | | 0/1 | | | 1/0 |
| Richmond | VA | 4 | 1,700 | EY | 5/16/2002 | 3/1 | | 2/0 | 1/0 | | | | 0/1 |
| Tampa | FL | 4 | 928 | EY(GT**) | 5/23/2002 | 1/3 | 0/1 | 0/1 | | 1/1 | | | |
| Washington | DC | 25 | 17,504 | EY | 5/16/2002 | 22/3 | 1/0 | 11/3 | 5/0 | 5/0 | | | |
| West Palm Beach | FL | 5 | 1,503 | EY | 5/23/2002 | 3/2 | 2/2 | 1/0 | | | | | |
| Ernst & Young total | | 154 | | | | 81/73 | 6/5 | 38/56# | 16/2 | 16/6 | 0/0 | 1/0 | 4/4 |

TABLE 2 (Continued)

| Office location | State | Number of public clients | Total audit fees (000s) | Acquiring firm* | Announcement date | Total | Early/After announcement[†] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | DT | EY | KPMG | PWC | GT | BDO | Small firm |
| Boise | ID | 1 | 1,598 | KPMG | 5/10/2002 | 1/0 | | | 1/0 | | | | |
| Dallas | TX | 34 | 11,364 | KPMG | 5/15/2002 (estimated) | 17/17 | 3/1 | 8/2 | 3/9 | 2/1 | 1/2 | 0/1 | 0/1 |
| Denver | CO | 27 | 5,724 | KPMG | 4/16/2002 | 2/25 | 0/2 | 0/4 | 2/16 | 0/1 | 0/1 | | 0/1 |
| Harrisburg | PA | 2 | 427 | KPMG | 5/29/2002 | 1/1 | | | 1/1 | | | | |
| Jackson | MS | 2 | 493 | KPMG | 5/23/2002 | 2/0 | | | 2/0 | | | | |
| Jacksonville | FL | 3 | 948 | KPMG | 5/23/2002 | 1/2 | 1/1 | | 0/1 | | | | |
| Kansas City | MO | 8 | 5,091 | KPMG | 5/22/2002 | 6/2 | 0/2 | | 5/0 | | | | 1/0 |
| Long Island | NY | 5 | 851 | KPMG | 6/11/2002 | 3/2 | | 1/0 | 1/0 | | 1/0 | 0/1 | 0/1 |
| Newark | NJ | 14 | 12,015 | KPMG | 6/11/2002 | 12/2 | 1/1 | | 8/0 | 2/1 | | 1/0 | |
| Omaha | NE | 1 | 445 | KPMG | 5/22/2002 | 0/1 | | | 0/1 | | | | |
| Palo Alto | CA | 12 | 4,757 | KPMG | 4/15/2002 | 3/9 | | 0/1 | 3/8 | | | | |
| Philadelphia | PA | 48 | 14,140 | KPMG | 5/29/2002 | 17/31 | 1/2 | 2/1 | 9/23 | 4/3 | 0/2 | | 1/0 |
| Portland | OR | 11 | 2,455 | KPMG | 5/10/2002 | 3/8 | | | 3/8 | | | | |
| Salt Lake City | UT | 12 | 1,983 | KPMG | 5/10/2002 | 1/11 | | 0/1 | 1/9 | | | | |
| Seattle | WA | 13 | 5,084 | KPMG | 5/10/2002 | 3/10 | 0/2 | 0/1 | 2/6 | 1/1 | | | 0/1 |
| KPMG total | | 193 | | | | 72/121 | 6/11 | 11/10 | 41/82# | 9/7 | 2/5 | 1/2 | 2/4 |

(The table is continued on the next page.)

TABLE 2  (Continued)

| Office location | State | Number of public clients | Total audit fees (000s) | Acquiring firm* | Announcement date | Early/After announcement† | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | DT | EY | KPMG | PWC | GT | BDO | Small firm |
| Albany | NY | 1 | 154 | | | 1/0 | | | 1/0 | | | | |
| Austin | TX | 2 | 128 | | | 1/1 | | 1/0 | | 0/1 | | | |
| Birmingham | AL | 9 | 2,066 | | | 4/5 | | 1/2 | 2/3 | 1/0 | | | |
| Charlotte | NC | 3 | 3,661 | (GT**) | | 0/3 | 0/1 | | 0/1 | 0/1 | | | |
| Cleveland | OH | 8 | 5,090 | (GT**) | | 1/7 | 0/1 | 0/3 | | 1/0 | 0/3 | | |
| Columbus | OH | 1 | 2,795 | (GT**) | | 0/1 | | 0/1 | | | | | |
| Des Moines | IA | 2 | 182 | | | 2/0 | | | 1/0 | 1/0 | | | |
| Greensboro | NC | 2 | 1,062 | (GT**) | | 1/1 | | | 1/0 | | | | 0/1 |
| Hartford | CT | 7 | 4,396 | | | 2/5 | 1/2 | 0/1 | | 1/2 | | | |
| Houston | TX | 49 | 43,107 | (GT**) | | 13/36 | 3/7 | 6/10 | 1/9 | 3/8 | 0/1 | | 0/1 |
| Little Rock | AR | 4 | 2,684 | | | 1/3 | 0/1 | | | 0/1 | | | 1/1 |
| Los Angeles | CA | 28 | 16,442 | | | 3/25 | 0/1 | 1/8 | 2/5 | 0/8 | | 0/1 | 0/2 |
| Oakland | CA | 2 | 895 | | | 2/0 | 1/0 | 1/0 | | | | | |
| Orange County | CA | 14 | 2,458 | (GT**) | | 4/10 | | 4/1 | 0/2 | 0/2 | 0/1 | 0/1 | 0/3 |
| Orlando | FL | 3 | 118 | | | 0/3 | | | 0/2 | | | | 0/1 |
| Princeton | NJ | 6 | 3,049 | | | 2/4 | | 2/2 | 0/1 | | | | 0/1 |
| Raleigh | NC | 1 | 184 | (GT**) | | 0/1 | 0/1 | | | | | | 0/1 |
| Reno | NV | 1 | 61 | | | 0/1 | | | | | | | |
| Rochester | NY | 3 | 432 | | | 0/3 | | | | 0/2 | | | 0/1 |

(The table is continued on the next page.)

TABLE 2  (Continued)

| Office location | State | Number of public clients | Total audit fees (000s) | Acquiring firm* | Announcement date | Early/After announcement† | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | DT | EY | KPMG | PWC | GT | BDO | Small firm |
| Sacramento | CA | 2 | 251 | | | 2/0 | | | 1/0 | | | | 1/0 |
| San Antonio | TX | 5 | 1,601 | | | 4/1 | | 4/0 | | | | | 0/1 |
| San Diego | CA | 8 | 3,666 | | | 5/3 | | 3/0 | 2/3 | | | | |
| San Francisco | CA | 11 | 4,312 | (GT**) | | 1/10 | 0/1 | 0/2 | 0/3 | 1/2 | 0/2 | | |
| San Jose | CA | 15 | 7,189 | | | 8/7 | 3/3 | | 0/1 | 4/3 | | 1/0 | |
| Stamford | CT | 7 | 4,500 | (GT**) | | 1/6 | 1/1 | 0/2 | | 0/1 | | | 0/2 |
| Tulsa | OK | 6 | 639 | | | 0/6 | | 0/3 | | 0/1 | 0/2 | | |
| No purchase total | | 200 | | | | 58/142§ | 9/19 | 23/35 | 10/30 | 12/32 | 0/10 | 1/2 | 3/14 |
| Totals before offices involving significant judgement | | 674 | | | | 279†/395 | 58/74 | 82/105 | 77/122 | 46/50 | 3/16 | 3/5 | 10/23 |
| Boston | MA | 71 | 15,170 | | | 8/63 | 1/12 | 4/20 | 0/8 | 3/16 | 0/3 | 0/3 | 0/1 |
| New York | NY | 40 | 27,475 | (GT**) | | 11/29 | 3/6 | 4/7 | 1/4 | 2/6 | 0/4 | | 1/2 |
| St. Louis | MO | 10 | 3,493 | | | 0/10 | | 0/2 | 0/4 | 0/3 | | | 0/1 |
| Significant judgement | | 121 | | | | 19/102 | 4/18 | 8/29 | 1/16 | 5/25 | 0/7 | 0/3 | 1/4 |
| Totals | | 795 | 392,331 | | | 298/497 | 62/92 | 90/134 | 78/138 | 51/75 | 3/23 | 3/8 | 11/27 |

TABLE 2  (Continued)

**Notes:**

\*      This table organizes Andersen's clients by local office and the purchasing office, if any. The acquiring audit firm is determined based on an analysis of the national and local newspapers, press releases, and *Public Accounting Reports* (*PAR*s). The successor auditors in the above report are as follows: DT is Deloitte, KPMG is KPMG, EY is Ernst & Young, PWC is PricewaterhouseCoopers, GT is Grant Thornton, BDO is BDO Siedman, and Small firm are all other auditors.

†      Early is based on prior to the purchase announcement date for clients of purchased offices, and on April 15, 2002 for offices that were not acquired by one of the Big 4, the total represents all *EARLY_SWITCHERS*.

‡      Both DT and EY acquired substantial portions of the Andersen's Atlanta office. We classify the office as a multiple purchase office. We include DT's acquisitions under DT and EY's acquisitions under EY. Given EY acquired more of the office than DT, we include information about Andersen, Atlanta's client switches to other auditors in EY's summary. Firms other than DT or EY acquire only 10 of Atlanta's 39 clients.

§      Total number of *NO_PURCHASE* clients representing clients in offices that were not purchased and who switched auditors after April 15, 2002.

#      Combined, these three amounts represent *PURCHASE_STAY* clients (*n* = 177), clients who remain with the auditor who purchases the local office. *PURCHASE_CHANGE* clients are all the remaining clients who switch after the office purchase date, and do not stay with the acquiring auditor.

\*\*     GT was identified as primarily acquiring middle market services aimed at private companies in these markets. We classify these GT acquisitions as no purchase because these clients are predominantly private companies. The table supports this classification because GT acquires only 10 of 68 public clients available after the early cutoff.

with no purchased office, or (b) prior to the purchase of the local office in cities where an office was purchased. The *EARLY_SWITCHERS* all share similar local market conditions. They obtain a new auditor on the open market without knowing whether or not the local office will be purchased. We chose the April 15 cutoff date because it is the first confirmed sale of an Andersen office.[10] Empirically, Figure 2 suggests an initial set of switches in March after the announced indictment of Andersen, and then the number of switches trends downward until the May 7 trial date when it spikes upward.

   *PURCHASE_STAY* clients follow the local office to the purchasing auditor and switch after the local office purchase announcement date. *PURCHASE_CHANGE* switchers do not follow the purchased local office, but switch after the office purchase date. *NO_PURCHASE* switchers change auditors after April 15 in cities without a local office purchase. The *NO_PURCHASE* switchers are similar to the

*EARLY_SWITCHERS* in terms of conducting open market switches. However, we segregate these switchers from *EARLY_SWITCHERS* based on the evidence presented by Barton 2005 that *EARLY_SWITCHERS* had different characteristics than later switchers.

Descriptive statistics for the pooled 2002 sample of the 4,754 audit clients are presented in panel A of Table 3. Mean/median data indicate that the distributions for client *ASSETS* and *EBIT* are skewed. To address the skewed variables, we use the natural log of assets, and include a variable for losses in our fee analysis. In untabulated results, we compare Andersen clients to other auditors' clients who did not switch auditors. Former Andersen clients are similar in size to nonswitchers but have lower inventory and receivables levels and current ratios. Former Andersen clients also have higher debt and reported earnings than nonswitchers. While there are differences between Andersen clients and non-Andersen clients, there is no obvious difference in overall risk profile. However, the descriptive statistics emphasize the need to control for audit fee determinants in evaluating any Andersen-related effects.

We compare the former Andersen clients across our switch classifications in panel B of Table 3. Consistent with Barton 2005, we find that *EARLY_SWITCHERS* are larger. These clients also appear to be lower risk in terms of profitability. No discernible pattern emerges when comparing within the other three classifications.

## 4.  Analysis of purchased offices

First, we provide evidence of factors associated with purchasing an office. Then we analyze the successor auditors' client gains to provide evidence on whether there are differences in client gains overall and/or conditional on switch category.

### *Analysis of former Andersen offices*

In Figure 3, we plot the Andersen office locations, office size, whether or not they are purchased, and, if so, by which firm.[11] The map implies a geographic strategy employed by the purchasing firms. KPMG's purchases are skewed toward the west

TABLE 3
Descriptive statistics

**Panel A:** Pooled sample

| Variables* (n = 4,754) | Mean | Median | s.d. | 25th percentile | 75th percentile |
|---|---|---|---|---|---|
| *FEES* | 530 | 185 | 1,442 | 97 | 406 |
| *ASSETS* | 4,355 | 303 | 31,412 | 70 | 1,192 |
| *INVRECV* | 0.310 | 0.263 | 0.240 | 0.099 | 0.483 |
| *CURRENT* | 0.507 | 0.536 | 0.260 | 0.300 | 0.713 |
| *QUICK* | 2.351 | 1.122 | 5.133 | 0.708 | 2.213 |
| *LTD* | 0.181 | 0.104 | 0.230 | 0.003 | 0.289 |
| *EBIT* | −0.118 | 0.023 | 0.942 | −0.065 | 0.092 |

(The table is continued on the next page.)

TABLE 3  (Continued)

**Panel B:** Former Andersen clients partitioned by move type

| Variables* | Early switchers (n = 279) | | | No purchase (n = 142) | | | Purchase stay (n = 177) | | | Purchase change (n = 76) | | | Total (n = 674) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Median | s.d. | Mean | Median | s.d. | Mean | Median | s.d. | Mean | Median | s.d. | Mean | Median | s.d. |
| FEES | 710 | 265 | 1,293 | 434 | 176 | 859 | 351 | 173 | 516 | 313 | 165 | 416 | 513 | 204 | 981 |
| ASSETS | 6,439 | 553 | 38,240 | 2,550 | 236 | 15,637 | 1,884 | 283 | 6,313 | 1,096 | 226 | 2,393 | 3,821 | 392 | 25,910 |
| INVRECV | 0.281 | 0.237 | 0.206 | 0.259 | 0.208 | 0.227 | 0.235 | 0.203 | 0.199 | 0.260 | 0.218 | 0.189 | 0.262 | 0.217 | 0.207 |
| CURRENT | 0.450 | 0.452 | 0.253 | 0.447 | 0.438 | 0.270 | 0.443 | 0.405 | 0.265 | 0.434 | 0.434 | 0.246 | 0.446 | 0.440 | 0.258 |
| QUICK | 2.132 | 1.080 | 4.757 | 2.558 | 1.169 | 5.594 | 2.118 | 1.402 | 2.353 | 1.765 | 1.091 | 2.294 | 2.177 | 1.136 | 4.242 |
| LTD | 0.226 | 0.189 | 0.222 | 0.191 | 0.114 | 0.204 | 0.228 | 1.179 | 0.240 | 0.178 | 0.111 | 0.201 | 0.213 | 0.166 | 0.221 |
| EBIT | 0.000 | 0.067 | 0.374 | −0.174 | 0.049 | 0.726 | −0.008 | 0.059 | 0.230 | −0.092 | 0.018 | 0.570 | −0.049 | 0.056 | 0.472 |

**Notes:**

* Variables are for 2001 and are defined as follows: *FEES* is total audit fees (in millions), *ASSETS* are year-end assets (in millions), *INVRECV* is the ratio of receivables and inventory to total assets, *CURRENT* is the ratio of current assets to total assets, *QUICK* is the ratio of current assets less inventory to current liabilities, *LTD* is the ratio of long-term debt to total assets, and *EBIT* is the ratio of earnings before interest and taxes to total assets.

and northwestern part of the United States. EY's purchases are heavily concentrated in the central United States from Michigan through Florida. DT does not appear to have a geographic pattern to its purchases, but did focus on purchasing large offices.

We investigate factors associated with an audit firm's purchase of an office using the following office purchase model:

$$
\begin{aligned}
\text{Prob}(PURCHASE_{j,k}) = \ & F(\phi_1 + \phi_2 AVAILABLE\_MKT\%_j + \phi_3 HI_j \\
& + \phi_4 HIGH\_RISK\_OFFICE_j + \phi_5 HIGH\_RISK\_IND_j \\
& + \phi_6 PRESENCE_{j,k} + \phi_7 EARLY\_FEES\%_{j,k} \\
& + \phi_8 AA\_RATIO_{j,k} + \epsilon_{j,k}) \tag{1}.
\end{aligned}
$$

The variables are defined for each Andersen office location ($j$) and potential acquiring audit firm ($k$) and are discussed in the following paragraphs. F is the

**Figure 3**   Purchasers of Andersen offices in 2002
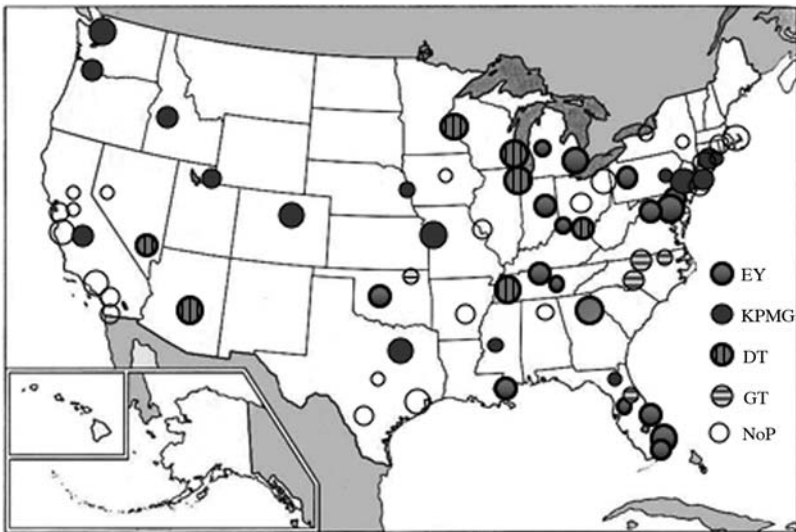


**Notes:**

This figure shows the location of each Andersen office, the public accounting firm that purchased the office, or that the office was not purchased. The purchasing firms are EY (Ernst and Young), KPMG (KPMG), DT (Deloitte), and GT (Grant Thornton). Offices that are not purchased are labeled NoP. We include the three offices (New York, Boston, St. Louis) we exclude from the analysis in the NoP category. Atlanta was purchase by both DT and EY. The size of the office is reflected by the size of the circle. The largest circles represent offices with more than $5 million in 2001 audit fees, the middle circle between $1 million and $5 million, and the smallest circles represent offices with less than $1 million in 2001 audit fees.

cumulative standard normal distribution function and *PURCHASE* is an indicator variable equal to 1 if the Andersen office was purchased by audit firm $k$ and zero otherwise.

On the basis of our earlier conjectures about a firm's motivation to purchase an office, we incorporate the following factors that seem likely to influence the purchase decision. First, we consider office/market-level characteristics that face all potential acquirers. The desirability of purchasing a local office depends on the value of the office's clientele. We consider the potential value of the local Andersen office based on its local market share available as of the purchase date where *AVAILABLE_MKT%* is Andersen's 2001 local market share based on fees less the effect of *EARLY_SWITCHERS*.

We also expect office purchases to be affected by the level of local market competition. The impact of competition could go either way. A highly competitive market creates incentives for firms to purchase an office as a way to gain a competitive advantage in gaining clients. Alternatively, a firm also has incentives to purchase an office in a less competitive market as a way to either gain entry or increase its own monopoly power. We measure local competition using a Herfindahl index based on 2001 audit fees (*HI*).

The potential legal exposure to an Andersen office acquirer is unclear, yet must be considered in our model. The office purchases technically were not purchases but rather group hires. However, PWC's concern about litigation was severe enough that it did not purchase any offices. We identified Andersen offices involved in high-profile legal cases such as Waste Management, Sunbeam, and Bishops' Charities (Cahan and Zhang 2006). We measure potential costs via the riskiness of the office where *HIGH_RISK_OFFICE* equals one for the Houston and San Antonio (Enron), Fort Lauderdale (Sunbeam), Chicago (Waste Management), Phoenix (Bishop's Charities), and Denver (Boston Chicken) offices, and zero otherwise. *HIGH_RISK_IND* is the proportion of local office clients remaining on the purchase date or April 15, 2002 or no purchase offices in high-risk industries identified by SIC codes 283x, 357x, 737x, 873x, and 3825–3839 (Shu 2000).

We consider characteristics of the local audit firms' offices with respect to the former Andersen office. Knowledge about the local market conditions and existing relationships with both Andersen partners and clients may have influenced the ability of an audit firm to complete an office purchase. Audit firms already operating in the market are assumed to have more local knowledge. *PRESENCE* equals one if the audit firm had a presence in the local market in 2001 and zero otherwise. In addition to gaining clients, an office acquisition can add staff to serve clients that the audit firm gains during the early period. As a result, we consider the ratio of Andersen's 2001 audit fees associated with *EARLY_SWITCHERS* to the potential acquiring firm's 2001 total audit fees (*EARLY_FEES%*). A positive association is consistent with seeking staff. We also consider the size of the Andersen office relative to the local audit firm, which may shed light on the ability to integrate an Andersen office into its existing office. *AA_RATIO* measures the ratio of Andersen's 2001 market share in number of clients to the audit firm's clients.[12]

Panel A of Table 4 compares our office-level variables between the 42 purchased Andersen offices (39 offices and 3 practice units) and the other 26 offices. The mean and median values for most of these measures are higher for purchased offices but are not statistically greater. We find no differences in *AVAILABLE_MKT%*, *HI*, *HIGH_RISK_OFFICE*, or *HIGH_RISK_IND*. Results comparing audit firm

TABLE 4

Analysis of former Andersen offices

**Panel A:** Univariate comparison — Andersen office characteristics

| | Purchased by Big 4 | | Not purchased by Big 4 | |
|---|---|---|---|---|
| | Mean | Median | Mean | Median |
| Andersen office characteristics | $n = 42$ | | $n = 26$ | |
| *AVAILABLE_MKT%* | 0.086 | 0.060 | 0.064 | 0.043 |
| *HI* | 0.334 | 0.287 | 0.367 | 0.341 |
| *HIGH_RISK_OFFICE* | 0.095 | 0.000 | 0.076 | 0.000 |
| *HIGH_RISK_IND* | 0.059 | 0.000 | 0.081 | 0.000 |
| Audit firm characteristics | $n = 43$ | | $n = 161$ | |
| *PRESENCE* | 0.976 | 1.000 | 0.509* | 1.000* |
| *AA_RATIO* | 1.602 | 1.341 | 2.693† | 0.785 |
| *EARLY_FEES%* | 0.514 | 0.194 | 0.184† | 0.000* |

**Panel B:** Multivariate analysis

$$\text{Prob}(PURCHASE_{j,k}) = F(\phi_1 + \phi_2 AVAILABLE\_MKT\%_j + \phi_3 HI_j$$
$$+ \phi_4 HIGH\_RISK\_OFFICE_j + \phi_5 HIGH\_RISK\_IND_j$$
$$+ \phi_6 PRESENCE_{j,k} + \phi_7 EARLY\_FEES\%_{j,k}$$
$$+ \phi_8 AA\_RATIO_{j,k} + \epsilon_{j,k}) \qquad (1)$$

| Variables ($n = 204$)‡ | Prediction | Coefficients | Wald $\chi^2$ |
|---|---|---|---|
| Intercept | | −4.815* | 14.94 |
| *AVAILABLE_MKT%* | + | 3.564 | 1.69 |
| *HI* | +/− | 1.601 | 0.95 |
| *HIGH_RISK_OFFICE* | − | −0.313 | 0.18 |
| *HIGH_RISK_IND* | − | −0.759 | 0.23 |
| *PRESENCE* | + | 3.805* | 13.07 |
| *EARLY_FEES%* | ? | 0.846† | 5.33 |
| *AA_RATIO* | ? | −0.392† | 4.55 |
| Pseudo $R^2$ | | 36.0% | |
| Percent correctly classified | | 80.8% | |

(The table is continued on the next page.)

TABLE 4  (Continued)

**Notes:**

\*       Significant at the 0.01 level (two-tailed).

†       Significant at the 0.05 level (two-tailed).

‡       The sample includes 39 purchased offices, three purchased segments and 26 non
        purchase offices. For each office there are three potential purchasers, which
        creates 204 (68 × 3) potential purchases, 43 that purchase, and 161 that do not
        purchase (Atlanta has two purchasers). Variables defined for each Andersen office
        ($j$) and potential acquiring audit firm ($k$) (Deloitte, KPMG, and Ernst & Young) as
        follows: F is the cumulative standard normal distribution function, *PURCHASE*
        equals 1 if audit firm $k$ purchased the Andersen office and zero otherwise,
        *AVAILABLE_MKT%* is Andersen's remaining 2001 local market share in fees on
        the purchase date or April 15, 2002 for no purchase office), *HI* is the Herfindahl
        Index based on 2001 audit fees, *HIGH_RISK_OFFICE* equals 1 for the Houston,
        San Antonio, Fort Lauderdale, Chicago, Phoenix and Denver offices, and zero
        otherwise, *HIGH_RISK_IND* is the proportion of local office clients remaining on
        the purchase date or April 15, 2002 for no purchase offices in high-risk industries
        identified by SIC codes of 283x, 357x, 737x, 873x, and 3825−3839, *PRESENCE*
        equals 1 if the audit firm had a presence in the local market in 2001 and zero
        otherwise, *EARLY_FEES%* is the ratio of 2001 fees associated with the early
        moves to the audit firm k's total 2001 fees, and *AA_RATIO* is the ratio of
        Andersen's 2001 market share in number of clients to that of the audit firm. If the
        audit firm did not have a presence in the local market, we set both *AA_RATIO* and
        *EARLY_FEES%* to zero.

characteristics suggest that purchasers were more likely to have a *PRESENCE*.
Firms also appear to have preferred Andersen offices that were similar to them in
terms of size, based on a lower *AA_RATIO* for purchased firms. The greater
*EARLY_FEES%* for purchased office suggests purchasers obtain a greater percent-
age of former Andersen fees during the early period.

    We estimate (1) using a conditional logit technique that incorporates separate
vectors for each auditor that may purchase each office. For this model, we include
three observations for each Andersen office location representing each of the three
Big 4 firms that were actively acquiring offices — DT, EY, and KPMG (panel B of
Table 4). We exclude PWC because it had a stated position of not seeking to
acquire former Andersen offices and its inclusion would add noise. We find that an
audit firm already having a presence in the market was more likely to purchase an
office. A purchase was also more likely as the *EARLY_FEES%* obtained prior to
the office move increases — consistent with efforts to gain staff. The significant
negative coefficient on *AA_RATIO* suggests that as size of the Andersen office
increases relative to the size of the potential purchaser, the potential purchaser
becomes significantly less likely to purchase the Andersen office. This finding sug-
gests that the ability to absorb an Andersen office into the local practice unit was an

important factor for purchasing firms.[13] The above inferences do not change when we perform the same analyses excluding Chicago, Los Angeles, and Atlanta, which all involved either two purchasers or the purchase of a significant industry segment.

We define *EARLY_SWITCHERS* as clients who leave before April 15 in non-purchased offices and before the date of acquisition in purchased offices. However, the median office purchase date is May 22, suggesting that office purchase decisions generally occurred a month after the early cut-off date. We run a second analysis that uses the median office purchase date to define *EARLY_SWITCHERS* for nonpurchase offices. This adjustment changes the measurement of *AVAILABLE_MKT%* and *EARLY_FEES%*. The coefficient for *AVAILABLE_MKT%* becomes significantly positive in this model, suggesting that firms did consider the remaining Andersen market share when purchasing an office. Other results are unchanged.

The above model includes a potential econometric issue. The first four variables (*AVAILABLE_MKT%*, *HI*, *HIGH_RISK_OFFICE*, or *HIGH_RISK_IND*) have the same values for the three observations representing the potential purchasers in that location. When we drop all four of these variables, the three remaining variables all remain significant. We also estimate a reduced model that includes the first four variables but only one observation per office ($n = 68$) and that excludes the potential purchaser variables. The resulting model estimates the association of these four variables with whether the office is purchased. In this model, *AVAILABLE_MKT%* becomes significantly positive, but *HI*, *HIGH_RISK_OFFICE*, and *HIGH_RISK_IND* remain insignificant.

### Analysis of gains in the number of former Andersen clients

We also explore the impact of office purchases on overall audit firm client gains. We note that purchasing an office did not give an audit firm any rights with respect to retaining the clients. All clients were free to find new audit firms and had to file a Form 8-K with the SEC noting their auditor change even if they stayed with the purchasing firm. The two most active purchasers of Andersen offices also obtained the largest number of clients and the greatest fee volume. EY acquired 17 offices and 3 practice units and KPMG acquired 15 offices.[14] Each audit firm more than doubled the seven offices acquired by DT. PWC did not acquire any offices. Table 5 clearly shows that the two biggest office purchasers were the biggest client gainers, and that the number of "purchased" clients largely accounts for the difference.

The GAO documents competition for Andersen's clients among the Big 4 and compares client gains by audit firm with client size (GAO 2003). We recreate the GAO analysis for our sample and then extend it to consider the type of competitive strategy used by the individual firms. The GAO concluded that competition levels among the remaining four firms was fairly equal for large clients (assets > \$5 billion) while EY and KPMG were much more successful in gaining smaller clients.

We summarize switches based on size and on our four categories of switches. Consistent with Barton 2005, we see that large clients were relatively more likely to be *EARLY_SWITCHERS* than small clients. Sixty-two percent of Andersen

TABLE 5
Analysis of gains in the number of former Andersen clients

| Switch type* | Client asset size portfolio | | | | | |
|---|---|---|---|---|---|---|
| | <$100 million | $100–$500 million | $500 million–$1 billion | $1 billion–$5 billion | >$5 billion | Total |
| Deloitte | | | | | | |
| EARLY_SWITCHERS | 6 | 16 | 7 | 17 | 12 | 58[†] |
| NO_PURCHASE | 4 | 8 | 3 | 2 | 2 | 19 |
| PURCHASE_STAY | 4 | 11 | 8 | 11 | 5 | 39[†,‡] |
| PURCHASE_CHANGE | 1 | 5 | 5 | 3 | 2 | 16 |
| Total (% of col.) | 15 (9%) | 40 (19%) | 23 (25%) | 33 (26%) | 21 (27%) | 132 (19%)[†] |
| Ernst & Young | | | | | | |
| EARLY_SWITCHERS | 5 | 28 | 17 | 20 | 12 | 82 |
| NO_PURCHASE | 9 | 10 | 8 | 7 | 1 | 35 |
| PURCHASE_STAY | 12 | 20 | 6 | 13 | 5 | 56[‡] |
| PURCHASE_CHANGE | 4 | 7 | 1 | 2 | 0 | 14 |
| Total (% of col.) | 30 (17%) | 65 (31%) | 32 (35%) | 42 (33%) | 18 (23%) | 187 (28%) |
| KPMG | | | | | | |
| EARLY_SWITCHERS | 15 | 23 | 10 | 15 | 14 | 77[†] |
| NO_PURCHASE | 11 | 7 | 6 | 4 | 2 | 30 |
| PURCHASE_STAY | 34 | 21 | 8 | 13 | 6 | 82[†,‡] |
| PURCHASE_CHANGE | 3 | 5 | 0 | 1 | 1 | 10 |
| Total (% of col.) | 63 (37%) | 56 (27%) | 24 (26%) | 33 (26%) | 23 (30%) | 199 (30%)[†] |

(The table is continued on the next page.)

TABLE 5 (Continued)

| Switch type* | Client asset size portfolio | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | <$100 million | $100–$500 million | $500 million–$1 billion | $1 billion–$5 billion | >$5 billion | Total |
| PricewaterhouseCoopers | | | | | | |
| EARLY_SWITCHERS | 7 | 16 | 6 | 7 | 10 | 46[†] |
| NO_PURCHASE | 7 | 14 | 3 | 5 | 3 | 32 |
| PURCHASE_STAY | 0 | 0 | 0 | 0 | 0 | 0 |
| PURCHASE_CHANGE | 8 | 2 | 1 | 5 | 2 | 18 |
| Total (% of col.) | 22 (13%) | 32 (16%) | 10 (11%) | 17 (13%) | 15 (20%) | 96 (14%)[†] |
| Other | | | | | | |
| EARLY_SWITCHERS | 8 | 7 | 0 | 1 | 0 | 16[†] |
| NO_PURCHASE | 21 | 5 | 0 | 0 | 0 | 26 |
| PURCHASE_STAY | 0 | 0 | 0 | 0 | 0 | 0 |
| PURCHASE_CHANGE | 12 | 3 | 2 | 1 | 0 | 18[†] |
| Total (% of col.) | 41 (24%) | 15 (7%) | 2 (3%) | 2 (2%) | 0 (0%) | 60 (9%)[†] |
| Total | | | | | | |
| EARLY_SWITCHERS (% of col.) | 41 (24%) | 90 (43%) | 40 (44%) | 60 (47%) | 48 (62%) | 279 (42%) |
| NO_PURCHASE (% of col.) | 52 (31%) | 44 (21%) | 20 (22%) | 18 (14%) | 8 (10%) | 142 (21%) |
| PURCHASE_STAY (% of col.) | 50 (29%) | 52 (25%) | 22 (24%) | 37 (29%) | 16 (21%) | 177 (26%)[‡] |
| PURCHASE_CHANGE (% of col.) | 28 (16%) | 22 (11%) | 9 (10%) | 12 (10%) | 5 (7%) | 76 (11%) |
| Total | 171 | 208 | 91 | 127 | 77 | 674 |
| % of total (n = 674) | 25% | 31% | 14% | 19% | 11% | |

(The table is continued on the next page.)

TABLE 5  (Continued)

**Notes:**

\*       Switch type is defined as follows for Andersen clients: *EARLY_SWITCHERS* includes clients that switched before April 15, 2002 in offices that were not purchased or the announcement date for purchased offices; *PURCHASE_STAY* includes clients who stay with the purchasing firm and are not included in *EARLY_SWITCHERS*; *PURCHASE_CHANGE* includes clients who switch to a nonpurchasing firm after their local office purchase date; and *NO_PURCHASE* covers clients that moved after April 15, 2002 in a city that did not have a purchased office. This table organizes Andersen's clients by acquiring firm while Table 2 organizes Andersen clients by Andersen office and the firm that acquired the office. For example, in this table *PURCHASE_CHANGE* represents clients that the acquiring auditor obtained that were part of another firm's office purchase. This table shows DT acquired 16 *PURCHASE_CHANGE* clients. Table 2 shows DT acquired 5 clients from EY and 11 clients from KPMG after each firm purchased the clients' local offices.

†       The proportion of clients acquired by each auditor within each switch type category (or in total) is significantly different from their 2001 markets shares exclusive of Andersen (DT [15 percent], EY [26 percent], KPMG [20 percent], PWC [26 percent], and Other [13 percent]), at the 0.05 level.

‡       The proportion of clients retained by the purchasing auditor (or combined total retained by all purchasing auditors) in the *PURCHASE_STAY* offices is significantly different from their 2001 markets shares exclusive of Andersen at the 0.05 level.

clients with greater than $5 billion in assets switched early while only 24 percent with assets less than $100 million switched early. Within each size category, *PURCHASE_STAY* clients represent a larger percentage than *PURCHASE_CHANGE* clients.[15] Seventy percent (177/253) of purchased clients stayed with the purchasing firm. We also see that for even the largest clients, purchased clients were more likely to stay with the purchasing auditor than to change auditors (16 out of 21 > $5 billion in assets stay). This finding suggests that the GAO's conclusion that the market for audit services among the largest clients is highly competitive is conditional on whether the large client switched early or whether the office was purchased. Overall, our results suggest that purchasing firms are more likely to retain the purchased clients, regardless of client size.

Finally, we compare client gains across firms in Table 5. The overall trend of client gains is similar across the Big 4 firms. The gains of larger clients (in terms of asset size) occurred during the early period. The ability to retain clients in purchased offices is also fairly constant across size classifications for each firm.

## 5.  Evidence from changes in audit fees

### *Research design*

We examine the change in audit fees from 2001 to 2002 for all public clients for which we can obtain sufficient data to test our hypotheses. The change in fees approach rather than a fee level approach enables us to control for client-specific factors that impact fees. The change model's intercept also captures the change in fees related to the changing audit environment resulting from the events of 2001 and the passage of Sarbanes-Oxley in 2002.

   Our change in audit fee model controls for changes in the usual audit fee determinants. It includes variables consistent with Ferguson, Francis, and Stoke 2003, Francis and Wang 2005 and Mayhew 2005. We present the model as (2):

$$
\begin{aligned}
\Delta LNFEES_{i,\,t} = {} & \beta_1 + \beta_2 \Delta LNASSETS_{i,\,t} + \beta_3 \Delta INVRECV_{i,\,t} + \beta_4 \Delta CURRENT_{i,\,t} \\
& + \beta_5 \Delta QUICK_{i,\,t} + \beta_6 \Delta LTD_{i,\,t} + \beta_7 \Delta EBIT_{i,\,t} \\
& + \beta_8 \Delta SEGMENTS_{i,\,t} + \beta_9 \Delta QUALIFIED_{i,\,t} + \beta_{10} \Delta LOSS_{i,\,t} \\
& + \beta_{11} \Delta FOREIGN_{i,\,t} + \beta_{12} \Delta YE_{i,\,t} + \beta_{13} NONAA\_CHANGE_{i,\,t} \\
& + \beta_{14} AA\_SMALL_{i,\,t} + \beta_{15} EARLY\_SWITCHERS_{i,\,t} \\
& + \beta_{16} NO\_PURCHASE_{i,\,t} + \beta_{17} PURCHASE\_STAY_{i,\,t} \\
& + \beta_{18} PURCHASE\_CHANGE_{i,\,t} + \epsilon_{i,\,t}
\end{aligned}
\tag{2}.
$$

The variables are defined as follows: $\Delta LNFEES$ is the change in the natural log of total audit fees for 2002, $\Delta LNASSETS$ is the change in the natural log of year-end assets, $\Delta INVRECV$ is the change in the ratio of receivables and inventory to total assets, $\Delta CURRENT$ is the change in the ratio of current assets to total assets, $\Delta QUICK$ is the change in the ratio of current assets less inventory to current liabilities, $\Delta LTD$ is the change in the ratio of long-term debt to total assets, $\Delta EBIT$ is the change in the ratio of earnings before interest and taxes to total assets, and $\Delta SEGMENTS$ is the natural log of the change in number of reportable segments. $\Delta QUALIFIED$ equals one if the company received a going concern audit report in 2002 and not in 2001, negative one if the company received a going concern audit report in 2001 and not in 2002, and zero otherwise. $\Delta LOSS$ equals one if the company reported a loss in the current year and a profit in the prior year, negative one if the company reported a profit in the current year and a loss in the prior year, and zero otherwise. Similarly, $\Delta FOREIGN$ equals one if the company began reporting foreign earnings in the current year, negative one if the company stopped reporting foreign earnings in the current year, and zero otherwise; and $\Delta YE$ equals one if the company switched to calendar year-end reporting, negative one if the company switched from calendar year-end reporting, and zero otherwise.

   We include a series of auditor change variables to classify each auditor switch. We separate non-Andersen switches from Andersen switches because the focus of our study is the initial engagement fees for former Andersen clients. $NONAA\_CHANGE$ equals one if the client changed auditors from other than Andersen in 2002 and zero otherwise. A negative coefficient provides evidence of

low-balling in acquiring non-Andersen clients. A number of Andersen clients changed to non–Big 4 auditors in 2002. Prior research documents that audit fees are lower for non–Big 4 firms (Francis and Simon 1987). *AA_SMALL* equals one if a former Andersen client changed to a non–Big 4 firm and zero otherwise. We expect greater decreases in fees from movements to non–Big 4 auditors than to Big 4 auditors, so we anticipate a negative coefficient for *AA_SMALL* representing an incremental small firm effect. The other four switch types — *EARLY_SWITCHERS*, *NO_PURCHASE*, *PURCHASE_STAY*, and *PURCHASE_CHANGE* — are indicator variables as previously defined.

Hypothesis 1 predicts that open-market switchers — *NO_PURCHASE* and *EARLY_SWITCHERS* — will be negative, as we expect auditors to offer low-ball bids to clients who seek open-market switches. In contrast, Hypothesis 2 predicts that *PURCHASE_STAY* will be non-negative because clients that followed their Andersen office to a new auditor are not expected to receive low-ball bids. Hypothesis 3 predicts that *PURCHASE_CHANGE* will be non-negative because we do not expect clients that changed from the purchasing audit firm to receive fee discounts due to decreased competition.

### *Empirical results*

Table 6 documents the estimation of the audit fee change model. Non-Andersen switches, *NONAA_CHANGE* ($\beta_{13} = -0.290$, *p*-value $< 0.01$), have statistically significant lower audit fee changes than continuing clients. The estimation also shows that non–Big 4 auditors that picked up Andersen clients (*AA_SMALL*) offered significant discounting ($\beta_{14} = -0.315$, *p*-value $< 0.01$). The magnitude is not significantly different from the amount of low-balling for *NONAA_CHANGE*.[16] Contrary to the prediction of Hypothesis 1, *EARLY_SWITCHERS* did not receive fee discounts. However, *NO_PURCHASE* clients did receive discounted prices ($\beta_{16} = -0.087$, *p*-value $< 0.01$), supporting Hypothesis 1. *PURCHASE_STAY* clients neither received a low-ball bid nor paid a premium, consistent with Hypothesis 2, and *PURCHASE_CHANGE* clients paid a premium ($\beta_{18} = 0.113$, *p*-value $< 0.05$) supporting Hypothesis 3.

We consider the fee change in the following year to provide more insight into whether or not the discounting, or lack thereof, persists in future periods. The audit fees change in the manner predicted by low-balling. Both the *NO_PURCHASE* and *NONAA_CHANGE* variables are significantly positive in the year following the auditor change, suggesting that auditors of these clients seek to recover the discounted first-year fees. However, *AA_SMALL* did not change, suggesting that the switch to non–Big 4 results in consistently lower fees rather than low-balling. The lack of discounting associated with clients of purchased offices (*PURCHASE_STAY* and *PURCHASE_CHANGE* clients) persists in the year following the auditor change.

We also classify client firms into five size groupings, consistent with the GAO size analysis.[17] We estimate (2) with each variable interacted with indicator variables representing each of the five size groupings. Our motivation stems from the GAO's concern that large clients may have few auditor options, resulting in

reduced competition for these clients' services. To conserve space, we do not report all 89 resulting variables. Table 7 reports only the auditor switch-related variables' coefficients for the five size-segregated groupings. The general pattern reported in our main analyses can be seen across the size portfolios. Across size groupings, open market switchers either received significant discounts or did not pay significant premiums. Purchase office clients on average did not receive significant discounts and sometimes paid significant premiums.

Table 7 also provides some evidence that competition within client size groupings impacts discounts. The only discounts occur among open market switch clients having assets of less than $1 billion. These results suggest more (less) competition for small (large) clients who demand Big 4 auditors.

TABLE 6

Change in audit fee model by Andersen move type

$$
\begin{aligned}
\Delta LNFEES_{i,t} = {}& \beta_1 + \beta_2 \Delta LNASSETS_{i,t} + \beta_3 \Delta INVRECV_{i,t} + \beta_4 \Delta CURRENT_{i,t} \\
& + \beta_5 \Delta QUICK_{i,t} + \beta_6 \Delta LTD_{i,t} + \beta_7 \Delta EBIT_{i,t} + \beta_8 \Delta SEGMENTS_{i,t} \\
& + \beta_9 \Delta QUALIFIED_{i,t} + \beta_{10} \Delta LOSS_{i,t} + \beta_{11} \Delta FOREIGN_{i,t} \\
& + \beta_{12} \Delta YE_{i,t} + \beta_{13} NONAA\_CHANGE_{i,t} + \beta_{14} AA\_SMALL_{i,t} \\
& + \beta_{15} EARLY\_SWITCHERS_{i,t} + \beta_{16} NO\_PURCHASE_{i,t} \\
& + \beta_{17} PURCHASE\_STAY_{i,t} + \beta_{18} PURCHASE\_CHANGE_{i,t} + \epsilon_{i,t} \quad (2)
\end{aligned}
$$

| Variables ($n = 4,754$)* | Prediction | Coefficient | $t$-statistic |
|---|---|---|---|
| Intercept | $+/-$ | $0.228^\dagger$ | 15.27 |
| $\Delta LNASSETS$ | $+$ | $0.224^\dagger$ | 12.66 |
| $\Delta INVRECV$ | $+$ | $0.273^\dagger$ | 3.15 |
| $\Delta CURRENT$ | $+$ | $-0.089$ | 1.40 |
| $\Delta QUICK$ | $-$ | $-0.002^\S$ | 1.84 |
| $\Delta LTD$ | $+$ | $0.018^\S$ | 1.63 |
| $\Delta EBIT$ | $-$ | $-0.006$ | 1.34 |
| $\Delta SEGMENTS$ | $+$ | $-0.035^\dagger$ | 2.69 |
| $\Delta QUALIFIED$ | $+$ | $0.082^\ddagger$ | 2.20 |
| $\Delta LOSS$ | $+$ | $0.049^\dagger$ | 3.74 |
| $\Delta FOREIGN$ | $+$ | $-0.001$ | 0.05 |
| $\Delta YE$ | $+$ | $0.038$ | 0.65 |
| $NONAA\_CHANGE$ | $-$ | $-0.290^\dagger$ | 9.06 |
| $AA\_SMALL$ | $-$ | $-0.315^\dagger$ | 5.56 |
| $EARLY\_SWITCHERS$ H1 | $-$ | $-0.012$ | 0.60 |
| $NO\_PURCHASE$ H1 | $-$ | $-0.087^\dagger$ | 2.44 |
| $PURCHASE\_STAY$ H2 | $\geq 0$ | $0.040$ | 1.29 |
| $PURCHASE\_CHANGE$ H3 | $\leq 0$ | $0.113^\ddagger$ | 2.34 |
| Adjusted $R^2$ | | 6.5% | |

(The table is continued on the next page.)

TABLE 6  (Continued)

**Notes:**

\*      Variables are defined as follows: $\Delta LNFEES$ is the change in the natural log of total audit fees; $\Delta LNASSETS$ the change in the natural log of year-end assets; $\Delta INVRECV$ is the change in the ratio of receivables and inventory to total assets; $\Delta CURRENT$ is the change in the ratio of current assets to total assets; $\Delta QUICK$ is the change in the ratio of current assets less inventory to current liabilities; $\Delta LTD$ is change in the ratio of long-term debt to total assets; $\Delta EBIT$ is change in the ratio of earnings before interest and taxes to total assets; $\Delta SEGMENTS$ is the natural log of the change in number of reportable segments; $\Delta QUALIFIED$ is an indicator variable equal to one if the company received a qualified audit report in 2002 and not in 2001, negative one if the company received a qualified audit report in 2001 and not in 2002, and zero otherwise; $\Delta LOSS$ is an indicator variable equal to one if the company reported a loss in the current year and a profit in the prior year, equal to negative one if the company reported a profit in the current year and a loss in the prior year, and zero otherwise; $\Delta FOREIGN$ is an indicator variable equal to one if the company began reporting foreign earnings in the current year, equal to negative one if the company stopped reporting foreign earnings in the current year, and zero otherwise; $\Delta YE$ is an indicator variable equal to one if the company switched to calendar year-end reporting, equal to negative one if the company switched from calendar year-end reporting, and zero otherwise; $NONAA\_CHANGE$ is an indicator variable equal to one if the client changed auditors from other than Andersen in 2002 and zero otherwise; $AA\_SMALL$ is an indicator variable equal to one if the former Andersen client changed to a non−Big 4 firm and zero otherwise; $EARLY\_SWITCHERS$ is an indicator variable equal to one if the former Andersen client moved before the office move announcement (or April 15, 2002 for $NO\_PURCHASE$ moves) and zero otherwise; $NO\_PURCHASE$ is an indicator variable equal to one if the former Andersen client was located in a city where the office was not acquired and zero otherwise; $PURCHASE\_STAY$ is an indicator variable equal to one if the former Andersen client moved as part of officewide move to the purchasing auditor and zero otherwise; and $PURCHASE\_CHANGE$ is an indicator variable equal to one if the former Andersen client is from a city with an officewide move, but moved independently to a nonacquiring auditor.

†      Significant at the 0.01 level (two-tailed).

‡      Significant at the 0.05 level (two-tailed).

§      Significant at the 0.10 level (two-tailed).

## *Sensitivity tests*

We perform a number of sensitivity tests to investigate whether our results are robust to our audit fee model assumptions and research design. We conduct a separate analysis using the Big 4 firms only. We then conduct our analysis using only former Andersen clients. The possibility also exists that our results are driven by a few influential observations. We therefore eliminate observations where the absolute value of the *R*-student values exceeds 3.0 (Belsley, Kuh, and Welsch 1980). Our inferences are unaffected in each case.

We consider a finer partitioning for our classifications where *EARLY_SWITCHERS* are segregated based on purchase-stay, purchase-change, and no purchase. In these tests, we found that *EARLY_SWITCHERS* in purchased offices that selected an auditor other than the audit firm that ultimately acquired the office were offered marginally lower fees. This result is consistent with the open-market bidding argument.

We also consider alternative definitions of *EARLY_SWITCHERS*. Instead of April 15, 2002, we used the June 15, 2002 conviction date. We also used May 7, 2002, the date of the beginning of the trial. Management's decision to switch early may also introduce self-selection bias into our analysis. We therefore include the inverse Mills ratio (Heckman 1979) based on a model to explain the early switch decision derived from Barton 2005. Our inferences are unaffected by each of the alternative specifications.

In our original analysis of (2), we exclude accruals and current accruals as fee determinants (Francis and Wang 2005) because they cannot be calculated for financial institutions. As an additional test, we exclude financial institutions from the sample and reestimated (2) with the addition of changes in accruals and changes in current accruals as independent variables. In this specification, the estimated coefficient for *EARLY_SWITCHERS* becomes significantly negative, consistent with increased competition for these clients and open-market bidding.

TABLE 7

Change in audit fee model by Andersen move type and controlling for size

| | Interactions with client asset size indicator variable | | | | |
|---|---|---|---|---|---|
| Variable[*] | <100 M | 100–500M | 500M–1B | 1B–5B | >5B |
| *n* within each size category | 1,478 | 1,310 | 632 | 858 | 476 |
| *EARLY_SWITCHERS* | −0.155[‡] | −0.051 | −0.121[§] | 0.040 | 0.060 |
| *NO_PURCHASE* | −0.016 | −0.257[†] | 0.077 | −0.104 | 0.005 |
| *PURCHASE_STAY* | −0.008 | −0.030 | 0.136 | −0.082 | 0.203[‡] |
| *PURCHASE_CHANGE* | 0.141[§] | 0.069 | −0.013 | 0.327[†] | −0.087 |
| Adjusted $R^2$ = 23.0% | | | | | |

**Notes:**

[*]    We estimate (2) with each variable interacted with an indicator variable representing one of the five size portfolios. The model therefore includes 89 variables, but we only report the test variables here to conserve space. The control variables are generally consistent across the five size portfolios above. See Table 6 for variable definitions.

[†]    Significant at the 0.01 level (two-tailed).

[‡]    Significant at the 0.05 level (two-tailed).

[§]    Significant at the 0.10 level (two-tailed).

The difference appears to be driven by the exclusion of financial institutions, not by the inclusion of the accrual variables. *EARY_SWITCHERS* also become significantly negative when we drop Chicago, Atlanta, and Los Angeles, which all include sales of separate industry segments.

Audit fees and choice of auditor may be jointly determined. We address this endogeneity issue two ways. First, we estimate modifications of (2) where the indicator variables (*EARLY_SWITCHERS*, *NO_PURCHASE*, *PURCHASE_STAY*, and *PURCHASE_CHANGE*) are included separately. Results are similar to those reported in Table 6. Second, we model the choice of a Big 4 auditor as a demand effect where Big 4 is explained by client size, ratio of receivables, and inventory to total assets, leverage, losses, and equity issues. We incorporate the demand effect two ways. First, we estimate the choice of Big 4 and change in audit fee models as a system using two-stage least squares, and second we include the predicted value from the Big 4 model as an explanatory variable in the change in audit fee model. In both cases, the Big 4 variable is significant in the change in audit fee model and *EARLY_SWITCHERS* becomes marginally significant and negative as predicted. The other coefficients are similar to those reported in Table 6. However, the Big 4 model has a relatively low adjusted $R^2$ (approximately 20 percent). Without a strong Big 4 model, the *EARLY_SWITCHERS* results are more tenuous and are not reported as a primary result.

In purchased offices, the audit fees may also be determined jointly with the client decision to stay or change. We address this issue by estimating a stay versus change model similar to Blouin et al. 2007. Because our model has a low pseudo $R^2$ (less than 9 percent), we add the significant variables from the estimation of this model as additional explanatory variables in (2) to control for variables associated with the client's decision to stay or change. Results are similar to those reported in Table 6.

The GAO 2003 report indicates that industry concentrations changed post-Andersen (GAO 2003). We therefore controlled for industry by inserting dummy variables representing 12 broad industries. We also considered a number of other variables that may influence an audit fee model, including the change in nonaudit fees, local auditor competition, Altman's *Z*-score, and a non–Big 4 indicator variable. In all cases our inferences are unaffected.

## 6. Conclusion

We investigate the acquisition of Andersen's audit practice at the local office level, along with the impact on market share gains and audit fees. We find that firms were more likely to purchase a local Andersen office if they had: (a) a local market presence, (b) a lower ratio of Andersen clients to the purchaser's local clients, and (c) already acquired a significant number of early Andersen switchers. The latter result is consistent with firms seeking additional personnel to address shortfalls in production capacity. We find that Big 4 firms that acquired Andersen offices gained more Andersen clients than firms that did not acquire offices or that acquired fewer offices. The acquiring firms also retained 70 percent of purchased clients. In contrast, the highest percentage of clients acquired in nonpurchase client switches was

the 26 percent gained by E&Y. This finding supports the rationale of purchasing offices and extends the initial analysis performed by the GAO 2003.

We also extend the GAO 2003 finding that competition is equal among the remaining four firms for very large clients and is different among smaller clients.[18] Our results suggest that purchasing offices increased the number of clients gained across all asset levels. This provides a partial explanation for the GAO's initial findings that EY and KPMG gained more clients than the other firms. We also find that larger client firms switched auditors earlier, on average, than smaller firms, consistent with Barton 2005.

We investigate how competition in the audit market influences audit fees for former Andersen clients. We find that clients who moved along with a local Andersen office purchased by another firm did not receive discounts. Clients who did not move to the same auditor that purchased their local Andersen office paid a significant fee premium. On the other hand, clients who switched auditors in a city where the local office was not purchased received fee discounts. These results support the rationale for buying a local office and attempting to retain its clients, as these clients appear to have paid more to remain with their current audit team. This evidence also provides information on the costs borne by former Andersen clients as a result of Andersen's failure, thereby adding to the costs documented by Chaney and Philipich 2002.

The lack of fee discounting — and, in some cases, the existence of premiums paid by firms that did not move with the purchased audit office — suggests that competition is lessened by a decrease in the number of available audit alternatives. Clients who decided not to move along with a purchased office and who also demanded a Big 4 auditor had at most three Big 4 options. In many cases, the actual number of options was fewer than three, especially if the client had a conflict of interest with one or more of the remaining audit firms. Furthermore, we find among *EARLY_SWITCHERS* and *NO_PURCHASE* that small clients appeared to receive discount fees while large clients did not. The difference suggests more competition among audit firms for small clients compared with competition for large clients. This result differs from Sullivan's 2002 analysis of the 1989 Big 8 mergers that seemed to enhance competition for large clients. Taken together, our results imply that the competitive dynamics differed based on the form of client acquisition and the client's size.

**Endnotes**

1. It is our understanding that the purchasers acquired the rights to hire Andersen staff from Andersen and did not officially purchase any Andersen offices. It appears that the purchasing firms wanted to avoid acquiring any of Andersen's liabilities as the result of a purchase. Nonetheless, press reports often referred to the transactions as purchases, as we do throughout this paper.

2. The basic issue facing large clients is that their operations are generally too geographically diverse and their audit scope is too large for smaller audit firms to effectively provide services. Whether the inability of second-tier firms to serve large clients is real or perceived is of some debate (Boles 2006). Nonetheless, if large clients

perceive that only large auditors can serve their needs, the large auditors will be able to wield market power resulting from less competition.

3. In our review of 8-K filings, we observed a handful of clients who apparently did not realize they needed to find a new auditor until notified by the SEC in August 2002 that Andersen could no longer provide audit services for public clients. The number of these observations is too small to warrant systematic review.

4. An auditor stepping in after year-end to take over an audit would not have been able to observe the year-end inventory, and may have faced significant challenges in establishing cut-offs for major accounts. To provide some evidence that switches after a client's year-end are unusual, we looked at non-Andersen client switches in 2002 and found that only 11 percent occurred within the first three months after year-end.

5. Chaney et al. (2003) develop their model to analytically assess the impact of direct solicitation on client decisions to change auditors. The model is sufficiently general to enable us to apply it to the Andersen setting. The model draws on earlier work by DeAngelo 1981 and Magee and Tseng 1990.

6. Low-balling refers to setting fees below expected costs in the initial year of an audit. We adapt the economic definition of low-balling throughout this paper consistent with the definition implicitly used by DeAngelo 1981. Economic low-balling does not necessarily mean the auditor loses money in the first year of the audit, only that the auditor earns less than its costs including opportunity costs. Negative coefficients in our regression models are consistent with an auditor earning abnormally low fees, consistent with the firm not covering its opportunity costs.

7. In private conversations with former Andersen partners, they suggested that many of these early switchers simply selected another firm and offered them the audit at the current rate they were paying Andersen. This approach bypassed an open-market bid process and therefore is unlikely to produce low-balling.

8. The basic idea here comes from the literature on the winner's curse. But it is easy to see that bidding against a bidder with superior knowledge about audit costs creates peril for the competing bidder. There is a higher probability the competing bidder will win the auction due to misestimated costs when competing with a better-informed bidder. The competing bidder is aware of this risk and may choose not to bid in cases where it believes it is at a significant information disadvantage.

9. Blouin et al. (2007) exclude clients from their analysis for whom they do not believe the data are clear enough to estimate whether the Andersen team moved. This constraint lowers their sample to 561 clients for whom they feel they have adequate data to judge whether the client followed the Andersen team, of which 425 have enough data for their analysis. We are unable to provide a complete reconciliation with Blouin et al. 2007 because they do not provide the same level of classification detail.

10. This cutoff date is conservative. The median date of office purchases was May 22, 2002, nearly a month later. Blouin et al. (2007) use May 1 as a cutoff for similar reasons. We consider alternative dates in sensitivity tests.

11. We only investigate Andersen offices that served public clients. We know other Andersen offices existed and in some cases were purchased, but do not appear to have any public clients. For example, the New Mexico office of Andersen was purchased by GT. However, we find no evidence that the New Mexico office had any public clients.

12. If the audit firm did not have a presence in the local market, we set both *AA_RATIO* and *EARLY_FEES%* to zero because we cannot divide by zero. In nearly all cases, a firm without a local market presence did not acquire any early Andersen client switches, so *EARLY_FEES%* would equal zero anyway. *AA_RATIO* effectively becomes the interaction between *PRESENCE* and the ratio of Andersen fees to the audit firm's fees. None of the other inferences change when we limit the analysis to auditors who had an existing presence in the location and drop *PRESENCE* from the model.

13. We considered alternative measures for office desirability, competition, office/client riskiness, and market shares with similar results. We also explored the impact of movements of the largest audit client in the Andersen office and found no association with the probability of purchasing the office. Further, results are not sensitive to including PWC offices in the analysis.

14. E&Y and DT each purchase a significant segment of the Atlanta office.

15. Blouin et al. (2007) examine clients' decisions to follow their Andersen team or change auditors. They find evidence supporting both agency theory and switching costs as motivation to follow to the purchasing auditors. We consider this decision in later sensitivity tests on the change in audit fees.

16. We also split *NONAA_CHANGE* into two variables based on whether the change is to a non–Big 4 auditor or to a Big 4 auditor. As expected, in the revised model the variable for switches to non–Big 4 ($-0.451$, $p < 0.01$) was much more negative than the variable on Big 4 switches ($-0.101$, $p < 0.03$). Splitting *NONAA_CHANGE* into two variables does not affect any of the other results.

17. We remove *AA_SMALL* from the estimation of the $> \$5$ billion assets portfolio because there are no switches from AA to non–Big 4 auditors for this group.

18. A recent Dow Jones article raised similar concerns about the concentration of large audit firms in the United Kingdom. The Big 4 audit 97 percent of the FTSE-350 (Boles 2006).

## References

Barton, J. 2005. Who cares about auditor reputation? *Contemporary Accounting Research* 22 (3): 549–616.

Belsley, D., E. Kuh, and R. Welsch. 1980. *Regression diagnostics*. New York: John Wiley & Sons.

Blouin J., B. Grein, and B. Roundtree. 2007. An analysis of forced auditor change: The case of former Arthur Andersen clients. *The Accounting Review* 82 (3): 621–50.

Boles, C. 2006. UK govt report highlights dominance of Big 4 audit firms. *Dow Jones Newswires*, April 11.

Bryan-Low, C. 2002. Who are winners at Andersen's yard sale? Ernst & Young, Deloitte, KPMG look to hire 200 partners each; Pricewaterhouse focuses on clients. *Wall Street Journal*, May 30, C1.

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 (4): 1221–45.

Chaney, P. K., D. C. Jeter, and P. E. Shaw. 2003. The impact on the market for audit services of aggressive competition by auditors. *Journal of Accounting and Public Policy* 22 (6): 487–518.

DeAngelo, L. 1981. Auditor independence, "low balling", and disclosure regulation. *Journal of Accounting and Economics* 3 (2): 113–27.

Dye, R. A. 1991. Informationally motivated auditor replacement. *Journal of Accounting and Economics* 14 (4): 347–74.

Ferguson, A., J. Francis, and D. Stoke. 2003. The effect of firm-wide and office-level industry expertise and audit pricing. *The Accounting Review* 78 (2): 429–48.

Francis, J., and D. Simon. 1987. A test of audit pricing in the small-client segment of the U.S. audit market. *The Accounting Review* 62 (1): 145–57.

Francis, J. R., and D. Wang. 2005. Impact of the SEC's public fee disclosure requirement on subsequent period fees and implications for market efficiency. *Auditing: A Journal of Practice and Theory* 24 (25th Anniversary Supplement): 145–60.

Frank, R., and M. Pacelle. 2002. Legal problems forced Deloitte to leave Andersen at the alter. *Wall Street Journal Online*, March 18.

General Accounting Office (GAO). 2003. Public accounting firms: Mandated study on consolidation and competition. United States General Accounting Office. GAO-03-864 (July).

Glater J. D. 2002. Andersen makes 3 deals to sell parts of firm. *New York Times*, May 9, C8.

Healy, P., and T. Lys. 1986. Auditor changes following Big Eight mergers with non-Big Eight audit firms. *Journal of Accounting and Public Policy* 5 (4): 251–65.

Heckman, J. 1979. Sample selection bias as a specification error. *Econometrica* 47 (1): 153–62.

Hedgpeth, D. 2002. At Arthur Andersen, emptying offices; Many partners, employees are gone. *Washington Post*, July 19, E1.

Johnsson, J. 2002. Carving up the flagship office: Deloitte, KPMG lead recruiting chase. *Crain's Chicago Business*, May 6, 3.

Johnstone, K. M., J. C. Bedard, and M. L. Ettredge. 2004. The effect of competitive bidding on engagement planning and pricing. *Contemporary Accounting Research* 21 (1): 25–53.

Krishnamurthy, S., J. Zhou, and N. Zhou. 2006. Auditor reputation, auditor independence and the stock market reaction to Andersen's clients. *Contemporary Accounting Research* 23 (2): 465–90.

Magee, R. P., and M. Tseng. 1990. Audit pricing and independence. *The Accounting Review* 65 (2): 315–36.

Mayhew, B. 2005. Discussion of "Impact of the SEC's public fee disclosure requirement on subsequent period fees and implications for market efficiency". *Auditing: A Journal of Practice and Theory* 24 (25th Anniversary Supplement): 161–69.

Mayhew B. W., and J. E. Pike. 2004. Does investor selection of auditors enhance auditor independence? *The Accounting Review* 79 (3): 797–822.

*Public Accounting Report*. 2002. E&Y, KPMG and D&T buy Andersen practices (May 15): 1.

Shu, S. Z. 2000. Auditor resignations: Clientele effects and legal liability. *Journal of Accounting and Economics* 29 (2): 173–205.

Sullivan, M. W. 2002. The effect of the big eight accounting firm mergers on the market for audit services. *Journal of Law and Economics* 45 (2): 375–99.

U.S. District Court. 2002. Indictment CRG-02-121 (U.S. against Arthur Andersen, LLP).
    http://news.findlaw.com/hdocs/docs/enron/usandersen030702ind.html.
Weil, J., A. Barrionuevo, and C. Bryan-Low. 2002. Auditor's ruling: Andersen win lifts U.S.
    Enron case — shredding wasn't factor in verdict, jurors say; a single e-mail was —
    prelude to the main event. *Wall Street Journal*, June 17, A1.