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REGULAR PAPER

Fiscal year-end and non-lateral auditor switches

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Abstract

Purpose – The purpose of this paper is to examine the potential effect of busy season resource constraints on the selection of a new auditor, conditioned upon the status of the prior auditor.
Design/methodology/approach – The paper employs multivariate logistic regressions for a sample of firms that changed auditors between 1979 and 2005 to explore the empirical correlations between having a December fiscal year-end (FYE) and non-lateral switches.
Findings – The paper finds that non-BigN clients with December FYEs are less likely to switch to BigN auditors than those with non-December FYEs prior to the enactment of the Sarbanes-Oxley Act (SOX). This trend subsides after SOX. For firms with BigN predecessor auditors, fiscal year-end appears to have insignificant influence on auditor switching.
Research limitations/implications – The findings suggest that upwardly mobile clients face greater audit supply constraints compared to clients already being audited by a BigN firm during the traditional busy season. However, the curbing influence on switching upwards erodes after SOX.
Practical implications – This study is to show the impact of supplier capacity constraints on audit production and structural changes within the auditing profession.
Originality/value – The findings can further the understanding of the determinants of auditor-client realignment, given that the paper identifies and explores the effects of having a December FYE on subsequent auditor appointments, conditioned upon the status of the prior auditor.

Keywords Auditor change, Fiscal year-end, Supplier capacity constraint, Sarbanes-Oxley Act
Paper type Research paper

1. Introduction

This paper investigates whether having a December fiscal year-end (FYE hereafter) plays a role in non-lateral auditor switches, i.e. from non-BigN auditors to BigN auditors (upward switching) and from BigN auditors to non-BigN auditors (downward switching)[1]. It has long been documented that auditors have different capacity at different times of the year. For instance, Francis (1984) finds that auditors charge lower fees for clients that have a FYE in the non-peak months and attributes this trend to the capacity constraints that auditors face toward the year-end. In a recent study, Lopez and Peters (2011) find that December FYE firms are less likely to switch auditors than

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non-December FYE firms using a sample of BigN clients. They attribute this phenomenon to high switching costs for busy-season companies and their auditors. This study complements Lopez and Peters' (2011) by examining the effects of supplier capacity constraints on the likelihood of non-lateral auditor switches. In particular, I argue that capacity constraints are more likely to impact big auditors' client acceptance decisions than their client retention decisions. December FYE firms are less likely to switch upward from non-Big to BigN auditors than firms with other FYEs.

Firms generally tend to prefer higher quality audit services. Because the auditing literature has documented that BigN auditors offer higher quality audit services ever since DeAngelo (1981), firms prefer to switch to BigN auditors to seek for the benefits that are associated with high audit quality (Johnson and Lys, 1990; Menon and Williams, 1991; Fernando *et al.*, 2010). BigN auditors are in high demand and thus more likely to be subject to capacity constraints, compared to smaller audit firms.

I expect that capacity constraints decrease the likelihood of upward switching. If two firms have similar characteristics save for the time of their FYEs, BigN auditors may be less likely to accept the firm with December FYE as a new client due to their limited capacity. Lopez and Peters (2011) also argue that auditor retention can be impacted by lower level of resources available for December year-end clients, but they did not specifically test the effect of these resource constraints on auditor selection. Auditor resignations or dismissals can be prompted by changes in a client's risk profile, fee preferences, opinion shopping or auditor/clientele mismatch (Schwartz and Menon, 1985; Teoh, 1992; Krishnan and Krishnan, 1997; Jones and Raghunandan, 1998; Shu, 2000; Ettredge *et al.*, 2007). What remains less understood is the impact of audit market constraints on the selection of subsequent BigN and non-Big-N auditor appointments.

I find evidence consistent with December FYE firms having a lower likelihood of upward switching prior to the enactment of the Sarbanes-Oxley Act (SOX hereafter), controlling for firm size, audit risk, growth, financial performance, and financial distress. The evidence is consistent with Landsman *et al.*'s(2009) results. Nevertheless, the positive effect of firms having non-December FYEs – that they are more likely to be accepted by auditors outside the December busy season – weakens in the post-SOX period. I do not find evidence that having December FYEs increases the probability of downward switching, controlling for the same set of firm characteristic variables. The overall results indicate that having a December FYE (a proxy for capacity constraints) significantly affects BigN auditors' acceptance decisions for upwardly mobile clients, but not for clients already audited by another BigN firm.

This research contributes to audit literature by also furthering our understanding of the effects of SOX on non-lateral auditor switches. This study goes further by documenting that during the post-SOX period, the effects of the capacity constraints caused by December FYEs may be eclipsed by the impact on the capacity constraints of SOX implementation. In addition, this paper uses a comparatively large data sample spanning over a longer longitudinal period than that of most previous studies and offers complementary findings to Lopez and Peters' (2011) so as to advance the understanding of auditor-client realignment. This study provides some evidence that December FYE inhibits auditor changes and thus enhances the understanding of the functioning of audit market.

The remainder of this paper proceeds as follows. The next section reviews major influences on auditor changes and develops the hypotheses. The following section specifies research methodology and describes sample selection procedures. The

subsequent section presents empirical results from the main study and additional analyses. The final section summarizes the study and provides conclusions.

2. Overview of major influences on auditor changes and hypothesis development

2.1 Auditor changes and firm characteristics

An underlying assumption in this study is that BigN auditors offer higher quality audit products (DeAngelo, 1981), and that in general, firms tend to prefer higher quality audit services. For instance, Menon and Williams (1991) find evidence that pre-IPO firms typically switch to larger auditors because investment banks and their clients prefer credible auditors for the IPO. In addition, Johnson and Lys (1990) document that firms demand high quality audit services provided by BigN auditors when firms expand (which they often do) and need to raise external financing. Fernando *et al.* (2010) report that firms (especially small firms) can reduce the cost of equity capital by selecting larger auditors.

Extensive auditing literature provides several explanations for auditor switches. The fundamental force driving auditor-client realignment resides in the changes in supply and demand of differentiated audit products.

On the demand side, prior studies show that firms' operating and financial characteristics and the scope of auditing services that the firms desire change over time. These studies also identify firm-specific characteristics as influencing factors in auditor-client realignment. Schwartz and Menon (1985) examine auditor switches in failing firms, and their findings suggest that financial distress plays an important role in auditor switching. Kaplan *et al.* (1990) document that clients' auditor preferences are consistent with the environment in which clients operate. Francis and Wilson (1988) offer the evidence of positive association between agency cost and demand for high audit quality, proxied by the choice of a BigN auditor, after controlling for client size and growth. Bar-Yosef and Livnat (1984) develop a signaling model, suggesting that firms switched to bigger audit firms to signal expectation of higher future cash flows. Johnson and Lys (1990) contend that firms' expansion, external financing needs, profitability, and audit risk are important determinants in auditor changes. In addition, auditor-client disputes and opinion shopping (DeFond and Subramanyam, 1998) are frequently cited reasons for auditor-client realignments. Abidin *et al.* (2010) examine the impact that audit fees and audit market structure has on auditor switches following the demise of Arthur Andersen and provide evidence on audit market concentration in the UK audit market between 1998 and 2003.

In addition, audit firms differ in terms of quality, reputation, and their specialization in industry and technology (DeAngelo, 1981; Dopuch and Simunic, 1980).

On the supply side, auditors choose clients based on client risk, clientele portfolio management, and auditor-client disputes. For example, a series of prior studies report that auditors may resign from clients for reasons such as litigation risk; further, BigN auditors may drop risky clients when audit fees cannot fully compensate for audit risk (O'Keefe *et al.*, 1994; Krishnan and Krishnan, 1997; Shu, 2000; Bell *et al.*, 2001; Landsman *et al.*, 2009; Abidin *et al.*, 2010). In addition, Beneish *et al.* (2005) report that about one-quarter of their sample of auditor resignations have disclosed auditor-client disagreements over accounting treatments or concerns over the adequacy of internal controls.

I argue that FYE is yet another important firm characteristic because having a December FYE potentially causes supplier capacity constraints. This in turn can

influence auditor-client realignment decisions. The next section will discuss in detail the impact of FYE on auditor switching.

2.2 Auditor changes and December FYE

December FYE firms and non-December FYE firms differ in size, risk characteristics, and business cycle (Oyer, 1998; Smith and Pourciau, 1988). About 73 percent of Compustat firms that registered in the USA in 2005 end their fiscal year in December (Sinha and Fried, 2008)[2]. Auditors having different capacity at different times of the year has been documented as far back as 1984 (Francis, 1984) in the auditing literature. Francis *et al.* (2005) and Hertz (2006) have reported that about 70 percent of a firm's total audit practice involves December year-end clients. December falls into auditors' busy season when auditor capacity is more constrained than in other months, and the behavior literature suggests that high resource demands of the busy season affect auditor behavior (Alderman and Dietrick, 1982; Kelley and Margheim, 1990; Raghunathan, 1991; Willett and Page, 1996; Sweeney and Summers, 2002; Coram *et al.*, 2004). Yet, empirical evidence from archival studies on the effect that December FYEs have on auditor switching has yet to emerge. In fact, DeZoort and Lord (1997) and Sweeney and Summers (2002) call for more research on auditor capacity constraints during busy season. My study intends to fill this literature gap.

In a recent study, Lopez and Peters (2011) investigate the influence of December FYEs on the likelihood of auditor switches and find that December FYE firms are less likely to change auditors than non-December FYE firms. They attribute this phenomenon to the fact that December FYE firms face higher switching costs and competition toward the end of calendar year when auditors have capacity constraints. My study differs from Lopez and Peters' (2011) in several aspects. First, my study period runs between 1979 and 2005, much longer than theirs (2004-2007). The longer study period provides an opportunity to observe the temporal changes of the influencing factors on auditor-client realignment. For example, BigN auditors seem to focus more on client risk after SOX. Second, Lopez and Peters (2011) examine the likelihood of auditor changes for firms with December FYEs without distinguishing BigN and non-BigN auditors. However, BigN auditors and non-BigN auditors may view client characteristics differently. Thus, this study explores the differential attitudes of the two groups of auditors toward client characteristics by separating the clients into the BigN and the non-BigN predecessor groups. With limited resources toward the end of the calendar year, I expect that BigN auditors may be less willing to accept new clients with December FYEs.

Non-BigN auditors may face the same level of capacity constraints and thus may not have the resources to accept additional clients. However, as I mentioned earlier, one premise of my study is that in general, firms prefer higher quality audit services provided by BigN auditors, thus BigN auditors may possess more flexibility in terms of clientele portfolio management (DeAngelo, 1981; Johnson and Lys, 1990; Menon and Williams, 1991). In contrast, non-BigN auditors may have less latitude to leave out December FYE clients. Therefore, non-BigN audit firms are perhaps more willing to add capacity for the December FYE firms since these clients are typically larger and can bring in more audit fees. For instance, Hogan and Martin (2009) document that second-tier firms accept clients with potentially increased audit and client risk characteristics relative to their existing client base.

I examine how December FYEs affect auditor-client realignment by categorizing auditor changes into two groups: one group with BigN predecessor auditors and the

other with non-BigN predecessor auditors. I use the above classification because I expect that the way in which December FYEs affect auditor-client realignments depends on firms' predecessor auditor types. The impacts of December FYEs and other demand-side and supply-side factors on auditor-client realignments for each group are as follows.

For firms in the non-BigN predecessor auditor group: on the demand side, these firms may switch to BigN auditors because they need higher quality audit services under certain circumstances. For example, when a firm needs external financing, management may seek BigN auditors to help their fundraising because BigN auditors have higher credibility and usually have good relationships with investment bankers (Johnson and Lys, 1990). On the supply side, if two firms have similar characteristics save for the time of their FYEs, BigN auditors may be less likely to accept the firm with December FYE as a new client simply due to their limited capacity.

These preceding arguments lead to my first hypothesis:

H1. For firms with non-BigN predecessor auditors, December FYE firms are less likely to switch to BigN auditors than non-December FYE firms.

For firms in the BigN predecessor auditor group: The capacity constraint argument suggests that if two firms have similar level of risk characteristics save for the time of their FYEs, BigN auditors are more likely to resign from the firm with December FYE simply because of their limited capacity. Therefore, the likelihood of switching to non-BigN auditors may be higher for December FYE firms than for non-December FYE firms.

Nevertheless, clients may switch away from BigN auditors for several reasons, such as high audit fees, opinion shopping (Chow and Rice, 1982; DeFond and Subramanyam, 1998), fewer funds due to deteriorating financial performance (Schwartz and Menon, 1985), or clientele mismatch (Shu, 2000). However, these factors are not linked with auditors' capacity constraints in the busy season. Some clients may be concerned about receiving less attention from BigNs at the year-end, but these clients may retain BigN auditors because firms generally prefer BigNs' reputation and expertise.

On the supply side, BigN auditors' resignation decisions are mainly driven by client risk and potential litigation and reputation cost associated with risky clients (Krishnan and Krishnan, 1997; Bockus and Gigler, 1998; Shu, 2000). Bockus and Gigler (1998) and Landsman *et al.* (2009) demonstrate that, when auditors resign from riskier clients, these clients are more likely to switch to smaller, lower-tier auditors. While the capacity constraint argument suggests that FYE matters, the risk argument suggests it does not. Still, for consistency with *H1*, I present the two-sided hypothesis along the lines suggested by the capacity constraint argument. Thus, the second hypothesis is:

H2. For firms with BigN predecessor auditors, December FYE firms are more likely to switch to non-BigN auditors than non-December FYEs.

SOX imposes new and enhanced legislation on corporate accounting and auditing procedures, which increase the scope and amount of auditing work required for US firms. In addition, the demise of the Arthur Andersen imposed further capacity constraints on BigN auditors in accepting new clients, especially smaller clients or those that possess higher litigation risk. The increased demand for auditing services following the implementation of SOX raises audit fees in general, particularly for

small firms. A survey by US GAO (2006) indicates that, after the enactment of SOX, large audit firms are reluctant to work with small clients because of risk, capacity constraints, and lack of profitability, forcing these small clients to seek other auditors. Thus, the effects of capacity constraints, proxied by December FYEs, on non-lateral auditor switches may exacerbate in the post-SOX period. However, the Section 404 requirements result in integrated audits that demand auditors to rely on the controls for financial statement audits and permit auditors to spread out their work throughout the year. This may alleviate the capacity constraint problem and thus mitigate the impact of having a December FYE.

3. Methodology

3.1 Model

Auditor switching is generally modeled as a function of variables representing firm-specific characteristics and other factors that have an effect on supply and demand in the audit market. Prior studies frequently include explanatory variables such as firm size, expansion, profitability, financial distress, external financing needs, and audit risk. Notably, Johnson and Lys (1990) develop a model to investigate the impact of cross-temporary changes in both firm-specific attributes and auditors' cost structure on the auditor-client rearrangements. Building on their research and other prior studies (Shu, 2000), I develop a relatively comprehensive model to explore determinants of audit switches by incorporating capacity-related factors, such as December FYE, in the model.

The empirical model I use is as follows:

$$\begin{aligned} AUDCHG_{it} =& \alpha_0 + \alpha_1 DEC\_FYE_{it} + \alpha_2 YR88 \\ &+ \alpha_3 YR88 * DEC\_FYE_{it} + \alpha_4 SOX \\ &+ \alpha_5 SOX * DEC\_FYE_{it} + \alpha_6 LASSETS_{it-1} \\ &+ \alpha_7 GROW_{it} + \alpha_8 \Delta ACQN_{it} + \alpha_9 \Delta CF_{it} \\ &+ \alpha_{10} \Delta ROA_{it} + \alpha_{11} DISTRESS_{it-1} + \alpha_{12} LOSS_{it-1} \\ &+ \alpha_{13} RETURN_{it-1} + \alpha_{14} \Delta FIN_{it} + \alpha_{15} LEVERAGE_{it-1} \\ &+ \alpha_{16} STOCKVOLAT_{it-1} + \alpha_{17} INVREC_{it-1} \\ &+ \alpha_{18} LITIG\_IND_{it} + \varepsilon \end{aligned} \tag{1}$$

where the dependent variable *AUDCHG* indicates whether the firm makes a non-lateral ($=1$) or lateral ($=0$) auditor switch. I estimate the model separately for the BigN and non-BigN predecessor samples.

The primary variable of interest in this study is *DEC_FYE*, an indicator variable coded as 1 if a firm has a December FYE, and 0 otherwise. As discussed before, BigN auditors face tremendous pressure during the busy season at the end of the calendar year. As a result, the likelihood of a firm being able to switch upward is slimmer among firms that end their fiscal years in December. Moreover, BigN auditors may have a tendency to drop December FYE clients in order to attenuate the pressure of limited capacity. Hence, I expect that the aforementioned hypotheses hold both in the pre-SOX and post-SOX periods.

H1 hypothesizes that December FYEs are negatively correlated with upward auditor changes. Thus, I expect the coefficients of the variables *DEC_FYE* and *DEC_FYE* × *YR88* (1988 is the year in which the "Expectation Gap Standards" were

announced) to be negative for the pre-SOX era[3]. Per *H2*, there is a positive correlation between December FYE and downward auditor switching prior to SOX. Therefore, I predict positive signs on the coefficients of the variables *DEC_FYE* and *DEC_FYE* × *YR88*.

During the post-SOX era, SOX compliance increased requirements for audit efforts and associated audit fees (Duffy, 2004; Harrington, 2004; Solomon, 2005; Krishnan *et al.*, 2008). The joint effect of the demise of Arthur Andersen and SOX compliance on auditor-client realignment enlarges the gap between the supply and demand of BigN audit work. As a result, I expect the coefficient of *DEC_FYE* × *SOX* to be negative for upward auditor switches and positive for downward auditor switches.

I include the control variable *LASSETS* (natural log of a client's total assets in the year preceding an auditor switch) in the regression. Firm size proxies for accounting complexity and agency costs. The bigger firms are, the more complex their accounting transactions become. They may need to switch to BigN auditors since BigN auditors, in general, have more advanced audit technology and expertise in handling complex accounting transactions. Firms' agency costs increase with size and higher agency costs demand higher quality audit work to enhance corporate governance. Therefore, I expect that *LASSETS* has a positive coefficient for upward auditor switching, and a negative coefficient for downward auditor switching.

Auditor switching is likely to occur when a firm expands. Following Johnson and Lys (1990), I use two variables in order to control for firm growth: *GROW* denotes the growth in a firm's total assets from the year prior to the realignment and to the year of the realignment, and *ΔACQN* represents the changes in acquisitions (acquisition expenditures/total assets). I predict both variables to be positive for upward auditor changes, and negative for downward auditor changes.

Prior studies have documented a positive correlation between financial performance and upward auditor switches and a negative correlation between financial performance and downward auditor switches. In this study, I use *ΔCF*, *ΔROA*, *LOSS*, *DISTRESS*, and *RETURN* to control for a firm's financial performance. These control variables are used by Johnson and Lys (1990) and Shu (2000). *ΔCF* denotes the changes in operating cash flow, and *ΔROA* reflects the changes in ROA performance (income before extraordinary items over total assets). Both *ΔCF* and *ΔROA* are expected to have positive effects on upward auditor switching and a negative effect on downward auditor switching. *LOSS* is an indicator variable, which is coded as 1 if a firm suffers a loss in the year prior to realignment, and 0 otherwise. I expect *LOSS* to have a negative coefficient if firms are involved in upward auditor switching and a positive coefficient if firms engage in downward auditor switching. *DISTRESS* designates the likelihood of firms going bankrupt. I use Altman's *Z*-score as an indicator of whether firms are in financial distress[4]. The higher Altman's *Z*-score, the less likely it is that a firm will go bankrupt. Therefore, I predict a positive correlation between *DISTRESS* and upward auditor changes, and a negative correlation between *DISTRESS* and downward auditor switching. *RETURN* is the firms' compounded return in the year prior to realignment. I use CRSP daily stock return to compute the holding period rate of return for the year preceding realignment. I expect a positive coefficient on *RETURN* for upward auditor switching and a negative coefficient for downward auditor switching. According to previous studies, these control variables are consistent with better or enhanced financial performance increasing the chance of upward auditor switching, whereas inferior or deteriorating financial performance raises the possibility of downward auditor switching.

The variable *ΔFIN* denotes the changes in new financing (total debt and stock issuances per cash flow statement over total assets), which is a measure for the need for external financing. Following Johnson and Lys (1990), I expect *ΔFIN* to have a positive coefficient for upward auditor switching and a negative coefficient for downward auditor switching.

While there are mixed results on the link between firm risk and auditor switching, empirical evidence is broadly consistent with a risk avoidance tendency in the way auditors manage their clientele portfolios. BigN auditors have more leeway to drop riskier clients. The dropped clients often have no other choice but to settle with lower-tier auditors. Similar to Shu (2000), I use *LEVERAGE* and *STOCKVOLAT* to measure firms' financial risk. *LEVERAGE* is calculated as total liabilities over total assets. I assume an inverse relationship between *LEVERAGE* and upward auditor switching, and a positive association between *LEVERAGE* and downward auditor switching. *STOCKVOLAT* represents clients' stock volatility, measured by the standard deviation of daily stock returns over the year prior to realignment. To assess firms' audit risk and litigation risk, I use the variables *INVREC* and *LITIG_IND*, respectively. *INVREC* is the sum of firms' inventories and accounts receivables deflated by total assets from the year prior to realignment. As documented by Francis and Simon (1987) and Menon and Williams (2001), *INVREC* is a measure of audit risk and accounting complexity. *LITIG_IND*, a binary variable, has a value of 1 when a firm is in a high litigation risk industry, and 0 otherwise[5]. Both *INVREC* and *LITIG_IND* are expected to have negative coefficients for upward auditor switching, and positive coefficients for downward auditor switching.

3.2 Sample selection

I first identify auditor changes in Compustat by detecting changes in firms' auditor codes between 1979 and 2005. As Table I panel A indicates, 9,943 firms changed auditors within the study period. I then remove 1,094 ADR firms. Financial and utility companies are in heavily regulated industries, and auditor-client realignments in these two industries may arise from different reasons than other industries, so I exclude 1,326 such firms. Additionally, 2,537 firms that lack necessary Compustat data items and 1,879 firms that have no CRSP stock return/volatility data are consequently dropped from my sample. To avoid outliers, I eliminate 51 firms that have data items with values three standard deviations from their sample means. I also delete 27 firms with duplicate CRSP permanent numbers. Furthermore, auditor changes caused by audit firm mergers, such as the merger of Coopers & Lybrand and Price Waterhouse, are not treated as non-lateral auditor switches in my study[6], [7]. My final sample consists of 3,029 firms.

This represents a larger sample spanning over a longer longitudinal period than most auditor-client realignment studies.

There are 4,389 firm-year observations for the 3,029 firms in the final sample. Out of this sample, 1,147 firm-year observations are for firms with non-BigN predecessor auditors, and 3,242 firm-year observations are for firms with BigN predecessor auditors. Within the non-BigN predecessor auditor group, there are 480 firm-year observations of upward auditor changes (243 firm-year observations of upward switches for December FYE firms and 237 firm-year observations of upward switches for non-December FYE firms) and 667 observations of lateral auditor changes. Within the BigN predecessor auditor group, there are 1,051 firm-year observations of downward auditor changes (578 firm-year observations of downward switches for

Panel A: firm observation counts		
Number of Compustat firms that changed auditors during 1979-2005	9,943	
Less: ADR firms	1,094	
Less: firms in financial and utility industries	1,326	
Less: firms without necessary Compustat Data	2,537	
Less: firms without necessary CRSP return/volatility data	1,879	
Less: firms with outlier data[a]	51	
Less: firms with duplicate CRSP permanent number	27	
Number of firms in the final sample	3,029	
Panel B: firm-year observation counts by firms' predecessor auditor type		
Number of firm-year observations of firms with non-BigN predecessor auditors	1,147	
Number of firm-year observations of firms with BigN predecessor auditors	3,242	
Panel C: firm-year observation counts by firms' FYE and auditor switch type		
Auditor switch type	December FYE firms	Non-December FYE firms
Non-BigN predecessor auditor group		
Upward switches	243	237
Lateral switches	327	340
BigN predecessor auditor group		
Downward switches	578	473
Lateral switches	1,334	857

Table I.
Sample selection

Note: [a]I remove observations that have values being three standard deviations away from sample means in the following data items: total assets, inventory, accounts receivable, operating cash flow

December FYE firms and 473 firm-year observations of downward switches for non-December FYE firms) and 2,191 firm-year observations of lateral auditor changes (please see Table I, panels B and C). Return data are obtained from CRSP, and the rest of firms' data are from Compustat.

4. Empirical results

4.1 Univariate analysis

Firm-specific characteristics. Table II presents the industry distribution of firm-year observations. Firm-year observations with non-BigN predecessor auditors are more concentrated in business services, machinery and equipment, and wholesale and retail industries. Firm-year observations with BigN predecessor auditors share similar industry distributions. This validates the comparability between the two groups.

I then contrast the descriptive statistics on the BigN predecessor auditor vs the non-BigN auditor samples and on December FYE vs non-December FYE sub-sample within each auditor change type in Table III. Panel A presents comparisons of the firm-specific characteristics for firms with BigN predecessor auditors and firms with non-BigN predecessor auditors. *t*-Tests for the two means reveal that, on average, firms with BigN predecessor auditors are comparatively larger than those with non-BigN predecessor auditors. The former group tends to have a lower growth rate and less stock volatility than the latter group. Wilcoxon *Z*-statistics for the differences in medians show a similar comparison pattern and additionally indicate that the former group has higher operating cash flow. The comparisons suggest that firms with

Industry	Non-BigN sample Count	Non-BigN sample Percentage	BigN sample Count	BigN sample Percentage
Business services	160	13.95	524	16.16
Chemical and petroleum	95	8.28	281	8.67
Construction and metal	78	6.80	218	6.72
Consumer goods	66	5.75	122	3.76
Entertainment	34	2.96	67	2.07
Food	26	2.27	50	1.54
Health and other services	71	6.19	233	7.19
Machinery and equipment	285	24.85	845	26.06
Natural resources	43	3.75	162	5.00
Paper and printing	39	3.40	82	2.53
Transportation related	45	3.92	148	4.57
Telecommunications	25	2.18	106	3.27
Wholesale and retail	156	13.60	366	11.29
Non-classifiable	24	2.09	38	1.17
Total no. of firm-year observations	1,147		3,242	

Notes: [a]I adopt the industry classification from Shu's (2000) study. Industries are classified using two-digit SIC code: business services: 73, 81; chemical and petroleum: 28-29; construction and metal: 15-19, 30, 32-34; consumer goods: 22-23, 25, 31, 39; entertainment: 78-79; food: 20-21; health and other services: 70, 72, 75-76, 80, 82-89; machinery and equipment: 35-36, 38; natural resources: 0-9, 10-14; paper and printing: 24, 26-27; transportation related: 37, 40-47; utilities and telecommunications: 48-49; wholesale and retail: 50-59; non-classifiable: 99

Table II.
Industry distribution of firm-year observations[a]

BigN predecessor auditors are relatively larger firms with better performance and grow more slowly than firms with non-BigN predecessor auditors.

Table III panel B shows the same set of statistics as panel A, but for December FYE firms and non-December FYE firms within non-BigN predecessor auditor sample. *T*-tests for the two means indicate that December FYE firms are comparatively larger and more financially distressed than non-December FYE firms. Wilcoxon *Z*-statistics display a similar comparative pattern on firm size and financial distress and show that the stocks of December FYE firms are more volatile than those of non-December FYE firms. The χ^2-statistics show that there are no significant differences in the proportion of firms that are in high litigation risk industry between the December FYE group and the non-December FYE group. The proportion of firms with upward switching is not significantly different between the December FYE group and the non-December FYE group.

Finally, Table III panel C distinguishes between December FYE firms and non-December FYE firms within BigN predecessor auditor sample. December FYE firms tend to be bigger and more financially distressed. Again, Wilcoxon *Z*-statistics show the similar contrast in firm size and financial distress to panel B. These statistics suggest that December FYE firms have higher operating cash flows and larger changes in external financing than non-December FYE firms. The χ^2-statistics show that the proportion of December FYE firms in high litigation risk industry is significantly higher than the proportion of non-December FYE firms in high litigation risk industry. The proportion of December FYE firms with downward switching is significantly higher than the proportion of non-December FYE firms with downward switching.

In summary, data in Table III suggests that, on average, firms included in this study have losses and are financially distressed.

Table III.
Summary statistics

	Mean	SD	Lower quartile	Median	Upper quartile	Mean	SD	Lower quartile	Median	Upper quartile	Satterthwaite *t*-statistics	Wilcoxon *Z*-test
	BigN predecessor auditor sample ($n = 3{,}242$)					Non-BigN Predecessor auditor sample ($n = 1{,}147$)						
Panel A: comparative summary statistics for the BigN predecessor auditor sample and the non-BigN predecessor auditor sample[a]												
Assets ($M)	354.263	1007.118	18.293	62.827	235.860	95.135	328.244	7.549	19.040	51.376	12.85**	18.61**
Income before extraordinary items ($M)	−5.860	216.657	−5.561	−0.084	6.521	−1.830	99.420	−2.220	−0.070	1.608	−0.84	0.36
Inventory ($M)	32.449	90.357	0.175	3.539	19.418	16.674	68.127	0.178	1.890	7.298	6.16**	6.36**
AR ($M)	50.697	181.401	2.131	8.706	33.083	16.398	61.233	0.774	2.851	8.661	9.36**	15.51**
LEVERAGE	0.531	0.387	0.290	0.488	0.688	0.568	0.831	0.267	0.490	0.705	−1.46	0.17
DISTRESS	−0.249	8.302	−0.439	1.318	2.398	−0.303	8.543	−0.602	1.416	2.606	0.18	1.00
GROW	0.145	1.268	−0.141	0.014	0.164	0.336	2.285	−0.138	0.041	0.242	−2.70**	−3.72**
RETURN	0.141	1.200	−0.393	−0.048	0.342	0.116	0.938	−0.438	−0.108	0.333	0.72	1.60
STOCKVOLAT	0.824	0.484	0.495	0.709	1.042	0.971	0.640	0.580	0.817	1.195	−7.07**	−7.65**
ΔACQN	−0.315	5.369	0.000	0.000	0.000	−0.595	9.937	0.000	0.000	0.000	0.91	0.51
ΔCF	0.633	261.686	−5.348	0.878	12.765	−25.391	685.758	−2.919	0.209	3.202	1.25	4.53**
ΔROA	0.057	0.870	−0.058	0.009	0.074	0.011	1.016	−0.076	0.007	0.083	1.36	1.35
ΔFIN	−1.501	19.067	−0.110	0.001	0.114	−2.234	21.509	−0.140	0.000	0.098	1.02	1.32
	December FYE sample ($n = 570$)					Non-December FYE sample ($n = 577$)						
Panel B: comparative summary statistics for December FYE firms, non-December FYE firms in the non-BigN predecessor auditor sample[a]												
Assets ($M)	120.888	376.249	7.740	20.988	63.967	69.694	270.589	7.436	17.231	39.607	2.64**	2.41**
Income before extraordinary items ($M)	−5.568	139.941	−3.160	−0.429	1.616	1.863	17.116	−1.523	0.138	1.600	−1.26	−3.33**
Inventory ($M)	20.131	82.223	0.048	1.468	6.824	13.260	50.322	0.336	2.311	7.719	1.70	−2.57**
AR ($M)	21.867	78.474	0.754	2.712	10.578	10.995	36.302	0.918	3.133	7.835	3.01**	0.37
LEVERAGE	0.554	0.501	0.268	0.498	0.724	0.159	0.213	0.000	0.078	0.250	−0.57	0.38
DISTRESS	−1.198	11.428	−1.330	1.191	2.475	0.544	4.127	−0.002	1.689	2.651	−3.24**	−3.38**
GROW	0.325	1.640	−0.146	0.045	0.256	0.347	2.780	−0.124	0.040	0.224	−0.16	0.27
RETURN	0.111	0.966	−0.479	−0.117	0.350	0.120	0.910	−0.406	−0.091	0.314	−0.17	−0.96
STOCKVOLAT	1.006	0.680	0.598	0.840	1.237	0.937	0.596	0.566	0.798	1.147	1.83	1.96*
ΔACQN	−0.413	7.508	0.000	0.000	0.000	−0.774	11.862	0.000	0.000	0.000	0.62	0.77
ΔCF	−2.169	56.396	−2.890	0.341	4.100	−48.331	965.104	−2.919	0.086	2.787	1.15	1.50
ΔROA	0.051	1.280	−0.080	0.008	0.098	−0.028	0.658	−0.073	0.004	0.065	1.31	1.01
ΔFIN	−1.653	15.722	−0.123	0.000	0.129	−2.808	25.993	−0.142	0.000	0.074	0.91	1.18
LITIG_IND (%)[b]	0.19											
AUDCHG (%)	0.29											

(*continued*)

Table III.

	Mean	SD	Lower quartile	Median	Upper quartile	Mean	SD	Lower quartile	Median	Upper quartile	Satterthwaite *t*-statistics	Wilcoxon *Z*-test
	December FYE sample ($n = 1{,}912$)					Non-December FYE sample ($n = 1{,}330$)						
Panel C: comparative summary statistics for December FYE firms, non-December FYE firms in the BigN predecessor auditor sample[a]												
Assets ($M)	459.851	1229.891	23.143	82.855	300.829	202.471	509.282	13.528	44.599	165.730	7.21**	8.44**
Income before extraordinary items ($M)	−10.668	277.382	−7.908	−0.303	8.438	1.052	61.289	−3.747	0.052	4.276	−1.79	−1.80
Inventory ($M)	31.820	91.917	0.000	2.936	17.897	33.355	88.093	0.611	4.483	22.004	−0.48	−5.37**
AR ($M)	62.272	221.634	2.328	10.982	41.005	34.057	95.629	1.919	6.920	24.551	4.94**	5.45**
LEVERAGE	0.179	0.251	0.001	0.083	0.278	0.148	0.199	0.000	0.063	0.244	0.85	0.12
DISTRESS	−0.537	6.952	−0.739	1.065	2.251	0.149	9.859	0.014	1.575	2.580	−2.07**	−6.14**
GROW	0.131	0.850	−0.144	0.017	0.175	0.165	1.698	−0.138	0.007	0.151	−0.68	0.75
RETURN	0.134	1.017	−0.388	−0.026	0.352	0.150	1.422	−0.400	−0.073	0.319	−0.36	1.54
STOCKVOLAT	0.832	0.492	0.496	0.707	1.058	0.814	0.473	0.491	0.709	1.024	1.05	0.73
ΔACQN	−0.361	5.346	0.000	0.000	0.000	−0.248	5.404	0.000	0.000	0.000	0.59	0.94
ΔCF	4.753	308.057	−6.279	1.247	16.143	−5.289	174.591	−4.576	0.510	8.891	1.18	2.35**
ΔROA	0.057	0.571	−0.055	0.007	0.078	0.056	1.173	−0.059	0.010	0.070	0.05	0.43
ΔFIN	−1.490	18.210	−0.105	0.003	0.125	−1.516	20.244	−0.118	0.000	0.090	0.04	2.21**
LITIG_IND (%)[c]	7.34											
AUDCHG (%)	10.19											

Notes: [a]Variable definitions are as follows: Assets($M),total Assets; income before extraordinary items($M), income before extraordinary items; inventory($M), inventory; AR($M), accounts receivables; leverage, total liabilities/total assets; distress, Altman *Z*-score (see note c); grow, growth in total assets from the year prior to the auditor-client realignment to the year of the realignment; return, compounded annual return over the year prior to the auditor-client realignment; *STOCKVOLAT*, standard deviation of daily stock returns over the year prior to the auditor-client realignment; *ΔACQN*, change in acquisitions (acquisition expenditures/total assets); *ΔCF*, change in operating cash flow; *ΔROA*, change in ROA performance (income before extraordinary items/total assets); *ΔFIN*, change in new financing (total debt and stock issuances per the cash flow statement/total assets). *LITIG_IND*, 1 if the client is in high litigation risk industry, and 0 otherwise (see note b of Table V); *AUDCHG*, 1 for non-lateral auditor switch, 0 for lateral auditor change. Tests are two-tailed. [b]I use χ^2-statistics to test differences between the December FYE Sample and the non-December FYE Sample in the proportion of firms that have the value of 1 for the indicator variables (such as *LITIG_IND*) listed in the table. [c]I use χ^2-statistics to test differences between the BigN Predecessor Auditor Sample and the non-BigN Predecessor Auditor group in the proportion of firms that have the value of 1 for the indicator variables (such as *LITIG_IND*) listed in the table. $^{*}p \leqslant 0.05$; $^{**}p \leqslant 0.01$

Trends in auditor changes. Figure 1 shows the trends in auditor changes between 1979 and 2005 for the full sample. There are three big spikes in the total number of auditor changes during the following periods: 1988-1989, 1998-1999, and 2002-2004. The rise in auditor changes in 1988 corresponds to the introduction of "Expectation Gap Standards" (AICPA, 1988) that require firms to increase the scope of audit work and thus induce necessary auditor changes. Increases in auditor switches in 1989, and 1998-1999 are likely due to mergers in top-tier auditing firms. The spike in 2002 stems from the impact of both the enactment of SOX and the demise of Arthur Andersen, both of which triggered numerous auditor changes. The period between 2003 and 2004 includes the initial stage of SOX implementation that leads to many auditor switches. For example, Ettredge *et al.* (2007) document that the high implementation costs of SOX triggered auditor dismissals. In addition, firms that receive adverse internal control reporting are more likely to change their auditors (Ettredge *et al.*, 2007). As shown in Figure 1, lateral auditor changes form the majority of auditor switch cases. The distributions of downward and upward auditor switches over time stay rather flat compared to the distributions of lateral changes; the only exception is the rising trend of downward auditor switches from 2002 onward. This evidence is consistent with prior studies.

To gain further insights on trend in auditor switches, I distinguish December FYE firms from non-December FYE firms in the non-BigN predecessor auditor group (Figure 2a) and the BigN predecessor auditor group (Figure 2b). Figure 2a illustrates that upward auditor switching increased in non-December FYE firms more sharply than in December FYE firms immediately after 1988. It is not surprising that upward auditor switches decreased after 2002: the capacity constraints of top-tier auditors perhaps contribute to the decline. Figure 2b shows that, within the BigN predecessor group, downward auditor switches start increasing in 1988, and this trend accelerates after SOX. December FYE firms seem to have more downward auditor switches than non-December FYE firms after SOX. However, without further tests in a multivariate context, it would be difficult to draw inferences from these figures.

Table IV presents Pearson's correlation coefficients among variables. panels A and B display the correlation matrixes for the non-BigN predecessor auditor group and the BigN predecessor auditor group, respectively. I find high correlations between the following sets of variables: *LOSS* and *LASSETS* (−0.385 in panel A; −0.353 in panel B), *STOCKVOLAT* and *LASSETS* (−0.371; −0.431), *ΔROA* and *DISTRESS*

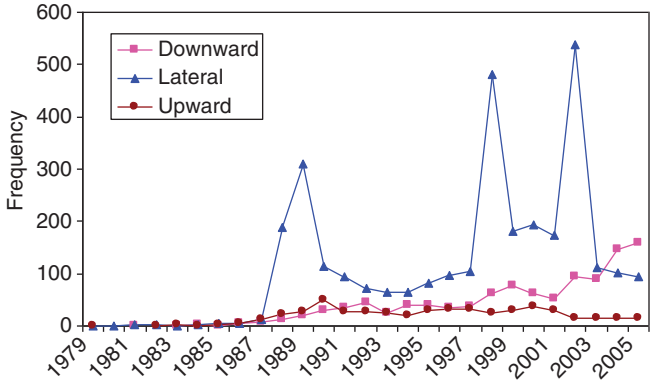
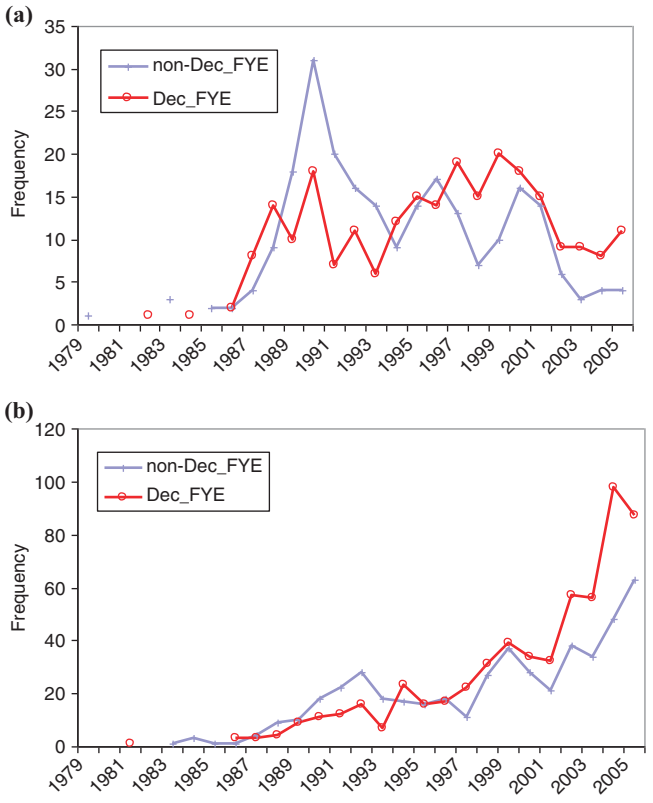


Figure 1.
Auditor changes between 1979 and 2005: full sample



Notes: (a) Upward auditor changes; (b) downward auditor changes

Figure 2.
Auditor changes within non-BigN predecessor auditor sample: December FYE firms vs non-December FYE firms

(−0.501; −0.541), *ΔFIN* and *ΔACQN* (0.637; 0.503), *LEVERAGE* and *DISTRESS* (−0526; −0.356), and *LOSS* and *STOCKVOLAT* (0.344; 0.430). To diagnose for multicollinearity, I use variance inflation factors (VIFs) generated by OLS regressions. Regression results for the non-BigN predecessor auditor sample show that the VIF for *SOX* × *DEC_FYE* is 2.57, just above the general benchmark of 2.5. Similarly, for the BigN predecessor auditor sample, VIFs for *SOX* and *SOX* × *DEC_FYE* are 2.82 and 3.37, respectively. Only these two terms have VIFs above 2. The generally low VIFs indicate that significant multicollinearity is not a major concern here in the model.

4.2 Multivariate analysis

I use logit regressions to estimate models. Table V panel A exhibits results for regressions on firms with non-BigN predecessor auditors and on firms with BigN predecessor auditors.

To test *H1*, I estimate the model on the sample of firms with non-BigN predecessor auditors.

For the pre-SOX period, the variable *DEC_FYE* (the main variable of interest) is significantly and negatively correlated with upward auditor switches (−0.3552, at the 5 percent significance level). The evidence thus suggests that December FYE firms are less likely to switch to BigN auditors than non-December FYE firms during the

Table IV.
Pearson correlation

	AUDCHG	*LASSETS*	*GROW*	*ΔACQN*	*ΔCF*	*ΔROA*	*DISTRESS*	*LOSS*	*RETURN*	*ΔFIN*	*LEVERAGE*	*STOCKVOLAT*	*INVREC*	*LITIG_IND*	*DEC_FYE*
Panel A: non-BigN predecessor auditor group (n = 1,147)[a]															
AUDCHG	1.000														
LASSETS	0.127**	1.000													
GROW	0.134**	−0.112**	1.000												
ΔACQN	0.003	0.039	0.034	1.000											
ΔCF	0.027	−0.029	0.003	0.012	1.000										
ΔROA	−0.043	−0.051	−0.243**	−0.002	0.000	1.000									
DISTRESS	0.062*	0.319**	−0.083**	−0.016	−0.008	−0.501**	1.000								
LOSS	0.000	−0.385**	0.020	−0.038	0.028	0.054	−0.314**	1.000							
RETURN	0.087**	0.031	0.082**	0.017	0.013	−0.109**	0.087**	−0.217**	1.000						
ΔFIN	−0.035	0.069*	0.053	0.637**	0.220**	0.020	−0.014	−0.047	0.012	1.000					
LEVERAGE	−0.029	−0.160**	0.059*	−0.007	0.018	0.169**	−0.526**	0.161**	−0.091**	0.036	1.000				
STOCKVOLAT	−0.085**	−0.371**	0.032	−0.007	0.018	0.022	−0.285**	0.344**	−0.018	0.016	0.139**	1.000			
INVREC	−0.046	−0.014	−0.033	−0.045	0.024	0.043	0.136**	−0.142**	−0.033	−0.016	0.016	−0.048	1.000		
LITIG_IND	−0.035	−0.017	−0.004	0.032	−0.041	−0.043	−0.019	0.025	−0.012	0.028	−0.061*	0.023	−0.128**	1.000	
DEC_FYE	0.016	0.092**	−0.005	0.018	0.034	0.039	−0.102**	0.088**	−0.005	0.027	−0.017	0.054	−0.109**	−0.013	1.000
Panel B: BigN predecessor auditor group (n = 3,242)[a]															
AUDCHG	1.000														
LASSETS	−0.388**	1.000													
GROW	−0.070**	−0.036*	1.000												
ΔACQN	−0.043*	0.072**	0.028	1.000											
ΔCF	−0.041*	0.148**	0.028	0.185**	1.000										
ΔROA	0.060**	−0.083**	−0.063**	−0.011	−0.007	1.000									
DISTRESS	−0.184**	0.295**	−0.005	0.033	0.016	−0.541**	1.000								
LOSS	0.230**	−0.353**	−0.052**	−0.056**	−0.089**	0.103**	−0.294**	1.000							
RETURN	−0.039*	0.036*	0.126**	−0.068**	0.016	−0.080**	0.070**	−0.167	1.000						
ΔFIN	−0.035*	0.112**	0.028	**0.503	0.073**	−0.042*	0.083**	−0.053**	−0.033	1.000					
LEVERAGE	0.076**	−0.004	−0.062**	0.021	0.015	0.273**	−0.356**	0.168**	−0.084**	−0.032	1.000				
STOCKVOLAT	0.266**	−0.431**	−0.050**	−0.066**	−0.077**	0.071**	−0.284**	0.430**	−0.059**	−0.055**	0.159**	1.000			
INVREC	0.042*	−0.155**	−0.030	0.024	−0.020	−0.038*	0.184**	−0.137**	0.001	0.025	0.138**	−0.009	1.000		
LITIG_IND	0.033	−0.118**	0.016	−0.005	−0.023	0.024	−0.108**	0.139**	0.014	−0.021	−0.094**	0.150**	−0.044*	1.000	
DEC_FYE	−0.056**	0.155**	−0.013	−0.010	0.019	0.001	−0.041*	0.026	−0.007	0.001	0.015	0.018	−0.216**	−0.048**	1.000

Notes: [a]Variable definitions are as follows: *AUDCHG*, 1 for non-lateral auditor switch, 0 for lateral auditor change. More explicitly, for firms with non-BigN predecessor auditors, *AUDCHG*, 1 if the client changes from non-BigN auditor to BigN auditor, *AUDCHG*, 0 if the client changes from non-BigN to another non-BigN auditor. *LASSETS*, natural log of total assets; *GROW*, growth in total assets from the year prior to the auditor-client realignment to the year of the realignment; *ΔACQN*, change in acquisitions (acquisition expenditures/total assets); *ΔCF*, change in operating cash flow; *LEVERAGE*, total liabilities/total assets; *DISTRESS*, Altman *Z*-score (see note c); *LOSS*, 1 if the client's income before extraordinary items <0, 0 otherwise; *RETURN*, compounded annual return over the year prior to the auditor-client realignment; *ΔFIN*, change in new financing (debt plus equity issued/total assets); *STOCKVOLAT*, standard deviation of daily stock returns over the year prior to the auditor-client realignment; *INVREC*, (inventory + AR)/total assets; *LITIG_IND*, 1 if the client is in high litigation risk industry, 0 otherwise (see note b of Table V); *DEC_FYE*, 1 if the client's fiscal year-ends in December, 0 otherwise; The symbol *Δ* denotes instances where pre-alignment values were subtracted from post-alignment values, and the remaining value deflated by total assets of the year preceding realignment. All other variables are for the pre-alignment year. *$p \leq 0.05$; **$p \leq 0.01$

	Expected sign	Non-BigN sample ($n = 1{,}147$) Coefficient	BigN sample ($n = 3{,}242$) Coefficient
Panel A: results from main analyses[a]			
Intercept		−0.37474	0.9510**
DEC_FYE	−/+	−0.3552*	−0.0813
YR88	−/+	−2.3879**	−1.0643*
YR88 × DEC_FYE	−/+	1.2891**	−0.0958
SOX	−/+	−1.4543**	1.9500**
SOX × DEC_FYE	−/+	0.8742*	−0.1648
LASSETS	+/−[b]	0.2007**	−0.7340**
GROW	+/−	0.5627**	−0.2424**
ΔACQN	+/−	0.0206	−0.0141
ΔCF	+/−	0.0014	0.0001
ΔROA	+/−	0.3457**	−0.0629
DISTRESS	+/−	0.0390*	0.0027
LOSS	−/+	0.5283**	0.1955
RETURN	+/−	0.2140**	−0.0247
ΔFIN	+/−	−0.0227*	0.0033
LEVERAGE	−/+	0.0482	0.4842**
STOCKVOLA	−/+	−0.3662**	0.3003**
INVREC	−/+	−0.5098	0.1230
LITIG_IND	−/+	−0.0723	−0.2034*
Max-rescaled R^2		21.89%	36.84%
Wald's χ^2		124.90**	545.79**
Panel B: results from robustness analyses using the main model[a]			
For *DECJAN_FYE*			
DECJAN_FYE	−/+	−0.3128*	−0.0548
YR88	−/+	−2.4047**	−1.0215*
YR88 × DECJAN_FYE	−/+	1.2272**	−0.2024
SOX	−/+	−1.4751*	1.9341**
SOX × DECJAN_FYE	−/+	0.8614*	−0.1361
Max-rescaled R^2		21.79%	36.80%
Wald's χ^2		184.26**	875.29**
For *DEC-FEB_FYE*			
DEC-FEB_FYE	−/+	−0.3698*	−0.0301
YR88	−/+	−2.3940**	−1.0183*
YR88 × DEC-FEB_FYE	−/+	1.0478*	− 0.1750
SOX	−/+	−1.4657**	1.9033**
SOX × DEC-FEB_FYE	−/+	0.8193*	−0.0887
Max-rescaled R^2		21.71%	36.76%
Wald's χ^2		183.52**	874.31**
For *DEC-MAR_FYE*			
DEC-MAR_FYE	−/+	−0.4261**	−0.0037
YR88	−/+	−2.8782**	−0.7077
YR88 × DEC-MAR_FYE	−/+	1.7111**	−0.7687
SOX	−/+	−1.5559**	1.8569**
SOX × DEC-MAR_FYE	−/+	0.8458*	−0.0156

(*continued*)

Table V.
Logit regression results

	Expected sign	Non-BigN sample ($n = 1{,}147$) Coefficient	BigN sample ($n = 3{,}242$) Coefficient
Max-rescaled R^2		22.22%	36.78%
Wald's χ^2		188.19**	874.81**

Model:

$$\begin{aligned} AUDCHG = {} & \alpha_0 + \alpha_1 DEC\_FYE + \alpha_2 YR88 \\ & + \alpha_3 YR88 * DEC\_FYE + \alpha_4 SOX \\ & + \alpha_5 SOX * DEC\_FYE + \alpha_6 LASSETS \\ & + \alpha_7 GROW + \alpha_8 \Delta ACQN + \alpha_9 \Delta CF \\ & + \alpha_{10} \Delta ROA + \alpha_{11} DISTRESS + \alpha_{12} LOSS \\ & + \alpha_{13} RETURN + \alpha_{14} \Delta FIN + \alpha_{15} LEVERAGE \\ & + \alpha_{16} STOCKVOLAT + \alpha_{17} INVREC + \alpha_{18} LITIG\_IND + \varepsilon \end{aligned}$$

Notes: [a]Variable definitions are as follows: *AUDCHG*, 1 for non-lateral auditor switch and 0 for lateral auditor change; *LASSETS*, natural log of total assets; *GROW*, growth in total assets from the year prior to realignment to the year of the realignment; *ΔACQN*, change in acquisitions (acquisition expenditures/total assets); *ΔCF*, change in operating cash flow; *LEVERAGE*, total liabilities/total assets; *DISTRESS*, Altman *Z*-score (see note c); *LOSS*, 1 if the client's income before extraordinary items < 0 and 0 otherwise; *RETURN*, compounded annual return over the year prior to the auditor-client realignment; *ΔFIN*, change in new financing (total debt and stock issuances per the cash flow statement/total assets); *STOCKVOLAT*, standard deviation of daily stock returns over the year prior to the auditor-client realignment; *INVREC*, (inventory + AR)/total assets; *LITIG_IND*, 1 if the client is in high litigation risk industry and 0 otherwise (see note b); *DEC_FYE*, 1 if the client's fiscal year-ends in December and 0 otherwise; *SOX*, 1 if the year 2002 and after and 0 otherwise; *YR88*, 1 if the fiscal year 1988, and 0 otherwise. The symbol *Δ* denotes instances where pre-alignment values were subtracted from post-alignment values, and the remaining value deflated by total assets of the year preceding realignment. All other variables are for the pre-alignment year. Tests are two-tailed. [b]The sign before slash (/) is the predicted sign for the coefficient in the model with non-BigN predecessor sample and the sign after slash (/) is the predicted sign for the coefficient in the model with BigN predecessor sample. $^{*}p \leq 0.05$ and $^{**}p \leq 0.01$ for χ^2-statistics

Table V.

pre-SOX period (excluding 1988). This is consistent with *H1*. I exclude 1988 from the pre-SOX period because mergers between BigN audit firms could confound the effects of the "Expectation Gap Standards" (AICPA, 1988) on supplier capacity constraint. The interaction term $YR88 \times DEC\_FYE$ has a surprising positive sign, suggesting that December FYE firms are more likely to have upward switches than non-December FYE firms in 1988. However, both the sum of the coefficients of *YR88* (−2.3879) and $YR88 \times DEC\_FYE$ (1.2891) and the coefficient of *YR88* (−2.3879) are negative and significant (both at the 1 percent significance level), showing that events surrounding 1988 made firms less likely to make upward auditor switches in general.

For the post-SOX period, the combined coefficient of *DEC_FYE* and $SOX \times DEC\_FYE$ $(-0.3552 + 0.8742)$ suggests that the busy season audit market constraints no longer have a significant influence on auditor selection for upwardly mobile clients. The unexpected positive interaction term $SOX \times DEC\_FYE$ may arise from the following reasons: risk may be a dominant concern in BigN auditors'

decision-making process after SOX imposed more rigid auditing standards; for instance, the *t*-test of the variable *DISTRESS* (*t*-statistics = −2.81, two-tailed *p*-value < 0.01) shows that December FYE firms in the non-BigN group are more distressed after SOX than before SOX. I would expect the capacity constraints associated with December FYE to be more significant after SOX. However, I acknowledge that risk is a more profound factor compared to FYE in BigN auditors' post-SOX decisions. Thus, risk factors may confound the impact of FYEs during the post-SOX period. Having a December FYE thus becomes an unimportant factor in auditor-client realignments in the post-SOX period. Both the sum of the coefficients of *SOX* (−1.4543) and *SOX* × *DEC_FYE* (0.8742) and the coefficient of *SOX* (−1.4543) are negative and significant (at the 1 and 5 percent significance level, respectively), which indicates that during the post-SOX period, the likelihood of upward auditor switches is smaller for firms in general. This evidence is consistent with Landsman *et al.*'s (2009).

The size variable *LASSETS* is positively correlated with upward auditor switches, consistent with expectations. *GROW* has a positive and significant coefficient, indicating that firms change to BigN auditors when accounting transactions get more complex as they grow. Performance variables *RETURN* and *ΔROA* are positively correlated with upward auditor changes, as expected. Against expectations, *LOSS* is significantly positive, opposite to expectations. Finally, the negative coefficient of *STOCKVOLA* and the positive coefficient of *DISTRESS* imply that the higher financial risk a firm has, the less likely a firm is to switch to a top-tier auditor.

Overall, the results in Table V panel A suggest that the capacity constraints of BigN auditors during the busy season limits them from accepting new and relatively smaller clients with December FYEs during the pre-SOX period (excluding 1988). However, these effects dwindled after SOX.

To test *H2*, I re-estimate the model on the sample of firms with BigN predecessor auditors (please see Table V panel A).

The main variable of interest, *DEC_FYE*, is negative but not significant. The two interaction terms are also insignificant. The results imply that December FYE is not an important determinant in auditor-client realignments for the BigN sample. Therefore, I did not find supporting evidence for *H2*[8].

As expected, the control variables *LASSETS* and *GROW* are negative and significant, indicating that larger or growing firms are less likely to make downward auditor switches. *LEVERAGE* is positively associated with downward auditor changes, suggesting that higher financial risk increases the likelihood of downward auditor switches. The significant and positive correlation between *STOCKVOLAT* and downward auditor switching implies that the higher financial risk a firm has, the more likely the firm is to switch to a lower-tier auditor. Contrary to my expectations, *LITIG_IND* shows a puzzling negative sign and is significant. One possible explanation is that accounting transactions in these high litigation industries are complex, so demand more auditing expertise from top-tier auditors.

In summary, the results show that for the sample of firms with BigN predecessor auditors, December FYE is an insignificant determinant in downward auditor switching. The combined results of the tests on *H1* and *H2* suggest that December FYE plays a role in BigN auditors' client acceptance decisions in the pre-SOX period, but is not an influencing factor when a new client was previously audited by a BigN auditor.

To assess the prediction power of the models, I calculate the *c*-statistic of the main regression for the sample of firms with BigN predecessor auditors (0.821) and the

c-statistic of the main regression for the sample of firms with non-BigN predecessor auditors (0.737). Both *c*-statistics are high, suggesting that logit regressions have high prediction power in projecting on the likelihood of auditor switches.

There are a couple of caveats in this study. One caveat is that the auditor code in Compustat may not be perfectly accurate. For instance, there may be cases in which firms changed their auditors, but Compustat failed to update their auditor codes accordingly. While I do not expect this type of data error in Compustat to be prevalent enough to bias my empirical results, further checks on the synchronization of the two databases could be beneficial. The other limitation is that the acceptance and dropping models for BigN auditors may actually differ. In addition, auditor dismissals may arise for different reasons than auditor resignations. In this study, I use Equation (1) as the auditor switch model based on the direction of switches. Over the long study period, other factors such as the market structure, or degree of competition, or most likely the development of new technology can also play a role in the auditor-client realignment. Future research on these topics is warranted to advance our understanding of the determinants of auditor-client realignments.

5. Robustness tests

5.1 Alternative specification for busy season

The impact of supplier capacity constraints associated with December FYE may very well extend to firms with January, February, or even March FYEs. To access the impact of FYE beyond just December and to check the robustness of the main results, I re-estimate the model using various proxies for busy season clients. First, I include both December and January FYE firms in the busy season group and create an indicator variable *DECJAN_FYE* that is set to one if a firm has either a December or January FYE, and zero otherwise. In addition, I introduce an indicator variable *DEC-FEB_FYE* that is set to one if a firm's FYE is in December, January, or February, and zero otherwise. Following Hertz (2006), I also use an indicator variable *DEC-MAR_FYE* that is set to one if a firm ends its fiscal year any time from December to March, and zero otherwise.

The robustness results presented in Table V panel B are qualitatively the same as the main results. Thus, the main inferences hold: FYEs in the business season reduce the likelihood of a firm switching upward in the pre-SOX period (excluding 1988), but have no impacts on downward switching. Interestingly, the variable *DEC-MAR_FYE* shows the impact of supplier capacity constraints at the 1 percent significance level, compared to the 5 percent significance level in regressions with the other proxies for the busy season. This suggests that firms with April-October FYEs may face the lowest supplier capacity constraints[9].

5.2 Alternative sub-samples

The first alternative sample consists of firm-year observations starting from 1988 since FASB issued SFAS 95 (FASB, 1987). SFAS 95 requires firms to issue a statement of cash flows rather than a statement of changes in financial position, effective July 15, 1988. The sub-sample offers a more consistent measure of operating cash flows. Another alternative sample excludes Arthur Andersen's clients from the full sample to avoid the potential confounding effects from mergers or the demise of Arthur Andersen. Untabulated empirical results from both tests using alternative samples are not qualitatively different from those in the main results.

5.3 Alternative measurements of variables

I adopt a couple of alternative measures of financial risk. For the variable *DISTRESS*, I replace the Altman *Z*-score with the modified *Z*-score that was developed by Begley *et al.* (1996)[10]. For the variable *LEVERAGE*, I use long-term debt deflated by total assets instead of total liability deflated by total assets. I find that the results using these alternative measures are consistent with the main analyses.

Overall, the high consistency between the robustness tests and the main results indicates that the inferences drawn in the main analyses are robust.

6. Conclusions

This study investigates the impact of supplier capacity constraints on auditors' client-acceptance vs resignation decisions or dismissals by examining whether having a FYE during the busy season influences non-lateral auditor switches. I find that during the pre-SOX period, firms with non-BigN predecessor auditors are significantly less likely to switch to top-tier auditors if they have a December FYE. I attribute this phenomenon to the capacity constraints of BigN auditors, given that clients are generally prefer to have BigN auditors. However, during the post-SOX era, firms with non-December FYEs lose the advantage of being able to switch upward, perhaps because SOX requirements lead auditors to focus more on client risk and the Section 404 implementation allows audits to become year-round engagements. Therefore, year-end plays a less significant role post-SOX than pre-SOX. In contrast, for firms with BigN predecessor auditors, having a December FYE seems to be an insignificant factor on auditor-client realignment.

My findings help further the understanding of the impact of supplier capacity constraints on audit production and structural changes within the auditing profession. The fact that only upwardly mobile clients seem to experience potential resource constraints in the audit market points to the growing importance of mid-tier firms, as well as an important limit to BigN auditors who argue that they are too busy to accept new clients. In addition, the results imply that auditor capacity constraints change after SOX implementation. Such findings may help regulators and policy makers realize that imposing sweeping legislation such as SOX may potentially alter auditor behaviors in unintended ways.

One line of future research could be a longitudinal study of auditor changes with more data from the recent years, which could uncover evolving patterns on determinants of auditor switches, such as December FYEs, degree of competition, or the development of audit technology, in the auditor-client realignment process. Future research can also compare the non-lateral auditor switches with lateral auditor switches to further the understanding of auditor-client realignments.

Notes

1. Several major mergers among big auditor firms occurred and Arthur Andersen was dissolved in 2002. As a result, the number of firms classified as top-tier auditors keeps changing. BigN is a generic term used in the prior auditing literature to denote the largest audit firms. In this paper, BigN refers to Big8, Big6, Big5, and Big4 audit firms in different periods. Big8 includes Arthur Andersen, Arthur Young & Co, Coopers & Lybrand, Ernst & Whinney, Deloitte Haskins & Sells, Peat Marwick Mitchell (later Peat Marwick, then KPMG), Price Waterhouse, and Touche Ross. Big6 includes Arthur Andersen, Coopers & Lybrand, Deloitte & Touche, Ernst & Young, KPMG, and Price Waterhouse. Big5 includes Arthur Andersen, Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers. Big4 includes Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers.

2. According to Sinha and Fried (2008), out of 8,006 Compustat firms that registered in the USA in 2005, about 73 percent have their FYE in December.
3. Expectation gap refers to the difference between auditors' perception of their role and the financial reporting users' perception of it. Expectation gap standards (AICPA, 1988) are Statements of Auditing Standard No. 53-61 that were issued by the Auditing Standards Board in 1988 with the intention of closing the expectation gap. Most of the nine standards increase auditors' roles and responsibilities. I include the variable *YR88* to detect the impacts of expectation gap standards on auditor switches. However, the merger of Ernst & Whinney with Arthur Young and Deloitte Haskin & Sells with Touche Ross during 1989 may confound the effects of 1988.
4. The *Z*-score is computed as follows (Altman, 1968): $Z - \text{Score} = 1.2 * x_1 + 1.4 * x_2 + 3.3 * x_3 + 0.6 * x_4 + 1.0 * x_5$where x_1 is the working capital/total assets; x_2 the retained earnings/total asserts; x_3 the earnings before interest and tax/total assets; x_4 the market value of equity/book value of all liabilities; x_5 the sales revenue/total assets.
5. According to several prior studies (Ali and Kallapur, 2001; Lennox and Park, 2007), firms are exposed to higher litigation risk if their SIC codes fall into the ranges specified as follows: 2833-2836 (chemicals), 3570-3577 (manufacture: machinery), 3600-3674 (manufacture: electrical equipment), 5200-5961 (retail: miscellaneous), or 7370-7374 (computers).
6. In June 1989, Ernst & Whinney merged with Arthur Young to form Ernst & Young, and in August during the same year Deloitte, Haskins & Sells merged with Touche Ross to form Deliotte & Touche.
7. In July 1998, Price Waterhouse merged with Coopers & Lybrand to form PricewaterhouseCoopers.
8. One factor that needs to be taken into consideration when reviewing results is that anecdotal evidence suggests that many privately owned organizations, such as big academic institutions, have non-December FYEs and BigN auditors. Such clients in BigN auditors' clientele portfolios may potentially balance auditors' workload and ease capacity constraints toward the end of the calendar year. Therefore, BigN auditors may not be hard-pressed to drop their December FYE clients. Consequently, the aforementioned factor could further confound the results on the impact of December FYEs on auditors' resignation decisions.
9. I thank an anonymous reviewer for the idea and detailed suggestions for this portion of robustness tests.
10. The modified *Z*-score (Begley *et al.*, 1996) is calculated as follows: $Z - \text{Score} = 0.104 * y_1 + 1.01 * y_2 + 0.106 * y_3 + 0.003 * y_4 + 0.169 * y_5$where y_1 is the (working capital/total assets) $\times$ 100; y_2 the (retained earnings/total asserts) $\times$ 100; y_3 the (earnings before interest and tax/total assets) $\times$ 100; y_4 the (market value of equity/book value of all liabilities) $\times$ 100; y_5 the sales revenue/total assets.

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Appendix. Variable definitions

Variables are defined as follows (Compustat data items in parentheses):

AUDCHG = 1 for non-lateral auditor switch, and 0 for lateral auditor change. More explicitly, for firms with non-BigN predecessor auditors, $AUDCHG = 1$ if the client changes from a non-BigN auditor to a BigN auditor, $AUDCHG = 0$ if the client changes from a non-BigN to another non-BigN auditor. For firms with BigN predecessor auditors, $AUDCHG = 1$ if the client changes from a BigN auditor to a non-BigN auditor, $AUDCHG = 0$ if the client changes from a BigN auditor to another non-BigN auditor

LASSETS = natural log of the client's total assets (#6)

GROW = growth in total assets (#6) from the year prior to the auditor-client realignment to the year of the realignment

ΔCF = changes in operating cash flow from the year prior to the auditor-client realignment to the year of the realignment

ROA = Income before extraordinary items (#18) scaled total assets (#6)

ΔROA = changes in ROA performance from the year prior to the auditor-client realignment to the year of the realignment

FIN = total debt (#111) and stock issuances (#108) per the cash flow statement scaled by total assets (#6)

ΔFIN = changes in new financing from the year prior to the auditor-client realignment to the year of the realignment

ACQN = acquisition expenditures (#129) scaled by total assets (#6)

$\Delta ACQN$ = changes in acquisitions from the year prior to the auditor-client realignment to the year of the realignment

LEVERAGE = total liabilities (#181) scaled by total assets (#6)

INVREC = (Inventory (#3) + AR (#2)) scaled by total assets (#6)

DEC_FYE = 1 if the client's fiscal year-ends in December, and 0 otherwise

DISTRESS = the likelihood of firms' going bankruptcy reflected by Altman's *Z*-score (see note 4)

LOSS = 1 if the client's income before extraordinary items < 0, and 0 otherwise

RETURN = the client's compounded annual return over the year prior to the auditor-client realignment

STOCKVOLAT = the client's stock volatility, measured by the standard deviation of daily stock returns over the year prior to the auditor-client realignment

LITIG_IND = 1 if the client is in high litigation risk industry, and 0 otherwise (see note 5)

YR88 = 1 if the fiscal year 1988, and 0 otherwise

YR88 × *DEC_FYE* = interaction term

SOX = 1 if the fiscal year 2002 and after, and 0 otherwise

SOX × *DEC_FYE* = interaction term

The symbol Δ denotes instances where pre-alignment values were subtracted from post-alignment values, and the remaining value deflated by total assets of the year preceding realignment. The variables are measured according to firms' fiscal year.

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