THE IMPACT OF WORKLOAD COMPRESSION ON BUSY SEASON AUDITOR SWITCHES

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ABSTRACT

This study investigates the impact of the concentration of busy season clients in an auditor's client portfolio, hereafter referred to as "workload compression," on the likelihood of auditor switches. Generally, prior audit literature assumes on an ad hoc basis that the concentrated busy season demands on auditors' limited resources increases the likelihood of auditor switching. Our primary contention is that it is not just the fiscal year-end of the client, but rather the concentration of busy season clients in the auditor's portfolios that drive the workload compression affects. Using methods similar to Francis et al. (2005) we measure workload compression, the independent variable of interest, at the firm-wide (national) level and at the local (city-specific) level. Using a sample of 42,729 firm-year observations for years 1993 to 2005, we find evidence indicating that December year-end companies are more likely to switch auditors than non-December year-end companies. However, when workload compression is analyzed as a local, city-specific phenomenon, our evidence suggests that it is not just the fiscal year-end month of the audit that matters, but the concentration of busy season clients within the auditor's portfolio that impacts the auditor-client relationships. Contrary to expectations this pattern appears to change during the post-SOX time period. Our results provide grounds for the inclusion of office-level and workload compression variables in studies investigating the competitive and operational structure of audit markets.

Key Words: auditor switches, workload compression, busy season, Sarbanes-Oxley Act.

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I. INTRODUCTION

This study investigates whether and why December year-end companies display a differential likelihood of switching auditors. Generally, prior audit literature assumes the concentrated demands on auditors' constrained resources during the busy season increases the likelihood of auditor switching. Although intuitively assumed in prior literature, there is little research evidence that attempts to directly investigate the phenomena. This study incrementally contributes to prior audit literature by investigating to what extent the concentration of busy season clients, hereafter referred to as "workload compression," impacts the likelihood of auditor switches.

Busy seasons and the commensurate impact on increased auditor workloads is a relatively unexplored phenomenon in the auditing literature. It is, however, a correlate of interest since 60.3 percent of all Compustat companies between the years of 1950 and 2005 have a fiscal year-end date of December (Lopez and Peters 2007). This in turn concentrates more than half of all audit work performed by CPA firms into only a few months of the year. Prior capital markets and audit literature acknowledges the effects of workload compression as a potential factor affecting auditor and financial reporting qualities but mostly from an *ad hoc* perspective. For instance, some audit researchers add a dummy variable to control for busy season audit clients (Francis et al., 2005; Abbot et al., 2003; Ferguson et al., 2003; Gul, Chen, and Tsui, 2003; Ferguson and Stokes, 2002; Gul and Tsui, 2001; Knechel and Payne, 2001; Gul 1999) while others omit non-busy season companies from their samples for reasons other than cross-sectional aggregation (Abbot et al., 2006; Atiase, et al., 2004; Schrand and Wong, 2003; Roulstone, 2003).

In fact, similar sample restrictions within capital markets literature date back as far as Ball and Brown (1968), whose sample only included companies with December year-ends and Beaver (1968), whose sample only included non-December year-end companies. Even when fiscal year-end sampling restrictions arise from pragmatic research choices, the restrictions still induce concerns about potential bias resulting from different risk characteristics, operating models, or audit traits of calendar year-end companies.

We refer to the concentration of December year-end clients in the auditor's portfolio of clients as workload compression throughout this study. The level of workload compression of an audit firm is proxied by the ratio of December year-end sales to total sales audited by the firm during a year. Using methods similar to Francis et al. (2005) we measure workload compression, the independent variable of interest, at the firm-wide (national) level and at the local (city-specific) level. This study is motivated in part by DeFond and Francis (2005) who call for more research analyzing audit-related phenomena at the local, city-specific level.

Using a sample of 42,729 firm-year observations for years 1993 to 2005, we find evidence indicating that December year-end companies are more likely to switch auditors than non-December year-end companies. The results of this study are stronger when workload compression is analyzed as a local, city-specific phenomenon. However, this association appears to change during the post-SOX time period. Combined, the results of this study provide evidence that supports the primary hypothesis that the relative demands on auditors' limited resources during the busy season impacts the provision of auditing services. In turn, this may also have an impact on the quality of those services and the market's assessment of auditor switching events.

For example, Hertz (2006) analyzes the determinants of auditor resignations and finds that auditor resignations are more likely than client dismissals for firms with calendar financial year-ends. Lopez and Peters (2007) provide evidence that December year-end financial statements reflect greater degrees of earnings management as proxied by discretionary accruals. Our evidence suggests that it is not just the fiscal year-end month of the audit that matters, but the concentration of busy season clients within the auditor's portfolio that impacts the auditor-client relationships. Thus, these studies highlight the need for research investigating workload compression as a determinant of other auditor-client factors such as audit fees or as a factor leading to events such as financial statement restatements. An additional contribution of this study provides formal grounds for the inclusion of workload compression control variables in studies investigating the competitive and operational structure of audit markets.

Our findings also contribute to the discussion among policy makers and accounting practitioners regarding the impact of important events and regulations we observe today in the auditing industry. For example, the nature of integrated audits and accelerated filing requirements of the Securities and Exchange Commission is likely to accentuate the effects of workload compression. However, the competitive forces in the post-sox audit market environment appear to mitigate these effects with respect to the pattern of auditor retention as documented in this study.

The remainder of this study is organized as follows. Section II presents background information and hypothesis development. Section III presents the sample selection and research methods. Section IV presents the empirical results. Section V presents the conclusions of this study.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Auditor Switches and Workload Compression

Workload compression or the impact of the concentration of December year-end clients in an auditor's portfolio is a relatively unexplored phenomenon, on a formal basis, in the auditing literature. It is, however, a correlate of interest since more than half of all audits performed over the last decades were performed for companies with a December fiscal year-end date.[1] Prior research commonly excludes non-calendar fiscal year-end observations or at a minimum includes a dummy variable to distinguish calendar year-end observations. These research choices are typically done on an *ad hoc* basis and under the general assumption that calendar year-end companies display different risk characteristics, operating models, or audit traits (Smith and Pourciau, 1988).

Following prior literature, the current study begins with a working hypothesis that December year-end companies exhibit a different likelihood of switching auditors than non-December year-end companies. This paper contributes to prior related literature by explicitly investigating the concentrated demands on audit resources (i.e. *workload compression or* WLC) on the likelihood of auditor switching. The concentration of companies with December fiscal year-ends represents a particular challenge to the audit industry since it can push the resources of any audit firm to the limit. In turn, this impacts the availability of audit resources to companies with December year-ends. If the associations in prior literature were the result of workload compression effects, we should see an incremental positive association between the concentration of calendar year-end clients in the auditor's portfolio and the likelihood of auditor

[1] An average of 60.3% of all Compustat companies between years 1950 and 2005 had a December fiscal year-end date. In addition, the proportion of companies with a December fiscal year-end date between 1950 and 2005 was more than 50 percent during any given year (López and Peters 2007).

turnover for calendar year-end clients. This discussion leads us to the main research hypothesis of this study:

> H1: The likelihood of auditor turnover for calendar year-end companies increases with the concentration of calendar year-end clients in the auditor's portfolio.

Workload Compression Explored as a City-specific Factor

An emerging area of the extant literature explores audit-related phenomena at the city-specific level. The great majority of these studies examines audit fees, auditor expertise, and audit quality related issues (Ferguson et al. 2003; Francis et al., 2005; Francis et al., 1999, Krishnan, 2005). For instance, using Australian data Ferguson et al. (2003) finds evidence that Big N firm specialization at the city-market level is associated with audit fee premiums. In an analogous study, Francis et al. (2005) find similar results using U.S. data. Krishnan (2005) narrows down the unit of analysis to only one city, Houston, to study the financial reporting behavior of Arthur Andersen clients. The researcher finds evidence indicating that Houston-based clients of Arthur Andersen were less timely in the reporting of bad news.

Ferguson et al. (2003) and Francis et al. (2005) studies are built on the premise that expertise is in part a local, city-specific phenomenon. In fact, Francis et al. (2005) provide evidence that national-level industry expertise is factored into audit fees only when an auditor is also considered an expert at the city-specific level. In the same vein, we predict that workload compression matters the most at the city-specific level since capacity, like expertise, is costly to transfer from one local office to another. Therefore, the resources available on an aggregate firm-wide level may not be representative of the resources that are economically available at the office- or city-level. The above studies show the importance of distinguishing between national-level and city-level firm characteristics. This discussion leads us to the following research hypothesis:

> H2: The impact of auditor workload compression on auditor switching increases at the *city-specific level*.

SOX Impact on Workload Compression Outcomes

Recent anecdotal evidence indicates that after the enactment of the Sarbanes-Oxley Act (SOX) and Enron's collapse in 2002 many Big N auditors dumped a sizable number of their clients (Byrnes, 2002; Sager and Hindo, 2003; Krantz, 2004). Many of these clients were small, non-public entities (Byrnes, 2002; Landsman et al, 2006). SOX forced many companies to switch auditors due to stricter independence requirements.

Besides possible independence issues, two additional non-mutually exclusive reasons help explain the radical changes that occurred in the market for auditing services after 2002. First, SOX and the Enron debacle created strong incentives for CPA firms to manage their litigation risk. For instance, SOX requires auditors to provide higher levels of assurance and increases criminal liability for auditors, making litigation risk management at top priority for many firms. Most large companies changing auditors, however, are able to engage the services of another Big N firm despite the fact that litigation risk is increasing in client size (Stice 1991; Lys and Watts 1994; Carcello and Palmrose 1994; Reynolds and Francis 2000).

Landsman, et al. (2006) investigates auditor changes in the pre- and post-Enron eras. The researchers find evidence indicating that auditor changes have little effect to the overall risk of the collective client base of Big N auditors since the most significant auditor changes, as proxied by the size of the client, were lateral changes. Landsman, et al. (2006) results hold true for the pre- and post-Enron eras. Since large, riskier companies changing auditors are able to engage the services of another Big N auditor, factors other than risk avoidance (such as audit resources available) may help explain lateral auditor switches patterns in Landsman et al (2006).

Second, the structural shift generated by Enron and SOX could have created a window of opportunity for Big N firms to realign their client bases and eliminate clients who are not a good match with the firms' existing audit resources. Consistent with this view, changes to the client base of Big N firms could be the end result of the increased assurance demands of SOX on the firm's auditing staff, forcing firms to restructure their client bases. This argument is bolstered by the increase in the number of hours needed to complete an audit due to the "integrated audit" requirements of SOX (e.g. SOX Section 404; PCAOB Auditing Standard No. 2).

In addition, some regulatory changes that came along with SOX, such as the recently enacted accelerated filing requirements of the SEC, had the effect of making filing deadlines harder to meet. Accelerated filing reduced the amount of time companies had to file their 10K reports from 90 days to 60 days after the fiscal year-end date. Filing datelines for quarterly reports were also accelerated. These new requirements most likely pushed the audit resources of many CPA firms to the limit, forcing many firms to reorganize their client bases.

Hertz's (2006) study of auditor resignations and dismissals finds evidence indicating that after SOX, auditor resignations are more likely than auditor dismissals for firms with a December fiscal year-end. Hertz (2006) findings, when taken in connection with SEC new accelerated filing requirements, lend support to the argument that switching auditors is more complicated for December year-end companies due to capacity constraints in the audit market. This discussion suggests that the impact of workload compression on auditor switching will be increased in the post-SOX environment, leading us to the third research hypothesis of this study:

> H3: The impact of auditor workload compression on auditor switching increases in the post-SOX environment.

III. SAMPLE SELECTION AND RESEARCH METHODS

Sample Selection Procedures

This study uses a pooled cross-sectional sample of all Compustat companies with enough data to operationalize study variables for years 1993 to 2005. The initial sample contains a total of 105,551 firm-year observations. Companies operating in the financial services sector (SIC codes 6000 to 6999) and regulated utilities (SIC codes 4800 to 4999) are excluded from the sample due to significant differences in their financial reporting practices and control environments. Data for fiscal year 2002 was also eliminated to avoid the confounding effects of the dissolution of Arthur Andersen. Eliminating observations for year 2002 created two sample partitions that are referred throughout this study as the pre-SOX sample (years 1993 to 2001) and the post-SOX sample (years 2003 to 2005). Consistent with Landsman, et al. (2006), former Arthur Andersen clients are eliminated from the post-Enron sample.

The current study focuses on the audit market captured by Big N Auditors. Landsman, et al. (2006) finds that 87.1 percent of all auditor switches between years 1993 and 2001 were lateral switches among Big N auditors. To estimate this descriptive, the researchers weighted all auditor switches in the sample by the total sales revenue of the company in the year prior to the change. Without this weighting the proportion of lateral auditor switches among Big N auditors would drop to only 30.4 percent (Landsman et al, 2006). This weighting highlights relative differences in size and importance of switching companies to the audit market.

Big N auditors, not only present a well-defined, homogeneous group of auditors, but also absorb a very significant portion of all auditor switches every year (Landsman et al., 2006). By limiting the tests to Big N auditor switches we are also able to better control for the base level of capacity and resources available to the firm and the costs of transferring these among different offices (Francis et al., 2005). Thus, at the expense of a lower number of observations, the sample of this study is limited to companies audited by Big N auditors. Consistent with this sample selection criterion, all auditor switches must occur laterally among Big N auditors for a company to remain in the sample. Auditor identification is obtained from Compustat (item #149). Consistent with previous research, audit firm mergers are coded as a continuation of the previous auditor (Johnson and Lys, 1990).

The level of workload compression of an audit firm is proxied by the ratio of December year-end sales to total sales audited by the firm during a year. Workload compression at the city and national levels is measured using an adaptation of the methods in Francis, et al. (2005) and Francis, et al. (1999). From the national-level perspective the ratio takes the form of total December year-end sales to total sales audited by the firm nationwide during the year. From the city-level perspective the ratio takes the form of total December year-end sales to total sales audited by the firm in a particular city during the year. For both variants of the measure a higher ratio is indicative of higher levels of workload compression during the busy season.

The location of the Big N auditor office performing the audit is identified using Compustat's code for the company's county and state. Consistent with Francis et al. (2005) and Francis, et al. (1999), we identify cities using the major statistical area (MSA) definitions of the U.S. Census Bureau. Using these city-identifiers, we assume all audits to be performed by auditors from the local office of the city in which the company headquarters are located. Observations from cities with less than three Big N auditor offices as of July 2006 are not allowed to enter the sample in order to decrease the impact of measurement errors introduced by the fact that auditor travel is necessary when the client operates from a remote location. The sample of this study is, therefore, limited to companies whose corporate headquarters are located in larger cities. This reduces the likelihood of measurement error because traveling is usually not necessary to audit these companies. Using the audit markets of larger cities also controls for the impact of competitive environments for client acquisition and switching behavior. This also provides the subsequent test of control for resources available to the local office of the firm and for auditor choices available to the companies being audited. The item elimination procedures presented in this section generate a final sample of 42,729 firm-year observations. There are 34,638 firm-year observations in the pre-Enron sub-sample and 8,091 firm-year observations in the post-Enron sub-sample.

Regression Model

The dependent variable of interest in the first hypothesis of this study is SWITCH, an indicator variable that equals 1 if the company switches auditors during the year and 0 otherwise. The regression model is estimated using logistic regression in response to the dichotomous nature of the dependent variable. In addition, logistic distribution is similar to the normal distribution except in the tails, which are considerably heavier (Greene, p. 667). Thus, the logistic regression adds a conservative bias to the estimates compared to probit regression estimates. The model is as follows:

$$\begin{aligned} SWITCH_{it} = \; & \alpha + \beta_1 BUSY\_FYE_{it} + \beta_2 BUSY\_FYE_{it}{*}WLC_{ft} + \beta_3 DA_{it} \\ & + \beta_4 LOSS_{it} + \beta_5 GC\_OPINION_{it} + \beta_6 SIZE_{it} + \beta_7 LEVERAGE_{it} \\ & + \beta_8 REC\_MERGE_{it} + \beta_9 REV\_GROWTH_{it} + \beta_{10} ROA_{it} \\ & + \beta_{11} MAJOR\_CITY_{it} + \beta_{12} CITY\_LEADER_{it} \\ & + \beta_{13} NATL\_LEADER_{it} + \Sigma\, \beta_t YEAR_{it} + \Sigma\, \beta_l SIC2_{lt} + \varepsilon \qquad (1) \end{aligned}$$

where *i* subscripts for company, *f* for firm, *t* for time, and *l* for industry. SWITCH is an indicator variable that equals 1 if the company switches auditors during the year and 0 otherwise. The baseline variable, BUSY_FYE, is an indicator variable that equals 1 if the company has a December fiscal year-end date and 0 otherwise. Consistent with the empirical patterns documented in prior literature, we expect the coefficient for BUSY_FYE to be positive.

The primary assertion of the current study is that the busy season associations proposed in prior literature result from the inherent strain on the auditors' limited resources, in other words, the workload compression caused by December year-end clients. However, it is not just the fiscal year-end of the client, but rather the concentration of busy season clients in the auditor's portfolios that drive the workload compression affects. Although prior accounting and finance literature intuitively assumes this association, little direct evidence exists supporting this contention. Thus, the primary variable of interest is an interaction variable between the busy season variable and the relative level of the auditor's workload compression (BUSY_FYE*WLC). As discussed in the previous section, we use the ratio of December year-end sales to total sales audited by the firm to calculate the workload compression variable (WLC). In subsequent tests we measure WLC at the national and city-specific level. To the extent the previous associations documented in prior literature result from workload compression, we expect a positive sign on this coefficient.

Control Variables—Litigation Risk and Audit Demands

Following prior literature, we include control variables as proxies for auditor litigation risk, the possibility of audit failure, and other general factors affecting the markets for audit-related services (see Shu 2000, Ettredge et al. 2006; Hertz et al. 2006; and Nagy and Cenker, 2006 for current examples). The first control variable in the model, DA, is the performance-adjusted discretionary accruals. DeFond and Subramanyam (1998) find that discretionary accruals are income-decreasing the year before an auditor change. They also find that this effect is more pronounced in companies with higher levels of litigation risk. The researchers interpret this finding as evidence that litigation risk concerns lead auditors to increase their preference for income-decreasing accounting choices. Defond and Subramanyam (1998) study provides evidence that discretionary accruals are an important factor explaining auditor changes.

López and Peters (2007) present evidence indicating that companies with a December year-end date display greater magnitudes of discretionary accruals and, therefore, have more latitude than companies with other fiscal year-end dates. Additional evidence on the relationship between discretionary accruals and workload compression comes from Abbott, et al (2006). Using audit fee data the researchers find evidence indicating that auditors spend more time performing audits of companies with income-increasing accruals. From their findings it can be concluded that, due to higher litigation risk, the audits of companies with income-increasing accruals put greater time strains on the audit resources of the firm. Thus, audits of companies with income-increasing accruals have the effect of increasing the levels of workload compression of the firm.

DA is estimated using the cross-sectional version of the Jones (1991). The measure is corrected for performance using the approach introduced by Kothari, et al. (2005). Correcting discretionary accruals for financial performance is particularly important in this study because previous research indicates that companies with poor financial performance are more likely to switch auditors (Schwartz and Soo, 1996)[2]. The first step in the estimation of performance-

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[2] We also re-estimated the regression models of this study using the original version of the Jones model for benchmarking purposes. The regression results were qualitatively similar. This indicates that adjusting discretionary accruals for financial performance, as suggested by Kothari et al. (2005), does not drive the results of this study. However, it is interesting to note that the explanatory power (pseudo r-squares) for all the models were greater when discretionary accruals were adjusted for financial performance.

adjusted discretionary accruals consists in calculating total accruals for each firm-year observation. The following equation is used for this purpose:

$$TA_{it} = (\Delta CA_{it} - \Delta CASH_{it} - \Delta CL_{it} + \Delta DCL_{it} - DEP_{it}) / ASSETS_{it-1} \quad (2)$$

where ΔCA is the change in current assets (Compustat #4), ΔCASH is the change in cash and cash equivalents (Compustat 1#), ΔCL is the change in current liabilities (Compustat #5), ΔDCL is change in the proportion of debt included in current liabilities (Compustat #34), DEP is depreciation and amortization (Compustat #14), and ASSETS is lagged total assets (Compustat #6). The subscripts *i* and *t* index for company and time, respectively. This definition of total accruals is consistent with Kothari et al. (2005), who employs the balance sheet approach for the estimation of performance-adjusted discretionary accruals. Total accruals from equation 2 are then used to fit the following equation using OLS regression:

$$TA_{it} = \beta_1(1/ASSETS_{it-1}) + \beta_2\Delta SALES_{it} + \beta_3 PPE_{it} + \beta_4 FIN\_PERF_{it} + \varepsilon_{it} \quad (3)$$

where ΔSALES is change in sales (Compustat #12) scaled by lagged total assets, PPE is net property plant and equipment (Compustat #7) scaled by lagged total assets, and FIN_PERF is net income divided by total assets (Compustat #172 / Compustat #6). All other variables and subscripts are as defined in equation 2. The discretionary portion of total accruals is captured in the error term of the regression. Equation 3 is estimated cross-sectionally using all Compustat data and cross-sections are formed each year using the first two digits of the SIC code of the company. Cross-sections with less than ten firm-year observations are excluded from the sample since the estimation of discretionary accruals for firms in smaller cross-sections is likely to be inaccurate (Kothari, et al., 2005).

LOSS (Compustat #18) is an indicator variable that takes a value of 1 if the company suffered a loss during the previous year and 0 otherwise. Previous research indicates that companies experiencing financial losses are more likely to change auditors (Schwartz and Soo, 1996). Therefore, LOSS is expected to have a positive coefficient. GC_OPINION is an indicator variable that takes a value of 1 if the predecessor auditor issued a going concern opinion and 0 otherwise. Companies receiving a going concern opinion represent a higher level of litigation risk for their auditors (Krishnan and Krishnan, 1997). GC_OPINION is expected to have a positive coefficient since receiving a going concern opinion increases the likelihood that the auditor will resign from the engagement (Schwartz and Soo, 1996; Krishnan and Krishnan, 1997).

SIZE is defined as the log of total assets (Compustat #6). Consistent with prior research, SIZE is expected to have a negative coefficient because the costs of switching auditors are relatively higher for larger companies (DeAngelo, 1981). LEVERAGE is defined as the ratio of debt to total assets ((Compustat # 9 + Compustat #24)/Compustat #6). LEVERAGE is expected to have a positive coefficient given that previous research indicates that companies with higher levels of leverage are more likely to switch auditors (Woo and Koh, 2001; DeFond & Jiambalvo, 1993).

REV_GROWTH is defined as the change in total revenues scaled by lagged total assets. REV_GROWTH is expected to have a positive coefficient (Woo and Koh, 2001; Landsman, 2006). ROA is defined as net income before extraordinary items divided by average total assets (Compustat #18 and #6). The estimated coefficient for ROA is expected to be negative since profitable companies pose less financial risks for their auditors (Landsman et al., 2006). REC_MERGE takes a value of 1 if the company experiences significant mergers or acquisition activity during the two years prior to the auditor change; 0 otherwise. This variable is expected to control for the impact of changing audit demands of the client. A positive coefficient is expected. A summary of the variables in this study is presented in Table 1 below.

Control Variables—Geographic and Industry Markets

The remaining variables in the model (i.e. MAJOR_CITY, CITY_LEADER, NATL_LEADER, YEAR, and SIC2) control for geographic factors that may affect the likelihood of observing auditor changes. The following is a detailed explanation of the use of these variables. As indicated above, cities are defined using the U.S. Census definitions of major statistical areas (MSA's) and only observations from cities with three or more Big N auditors are allowed to enter the sample. Table 2 presents a list of the cities included in the sample and their respective MSA codes. A total of 58 different cities are represented in the sample.

MAJOR_CITY is an indicator variable that takes a value of 1 if the company's headquarters are located in a major metropolitan division and 0 otherwise. A major metropolitan division is a city whose metropolitan statistical area is composed of two or more metropolitan divisions, as stipulated by the U.S. Census Bureau. Eleven U.S. cities in the sample meet this definition—Boston, Chicago, Dallas-Fort Worth, Detroit, Los Angeles, Miami, New York-Northern New Jersey, Philadelphia, San Francisco, Seattle, and Washington DC.[3] The coefficient for MAJOR_CITY is expected to be positive since companies operating in larger cities have greater access to audit resources.

Two indicator variables, CITY_LEADER and NATL_LEADER, are generated to control for the effects of geographic and industry leadership on auditor changes. These measures are

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[3] See Appendix to OMB Bulleting 05-02 of the Office of Monetary Budget for a complete list of metropolitan statistical areas and metropolitan divisions in the U.S.

based on the rank of total Compustat sales audited by each Big N firm within a two-digit SIC code group. Specifically, CITY_LEADER (NATL_LEADER) takes a value of 1 if the company is a December year-end company and the predecessor auditor is ranked as the number one city (national) industry leader; 0 otherwise. Thus, CITY_LEADER and NATL_LEADER capture the differential likelihood that companies switching auditors are leaving the city or national industry leader, respectively. YEAR and SIC2 are matrixes of year and industry dummies, respectively. These matrixes are included in the model to control for the fixed effects of time and industry.

IV. EMPIRICAL RESULTS

Univariate Results

The univariate results of this study are presented in Table 3 through Table 7. Table 3 depicts the industry distribution of the sample. The first column of this table presents 15 major industry groups generated using the grouping methods followed by Shu (2000). There are two sets of columns in this table. The first set is for the sample in this study and the second set is for the sample in Smith and Pourciau (1988), an earlier study investigating differences in the financial characteristics of December and non-December year-end companies. Smith and Porciau (1988) formally investigate differences in the financial characteristics of December and non-December year-end companies. The researchers find that December year-end companies are larger and have smaller betas when compared to non-December year-ends. They also find evidence of strong industry concentrations among December year-end companies, particularly in regulated and deregulated industries.

As shown in Table 3, the industry distribution of the data in this study does not display any obvious industry clustering when compared to the industry distribution of the data in Smith and Pourciau (1988). In particular, Smith and Porciau (1988) find strong industry concentrations in regulated industries (utilities and transportation, row #13) and deregulated industries (banking and insurance, row #14). Following previous research, these industries have not been included in the sample of this study. Table 3 shows a marked increase in the companies in the business services group (row #11) when compared to the data in Smith and Pourciau (1988). In sum, industry clustering appears to have receded over the years and is a lesser concern in this study since some of the industry groups with most pervasive levels of clustering have been excluded from the sample.

Table 4 presents two frequency tables of the distribution of companies with auditor changes. The observations in each panel are divided into three groups. The first column in Panel A shows the number of companies switching from an auditor whose workload compression levels are above the national workload compression mean; the second column shows the number of companies switching from an auditor whose workload compression levels are below the workload compression national mean; and the third column shows the number of observations not displaying auditor changes. The fourth and last column of the panel shows the row totals. Panel B was constructed using the same methods but the level of workload compression of the firms was measured at the city-specific level.

The results in Panel A and B show that busy season clients are more likely to experience a change in auditors. When comparing the relative percentage of clients that remain with their existing auditors, the table suggests that busy season (non-busy season) clients are less (more) likely to remain with an existing auditor, respectively (92.9% versus 93.2%). Contrary to the initial expectations, Panel A shows that the majority of December year-end companies switching auditors leave an auditor whose workload compression levels are below the national average (Panel A: Cell F versus Cell E). However, Panel B shows that the majority of December year-end companies switching auditors leave a predecessor auditor whose workload compression levels are above the city average (Panel B: Cell E versus Cell F). The information in this table provides limited evidence that workload compression is a more relevant factor explaining auditor turnover when measured at the city-specific level. However, the patterns in this table should be interpreted with caution since a limited number of audit firms are included in the calculation of and comparisons to the relative mean WLC. At a minimum, the comparisons (national- versus city-level) show the importance of capturing auditor portfolio metrics at both the national- and city-level.

Table 5 depicts descriptive statistics for the sample. Three sets of columns are presented in this table. The first set of columns is for all observations in the sample (n=42,729); the second set is for pre-SOX subsample (n-34,638); and the third set is for the post-SOX subsample (n=8,091). It is interesting to note that the proportion of companies switching auditors (SWITCH) remains relatively unchanged between the pre-SOX and the post-SOX periods at around 7 percent. On the other hand, the proportion of companies with a December year-end date (BUSY_FYE) increased from 59.8 percent in the pre-SOX period to 66.0 percent in the post-SOX period.

Table 6 depicts descriptive for switchers and non-switchers by sample period. There are three sets of data in this table. The first set (Panel A) is for the full sample (n=42,729) and covers years 1993 to 2005 (excluding 2002); the second set (Panel B) is for the pre-SOX subsample (n=34,638) and covers the years 1993 to 2001; the third and last set (Panel C) is for the post-SOX subsample (n=8,091) and covers years 2003 to 2005. Panel A displays no statistically significant differences between the mean proportion of busy season clients (BUSY_FYE) and the mean level of auditor workload compression (WLC_NATL and WLC_CITY) for companies remaining with existing auditors versus those that switched auditors. During the pre-SOX sample period (Panel B), auditor switches are significantly (<.001) more likely to occur for busy season clients (.632 versus .596) and audits were subject to greater levels of city-specific workload compression (.692 versus .678). No significant differences are noted at the national level of workload compression for the pre-SOX sample period. The post-SOX sample period (Panel C) displays no statistically significant differences in workload compression (WLC_NATL and WLC_CITY) between companies switching auditors versus those that remained with the same auditor. Interestingly, and contrary to expectations, a significantly (<.001) greater proportion of busy season clients (BUSY_FYE) remained with their existing auditors during the post-SOX sample period.

With respect to the control variables in this study, this table shows that companies switching auditors have lower discretionary accruals, are more likely to report a loss, and are more likely to receive a going concern opinion. In accordance to previous studies, companies that switch auditors are smaller and have higher levels of leverage (Hertz, 2006; DeFond et al., 1997). Similar patterns can be observed in Panel A, Panel B and Panel C of this table.

The correlations presented in Table 7 confirm some of the patterns depicted in Table 6 above. For instance, the correlation between SIZE and SWITCH is negative and significant, indicating that larger companies are less likely to change auditors. In addition, the correlation between LOSS and SWITCH is positive and significant, indicating that companies suffering a loss are more likely to replace their auditors.

Regression Results for Hypotheses 1 and 2

The main regression results of this study are presented in Table 8 and Table 9. Table 8 reflects the regression results for the full sample with workload compression measured at the national- and city-specific level. Table 9 (discussed later) follows a similar format but the models are estimated using the pre- and post-SOX sub-samples. As discussed in the methods section of this study, the models in both tables are estimated using logistic regression.

The coefficient for BUSY_FYE in the first model of Table 8 is positive as expected but not significant. The lack of significance in this model may reflect the importance of accounting for the level of workload compression in the auditor's portfolio. The first hypothesis of this study predicts that we should see an incremental impact for those companies who are audited by audit firms facing greater levels of workload compression. In order to discern whether the lack of significance is driven in large part by the strains on auditor's workload, an interactive term between BUSY_FYE and WLC is added to the regression models. Once the WLC terms are added to the models, BUSY_FYE begins to display significant associations.

Contrary to the expectations, Model #2 (Table 8) shows that the interaction between BUSY_FYE and WLC_NATL is significant but negative. While busy season clients are more likely to switch auditors (BUSY_FYE = .926, p-value =.038), the overall likelihood of auditor switching (after combining the coefficients for BUSY_FYE and BUSY_FYE*WLC_NATL) is negative for clients of auditors with higher levels of workload compression (-1.194 + 0.926). This result may be indicative of two possible situations. First, something other than the constraints on auditor resources is influencing the busy season auditor switching behavior. Alternatively, the national-level workload compression variable contains biased information that does not reflect resource constraints imposed at the office-level, thus introducing the need to consider the office or city-level constraints on audit resources.

Model #3 (Table 8) includes workload compression measured at the city-specific level in order to further investigate the contradictory information presented by model #1 and #2 and to test the second hypothesis of this study. The results show that the coefficient for BUSY_FYE is negative (-0.201) and significant (p-value = -0.027). However, the overall likelihood of auditor switching for busy season clients becomes positive once auditor workload compression measured at the city-specific level is included in the model. BUSY_FYE*WLC_CITY is positive (0.329) and significant (p-value = 0.003). Consistent with Hypothesis 2, combining the coefficients for BUSY_FYE and BUSY_FYE*WLC_CITY results in an overall positive effect (-0.201 + 0.329).

The coefficients for LOSS, GC_OPINION, REC_MERGE, and MAJOR_CITY are positive, as expected. This indicates that companies suffering a loss, receiving a going concern opinion, or experiencing significant recent merger and acquisition activity are more likely to switch auditors. In addition, SIZE displays negative coefficients, indicating that larger companies are less likely to switching auditors. All the models presented in this table are significant. The r-square of the models is approximately 12.6 percent for all models.

Regression Results for the Post-SOX Hypothesis

The regression results presented in Table 9 are intended to test the third hypothesis that the workload compression effects on auditor turnover are higher in the post-SOX period. There are two panels presented in this table. The first panel is for the pre-SOX period (n=36,638) and the second panel is for the post-SOX period (n=8,091). Three different versions of the model are presented in each panel of this table. These estimations are equivalent to the estimations presented in Table 8. All models presented in Panel A and Panel B of this table are significant. The pseudo r-square for the models is approximately 12.3 percent for the pre-SOX models and 17.8 for the post-SOX models

The pre-SOX sample period (Panel A) exhibits the same associations documented in Table 8 for all three models, with one exception. Prior to including the influence of WLC, there is an overall significantly greater tendency for busy season clients to switch auditors. This is consistent with the original working hypothesis of the study. However, in the post-SOX period (Panel B) there is significantly lower tendency for busy season clients to switch auditors. These results are consistent with the patterns documented in Table 6 although they are contrary to Hypothesis #3.

We note that this result contradicts the public cry from the Big N audit firms concerning the increased demands on constrained firm resources resulting from SOX. In addition, the results suggest that auditor supply-side factors, other than workload compression, are needed to explain the increase in auditor resignations (versus client dismissals) in the post-SOX environment as documented by Hertz (2006).

V. CONCLUSIONS

This study investigates the busy season and concomitant concentrated demands on audit resources (i.e. workload compression) as environmental factors affecting the likelihood of auditor switching events. From the demand-side perspective it can be argued that December year-end companies switch auditors more often than non-December year-end companies since, everything else equal, client satisfaction is more difficult to maintain for busy season clients given the inherent strain on limited auditor resources. Likewise, exploring the issue from a supply-side perspective opens a space for the argument that auditor switches are more likely for December year-end companies since audit firms are more likely to face the need to alter their portfolio of clients in response to capacity constraints. This study represents one of the first archival attempts at directly testing the incremental impact of workload compression on auditor switching behavior.

We find evidence consistent with busy season clients showing a greater tendency to switch auditors when auditors face greater amounts of workload compression, measured at the city-specific level. However, this association appears to change during the post-SOX time period. Collectively, our results have important implications to extant auditing literature since they highlight the need to control for workload compression in extant research investigating auditor-client relationships. Given the costs of transferring audit resources, our study also reinforces the importance of capturing auditor characteristics at the office level as opposed to the national level.

Recent regulatory changes, such as the accelerated filing requirements of the SEC, had the effect of further increasing the levels of workload compression experienced by auditors. The SEC has delayed final implementation of accelerated filing requirements due to complaints from companies and their auditors that the new regulation, joined to other SOX-related changes, imposes too many demands on their resources. Since auditors argue they do not have the capacity to meet the increased audit rules and to prepare faster filings, we should observe that auditors with higher levels of workload compression release December year-end clients at a greater rate compared to non-December year-end clients. However, the results for the post-SOX period do not support, and at most, contradict the cries from Big N audit firms.

Future research is needed to investigate whether workload compression is still an explanatory factor once the impact of SOX is fully assimilated by the audit market. The implications of this regulation are of particular importance for non-Big N firms as they continue to pick an increasing proportion of public companies. The expectation is that workload compression will be a factor of increasing significance once accelerated filing is fully implemented. Conversely, future research is needed to explore how technology and changing audit techniques impact the effects of auditor workload compression.

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Table 1
Variable Definitions

SWITCH	=	1 if the company changes auditors during the year: 0 otherwise
BUSY_FYE	=	1 if the company is a December fiscal-year end; 0 otherwise
WLC_NATL	=	ratio of December year-end sales to total sales audit by the firm during the year; the ratio is measured at the national level
WLC_CITY	=	ratio of December year-end sales to total sales audit by the firm during the year; the ratio is measured at the city level
DA	=	performance adjusted discretionary accruals
LOSS	=	1 if the company suffered a loss during the previous year; 0 otherwise
GC_OPINION	=	1 if the predecessor auditor issued a going concern opinion; 0 otherwise
SIZE	=	log of total assets
LEVERAGE	=	ratio of debt to total assets ((Compustat # 9 + Compustat #24)/Compustat #6)
REC_MERGE	=	1 if the company experienced significant merger and acquisition activity during the two years prior to the auditor change; 0 otherwise
REV_GROWTH	=	change in total revenues scaled by lagged total assets (Compustat #6)
ROA	=	net income before extraordinary items divided by average total assets
MAJOR_CITY	=	1 if the company's headquarters are located in a major city; 0 otherwise Major cities are defined in this study as cities whose metropolitan statistical area is composed of two or more metropolitan divisions, as stipulated by the U.S. Census. Eleven cities in the sample meet this definition—Boston, Chicago, Dallas-Fort Worth, Detroit, Los Angeles, Miami, New York-Northern New Jersey, Philadelphia, San Francisco, Seattle, and Washington DC

Table 1 (Continued)

CITY_LEADER	=	1 if the company is a December-year company and the predecessor auditor is ranked as the city industry leader; 0 otherwise
NATL_LEADER	=	1 if the company is a December-year company and the predecessor auditor is ranked as the national industry leader; 0 otherwise
YEAR	=	matrix of year dummies
SIC2	=	matrix of industry dummies using the first two digits of the SIC code for the company

See Section III for a detailed explanation of the operationalization of these variables.

Table 2
Metropolitan Statistical Areas Included in the Sample

State	City	Metropolitan Statistical Area (MSA)	Major Metropolitan Area	DT	EY	KPMG	PwC
Alabama	Birmingham-Hoover	13820		x	x	x	x
Arizona	Phoenix-Mesa-Scottsdale	38060		x	x	x	x
California	Los Angeles-Long Beach-San Ana	31100	x	x	x	x	x
	Sacramento-Arden-Arcade	40900		x	x	x	x
	San Diego-Carlsbald-San Marcos	41740		x	x	x	x
	San Francisco-Oakland-Freemont	41860	x	x	x	x	x
	San Jose-Sunnyvale-Santa Clara	49140		x	x	x	x
Colorado	Denver-Aurora	19740		x	x	x	x
Connecticut	Hartford-West Hartford-East Hartford	25540		x	x	x	x
	Bridgeport-Stamford-Norwalk	14860		x	x	x	x
District of Columbia	Washington-Arlington-Alexandria	47900	x	x	x	x	x
Florida	Jacksonville	27260		x	x	x	x
	Miami-Fort Lauderdale-Miami Beach	33100	x	x	x	x	x
	Orlando-Kissimmee	36740		x	x	x	x
	Tampa-St Petersburg-Clearwater	45300		x	x	x	x
Georgia	Atlanta-Sandy Springs-Marietta	12060		x	x	x	x
Hawaii	Honolulu	26180		x	x	x	x
Illinois	Chicago-Naperville-Joliet	16980	x	x	x	x	x
Indiana	Indianapolis	26900		x	x	x	x
Iowa	Des Moines	19780		x	x	x	

Table 2 (Continued)

State	City	Metropolitan Statistical Area (MSA)	Major Metropolitan Area	DT	EY	KPMG	PwC
Kentucky	Louisville	31140		x	x	x	x
Louisiana	New Orleans-Metairie-Kenner	35380		x	x	x	x
Maryland	Baltimore-Towson	12580		x	x	x	x
Massachusetts	Boston-Cambridge-Quincy	14460	x	x	x	x	x
Michigan	Detroit-Warren-Livonia	19820	x	x	x	x	x
	Grand Rapids-Wyoming	24340		x	x		x
Minnesota	Minneapolis-St Paul-Bloomington	33460		x	x	x	x
Missouri	Kansas City	28140		x	x	x	x
	St Louis	21180		x	x	x	x
Montana	Omaha-Council Bluffs	36540		x	x	x	
Nevada	Las Vegas-Paradise	29820		x	x		x
New York	Buffalo-Niagara Falls	15380		x	x	x	x
	New York-Northern NJ-Long Island	35620	x	x	x	x	x
	Rochester	40380		x	x	x	x
	Syracuse	45060			x	x	x
North Carolina	Charlotte-Gastonia-Concord	16740		x	x	x	x
	Greensboro-High Point	24660			x	x	x
	Raleigh-Cary	39580		x	x	x	x
Ohio	Cincinnati-Middletown	17140		x	x	x	x
	Cleveland-Elyra-Mentor	17460		x	x	x	x
	Columbus	18140		x	x	x	x
	Dayton	19380		x	x		x
Oklahoma	Tulsa	46140		x	x	x	x
Oregon	Portland-Vancouver-Beaverton	38900		x	x	x	x

Table 2 (Continued)

State	City	Metropolitan Statistical Area (MSA)	Major Metropolitan Area	DT	EY	KPMG	PwC
Pennsylvania	Harrisburg-Carlisle	25420		x		x	x
	Philadelphia-Camden-Wilmington	37980	x	x	x	x	x
	Pittsburg	38300		x	x	x	x
South Carolina	Greenville	24780		x	x	x	x
Tennessee	Memphis	32820		x	x	x	x
	Nashville-Davidson-Murfreesboro	34980		x	x	x	
Texas	Austin-Roundrock	12420		x	x	x	x
	Dallas-Fort Worth-Arlington	19100	x	x	x	x	x
	Houston-Sugar Land-Baytown	26420		x	x	x	x
	San Antonio	41700		x	x	x	
Utah	Salt Lake City	41620		x	x	x	x
Virginia	Richmond	40060		x	x	x	x
Washington	Seattle-Tacoma-Bellevue	42660	x	x	x	x	x
Wisconsin	Milwaukee-Waukesha-West Allis	33340		x	x	x	x

This table presents the metropolitan statistical areas (MSA's) represented in the final sample. Firm-year observations from cities with less than three Big N auditors as of July 2006 are not allowed to enter the sample. A major metropolitan area is defined by the U.S. Census as a city whose metropolitan statistical area is composed of two or more metropolitan divisions. As shown above, eleven U.S. cities in the sample meet the U.S. Census definition of a major metropolitan area. These cities are Boston, Chicago, Dallas-Fort Worth, Detroit, Los Angeles, Miami, New York-Northern New Jersey, Philadelphia, San Francisco, Seattle, and Washington DC.

Table 3
Sample Industry Distribution and Comparison to Smith and Pourciau (1988)

	Current Study Sample window: 1993-2005			Smith and Pourciau (1988) Sample window: 1982		
Industry	**Number of December Year-end Companies**	**As a % of December Year-end Companies**	**As a % of All Sample Companies**	**Number of December Year-end Companies**	**As a % of December Year-end Companies**	**As a % of All Sample Companies**
1. Natural resources	1,661	6.4	3.9	152	11.3	4.5
2. Construction and metal	1,772	6.8	4.1	233	11.8	4.7
3. Food	471	1.8	1.1	82	3.6	1.4
4. Consumer goods	729	2.8	1.7	139	6.7	2.7
5. Paper and printing	988	3.8	2.3	118	8.4	3.3
6. Chemical and petroleum	3,571	13.7	8.4	149	12.2	4.8
7. Machinery and equipment	5,741	22.0	13.4	399	22.3	8.8
8. Transportation related	1,603	6.2	3.8	138	10.8	4.3
9. Wholesale and retail	2,470	9.5	5.8	240	7.2	2.8
10. Entertainment	496	1.9	1.2	20	0.6	0.2
11. Business services	4,186	16.1	9.8	51	2.4	1.0
12. Health and other services	2,153	8.3	5.0	58	2.6	1.0
13. Utilities and transportation*	--	--	--	266	22.4	8.9
14. Finance and insurance*	--	--	--	343	28.5	11.3
15. Non-classifiable	216	0.8	0.5	--	--	--
Total firms	26,057	100	100	2,388	100	100

* Industry group is not included in the sample of this study.
This table follows the industry distribution used in Table 1 of Shu (2000). Industries are classified based on two-digit SIC codes as follows: (1) 0-9, 10-14; (2) 15-19, 30, 32-34; (3) 20-21; (4) 22-23, 25, 31, 39; (5) 24, 26-27; (6) 28-29; (7) 35-36, 38; (8) 37, 40-47; (9) 50-59; (10) 78-79; (11) 73,81; (12) 70, 72, 75-76, 80, 82-89; (13) 48,49; (14) 60-69 (15) 99. Only thirteen industry groups are presented above instead of the fourteen groups presented in Shu (2000) since the utilities and communications group (SIC 48-49) was excluded from the sample of this study.

Table 4
Frequency Table of Workload Compression
Level of the Predecessor Auditor

Panel A: Switchers versus non-switchers with workload compression measured at the national level

	WLC_NATL > WLC mean	**WLC_NATL < WLC mean**	**Company remained with same auditor**	**Total**
	A	B	C	D
BUSY_FYE = 0	528	594	15,550	16,672
	3.2%	3.6%	93.2%	100%
	E	F	G	H
BUSY_FYE = 1	794	1,061	24,202	26,057
	3.0%	4.1%	92.9%	100%
Total	1,322	1,655	39,752	42,729
	3.1%	3.9%	93.0%	100%

Table 4 (Continued)

Panel B: Switchers versus non-switchers with workload compression measured at the city level

	WLC_CITY > WLC mean	**WLC_CITY < WLC mean**	**Company remained with same auditor**	**Total**
	A	B	C	D
BUSY_FYE = 0	499	623	15,550	16,672
	3.0%	3.7%	93.3%	100%
	E	F	G	H
BUSY_FYE = 1	971	884	24,202	26,057
	3.7%	3.4%	92.9%	100%
Total	1,470	1,507	39,752	42,729
	3.4%	3.5%	93.0%	100%

Variables are as defined in Table 1.
This table depicts the frequency of auditor switches and the workload compression level of the predecessor auditor. Workload compression is measured at the national (Panel A) and the city-specific level (Panel B).

Table 5
Descriptive Statistics for the Full Sample

	All Observations (n = 42,729)			Pre-SOX Sub-sample (n = 34,638)			Post-SOX Sub-sample (n = 8,091)		
Variable	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**	**Mean**	**Median**	**SD**
SWITCH	0.069	0.00	0.255	0.070	0.00	0.255	0.069	0.00	0.253
BUSY_FYE	0.610	1.00	0.488	0.598	1.00	0.490	0.660	1.00	0.474
WLC_NATL	0.763	0.767	0.048	0.764	0.762	0.045	0.760	0.769	0.059
WLC_CITY	0.683	0.747	0.248	0.679	0.744	0.249	0.704	0.764	0.241
DA	-0.010	-0.016	0.385	-0.011	-0.016	0.317	-0.002	-0.014	0.596
LOSS	0.394	0.000	0.488	0.400	0.00	0.490	0.366	0.00	0.482
GC_OPINION	0.001	0.000	0.028	0.001	0.00	0.030	0.00	0.00	0.00
SIZE	5.037	4.935	2.027	4.844	4.723	2.000	5.867	5.850	1.927
LEVERAGE	0.268	0.173	4.111	0.276	0.177	4.560	0.232	0.157	0.402
REC_MERGE	0.302	0.00	0.459	0.311	0.00	0.463	0.261	0.00	0.440
REV_GROWTH	0.339	0.103	8.807	0.352	0.109	8.631	0.282	0.084	9.523
ROA	-0.113	0.024	0.911	-0.121	0.023	0.861	-0.080	0.027	1.097
MAJOR_CITY	0.509	1.00	0.500	0.512	1.00	0.500	0.499	0.00	0.500
NATL_LEADER	0.165	0.00	0.371	0.159	0.00	0.366	0.193	0.00	0.395
CITY_LEADER	0.286	0.00	0.452	0.272	0.00	0.445	0.349	0.00	0.477

Variables are as defined in Table 1.
This table presents descriptive statistics for the sample of this study. The first set of columns presents descriptive statistics for the full sample (42,729 pooled cross-sectional observations) and covers years 1993 to 2005, excluding 2002. The second set of columns is for the pre-SOX sub-sample (34,638 pooled cross-sectional observations) and covers years 1993 to 2001. The third set of columns is for the post-SOX sample (8,091 pooled cross-sectional observations) and covers years 2003 to 2005.

Table 6
Descriptive Statistics for Switchers versus Non-Switchers

Panel A – Full Sample – Years 1993 to 2005

Variable	Company Remained with the Same Auditor (n = 39,752)			Company Switched Auditors During the Year (n = 2,977)			Z-test of Difference in Sub-sample Means
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	
SWITCH	0.00	0.00	0.00	1.00	1.00	0.00	
BUSY_FYE	0.609	1.00	0.488	0.623	1.00	0.485	
WLC_NATL	0.763	0.766	0.049	0.763	0.751	0.043	
BUSY_FYE x WLC_NATL	0.465	0.709	0.375	0.474	0.739	0.371	
WLC_CITY	0.683	0.746	0.248	0.692	0.762	0.252	*
BUSY_FYE x WLC_CITY	0.434	0.479	0.393	0.448	0.497	0.396	*
DA	-0.009	-0.015	0.381	-0.017	-0.021	0.439	
LOSS	0.381	0.00	0.486	0.562	1.00	0.496	***
GC_OPINION	0.001	0.00	0.026	0.002	0.00	0.049	
SIZE	5.102	4.991	2.004	4.171	4.130	2.129	***
LEVERAGE	0.266	0.172	4.257	0.295	0.182	0.670	
REC_MERGE	0.303	0.00	0.460	0.289	0.00	0.453	
REV_GROWTH	0.288	0.106	4.208	1.020	0.049	29.605	
ROA	-0.098	0.026	0.852	-0.310	-0.027	1.473	***
MAJOR_CITY	0.507	1.00	0.500	0.534	1.00	0.499	***
NATL_LEADER	0.166	0.00	0.372	0.150	0.00	0.357	**
CITY_LEADER	0.289	0.00	0.453	0.253	0.00	0.435	***

Table 6 (Continued)

Panel B – Pre-SOX Sample – Years 1993 to 2001

	Company Remained with the Same Auditor (n = 32,217)			Company Switched Auditors During the Year (n = 2,421)			
Variable	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**	**Z-test of Difference in Sub-sample Means**
SWITCH	0.00	0.00	0.00	1.00	1.00	0.00	
BUSY_FYE	0.596	1.00	0.491	0.632	1.00	0.482	***
WLC_NATL	0.764	0.762	0.046	0.763	0.750	0.039	
BUSY_FYE x WLC_NATL	0.456	0.724	0.377	0.481	0.744	0.369	***
WLC_CITY	0.678	0.742	0.249	0.692	0.760	0.253	***
BUSY_FYE x WLC_CITY	0.421	0.457	0.392	0.454	0.518	0.395	***
DA	-0.011	-0.016	0.310	-0.009	-0.020	0.391	
LOSS	0.387	0.00	0.487	0.575	1.00	0.495	***
GC_OPINION	0.001	0.00	0.028	0.003	0.00	0.054	*
SIZE	4.899	4.767	1.977	4.107	4.034	2.156	***
LEVERAGE	0.274	0.175	4.725	0.301	0.200	0.574	
REC_MERGE	0.312	0.00	0.463	0.307	0.00	0.461	
REV_GROWTH	0.312	0.114	4.562	0.877	0.044	28.085	
ROA	-0.105	0.026	0.792	-0.325	-0.036	1.491	*
MAJOR_CITY	0.510	1.00	0.500	0.536	1.00	0.499	**
NATL_LEADER	0.160	0.00	0.366	0.147	0.00	0.355	*
CITY_LEADER	0.273	0.00	0.446	0.251	0.00	0.434	**

Table 6 (Continued)

Panel C – Post-SOX Sample – Years 2003 to 2005

	Company Remained with the Same Auditor (n = 7,535)			Company Switched Auditors During the Year (n = 556)			
Variable	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**	**Z-test of Difference in Sub-sample Means**
SWITCH	0.00	0.00	0.00	1.00	1.00	0.00	
BUSY_FYE	0.666	1.00	0.472	0.586	1.00	0.493	***
WLC_NATL	0.760	0.769	0.059	0.762	0.769	0.058	
BUSY_FYE x WLC_NATL	0.505	0.689	0.361	0.445	0.678	0.377	***
WLC_CITY	0.705	0.764	0.240	0.693	0.764	0.249	
BUSY_FYE x WLC_CITY	0.487	0.551	0.392	0.420	0.409	0.399	***
DA	0.001	-0.013	0.595	-0.050	-0.025	0.604	***
LOSS	0.356	0.00	0.479	0.507	1.00	0.500	***
GC_OPINION	0.00	0.00	0.00	0.00	0.00	0.00	**
SIZE	5.971	5.930	1.88	4.448	4.523	1.988	***
LEVERAGE	0.229	0.160	0.319	0.270	0.099	0.983	
REC_MERGE	0.266	0.00	0.442	0.209	0.00	0.407	***
REV_GROWTH	0.183	0.086	2.104	1.640	0.058	35.496	
ROA	-0.068	0.030	1.072	-0.245	-0.005	1.393	***
MAJOR_CITY	0.497	0.00	0.500	0.520	1.00	0.500	
NATL_LEADER	0.195	0.00	0.396	0.162	0.00	0.369	**
CITY_LEADER	0.355	0.00	0.479	0.268	0.00	0.443	***

Table 6 (Continued)

Variables are as defined in Table 1.
*, **, *** Denotes significance at the <.10, <.05, and <.01, respectively, two-tailed test.
This table presents descriptive statistics for switchers versus non-switchers. There are three panels in this table. Panel A is for the full sample (42,729 pooled cross-sectional observations) and covers years 1993 to 2005, excluding 2002. Panel B is for the pre-SOX sub-sample (34,638 pooled cross-sectional observations) and covers years 1993 to 2001. Panel C is for the post-SOX sample (8,091 pooled cross-sectional observations) and covers years 2003 to 2005.

Table 7
Correlation Table

	SWITCH	BUSY_FYE	WLC_NATL	WLC_CITY	DA	LOSS	GC_OPINION	SIZE
SWITCH	1.000							
BUSY_FYE	0.007	1.000						
	0.123							
WLC_NATL	-0.003	0.008	1.000					
	0.470	0.086	<.001					
WLC_CITY	0.010	0.147	0.077	1.000				
	0.048	<.001	0.322					
DA	-0.005	0.010	0.005	0.014	1.000			
	0.268	0.031	<.001	0.004				
LOSS	0.094	0.076	-0.034	-0.022	-0.028	1.000		
	<.001	<.001	<.001	<.001	<.001			
GC_OPINION	0.016	-0.005	0.003	0.013	-0.010	0.029	1.000	
	0.001	0.265	0.523	0.009	0.035	<.001		
SIZE	-0.117	0.086	0.038	0.072	0.020	-0.337	-0.035	1.000
	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
LEVERAGE	0.002	0.007	-0.002	0.007	0.074	0.016	0.011	-0.011
	0.705	0.158	0.641	0.165	<.001	<.001	0.020	0.022
REC_MERGE	-0.008	0.040	0.010	0.008	-0.002	-0.058	-0.011	0.144
	0.096	<.001	0.030	0.084	0.657	<.001	0.024	<.001
REV_GROWTH	0.021	0.002	-0.001	0.001	-0.002	-0.003	-0.001	-0.006
	<.001	0.702	0.899	0.812	0.704	0.588	0.789	0.185
ROA	-0.059	-0.040	0.024	0.003	-0.033	-0.254	-0.021	0.229
	<.001	<.001	<.001	0.476	<.001	<.001	<.001	<.001
MAJOR_CITY	0.013	0.023	0.027	0.195	0.009	0.060	-0.003	-0.048
	0.006	<.001	<.001	<.001	0.066	<.001	0.530	<.001
NATL_LEADER	-0.011	0.356	0.278	0.107	-0.004	-0.007	-0.010	0.113
	0.021	<.001	<.001	<.001	0.461	0.169	0.037	<.001
CITY_LEADER	-0.020	0.507	0.053	0.101	0.014	-0.066	0.001	0.245
	<.001	<.001	<.001	<.001	0.004	<.001	0.833	<.001

Table 7 (Continued)

	LEVERAGE	REC_MERGE	REV_GROTH	ROA	MAJOR_CITY	NATL_LEADER	CITY_LEADER
LEVERAGE	1.000						
REC_MERGE	-0.002	1.000					
	0.633						
REV_GROWTH	-0.001	0.026					
	0.763	<.001	1.000				
ROA	-0.551	0.024	0.002	1.000			
	<.001	<.001	0.658				
MAJOR_CITY	0.003	-0.013	0.001	-0.039			
	0.534	0.057	0.814	<.001	1.000		
NATL_LEADER	0.012	0.012	0.001	-0.005	0.017		
	0.011	0.014	0.846	0.266	<.001	1.000	
CITY_LEADER	0.011	0.034	-0.005	0.024	-0.097	0.354	1.000
	0.019	<.001	0.280	<.001	<.001	<.001	

Variables are as defined in Table 1.
The first row of each cell presents Pearson correlation coefficient and the second row presents the p-value for two-tailed test of significance. Pearson correlation coefficients are estimated using all available firm-year observations in the final sample (n=42,729).

Table 8
Industry and Time Fixed-Effects Logistic Regression of the Probability of Changing Auditors

Sample Period: 1993 – 2005
Discretionary Accruals Estimation: Performance Adjusted

Prob $SWITCH_{it} = \alpha + \beta_1 BUSY\_FYE_{it} + \beta_2 BUSY\_FYE_{it}{*}WLC_{ft} + \beta_3 DA_{it} + \beta_4 LOSS_{it} + \beta_5 GC\_OPINION_{it}$
$+ \beta_6 SIZE_{it} + \beta_7 LEVERAGE_{it} + \beta_8 REC\_MERGE_{it} + \beta_9 REV\_GROWTH_{it} + \beta_{10} ROA_{it}$
$+ \beta_{11} MAJOR\_CITY_{it} + \beta_{12} CITY\_LEADER_{it} + \beta_{13} NATL\_LEADER_{it} + \Sigma\, \beta_t YEAR_{it}$
$+ \Sigma\, \beta_l SIC2_{lt} + \varepsilon$

		Model #1		Model #2		Model #3	
Variable	**Expected Sign**	**Coefficient Estimate**	**Logit p-value**	**Coefficient Estimate**	**Logit p-value**	**Coefficient Estimate**	**Logit p-value**
Intercept		-1.575	<.001	-1.573	<.001	-1.560	<.001
BUSY_FYE	+	0.026	0.601	0.926	0.038	-0.201	0.027
BUSY*WLC_NATL	+			-1.194	0.043		
BUSY*WLC_CITY	+					0.329	0.003
DA		-0.048	0.300	-0.048	0.303	-0.048	0.305
LOSS	+	0.290	<.001	-0.290	<.001	0.293	<.001
GC_OPINION	+	0.871	0.052	0.875	0.051	0.854	0.057
SIZE	-	-0.290	<.001	-0.290	<.001	-0.292	<.001
LEVERAGE		-0.002	0.736	-0.002	0.736	-0.002	0.746
REC_MERGE	+	-0.095	0.037	0.097	0.034	0.095	0.037
REV_GROWTH		0.004	0.018	0.004	0.018	0.004	0.017
ROA		0.018	0.280	0.019	0.264	0.019	0.256
MAJOR_CITY	+	0.085	0.037	0.088	0.032	0.071	0.085
CITY_LEADER	-	0.056	0.302	0.056	0.304	0.056	0.302
NATL_LEADER	-	-0.052	0.386	-0.006	0.926	-0.063	0.291
YEAR	-/+	(not reported)		(not reported)		(not reported)	
SIC2	-/+	(not reported)		(not reported)		(not reported)	
Chi-square		2,197.16		2,201.25		2,206.19	
(p-value)		<.001		<.001		<.001	
Pseudo R-square		0.1263		0.1265		0.1268	
n		42,729		42,729		42,729	

Variables are as defined in Table 1.
This table presents the logistic regression results of the probability of auditor switching. The models control for the fixed-effects of industry (SIC2) and time (YEAR). The models were estimated using 42,729 pooled cross-sectional observations over the calendar years 1993 to 2005 (year 2002 excluded).

Table 9
Industry and Time Fixed-Effects Logistic Regression of the Probability of Changing Auditors

Sample Periods: 1993-2001 and 2003-2005
Discretionary Accruals Estimation: Performance Adjusted

$$\text{Prob SWITCH}_{it} = \alpha + \beta_1\text{BUSY\_FYE}_{it} + \beta_2\text{BUSY\_FYE}_{it}\text{*WLC}_{ft} + \beta_3\text{DA}_{it} + \beta_4\text{LOSS}_{it} + \beta_5\text{GC\_OPINION}_{it} + \beta_6\text{SIZE}_{it} + \beta_7\text{LEVERAGE}_{it} + \beta_8\text{REC\_MERGE}_{it} + \beta_9\text{REV\_GROWTH}_{it} + \beta_{10}\text{ROA}_{it} + \beta_{11}\text{MAJOR\_CITY}_{it} + \beta_{12}\text{CITY\_LEADER}_{it} + \beta_{13}\text{NATL\_LEADER}_{it} + \Sigma\, \beta_t\text{YEAR}_{it} + \Sigma\, \beta_l\text{SIC2}_{lt} + \varepsilon$$

Panel A: Pre-SOX Sample (Years 1993-2001)

		Model #1		Model #2		Model #3	
Variable	**Expected Sign**	**Coefficient Estimate**	**Logit p-value**	**Coefficient Estimate**	**Logit p-value**	**Coefficient Estimate**	**Logit p-value**
Intercept		-1.763	<.001	-1.760	<.001	-1.747	<.001
BUSY_FYE	+	0.098	0.069	1.677	0.002	-0.145	0.148
BUSY*WLC_NATL	+			-2.094	0.004		
BUSY*WLC_CITY	+					0.353	0.003
DA		-0.009	0.880	-0.009	0.875	-0.009	0.878
LOSS	+	0.324	<.001	0.324	<.001	0.326	<.001
GC_OPINION	+	0.912	0.040	0.920	0.039	0.895	0.044
SIZE	-	-0.258	<.001	-0.259	<.001	-0.260	<.001
LEVERAGE		-0.005	0.444	-0.005	0.451	-0.005	0.450
REC_MERGE	+	0.114	0.022	0.117	0.019	0.114	0.022
REV_GROWTH		0.003	0.047	0.003	0.049	0.003	0.043
ROA		-0.003	0.887	-0.001	0.953	-0.003	0.903
MAJOR_CITY	+	0.093	0.042	0.098	0.032	0.076	0.099
CITY_LEADER	-	0.045	0.455	0.050	0.410	0.044	0.470
NATL_LEADER	-	-0.066	0.326	0.016	0.830	-0.076	0.258
YEAR	-/+	(not reported)		(not reported)		(not reported)	
SIC2	-/+	(not reported)		(not reported)		(not reported)	
Chi-square		1,732.00		1,740.27		1,740.65	
(p-value)		<.001		<.001		<.001	
Pseudo R-square		0.1227		0.1233		0.1233	
n		34,638		34,638		34,638	

Table 9 (Continued)

Panel B: Post-SOX Sample (Years 2003-2005)

		Model #1		Model #2		Model #3	
Variable	**Expected Sign**	**Coefficient Estimate**	**Logit p-value**	**Coefficient Estimate**	**Logit p-value**	**Coefficient Estimate**	**Logit p-value**
Intercept		0.809	0.110	0.809	0.110	0.817	0.105
BUSY_FYE	+	-0.354	0.003	-0.613	0.454	-0.522	0.019
BUSY*WLC_NATL	+			0.344	0.749		
BUSY*WLC_CITY	+					0.243	0.370
DA		-0.074	0.386	-0.075	0.382	-0.074	0.388
LOSS	+	0.114	0.272	0.114	0.271	0.118	0.254
GC_OPINION	+	0	0	0	0	0	0
SIZE	-	-0.441	<.001	-0.441	<.001	-0.442	<.001
LEVERAGE		0.087	0.306	0.086	0.310	0.084	0.322
REC_MERGE	+	-0.068	0.563	-0.068	0.559	-0.069	0.554
REV_GROWTH		0.006	0.421	0.006	0.422	0.006	0.420
ROA		0.089	0.150	0.088	0.151	0.089	0.146
MAJOR_CITY	+	0.057	0.554	0.056	0.561	0.050	0.606
CITY_LEADER	-	0.160	0.202	0.163	0.195	0.162	0.196
NATL_LEADER	-	-0.016	0.908	-0.028	0.842	-0.027	0.843
YEAR	-/+	(not reported)		(not reported)		(not reported)	
SIC2	-/+	(not reported)		(not reported)		(not reported)	
Chi-square		586.37		586.47		587.18	
(p-value)		<.001		<.001		<.001	
Pseudo R-square		0.1775		0.1775		0.1777	
n		8,091		8,091		8,091	

Variables are as defined in Table 1.
This table presents the logistic regression results of the probability of auditor switching. The models control for the fixed-effects of industry (SIC2) and time (YEAR). There are two panels in this table. Panel A is for the pre-SOX sub-sample (34,638 pooled cross-sectional observations) and covers years 1993 to 2001. Panel B is for the post-SOX sample (8,091 pooled cross-sectional observations) and covers years 2003 to 2005.