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Auditor Workload Compression and Busy Season Auditor Switching

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SYPNOSIS: This study investigates the impact of the busy season and concomitant concentrated demands on audit resources on the likelihood of auditor switching. Hereafter, we refer to the concentration of companies with the same fiscal year-end date within an auditor's client portfolio as "workload compression." Despite the economic significance of December year-end clients for audit firms and the challenges imposed by workload compression, the busy season remains a relatively unexplored area of study in the archival auditing literature (Sweeney and Summers 2002). This study represents an attempt to fill this void and validate some of the findings of prior behavioral studies from an empirical perspective. We employ a sample of 10,238 company-year observations for years 2004 through 2007 and find evidence consistent with December year-end companies having a lower likelihood of auditor switching than that of non-December year-end companies. However, we also find evidence of a significantly positive association between the likelihood of auditor switching and workload compression. Thus, our results suggest that it is not just the fiscal year-end month of a client that matters, but the concentration of busy season companies within an auditor's client portfolio also affects the auditor-client relationship.

Keywords: auditor switching; busy season; December year-end; workload compression.

Data Availability: Data are available from public sources identified in the paper.

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INTRODUCTION

More than half of all publicly traded companies in the U.S. have a fiscal year-end date of December, creating a condition known to auditors as the *busy season*.[1] This period stretches the resources of audit firms to the limit and causes long work hours for their auditors. Prior behavioral studies present evidence indicating that the high resource demands of the busy season affect auditor performance and behavior (Alderman and Dietrick 1982; Kelley and Margheim 1990; Raghunathan 1991; Willett and Page 1996; Sweeney and Summers 2002; Coram et al. 2004). Yet, this unique period remains a relatively unexplored area of study in the archival auditing literature (Sweeney and Summers 2002). Given the economic and practical significance of the busy season to the auditing profession, we empirically investigate the potential effects of this period on the likelihood of auditor switching. This study also considers the extent to which the distribution of fiscal year-end companies within an auditor's client portfolio places concentrated demands on audit resources. We investigate these demands at the local office-level and, hereafter, we refer to them as *workload compression*.

The behavioral accounting literature has issued a general call for research concerning the role of work pressures on the auditor-client relationship. DeZoort and Lord (1997) and Sweeney and Summers (2002) acknowledge the limited amount of formal research on the impact of the busy season on auditor performance and conclude that the demands of this period increase job burnout. Sweeney and Summers (2002) also note that most extant research on work pressures relates to behavioral-based studies in auditing, which are limited by the extent that experimental treatments are able to reflect real-world settings. To extend the behavioral-based research on work pressures, we focus on a distinct audit event, namely auditor switching. Prior studies suggest that auditor switching can be both costly and disruptive (DeAngelo 1981b; Beattie and Fearnley 1995; Arrunada and Paz-Ares 1997; Blouin et al. 2007; Martinis et al. 2009). Therefore, it is important to better understand the role of the busy season and auditor workload compression as catalyst factors for auditor switching. To accomplish this goal, we develop an archival measure of auditor workload compression, which is operationalized as the ratio of audit fees from all audit engagements with the same fiscal year-end month of a client to total audit fees generated by a local office of an audit firm during a year.

The auditor report lag literature provides some basis for this study by proposing that the length of the report lag is a function of the concentrated demands placed upon an audit engagement with constrained resources. These demands include factors such as the timing of fieldwork, a client's internal controls, complexity, financial health, overall risk, and the fiscal year-end date of a client (e.g., Ashton et al. 1987; Ashton et al. 1989; Newton and Ashton 1989; Bamber et al. 1993; Schwartz and Soo 1996; Knechel and Payne 2001; Ettredge et al. 2006). However, the focus of our study is instead on the determinants of auditor switching, given the absence of prior empirical research formally investigating whether workload compression resulting from the concentration of busy season companies within an auditor's client portfolio leads to significant events such as auditor switching.

Our sample includes 10,238 company-year observations for the years 2004 through 2007. We find evidence consistent with December year-end companies having a lower likelihood of auditor

[1] Table 2 shows that 70.99 percent of the observations in the sample have a fiscal year-end date of December. Other related studies present similar proportions of December year-end companies. For instance, Hertz (2006) employs a sample of companies with auditor resignations and dismissals during the immediate pre- and post-SOX (U.S. House of Representatives [SOX] 2002) periods. The proportion of observations with a ''busy season'' year-end date in her sample is 78 percent for the post-SOX period. The proportion of December year-end companies in Francis et al. (2005), a study whose sample includes observations from companies with continuing auditor engagements, is 68.9 percent.

switching than that of non-December year-end companies. This result is consistent with economic predictions of higher switching transaction costs for busy season companies and their auditors. Following prior economic literature, the prediction is based upon an increased availability of audit resources and competition among auditors for non-December year-end engagements. In contrast, the results for the proxies for workload compression present evidence of a positive association between workload compression and the likelihood of auditor switching. This latter result provides evidence that workload compression has a damaging effect on the auditor-client relationship, despite the presumption of higher switching transaction costs for busy season companies and their auditors. We also find that the number of competing auditors within geographical proximity to a company is positively associated with auditor switching, which is supportive of the hypothesized effects of competition and switching transaction costs. Overall, our results provide evidence that the availability of local audit resources during the busy season and the effects of workload compression on the auditor-client relationship affect the likelihood of auditor switching.

Our findings contribute to the general discussion among policymakers and accounting practitioners regarding the impact of recent significant events and regulatory changes on the operating environment of auditors. For instance, policymakers could benefit from considering the workload compression effects documented in this study when proposing regulatory changes that may place increased demands on audit resources, including new mandates to comply with accelerated deadlines or perform additional audit procedures. Our findings also have implications to researchers and practitioners wanting to obtain a broader understanding of the underlying determinants of auditor switching, given that we identify and explore different covariates previously overlooked by the archival literature. For instance, we develop an extended model of the auditor-switching event that includes controls for the availability of competing auditors in proximity to a company and the length of the auditor report lag. Last, this study is responsive to the general call for research analyzing audit-related issues at the local, city-specific level (DeFond et al. 2005). In this regard, we use a proxy for auditor workload compression that is estimated at the local office-level and was developed using methods similar to those in the auditor industry specialization literature.

We organize the remainder of this study as follows. The next section presents background information and develops the hypotheses. The third section describes the sample selection procedures and research methods. The fourth section offers descriptive statistics and the regression results. The fifth and final section presents a summary and the conclusions.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

The concentration of audit clients around the calendar year-end is a well-known condition in auditing practice. Prior studies show that December year-end companies usually account for approximately 70 percent of a firm's total audit practice (e.g., Francis et al. 2005; Hertz 2006). In response, audit firms manage the constraints imposed by traditional busy seasons by shifting audit procedures to interim periods or adopting ''continuous auditing'' strategies. However, despite auditors' ability to shift work to interim periods, certain audit procedures cannot be performed until the fiscal year has ended or shortly thereafter (American Institute of Certified Public Accountants [AICPA] 2006). As a result, December year-end clients and the concomitant workload compression conditions these companies create are distinct challenges in the allocation of available audit resources. A report of the Panel on Audit Effectiveness of the former Public Oversight Board (2000, 105) recognizes the potential detrimental impact of these conflicts and states that:

> pressures can create an environment in which audit quality might be compromised if engagement team members, at any level, perceive that their individual performance is measured primarily by meeting time deadlines and budget estimates. These threats to audit

> quality frequently appear at or near the completion of the engagement in the form of client pressures on the engagement team to "*finalize the audit*" *and hurry the issue-resolution process*. (emphasis added)

In response to these pressures, among others, Public Company Accounting Oversight Board (PCAOB) Auditing Standard No. 7 (PCAOB 2010) has recently imposed stricter quality review requirements, including a statement of concurrence and approval by a second audit partner.

Despite the impact and relevance of workload pressures on extant auditing guidance, the busy season is still a relatively unexplored area of formal study in the empirical auditing literature. Even so, it is common practice in empirical auditing research to make design choices that depend on the fiscal year-end date of observed companies. For example, some studies incorporate an indicator variable to control for the presence of December year-end companies in the sample under the notion that the auditing and financial reporting qualities of busy season companies might be different.[2] Other studies contain sample restrictions based on the fiscal year-end date of observed companies, although this is most often performed for pragmatic, econometric, or research design reasons.[3] Overall, these restrictions induce concerns about potential biases resulting from differences in the risk characteristics, operating models, or audit traits of December year-end companies. Thus, there is a need for formal empirical research aimed at investigating whether relevant audit issues equally affect December and non-December year-end companies.

It can be argued that recent technological and auditing advances have alleviated the potentially detrimental effects of the busy season on auditors' performance and behavior. For example, Shu (2000) theorizes that technological advances, in connection with a noticeable expansion into consulting and other nonaudit services, partially explain the auditor resignation transactions examined in her study of auditor switching during the period of 1985 to 1996. However, the post-SOX environment proposes new challenges to auditors, such as the preparation of reports on internal control over financial reporting, compliance with the accelerated filing requirements of the Securities and Exchange Commission (SEC) (SEC 2002), and PCAOB's Audit Standard No. 7. These regulatory requirements have had the general effect of increasing the number of procedures to be performed by auditors and have further compressed their workloads (Bierstaker et al. 2006). Early empirical evidence on the potential effects of these new conditions comes from Cassell et al. (2010), who suggest that auditors used the post-SOX environment to adjust their client portfolios and balance their risk exposure relative to the availability of constrained audit resources. Thus, the busy season and workload compression as potential determinants of auditor switching are of renewed interest in the current operating environment of auditors.

In this study, we posit that the busy season should be associated with a lower likelihood of switching due to higher switching transaction costs for December year-end companies and their auditors. Client switching costs are particularly relevant in certain service industries characterized by repeated purchases and transactions that require building a relationship, such as auditing (Harris and Duellman 2008). Economic theory in this area predicts an inverse relation between competition for new clients and the costs associated with switching service providers (Klemperer 1987, 1995; Harris and Duellman 2008). In an auditing context, this means that fewer potential clients and greater amounts of available audit resources during the off-busy season period lead to greater

[2] The following are examples of studies that include an indicator variable to control for the presence of December year-end observations: Gul (1999), Gul and Tsui (2001), Knechel and Payne (2001), Ferguson and Stokes (2002), Abbott et al. (2003), Ferguson et al. (2003), Gul et al. (2003), and Francis et al. (2005).

[3] As stated by one of the anonymous referees, choosing December year-end clients makes programming more tractable and allows the researcher to form zero-investment hedge portfolios. The following are examples of studies that either only include calendar year-end observations or completely exclude them from their samples: Roulstone (2003), Schrand and Wong (2003), Atiase et al. (2004), and Abbott et al. (2006).

competition among auditors and lower switching transaction costs for their clients. For nonbusy season companies, this decreases switching costs or the costs associated with identifying and selecting a new auditor. The converse applies for busy season companies.

Although prior economic literature primarily takes a client's perspective, the impact of the busy season on an auditor's switching costs is also of concern. Due to the constraining resource demands of this period, the client acceptance and replacement costs of auditors can be affected. For instance, auditors may need to consider the opportunity costs of devoting audit resources to incorporate a new client into their practice versus improving the audit and examination procedures performed on existing clients. Furthermore, audit risk and uncertainty about the integrity of a potential client's internal control system are of increased importance during periods of limited audit resources. Thus, switching costs can manifest themselves in the form of opportunity costs, monetary expenditures, additional cognitive efforts, increased risk, and uncertainty about new business relationships (Klemperer 1987, 1995).[4]

In sum, the level of competition and switching costs within the audit market follows from a disproportionally high number of companies with a fiscal year-end date of December, while auditors' ability to obtain additional resources to fulfill the audit service demands of these companies is constrained. In contrast, nonbusy season engagements are concomitant with greater amounts of competition among auditors and greater availability of audit resources. The above predicts that we should see a lower likelihood of auditor switching among busy season engagements due to higher switching costs for both clients and auditors. Our first hypothesis, expressed in the alternative, is as follows:

H1: The likelihood of auditor switching is lower among December year-end companies.

Although the economic literature would associate greater switching transaction costs with busy season clients, the extant behavioral audit literature also suggests that the concentration or compression of auditing work may have detrimental effects on audit quality and auditor behavior. Prior behavioral studies present evidence that time budget pressures can impair the auditor-client relationship, providing incentives for auditor switching. For example, Sweeney and Summers (2002) find that the heightened workload demands of the busy season significantly increase job burnout and lead to a depersonalization of auditor commitment. There is also evidence indicating that resource constraints and time budget pressures may lead auditors to engage in dysfunctional behaviors or perform substandard audit work. Some of the audit quality-reducing acts documented in prior studies include premature signoffs, superficial reviews of audit documentation, and acceptance of weak client explanations (Alderman and Dietrick 1982; Kelley and Margheim 1990; Raghunathan 1991; Willett and Page 1996; Coram et al. 2004). In addition, Beattie and Fearnley (1995) identify client dissatisfaction with audit quality as the second most-stated reason for auditor switching.

Assuming that auditors and their clients recognize the potentially detrimental effects of workload compression on the auditor-client relationship and audit quality, we expect a positive association between the concentration of companies with the same fiscal year-end month within an auditor's client portfolio and the likelihood of auditor switching. This discussion leads to the following hypothesis, expressed in the alternative:

H2: The likelihood of auditor switching is positively associated with the level of auditor workload compression.

[4] The theoretical development of customer switching costs and competitive markets is predominately based upon the analytical work of P. Klemperer (see Klemperer [1987, 1995] for a discussion of this economic literature stream). Harris and Duellman (2008) provide a summary of this literature and a discussion of its application to audit markets.

Our hypotheses propose that auditor switching is influenced by the busy season and the workload compression conditions experienced by auditors. Moreover, we posit that these factors have opposing marginal effects on the likelihood of auditor switching. Our research is built on the premise that the audit product is in part determined by the unique characteristics of the specific local office performing the engagement (Francis et al. 1999). AICPA Practice Alert 2003-3 (AICPA 2003) specifies that auditors should annually assess whether their firm has the necessary resources to staff continuing engagements and ensure that the conduct of audits meets adequate levels of professional due care and competence. This assessment is particularly important at the local office level since audit resources and capacity are costly to transfer from one office to another. Given the importance and office-specific nature of audit resources, local office partners play a crucial role in the portfolio management decisions of a firm (Bell et al. 2002). Likewise, the level of satisfaction of a company with the performance of its auditors reflects their experiences with the assigned audit team, as opposed to the population of all available partners and staff at the national level. Thus, our investigation of the impact of the busy season and workload compression on auditor switching is particularly germane at the local office level. Following the lead of prior related studies (e.g., Reynolds and Francis 2000; Ferguson et al. 2003; Francis et al. 2005; Krishnan 2005; Gaver and Paterson 2007), we operationalize the proxy for auditor workload compression at the local office level.

SAMPLE SELECTION AND RESEARCH METHOD

Sample

We use a panel of publicly traded companies in the U.S. for the calendar years 2004 through 2007. The initial sample contained 70,730 company-year observations, from which we exclude companies not audited by Big N firm auditors (n = 25,259) and companies missing information in Compustat or Audit Analytics to operationalize the study variables (n = 33,470). We limit the sample to audits conducted by Big N firms since these firms play a dominant role in the market for audit services and their client portfolios are significantly larger and more homogeneous than those of lower-tier firms. In addition, the results in Landsman et al. (2009) show that Big N firms absorb an economically significant portion of all auditor switches every year, while the U.S. Government Accountability Office (GAO) asserts that Big N firms conducted 82 percent of all audits of large public companies examined during a special investigation (GAO 2008). Thus, concentrating our analyses on audit engagements performed by Big N firms allows us to exercise a higher level of control over the base level of resources available to auditors and the costs associated with transferring those resources among the different local offices of a firm (Francis et al. 2005). Last, we cannot observe the proportion of nonpublic companies in the client portfolio of each local office. To address this limitation, we eliminate observations audited by local offices of Big N firms with less than ten publicly traded clients (n = 1,763) since smaller local offices could have different proportions of nonpublicly traded companies in their client portfolios.[5] This restriction also helps to ensure that sample observations come from local offices with well-diversified client portfolios.

Audit fees and auditor identification data, such as audit firm name and local office city, come from Audit Analytics; all other variables come from Compustat. The final sample is composed of 10,238 company-year observations. There are 3,525 distinct companies and 163 different Big N local offices represented in the final sample. Untabulated results show that the distribution of companies in the sample is relatively even among the different Big N firms in business during the

[5] In earlier versions of the study, we conducted similar tests without restricting the sample to auditor offices with ten or more publicly traded clients. We obtained qualitatively similar results, consistent with our general predictions. We appreciate an anonymous reviewer for suggesting this additional sample restriction.

period under study. Ernst and Young, LLP has the largest share of sample observations (32.09 percent), while KPMG, LLP has the smallest share of sample observations (19.21 percent).

Regression Model

Our regression model investigates the differential likelihood of auditor switching as a function of the December busy season, auditor workload compression, and other auditor- and client-related factors known to affect the likelihood of auditor switching. We estimate the model using logistic regression, where the dependent variable, *SWITCH*, takes a value of 1 if an auditor-client engagement is discontinued, and 0 otherwise.[6] The regression equation is as follows:

$$\begin{aligned} SWITCH_{i,t} = {} & \beta_0 + \beta_1 BUSY\_FYE_{i,t-1} + \beta_2 AUD\_WLC_{f,t-1} + \beta_3 ABS\_DA_{i,t-1} \\ & + \beta_4 REV\_GROWTH_{i,t-1} + \beta_5 ICOFR_{i,t-1} + \beta_6 REPORT\_LAG_{i,t-1} \\ & + \beta_7 M\&A_{i,t-1} + \beta_8 INV\_REC_{i,t-1} + \beta_9 ROA_{i,t-1} + \beta_{10} LOSS_{i,t-1} \\ & + \beta_{11} LEVERAGE_{i,t-1} + \beta_{12} CASH_{i,t-1} + \beta_{13} ABN\_FEES_{i,t-1} \\ & + \beta_{14} MISMATCHED_{i,t-1} + \beta_{15} NUM\_AUDITOR_{i,t-1} \\ & + \beta_{16} SHORT\_TENURE_{i,t-1} + \beta_{17} SIZE_{i,t-1} + \beta_{18} IND\_LEADER_{i,t-1} \\ & + \lambda_m YEAR_m + \delta_n SIC2_n + \varepsilon_{i,t} \end{aligned}$$

where *i* subscripts for company, *t* for time, and *f* for local auditor office. Below, we present a discussion of the independent variables of interest, *BUSY_FYE* and *AUD_WLC*, followed by a description of the control variables.

Busy Season Clients and Auditor Workload Compression

There are two independent variables of interest in this study, *BUSY_FYE* and *AUD_WLC*. *BUSY_FYE* is an indicator variable that equals 1 if a company has a fiscal year-end date of December, and 0 otherwise. This variable is intended to capture the effects of audit market competition and auditor switching costs among December year-end companies. *AUD_WLC* proxies for the level of workload compression of a local auditor office during the fiscal year-end month of a client. We operationalize this latter variable as the ratio of audit fees from all audit engagements with the same fiscal year-end month of a client to total audit fees generated by a local office of a firm during a year. Higher values for *AUD_WLC* are indicative of higher concentrations of companies with the same fiscal year-end date within an auditor's client portfolio. We note that *AUD_WLC* is intended as a *relative* measure of auditor workload compression and should not be interpreted as a proxy for absolute capacity or resource utilization. We use all available company-year observations in Compustat and Audit Analytics for the estimation of this variable.

Control Variables

Our regression model includes controls for audit risk, financial risk, clientele mismatch, and other general factors known to affect the markets for audit services (e.g., Shu 2000; Hertz 2006; Ettredge et al. 2007; Cenker and Nagy 2008; Landsman et al. 2009).

[6] The research methods in this study do not distinguish between auditor dismissals and resignations. Landsman et al. (2009) assert that the two-way partition, although common in prior research, may not fully capture the underlying dynamics of auditor switching. The researchers state that auditors may give clients the opportunity to dismiss them because resignations could affect their ability to attract new clients. In addition, clients may rush to dismiss an auditor they believe is about to resign because resignations may be viewed negatively by investors and regulators.

Audit Risk

Our controls for audit risk, *ABS_DA*, *REV_GROWTH*, *ICOFR*, *REPORT_LAG*, *M&A*, and *INV_REC*, account for factors that may affect the likelihood of financial statement misstatements, which in turn increases the likelihood of auditor switching. *ABS_DA* is the absolute value of the performance-adjusted discretionary accruals of a company. Abbott et al. (2006) find evidence that auditors spend more time performing the audits of clients with income-increasing accruals and, as such, these companies impose additional capacity constraints on their auditors. In contrast, income-decreasing discretionary accruals could be the result of an overly conservative audit, which increases the likelihood of auditor dismissal. We estimate the absolute value of discretionary accruals using the cross-sectional version of the Jones (1991) model and correct for financial performance using the methods introduced in Kothari et al. (2005). We expect a positive coefficient for this variable. *REV_GROWTH* is the change in total revenues scaled by lagged total assets. We expect a positive coefficient for this variable since audit risk is higher for clients that experience significant levels of expansion in their operations (Woo and Koh 2001).

Audit risk is also greater when a client has an ineffective internal control system, which increases the likelihood of misleading financial statements and auditor litigation (Landsman et al. 2009). Thus, we include an indicator variable to control for the presence of management- or auditor-reported issues on internal control over financial reporting (*ICOFR*). We expect this variable to be positively associated with the likelihood of auditor switching. Knechel and Payne (2001) find a positive correlation between the length of the auditors' report lag and busy season audits. *REPORT_LAG* is the log of the number of days between the fiscal year-end date of a company and the signoff date in the auditors' opinion report. We expect a positive coefficient for this variable. *REPORT_LAG* is also intended to mitigate the concern that our workload compression measure could be acting as a proxy for alternative risk factors that can manifest themselves in the auditors' report lag.[7] *M&A* is an indicator that takes a value of 1 if a company experiences significant merger or acquisition activity during the current or the last year, and 0 otherwise. This variable controls for the impact of mergers and acquisitions on the audit demands of a client. We expect a positive coefficient for this variable. *INV_REC* is the ratio of inventory plus receivables to total assets. Consistent with Krishnan (1994), we expect a positive coefficient for this variable.

Financial Risk

Financial risk is the risk that a client's economic condition will deteriorate in either the short or the long term (Johnstone and Bedard 2004). Our controls for financial risk are *ROA*, *LOSS*, *LEVERAGE*, and *CASH*. *ROA* is net income before extraordinary items divided by average total assets. We expect a negative coefficient for this variable since profitable companies pose less financial risks for their auditors (Landsman et al. 2009). *LOSS* is an indicator that equals 1 if a company suffered a loss during the current or prior year, and 0 otherwise. Companies experiencing financial losses are more likely to switch auditors (Schwartz and Soo 1996). Thus, we expect *LOSS* to display a positive coefficient. *LEVERAGE* is the ratio of debt to total assets. We expect a positive coefficient for this variable given that financial leverage increases the risk of default on outstanding debt (DeFond and Jiambalvo 1993; Woo and Koh 2001). *CASH* measures the level of liquidity of a company as the ratio of cash to total assets. The lower the liquidity, the higher the level of financial risk associated with a client. Therefore, we expect a negative coefficient for this variable.

[7] We thank an anonymous referee for this suggestion.

Clientele Mismatch

The controls in this section are intended to capture additional attributes of the auditor-client relationship that can affect the likelihood of auditor switching. The variables are *ABN_FEES*, *MISMATCHED*, *NUM_AUDITOR*, and *SHORT_TENURE*. *ABN_FEES* is the log of abnormal audit fees, which we estimate using the methods and fee model in Francis et al. (2005). The economic profit generated from each audit engagement is an unobservable. However, we posit that *ABN_FEES* should be correlated with the incremental fee realization or profit contribution of a client. In addition, Beattie and Fearnley (1995) identify excessive fees as one of the most commonly stated reasons for auditor switches. The audit fee model used to estimate *ABN_FEES* was statistically significant with an R^2 of 71.20 percent (untabulated).

MISMATCHED is an indicator variable that equals 1 if a company is classified as ''incorrectly aligned'' with its current Big N auditor, and 0 otherwise. Specifically, we operationalize the model in Shu (2000) to obtain an estimate of the probability that an auditor from a Big N firm should perform an audit. We then classify companies with predicted probabilities below a predetermined cutoff point as ''incorrectly aligned'' with their current auditor type (i.e., Big N versus non-Big N). Similarly, we classify companies with predicted probabilities above the predetermined cutoff point as ''correctly aligned'' with their current auditor type.[8] We expect this variable to display a positive coefficient since auditor switching is more likely to occur in the presence of a disconnect between the financial or operating characteristics of a company and the objective function of its auditors (Shu 2000; Landsman et al. 2009).

Extending the auditor geography literature, we also consider the availability of competing auditors to service a company. Following Jensen et al. (2008), we include a variable that captures the number of auditors within close proximity to a company. Specifically, *NUM_AUDITOR* is the log of number of local auditor offices within a 100-mile radius of the corporate headquarters of a company. This variable controls for the level of market saturation and auditor competition within a company's geographical area. Thus, we expect a positive coefficient for this variable. *SHORT_TENURE* is an indicator that equals 1 if an auditor has conducted an audit for less than four years, and 0 otherwise. Previous evidence on the relation between tenure and auditor switching is conflicting. Stice (1991) asserts that shorter tenures are associated with lower client-specific knowledge and a higher risk of litigation, therefore increasing the likelihood of auditor switching. Conversely, Geiger and Raghunandan (2002) state that auditors have an incentive to keep their newly acquired clients long enough to at least offset the initial start-up costs associated with their engagements. As such, we express no expectation for the direction of the estimated coefficient for *SHORT_TENURE*.

Other Factors

We include additional variables to control for the general nature of the auditor and client operating environments. *SIZE* is the log of total assets. We expect the estimated coefficient for this variable to be negative since auditor switching is relatively more expensive for larger companies and their auditors (DeAngelo 1981a, 1981b). *IND_LEADER* is an indicator variable that equals 1 if the market share of an auditor at the local or national level is greater than 30 percent, and 0 otherwise. This variable is based on the yearly audit fees generated by all auditors in each two-digit

[8] While not included in the sample of this study, non-Big N clients with predicted probabilities above the predetermined cutoff point are classified as ''incorrectly aligned,'' and non-Big N clients with predicted probabilities below the predetermined cutoff point are classified as ''correctly aligned.'' See Table 1 and Shu (2000) for more details on the determination of the cutoff point values and the operationalization of the *MISMATCHED* variable.

SIC industry group and is intended to capture the differential likelihood of switching when an auditor is considered an industry leader at the local or national level. We expect *IND_LEADER* to display a negative coefficient since prior studies document a lower likelihood of switching for clients of industry-specialist auditors (Cenker and Nagy 2008). *YEAR* is a set of fiscal year indicators. These indicators are intended to control for temporal and structural differences that may affect the likelihood of auditor switching and for general changes in the operating conditions of auditors. *SIC2* is a set of indicator variables based on the first two digits of the SIC code of a company. Table 1 presents a summary description of the variables discussed in this section.

EMPIRICAL RESULTS

Univariate Statistics

Table 2 through Table 4 present the univariate results of this study. Table 2 presents the frequency distributions of companies with continuing versus noncontinuing audit engagements. As depicted on this table, the proportion of observations in the sample with a fiscal year-end date of December is 70.99 percent. We estimate the proportion of December and non-December year-end companies with noncontinuing engagements and find that 5.24 percent (381/7,268) of December year-end companies have a noncontinuing auditor engagement. In contrast, 7.91 percent (235/2,970) of non-December year-end companies have a noncontinuing engagement. These proportions are significantly different from each other (p-value < 0.001). This lends partial support to H1 by providing preliminary evidence that the likelihood of auditor switching is proportionally lower among December year-end companies.

Table 3, Panel A, presents descriptive statistics for companies with continuing versus noncontinuing auditor engagements. The mean values for *BUSY_FYE* show that there are lower concentrations of December year-end companies in the noncontinuing engagements subgroup. This supports the evidence in Table 2 that companies with a fiscal year-end date of December have a lower tendency to engage in auditor switching.[9] The mean values for *AUD_WLC* are also consistent with this pattern. However, this follows from the construction of the sample since *AUD_WLC* is highly correlated with the fiscal year-end of a client. We address this seemingly contradictory result to H2 later, in the discussion of Panel B of this table.

Table 3, Panel A, also shows significant differences among the audit risk controls. We find that companies in the noncontinuing engagements subgroup have higher discretionary accruals (*ABS_DA*), experience lower levels of growth (*REV_GROWTH*), are more likely to have internal control disclosures (*ICOFR*), have longer auditor report lags (*REPORT_LAG*), and carry higher levels of inventory and receivables (*INV_REC*). Thus, these results indicate that companies with auditor switching activity carry higher levels of audit risk for their auditors. The controls for financial risk indicate that companies in the noncontinuing engagements subgroup have less profitable operations (*ROA*) and are more likely to have a history of recent losses (*LOSS*). However, companies in this sample subgroup also have better levels of liquidity (*CASH*). The univariate statistics for the financial risk indicators generally confirm the expectation that companies with noncontinuing engagements carry higher levels of financial risk for their auditors.

The controls for clientele mismatch indicate that companies with noncontinuing engagements pay higher abnormal fees (*ABN_FEES*), are more likely to be mismatched with their current Big N auditor (*MISMATCHED*), and are surrounded by a larger number of local auditor offices (*NUM_AUDITOR*). These findings are consistent with our expectations for the clientele mismatch

[9] Assuming that there was no difference, we would expect both columns to reflect the overall rate of December year-end clients of approximately 70.99 percent (see Table 2).

TABLE 1

Variable Definitions

SWITCH = 1 if an auditor-client engagement is discontinued, and 0 otherwise;
BUSY_FYE = 1 if a company has a fiscal year-end date of December, and 0 otherwise;
AUD_WLC = ratio of total audit fees generated by a local office of an auditor during the fiscal year-end month of a client to total audit fees generated by the local office during a year;
BUSY_HIGH_WLC = 1 if a company has a fiscal year-end date of December and *AUD_WLC* is greater than December's yearly workload compression median, and 0 otherwise;
BUSY_LOW_WLC = 1 if a company has a fiscal year-end date of December and *AUD_WLC* is less or equal to December's yearly workload compression median, and 0 otherwise;
ABS_DA = absolute value of performance adjusted discretionary accruals (see Kothari et al. 2005);
REV_GROWTH = change in total revenues scaled by lagged total assets;
ICOFR = 1 if the report on internal control over financial reporting discloses internal control issues, and 0 otherwise;
REPORT_LAG = log of number of days between the fiscal year-end date of a company and the signoff date in the auditors' opinion report;
M&A = 1 if a company experienced significant merger and acquisition activity during the current or the last year, and 0 otherwise;
INV_REC = ratio of inventory plus receivables to total assets;
ROA = net income before extraordinary items divided by average total assets;
LOSS = 1 if a company suffered a loss during the current or the prior year, and 0 otherwise;
LEVERAGE = ratio of debt to total assets;
CASH = cash to total assets;
ABN_FEES = log of abnormal audit fees (see Francis et al. 2005);
MISMATCHED = 1 if a company is classified as ''incorrectly aligned'' with their current Big N auditor, and 0 otherwise (see Shu 2000);
NUM_AUDITOR = log of number of local auditor offices within a 100-mile radius of the corporate headquarters of a company;
SHORT_TENURE = 1 if an auditor has conducted the audit for less than four years, and 0 otherwise;
SIZE = log of total assets;
IND_LEADER = 1 if an auditor's industry market share at the local or national level is greater than 30 percent, and 0 otherwise;
YEAR = set of year indicator variables; and
SIC2 = set of industry indicator variables.

controls. Companies in the noncontinuing engagements subgroup are also smaller in average (*SIZE*). In sum, the descriptive statistics presented in Table 3, Panel A, are generally consistent with those in previous studies of auditor switching employing similar variables, mainly Krishnan and Krishnan (1997), Shu (2000), and Landsman et al. (2009).

In Table 3, Panel B, we present the mean values of *AUD_WLC* by continuing versus noncontinuing engagements and by December versus non-December year-end companies. As shown in the first row in this panel, the mean value of *AUD_WLC* is significantly greater for December year-end companies with noncontinuing engagements (0.734 versus 0.787; p-value = < 0.001). This finding provides support to H2. The second row in this panel shows similar descriptives for non-December year-end companies. In this row, the mean value of *AUD_WLC* is instead significantly greater for companies with continuing engagements (0.069 versus 0.052; p-value = < 0.001). However, the average values of *AUD_WLC* are much lower for non-December

TABLE 2

Frequency Distribution

	Continuing Engagements	Noncontinuing Engagements	Row Total
December YE Subtotal	6,887	381	7,268
			70.99%
Non-December YE Subtotal	2,735	235	2,970
			29.71%
Column Total	9,622	616	10,238
	93.98%	6.02%	100.00%

December YE versus Non-December YE Companies with Noncontinuing Engagements
December YE companies: 5.24% (381/7,268)
Non-December YE companies: 7.91% (235/2,970)
Two-tailed test of difference in proportions: z-value = 5.11; p-value < 0.001

Each cell presents the number of company-year observations in sample subgroup. The proportion of observations in each row or column as a percentage of total observations is also presented. There are 10,238 company-year observations in the sample.

year-end companies overall (0.069 and 0.052 versus 0.734 and 0.787), which is consistent with workload compression being a nonissue among non-December year-end engagements.

Table 4 presents the Pearson correlation coefficients among the independent variables. We estimated the correlation coefficients on this table using all available company-year observations (n = 10,238). The highest correlation is for *BUSY_FYE* and *AUD_WLC* at 82.6 percent. However, this is an expected result since 70.99 percent of the observations in the sample have a fiscal year-end date of December (see Table 2), aligning December year-end companies with auditors that have higher levels of workload compression. We address the potential econometric issues introduced by this condition in the multivariate analysis section of this study. Other variable pairs with high correlations are *SIZE* and *ABN_FEES*, with a correlation of 52.1 percent, and *SIZE* and *MISMATCHED*, with a correlation of −51.7 percent. These are also expected results since larger companies are assessed higher audit fees (and concomitant higher abnormal fees) and are usually better matched with a Big N auditor. All other variable pairs show correlations within normal limits.

Regression Results

Tables 5 and 6 present the logistic regression results. All models in these tables are statistically significant and have pseudo R^2s of approximately 17.5 percent. In Table 5, Model 1, the estimated coefficient for *BUSY_FYE* is negative and significant, lending support to H1 and providing evidence that companies with a fiscal year-end date of December are less likely to engage in auditor switching. In Model 2, we replace *BUSY_FYE* with *AUD_WLC* and obtain a negative regression coefficient for *AUD_WLC*. This is contrary to our expectations in H2, but we posit that *AUD_WLC* could be acting as a proxy for *BUSY_FYE* in this model. Thus, in Model 3 we consider *BUSY_FYE* and *AUD_WLC* in conjunction and find evidence that these variables have opposite effects on the likelihood of auditor switching. That is, the likelihood of switching is lower among busy season companies, but increases with the level of auditor workload compression.

The estimated regression coefficients for the control variables in the regression equation are generally significant and in the expected direction. For the sake of parsimony, our discussion

TABLE 3

Descriptive Statistics

Panel A: Descriptive Statistics by Continuing versus Noncontinuing Engagements

	Continuing Engagements (n = 9,622)			Noncontinuing Engagements (n = 616)			Difference
Variable	**Mean**	**Median**	**Std. Dev.**	**Mean**	**Median**	**Std. Dev.**	**(Cont − Non)**
BUSY_FYE	0.716	1.000	0.451	0.619	1.000	0.486	***
AUD_WLC	0.545	0.720	0.345	0.507	0.669	0.376	***
ABS_DA	0.085	0.049	0.118	0.103	0.061	0.138	***
REV_GROWTH	0.153	0.083	0.382	0.122	0.057	0.405	*
ICOFR	0.071	0.000	0.257	0.182	0.000	0.386	***
REPORT_LAG	4.174	4.205	0.306	4.347	4.317	0.434	***
M&A	0.269	0.000	0.443	0.245	0.000	0.431	
INV_REC	0.235	0.195	0.186	0.262	0.216	0.215	***
ROA	−0.015	0.038	0.264	−0.175	0.005	1.524	***
LOSS	0.353	0.000	0.478	0.567	1.000	0.496	***
LEVERAGE	0.219	0.160	0.264	0.207	0.112	0.270	
CASH	0.232	0.134	0.248	0.256	0.162	0.257	**
ABN_FEES	0.048	0.051	0.571	0.167	0.160	0.633	***
MISMATCHED	0.212	0.000	0.409	0.484	0.000	0.500	***
NUM_AUDITOR	4.677	4.500	0.957	4.758	4.673	0.936	**
SHORT_TENURE	0.180	0.000	0.384	0.185	0.000	0.389	
SIZE	14.023	13.956	1.134	13.464	13.502	1.171	***
IND_LEADER	0.758	1.000	0.428	0.740	1.000	0.439	

Panel B: *AUD_WLC* Mean by Continuing versus Noncontinuing Engagements

	Continuing Engagements	Noncontinuing Engagements	Row Total	Difference (Cont − Non)
December Year-End	0.734	0.787	0.737	***
	n = 6,887	n = 381	n = 7,268	
Non-December Year-End	0.069	0.052	0.068	***
	n = 2,735	n = 235	n = 2,970	
Column Total	0.545	0.507	0.543	***
	n = 9,622	n = 616	n = 10,238	

*, **, *** Denote significance at the < 0.10, < 0.05, and < 0.01 levels, respectively, two-tailed test of difference in sample means.
Variables are as defined in Table 1.

applies to all models in Table 5 since the regression results for these variables are qualitatively equivalent in all models. Among the controls for audit risk, we find that companies with internal control disclosures (*ICOFR*), longer auditor report lags (*REPORT_LAG*), and high levels of inventory and receivables (*INV_REC*) are more likely to engage in auditor switching. The controls for financial risk indicate that companies with a history of recent losses (*LOSS*) have a higher likelihood of switching. However, the likelihood is lower for companies that are more profitable (*ROA*) or have better levels of liquidity (*CASH*).

TABLE 4

Correlation Table

Panel A: Correlation Table for Variables *BUSY_FYE* to *ROA*

	BUSY_FYE	*AUD_WLC*	*ABS_DA*	*REV_GROWTH*	*ICOFR*	*REPORT_LAG*	*M&A*	*INV_REC*	*ROA*
BUSY_FYE		0.826	0.058	0.012	0.014	0.078	0.002	−0.175	−0.050
		<0.001	<0.001	0.210	0.158	<0.001	0.811	<0.001	<0.001
AUD_WLC	0.826		0.032	0.005	0.023	0.073	0.004	−0.154	−0.039
	<0.001		0.001	0.649	0.020	<0.001	0.651	<0.001	<0.001
ABS_DA	0.058	0.032		0.091	−0.033	0.052	−0.055	−0.098	−0.224
	<0.001	0.001		<0.001	0.001	<0.001	<0.001	<0.001	<0.001
REV_GROWTH	0.012	0.005	0.091		−0.022	−0.025	0.138	0.139	0.087
	0.210	0.649	<0.001		0.028	0.012	<0.001	<0.001	<0.001
ICOFR	0.014	0.023	−0.033	−0.022		0.326	0.004	0.021	−0.014
	0.158	0.020	0.001	0.028		<0.001	0.707	0.037	0.160
REPORT_LAG	0.078	0.073	0.052	−0.025	0.326		0.001	0.020	−0.087
	<0.001	<0.001	<0.001	0.012	<0.001		0.906	0.046	<0.001
M&A	0.002	0.004	−0.055	0.138	0.004	0.001		0.000	0.042
	0.811	0.651	<0.001	<0.001	0.707	0.906		0.976	<0.001
INV_REC	−0.175	−0.154	−0.098	0.139	0.021	0.020	0.000		0.114
	<0.001	<0.001	<0.001	<0.001	0.037	0.046	0.976		<0.001
ROA	−0.050	−0.039	−0.224	0.087	−0.014	−0.087	0.042	0.114	
	<0.001	<0.001	<0.001	<0.001	0.160	<0.001	<0.001	<0.001	
LOSS	0.051	0.031	0.216	−0.105	0.095	0.194	−0.080	−0.156	−0.288
	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
LEVERAGE	0.106	0.131	−0.040	−0.070	0.013	0.059	−0.009	−0.021	−0.096
	<0.001	<0.001	<0.001	<0.001	0.180	<0.001	0.386	0.036	<0.001
CASH	0.009	−0.046	0.367	−0.009	−0.033	0.018	−0.132	−0.352	−0.211
	0.351	<0.001	<0.001	0.383	0.001	0.070	<0.001	<0.001	<0.001
ABN_FEES	0.010	0.042	0.007	0.040	0.242	0.254	0.035	0.045	−0.053
	0.325	<0.001	0.503	<0.001	<0.001	<0.001	0.000	<0.001	<0.001
MISMATCHED	−0.017	−0.057	0.278	−0.037	−0.050	0.135	−0.124	−0.062	−0.257
	0.093	<0.001	<0.001	0.000	<0.001	<0.001	<0.001	<0.001	<0.001

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TABLE 4 (continued)

	BUSY_FYE	*AUD_WLC*	*ABS_DA*	*REV_GROWTH*	*ICOFR*	*REPORT_LAG*	*M&A*	*INV_REC*	*ROA*
NUM_AUDITOR	0.029	0.042	0.033	−0.022	0.000	0.066	−0.018	−0.017	−0.019
	0.003	<0.001	0.001	0.027	0.962	<0.001	0.073	0.081	0.049
SHORT_TENURE	0.016	0.029	0.072	0.115	0.022	0.055	−0.004	−0.025	0.000
	0.103	0.004	<0.001	<0.001	0.029	<0.001	0.714	0.012	0.969
SIZE	0.115	0.158	−0.183	−0.016	0.161	−0.014	0.113	0.061	0.133
	<0.001	<0.001	<0.001	0.115	<0.001	0.170	<0.001	<0.001	<0.001
IND_LEADER	−0.002	0.012	−0.075	−0.001	0.028	−0.023	0.004	0.028	0.058
	0.855	0.226	<0.001	0.908	0.005	0.018	0.724	0.004	<0.001

Panel B: Correlation Table for Variables *LOSS* to *IND_LEADER*

	LOSS	*LEVERAGE*	*CASH*	*ABN_FEES*	*MISMATCHED*	*NUM_AUDITOR*	*SHORT_TENURE*	*SIZE*	*IND_LEADER*
BUSY_FYE	0.051	0.106	0.009	0.010	−0.017	0.029	0.016	0.115	−0.002
	<0.001	<0.001	0.351	0.325	0.093	0.003	0.103	<0.001	0.855
AUD_WLC	0.031	0.131	−0.046	0.042	−0.057	0.042	0.029	0.158	0.012
	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	0.226
ABS_DA	0.216	−0.040	0.367	0.007	0.278	0.033	0.072	−0.183	−0.075
	<0.001	<0.001	<0.001	0.503	<0.001	0.001	<0.001	<0.001	<0.001
REV_GROWTH	−0.105	−0.070	−0.009	0.040	−0.037	−0.022	0.115	−0.016	−0.001
	<0.001	<0.001	0.383	<0.001	0.000	0.027	<0.001	0.115	0.908
ICOFR	0.095	0.013	−0.033	0.242	−0.050	0.000	0.022	0.161	0.028
	<0.001	0.180	0.001	<0.001	<0.001	0.962	0.029	<0.001	0.005
REPORT_LAG	0.194	0.059	0.018	0.254	0.135	0.066	0.055	−0.014	−0.023
	<0.001	<0.001	0.070	<0.001	<0.001	<0.001	<0.001	0.170	0.018
M&A	−0.080	−0.009	−0.132	0.035	−0.124	−0.018	−0.004	0.113	0.004
	<0.001	0.386	<0.001	0.000	<0.001	0.073	0.714	<0.001	0.724
INV_REC	−0.156	−0.021	−0.352	0.045	−0.062	−0.017	−0.025	0.061	0.028
	<0.001	0.036	<0.001	<0.001	<0.001	0.081	0.012	<0.001	0.004
ROA	−0.288	−0.096	−0.211	−0.053	−0.257	−0.019	0.000	0.133	0.058
	<0.001	<0.001	<0.001	<0.001	<0.001	0.049	0.969	<0.001	<0.001
LOSS		0.082	0.342	0.023	0.384	0.045	0.070	−0.217	−0.069
		<0.001	<0.001	0.022	<0.001	<0.001	<0.001	<0.001	<0.001

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TABLE 4 (continued)

	LOSS	*LEVERAGE*	*CASH*	*ABN_FEES*	*MISMATCHED*	*NUM_AUDITOR*	*SHORT_TENURE*	*SIZE*	*IND_LEADER*
LEVERAGE	0.082		−0.300	0.051	−0.194	0.034	0.030	0.153	0.061
	<0.001		<0.001	<0.001	<0.001	0.001	0.002	<0.001	<0.001
CASH	0.342	−0.300		−0.111	0.466	0.069	0.020	−0.335	−0.104
	<0.001	<0.001		<0.001	<0.001	<0.001	0.040	<0.001	<0.001
ABN_FEES	0.023	0.051	−0.111		−0.023	0.176	0.065	0.521	0.014
	0.022	<0.001	<0.001		0.018	<0.001	<0.001	<0.001	0.171
MISMATCHED	0.384	−0.194	0.466	−0.023		0.018	0.020	−0.517	−0.145
	<0.001	<0.001	<0.001	0.018		0.067	0.046	<0.001	<0.001
NUM_AUDITOR	0.045	0.034	0.069	0.176	0.018		−0.009	0.124	−0.060
	<0.001	0.001	<0.001	<0.001	0.067		0.382	<0.001	<0.001
SHORT_TENURE	0.070	0.030	0.020	0.065	0.020	−0.009		−0.061	−0.019
	<0.001	0.002	0.040	<0.001	0.046	0.382		<0.001	0.056
SIZE	−0.217	0.153	−0.335	0.521	−0.517	0.124	−0.061		0.176
	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001
IND_LEADER	−0.069	0.061	−0.104	0.014	−0.145	−0.060	−0.019	0.176	
	<0.001	<0.001	<0.001	0.171	<0.001	<0.001	0.056	<0.001	

Variables are as defined in Table 1. Pearson correlation coefficients were estimated using all available company-year observations in the sample (n = 10,238).

TABLE 5

Logistic Regression of Auditor Switching
Sample Period: 2004–2007

$$SWITCH_{i,t} = \beta_0 + \beta_1 BUSY\_FYE_{i,t-1} + \beta_2 AUD\_WLC_{f,t-1} + \beta_3 ABS\_DA_{i,t-1} + \beta_4 REV\_GROWTH_{i,t-1} + \beta_5 ICOFR_{i,t-1} + \beta_6 REPORT\_LAG_{i,t-1} + \beta_7 M\&A_{i,t-1} + \beta_8 INV\_REC_{i,t-1} + \beta_9 ROA_{i,t-1} + \beta_{10} LOSS_{i,t-1} + \beta_{11} LEVERAGE_{i,t-1} + \beta_{12} CASH_{i,t-1} + \beta_{13} ABN\_FEES_{i,t-1} + \beta_{14} MISMATCHED_{i,t-1} + \beta_{15} NUM\_AUDITOR_{i,t-1} + \beta_{16} SHORT\_TENURE_{i,t-1} + \beta_{17} SIZE_{i,t-1} + \beta_{18} IND\_LEADER_{i,t-1} + \lambda_m YEAR_m + \delta_n SIC2_n + \varepsilon_{i,t}$$

Variable	Expected Sign	Model 1		Model 2		Model 3	
		Coeff. Estimate	Pr > Chi-square	Coeff. Estimate	Pr > Chi-square	Coeff. Estimate	Pr > Chi-square
Intercept	+/−	1.830	0.024	1.906	0.011	1.843	0.012
BUSY_FYE	−	−0.333	<0.001			−0.487	0.009
AUD_WLC	+			−0.383	0.004	0.216	0.016
ABS_DA	+	0.293	0.220	0.279	0.231	0.298	0.217
REV_GROWTH	+	−0.134	0.855	−0.139	0.135	−0.134	0.855
ICOFR	+	0.911	<0.001	0.913	<0.001	0.909	<0.001
REPORT_LAG	+	0.734	<0.001	0.733	<0.001	0.733	<0.001
M&A	+	0.102	0.174	0.103	0.173	0.103	0.174
INV_REC	+	0.996	<0.001	0.999	0.001	0.999	<0.001
ROA	−	−0.130	0.078	−0.125	0.080	−0.130	0.079
LOSS	+	0.376	<0.001	0.375	<0.001	0.377	<0.001
LEVERAGE	+	0.012	0.473	0.013	0.471	0.010	0.478
CASH	−	−0.620	0.009	−0.649	0.007	−0.607	0.011
ABN_FEES	+/−	0.677	<0.001	0.688	<0.001	0.677	<0.001
MISMATCHED	+	0.543	<0.001	0.538	<0.001	0.541	<0.001
NUM_AUDITOR	+	0.102	0.034	0.104	0.031	0.101	0.018
SHORT_TENURE	+/−	−0.298	0.011	−0.299	0.011	−0.298	0.006
SIZE	−	−0.632	<0.001	−0.638	<0.001	−0.634	<0.001
IND_LEADER	−	0.305	0.998	0.308	0.998	0.304	0.998
YEAR	+/−	(not reported)		(not reported)		(not reported)	
SIC2	+/−	(not reported)		(not reported)		(not reported)	
n =		10,238		10,238		10,238	
Pseudo R^2 =		0.1753		0.1747		0.1754	

Variables are as defined in Table 1. Logistic regression of the probability of auditor switching where continuing engagements are evaluated as baseline condition. One-sided p-values reported when signs are predicted; two-sided p-values reported otherwise.

TABLE 6

Logistic Regression of Auditor Switching
Sample Period: 2004–2007

$$SWITCH_{i,t} = \beta_0 + \beta_1 BUSY\_HIGH\_WLC_{i,t-1} + \beta_2 BUSY\_LOW\_WLC_{i,t-1} + \beta_3 ABS\_DA_{i,t-1} + \beta_4 REV\_GROWTH_{i,t-1} + \beta_5 ICOFR_{i,t-1} + \beta_6 REPORT\_LAG_{i,t-1} + \beta_7 M\&A_{i,t-1} + \beta_8 INV\_REC_{i,t-1} + \beta_9 ROA_{i,t-1} + \beta_{10} LOSS_{i,t-1} + \beta_{11} LEVERAGE_{i,t-1} + \beta_{12} CASH_{i,t-1} + \beta_{13} ABN\_FEES_{i,t-1} + \beta_{14} MISMATCHED_{i,t-1} + \beta_{15} NUM\_AUDITOR_{i,t-1} + \beta_{16} SHORT\_TENURE_{i,t-1} + \beta_{17} SIZE_{i,t-1} + \beta_{18} IND\_LEADER_{i,t-1} + \lambda_m YEAR_m + \delta_n SIC2_n + \varepsilon_{i,t}$$

Variable	Expected Sign	Coeff. Estimate	Pr > Chi-square
Intercept	+/−	1.841	0.012
BUSY_HIGH_WLC	−	−0.306	0.005
BUSY_LOW_WLC	−	−0.456	0.001
ABS_DA	+	0.293	0.220
REV_GROWTH	+	−0.134	0.856
ICOFR	+	0.910	<0.001
REPORT_LAG	+	0.733	<0.001
M&A	+	0.102	0.175
INV_REC	+	0.998	0.001
ROA	−	−0.130	0.079
LOSS	+	0.377	<0.001
LEVERAGE	+	0.012	0.473
CASH	−	−0.610	0.010
ABN_FEES	+/−	0.678	<0.001
MISMATCHED	+	0.542	<0.001
NUM_AUDITOR	+	0.102	0.017
SHORT_TENURE	+/−	−0.298	0.011
SIZE	−	−0.633	<0.001
IND_LEADER	−	0.304	0.998
YEAR	+/−	(not reported)	
SIC2	+/−	(not reported)	

n = 10,238
Pseudo R^2 = 0.1754

Test of Difference in Regression Coefficients
H1: *BUSY_HIGH_WLC* = *BUSY_LOW_WLC* is significant (p = 0.021)

Variables are as defined in Table 1. Logistic regression results of the probability of auditor switching where continuing engagements are evaluated as baseline condition. One-sided p-values reported when signs are predicted; two-sided p-values reported otherwise.

In terms of the proxies for clientele mismatch, we find that abnormal fees (*ABN_FEES*) and mismatched clients are positively associated with switching, a result consistent with the findings in Beattie and Fearnley (1995). In addition, the likelihood of switching is higher for companies surrounded by larger numbers of local auditor offices (*NUM_AUDITOR*), consistent with those companies having more choices with respect to audit service providers and lower switching or search costs. This result provides indirect evidence of the inverse association between auditor competition and switching transaction costs (Klemperer 1995; Harris and Duellman 2008). We also find that the likelihood of switching is lower among companies with auditor tenures of less than four years

(*SHORT_TENURE*) and among larger companies (*SIZE*). Last, we do not find that companies audited by an industry specialist (*IND_LEADER*) are more likely to engage in auditor switching.

Table 6 presents the results for an alternative specification of the main regression model. The purpose of this alternative model is to assess the robustness of the regression results and address the potential econometric issues introduced by the high level of correlation between *BUSY_FYE* and *AUD_WLC*.[10] In the alternative model, we replace *BUSY_FYE* and *AUD_WLC* with two indicator variables based on the fiscal year-end date of a company and the level of workload compression of its auditors. That is, *BUSY_HIGH_WLC* equals 1 if a company has a fiscal year-end date of December and *AUD_WLC* is greater than December's yearly workload compression median, and 0 otherwise. Similarly, *BUSY_LOW_WLC* equals 1 if a company has a fiscal year-end date of December and *AUD_WLC* is less or equal to December's yearly workload compression median, and 0 otherwise. The estimated coefficients for *BUSY_HIGH_WLC* and *BUSY_LOW_WLC* are intended to present the differential likelihood of auditor switching for December year-end companies while partially controlling for the level of workload compression of their auditors.

As depicted in Table 6, and consistent with the results presented in Table 5, negative and significant coefficients for *BUSY_HIGH_WLC* and *BUSY_LOW_WLC* indicate that auditor switching is less likely to occur among December year-end companies. This lends additional support to H1. Moreover, the estimated regression coefficients also show that auditor switching is significantly more likely to occur when an audit is performed by a local office whose level of workload compression is greater than December's workload compression median (i.e., $-0.306 > -0.456$). We performed a test of difference in regression coefficients and find that this difference is significant ($p = 0.021$). This provides further evidence that the likelihood of auditor switching is increasing with the level of auditor workload compression, lending additional support to H2. In sum, the likelihood of auditor switching remains lower among busy season companies, while there is evidence of a positive association between the likelihood of switching and the level of auditor workload compression. The results for the control variables in this table are qualitatively equivalent to those presented in Table 5.

Sensitivity Tests

The workload compression issues investigated in this study could be exacerbated by the recently enacted accelerated filing regulation of the Securities and Exchange Commission. This regulation decreases the amount of time certain companies have to file their 10-K reports from 90 days to 60 days after the completion of their fiscal year, and applies to larger companies meeting certain public float requirements. In order to control for the changing audit demands of accelerated filers, we define *SIZE* as a dichotomous variable for accelerated versus nonaccelerated filers. This variable is intended to capture the increased workload demands brought about by SOX's Section 404 that would only affect accelerated filers.[11] Untabulated results show that the estimated regression coefficients for this alternative specification of the variable *SIZE* are negative and significant, as in the original version of this variable. Our primary regression results remain qualitatively unaffected.

Carcello and Neal (2003) consider the impact of corporate governance on auditor switching in the presence of going-concern opinions. Their results suggest that audit committee independence is

[10] We also estimate the variance inflation factors (VIFs) for the explanatory variables in the regression model and find values of 2.0 or lower.

[11] We would like to acknowledge the anonymous reviewers for recommending this sensitivity test. We would also like to thank Tom Hardy from Audit Analytics for granting us access to the necessary data for the operationalization of this variable.

an important determinant of auditor switching, regardless of the existence of going-concern conditions. However, they find that the impact of board experience and financial expertise was significant only in the presence of a going-concern opinion. Based upon the above, we include controls for the percentage of directors who are independent and the percentage of directors who serve on more than two other boards (data obtained from the IRRC database).[12] The regression results remain qualitatively unchanged after the inclusion of these corporate governance variables in the model. In addition, we include an indicator variable to control for the potential effects of going-concern opinions. Companies receiving a going-concern opinion carry higher levels of risk for their auditors and are more likely to engage in auditor switching (Schwartz and Soo 1996; Krishnan and Krishnan 1997). The estimated regression coefficients for the going-concern controls are positive but not significant; the primary regression results remain unchanged.

We also estimate the regression employing variables other than audit fees to operationalize the *AUD_WLC* variable. These alternative specifications respond to concerns about the selection of audit fees as a weighting factor to proxy for the level of auditor workload compression. The weighting factors we test are total fees, net sales audited, and total assets audited. The interpretation of the regression results remains generally unchanged after these alternative specifications of the *AUD_WLC* variable. We also use the year in the auditors' opinion report (i.e., signoff date) instead of the year associated with the financial statement period to operationalize *AUD_WLC*. The purpose of this latter test is to eliminate potential timing issues associated with audits completed several months after the fiscal year-end date of a company and by financial statements re-audits. The regression results are not sensitive to this alternative specification of the audit period.

Last, we re-estimate the regression model using the ''raw'' values of discretionary accruals in place of *ABS_DA*. The estimated regression coefficients of the variables of interest only change slightly and the estimated coefficients for raw discretionary accruals are not significant in any of the models. We also explore the possibility of defining this control as an indicator for companies with income-increasing discretionary accruals. Consistent with the raw discretionary accruals results, the coefficients for the variables of interest only change slightly and the estimated regression coefficients for the indicator for income-increasing discretionary accruals remain not significant.

CONCLUSIONS AND LIMITATIONS

We investigate the impact of the busy season and its concomitant concentrated demands on audit resources as factors explaining the likelihood of auditor switching. We employ a measure of auditor workload compression that captures the concentration of busy season audit engagements within an auditor's client portfolio at the local office level. We find evidence indicating that December year-end companies have a lower tendency to engage in auditor switching than that of non-December year-end companies. However, we also find evidence of a significantly positive association between workload compression and the likelihood of auditor switching. Thus, our results suggest that it is not just the fiscal year-end month of a client that matters, but the concentration of busy season companies within an auditor's client portfolio also affects the auditor-client relationship. These results are consistent with extant economic theory and prior behavioral research suggesting that busy seasons and workload compression have opposing effects on the likelihood of auditor switching.

[12] We acknowledge that this is not a perfect overlap with Carcello and Neal's (2003) variables. The variables we test attempt to identify director metrics that would be correlated with audit committee characteristics, but that would also display a sufficient amount of variation during our sample period. We note that, in contrast to Carcello and Neal (2003), our study covers a time period where all audit committee members are required to be fully independent and at least one member has to be an accounting or a financial management expert.

This study is relevant and timely given the economic significance of busy season clients and ongoing concerns about the impact of work overload on audit engagements. To our knowledge, this study also represents one of the first archival attempts to formally investigate the potential effects of auditor workload compression on a specific audit outcome. In addition, the role of portfolio and resource management continues to be a concern among audit firms and regulators. For example, as a part of the auditor inspection process, the PCAOB has expressed interest in whether audit engagements are impacted by partners who are overloaded with work. In response to these concerns, audit firms are now required to commit more partner hours and resources to engagement quality reviews for fiscal years beginning on or after December 15, 2009 (PCAOB 2010). These issues are heightened by the extent of pressures and disproportionate amount of work that take place during the busy season for auditors of publicly traded companies (Tackett et al. 2004).

The findings of this study and the opportunities for future research are, however, contingent upon some limitations. The busy season and auditor workload compression are well-established conditions in auditing practice, but the possibility of performing interim work induces a potentially imperfect measurement of the workload compression construct. On the other hand, GAAS provides explicit guidance on the performance of audit work during interim periods (i.e., SAS No. 110) (AICPA 2006). Thus, to the extent that the opportunities to perform interim work are the same for all auditors, the intercept of our models could be shifted, but the estimated regression coefficients for *AUD_WLC* will not be biased. We encourage future research to further consider the potential impact of interim period procedures on workload compression and auditor report outcomes.

Another limitation is that the presence of nonpublic companies within an auditor's client portfolio limits our ability to measure the full extent of auditor workload compression. The impact of this condition depends on the unobserved proportion of nonpublic companies within a client portfolio, as well as the cross-sectional distribution of nonpublic clients in each local office. This is an inherent limitation of most proxy measures using audit fees as a weighting factor, such as the market share-based measures in the auditor industry specialization literature. We attempt to control for the potential impact of these conditions through our sample selection procedures and the use of control variables. However, we believe that the literature would benefit from the development of new research methods that would further address this limitation. From a regulatory perspective, engagement quality reviews may also want to consider the incremental impact of nonpublic companies on the overall workload pressures within an auditor's client portfolio.

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