Auditor-Provided Non-Audit Services and Audit Effectiveness and Efficiency: Evidence from pre- and post-SOX Audit Report Lags

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ABSTRACT

The Sarbanes Oxley Act (SOX) of 2002 effectively bars an auditor from providing non-audit services to an audit client based on the often-stated belief that the economic bonding that occurs between a client and the auditor undermines the auditor's independence, and thus reduces the quality of the audit. However, the accounting profession strongly debated this view and counter-argued that auditor provided non-audit services create efficiencies to the audit process that benefit the client. Prior research provides mixed evidence on the effect of non-audit services on audit quality. We examine the effect of auditor-provided non-audit services on both the effectiveness and efficiency of the audit using audit report lag as a measure of audit efficiency. Knechel and Payne (2001) demonstrate that under certain conditions audit report lag can be interpreted as a measure of audit efficiency. Based on 5,393 firm-year observations across fiscal years 2000 to 2003 inclusive, we find that discretionary accruals and financial restatements are decreasing in shorter audit report lags when non-audit services fees are higher. This suggests that audit quality is not diminished but is incrementally better when audit report lag is shorter due to knowledge spillovers from auditor provided non-audited services. We also find that the provision of non-audit services is associated with shorter report lags prior to the passage of SOX, which suggests that audits are more efficient when performed in conjunction with auditor-provided non-audit services. We also observe that the link between non-audit services and audit report lag disappeared after SOX became effective. Taken together, and relying on audit report lag as a reasonable proxy for audit efficiency, we conclude that there is some merit to the profession's argument that non-audit services create knowledge spillovers that improve audit effectiveness and efficiency.

Keywords: audit lag; knowledge spillover; non-audit fees; tenure; Sarbanes-Oxley Act.

Data availability: All data are publicly available.

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I. INTRODUCTION

This study investigates the effect of non-audit services provided by an external auditor on the effectiveness and efficiency of the audit of financial statements. Auditor-provided non-audit services have been a controversial topic in the profession for many years and is one of the key issues in debates between regulators and the accounting profession regarding potential threats to auditor independence. Many commentators believe auditors are more lenient in dealing with difficult accounting issues when a client purchases significant amounts of non-audit services from a firm. Although there is anecdotal evidence to support such claims (e.g., Enron, WorldCom and Global Crossing), empirical evidence generally suggests that the level of non-audit services fees does not threaten auditor independence (e.g., DeFond et al. 2002; Ashbaugh et al. 2003; Kinney et al. 2004). Nevertheless, the US Congress introduced the Sarbanes-Oxley Act of 2002 (SOX) to strengthen confidence in US markets following allegations of breaches in auditors' independence that were perceived as contributing to Enron and other accounting scandals. One reform, embodied in section 201 of SOX, prohibits the provision of most non-audit services by the incumbent external auditor.

At the time, the accounting profession generally disagreed with the prohibition of non-audit services and argued that the joint provision of audit and non-audit services improves the performance of the audit. For example, in response to an Securities and Exchange Commission (SEC) proposal in 2000, Barry Melancon, President and CEO of the AICPA, argued "There will be a loss of synergies that exist when a firm provides a broad array of audit and nonaudit services to its clients … In addition, the loss of nonaudit service lines will reduce the scope of knowledge

available at the accounting firms" (Melancon 2000, p.26). Mr. Melancon further argued that the loss of synergies would impair the quality of the audit and increase costs to clients. Steven Wallman, former Commissioner of the SEC (1996, p. 92), remarked that in his opinion prohibiting auditors from providing non-audit services "denies the benefits to the audit function of learning more about the audit client and its business". Mr. Melancon and Commissioner Wallman's remarks drive home the perception that knowledge spills over between the audit and non-audit functions, improving the quality of both.

This study contributes to the debate about non-audit services by examining the relationship between such services and audit effectiveness and efficiency using evidence from audit report lags and fees paid for non-audit services prior to SOX. Knechel and Payne (2001), using proprietary data from an international accounting firm, demonstrated that audit report lag can be used as a proxy for audit efficiency as long as certain externally-observable control variables are incorporated in the analysis. Using a sample of 5,393 firm-year observations over the period 2000 to 2003, we first examine whether shorter audit report lags are associated with more or less effective audits. Our results suggest that audit quality, as measured by discretionary accruals and financial restatements, is not negatively affected by shorter audit report lags, and may be improved. Given this finding, we then examine whether non-audit services are related to audit report lag and find a negative association, i.e, engagements with a higher level of non-audit services are more efficient as evidenced by a shorter audit report lag. Further analysis shows that the efficiency gains from pre-SOX knowledge spillovers have eroded since SOX banned the provision of most auditor-provided non-audit services. Taken together, these results are consistent with the concept of the auditor accumulating client-specific knowledge and expertise that manifests in increased audit quality.

The remainder of this paper progresses as follows: The next section discusses the prior literature and develops empirically testable hypotheses. Section III presents the research method including the sample, empirical model, variable measurement, and data sources. Descriptive statistics and multivariate results are presented in Section IV including the sensitivity analyses. Section V discusses and concludes the study including limitations and avenues for further research.

II. PRIOR RESEARCH & HYPOTHESES DEVELOPMENT

Prior empirical research has reported mixed results concerning the possibility of knowledge spillovers arising from auditor-provided non-audit services that might improve audit effectiveness or efficiency. A considerable amount of prior research has investigated the association between non-audit services fees paid to the external auditor and the quality of the audit. Common measures of audit quality employed in the literature include estimation of earnings management, occurrence of financial restatements, and incidence of going concern modifications. Frankel et al. (2002) report that high levels of non-audit services fees paid to the auditor undermines the quality of the external audit where audit quality is measured as discretionary accruals. However, research subsequent to Frankel et al. (2002) suggests that non-audit services fees paid to the external auditor may not compromise the quality of the audit (e.g., Ashbaugh et al. 2003; Chung and Kallapur 2003). Using financial restatements as a proxy for audit quality, Raghunandan et al. (2003) and Kinney et al. (2004) also document that high non-audit fees paid to the external auditor do not reduce the quality of the audit. Finally, DeFond et al. (2002) show that auditors' going concern modifications are not related to non-audit service fees. The mixed evidence has continued with a recent study by Huang et al. (2007) which shows non-audit services fees paid to the external auditor in the post-SOX period could either enhance

or reduce the quality of the audit. Thus, existing evidence does not provide conclusive support for the idea that non-audit services fees paid to the external audit harm audit quality. Similarly, it is not clear if the joint provision of audit and non-audit services enhances the efficiency of the audit.

In his seminal study, Simunic (1984) argues that there are efficiencies associated with the joint supply of two services because non-audit services and audit services require a common knowledge base about a client. As audit production becomes more efficient, Simunic (1984) argues that cost efficiencies can be passed on to clients, leading to greater purchases of audit services from the incumbent and improving the overall quality of the audit of the financial statements. His results show that clients who purchase both non-audit and audit services from the incumbent auditor pay significantly higher audit fees than those who do not purchase both services from the incumbent. Simunic (1984) concludes that the higher audit fees represents greater quantities of audit services purchased and is evidence of the benefits of knowledge spillovers.[1]

Subsequent research by Palmrose (1986) finds a positive association between audit and non-audit fees for clients purchasing non-audit services from a non-incumbent. This finding suggests that firms purchase more audit and non-audit services in general, regardless of the supplier, which weakens the knowledge spillover argument in Simunic (1984). Abdel-khalik (1990, p. 296) argues that "A priori, the presence of knowledge spillover should not be expected to exert an upward pressure on the cost of audits due to the resultant cost savings". Economic theory suggests that the efficiencies flowing from knowledge spillovers would result in lower costs if a single auditor supplies both services than if the two services are sourced from two

[1] A critical assumption supporting this conclusion is that the market for audit services is competitive, otherwise the increased fees could simply reflect higher profit margins on the services due to non-competitive pricing.

different audit firms. Abdel-khalik (1990) reports no significant difference in audit fees between clients purchasing audit services only and those purchasing both audit and non-audit services. His evidence, consistent with Palmrose (1986), does not support the concept of knowledge spillovers.

Davis et al. (1993) investigate the effects of tax related, accounting related and other non-audit fees on audit hours for a sample drawn from a large international accounting firm. Although the different categories of non-audit service fees have a positive effect on measures of audit effort, they are not significant at conventional levels. They report that tax-related non-audit fees have a positive and marginally significant ($p<0.10$) association with audit hours. Davis et al. (1993) argue that this result is consistent with production synergy based on the assumption that lower audit costs due to knowledge spillovers lead to a greater demand and purchase of audit services. However, Knechel and Payne (2001) provide an alternative argument suggesting that the greater demand for tax related non-audit services is due to complex tax and financial reporting issues that simultaneously create the demand for additional audit work. O'Keefe et al. (1994) examine disaggregated labor hours by rank (partner, manager, senior and staff) but fail to find evidence that audit effort is reduced as a function of the percentage of tax or consulting fees to audit fees.

Knechel and Payne (2001) use proprietary information from an international public accounting firm for 226 engagements with 1991 fiscal year-ends. They investigate evidence of knowledge spillovers using audit lag as the dependent variable and two dummy variables representing the provision of tax services and the provision of management advisory services (MAS) by the incumbent auditor. While the joint provision of MAS reduces audit lag, the joint provision of tax services increases audit lag. Recognizing that audit technology has changed

dramatically since their data were collected in 1991, Knechel and Payne (2001) urge researchers to readdress the association between non-audit services and audit efficiency across a wider, larger, and more recent sample.

Knowledge spillovers, if they exist, can influence the effectiveness or efficiency of an audit, or both. Improvement in audit efficiency is only meaningful if audit quality remains constant or improves. Thus, we start our analysis by first examining the relationship between audit lag and audit quality conditioned on high levels of non-audit services. In general, one might expect that a quick audit involves less auditor effort (Knechel and Payne 2001) and, *ceteris paribus*, may indicate lower audit quality. However, a quick audit may be due to the relative low risk of material misstatement of the client, making it possible to shorten the audit process without undermining audit quality. Of more direct interest in this paper is whether short audit lags occurring in conjunction with high levels of non-audit services undermine audit quality. One possibility is that knowledge spillovers from non-audit services make it easier for the auditor to quickly identify and resolve potential accounting problems. In this case, a decrease in audit lag associated with high levels of non-audit services could indicate an increase in audit effectiveness (quality). Alternatively, it is possible, and of greater concern, that non-audit fees cause the auditor to be less objective towards a client because the auditor is hesitant to disagree or challenge management about contentious accounting issues. In this case, a decrease in audit lag associated with high levels of non-audit services could indicate a decrease in audit effectiveness. Given that the effect of lag and non-audit services on audit quality might go in either direction, and that we are most concerned with a potential loss of audit quality, we state our first hypothesis in the null form:

> H_1: For clients that purchase high levels of non-audit services from their external auditor, there is no association between audit report lag and audit quality.

When the production of two or more goods or services requires a common input, their joint production may yield economies of scope. The outcome is a more efficient allocation of scarce resources across services by reducing duplication of effort in production (e.g., Carlton and Perloff 2005). In the context of the external audit production function, the joint supply of audit and non-audit services requires scarce resources (i.e., audit staff, expertise, time, etc.) to be efficiently and effectively allocated (Knechel, Rouse and Schelleman 2007). If audit quality is not adversely affected by audit lag in the presence of high non-audit fees, we can analyze whether knowledge spillovers generate economies of scope that improve audit efficiency (i.e., synergy across services). Knowledge about a client, including its operating environment and business processes, is a common factor in the production function of the audit firm. Such knowledge may be enriched when the audit firm provides both audit and non-audit services. Consequently, there can be a reduction in transaction costs and production factors such as start-up time and learning effects, resulting in more efficient audits (e.g., Simunic 1984; Davis et al. 1993; O'Keefe et al. 1994; Knechel and Payne 2001). Such synergistic benefits do not arise if the incumbent auditor does not provide, or provides low levels of, non-audit services. Using audit lag as the proxy for audit efficiency (Knechel and Payne 2001), this leads to our second hypothesis:

> H_2: There is a negative association between auditor provided non-audit services and audit report lag.

The Sarbanes-Oxley Act came into force in July 2002. As a result, the provision of most non-audit services to a client by an auditor was banned almost immediately. With this ban in place, the effect of pre-SOX knowledge spillover on audit efficiency would begin to erode over

time and any beneficial impact of non-audit services on the efficient production of the audit would be lost. This leads to our third hypothesis:

> H_3: A negative association between auditor provided non-audit services and audit report lag, if it exists, is stronger in the pre-SOX period than in the post-SOX period.

III. METHOD

Sample

The initial sample consists of 21,702 companies with audit and non-audit fee data available in Compustat over the period 2000 to 2003 inclusive.[2] We use non-audit fees as a proxy for the extent of non-audit services provided by the audit firm although fees include both the cost of the service to the audit firm and a profit margin, and such costs and margins could be different across audit firms. To increase homogeneity in pricing, market niche, and relative audit quality, we restrict the sample to Big 5/4 audit firms, eliminating 360 companies from the sample. Consistent with prior research, we exclude utilities (two-digit SICs between 44 - 49; n = 546) and financial insitutions (two-digit SICs between 60 - 64; n = 5,197). These industries are highly regulated and have unique financial reporting and audit issues. Furthermore, OLS estimation for audit lag for companies in these industries is structurally different from industrial companies (Ashton et al. 1987). We also exclude 68 companies not listed on the NYSE, AMEX and Nasdaq. After excluding companies with missing data, the sample consists of 5,495 firm-year observations over the period 2000 to 2003 inclusive. We also exclude 102 outliers yielding a final multivariate analysis sample of 5,393 firm-year observations.

Empirical Models

[2] We limit our sample to 2000 to 2003 to exclude the effects of Section 404 of Sarbanes-Oxley on our empirical tests. Section 404 requires management to evaluate and attest to their company's internal control system, and auditors to assess management's testimony of the internal controls. These requirements imposed significant costs and steep learning curves which could confound our tests on audit lag. We also do not know how the Section 404 requirements affects the provision of non-audit services by the external auditor, and how the classification of fees across different types of non-audit services is affected by auditor provided services arising from the application of Section 404.

Model to Test Hypothesis H_1

To test Hypothesis H_1, we estimate discretionary accruals using the performance-adjusted cross-sectional modified-Jones model and compute the absolute value of discretionary accruals (ABSDACC) as a proxy for audit quality (Kothari et al. 2005). We then estimate the following model for ABSDACC including a measure of audit report lag conditioned on high non-audit services fees as our main test variable:

$$\begin{aligned} ABSDACC = \; & a + \beta_1 HINAS*SHORTLAG + \beta_2 TENURE + \beta_3 LN\_MKTCAP \\ & + \beta_4 BOOKMKT + \beta_5 OCF\_TA + \beta_6 LOSS + \beta_7 FINANCE \\ & + \beta_8 LEVERAGE + \beta_9 LITIGATION + \beta_{10-} \beta_{12} YEAR\ DUMMY + \varepsilon_i \end{aligned} \quad (1)$$

where:

ABSDACC	Absolute value of discretionary accruals. We estimate discretionary accruals using the performance-adjusted cross-sectional modified-Jones model (Kothari et al. 2005).
HINAS *SHORTLAG	Dummy variable equal to 1 if non-audit services fees greater than the median *and* audit lag is less than or equal to the median, 0 otherwise.
TENURE	The number of consecutive years a client has had the same auditor.
LN_MKTCAP	Natural logarithm of market capitalization.
BOOKMKT	Book value of total assets to market capitalization.
OCF_TA	Operating cash flow deflated by total assets.
LOSS	Dummy variable equal to 1 if net income is negative, 0 otherwise.
FINANCE	Dummy variable equal to 1 if long term debt increases by at least 20% and/or the number of common stock outstanding increases by at least 10% after accounting for stock splits and stock dividends.
LEVERAGE	Ratio of debt to assets.
LITIGATION	Dummy variable equal to 1 if firm operates in one of the following four digit SIC industries that are considered high risk: Drugs (SIC 2833-2836), Computer Equipment (3570-3577), Electronics (3600-3674), Retail (5200-5961) and Computer Programming (7370-7374).
YEAR DUMMY	Three year dummy variables are included: 2001 = 1, 2002 = 1, and 2003 = 1, 0 otherwise.

The control variables in the preceding model are selected based on findings in the prior

literature. We include auditor tenure (TENURE) because Myers et al. (2003) show tenure is associated with discretionary accruals. Firms with high growth (BOOKMKT), losses (LOSS), poor performance (OCF_TA), high leverage (LEVERAGE), new debt or equity (FINANCE), or operate in risky industries that pose greater litigation risk (LITIGATION) have a tendency to engage in earnings management (e.g., Frankel et al. 2002; Ashbaugh et al. 2003; Chung and Kallapur 2003; Huang et al. 2007). We include firm size (LN_MKTCAP) because it is related to discretionary accruals (Frankel et al. 2002; Ashbaugh et al. 2003; Chung and Kallapur 2003). Year dummy variables are included to control for year effects. Note, we also analyze a model where we replace HINAS*SHORTLAG with just the natural logarithm of audit report lag (LN_AULAG, defined in more detail in the next section).

We also test Hypothesis H_1 by estimating a logistic regression for financial restatements. Restatements are considered to be a less subjective measure of audit quality than discretionary accruals. We define financial restatement as economic restatements that are due to managerial discretion. Consistent with prior research (Raghunandan et al. 2003; Kinney et al. 2005), restatements due to changes in GAAP, mergers and acquisitions and others of a non-economic nature are not considered financial restatements for the purposes of our analyses. Based on the financial restatement literature (e.g., Raghunandan et al. 2003; Kinney et al. 2005), our empirical model is as follows:

$$\begin{aligned} RESTMT = \quad & a + \beta_1 \text{ HINAS*SHORTLAG} + \beta_2 TENURE + \beta_3 LN\_MKTCAP \\ & + \beta_4 BOOKMKT + \beta_5 LOSS + \beta_6 FINANCE + \beta_7 LEVERAGE \\ & + \beta_8 LITIGATION + \beta_9 AGE + \beta_{10} AUOP + \beta_{11-} \beta_{13} YEAR\ DUMMY + \varepsilon_i \end{aligned} \quad (2)$$

where HINAS*SHORTLAG, TENURE, LN_MKTCAP, BOOKMKT, LOSS, FINANCE, LEVERAGE, LITIGATION and YEAR DUMMY are as defined for equation (1). Other variables are defined as follows:

RESTMT	Dummy variable equal to 1 if a financial restatement is reported in Audit Analytics.
AGE	Company age measured as the number of years for which total assets is reported in Compustat since 1985.
AUOP	Dummy variable equal to 1 if audit opinion is modified or otherwise contains an explanatory paragraph, 0 otherwise.

Model to Test Hypotheses H_2 and H_3

To test Hypotheses H_2 and H_3, we estimate audit report lag using control variables identified in prior research (e.g., Ashton et al. 1987; 1989; Bamber et al. 1993; Knechel and Payne 2001). To test for differences between the pre-SOX and post-SOX periods (H_3), we also add interactions terms to the base model. The basic empirical model for audit report lag is:

$$\begin{aligned} LN\_AULAG = {} & a + \beta_1 LN\_NASFEE + \beta_2 TENURE + \beta_3 LN\_TA + \beta_4 LEVERAGE \\ & + \beta_5 CACL + \beta_6 LOSS + \beta_7 EPS\_UP + \beta_8 EI\_POS + \beta_9 BIZNUM \\ & + \beta_{10} AGE + \beta_{11} FYE\_DEC + \beta_{12} AUOP + \beta_{13} LN\_AUFEE \\ & + \beta_{14\text{-}18} INDUSTRY + \varepsilon_i \end{aligned} \quad (3)$$

where various terms are defined below and ε_i is the error term. Note, for some tests we replace $\beta_1 LN\_NASFEE$ with one of two interactions terms: $\beta_1 LN\_NASFEE + \beta_2 LN\_NASFEE*Pre\text{-}SOX$ *or* $\beta_1 LN\_NASFEE + \beta_2 - \beta_4 LN\_NASFEE*YEAR$.

Dependent and independent variables

The primary variables of interest in this study are audit report lag and the level of non-audit service fees collected from a client. These variables are defined as follows:

LN_AULAG	The natural logarithm of audit lag, where audit lag is the number of days between the fiscal year-end date and the audit report date. Audit lag as an audit production quantity or efficiency variable is consistent with the notion of knowledge spillovers (Knechel and Payne 2001; Payne and Jensen 2002).
LN_NASFEE	The natural logarithm of total non-audit services fees.
LN_NASFEE* Pre-SOX	The interaction between LN_NASFEE and Pre-SOX (Pre-SOX = 1 if fiscal year-end is prior to July 2002).
LN_NASFEE	

*YEAR	The interaction between LN_NASFEE and individual years 2001, 2002 and 2003.

We measure non-audit services fees as the following fees paid to the auditor based on SEC disclosures: (1) financial information systems design and implementation fees, (2) tax fees, and (3) all other non-audit fees paid to the auditor. Because it is not clear what types of services are classified as 'audit-related fees', we perform additional sensitivity tests related to the measurement of non-audit service fees.[3] In addition, we conduct sensitivity tests using various alternative fee measures such as fee ratio, percentile ranking of fees and 'unexpected' non-audit fees (e.g., DeFond et al. 2002; Frankel et al. 2002).

Control variables

Based on prior research related to audit report lag and audit production, we include a number of control variables in our analysis. TENURE,[4] LEVERAGE,[5] LOSS, AGE, and AUOP[6] are as previously defined. Additional control variables include:

LN_TA	The natural logarithm of total assets. For various reasons (e.g., better internal controls, the need for more timely reporting), prior studies show larger companies have an inverse association with audit lag (Ashton et al. 1989; Bamber et al. 1993; Knechel and Payne 2001).
CACL	Ratio of current assets to current liabilities.

[3] Fees paid to the auditor for 'financial information systems design and implementation' and 'tax services' are not disclosed for each of the years in the sample because of regulatory changes to fee disclosure requirements and the ban on non-audit services imposed by the SOX. Prior to the SEC's revised fee disclosure rules adopted on January 28, 2003 (SEC 2003a), many registrants voluntarily reported fees paid to the auditor for 'audit-related services' and it subsequently became clear some of the fees reported in this category were of a non-audit nature (SEC 2003b). Given such concerns, the SEC revised the fee disclosure rules from three categories ('audit fees', 'financial information systems design and implementation fees' and 'all other fees') to four categories ('audit fees', 'audit-related fees', 'tax fees' and 'all other fees'). In relation to the new fee disclosure categories adopted on January 28, 2003, the SEC states 'audit-related fees' may comprise fees paid to the auditor for assurance and related services that are reasonably related to the performance of the audit or review of the registrant's financial statements. The intent of the clarification is to ensure fees for non-audit services are not classified as audit-related.

[4] See Johnson et al. (2002). We also conduct tests using various cut-offs for long and short audit-firm tenure because there may be a non-monotonic association between audit-firm tenure and audit lag.

[5] Beasley (1996), Kinney et al. (2004), and DeFond et al. (2002) show debt structure and profitability significantly influence the likelihood of financial misreporting and failure, respectively, so we use a number of variables to control for financial risk. It is not possible to use a bankruptcy prediction model index such as the 'Z' score because models are industry and time specific.

[6] Companies with a modified opinion tend to experience a longer audit lag (Ashton et al. 1989; Bamber et al. 1993).

EPS_UP	Dummy variable equal to 1 if EPS increases over the prior year, 0 otherwise.
EI_POS	Dummy variable equal to 1 if extraordinary items are positive, 0 otherwise. There is often significant uncertainty regarding the accounting treatment of extraordinary items that tends to extend the audit and negotiations between the auditor and the client (Ashton et al. 1989; Carslaw and Kaplan 1991; Bamber et al. 1993).
BIZNUM	The number of business segments. Ashton et al. (1987) report that industrial companies with more lines of business have longer audit lag.
FYE_DEC	Dummy variable equal to 1 if fiscal year-end is December, 0 otherwise. Knechel and Payne (2001) report that companies with fiscal year-end falling during the peak audit period experience longer audit lag.
LN_AUFEE	There is evidence that audit fees and non-audit services fees are related (Whisenant et al. 2003). Audit fee is arguably a proxy for audit effort which affects audit lag (e.g., Davis et al. 1993; O'Keefe et al. 1994). Palmrose (1986) and Carcello et al. (2002) posit that higher audit fees are commensurate with high audit quality and higher quality could have implications for audit lag.
INDUSTRY	Indicator variables for Drugs (SIC 2833-2836), Computer Equipment (3570-3577), Electronics (3600-3674), Retail (5200-5961) and Computer Programming (7370-7374). Frankel et al. (2002) suggest certain industries are inherently more risky due to poor controls, incidence of financial misstatements or probability of litigation.

IV. RESULTS

Descriptive Data

Table 1 presents the descriptive results for the entire sample including outliers. The mean (median) audit lag (AULAG) is 43.7 (39) days. The minimum audit lag is six days and the maximum is 435 days. This suggests the presence of outliers so we eliminate 21 firms with an audit lag that is more than three standard deviations from the mean. The mean (median) audit fees (AUFEE) is $922 ($384) thousand and the mean (median) of total non-audit services fees (NASFEE) is $1,137 ($253) thousand. The maximum audit and non-audit fees are approximately $80 million each. We reduce the sample by removing 81 firms with non-audit fees that are more than three standard deviations from the mean, leaving a sample of 5,393 firm-

year observations for the multivariate analyses.[7] Our sample size varies between 5,260 and 5,393 firm-year observations in multivariate tests due to data requirements.

The mean (median) absolute value of discretionary accruals (ABSDACC) is 0.20 (0.06) which is comparable to prior research (e.g., Frankel et al. 2002; Ashbaugh et al. 2003). One hundred and ninety seven (197) financial restatements are observed comprising 3.5% of the total sample. The average company has had the same auditor for at least seven years (TENURE) with a maximum of 18 years. The minimum is zero which indictes that some companies changed auditors during the year used in the analysis. Most of these changes relate to the restructuring of the Big 5 to the Big 4 following the indictment and demise of Arthur Andersen.[8] The average company in the sample reports total assets (TA) of $2,772 million and is financially sound with a debt to asset ratio (LEVERAGE) of 0.21, a current ratio (CACL) of 3.01, and operating cash flow scaled by total assets (OCF_TA) of 0.05. The average (median) book to market (BOOKMKT) and market capitalization (LN_MKTCAP) are 1.97 (0.94) and 6.32 (6.19), respectively. The mean age (AGE) is 11 years with just over two reported business segments (BIZNUM).

A loss (LOSS) is recorded for 2,011 firm-years (36.6%) and an improvement in earnings per share (EPS_UP) is observed for 3,116 firm-years (56.7%). Twenty-percent (1,199) of firms increased debt and/or equity funding (FINANCE) during the sample period. One-hundred and eighty-five firm-years (3.4%) report income-increasing extraordinary items (EI_POS). Seventy-

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[7] The results are qualitatively similar if the data is winzorized at the 1 percent and 99 percent, respectively or if the analyses are performed on the full sample.

[8] Inclusion of an auditor change variable in the model is not significant and does not alter the results; the coefficient on non-audit services fees remains negative and significant ($p < 0.01$). The results are qualitatively similar excluding companies whose auditor was Arthur Andersen. Clients of Arthur Andersen did not have significantly different audit lag relative to clients of the other Big 5. If we include dummy variables representing each of the Big 5/Big 4, the coefficient on non-audit services fees remains negative and significant ($p < 0.01$). Results of these tests are reported in the 'Sensitivity Analyses' section.

seven percent (4,240 firm-years) of the sample have a December fiscal year-end (FYE_DEC) and just over 42 percent (2,332 firm-years) received an unqualified audit opinion with explanatory paragraph (AUOP). Finally, approximately 40% of the sample comprises firms in litigious industries (LITIGATION) with many (12.6%) operating in the computer programming industry (COM_PRG).

<<<<< *Insert Table 1 here* >>>>>

Table 2 classifies the variables in Table 1 by short and long audit lag, along with t-values for tests of differences between the two groups. Firms are classified in the short audit lag group if their audit lag is less than or equal to the median (39 days), and in the long audit lag group otherwise. Table 2 indicates that firms with short audit lag are significantly larger, more liquid, have less debt in their capital structure, seek less financing, have better cash flow, are less likely to report a loss, exhibit longer audit firm tenure, and are less likely to receive a modified opinion. More importantly, firms with short audit lag have significantly higher non-audit services fees and lower absolute value of discretionary accruals (greater audit effectiveness). Firms with long audit lag are significantly more complex (number of business segments), more likely to report income-increasing extraordinary items, and have been listed for a greater number of years. The differences in the non-fee variables reported in Table 2 are consistent with the prior audit lag literature (e.g., Ashton et al. 1987; 1989; Knechel and Payne 2001). Finally, our Chi-square test in Table 2 shows the incidence of financial restatements is lower in firms with short audit lag than in firms with long audit lag.

<<<<< *Insert Table 2 here* >>>>>

Table 3 reports descriptive data by year for audit lag, audit and non-audit service fees, the absolute value of discretionary accruals, and the incidence of financial restatements together with

the F-value and Chi-Square statistics for tests of mean, median and frequency differences across years. While the mean audit lag is stable in 2000 and 2001, it increases by 6% (2.37 days) in 2002, and by 18% (7.46 days) in 2003. The average absolute value of discretionary accruals reaches a high of 0.31 in 2001, and declines to 0.17 and 0.18 in 2002 and 2003, respectively. The value of 0.31 in fiscal 2001 may be indicative of the aggressive accounting practices of many firms at the time. The frequency of financial restatements does not fluctuate considerably over the period.While non-audit services fees (NASFEE) are declining across the years, audit fees (AUFEE) are increasing. The differences in the mean and median across the period for all variables with the exception of financial restatements are statistically significant.

<<<<< *Insert Table 3 here* >>>>>

Correlation results are presented in Table 4. None of the observed correlation coefficients are greater than the 0.80 threshold at which multicollinearity may pose potential problems (Gujarati 2003). Three noteworthy correlations (Pearson) are between measures of firm size and audit fees (LN_TA and LN_MKTCAP with LN_AUFEE r = 0.77, r = 0.66), size and non-audit services fees (LN_TA TA and LN_MKTCAP with LN_NASFEE r = 0.60, r = 0.56) and audit fees and non-audit services fees (LN_AUFEE with LN_NASFEE r = 0.60).[9] These correlations are expected and consistent with prior studies (e.g., Whisenant et al. 2003). The high correlations between size and fees arise because larger companies tend to be more complex and require more auditor resources. With the exception of the Pearson correlation between auditor tenure and firm age (TENURE with AGE r = 0.48) which is consistent with Myers et al. (2003), all other correlations are below 0.48.

<<<<< *Insert Table 4 here* >>>>>

[9] VIF (variance inflation factors) across all tabulated and untabulated OLS results are less than 4.0 and condition indices are below 5.0. These are well below the threshold of 10 at which multicollinearity could pose a mild problem (Gujarati 2003).

Test of Hypothesis H_1

The results for H1 are reported in Table 5, Panels A and B. Panel A reports results for discretionary accruals and Panel B reports results for financial restatements. Both panels report results for two models: (1) with audit lag conditioned on the level of non-audit services fees, and (2) with just audit lag. The reported t-statistics for the OLS in Panel A are based on standard errors adjusted for heteroskedasticity (White 1980). Consistent with prior research (e.g., Myers et al. 2003), the coefficient on audit-firm tenure is negative and significant in both models in Panel A ($p<0.05$), implying that longer tenure enhances audit quality. We also observe in both models that companies that are larger, operating in high risk industries, carrying high levels of debt, experiencing losses, or obtaining new financing through debt or equity are positively associated with the absolute value of discretionary accruals ($p<0.05$ in all cases). Companies with better operating cash flow are negatively associated with the absolute value of discretionary accruals ($p<0.01$). The ratio of book value to market capitalization is not significant in either model. These results are largely consistent with prior research (e.g., Frankel et al. 2002; Ashbaugh et al. 2003; Chung and Kallapur 2003). We observe similar results relating to the control variables for the financial restatement models in Panel B. The two exceptions are that litigation risk and financing are not significant. We find that firm age and the presence of an unqualified audit opinion with explanatory paragraph are positively associated with financial restatements ($p<0.01$).

Of most interest are the results for audit lag conditioned on non-audit services fees. We are concerned that short audit lags occurring in conjunction with high levels of non-audit services might undermine audit quality. That is, we test whether audit quality is lower for clients that acquire high levels of non-audit services from their auditor and experience short audit lag.

We compute the interaction between audit lag and non-audit services fees as follows: Using the median as the cut-off, firms with high non-audit services fees *and* short audit lag (HINAS*SHORTLAG) are coded 1, and 0 otherwise. We find that the coefficient on HINAS*SHORTLAG is negative and marginally significant (β_1 = -0.041, t = -1.82, p<0.10) for the discretionary accruals model, and negative and significant for the financial restatement model (β_1 = -0.38, t = -3.67, p<0.01). This indicates that when clients purchase greater non-audit services from their auditor and experience short audit lag, they also exhibit lower than average discretionary accruals, and are less likely to experience a financial restatement. Our results suggest that audit quality does not decrease, and may increase, when non-audit services fees are high and audit lag is short. In the lag model, the coefficient for LN_AULAG is not significantly associated with discretionary accruals (β_1 = 0.015, t = 0.72, p>0.10) but is positive and significant in the financial restatement model in Table 5 - Panel B (β_1 = 0.57, Wald = 11.11, p<0.01). These results suggest shorter audit lag *per se* does not reduce audit quality but appears to enhance audit quality in terms of financial restatements. In untabulated regressions where we include HINAS and SHORTLAG as main effects variables, we find the coefficients on both these variables are negative and significant at the 1% and 10% levels, respectively for the discretionary accruals model.[10] The coefficient on HINAS is not significant whereas the coefficient on SHORTLAG is negative and significant (p<0.01) in the financial restatement model.

<<<<< *Insert Table 5 here* >>>>>

Test of Hypothesis H_2 and H_3

The OLS results for the tests of hypotheses H_2 and H_3 are presented in Table 6. The

[10] We repeat these analyses for signed, positive and negative accruals. We observe the coefficient on HINAS*SHORTLAG is not significant in any of the models.

reported t-statistics are based on standard errors adjusted for heteroskedasticity (White 1980). Model 1 reports results relating to the effect of non-audit services on audit lag in general. Consistent with the prior audit lag literature (Ashton et al. 1987; Ashton et al. 1989; Bamber et al. 1993; Knechel and Payne 2001), there are significant associations between audit lag and all but one of the control variables, i.e., the exception is the industry variable DRUGS. As expected and consistent with the prior literature, the coefficients on leverage, loss, positive extraordinary items, number of business segments, fiscal year-end is December, and unqualified audit opinion with explanatory paragraph are positive and significant. Conversely, the coefficients on liquidity and improvement in EPS are negative and significant suggesting firms with better financial performance have shorter audit lag. Likewise, larger firms experience shorter audit lag. We find that the coefficient on the age of the company is positive and significant. Industry effects are mixed: The coefficient on DRUGS is not significant but the coefficient on RETAIL is positive and significant suggesting high levels of inventory delay the audit. The coefficients on COMP, COMP_EQUIP, and ELEC are negative and significant. Companies in these high-tech industries may have invested in technologically advanced information processing systems that facilitated relatively rapid report preparation. Moreover, the mixed industry results suggest either auditors allocate more audit resources, or allocate more senior and specialist staff to the audit of such clients. The coefficient on audit-firm tenure (TENURE) is negative and significant ($p<0.01$) in all models. This suggests that audit lag reduces with increasing audit-firm tenure.[11] Finally, we observe a positive and significant coefficient on audit fees. This suggests higher audit fees representing greater audit effort due to the complexity and riskiness of the client prolong the

[11] Because TENURE can have a non-monotonic association with audit lag, consistent with Johnson et al. (2002), we use cut-offs to determine short (3 years or less) and long (9 years or more) audit-firm tenure and investigate how these affect audit lag. We find the coefficient on short audit-firm tenure is positive and significant ($p<0.01$) whereas the coefficient on long audit-firm tenure is negative and significant ($p<0.01$).

audit (Davis et al. 1993; O'Keefe et al. 1994).

Consistent with H_2, the results for Model 1 indicate that the coefficient on non-audit services fees (LN_NASFEE) is negative and significant (β_1 = -0.017, t = -4.00, p<0.01). This suggests that audit lag decreases with increasing levels of auditor-provided non-audit services which is consistent with the knowledge spillover hypothesis, i.e., it suggests that as the level of non-audit services provided by the auditor increases, the audit becomes more efficient (given no loss of audit quality as tested in H_1). This finding is also consistent with the accounting profession's argument that the joint provision of audit and non-audit services create synergies and, hence, improves audit efficiency.

<<<<< *Insert Table 6 here* >>>>>

Given that SOX banned most auditor provided non-audit services, we expect that any knowledge spillovers that existed prior to the ban would begin to erode following the ban. We test this using a pre- and post-SOX comparison. We first classify firm-fiscal-years ending prior to July 2002 as pre-SOX and firm-fiscal-years ending on or after July 2002 as post-SOX.[12] Pre-SOX equals 1 if a firm-fiscal-year is prior to July 2002, and 0 otherwise. We then interact Pre-SOX with LN_NASFEE. We expect the coefficient on the interaction term to be negative in Model 2. For Model 3, we construct interactions with LN_NASFEE using dummy variable for the fiscal-years 2001, 2002 and 2003. The coefficients on the interactions with the dummy variables for 2001 and 2002 are expected to be negative in Model 3, while the interaction with

[12] Since the PCAOB became operational on January 6, 2003, the ban would have the most effect for fiscal-years ending on or after July 2003. However, some audit clients may have realigned their source of non-audit services in anticipation of the SOX-imposed ban so we consider all audits conducted after the passage of SOX and test Hypothesis H_3 by defining the pre-SOX period based on three different cutoff dates: (i) pre-July 2002, (ii) pre-Jan 2003, and (iii) pre-July 2003.Results based on pre-SOX cut-off defined as pre-Jan 2003 and pre-July 2003 are qualitatively similar and are not tabulated. The coefficient on the interaction term LN_NASFEE*Pre-SOX is negative and significant for both variables ($\beta_{\text{pre-Jan 2003}}$ = -0.021, t = -7.91, p<0.01; $\beta_{\text{pre-July 2003}}$ = -0.017, t = -5.64, p<0.01).

the dummy for 2003 should be insignificant if knowledge spillovers dissipate after the SOX ban.

Model 2 in Table 6 shows that the coefficient on LN_NASFEE*Pre-SOX is negative and significant (β_2 = -0.009, t = -3.67, p<0.01). This suggests that auditor-provided non-audit services reduced audit lag in the period before the ban on non-audit services. Model 3 in Table 6 indicates that the coefficient for LN_NASFEE*2001 and LN_NASFEE*2002 are negative and significant (β_{2001} = -0.005, t = -1.78, p<0.05; β_{2002} = -0.010, t = -2.89, p<0.01), whereas the coefficient for LN_NASFEE*2003 is positive and significant (β_{2003} = 0.016, t = 4.68, p<0.01). An F-test of the coefficients for the pre-SOX ban period ($\beta_{2001} + \beta_{2002} < 0$) shows the joint coefficient is negative and significant (F = 7.74, p<0.01). Furthermore, the pre-SOX individual and joint coefficients are significantly different (p<0.01) from the coefficient on the post-SOX ban period. Overall, the results in Table 6 provide evidence consistent with the argument that the ban on most non-audit services has had the effect of increasing audit lags. These results are consistent with hypotheses H_2 and H_3 and suggest that the ban has led to an erosion of audit efficiency that was attributable to knowledge spillovers associated with auditor-provided non-audit services.

Sensitivity Analyses

A number of sensitivity analyses were used to test the robustness of the primary results for the three hypotheses.

Alternative Fee Measures

Prior research has used a number of different measures for non-audit service fees so we re-estimate the models in Table 6 using two alternative fee measures: (1) percentile ranks for non-audit service fees (Frankel et al. 2002) and (2) the ratio of non-audit service fees to total fees (DeFond et al. 2002). The results for both fee specifications are essentially the same. The

coefficients for non-audit fees (LN_NASFEE), non-audit fees by year (LN_NASFEE*2001 and LN_NASFEE*2002) and non-audit fees by Pre-SOX (LN_NASFEE*Pre-SOX) are still negative and significant ($p<0.05$ for the percentile measure and $p<0.01$ for the ratio measure). The coefficient on LN_NASFEE*2003 is positive and significant ($p<0.01$) for both variations of the non-audit service fee measures. These results are consistent with those reported in Table 6 and suggest our tests are robust across different fee measures.

'Unexpected' non-audit services fees

A potential limitation of the analyses in Tables 5 and 6 is that audit quality and audit lag may be influenced by 'unexpected' fees generated from non-audit services provided to the audit client rather than the nominal amounts of such fees. 'Unexpected' high fees may be a surrogate for profits generated from a client (DeFond et al. 2002) and such clients may receive preferential treatment. To estimate 'unexpected' non-audit services fees for the pooled and yearly samples, we estimate the DeFond et al. (2002) non-audit fee model. The estimated models have reasonable explanatory power and are comparable to DeFond et al. (2002) with adjusted R^2 ranging from 44% to 52%. The error terms (residual) from the estimated non-audit service fee models are then used to compute the 'unexpected' portion of the non-audit services fees (UNEXP_NASFEE). The residuals are fractionally ranked according to 2-digit SIC. This procedure ranks 'unexpected' fees of a firm relative to its peers in the industry.

We re-estimate the audit effectiveness models in Table 5 by regressing the absolute value of discretionary accruals and financial restatements on 'unexpected' non-audit services fees conditional on short audit lag. The results are shown in Table 7. Consistent with the result in Table 5, the coefficient on the interaction term HIUNEXP_NAS*SHORTLAG is negative and significant ($p<0.05$) in both the discretionary accruals and financial restatements models. This

finding suggests that shorter audit lag for clients that generate lucrative non-audit services fees for the auditor does not reduce the quality of financial reporting. Rather, our results suggest knowledge spilling over from non-audit services to audit services appears to enhance audit effectiveness.

Results of our re-estimation of models 1, 2 and 3 in Table 6 are shown in Table 8. The coefficient on UNEXP_NASFEE is negative and significant (-0.032, $p<0.10$). The coefficient on UNEXP_NASFEE*Pre-SOX ($\beta_{July2002}$ = -0.076, $p<0.01$; [$\beta_{July2003}$ = -0.0.066, $p<0.01$ not tabulated]) is also negative and significant suggesting that when a client is a source of unusually high ('unexpected') non-audit services fees in the pre-SOX period, audit lag is shorter. The coefficient on UNEXP_NASFEE*2001 is negative but not significant (-0.022, $p>0.10$)[13] whereas the coefficient on UNEXP_NASFEE*2002 is negative and significant (-0.028, $p<0.05$) and the coefficient on UNEXP_NASFEE*2003 is positive and significant (0.064, $p<0.01$). These results are all consistent with those reported in Table 6.

<<<<< *Insert Tables 7 and 8 here* >>>>>

Discretionary Accruals and Audit Lag

We next incorporate our measure of audit quality, ABSDACC and RESTMT, directly into the models reported in Table 6. ABSDACC is not significant ($p>0.10$) in any of the models. All other results, particularly those relating to non-audit services fees, maintain their significance as reported in Table 6. We find a significant positive association between RESTMT and audit lag across all models ($p<0.05$) suggesting that auditors expend more effort when the risk of

[13] As explained under 'Yearly Analyses', this result is due to the classification of non-audit services fees as 'audit-related' fees. Reclassifying 'audit-related' fees as non-audit services fees results in a significant coefficient ($p<0.05$).

misstatement increases. These results support our main analysis that audit report lag is not compromised (shorter) when the accounts exhibit potential errors.[14]

Yearly Analyses and 'Audit-Related' Fees

Because the sample includes firms across the four years, yearly analyses address potential auto-correlation effects, although the reported Durbin-Watson statistics in Table 6 show auto-correlation is unlikely. Results for Model 1 for each year are shown separately in Table 9. The coefficient on non-audit fees in Panel A is negative for all years. However, the coefficient is significant ($p<0.05$ or lower) only in 2000 and 2002 which is consistent with the notion of knowledge spillovers. The non-significance in 2003 is expected because of the erosion of knowledge spillovers due to the SOX ban on most non-audit services.

The lack of significance in 2001 is surprising but may be due to measurement error in the classification of audit fees required for SEC disclosures. In 2003, the SEC (2003b) accused some clients of classifying fees for non-audit services into a new category known as 'audit-related fees' to avoid perceptions of weakened independence. On January 28, 2003, the SEC adopted new fee disclosure rules and specified that the new fourth category 'audit-related fees' should include only fees for assurance services that are reasonably related to the performance of the audit or review of the registrant's financial statements (SEC 2003a). To address this classification issue, we include 'audit-related fees' as a variable in the models and as a component of non-audit fees.

Untabulated descriptive data reveals an increase in the mean (median) 'audit-related fees'

[14] The simple correlation between audit lag and ABSDACC is 0.013 ($p>0.10$). We further test the sensitivity of the discretionary accruals effect by estimating ABSDACC using the cross-sectional Jones-model and the cross-sectional modified-Jones model with and without adjustment for prior and/or current period performance (ROA) (Kothari et al. 2005). We then investigate if audit lag is a significant determinant of the various measures of ABSDACC. The coefficient on audit lag is not significant ($p>0.10$) in any of the models. Re-estimating the models in Table 6 using the different estimates of ABSDACC does not yield any significant results for ABSDACC ($p>0.10$).

from 2000 to 2003. The mean (median) 'audit-related fees' is $0.926 ($0.00) thousand, $59 ($0.00) thousand, $228 ($44) thousand and $267 ($56) thousand in 2000, 2001, 2002 and 2003, respectively. When 'audit-related fees' are included in the yearly OLS models (Panel B of Table 9), the coefficient is negative and significant ($p<0.05$) in 2001. It is positive and significant ($p<0.10$) in 2003. These results suggest that the non-significance of the coefficient on non-audit services fees in 2001 may be due to the reclassification of non-audit fees as 'audit-related fees'.[15] These results also suggest a change in the nature of 'audit-related fees' overtime. When non-audit service fees are defined as the sum of all fees other than direct audit fees (i.e., non-audit fees include 'audit-related fees'), the coefficient on non-audit service fees is negative and significant ($p<0.05$) in 2001 as shown in Panel C of Table 9. This finding is consistent with the SEC's argument that in 2001 firms may have classified non-audit fees as 'audit-related fees'.

<<<<< *Insert Table 7 here* >>>>>

Company Size and Filing Status

The SEC identifies 'large accelerated filers' as companies with market capitalization in excess of $700 million and 'accelerated filers' as companies with market capitalization between $75 million and $700 million. Effective fiscal years ending December 15, 2006 these registrants are required to file their 10-K within 60 and 75 days of the fiscal year-end, respectively. Companies with a market capitalization less than $75 million are not subject to accelerated filing and are required to file their 10-K within 90 days of the fiscal year-end. We stratify our sample based on the SEC size categories resulting in 2,306 (43%) 'large accelerated filers', 2,348 (43%) 'accelerated filers' and 739 (14%) 'non-accelerated filers' and re-estimate the models in Table 6.

[15] We perform mean difference tests on non-audit services fees to understand the effect of the 'audit-related fees' classification in 2001. The non-audit services fees are significantly lower (mean LN_NASFEE = 5.45) for firms that report 'audit-related fees' than for firms that do not report 'audit-related fees' (mean LN_NASFEE = 5.74, $t = 2.604$, $p<0.01$). The mean difference reverses when 'audit-related fees' are added back to non-audit services fees ($p<0.05$) suggesting the SEC's accusations appear valid.

Consistent with the prior results, the coefficients for non-audit service fees (LN_NASFEE) are negative and significant ($p<0.05$ or lower) across all three sub-samples. The coefficients for LN_NASFEE are -0.017 ($p<0.01$), -0.013 ($p<0.01$), and -0.020 ($p<0.05$) for 'large accelerated filers', 'accelerated filers' and 'non-accelerated filers' samples, respectively. The coefficient on the interaction variable LN_NASFEE*Pre-SOX is negative and significant ($p<0.01$) for the 'large accelerated filers' and 'accelerated filers' sub-samples. Finally, the results relating to the interaction variable LN_NASFEE*YEAR are qualitatively similar across the three sub-samples.[16]

Endogeneity Between Audit Lag and Non-audit Services

Audit report lag may be longer for some companies because they have problems with internal control and reporting systems or complex financial transactions. These conditions may also increase a client's demand for non-audit services. Consequently, the reported results may be biased if audit lag and non-audit services fees are endogenously determined. We test for potential endogeneity between audit lag and non-audit services fees using the Hausman Specification test (Gujarati 2003). Based on this test, there is no evidence of endogeneity between audit lag and non-audit services fees ($p>0.25$).

Auditor Effects

During the period of this study, various large firms restructured their consulting practices. For example, Ernst & Young sold its consulting division to Cap Gemini in 2000. To consider firm-specific effects, the models in Table 6 are re-estimated using dummy variables for each of

[16] Because of loss of power due to smaller sample size when these interaction tests are performed, some interaction coefficients are marginally significant and some are not significant. The coefficient on LN_NASFEE*2001 is not significant ($p>0.10$) for 'non-accelerated filers' and 'large accelerated filers'. These coefficients become significant ($p<0.10$ or lower) if 'audit-related' fees are categorized as non-audit fees – see previous section 'Yearly Analyses' for details. The coefficient on LN_NASFEE*2002 is marginally significant ($p<0.10$) for large accelerated filers. Results for other coefficients across all three sub-samples are qualitatively similar ($p<0.05$ or lower).

the Big 5 firms with PwC included in the intercept (not reported). The coefficient for non-audit service fees remains negative and significant ($p<0.05$ or lower). Additional analyses of sub-samples separated by firm indicate that the coefficient for non-audit service fees is significant and negative for all firms except KPMG, for which the coefficient is not significant. Finally, re-estimating the models in Table 6 for a non-Big 5/4 sample indicates that the coefficient for non-audit service fees is not significant. This latter result suggests that knowledge spillovers arise from economies of scale and scope and are restricted to large firms providing audit and non-audit services to their clients (Simunic 1984).

V. DISCUSSION AND CONCLUSION

The often-stated assumption underlying the prohibition of auditor-supplied non-audit services incorporated into SOX is that non-audit services increase the economic bonding between auditors and management, resulting in a loss of auditor independence and diminished audit quality. However, in their rebuttal of this common viewpoint, the accounting profession has consistently and continuously argued that the provision of non-audit services by the audit firm enhances, rather than diminishes, the value and performance of the audit through the knowledge spillovers occurring between audit and non-audit services. To date, the evidence on audit effectiveness is mixed, leaning somewhat in favour of the argument that non-audit services do not impair audit quality. There is virtually no evidence on how non-audit services affect audit efficiency.

In this paper, we examine the effect of non-audit services on both audit quality, as measured by discretionary accruals and financial restatements, and audit efficiency, as measured by audit report lag. First, we report that shorter audit lag does not lead to higher levels of discretionary accruals or financial restatements which would be indicative of lower audit quality;

on the contrary, we observe lower levels of discretionary accruals and lower likelihood of a financial restatement for shorter audit lag. Next, in the period prior to the passage of SOX, we observe that audit lag is shorter when a company receives a high level of auditor-provided non-audit services. However, after SOX became effective, the relationship between non-audit services and audit report lag disappears. These results are consistent with the argument that knowledge spillovers occur as a result of providing non-audit services to a client, increasing the efficiency of the audit. Furthermore, these findings are consistent with the accounting profession's basic rationale for allowing such services to be provided by auditors.

The results of this study have important implications for regulators, the accounting profession, and audit clients concerned about the escalating costs of the audit since the introduction of the SOX. First, our results are consistent with other empirical evidence showing the joint provision of audit and non-audit services does not reduce audit quality (e.g., DeFond et al. 2002; Ashbaugh et al. 2003; Kinney et al. 2004). Furthermore, our results suggest that audit efficiencies may flow from the joint provision of audit and non-audit services. The loss of synergies between audit and non-audit services following the SOX imposed ban on most auditor-provided non-audit services will impose a greater cost burden on the firm and ultimately on the shareholders. The significance of audit lag as a determinant of reporting timeliness (e.g., Ashton et al. 1989) becomes even more important in an era of accelerated SEC filing that was effective December 15, 2006. The results of this study suggest the joint provision of audit and non-audit services can facilitate such accelerated filing and is consistent with the qualitative characteristic of timeliness of financial information and efficient production of the audit.

There are several issues worthy of further research. First, different types of non-audit services may have different effects on audit lag (Knechel and Payne 2001) and this could be

investigated in more detail. The primary limitation to such investigation is the availability of accurate and reliable data on the nature and amount of non-audit services in each category. Second, to the extent that fees are a noisy indicator of audit effort and the factors of production, our results may be subject to measurement error. However, prior research shows fees and audit hours are highly correlated (e.g., O'Keefe et al. 1994). Third, audit lag actually consists of three separate components: (1) scheduling lag, the time between the fiscal year-end and commencement of audit work, (2) fieldwork lag, the time taken to complete the fieldwork, and (3) reporting lag, the time between completion of fieldwork and the audit report date (Knechel and Payne 2001). The joint provision of audit and non-audit services could differentially influence these components of audit lag. Finally, there have been a number of regulatory changes to audit and reporting requirements over the recent few years, and these changes may influence the production function of the audit. Although we attempted to control for such effects, further research is encouraged to better understand how regulatory changes and audit technology influence the efficiency of the audit, and how they affect knowledge spillovers arising from the provision of a restricted set of auditor-provided non-audit services. As auditors develop experience and expertise working under the requirements of SOX (e.g., Section 404), knowledge spillover could re-emerge as an issue related to improving the efficiency of the audit.

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TABLE 1
Descriptive Statistics for Full Sample (N = 5,495)

Variables[a]	Mean	Median	SD	Min	Max
AULAG	43.73	39.00	21.71	6.00	435.00
ABSDACC	0.20	0.06	0.71	0.00	20.73
TA ($ millions)	2,772	465	9,604	1.68	174,278
BOOKMKT	1.97	0.94	13.97	0.02	927.07
LEVERAGE	0.21	0.18	0.22	0.00	2.17
LN_MKTCAP	6.32	6.19	1.84	-0.91	12.62
BIZNUM	2.33	1.00	1.67	1.00	10.00
AGE	11.22	11.00	5.10	1.00	18.00
CACL	3.01	2.07	3.41	0.01	64.14
OCF_TA	0.05	0.08	0.20	-2.90	1.48
TENURE	7.27	6.00	5.52	0.00	18.00
AUFEE ($ thousands)	922	384	2,059	2.26	79,984
NASFEE ($thousands)	1,137	253	3,772	0.00	80,000

	Number	Percent
RESTMT	197	3.5%
LOSS = 1	2,011	36.6%
EPS_UP = 1	3,116	56.7%
EI_POS = 1	185	3.4%
FINANCE	1,199	20.0%
FYE_DEC = 1	4,240	77.2%
AUOP = 1	2,332	42.4%
LITIGATION	2,208	40.2%
DRUG (2833-2836)	359	6.5%
COM_EQ (3570-3577)	159	2.9%
ELEC (3600-3674)	497	9.0%
RETAIL (5200-5961)	502	9.1%
COM_PRG (7370-7374)	691	12.6%

[a] Variable Definitions:

AULAG = audit lag measured as the number of days between the fiscal year-end date and audit report date;

ABSDACC = absolute value of discretionary accruals. We estimate discretionary accruals using the performance-adjusted cross-sectional modified-Jones model (Kothari et al. 2005). The sample size for ABSDACC is 5,412 due to minimum sample required to estimate discretionary accruals;

RESTMT = 1 if a firm reports a financial restatement in Audit Analytics during the period 2000 to 2003;

TA = total assets;

BOOKMKT = book value of total assets to market capitalization;

LEVERAGE = ratio of debt to assets;

LN_MKTCAP = natural logarithm of market capitalization;

BIZNUM = number of business segments;

AGE = age of the client measured as the number of years for which total assets is reported in Compustat since 1985;

CACL = ratio of current assets to current liabilities;

OCF_TA = operating cash flow deflated by total assets;

TENURE = the number of consecutive years a client has had the same auditor;

AUFEE = audit fees;

NASFEE = total non-audit services fees;

LOSS = 1 if net income is negative, 0 otherwise;

EI_POS = 1 if extraordinary items is positive, 0 otherwise;

TABLE 1 (continued)
Descriptive Statistics for Full Sample (N = 5,495)

[a] **Variable Definitions:**

FINANCE	= 1 if long term debt increases by at least 20% and/or the number of common stock outstanding increases by at least 10% after accounting for stock splits and stock dividends;
FYE_DEC	= 1 if fiscal year-end is December, 0 otherwise;
AUOP	= 1 if audit opinion is 'unqualified with explanatory paragraph', 0 otherwise;
EPS_UP	= 1 if EPS increases over the prior year;
LITIGATION	= 1 if company operates in one of the following SIC industries 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7374, 0 otherwise;
DRUG (2833-2836)	= 1 if company operates in the drugs industry;
COM_EQ (3570-3577)	= 1 if company operates in the computer equipment industry;
ELEC (3600-3674)	= 1 if company operates in the electronics industry;
RETAIL (5200-5961)	= 1 if company operates in the retail industry; and
COM_PRG (7370-7374)	= 1 if company operates in the computer programming industry.

TABLE 2
Comparison of Short and Long Audit Lag for Full Sample (N = 5,495)

	Short audit lag		Long audit lag		
Variables	**Mean**	**Median**	**Mean**	**Median**	**t-value[a]**
ABSDACC	0.182	0.058	0.216	0.061	-1.758*
TA ($ millions)	3,120	595	2,417	382	8.011***§
BOOKMKT	1.461	0.802	2.451	1.122	-2.587***
LEVERAGE	0.187	0.145	0.241	0.208	-9.135***
LN_MKTCAP	6.703	6.64	5.960	5.800	15.037***
BIZNUM	2.250	1	2.410	1	-3.603***
AGE	11.020	11	11.420	11	-2.887***
CACL	3.300	2.290	2.710	1.920	6.503***
OCF_TA	0.056	0.089	0.040	0.074	2.966**
TENURE	7.570	6	6.970	6	4.042***
AUFEE ($ thousands)	934	398	909	368	2.785***§
NASFEE ($thousands)	1,365	317	904	206	7.868***§
LOSS	0.340	0	0.390	0	-3.319***
EPS_UP	0.570	1	0.560	1	0.325
EI_POS	0.030	0	0.040	0	-2.453***
FINANCE	0.187	0.000	0.218	0.000	-1.938*
FYE_DEC	0.770	1	0.770	1	-0.029
AUOP	0.380	0	0.470	0	-7.419***
LITIGATION	0.450	0.000	0.350	0.000	7.434***
DRUG	0.059	0	0.071	0	-1.772
COM_EQ	0.036	0	0.021	0	3.340***
ELEC	0.114	0	0.067	0	6.144***
RETAIL	0.082	0	0.101	0	-2.381**
COM_PRG	0.160	0	0.090	0	7.868***
	Freq	**%**	**Freq**	**%**	**Chi-sq**
RESTMT	72	2.7%	125	4.4%	11.40***

Variable Definitions = all variables are defined in Table 1.
***, ** = represent significance at 0.01 and 0.05 levels, respectively.
[a] = the Wilcoxon Z and Median tests produce identical results.
§ = tests are based on natural logarithm transformed values.

TABLE 3
Descriptive Statistics by Year for Audit Lag, Absolute Value of Discretionary Accruals, and Fees for Full Sample (N = 5,495)

	Total	2000	2001	2002	2003	Test Statistic
N	**5,495**	**1,335**	**1,394**	**1,392**	**1,374**	
	Mean (Median)	**Mean (Median)**	**Mean (Median)**	**Mean (Median)**	**Mean (Median)**	**F-value[a]**
Variables	**[SD]**	**[SD]**	**[SD]**	**[SD]**	**[SD]**	**Chi-Sq.[a]**
AULAG	43.73	41.24	41.27	43.64	48.73	36.82***§
	(39.00)	(38.00)	(37.00)	(38.00)	(47.00)	112.68***§
	[21.71]	[19.28]	[20.83]	[24.59]	[20.86]	
ABSDACC	0.20	0.12	0.31	0.17	0.18	17.963***
	(0.06)	(0.05)	(0.08)	(0.06)	(0.05)	36.77***
	[0.71]	[0.39]	[0.89]	[0.58]	[0.83]	
NASFEE	1,137	1,768	1,447	773	577	97.20***§
($thousands)	(253)	(377)	(337)	(192)	(170)	143.06***§
	[3,772]	[5,225]	[4,669]	[2,257]	[1,488]	
AUFEE	922	671	754	988	1,269	78.78***§
($thousands)	(384)	(280)	(319)	(423)	(512)	182.20***§
	[2,059]	[1,232]	[1,539]	[1,812]	[3,091]	
	Freq (%)	**Freq (%)**	**Freq (%)**	**Freq (%)**	**Freq (%)**	
RESTMT	197	47	41	52	57	-
(% of N)	3.5%	3.5%	2.9%	3.7%	4.1%	3.041

Variable Definitions = all variables are defined in Table 1.
[a] = Analysis of Variance F-value for mean difference and Median test Chi-Square value for median difference tests.
***, **, * = represent significance at 0.01, 0.05, and 0.10 levels, respectively.
§ = tests are based on natural logarithm transformed values.

Table 4

Pearson and Spearman Correlation Coefficients (N = 5,495)

Variable[a]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. LN_TA		**.03**	**.31**	**.85**	**.38**	**.39**	**-.25**	**.38**	**.26**	**.79**	**.63**	**-.27**	**-.03**	**.10**	**-.10**	.01	**.17**	**-.19**	**-.11**	**-.04**	**-.07**	**.07**	**-.17**
2. BOOKMKT	**.19**		**.08**	**-.12**	.02	-.02	-.02	.00	-.03	**.04**	.02	**.04**	-.02	.09	**-.03**	.02	**.04**	**-.05**	-.03	-.01	-.02	-.00	**-.03**
3. LEVERAGE	**.44**	**.48**		**.06**	**.16**	**.10**	**-.26**	.02	**.05**	**.24**	**.15**	**.04**	**-.07**	**.11**	**-.06**	**.10**	**.13**	**-.26**	-.02	**-.08**	**-.08**	**-.03**	**-.24**
4. LN_MKTCAP	**.84**	**-.33**	**.14**		**.26**	**.31**	**-.10**	**.33**	**.23**	**.66**	**.56**	**-.32**	**.07**	**.07**	**.03**	.01	**.08**	-.02	**.03**	-.01	-.02	**.06**	**-.08**
5. BIZNUM	**.36**	**.23**	**.23**	**.22**		**.34**	**-.20**	**.14**	**.18**	**.43**	**.32**	**-.11**	**-.05**	**.05**	**-.11**	**.07**	**.11**	**-.25**	**-.10**	**-.03**	**-.08**	**-.14**	**-.09**
6. AGE	**.38**	**.14**	**.19**	**.29**	**.35**		**-.19**	**.23**	**.48**	**.37**	**.21**	**-.25**	.01	**.04**	**-.16**	**-.13**	**.15**	**-.17**	-.02	-.02	.01	**.03**	**-.26**
7. CACL	**-.39**	**-.34**	**-.48**	**-.18**	**-.22**	**-.19**		**-.15**	**-.09**	**-.31**	**-.19**	**.14**	-.02	**-.04**	**.10**	-.01	**-.11**	**.22**	**.29**	**.05**	**.15**	**-.07**	**.03**
8. OCF_TA	**.26**	**-.18**	-.02	**.34**	**.07**	**.23**	**-.16**		**.11**	**.20**	**.20**	**-.48**	**.07**	-.01	**-.14**	**-.07**	.01	**-.17**	**-.26**	**-.03**	-.02	**.11**	**-.12**
9. TENURE	**.22**	**.04**	**.08**	**.19**	**.13**	**.39**	**-.08**	**.10**		**.24**	**.25**	**-.12**	-.02	.01	**-.08**	**-.09**	.01	**-.07**	-.01	.01	**.04**	.02	**-.15**
10. LN_AUFEE	**.78**	**.20**	**.35**	**.63**	**.41**	**.37**	**-.38**	**.11**	**.20**		**.63**	**-.11**	.00	**.10**	**.12**	**.06**	**.27**	**-.15**	**-.11**	.01	**-.05**	**-.06**	**-.04**
11. LN_NASFEE	**.66**	**.10**	**.25**	**.57**	**.33**	**.20**	**-.25**	**.14**	**.22**	**.65**		**-.14**	**-.07**	**.05**	**-.04**	**.04**	.02	**-.08**	**-.09**	.01	-.02	-.01	**-.03**
12. LOSS	**-.27**	**.11**	-.03	**-.33**	**-.11**	**-.24**	**.09**	**-.57**	**-.11**	**-.11**	**-.14**		**-.27**	.01	**.09**	**.08**	.02	**.17**	**.14**	**.08**	**.08**	**-.14**	**.16**
13. EPS_UP	**-.03**	**-.18**	**-.08**	**.07**	**-.05**	.02	-.02	**.15**	-.02	-.00	**-.07**	**-.27**		.01	**.04**	.01	**.06**	**.03**	-.02	.02	**-.03**	**.05**	**.03**
14. EI_POS	**.10**	**.10**	**.11**	**.03**	**.05**	**.04**	**-.08**	**-.04**	.00	**.08**	**.05**	.01	.01		.01	**.04**	**.06**	**-.05**	-.01	.01	-.01	**-.03**	**-.03**
15. FINANCE	**-.09**	**-.21**	**-.07**	**.03**	**-.12**	**-.16**	**.08**	**-.12**	**-.07**	**-.11**	**-.03**	**.09**	**.04**	.01		.00	**-.06**	**.09**	**.11**	.00	**.03**	-.02	**.05**
16. FYE_DEC	.00	.00	**.10**	.01	**.05**	**-.13**	**-.08**	**-.08**	**-.10**	**.04**	**.05**	**.08**	.01	.04	.00		**.04**	**-.19**	**.10**	**-.06**	**-.08**	**-.29**	-.00
17. AUOP	**.18**	**.15**	**.15**	**.09**	**.11**	**.18**	**-.15**	.00	-.01	**.27**	**.04**	.02	**.06**	**.06**	**-.06**	**.04**		**-.11**	**-.03**	-.01	**-.05**	**-.06**	**-.05**
18. LITIGATION	**-.19**	**-.29**	**-.33**	**-.03**	**-.25**	**-.17**	**.27**	**-.11**	**-.05**	**-.16**	**-.09**	**.17**	**.03**	**-.05**	**.09**	**-.19**	**-.11**		**.32**	**.21**	**.39**	**.39**	**.46**
19. DRUG	**-.12**	**-.24**	**-.04**	.00	**-.11**	-.01	**.22**	**-.17**	.00	**-.12**	**-.10**	**.14**	-.02	-.01	**.11**	**.10**	**-.03**	**.32**		**-.05**	**-.08**	**-.08**	**-.10**
20. COM_EQ	**-.04**	**-.05**	**-.10**	-.02	**-.03**	-.03	**.09**	**-.04**	.01	.00	.01	**.08**	.02	.01	.00	**-.06**	-.01	**.21**	**-.05**		**-.05**	**-.06**	**-.07**
21. ELEC	**.07**	**-.08**	**-.11**	-.02	**-.07**	.01	**.20**	**-.04**	**.04**	**-.05**	**-.03**	**.08**	**-.03**	-.01	**.03**	**-.08**	**-.05**	**.39**	**-.08**	**-.05**		**-.10**	**-.12**
22. RETAIL	**.08**	.02	-.02	**.07**	**-.15**	**.03**	**-.09**	**.15**	**.03**	**-.06**	-.07	**-.14**	**.05**	**-.03**	-.02	**-.29**	**-.06**	**.39**	**-.08**	**-.06**	**-.10**		**-.12**
23. COM_PRG	**-.19**	**-.17**	**-.29**	**-.08**	**-.09**	**-.26**	**.09**	**-.11**	**-.14**	**-.04**	-.03	**.16**	.03	**-.03**	**.05**	.00	**-.05**	**.46**	**-.10**	**-.07**	**-.12**	**-.12**	

Pearson (Spearman) correlations are shown above (below) the diagonal. Coefficients in bold only are significant at $p < 0.05$ (two-tailed). Because coefficients are rounded to two decimal places some coefficients are not indicated significant as the raw (unrounded) coefficient was not significant.

[a]**Variable Definitions:**

LN_TA = natural logarithm of total assets;

LN_AUFEE = natural logarithm of audit fees; and

LN_NASFEE = natural logarithm of non-audit services fees.

All other variables are defined in Table 1.

TABLE 5 – Panel A
OLS Regressions of Audit Effectiveness Measured as Absolute Value of Discretionary Accruals

ABSDACC = $a + \beta_1$ HINAS*SHORTLAG + β_2TENURE + β_3LN_MKTCAP + β_4BOOKMKT + β_5OCF_TA + β_6LOSS + β_7FINANCE + β_8LEVERAGE + β_9LITIGATION + β_{10-} β_{12}YEAR DUMMY + ε_i (HINAS*SHORTLAG)

ABSDACC = $a + \beta_1$ LN_AULAG + β_2TENURE + β_3LN_MKTCAP + β_4BOOKMKT + β_5OCF_TA + β_6LOSS + β_7FINANCE + β_8LEVERAGE + β_9LITIGATION + β_{10-} β_{12}YEAR DUMMY + ε_i (LN_AULAG)

		HINAS*SHORTLAG			LN_AULAG		
Variables[a]	**Pred. Sign**	**Estimate**	**t-value**[§]	**VIF**	**Estimate**	**t-value**[§]	**VIF**
Intercept	?	-0.018	-0.42		-0.065	-0.70	
HINAS*SHORTLAG	?	-0.041	-1.82*	1.24			
LN_AULAG	?				0.015	0.72	1.16
TENURE	-	-0.004	-2.27**	1.08	-0.004	-2.40**	1.08
LN_MKTCAP	?	0.012	2.00**	1.48	0.019	3.19***	1.37
BOOKMKT	+	-0.000	-0.49	1.03	-0.000	-0.56	1.03
OCF_TA	-	-0.490	-8.63***	1.40	-0.491	-8.64***	1.40
LOSS	+	0.121	5.46***	1.41	0.119	5.39***	1.40
FINANCE	+	0.060	2.60***	1.06	0.061	2.62***	1.06
LEVERAGE	+	0.120	2.78***	1.10	0.117	2.68***	1.12
LITIGATION	+	0.132	6.79***	1.13	0.133	6.85***	1.14
YEAR DUMMIES	?	yes			yes		
N[#]		5,264			5,264		
Adjusted R^2/F-value		6.5%	31.37***		6.4%	31.12***	

[§] The reported t-values are based on White's (1980) corrected standard errors.
***, **, * represent significance at 0.01, 0.05, and 0.10 levels, respectively.
[#] The sample size drops to 5,264 because the estimation of discretionary accruals requires at least five companies per industry, and the removal of outliers.
[a] **Variable Definitions:**
HINAS*SHORTLAG = 1 if non-audit services fees greater than the median *and* audit lag is less than or equal to the median, 0 otherwise.
LN_AULAG = natural logarithm of audit lag.
All other variables are defined in Table 1.

TABLE 5 – Panel B
OLS Regressions of Audit Effectiveness Measured as Financial Restatements

RESTMT = $a + \beta_1$ HINAS*SHORTLAG + β_2TENURE + β_3LN_MKTCAP + β_4BOOKMKT + β_5LOSS + β_6FINANCE + β_7LEVERAGE + β_8LITIGATION + β_9AGE + β_{10}AUOP + β_{11-} β_{13}YEAR DUMMY + ε_i (HINAS*SHORTLAG)

RESTMT = $a + \beta_1$ LN_AULAG + β_2TENURE + β_3LN_MKTCAP + β_4BOOKMKT + β_5LOSS + β_6FINANCE + β_7LEVERAGE + β_8LITIGATION + β_9AGE + β_{10}AUOP + β_{11-} β_{13}YEAR DUMMY + ε_i (LN_AULAG)

		HINAS*SHORTLAG		LN_AULAG	
Variables[a]	**Pred. Sign**	**Estimate**	**Wald**[^]	**Estimate**	**Wald**[^]
Intercept	?	-4.35	127.77***	-6.52	69.24***
HINAS*SHORTLAG	?	-0.38	3.67***		
LN_AULAG	?			0.57	11.11***
TENURE	-	-0.05	12.48***	-0.05	11.97***
LN_MKTCAP	?	0.13	7.13***	0.14	8.46***
BOOKMKT	+	0.00	1.70*	0.00	1.35*
LOSS	+	0.24	2.00**	0.21	1.50*
FINANCE	+	-0.08	0.26	-0.09	0.29
LEVERAGE	+	0.64	3.97***	0.51	2.43**
LITIGATION	+	0.08	0.22	0.11	0.47
AGE	-	0.04	4.70***	0.03	3.43***
AUOP	+	0.58	10.52***	0.52	8.35***
YEAR DUMMIES	?	yes		yes	
N[#]		5,260		5,260	
Pseudo R^2/Chi-square		3.4%	46.36***	4.2%	53.57***

[^] The Wald statistic is analyzed for significance based on t-values (Hosmer and Lemeshow 1989).
***, **, * represent significance at 0.01, 0.05, and 0.10 levels, respectively.
[#] The sample size drops to 5,260 because of missing data and the removal of outliers.
[a] **Variable Definitions:**
HINAS*SHORTLAG = 1 if non-audit services fees greater than the median *and* audit lag is less than or equal to the median, 0 otherwise.
LN_AULAG = natural logarithm of audit lag.
All other variables are defined in Table 1.

TABLE 6
OLS Regressions of Audit Lag on Non-Audit Services Fees and Control Variables

LN_AULAG = a + β_1LN_NASFEE (or β_1LN_NASFEE + β_2LN_NASFEE * Pre-SOX or β_1LN_NASFEE + $\beta_{2\_}$ β_4LN_NASFEE * year) + β_2TENURE + β_3LN_TA + β_4LEVERAGE + β_5CACL + β_6LOSS + β_7EPS_UP + β_8EI_POS + β_9BIZNUM + β_{10}AGE + β_{11}FYE_DEC + β_{12}AUOP + β_{13}LN_AUFEE + $\beta_{14\text{-}18}$INDUSTRY + ε_i

	Model 1			Model 2			Model 3		
Variables[a] (predicted sign)	**Estimate**	**t-value[§]**	**VIF**	**Estimate**	**t-value[§]**	**VIF**	**Estimate**	**t-value[§]**	**VIF**
Intercept	3.810	93.89***		3.858	90.47***		3.860	91.50***	
LN_NASFEE (-)	-0.017	-4.00***	1.79	-0.008	-1.57*	2.44	-0.012	-2.77***	1.96
LN_NASFEE * Pre-SOX (-)				-0.009	-3.67***	1.87			
LN_NASFEE * 2001 (-)							-0.005	-1.78**	1.59
LN_NASFEE * 2002 (-)							-0.010	-2.89***	1.85
LN_NASFEE * 2003 (?)							0.016	4.68***	1.94
TENURE (-)	-0.006	-4.81***	1.34	-0.006	-4.37***	1.35	-0.006	-4.91***	1.35
LN_TA (?)	-0.100	-16.05***	3.45	-0.098	-15.58***	3.50	-0.098	-15.58***	3.51
LEVERAGE (+)	0.295	9.94***	1.30	0.302	10.15***	1.30	0.299	10.09***	1.30
CACL (-)	-0.008	-4.14***	1.31	-0.008	-4.32***	1.32	-0.008	-4.47***	1.32
LOSS (+)	0.046	3.27***	1.38	0.045	3.22***	1.38	0.052	3.74***	1.38
EPS_UP (-)	-0.017	-1.39*	1.13	-0.022	-1.79**	1.14	-0.030	-2.46***	1.17
EI_POS (+)	0.054	1.65**	1.02	0.063	1.93**	1.03	0.056	1.72**	1.03
BIZNUM (+)	0.017	4.27***	1.33	0.018	4.47***	1.33	0.018	4.57***	1.33
AGE (?)	0.007	4.57***	1.69	0.006	4.01***	1.73	0.006	4.02***	1.74
FYE_DEC (+)	0.023	1.58*	1.17	0.013	0.89	1.21	0.023	1.61*	1.17
AUOP (+)	0.085	6.89***	1.15	0.067	5.04***	1.34	0.079	5.82***	1.39
LN_AUFEE (?)	0.073	7.44***	3.46	0.063	6.16***	3.74	0.060	5.85***	3.82
DRUG (?)	-0.026	-1.02	1.20	-0.025	-0.97	1.20	-0.026	-1.03	1.19
COM_EQ (?)	-0.216	-6.07***	1.06	-0.215	-6.03***	1.07	-0.216	-6.10***	1.07
ELEC (?)	-0.181	-8.57***	1.14	-0.183	-8.77***	1.14	-0.183	-8.70***	1.14
RETAIL (?)	0.105	4.77***	1.24	0.102	4.66***	1.24	0.104	4.77***	1.25
COM_PRG (?)	-0.193	-9.85***	1.30	-0.194	-9.89***	1.30	-0.195	-9.99***	1.30
N[#]	5,393			5,393			5,393		
Adjusted R^2/F-value	15%	52.24***		15%	47.93***		16%	48.91***	
Durbin-Watson	1.958			1.961			1.986		

TABLE 6 (continued)
OLS Regressions of Audit Lag on Non-Audit Services Fees, Audit-Firm Tenure and Control Variables

[§] The reported t-values are based on White's (1980) corrected standard errors.
[#] Sample size differs from Tables 1 - 4 because OLS models exclude outliers defined as more than three standard deviations from the mean for audit lag and fee variables.
***, **, * represent significance at 0.01, 0.05, and 0.10 levels, respectively.
[a] **Variable Definitions:**

LN_AULAG	= natural logarithm of audit lag;
LN_TA	= natural logarithm of total assets;
LN_AUFEE	= natural logarithm of audit fees;
LN_NASFEE	= natural logarithm of non-audit services fees;
LN_NASFEE * Pre-SOX	= interaction term between LN_NASFEE and Pre-SOX (= 1 if fiscal year-end is prior to July 2002); and
LN_NASFEE * year	= interaction term between LN_NASFEE and 2001, 2002 or 2003.

All other variables are defined in Table 1.

TABLE 7
OLS Regressions of Audit Effectiveness on Unexpected Non-Audit Services Fees Conditional on Audit Lag

ABSDACC = $a + \beta_1$HIUNEXPNAS*SHORTLAG + β_2TENURE + β_3LN_MKTCAP + β_4BOOKMKT + β_5OCF_TA + β_6LOSS + β_7FINANCE + β_8LEVERAGE + β_9LITIGATION + $\beta_{10\text{-}12}$YEAR DUMMY+ε_i

RESTMT = $a + \beta_1$HIUNEXPNAS*SHORTLAG + β_2TENURE + β_3LN_MKTCAP + β_4BOOKMKT + β_5LOSS + β_6FINANCE + β_7LEVERAGE + β_8LITIGATION + β_9AGE + β_{10}AUOP + $\beta_{11\text{-}}$ β_{13}YEAR DUMMY + ε_i

		ABSDACC OLS model			RESTMT logistic model	
Variables[a]	**Pred. Sign**	**Estimate**	**t-value[§]**	**VIF**	**Estimate**	**Wald[^]**
Intercept	?	0.00	0.34		-4.143	117.76***
HIUNEXPENAS*SHORTLAG	?	-0.06	-2.10**	1.10	-0.01	3.08**
TENURE	-	-0.00	-2.37***	1.08	-0.05	13.12***
LN_MKTCAP	?	0.01	1.81*	1.32	0.11	5.56***
BOOKMKT	+	0.00	-0.55	1.03	0.00	1.42*
OCF_TA	-	-0.49	-8.68***	1.40	-	-
LOSS	+	0.12	5.41***	1.40	0.24	2.06**
FINANCE	+	0.06	2.53***	1.06	-0.07	0.19
LEVERAGE	+	0.11	2.57***	1.11	0.60	3.50***
LITIGATION	+	0.13	6.82***	1.13	0.08	0.24
AGE	-				0.03	3.91***
AUOP	+				0.56	9.94***
YEAR DUMMIES	?	yes			yes	
N[#]		5,233			5,260	
Adjusted R^2/F-value		6.4%	31.32***	Pseudo R^2/ Chi Sq	3.4%	45.25***

[§] The reported t-values are based on White's (1980) corrected standard errors.
[^] The Wald statistic is analyzed for significance based on t-values (Hosmer and Lemeshow 1989).
***, **, * represent significance at 0.01, 0.05, and 0.10 levels, respectively.
[#] The sample size drops to 5,233/5,260 because (i) the estimation of discretionary accruals requires at least five companies per industry, (ii) we exclude companies with missing data to estimate unexpected non-audit services fees, and (iii) of removal of outliers.
[a] **Variable Definitions:**
HIUNEXPNAS*SHORTLAG = Multiplicative product of fractionally ranked unexpected non-audit services fees *and* SHORTLAG; where SHORTLAG = 1 if audit lag is less than or equal to the median, 0 otherwise. All other variables are defined in Table 1.

TABLE 8
OLS Regressions of Audit Lag on Unexpected Non-Audit Services Fees and Control Variables

LN_AULAG = a + β_1UNEXPNASFEE (or β_1UNEXPNASFEE + β_2UNEXPNASFEE * Pre-SOX or β_1UNEXPNASFEE + $\beta_{2\_}$ β_4UNEXPNASFEE * year) + β_2TENURE + β_3LN_TA + β_4LEVERAGE + β_5CACL + β_6LOSS + β_7EPS_UP + β_8EI_POS + β_9BIZNUM + β_{10}AGE + β_{11}FYE_DEC + β_{12}AUOP + β_{13}LN_AUFEE + $\beta_{14\text{-}18}$INDUSTRY + ε_i

	Model 1			Model 2			Model 3		
Variables[a] (predicted sign)	**Estimate**	**t-value[§]**	**VIF**	**Estimate**	**t-value[§]**	**VIF**	**Estimate**	**t-value[§]**	**VIF**
Intercept	3.828	91.87***		3.869	91.41***		3.862	91.66***	
UNEXPNASFEE (-)	-0.032	-1.51*	1.09	-0.035	-1.19	2.04	-0.025	-0.993	1.96
UNEXPNASFEE * Pre-SOX (-)				-0.076	-3.05***	2.24			
UNEXPNASFEE * 2001 (-)							-0.022	-0.843	1.59
UNEXPNASFEE * 2002 (-)							-0.028	-1.83**	1.85
UNEXPNASFEE * 2003 (?)							0.064	5.52***	1.94
TENURE (-)	-0.007	-5.37***	1.32	-0.006	-5.05***	1.33	-0.007	-5.45***	1.35
LN_TA (?)	-0.107	-17.02***	3.49	-0.107	-16.37***	3.80	-0.101	-15.57***	3.51
LEVERAGE (+)	0.295	9.50***	1.30	0.297	9.63***	1.29	0.292	9.47***	1.30
CACL (-)	-0.009	-4.43***	1.31	-0.009	-4.57***	1.31	-0.009	-4.70***	1.32
LOSS (+)	0.038	2.66***	1.37	0.035	2.40***	1.37	0.042	2.90***	1.38
EPS_UP (-)	-0.023	-1.84**	1.13	-0.030	-2.39***	1.14	-0.034	-2.69***	1.17
EI_POS (+)	0.113	3.43***	1.02	0.118	3.58***	1.03	0.118	3.61***	1.03
BIZNUM (+)	0.013	3.14***	1.35	0.013	3.23***	1.36	0.014	3.55***	1.33
AGE (?)	0.008	5.03***	1.67	0.007	4.33***	1.71	0.007	4.42***	1.74
FYE_DEC (+)	0.021	1.39*	1.18	0.015	1.00	1.21	0.020	1.35*	1.17
AUOP (+)	0.102	7.96***	1.15	0.082	6.10***	1.29	0.094	6.86***	1.39
LN_AUFEE (?)	0.066	6.71***	3.53	0.068	6.56***	3.89	0.054	5.38***	3.82
DRUG (?)	-0.018	-0.67	1.17	-0.015	-0.57	1.17	-0.014	-0.52	1.19
COM_EQ (?)	-0.188	-5.18***	1.07	-0.185	-5.11***	1.07	-0.180	-4.96***	1.07
ELEC (?)	-0.186	-8.49***	1.14	-0.187	-8.60***	1.14	-0.186	-8.56***	1.14
RETAIL (?)	0.112	4.91***	1.24	0.110	4.86***	1.25	0.109	4.79***	1.25
COM_PRG (?)	-0.193	-9.61***	1.30	-0.197	-9.78***	1.30	-0.193	-9.63***	1.30
N[#]	5,290			5,290			5,290		
Adjusted R^2/F-value	14%	48.63***		14%	47.67***		15%	44.91***	
Durbin-Watson	1.948			1.951			1.970		

TABLE 8 (continued)
OLS Regressions of Audit Lag on Unexpected Non-Audit Services Fees and Control Variables

[§] The reported t-values are based on White's (1980) corrected standard errors.
[#] Sample size differs from Table 6 because of missing data to estimate unexpected non-audit services fees.
***, **, * represent significance at 0.01, 0.05, and 0.10 levels, respectively.
[a] **Variable Definitions:**

LN_AULAG	= natural logarithm of audit lag;
LN_TA	= natural logarithm of total assets;
LN_AUFEE	= natural logarithm of audit fees;
UNEXPNASFEE	= unexpected non-audit services fees estimated using the Defond et al. (2002) fee model;
UNEXPNASFEE * Pre-SOX	= interaction term between UNEXPNASFEE and Pre-SOX (= 1 if fiscal year-end is prior to July 2002); and
UNEXPNASFEE * year	= interaction term between UNEXPNASFEE and 2001, 2002 or 2003.

All other variables are defined in Table 1.

TABLE 9
Yearly OLS Regressions

LN_AULAG = $a + \beta_1$LN_NASFEE + β_2TENURE + β_3LN_TA + β_4LEVERAGE + β_5CACL + β_6LOSS + β_7EPS_UP + β_8EI_POS + β_9BIZNUM + β_{10}AGE + β_{11}FYE_DEC + β_{12}AUOP + β_{13}LN_AUFEE + $\beta_{14\text{-}18}$INDUSTRY + ε_i

Panel A: Non-Audit Services Fee

	2000		2001		2002		2003	
Variables[a] (predicted sign)	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**
Intercept	3.796	47.06***	3.750	46.25***	3.791	44.05***	4.031	44.82***
LN_NASFEE (-)	-0.027	-2.41***	-0.008	-0.81	-0.014	-1.70**	-0.007	-0.81
Control variables	yes		yes		yes		yes	
Adjusted R^2/ F-value	16%	15.44***	16%	16.41***	16%	15.37***	9%	8.72***

Panel B: Audit-Related Fee

	2000		2001		2002		2003	
Variables[a] (predicted sign)	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**
Intercept	3.798	47.00***	3.726	45.76***	3.785	43.11***	4.058	44.43***
AUDIT-RELATED FEE (?)	-0.016	-0.43	-0.016	-2.56**	-0.003	-0.33	0.014	1.67*
LN_NASFEE (-)	-0.027	-2.44***	-0.013	-1.35*	-0.014	-1.63*	-0.009	-1.02
Control variables	yes		yes		yes		yes	
Adjusted R^2/ F-value	16%	14.62***	17%	15.96***	16%	14.56***	9%	8.42***

Panel C: Non-Audit Services Fee includes Audit-Related Fee

	2000		2001		2002		2003	
Variables[a] (predicted sign)	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**	**Estimate**	**t-value[§]**
Intercept	3.797	47.10***	3.741	46.21***	3.802	44.46***	4.045	45.32***
LN_NASFEE (-)	-0.027	-2.42***	-0.018	-1.68**	-0.013	-1.28*	0.003	0.30
Control variables	yes		yes		yes		yes	
Adjusted R^2/ F-value	16%	15.44***	17%	16.56***	16%	15.29***	9%	8.68***

[§] The reported t-values are based on White's (1980) corrected standard errors.
***, **, * represent significance at 0.01, 0.05, and 0.10 levels, respectively.

[a] Variable Definitions:
AUDIT-RELATED FEE = natural logarithm of audit-related fees disclosed in proxy statements.
All other variables are defined in Table 1.