Future Nonaudit Service Fees and Audit Quality

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1. Introduction

Prior research shows that, in general, nonaudit services do not impair audit quality (Ashbaugh, LaFond, and Mayhew 2003; Habib 2012). Further, an assessment of this line of research also suggests that under certain circumstances, nonaudit services can have negative consequences for the quality of the audit. Such circumstances, for example, include weak corporate governance (Larcker and Richardson 2004), small high-growth clients (Reynolds, Deis, and Francis 2004), and "harmful" nonaudit services—those banned by SOX (Krishnan, Su, and Zhang 2011; Paterson and Valencia 2011). We extend this recent stream of research by predicting that, prior to the Sarbanes-Oxley Act of 2002 (SOX), an auditor's opportunity to sell additional nonaudit services in the subsequent year, coupled with the client's willingness to buy services, intensified the economic bond between auditor and client, in turn reducing auditor independence and the quality of financial reporting (i.e., earnings management).

Our approach is unique. We base our motivation on the Securities and Exchange Commission's (SEC's) concern that the structure of audit partner compensation prior to SOX emphasized rewards for selling additional nonaudit services (NAS), rather than rewarding audit partners for their investigative and professional ability. According to the SEC (SEC 2003), "such compensation arrangements may detract from audit quality by incentivizing the audit partner to focus on selling nonaudit services rather than providing high quality audit services." Because of this concern, in 2003 the SEC issued Rule No. 33-8183 that, among other things, prohibited partner compensation structures that reward the sale of NAS to audit clients (SEC 2003). If the SEC's concerns were justified, partner compensation plans created economic pressure to focus more on seeking NAS growth opportunities, at the expense of auditor objectivity and independence.

To examine our research question, we depart from prior research that investigates whether auditors are likely to compromise their independence in exchange for high NAS fees in the *current* year alone. Instead, we advance the notion that a client's promise of

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future NAS business has the potential to impair an auditor's independence. To an auditor whose compensation contract highly rewards revenue generation, future NAS fees present an important source of career advancement and, with it, a source of particularly strengthened economic bond with the client. Because we are interested in partner behavior, we attempt to get as close as possible to partner-level analysis by dissecting the sample along two dimensions: industry and city. We assume that clients of a given audit firm that are in the same industry and city are audited by the same partner. We focus on this more granular level of analysis because we expect that at this level short-term profitability goals potentially override competitive incentives to maintain firm-wide reputation.

We expect that the practical effect of the incentive structure prior to SOX would encourage partners to pursue revenue growth by especially targeting their clients currently purchasing relatively low levels of NAS. We suggest these clients provide the greatest opportunity for NAS revenue growth. If a high fee-growth-opportunity client responds to the audit partner's sales efforts with an offer to buy future NAS, we expect the resulting economic bond to affect audit quality adversely. We therefore focus on clients who (1) provide the auditor with high fee-growth opportunities (i.e., those with relatively low NAS fees in the current year) and (2) increase NAS purchases in the following year; we examine whether the combination of these two factors is associated with lower audit quality.

We examine our research question in the context of earnings management. First, we examine a form of earnings management that has received extensive attention, the manipulation of discretionary accruals (Frankel, Johnson, and Nelson 2002; Ashbaugh et al. 2003; and Lim and Tan 2008). We hypothesize that the combination of high fee-growth opportunities, proxied by low NAS fees in the current year, and the eventual fulfillment of these opportunities, proxied by NAS fee increases next year, will result in auditors becoming more lenient toward the financial reporting of accruals. Therefore, we expect that high fee-growth-opportunity clients who increase their NAS purchases in the subsequent period will have larger discretionary accruals in the current period.

Our second type of earnings management is one that is not common in the literature investigating audit quality; namely, inflating core earnings by classification shifting of core expenses into special items (McVay 2006; Fan, Barua, Cready, and Thomas 2010). Managers who wish to report higher core earnings can shift core expenses into the special items section of the income statement. According to Fan et al. (2010), this form of earnings management not only inflates core earnings but also results in an observable relation: a more positive (or less negative) association between income-decreasing special items and unexpected core earnings. We hypothesize that this association will be stronger in the current period for high fee-growth-opportunity clients that increase NAS fees in the subsequent year.

We choose earnings management as a proxy for audit quality because of regulators' concern that auditors were allowing their clients to engage in the aggressive management of earnings (Levitt 1998). One of the primary goals of SOX was to limit such earnings manipulations. Second, incentives for auditors to maintain their independence, such as concerns regarding firm reputation or litigation costs are less powerful when considering earnings management because of the flexibility and subjectivity inherent in reporting standards that allows significant judgment and discretion (see Mayhew, Schatzberg, and Sevcik 2001). Therefore, if auditors' independence is impaired, earnings management would be a likely metric to manifest the impairment.

Our results show that earnings management is higher for high fee-growth-opportunity clients who increase their future NAS purchases from the auditor. First, when using the absolute value of discretionary accruals to proxy for earnings management, we find that future increases in NAS fees are positively associated with the absolute discretionary accruals for high fee-growth-opportunity clients. This association continues to hold when

we separate total discretionary accruals into income-increasing and income-decreasing accruals. Second, when using the association between unexpected core earnings and income-decreasing special items as the proxy for classification shifting, we find that the association becomes more positive, indicating greater classification shifting for high fee-growth-opportunity clients who increase future NAS purchases. In these regressions, we control for firm growth to confront potential confounding from this source. Third, we document that both forms of earnings management by these clients, are greater in companies with particularly strong incentives to manage earnings, including companies that meet or beat earnings forecasts and those with a concurrent seasoned equity offering. Importantly, our findings do not extend to the period after the implementation of major regulatory provisions that limited the amount of NAS auditors could perform for their audit clients (SOX 2002) and regulations that alleviated partner compensation pressures (SEC 2003). Finally, our main results hold for alternative measures of the test variables as well as a host of other additional analyses and sensitivity tests.

Our findings provide important contributions to the growing research that investigates conditions where economic incentives from NAS override auditor's reputational and regulatory concerns and become an important factor that drives an auditor's decisions (Larcker and Richardson 2004; Reynolds et al. 2004; Krishnan et al. 2011; Lennox and Li 2012). Our findings also address some of the concerns that the conflict of interest associated with NAS "lies not in the actual receipt of high fees, but in their expected receipt. Even the client currently paying low consulting revenues to its auditor might reverse this pattern if the auditor proved more cooperative" (Coffee 2006). We therefore relax the commonly held assumption that only current-year NAS impacts auditor judgment and instead argue that the economic bond between an auditor and a client can also arise from the future expected revenue that can be obtained from the client (DeAngelo 1981), particularly in settings with high revenue growth opportunities. Blay and Geiger (2013) also consider the effects of future fees on audit quality. However, in contrast to our study, they examine the effects of total future fees (audit and nonaudit) where we study future NAS fee growth, restrict their sample to manufacturing firms where we use a more broad-based sample, examine the time period after SOX rather than before, examine going-concern opinions rather than our measures of earnings management, and do not condition their analysis on current-year NAS purchases. They report that after SOX, subsequent total fees impair auditor independence whereas subsequent NAS fees do not.

Finally, our study addresses the call by Francis (2006) who states that "the analysis of auditor independence requires a more comprehensive analysis of incentives and the institutional setting in which audit contracting takes place." Our study also responds to researchers who call for abandoning the naïve view that NAS will always adversely affect audit quality and instead adopt the view that NAS, in certain circumstances, will have negative consequences for the audit (Dedman, Kausar, and Lennox 2009). Our results should also be of interest to regulators. While current regulation prohibits most types of NAS on the grounds that they lead to poor audit quality, our results suggest that NAS effects are more nuanced. Although the strict rules of SOX prohibit public companies from obtaining most NAS from their auditor, the NAS issue has broad appeal in other sectors of the economy including private companies that are not subject to SOX and international markets (Ye, Carson, and Simnett 2011; European Commission 2010, 2011).

We organize the remainder of the paper as follows. Section 2 describes the background research and states the hypothesis. Section 3 describes the data and research design. Section 4 reports the main results and provides additional analyses and sensitivity tests. Section 5 considers alternative partitions of the main variables, and section 6 considers the effects of incentives to manage earnings. Finally, section 7 concludes the paper.

2. Background and hypothesis

Whether and how NAS affects audit quality is an important question that also reflects the complexities surrounding auditor decision making. Historically, regulators have taken the position that the joint provision of audit and NAS impairs auditor independence. The basic premise for this position is that revenues generated from NAS create strong economic ties between the auditor and its client, encouraging the auditor to accept more readily a client's biased financial reporting. Therefore, regulators have sought to sever such ties by targeting fees that auditors obtain from their audit clients for nonaudit work (Levitt 2000; SOX 2002). Driven in part by the scandalous affairs at Enron, which paid large fees to their auditor for consulting work, the U.S. Congress passed the Sarbanes-Oxley Act, which prohibits auditors from providing most types of NAS to their audit clients.

While it is likely that the economic relationship between clients and auditors can threaten auditor independence and the quality of financial reporting (DeAngelo 1981), the picture that emerges from empirical research is not consistent. Some studies find evidence that high levels of NAS fees have negative consequences for financial reporting and audit quality (Frankel et al. 2002; Srinidhi and Gul 2007). However, the majority of studies report an insignificant association between NAS fees and audit quality measured by discretionary accruals (Ashbaugh et al. 2003; Chung and Kallapur 2003), going-concern opinions (DeFond, Raghunandan, and Subramanyam 2002; Geiger and Rama 2003; and Callaghan, Parkash, and Singhal 2009), restatements (Kinney, Palmrose, and Scholz 2004; Raghunandan, Read, and Whisenant 2003), and earnings conservatism (Ruddock, Taylor, and Taylor 2006). Overall, the consensus derived from prior research suggests that the level of NAS fees does not, in general, have an adverse impact on audit quality (DeFond and Francis 2005; Francis 2006; Schneider, Church, and Ely 2006; Bloomfield and Shackman 2008; Lim and Tan 2008; Habib 2012).

At least two rationales can explain the insignificant association between NAS and audit quality. First, several market-based or regulatory incentives can offset the adverse effect of economic incentives on auditor independence. These include professional standards and regulations, reputation concerns, and the potential for litigation (Nelson 2006). Second, the joint provision of audit and NAS endows the auditor with a richer set of information about the client, which, in turn, can be used to produce a more effective and efficient audit (e.g., Simunic 1984).[1]

Based on the existing research, there are many complexities associated with NAS and audit quality. To suggest that economic incentives from NAS always dominate the other incentives is simplistic. However, it is possible that particular circumstances arise where auditor's economic incentives do dominate. Thus, a study of how specific economic incentives affect auditor decisions would focus on identifying such circumstances. Recent research provides some evidence in this regard. Kinney et al. (2004) examine the effects of each NAS component on audit quality separately. They find a positive association between tax services and audit quality and a negative association between unspecified NAS and audit quality. Paterson and Valencia (2011) find that nonrecurring tax services appear to influence auditor objectivity in some settings while Reynolds et al. (2004) suggest that auditors are more likely to compromise their independence from NAS when auditing small, high-growth clients. Larcker and Richardson (2004) find that the independence-impairing effect of NAS is present in companies with weak corporate governance, and Krishnan et al. (2011) suggest that only "harmful" NAS—defined as those banned by SOX—can lead to lower audit

1. See also Beck, Frecka, and Solomon 1988; Reynolds and Francis 2001; Knechel and Payne 2001; Geiger and Rama 2003; Antle, Gordon, Narayanamoorthy, and Zhou 2006; Wu 2006; Robinson 2008; Koh, Rajgopal, and Srinivasan 2013; Paterson and Valencia 2011; Seetharaman, Sun, and Wang 2011; Knechel and Sharma 2012; Krishnan and Visvanathan 2011; Prawitt, Sharp, and Wood 2012.

quality and find that clients with high amounts of harmful NAS in the pre-SOX period experienced greater earnings management.

Our research extends this investigation by examining an important circumstance that can intensify the negative aspects associated with NAS: the expectation and the eventual realization of revenue opportunities by audit partners (Coffee 2006; Blay and Geiger 2013). DeAngelo's (1981) analytical model shows that expected future revenues can increase the economic bond between the auditor and client. This bond can intensify in the presence of financial incentives that promote revenue growth because it encourages partners to pursue revenue-generating opportunities. Several observers have reported on the existence of such incentives prior to SOX. For example, at Arthur Andersen audit partners were expected to double the revenues obtained from their audit clients by cross-selling NAS (Brown and Dugan 2002). Arthur Wyatt (2003), a former FASB and IASB board member and former senior partner at Arthur Andersen notes, "Cross-selling of a range of consulting services to audit clients became one of the most important criteria in the evaluation of audit partners. Those with the technical skills previously considered so vital to internal firm advancement found themselves with relatively less important roles." Coffee (2006) notes that partners who successfully attracted large NAS contracts through their salesmanship abilities replaced more technically proficient audit partners who were less successful at selling NAS. Zeff (2003) reports that the consequences for partners for not meeting revenue targets were severe and included extreme measures such as dismissal from the firm.

The SEC, recognizing the importance of these incentives, also expressed concern that financial incentives linked to the sale of NAS threatened auditor objectivity and independence (SEC 2003). Responding to these concerns, in 2003 the SEC issued Rule No. 33-8183, which prohibited "accounting firms from establishing an audit partner's compensation or allocation of partnership 'units' based on the sale of nonaudit services to the partner's audit clients….The new rule provides that an accountant is not independent if, at any point during the audit and professional engagement period, any audit partner, other than specialty partners, earns or receives compensation based on selling engagements to that audit client, to provide any services, other than audit, review, or attest services." (SEC 2003)

These developments suggest that financial incentives prior to SOX had become so important that they could overwhelm the professional responsibility of maintaining audit quality, especially for individual partners who likely became more concerned with short-term career goals than the firm-wide objective of maintaining a high quality reputation (Zeff 2003; Crockett, Harris, Miskin, and White 2004).[2,3] Lennox and Li (2012) reinforce this argument by suggesting that the interplay and tension between partners' personal incentives and the audit firm's incentives to protect its reputation can exert significant effects on audit partner effort and ultimately audit quality. Therefore, we expect that the perverse effects of the compensation practices prior to SOX would lead partners to seek out new growth opportunities by targeting their existing audit clients for additional NAS, in turn increasing the likelihood of economic bonding. In particular, we expect the economic bonding to be more salient in settings where audit partners expected NAS fee increases to be largest and argue that clients with relatively lower levels of NAS provided the most promising target when it came to NAS growth opportunities.

To the extent that high fee-growth-opportunity clients reward the auditor through additional NAS purchases in the subsequent year, these clients were also in the position to

2. Note that audit partner rotation should not significantly mitigate this effect as firms evaluated partners on their ability to increase revenues from all their clients, regardless of their tenure on the engagement.
3. This intuition is confirmed by Trompeter (1994) who finds, in an experimental setting, that partners with compensation more closely tied to client retention were less likely to require downward adjustments to their clients' net income.

influence auditor's decisions to accept financial choices more readily, leading to lower audit quality (Coffee 2006). As Kinney and Libby (2002) note, "more insidious effects on the economic bond may result from unexpected audit and nonaudit service fees that may more accurately be likened to attempted bribes." Therefore, we predict that an auditor's independence is threatened by the pursuit of *additional future* NAS fees that can be obtained from current high fee-growth-opportunity audit clients. Thus, we test the following hypothesis:

HYPOTHESIS. *Increases in nonaudit service fees in subsequent periods obtained from high fee-growth-opportunity (low-NAS) clients will be negatively associated with audit quality.*

3. Data and research design

Sample

We obtain data on Big-N clients' audit and nonaudit fees from Audit Analytics, data on client characteristics from COMPUSTAT, and data on stock returns from CRSP for fiscal years 2000-2001.[4] We exclude observations from 2002 because this was the year of the demise of Arthur Andersen and the year of the Sarbanes-Oxley Act, which prohibited many types of NAS. Consistent with prior studies, all continuous control variables are winsorized at the top and bottom 1 percent to remove extreme values.

Table 1 summarizes the sample selection process and sample size by year for each of the models. The accruals model starts with 9,875 COMPUSTAT observations and uses 4,078 company-year observations after deletions for observations lost in calculating abnormal accruals (144), lacking Audit Analytics data variables (5,057), and the 596 in the 6000 SIC code (financial institutions). The classification-shifting model starts with 12,313 COMPUSTAT observations and uses 3,361 company-year observations after deletions for observations lost due to lacking Audit Analytics data (7,583), CRSP returns data (1,142), and those lost estimating expected core earnings (227).

Fee growth opportunities and future NAS

As stated earlier, in order to identify growth opportunities at a more granular (partner) level, we dissect the sample along city and industry parameters. In doing so, we acknowledge that this dissection may capture more than one partner servicing the same city–industry grouping. However, we assume that partners in the same city and industry face similar incentive structures and therefore will act similarly.[5]

We argue that if partners pursue fee growth, they attempt to tap into their high fee-growth-opportunity clients as a source of new NAS fees. In our research design, we define high fee-growth-opportunity clients as those with current-year NAS fees, scaled by total fees (audit and NAS), below the 50th percentile of such measure among the audit firm's clients in the same city and industry. We obtain information on the city from the Audit Analytics database, which specifies the city of auditor office. Thus, our variable indicating

4. We limit our investigation to Big-N firms (Arthur Andersen, Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers) to be consistent with prior literature that identifies these firms as having differential audit quality and pricing (e.g., Francis and Wang 2005). The use of 2000–2001 as the pre-SOX period is consistent with prior research (Krishnan et al., 2011).

5. We also acknowledge that it is possible for a client to be serviced by partners outside the local office. However, as Francis and Yu (2009) argue, although multiple offices of the Big-4 can service a particular client, the local engagement office contracts with the client and is responsible for the audit. Our method also emphasizes the importance of local offices on audit quality as evidenced by Francis and Yu (2009). In addition, Reichelt and Wang (2010) emphasize the importance of localized industry expertise.

TABLE 1
Sample selection

Panel A: Selection of accruals model sample	
Observations with COMPUSTAT data variables available	9,875
Less: Observations lost calculating abnormal accruals	(144)
Observations lacking Audit Analytics data variables	(5,057)
Observations in SIC 6000s	(596)
Accruals Model Sample	4,078

Panel B: Selection of classification-shifting model sample	
Observations with COMPUSTAT data variables available	12,313
Less: Observations lacking Audit Analytics data variables	(7,583)
Observations lacking CRSP returns data	(1,142)
Observations lost estimating expected core earnings	(227)
Classification-Shifting Model Sample	3,361

Panel C: Sample sizes

Year	Accruals model	Classification-shifting model
2000	1,585	1,261
2001	2,493	2,100
Total company years	4,078	3,361
Total companies	2,803	2,305

fee growth opportunity, *OPFEE*, equals one if a client's NAS fees/total fees are below the 50th percentile of those paid by clients of the company-year auditor in the same city and the same 1-digit SIC industry, and zero otherwise.[6] In order to calculate *OPFEE*, we use the entire sample with data available in Audit Analytics. This procedure yields a sample of 132 unique cities and a sample of 2,460 unique auditor–city–SIC groups before we reduce the sample due to data requirements for each model. The average observation has 7.7 clients in its auditor–city–industry group and the number of clients per group ranges from 1 to 76.

Fee growth opportunity may be a necessary, but not a sufficient, condition for impaired independence; the auditor must also have a promise of future revenues from a client. Our proxy for the existence of such a promise is the observed increase in NAS fees in the following year (*NY_PCT*).[7] Specifically, *NY_PCT* is equal to the larger of (a) the change in total NAS fees or (b) the maximum change in any single NAS fee component (e.g., information systems design and implementation fees), scaled by total fees, from year t to year $t+1$.[8] Therefore we examine the consequences on audit quality for audit engagements characterized by relatively low NAS fees in the current year and NAS fee increases in the following year (*OPFEE* × *NY_PCT*).

6. For descriptions of all variables used, see the Appendix.
7. In our private conversations with partners in international accounting firms, they indicated that performance evaluations were often driven by percentage fee increases.
8. Taking the larger of total NAS fee change or the largest component change controls for settings where net total NAS fee change is small due to an increase in one type of service combined with a decrease in another. We provide sensitivity analyses by redefining *NY_PCT* separately as one or the other later in the paper.

Discretionary accruals

Our first measure of audit quality is discretionary accruals. We generate discretionary accruals using a cross-sectional performance-controlled Jones (1991) model (see Kothari, Leone and Wasley 2005):[9]

$$\frac{CA_t}{AT_{t-1}} = \lambda_1 \frac{1}{AT_{t-1}} + \lambda_2 \frac{\Delta SALE_t}{AT_{t-1}} + \lambda_3 \frac{IB_{t-1}}{AT_{t-1}} + \varepsilon. \quad (1)$$

We first use all COMPUSTAT companies available in our sample years with available data. Current accruals, *CA*, is equal to income before extraordinary items (COMPUSTAT variable *IBC*) plus depreciation (*DPC*), minus operating cash flows (*OANCF*). Change in sales, $\Delta SALE$, is equal to $SALE_t - SALE_{t-1}$. Income before extraordinary items is equal to *IB*, and total assets are equal to *AT*. Consistent with prior studies, we winsorize all variables at the one percent tails before estimating equation (1) within years and within 2-digit SIC codes (excluding industries with fewer than six members).

Discretionary accruals, *DCA*, is equal to the residual values from estimating (1). Absolute discretionary accruals, *ADCA,* is equal to the absolute value of *DCA*. Consistent with prior studies, we eliminate observations with *ADCA* greater than one.

We follow Ashbaugh et al. (2003) and Lim and Tan (2008) and estimate (2) to test for a relationship between audit quality and the combination of fee growth opportunity (*OPFEE*) and future NAS increases (*NY_PCT*):

$$\begin{aligned} ADCA_t = {} & \phi_0 + \phi_1 OPFEE_t + \phi_2 NY\_PCT_t + \phi_3 (OPFEE \times NY\_PCT)_t + \phi_4 GROWTH_t \\ & + \phi_5 (GROWTH \times NY\_PCT)_t + \phi_6 LNNASF_t + \phi_7 TENURE_t + \phi_8 CFO_t \\ & + \phi_9 LEV_t + \phi_{10} LITIG_t + \phi_{11} MB_t + \phi_{12} MV_t + \phi_{13} LOSS_t + \phi_{14} FIN_t \\ & + \phi_{15} LCA_t + \phi_{16} SPEC_{t-1} + \phi_{17} Y(0)_t + \varepsilon. \end{aligned} \quad (2)$$

As defined earlier, *ADCA* is our proxy for audit quality. We base the control variables on prior research (Ashbaugh et al. 2003; Lim and Tan 2008). Prior research suggests that growth companies maybe have more incentives to manage earnings (Skinner and Sloan 2002) and are more likely to increase NAS fees (DeFond et al. 2002). Therefore, we add *GROWTH* and the interaction *GROWTH* × *NY_PCT*, where *GROWTH* measures the percent change in sales (*SALE*) from year $t-1$ to year t. *LNNASF* is the natural log of nonaudit service fees paid to the auditor in the current year. *TENURE* is auditor tenure in years, while *CFO* is equal to operating cash flow (*OANCF*) scaled by total assets (*AT*). *LEV* is equal to total liabilities (*AT* – *CEQ*) scaled by lagged total assets. *LITIG* is a dummy variable equal to one if the company-year is in a high-litigation industry, defined as SIC codes: 2833–2836, 3570–3577, 3600–3674, 5200–5961, 7370–7474; zero otherwise. *MB* is the market-to-book ratio (*MKVALT*/*CEQ*), *MV* is the natural log of the market value of equity (*MKVALT*) at fiscal year-end, and *LOSS* is a dummy variable that equals one if net income (*NI*) is less than zero; zero otherwise. *FIN* is a dummy variable indicating mergers or new financing and equals one if COMPUSTAT footnote *SALE_FN* equals "AB," or the percentage change in long-term debt (*DLTT*) is greater or equal to 20 percent, or the percentage change in common shares outstanding (*CSHO*), adjusted for stock splits, is greater than or equal to 10 percent; zero otherwise. To control

9. Cheng, Liu, and Thomas (2012) find that abnormal accruals models, estimated within industry, that include a control for return on assets outperform other accruals models, particularly when the intent is to detect earnings management.

for possible mean reversion of discretionary accruals we include *LCA*, the absolute value of lagged current accruals.[10] *SPEC* is a dummy variable that equals one if the company-year's audit firm has the greatest market share (based on total audit fees) in the company's 2-digit SIC code; zero otherwise. A yearly dummy variable is included to control for yearly fixed effects.

The interaction term $OPFEE \times NY\_PCT$ is our independent variable of interest; it measures the incremental coefficient on NY_PCT for the $OPFEE = 1$ group. We expect that the coefficient on the interaction term is positive ($\phi_3 > 0$) suggesting that high fee-growth-opportunity (low-NAS) clients that increase future NAS purchases exhibit greater levels of earnings management and therefore lower audit quality. We estimate (2) using all observations and separately for observations with income-increasing and income-decreasing *DCA*.

Classification shifting

Our second measure of earnings management is classification shifting, measured by the association between unexpected core earnings and income-decreasing special items. McVay (2006) suggests that managers who wish to report higher core earnings can do so by reclassifying core expenses into the special items section of the income statement. This shift will produce a positive association between income-decreasing special items and unexpected core earnings, where the latter is equal to the difference between actual and predicted core earnings.

Although managing core earnings through classification shifting does not change net income, managers have incentives to manage core earnings because of the expectation that investors and analysts consider core earnings the most important metric to gauge the performance of a company (Bradshaw and Sloan 2002). Therefore, managers may reclassify core expenses to special items to achieve analysts' forecasts (McVay 2006; Fan et al. 2010). The market's focus on core earnings suggests to the auditor that this line item is important to investors and therefore material to the audit investigation. In addition, McVay (2006) notes that the misclassification of expenses amounts to a GAAP violation. If auditors detect such violations, they should require their reversal. Third, auditors can detect higher than expected core earnings when using analytical procedures designed to detect abnormal fluctuations. Therefore, we expect that auditors influence the reported level of core earnings.

In order to examine the relationship between NAS growth opportunities, future NAS fee increases, and classification shifting, we measure expected core earnings following the methodology in McVay (2006) as modified in Fan et al. (2010). Specifically, using a sample of all COMPUSTAT companies with available data, we estimate core earnings as a function of several economic factors. Equation (3) captures the extent to which core earnings can be explained by company performance metrics, with the residual measuring abnormal core earnings. We estimate (3) within each industry-year, excluding company-year *i*:

$$\begin{aligned} CE_t = {} & \beta_0 + \beta_1 CE_{t-1} + \beta_2 ATO_t + \beta_3 ACCRUALS_{t-1} + \beta_4 \Delta SALES_{t-1} \\ & + \beta_5 NEG\_\Delta SALES_t + \beta_6 RETURNS_{t-1} + \beta_7 RETURNS_t + \varepsilon_t. \end{aligned} \tag{3}$$

In this model, *CE* is core earnings before special items and depreciation, defined as sales (COMPUSTAT variable *SALE*) minus the cost of goods sold (*COGS*) minus sales,

10. Nontabulated analyses excluding *LCA* produce qualitatively similar results to those presented; except for income-increasing accruals, the coefficient is not significant.

general, and administrative expenses (*XSGA*), all scaled by sales. We include prior-year core earnings, CE_{t-1}, because core earnings are highly persistent (McVay 2006; Fan et al. 2010). Prior research suggests that asset turnover ratio, *ATO*, is negatively related to profit margins, therefore we include *ATO* in the regression (Nissim and Penman 2001). *ATO* is equal to $SALE \;/\; ((NOA_t + NOA_{t-1}) \;/\; 2)$ where *NOA* is net operating assets, defined as operating assets minus operating liabilities. Operating assets are equal to total assets (*AT*) minus cash (*CHE*) and other investments (*IVAO*); and operating liabilities are equal to total assets minus long-term debt (*DLTT*), debt in current liabilities (*DLC*), common equity (*CEQ*), preferred stock (*PSTK*), and minority interest (*MIB*).

We also include lagged accruals, $ACCRUALS_{t-1}$, to control for the effect of accruals on future performance (Sloan 1996). *ACCRUALS* equals operating accruals, defined as net income before extraordinary items (*IB*) minus operating cash flows (*OANCF* – *XIDOC*), all scaled by sales. McVay (2006) and Fan et al. (2010) argue that fixed costs decline on each sales dollar as sales increase; therefore we also include the change in sales in the model, *ΔSALES*, measured as the percent change in sales, defined as $(SALE_t - SALE_{t-1}) \;/\; SALE_{t-1}$ and include *NEG_ΔSALES* which equals *ΔSALES* if *ΔSALES* is negative, and zero otherwise. The rationale for including a different term for negative sales changes is due to Anderson, Banker and Janakiraman (2003) who find that costs are "sticky" and increase more when activity rises than they decline when activity falls.

Finally, we include both current year and lagged *RETURNS* measured as the 12-month market adjusted returns corresponding to the fiscal year. As argued in Fan et al. (2010), current-year *RETURNS* control for current-year performance whereas lagged *RETURNS* are included because investors may be able to detect weak performance and adjust their expectations of core earnings before companies report earnings in the current year. We calculate unexpected core earnings (*UE_CE*) as the difference between reported and predicted core earnings, where predicted values are calculated using coefficients from (3), estimated within calendar year of fiscal-year-end and industry, while excluding company-year *i*.

Following Fan et al. (2010), we use (4) below to test our hypothesis that the association between special items and unexplained core earnings is more positive (or less negative) when high fee-growth-opportunity clients increase NAS purchases in the subsequent year:

$$\begin{aligned} UE\_CE_t = {} & \alpha_0 + \alpha_1 \%SI_t + \alpha_2 (\%SI \times OPFEE)_t + \alpha_3 (\%SI \times NY\_PCT)_t \\ & + \alpha_4 (\%SI \times OPFEE \times NY\_PCT)_t + \alpha_5 (OPFEE \times NY\_PCT)_t \\ & + \alpha_6 OPFEE_t + \alpha_7 NY\_PCT_t + \alpha_8 (\%SI \times GROWTH \times NY\_PCT)_t \\ & + \alpha_9 (\%SI \times GROWTH)_t + \alpha_{10} (GROWTH \times NY\_PCT)_t \\ & + \alpha_{11} GROWTH_t + \alpha_{12} LNNASF_t + \alpha_{13} (\%SI \times LNNASF)_t + \varepsilon_t. \end{aligned} \tag{4}$$

In this equation, *UE_CE* is unexpected core earnings, defined above. *%SI* is equal to −1 times special items (*SPI*), scaled by sales, when special items are income-decreasing, and zero otherwise; in other words, income-decreasing special items as a percent of sales. *OPFEE* and *NY_PCT* are defined above, as are *GROWTH* and *LNNASF*.

The hypothesis predicts that high fee-growth opportunities represented by low-NAS clients (*OPFEE*) in combination with future NAS purchases (*NY_PCT*), will lead to lower audit quality. Therefore, in (4), we expect a positive coefficient, α_4, on the interaction term $\%SI \times OPFEE \times NY\_PCT$ indicating an increase in the association between income-decreasing special items and unexpected core earnings, consistent with greater earnings management through classification shifting.

4. Results

Fee-growth opportunity, future NAS, and discretionary accruals

Descriptive statistics

Table 2 presents the distribution of the sample used in the discretionary accruals model by 2-digit SIC industry. We present descriptive statistics for the discretionary accruals sample in Table 3. The mean (median) value of *ADCA* is 0.09 (0.05), which is similar to the values reported in Lim and Tan (2008). The mean value of *NY_PCT* prior to SOX is 0.22, indicating that nonaudit fees increased on average by 22 percent of total fees in our sample period and suggesting that audit firms were actively pursuing NAS fees just prior to SOX. On average, about 40 percent of companies prior to SOX had nonaudit fees below the 50th percentile for the same combination of city and 1-digit SIC industries, as measured by *OPFEE*. The mean value of auditor tenure is about nine years. Finally, *SPEC*'s mean of 0.28 indicates that industry specialists audited 28 percent of sample companies.

In panel B, correlations show that *OPFEE* is positively and significantly correlated with *ADCA*, providing some preliminary evidence that audit quality is lower for high fee-growth-opportunity clients. The relationship between *ADCA* and *NY_PCT* is negative and significant, which suggests that an increase in future NAS is associated with lower discretionary accruals. Consistent with some prior literature, NAS fees are negatively correlated with absolute values of discretionary accruals. However, simple correlations do not simultaneously control for all variables that might influence *ADCA*. Next, we examine our research question in a multivariate framework.

Multivariate results

Table 4 presents the regression results of the discretionary accruals model (2) using the absolute value of total, income-increasing, and income-decreasing accruals. The ordinary least square (OLS) results have adjusted R^2s ranging from 21 to 38 percent, suggesting a reasonably good fit and are comparable to levels reported in prior research. Examination of variance inflation factors (VIFs) suggest that none of our coefficients are materially affected by multicollinearity (Belsley, Kuh, and Welsch (1980)). The coefficients on

TABLE 2
Distribution of accruals model sample companies by industry

SIC	Industry	*N*	%
13	Oil and gas extraction	166	4.07
20	Food and kindred prod.	82	2.01
28	Chemical and allied proc.	424	10.40
35	Industrial machinery/equip.	268	6.57
36	Electronic/other electric	333	8.17
37	Transportation equip.	111	2.72
38	Instruments and related	283	6.94
48	Communication	195	4.78
49	Electric/gas/sanitary serv.	205	5.03
50	Durable goods—whsl.	97	2.38
59	Miscellaneous retail	83	2.04
73	Business services/software	618	15.15
87	Engineering/mgmt. serv.	98	2.40
	Other	1,115	27.34
Total		4,078	

TABLE 3
Descriptive statistics and correlation between variables used in the accruals model

Panel A: Descriptive statistics

Variable	Mean	Std. dev.	1st qrtl.	Median	3rd qrtl.
ADCA	0.09	0.11	0.02	0.05	0.10
NY_PCT	0.22	0.38	0.00	0.09	0.31
OPFEE	0.40	0.49	0	0	1
GROWTH	0.29	1.04	– 0.05	0.08	0.29
LNNASF	12.55	1.76	11.34	12.46	13.66
TENURE	8.97	6.38	4	7	12
CFO	0.02	0.21	– 0.02	0.06	0.13
LEV	0.57	0.31	0.36	0.57	0.73
LITIG	0.34	0.47	0	0	1
MB	2.56	4.51	0.86	1.71	3.20
MV	5.56	2.24	3.90	5.59	7.06
LOSS	0.44	0.50	0	0	1
FIN	0.43	0.49	0	0	1
LCA	0.07	0.10	0.02	0.04	0.08
SPEC	0.28	0.45	0	0	1

(The table is continued on the next page.)

TABLE 3 (continued)

Panel B: Correlations (Pearson Correlations above the diagonal; Spearman Correlations below)

	A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*
ADCA (A)		−0.07**	0.04**	0.14**	−0.15**	−0.17**	−0.34**	0.09**	0.20**	0.04**	−0.22**	0.27**	0.20**	0.32**	0.01
NY_PCT (B)	−0.11**		0.01	−0.01	−0.01	0.00	0.09**	−0.04**	−0.01	0.03	0.15**	−0.13**	−0.02	−0.06**	0.02
OPFEE(C)	0.06**	−0.02		−0.02	−0.60**	−0.11**	−0.13**	0.00	0.03	−0.04**	−0.37**	0.13**	−0.04*	0.10**	−0.01
GROWTH (D)	0.14**	−0.01	−0.02		−0.02	−0.14**	−0.23**	−0.06**	0.06**	0.02	0.02	0.10**	0.20**	0.07**	0.00
LNNASF (E)	−0.17**	0.07**	−0.64**	0.03		0.25**	0.23**	0.10**	−0.09**	0.06**	0.70**	−0.20**	0.00	−0.19**	0.02
TENURE (F)	−0.16**	0.06**	−0.11**	−0.15**	0.21**		0.22**	0.06**	−0.16**	0.03	0.26**	−0.26**	−0.11**	−0.14**	−0.00
CFO (G)	−0.18**	0.15**	−0.15**	0.04**	0.23**	0.26**		0.07**	−0.24**	−0.01	0.30**	−0.50**	−0.27**	−0.27**	0.00
LEV (H)	−0.06**	−0.05**	−0.03	−0.12**	0.17**	0.12**	−0.02		−0.17**	−0.16**	−0.12**	0.09**	0.02	0.13**	−0.02
LITIG (I)	0.20**	−0.04*	0.03	0.00	−0.10**	−0.15**	−0.20**	−0.25**		0.10**	−0.05**	0.21**	0.11**	0.17**	0.00
MB (J)	0.01	0.14**	−0.14**	0.21**	0.17**	0.05**	0.18**	−0.19**	0.12**		0.25**	−0.04**	0.04**	0.02	0.02
MV (K)	−0.22**	0.24**	−0.37**	0.20**	0.69**	0.23**	0.35**	−0.05**	−0.06**	0.52**		−0.35**	−0.00	−0.24**	0.04**
LOSS (L)	0.26**	−0.18**	0.13**	−0.14**	−0.20**	−0.26**	−0.59**	0.03*	0.22**	−0.18**	−0.35**		0.18**	0.19**	0.02
FIN (M)	0.18**	−0.04*	−0.04*	0.22**	−0.00	−0.12**	−0.24**	0.00	0.11**	0.08**	−0.00	0.18**		0.13**	0.02
LCA (N)	0.28**	−0.08**	0.12**	−0.04**	−0.21**	−0.16**	−0.21**	−0.05**	0.16**	−0.05**	−0.27**	0.21**	0.13**		−0.02
SPEC (O)	−0.00	0.03*	−0.01	0.04*	0.02	0.01	−0.00	−0.02	−0.00	0.03*	0.04**	0.02	0.02	−0.02	

Notes:

All continuous control variables are winsorized at the 1 percent tails.

** and * denote statistical significance at the 1 and 5 percent levels, respectively.

All variables are as defined in the Appendix.

TABLE 4
Regression of absolute discretionary accruals on fee variables and controls

$$ADCA_1 = \phi_0 + \phi_1 OPFEE_t + \phi_2 NY\_PCT_t + \phi_3 (OPFEE \times NY\_PCT)_t + \phi_4 GROWTH_t + \phi_5 (GROWTH \times NY\_PCT)_t + \phi_6 LNNASF_t + \phi_7 TENURE_t + \phi_8 CFO_t + \phi_9 LEV_t + \phi_{10} LITIG_t + \phi_{11} MB_t + \phi_{12} MV_t + \phi_{13} LOSS_t + \phi_{14} FIN_t + \phi_{15} LCA_t + \phi_{16} SPEC_{t-1} + \phi_{17} Y(0)_t + \varepsilon. \quad (2)$$

	Total discretionary accruals		Income increasing discretionary accruals		Income decreasing discretionary accruals	
Variable	Estimated coefficient	*t*-statistic	Estimated coefficient	*t*-statistic	Estimated coefficient	*t*-statistic
Intercept	0.082***	2.64	0.128***	16.03	0.054*	1.53
OPFEE	−0.015***	−34.58	−0.015***	−2.92	−0.014***	−3.51
NY_PCT	−0.013***	−4.13	−0.018**	−2.38	−0.012***	−4.67
OPFEE x NY_PCT	**0.019*** **	**2.51**	**0.016** **	**2.05**	**0.021*** **	**4.12**
GROWTH	0.007***	24.25	0.007***	6.90	0.009***	5.06
GROWTH × NY_PCT	−0.003	−1.04	0.010	1.30	−0.008***	−4.94
LNNASF	0.000	0.07	−0.003***	−4.29	0.000	0.05
TENURE	−0.001***	−6.03	−0.001***	−10.82	−0.001***	−3.57
CFO	−0.084***	−2.94	−0.243***	−73.07	0.030	0.82
LEV	0.023**	2.37	−0.006	−0.71	0.044***	6.26
LITIG	0.024***	8.36	−0.002**	−2.44	0.038***	28.41
MB	0.002***	2.99	−0.000	−0.11	0.002***	4.73
MV	−0.006***	−3.79	−0.002***	−2.70	−0.006***	−3.58
LOSS	0.011	1.29	−0.055***	−12.74	0.053***	15.83
FIN	0.020***	193.32	0.019***	59.97	0.019***	35.33
LCA	0.222***	13.81	0.334***	17.41	0.123***	21.66
SPEC	0.005***	27.70	0.006**	5.07	0.004***	17.86
Y(0)	−0.006***	−8.22	0.007***	60.59	−0.012***	−24.25
Adjusted R^2	0.215		0.385		0.221	
N	4,078		1,745		2,333	

Notes:

All variables are as defined in the Appendix.

T-statistics are calculated based on the Huber-White method (Diggle et al. 1994).

***, ** and * denote statistical significance at the 1, 5, and 10 percent levels, respectively, using one-tailed test for the hypothesized variables and two-tailed for the control variables.

OPFEE and *NY_PCT* are negative and significant ($\phi_1 = -0.015$ and $\phi_2 = -0.013$, respectively). This result is consistent with the view that NAS do not always negatively influence audit quality.

Consistent with our expectations, the coefficient on the interaction term *OPFEE* × *NY_PCT* is positive and significant ($\phi_3 = 0.019$, *t*-statistic = 2.51).[11] This suggests that high fee-growth-opportunity clients that increase subsequent NAS fees have greater levels of earnings management. We obtain a similar result when *ADCA* is limited to income-increasing ($\phi_3 = 0.016$, *t*-statistic = 2.05) and income-decreasing ($\phi_3 = 0.021$, *t*-statistic = 4.12) discretionary accruals in the next two columns. The sign and significance of the remaining control variables are consistent with prior research (Lin and Tam 2008).

LNNASF is not a significant determinant of *ADCA*, which suggests that the current level of NAS obtained from the client do not affect audit quality (see Ashbaugh et al. 2003; Habib 2012). The association between *LNNASF* and income-increasing discretionary accruals is negative and significant, indicating less use of income-increasing discretionary accruals as current-year NAS fees increase. This implies more conservative financial reporting in the presence of higher NAS fees, which is contrary to the concerns of regulators and more consistent with the argument that current NAS creates knowledge spillovers that can improve audit quality.

Fee-growth opportunity, future NAS, and classification shifting

Descriptive statistics

Table 5 presents the distribution of the classification-shifting sample by industry using the Fama–French definitions.[12] Table 6 presents descriptive statistics (panel A) and correlation coefficients (panel B) of the variables in (4). The mean (median) value of unexpected core earnings (*UE_CE*) is 0.00 (0.01) and is comparable to that reported in prior research. The mean (median) value for percentage of special items (%*SI*) is 0.07 (0.00) suggesting that on average, income-decreasing special items are 0.07 percent of sales. In terms of NAS fees, the table shows that mean (median) NAS fees in year $t+1$ increased by 24 (9) percent of total fees in year *t*. The mean value for *OPFEE* is 0.42 suggesting that about 42 percent of observations in the sample fall under the category low-NAS and thus represent high fee-growth opportunities. Finally, the mean (median) value of the natural log of nonaudit services is 12.40 (12.33). In panel B, the Pearson correlation between %*SI* and *UE_CE* is negative and significant, consistent with Fan et al. (2010).[13] In these univariate analyses, the association between *UE_CE* and the fee variables is not significant.

Multivariate results

Table 7 presents the results of estimating (4), which tests for an increased association between unexpected core earnings (*UE_CE*) and income-decreasing special items for

11. The Huber-White *t*-statistics reported in the paper control for cross-sectional correlations (see Diggle, Liang, and Zeger 1994). We do not control for two-way clustering (Gow, Ormazabal, and Taylor 2010) because our two-year sample is insufficient to estimate two-way cluster controlled *t*-statistics. Gow et al. (2010) imply a minimum of 10 years of data are needed to estimate the time-series dimension of their two-way cluster controlled *t*-statistics.
12. We follow the prior classification-shifting literature by defining industries using the Fama-French (1997) definitions.
13. McVay (2006) cautions that controlling for performance using contemporaneous accruals induces a mechanical positive association between unexpected core earnings and special items because contemporaneous accruals include accrual special items. Fan et al. (2010) demonstrate that measuring performance with contemporaneous returns solves this potential problem, resulting in a negative association between *UE_CE* and %*SI*. In their regression specification, a less negative or more positive coefficient on %*SI* would be consistent with evidence of classification shifting.

TABLE 5
Distribution of classification-shifting sample by Fama-French industry

Fama-French industry	*N*	%
Agriculture	0	0.00
Food Products	52	1.55
Candy and Soda	0	0.00
Alcoholic Beverages	0	0.00
Tobacco Products	0	0.00
Recreational Products	45	1.34
Entertainment	56	1.67
Printing and Publishing	17	0.51
Consumer Goods	65	1.93
Apparel	44	1.31
Health Care	64	1.90
Medical Equipment	148	4.40
Pharmaceutical Products	144	4.28
Chemicals	81	2.41
Rubber and Plastic Products	47	1.40
Textiles	0	0.00
Construction Materials	78	2.32
Construction	25	0.74
Steel Works, Etc.	79	2.35
Fabricated Products	0	0.00
Machinery	161	4.79
Electrical Equipment	72	2.14
Miscellaneous	21	0.62
Automobiles and Trucks	64	1.90
Aircraft	0	0.00
Shipbuilding, Railroad Equipment	0	0.00
Defense	0	0.00
Precious Metals	0	0.00
Nonmetallic Mining	0	0.00
Coal	0	0.00
Petroleum and Natural Gas	171	5.09
Utilities	37	1.10
Telecommunications	100	2.98
Personal Services	39	1.16
Business Services	602	17. 91
Computers	200	5.95
Electronic Equipment	247	7.35
Measuring and Control Equipment	110	3.27
Business Supplies	54	1.61
Shipping Containers	0	0.00
Transportation	50	1.49
Wholesale	151	4.49
Retail	207	6.16
Restaurants, Hotel, and Motel	87	2.59
Banking	0	0.00
Insurance	43	1.28
Real Estate	0	0.00
Trading	0	0.00
Total	3,361	

TABLE 6
Descriptive statistics and correlation between variables used in the classification-shifting model

Panel A: Descriptive statistics

Variable	Mean	Std. dev.	1st qtrl.	Median	3rd qtrl
UE_CE	0.00	0.37	−0.04	0.01	0.07
%SI	0.07	0.31	0.00	0.00	0.02
NY_PCT	0.24	0.40	0.00	0.09	0.32
OPFEE	0.42	0.49	0	0	1
GROWTH	0.18	0.67	−0.06	0.07	0.24
LNNASF	12.40	1.71	11.27	12.33	13.48

Panel B: Correlations (Pearson Correlations above the diagonal; Spearman Correlations below)

	UE_CE	*%SI*	*OPFEE*	*NY_PCT*	*GROWTH*	*LNNASF*
UE_CE		−0.16**	0.03	−0.01	0.16**	0.01
%SI	−0.02		−0.02	−0.06**	−0.02	0.03
OPFEE	−0.00	−0.09**		−0.00	−0.03	−0.61**
NY_PCT	0.02	−0.08**	−0.01		0.04*	−0.02
GROWTH	−0.13**	−0.18**	−0.08**	0.12**		0.00
LNNASF	0.03	0.19**	−0.64**	0.06**	0.04*	

Notes:

All variables are as defined in the Appendix.
** and * denote statistical significance at the 1 and 5 percent levels, respectively.

clients with high-fee-growth opportunities (*OPFEE*) and subsequent NAS fee increases (*NY_PCT*), while controlling for the current-year level of NAS fees (*LNNASF*). The results of the equation are comparable to prior research with the adjusted R^2 of about 7 percent (Fan et al. 2010).[14] The coefficient on the three-way interaction term $\%SI \times OPFEE \times NY\_PCT$, our hypothesis test, is positive and significant ($\alpha_4 = 0.651$, t-stat = 59.76); the association between unexpected core earnings and income-decreasing special items is more positive when current-year low-NAS clients increase future NAS fees.[15] This indicates that high fee-growth-opportunity clients who increase NAS purchases in the future, exhibit greater levels of classification shifting and higher than expected core earnings. In addition, we observe that the interaction between $\%SI \times OPFEE$ is positive and significant suggesting that an auditor allows more classification shifting in clients with low NAS in the current year (those with the greatest fee-growth opportunities). The association between $\%SI \times NY\_PCT$ is negative and significant, suggesting that future NAS increases by themselves do not necessarily impair audit quality.

Examination of VIFs suggest that our main interaction coefficient is unaffected by multicollinearity; although the t-statistics associated with $\%SI$ and $\%SI \times LNNASF$ are jointly affected by multicollinearity, this has no effect on our hypothesis test. These inflated variances are a contributing factor in the insignificant coefficients on $\%SI$ and the interaction $\%SI \times LNNASF$.

14. We also ran Fan et al.'s (2010) original model of unexpected core earnings using our sample. Our untabulated results are quantitatively similar to those presented in Tables 4 and 5 in Fan et al. (2010), where the coefficient on $\%SI$ is negative and significant.
15. The large t-statistics on terms involving $\%SI$ are comparable to Fan et al. (2010).

TABLE 7
Regression of unexpected core earnings on special items, fee variables, and controls

$$\begin{aligned} UE\_CE_t = {} & \alpha_0 + \alpha_1 \%SI_t + \alpha_2 (\%SI \times OPFEE)_t + \alpha_3 (\%SI \times NY\_PCT)_t \\ & + \alpha_4 (\%SI \times OPFEE \times NY\_PCT)_t + \alpha_5 (OPFEE \times NY\_PCT)_t \\ & + \alpha_6 OPFEE_t + \alpha_7 NY\_PCT_t + \alpha_8 (\%SI \times GROWTH \times NY\_PCT)_t \\ & + \alpha_9 (\%SI \times GROWTH)_t + \alpha_{10} (GROWTH \times NY\_PCT)_t + \alpha_{11} GROWTH_t \\ & + \alpha_{12} LNNASF_t + \alpha_{13} (\%SI \times LNNASF)_t + \varepsilon. \end{aligned} \quad (4)$$

Variable	Estimated coefficient	*t*-statistic
Intercept	−0.012***	−8.92
%SI	−0.382	−0.62
%SI × OPFEE	0.149***	4.03
%SI × NY_PCT	−0.520***	−7.44
%SI × OPFEE × NY_PCT	**0.651*** **	**59.76**
OPFEE × NY_PCT	0.004	0.16
OPFEE	0.027***	6.24
NY_PCT	−0.015	−0. 72
%SI × GROWTH × NY_PCT	0.561***	6.49
%SI × GROWTH	−0.006	−0.27
GROWTH × NY_PCT	−0.006***	−4.83
GROWTH	0.074***	15.09
LNNASF	0.009***	12.06
%SI × LNNASF	0.014	0.28
Adjusted R^2	0.07	
N	3,361	

Notes:

All variables are as defined in the Appendix.

T-statistics are calculated based on the Huber-White method, controlling for within-year cross-correlations (Diggle et al. 1994).

*** denotes statistical significance at the 1 percent level, using one-tailed test for the hypothesized variables and two-tailed for the control variables.

Overall, we find significant evidence of earnings management in high fee-growth-opportunity clients (represented by relatively lower levels of NAS) who increase their NAS purchases from the auditor in subsequent periods. These results are consistent with Coffee (2006), who argues that low NAS clients can influence the auditor's decisions and the quality of the audit by simply promising future business.

Post-SOX analyses

To provide a benchmark to our main results, we test whether the association predicted in our hypothesis holds during the years 2005–2007, a period characterized by new regulatory provisions that targeted both NAS and partner-compensation structures. First, the Sarbanes-Oxley Act prohibited audit firms from providing most types of NAS to their audit clients. This provision limited NAS fee-growth opportunities. In addition, in 2003 the SEC issued Rule No. 33-8183 prohibiting compensation practices based on NAS, suggesting that pressure to increase professional service fees was lower during this period. In this new regulatory environment, we do not expect our hypothesized relation to hold. Table 8 reports the results for discretionary accruals and Table 9 presents the result for

TABLE 8
Regression of absolute discretionary accruals on fee variables and controls during 2005–07

$$ADCA_t = \phi_0 + \phi_1 OPFEE_t + \phi_2 NY\_PCT_t + \phi_3 (OPFEE \times NY\_PCT)_t + \phi_4 GROWTH_t + \phi_5 (GROWTH \times NY\_PCT)_t + \phi_6 LNNASF_t + \phi_7 TENURE_t + \phi_8 CFO_t + \phi_9 LEV_t + \phi_{10} LITIG_t + \phi_{11} MB_t + \phi_{12} MV_t + \phi_{13} LOSS_t + \phi_{14} FIN_t + \phi_{15} LCA_t + \phi_{16} SPEC_{t-1} + \phi_{17} Y(6)_t + \phi_{18} Y(7)_t + \varepsilon.$$

	Total discretionary accruals		Income-increasing discretionary accruals		Income-decreasing discretionary accruals	
Variable	Estimated coefficient	*t*-statistic	Estimated coefficient	*t*-statistic	Estimated coefficient	*t*-statistic
Intercept	0.041***	7.16	0.054**	2.86	−0.001	−0.17
OPFEE	−0.004***	−11.11	−0.002	−0.35	−0.004***	−3.07
NY_PCT	−0.005	−0.81	0.002	0.13	−0.008	−0.71
OPFEE* × *NY_PCT	**0.004**	**0.28**	**0.025**	**1.36**	**-0.003**	**−0.82**
GROWTH	0.017***	4.17	0.013***	2.77	0.020*	1.65
GROWTH × *NY_PCT*	0.001	0.06	−0.043**	−2.40	0.027	0.52
LNNASF	−0.000	−0.15	0.002	0.99	0.000	0.46
TENURE	−0.000	−0.55	−0.000**	−1.96	0.000	1.04
CFO	−0.015	−0.94	−0.218***	−51.58	0.192***	5.98
LEV	0.015***	9.80	0.011**	2.20	0.023***	7.97
LITIG	0.009***	7.61	0.001	0.32	0.011***	8.04
MB	0.001	0.95	0.001	1.53	−0.000	−0.24
MV	−0.003***	−13.05	−0.004***	−6.55	−0.003***	−8.42
LOSS	0.028***	6.14	−0.043***	−12.78	0.076***	14.70
FIN	0.014***	7.26	0.016***	20.70	0.007***	3.02
LCA	0.276***	6.96	0.297***	9.94	0.245***	7.55
SPEC	−0.001	−1.21	−0.009***	−4.76	0.005***	8.83

(The table is continued on the next page.)

TABLE 8 (continued)

Variable	Total discretionary accruals		Income-increasing discretionary accruals		Income-decreasing discretionary accruals	
	Estimated coefficient	*t*-statistic	Estimated coefficient	*t*-statistic	Estimated coefficient	*t*-statistic
Y(6)	−0.000	−1.00	−0.002***	−5.91	0.001***	6.00
Y(7)	0.003***	15.32	0.000***	2.13	0.004***	6.74
Adjusted R^2	0.181		0.316		0.245	
N	4,985		1,909		3,076	

Notes:

All variables are as defined in the Appendix.

T-statistics are calculated based on the Huber-White method (Diggle et al. 1994).

***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively, using one-tailed test for the hypothesized variables and two-tailed for the control variables.

TABLE 9
Regression of unexpected core earnings on special items, fee variables, and controls during 2005–07

$$\begin{aligned} UE\_CE_t = {} & \alpha_0 + \alpha_1 \%SI_t + \alpha_2 (\%SI \times OPFEE)_t + \alpha_3 (\%SI \times NY\_PCT)_t \\ & + \alpha_4 (\%SI \times OPFEE \times NY\_PCT)_t + \alpha_5 (OPFEE \times NY\_PCT)_t \\ & + \alpha_6 OPFEE_t + \alpha_7 NY\_PCT_t + \alpha_8 (\%SI \times GROWTH \times NY\_PCT)_t \\ & + \alpha_9 (\%SI \times GROWTH)_t + \alpha_{10} (GROWTH \times NY\_PCT)_t + \alpha_{11} GROWTH_t \\ & + \alpha_{12} LNNASF_t + \alpha_{13} (\%SI \times LNNASF)_t + \varepsilon. \end{aligned} \quad (4)$$

Variable	Estimated coefficient	*t*-statistic
Intercept	−0.049***	−12.88
%SI	0.446	0.90
%SI × OPFEE	−0.507***	−6.86
%SI × NY_PCT	0.894	1.20
%SI × OPFEE × NY_PCT	**1.941**	**1.12**
OPFEE × NY_PCT	−0.010	−0.39
OPFEE	0.005	1.50
NY_PCT	0.036***	2.67
%SI × GROWTH × NY_PCT	−3.953	−0.89
%SI × GROWTH	−0.062	−0.73
GROWTH × NY_PCT	−0.093***	−4.09
GROWTH	0.046***	3.31
LNNASF	0.003***	11.63
%SI × LNNASF	−0.034	−1.00
Adjusted R^2	0.03	
N	5,241	

Notes:

All variables are as defined in the Appendix.

T-statistics are calculated based on the Huber-White method, controlling for within-year cross correlations (Diggle et al. 1994).

*** denotes statistical significance at the 1 percent levels, using one-tailed test for the hypothesized variables and two-tailed for the control variables.

classification shifting using data from the post-SOX period. The sample size for the discretionary accruals and classification-shifting analyses are 4,985 and 5,241 company-year observations, respectively. The results show that the coefficients on the variables of interest are statistically insignificant, supporting our expectations.[16] This is consistent with prior research that documents lower levels of earnings management post-SOX (Cohen, Dey, and Lys 2008; Koh et al., 2008).

Sensitivity analyses

We replicate our main analyses by (a) excluding Arthur Andersen observations and (b) controlling for the natural log of total fees. We also rerun the classification-shifting model while controlling for companies that engaged in merger or other financing activity. In all cases, our main results did not qualitatively change.

16. We limit the post-SOX period to years 2005–07 to avoid the confounding effects from other contemporaneous regulation (i.e., SOX 404). Including 2004 produced similar results, except for a positive and significant coefficient for the income-increasing discretionary accruals model.

We next examine a number of alternative specifications for *NY_PCT,* which is defined as a combination of two components: (a) the larger of the scaled change in total NAS fees; or (b) the maximum scaled change among the separate NAS fee components. In order to test the sensitivity of the results to this measure, we rerun the analyses by constructing two separate measures of *NY_PCT*, each based on one of the underlying components. The results are qualitatively similar to our main results for core earnings and discretionary accruals, with one exception: when *NY_PCT* is based on total NAS and *ADCA* includes only income-increasing accruals, the interaction coefficient is statistically insignificant. Second, because our sample period coincides with an economic downturn, it is possible that *NY_PCT* does not capture discretionary rewards to the auditor but instead a resumption of NAS spending to normal levels. In order to address this concern, we consider year 2000 NAS fee levels as the expected or normal levels of NAS and measure the change in NAS fees relative to year 2000 levels; in this analysis, our results continue to support the hypothesis for both models. Finally, we replace our current *NY_PCT* with unexpected *NY_PCT*, where unexpected NAS fees is the difference between the actual NAS and the NAS industry mean within 2-digit SIC. The results show that the coefficient on $OPFEE \times NY\_PCT$ is positive and statistically significant for both types of earnings management.

Next, we examine alternative definitions of *OPFEE*. We draw on DeFond and Francis (2005) and run a regression that predicts nonaudit service fees as a function of several independent variables. Using the residuals of this regression, we construct a measure of unexpected NAS and define amounts below the median as those with low current-year NAS ($OPFEE = 1$). We rerun our main analyses using this alternative definition of *OPFEE* and find that the interaction term is positive and statistically significant for both types of earnings management. Second, we redefine O*PFEE* to equal one if a client's NAS fees are below the *mean* (rather than the median used in the original definition) of the fees paid by clients of the company-year auditor in the same city and the same 1-digit SIC industry and zero otherwise. Using this alternative cut-off produces qualitatively similar results to our main findings. Third, we consider that *OPFEE* measured using 1-digit SIC industries may be too broad to capture a partner's portfolio along industry lines. However, building portfolios using 2-digit SIC codes significantly reduces the number of observations in each city cell. In order to ensure there are sufficient observations to calculate the median, we expand the unit of analysis from city to state, and from city to region.[17] In untabulated results, we find positive and significant coefficients on $OPFEE \times NY\_PCT$ for the state–2-digit industry combination and the region–2-digit industry combination for both discretionary accruals and classification-shifting models.

We also consider two alternative measures of audit quality including the presence of year t restatement (restatement pertaining to year t financial statements which may have been disclosed in subsequent periods) or the issuance of a going-concern opinion (limited to companies with financial reports that indicate financial distress—either net income or operating cash flows less than zero). When using these measures we find no association between our interaction variable and audit quality. We also reestimate the going-concern model using the more restricted sample specification used by Blay and Geiger (2013) and find no significant results. These results are not surprising when considering that the transparency of the metric used to capture audit quality will determine whether economic incentives override reputation concerns. Going-concern opinions and restatements are significant events that attract attention from regulators and financial statement users as

17. Six regions were obtained from Audit Analytics including Mid-Atlantic, Midwest, New England, Southeast, Southwest, and West.

opposed to management's reported earnings that derive from the application of flexible financial reporting standards.

5. Finer partitioning of *OPFEE* groups

The main analyses utilize a single partitioning of our sample into high and low fee-growth-opportunity groups (*OPFEE* = 1 and 0, respectively). We examine the relation between future growth in NAS (*NY_PCT*) and earnings management separately for the two groups. We find significant positive relations only for the high fee-growth-opportunity group as expected. Table 10, panel A illustrates this partition.

However, it is possible that auditors of companies in subgroups within our partitioning will not have the expected incentives to impair independence.[18] For example, companies in the high fee-growth-opportunity (*OPFEE* = 1) group with low future NAS growth may simply be companies that are not in the market for NAS under any conditions—"lost causes" from the auditor's perspective. For this subgroup of the *OPFEE* = 1 group, we may not observe evidence of higher earnings management. Alternatively, in our main analyses, we expect little impairment of independence for the low fee-growth-opportunity group (*OPFEE* = 0). However, a subgroup of the *OPFEE* = 0 group, with their high current NAS, may be in a position to negotiate with their auditor about the continuance of NAS contracts at the same level in the future. The auditor may view these companies as "potential NAS loss" clients; this would result in the client having a favorable bargaining position vis-à-vis the auditor, resulting in an economic bond that impairs auditor independence.

Table 10, panel B illustrates a finer partitioning of the sample that attempts to isolate companies that belong to one of these subgroups. In addition to the original partition based on *OPFEE*, we partition the sample at the median of *NY_PCT* to form four subgroups (*a*, *b*, *c*, and *d*). The *OPFEE* = 1 group is divided into subgroups *a* and *b*, and the *OPFEE* = 0 group into subgroups *c* and *d*. Subgroup *a* may be populated by the "lost cause" clients that would not be in the market for NAS under any conditions. Subgroup *c* may contain the "potential NAS loss" clients with high current NAS the auditor wants to retain. Subgroup *b* consists of the companies where we expect our hypothesized relation to be the strongest. Subgroup *d* consists of clients with high current NAS that significantly increase NAS in the future. This group likely contains companies with economic reasons for contracting for NAS. We would not expect to see auditor incentives to impair independence in subgroup *d*. Table 10 panel B contains the sample sizes for each of the subgroups.

We reestimate our main analyses with separate interaction variables and intercepts for the four subgroups to examine potential variation in our results within the subgroups.[19] Table 10, panel C reports two sets of interaction coefficients for the discretionary accruals model. The first column replicates the main analyses by combining subgroups *a* and *b*. The coefficients are identical to those reported in Table 4. The second column reports results that isolate subgroups *a*, *b*, and *c* separately (in this column, the *NY_PCT* coefficient measures subgroup *d*'s result).

The coefficient for the subgroup *b* interaction is positive and significant, confirming that our discretionary accrual model results are primarily driven by this subgroup. The coefficient for subgroup *a* in the second column is insignificantly different from zero, supporting the intuition that this subgroup primarily contains "lost cause" clients unlikely to generate incentives leading to impaired auditor independence. Contrary to the idea that

18. We thank the editor and an anonymous reviewer for suggesting this avenue of analysis.
19. We tabulate only the total accruals and core earnings regression results. The income-increasing accrual results are similar; however, the results for the income-decreasing accruals are insignificant in subgroup *b*.

TABLE 10

Classification of sample firms depending on current-year NAS and future NAS growth

Panel A: Main analysis partitioning

	Increasing *NY_PCT* →
Low current NAS (*OPFEE* = 1)	Hypothesized incremental positive relation with NY_PCT
High Current NAS (*OPFEE* = 0)	No hypothesized relation with NY_PCT

NBaa

Panel B: Matrix partitioning on *OPFEE* and *NY_PCT*

	Low future NAS growth (*NY_PCT* less than the median)	High future NAS growth (*NY_PCT* greater than median)
	Increasing *NY_PCT* →	
Low current NAS (*OPFEE* = 1)	*(a)* *N* = 822 (ADCA) *N* = 700 (CORE)	*(b)* *N* = 817 (ADCA) *N* = 699 (CORE)
High Current NAS (*OPFEE* = 0)	*(c)* *N* = 1,217 (ADCA) *N* = 979 (CORE)	*(d)* *N* = 1,222 (ADCA) *N* = 983 (CORE)

Panel C: Matrix partitioned regressions—total discretionary accruals (*ADCA*)

Variable	Subgroup *a*+*b* (replicates main analysis)	Subgroups *a*, *b*, and *c*
NY_PCT	–0.013*** (–4.13)	–0.001 (–0.79)
NY_PCT × *ab*	0.019*** (2.51)	
NY_PCT × *a*		0.013 (0.33)
NY_PCT × *b*		0.006*** (3.45)
NY_PCT × *c*		–0.355*** (–19.84)
Adjusted R^2	0.21	0.22

(The table is continued on the next page.)

TABLE 10 (contiuned)

Panel D: Matrix partitioned regressions—classification shifting (CORE)

Variable	Subgroup *a*+*b* (replicates main analysis)	Subgroups *a*, *b*, and *c*
%Si × *NY_PCT*	–0.520***	–0.435***
	(–7.44)	(–5.38)
%SI × *NY_PCT* × *ab*	0.651***	
	(59.76)	
%SI × *NY_PCT* × *a*		2.741***
		(5.04)
%SI × *NY_PCT* × *b*		0.336**
		(1.83)
%SI × *NY_PCT* × *c*		–1.658***
		(–4.19)
Adjusted R^2	0.07	0.07

Notes:

ADCA indicates sample used for the discretionary accruals regressions;

CORE indicates sample used for classification-shifting regressions.

a = Dummy variable equal to one if the observation is contained in subgroup a in panel B; zero otherwise.

b = Dummy variable equal to one if the observation is contained in subgroup b in panel B; zero otherwise.

c = Dummy variable equal to one if the observation is contained in subgroup c in panel B; zero otherwise.

ab = Dummy variable equal to one if the observation is contained in subgroup a or b in panel B; zero otherwise.

All remaining variables are defined in the Appendix.

subgroup *c* contains "potential NAS loss" clients, the coefficient on the subgroup *c* interaction is significantly negative. This suggests that auditors of these clients do not have impaired independence. Finally, the coefficient on *NY_PCT* in the fourth column, measuring subgroup *d*, is not significant, consistent with an absence of incentives to impair auditor independence. These results are consistent with our hypothesis that independence is more likely impaired for clients with low current levels of NAS.

Table 10, Panel D reports matrix-partition results for the classification-shifting model. Unlike the results in Panel C, there is evidence of increased earnings management for both subgroups *a* and *b*. In fact, the results in subgroup *a* appear to be stronger than those in *b*. This evidence is consistent with support for our hypothesis in both subgroups. This is inconsistent with the "lost cause" idea that auditors of companies in subgroup *a* are sufficiently independent to prevent classification shifting. However, classification shifting is arguably a less costly method of earnings management compared to accruals manipulation (McVay 2006). Therefore, these results imply that auditor's incentives in subgroup *a* may be sufficient to permit classification shifting but not accruals manipulation.

6. Incentives to manage earnings

We expect the hypothesized relation to be especially acute among companies that have particularly strong incentives to manage earnings including companies that (a) meet or beat earnings forecasts, (b) issue equity, and (c) have a large number of clients in city industries. We expect these incentives to be weaker in the presence of strong corporate governance (Table S11.[20])

Meet or Beat: We collect data on analyst forecasts from I/B/E/S and, following Payne (2008), calculate the earnings forecast error as actual earnings per share minus the mean consensus analysts' forecast in the most recent month prior to the earnings announcement. We then define MBE as an indicator variable equal to one for companies with a forecast error of 0 or 1 cent per share; and zero otherwise. We then interact MBE with our main variable of interest to create a three-way interaction ($OPFEE \times NY\_PCT \times MBE$). The untabulated results show a positive and statistically significant coefficient on this added variable in both total and income-decreasing discretionary accruals.[21]

Seasoned Equity Offerings: We obtain data on SEOs from the SDC Platinum database provided by Thomson Financial. After Cohen and Zarowin (2010), we create a dummy variable SEO that is equal to one for companies that engaged in a seasoned equity offering in year t and interact this variable with our main variable of interest ($OPFEE \times NY\_PCT \times SEO$). The untabulated results show a positive and statistically significant coefficient on the three-way interaction for both discretionary accruals and classification shifting. This indicates a significantly greater main effect for the seasoned equity offerings subsample, as expected.

Number of clients per city–industry: We create a three-way interaction between a measure of the size of the city–industry group (number of companies in an auditor–city–industry, N) and our variable of interest. The idea here is that because there is more variability in a larger market, there are greater opportunities to extract NAS leading to potentially greater earnings management. The untabulated results show a positive and significant coefficient on $OPFEE \times NY\_PCT \times N$ only in the case of income-increasing discretionary accruals suggesting that our hypothesized result is potentially greater for clients who engage in upward-earnings management in larger city–industry groups.

Corporate governance: Prior research suggests that the quality of corporate governance is associated with financial reporting quality (Dechow, Sloan and Sweeney 1996; Cohen Krishnamoorthy and Wright 2004). We test whether strong corporate governance mitigates our hypothesized relationship. Our measure of corporate governance is the G-Score (Gompers, Ishii, and Metrick 2003). We create a governance rank that ranges between 0 and 1, with 1 indicating better governance. We then interact the governance rank with our main variable of interest $OPFEE \times NY\_PCT \times G$. We expect the coefficient on this three-way interaction to be negative suggesting that companies with strong governance are less likely to allow earnings management. In an untabulated analysis, the governance interaction is significantly negative for the discretionary accruals model but insignificantly negative for the classification-shifting model.

7. Conclusions

In this paper, we introduce the idea that the combination of fee-growth opportunities and a client's willingness to purchase future NAS represents a source of impairment of auditor

20. Please see supporting information "Table S11" as an addition to the online article.

21. We ran the meet-or-beat analyses using the post-SOX sample, and we observe the opposite result; that is, lower levels of earnings management for firms that meet or beat earnings consistent with Koh, Matsumoto, and Rajgopal (2008). Only in the case of income-decreasing accruals is this coefficient insignificant.

independence. We expect the economic bonding in this circumstance to manifest in lower audit quality proxied by two forms of earnings management: discretionary accruals and classification shifting.

We report that both forms of earnings management are higher for companies with relatively low NAS in the current year that simultaneously increase future NAS purchases from the auditor. We also find that the negative effect of future NAS is even more pronounced in companies that have greater incentives to manage earnings such as those that meet or just beat earnings forecasts or those that issue equity and less likely to occur in companies with strong corporate governance. These results remain robust under a variety of additional analyses and sensitivity tests. Our findings do not extend to the period after major regulatory interventions in the market for audit services, including prohibitions on various NAS that the auditor could perform for audit clients and prohibitions on compensations practices of audit partners.

This research approach has inherent limitations. First, our partitioning on fee-growth-opportunity (*OPFEE*) most likely contains measurement error; for example, opportunities for fee growth may also come from high-NAS paying clients. Although we find no evidence of this in the additional analyses, there may be other subgroups of clients where impaired auditor independence is occurring. Second, our data are restricted to the two-year period prior to SOX, which may limit the generalizability of our results across other periods. In addition, our sample could be problematic because regulators had been discussing NAS proscriptions since the year 2000, leading firms to anticipate and potentially initiate a response prior to the actual regulatory changes. Third, it is not possible to observe actual partner-level data in an archival study using U.S. data. However, partitioning within city and industry comes reasonably close to isolating either an individual partner or a set of partners who face similar incentives. Nonetheless, to the degree that individual partner portfolios of clients are not isolated by this partitioning, this proxy contains measurement error.

Our study responds to the call by Francis (2006) to extend the investigation of auditor independence by considering specific incentives and institutional settings within the auditing marketplace. Our results should also be of interest to regulators as they further develop their approaches to improving audit quality while they consider the myriad of potentially conflicting effects from imposed regulations. Prior research indicates that the current level of NAS does not consistently negatively influence audit quality. Our results indicate that settings can arise where NAS is detrimental to audit quality. Future research should investigate additional settings where this might occur.

Appendix: Variable descriptions[22]

ADCA = Absolute value of discretionary accruals where the discretionary accruals are equal to the residual values from using the equation below estimated within years and within 2-digit SIC codes.

$$\frac{CA}{AT_{t-1}} = \lambda_1 \frac{1}{AT_{t-1}} + \lambda_2 \frac{\Delta SALE_1}{AT_{t-1}} + \lambda_3 \frac{IB_{t-1}}{AT_{t-1}} + \varepsilon.$$

CA = Current accruals; income before extraordinary items plus depreciation minus operating cash flows.

$\Delta SALE$ = Change in Sales; $SALE_t - SALE_{t-1}$.

IB = Income before extraordinary items.

AT = total assets.

22. All continuous control variables are winsorized at the 1 percent tails.

Appendix (continued)

OPFEE = Fee growth opportunity, a dummy variable equal to one if the company's nonaudit-services fees scaled by total fees are below the 50th percentile of those paid by clients of the company-year's auditor in the same city and 1-digit SIC industry; zero otherwise.
NY_PCT = Realized change in nonaudit fees, equal to the larger of (a) the percentage change in total NAS fees, and (b) the maximum change in any single NAS fee component (e.g., information systems design and implementation fees), scaled by total fees, from year t to year $t + 1$; winsorized at the 99th percentile.
LNNASF = Natural log of total nonaudit service fees.
GROWTH = Percent change in sales from year $t-1$ to year t.
TENURE = Auditor tenure measured in years starting in 1980.
CFO = Operating cash flows scaled by lagged total assets.
LEV = Leverage; total liabilities scaled by current total assets.
LITIG = Dummy variable equal to one if the company-year is in a high litigation SIC code: 2833–2836, 3570–3577, 3600–3674, 5200–5961, 7370–7374; zero otherwise.
MB = Market-to-book ratio.
MV = Natural log of market value of equity at fiscal-year-end.
LOSS = Dummy variable equal to one if net income is less than zero; zero otherwise.
FIN = Dummy variable indicating new financing. Equal to one if COMPUSTAT footnote SALE_FN equals "AB", or the percentage change in long-term debt is greater than or equal to 20 percent, or the percentage change in common shares outstanding (adjusted for stock splits, etc.) is greater or equal to 10 percent; zero otherwise.
LCA = Absolute value of lagged total accruals, scaled by lagged total assets.
SPEC = Dummy variable that equals one if the company-year's audit firm has the greatest market share (based on total audit fees) in the company's 2-digit SIC code; zero otherwise.
UE_CE = Unexpected Core Earnings; the difference between reported and predicted Core Earnings, where predicted values are calculated using coefficients from the equation below estimated by calendar year of fiscal year-end and industry, while excluding company-year i.

$$CE_t = \beta_0 + \beta_1 CE_{t-1} + \beta_2 ATO_t + \beta_3 ACCRUALS_{t-1} + \beta_4 \Delta SALES_{t-1} + \beta_5 NEG\_\Delta SALES_t + \beta_6 RETURNS_{t-1} + \beta_7 RETURNS_t + \varepsilon_t.$$

CE = Core Earnings before special items and depreciation, defined as Sales (SALES) – Cost of Goods Sold (COGS) – Sales, General, and Administrative Expense (XSGA), all scaled by Sales.
ATO = Asset Turnover Ratio, defined as Sales / ((NOA_t + NOA_{t-1}) /2).
NOA = Net Operating Assets, defined as Operating Assets minus Operating Liabilities. Operating Assets are equal to Total Assets (AT) – Cash (CHE) – Other Investments (IVAO) and Operating Liabilities are equal to Total Assets – Long-Term Debt (DLTT) – Debt in Current Liabilities (DLC) – Common Equity (CEQ) – Preferred Stock (PSTK) – Minority Interest (MIB).
ACCRUALS = Operating Accruals, defined as Net Income before Extraordinary Items (IB) – Operating Cash Flows (OANCF – XIDOC), all scaled by SALES.
ΔSALES = Percent Change in Sales, defined as ($Sales_t$ – $Sales_{t-1}$) / $Sales_t$.
NEG_ΔSALES = *ΔSALES* if *ΔSALES* is less than zero; otherwise equal to zero.
RETURNS = Twelve-month market-adjusted returns corresponding to the fiscal year.
%SI = Income-Decreasing Special Items as a percentage of Sales, equal to –1 × Special Items (SPI), scaled by Sales, when Special Items are income-decreasing and zero otherwise.
Y(n) = 1 if year is 200 × 0 otherwise.

References

Anderson, M., R. Banker, and S. Janakiraman. 2003. Are selling, general, and administrative costs "sticky"? *Journal of Accounting Research* 41 (1): 47–63.

Antle, R., E. Gordon, G. Narayanamoorthy, and L. Zhou. 2006. The joint determination of audit fees, nonaudit fees, and abnormal accruals. *Review of Quantitative Finance and Accounting* 27 (3): 235–66.

Ashbaugh, H., R. LaFond, and B. W. Mayhew. 2003. Do nonaudit services compromise auditor independence? Further evidence. *The Accounting Review* 78 (3): 611–39.

Beck, P., T. J. Frecka, and I. Solomon. 1988. A model of the market for MAS and audit services: Knowledge spillovers and auditor–auditee bonding. *Journal of Accounting Literature* 7 : 50–64.

Belsley, D. A., E. Kuh, and R. E. Welsch. 1980. *Regression diagnostics: Identifying influential data and sources of collinearity*. New York, NY: John Wiley and Sons.

Blay, A. D., and M. A. Geiger. 2012. Non-audit fees and auditor independence: Recent evidence from going concern reporting decisions. *Contemporary Accounting Research* 30 (2): 579–606.

Bloomfield, D., and J. Shackman. 2008. Non-audit service fees, auditor characteristics and earnings restatements. *Managerial Auditing Journal* 23 (2): 125–41.

Bradshaw, M., and R. Sloan. 2002. GAAP versus the street: An empirical assessment of two alternative definitions of earnings. *Journal of Accounting Research* 40 (1): 41–66.

Brown, K., and I. J. Dugan. 2002. Sad account: Andersen's fall from grace is a tale of greed and miscues. *Wall Street Journal*, June 7, A-1.

Callaghan, J., M. Parkash, and R. Singhal. 2009. Going-concern audit opinions and the provision of nonaudit services: Implications for auditor independence of bankrupt firms. *Auditing: A Journal of Practice and Theory* 28 (1): 153–69.

Cheng, C. S. A., C. Z. Liu, and W. Thomas. 2012. Abnormal accrual estimates and evidence of mispricing. *Journal of Business Finance and Accounting* 39 (1–2): 1–34.

Chung, H., and S. Kallapur. 2003. Client importance, nonaudit services and abnormal accruals. *The Accounting Review* 78 (4): 931–55.

Coffee, J. C. Jr. 2006. *Gatekeepers: The professions and corporate governance*. New York: Oxford University Press.

Cohen, D. A., and P. Zarowin. 2010. Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics* 50 (1): 2–19.

Cohen, D. A., A. Dey, and T. Z. Lys. 2008. Real and accrual-based earnings management in the pre- and post-Sarbanes–Oxley Periods. *The Accounting Review* 83 (3): 757–87.

Cohen, J. R., G. Krishnamoorthy, and A. Wright. 2004. The corporate governance mosaic and financial reporting quality. *Journal of Accounting Literature* 23 : 87–52.

Crockett, A., T. Harris, F. S. Mishkin, and E. N. White. 2004. Conflicts of interest in the financial services industry: What should we do about them? International Center for Monetary and Banking Studies and Center for Economic Policy Research.

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

Dechow, P. M., R. G. Sloan, and A. P. Sweeney. 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research* 23 (1): 1–36.

Dedman, E., A. Kausar, and C. Lennox. 2009. Non–audit services and the demand for voluntary audits. Working paper, University of Manchester.

DeFond, M. L., K. Raghunandan, and K. R. Subramanyam. 2002. Do non-audit service fees impair auditor independence? Evidence from going concern audit opinions. *Journal of Accounting Research* 40 (4): 1247–74.

DeFond, M. L., and J. R. Francis. 2005. Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice and Theory* 24 (Supplement): 5–30.

Diggle, P. J., K. Y. Liang, and S. L. Zeger. 1994. *Analysis of longitudinal data*. Oxford, U.K.: Clarendon Press.

European Commission. 2010. *Green paper: Audit policy: Lessons from the crisis*. Brussels, Belgium.

European Commission. 2011. *Proposal for a regulation of the European Parliament and of the Council on specific requirements regarding statutory audit of public-interest entities*. Brussels, Belgium.

Fama, E. F., and K. R. French. 1997. Industry costs of equity. *Journal of Financial Economics* 43 (2): 153–93.

Fan, Y., A. Barua, W. M. Cready, and W. B. Thomas. 2010. Managing earnings using classification shifting: Evidence from quarterly special items. *The Accounting Review* 85 (4): 1303–23.

Francis, J. 2006. Are auditors compromised by nonaudit services? Assessing the evidence. *Contemporary Accounting Research* 23 (3): 747–60.

Francis, J. R., and B. Ke. 2006. Disclosure of fees paid to auditors and the market valuation of earnings surprises. *Review of Accounting Studies* 11 (4): 495–23.

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

Francis, J. R., and M. D. Yu. 2009. Big four office size and audit quality. *The Accounting Review* 84 (5): 1521–52.

Frankel, R.M., M.F. Johnson, and K.K. Nelson. 2002. The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review* 77 (Supplement): 71–105.

Geiger, M. A., and D. V. Rama. 2003. Audit fees, nonaudit fees, and auditor reporting of stressed companies. *Auditing: A Journal of Practice and Theory* 22 (2): 53–69.

Gompers, P. A., J. L. Ishii, and A. Metrick. 2003. Corporate governance and equity prices. *The Quarterly Journal of Economics* 18 (1): 1007–155.

Gow, I. D., G. Ormazabal, and D. Taylor. 2010. Correcting for cross-sectional and time-series dependence in accounting research. *The Accounting Review* 85 (2): 483–512.

Habib, A. 2012. Non-audit service fees and financial reporting quality: A meta-analysis. *Abacus* 48 (2): 121–57.

Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29 (2): 193–228.

Kinney, W. R., and R. Libby. 2002. Discussion of "The relation between auditor's fees for nonaudit services and earnings management." *The Accounting Review* 77 (Supplement): 107–14.

Kinney, W.R. Jr., Z-V Palmrose, and S. Scholz. 2004. Auditor independence, non-audit services, and restatements: Was the U.S. Government right? *Journal of Accounting Research* 42 (3): 561–88.

Knechel, W. R., and J. L. Payne. 2001. Additional evidence on audit report lag. *Auditing: A Journal of Practice and Theory* 20 (1): 137–46.

Knechel, W.R., and D. Sharma. 2012. Auditor-provided non-audit services and audit effectiveness and efficiency: Evidence from pre- and post-SOX audit report lags. *Auditing: A Journal of Practice and Theory* 31 (4): 85–114.

Koh, K., S. Rajgopal, and S. Srinivasan. 2013. Non-audit services and financial reporting quality: Evidence from 1978–1980. *Review of Accounting Studies* 18 (1): 1–33.

Koh, K., D. A. Matsumoto, and S. Rajgopal. 2008. Meeting or beating analysts' expectations in the post-scandals world: Changes in stock market rewards and managerial actions. *Contemporary Accounting Research* 25 (4): 1067–98.

Kothari, S. P., A. J. Leone, and C. E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39 (1): 163–97.

Krishnan, G. V., and G. Visvanathan. 2011. Is there an association between earnings management and auditor provided tax-services? *Journal of American Taxation Association* 33 (2): 111–35.

Krishnan, J., L. Su, and Y. Zhang. 2011. Nonaudit services and earnings management in the pre-SOX and post-SOX eras. *Auditing: A Journal of Practice and Theory* 30 (3): 103–23.

Larcker, D. F., and S. A. Richardson. 2004. Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research* 42 (3): 625–58.

Lennox, C., and B. Li. 2012. The consequences of protecting audit partners' personal assets from the threat of liability. *Journal of Accounting and Economics* 54 (2–3): 154–73.

Levitt, A. 1998. "The numbers game." Remarks of SEC chairman Arthur Levitt at the New York University Center for Law and Business, New York University, September 28.

Levitt, A. 2000. "Renewing the covenant with investors." Remarks delivered at NYU Center for Law and Business, New York University, NY, May 10.

Lim, C., and H. Tan. 2008. Non-audit service fees and audit quality: The impact of auditor specialization. *Journal of Accounting Research* 46 (1): 199–246.

Mayhew, B. W., J. W. Schatzberg, and G. R. Sevcik. 2001. The effect of accounting uncertainty and auditor reputation on auditor objectivity. *Auditing: A Journal of Practice and Theory* 20 (Supplement): 49–70.

McVay, S. 2006. Earnings management using classification shifting: An examination of core earnings and special items. *The Accounting Review* 81 (3): 501–31.

Nelson, M. W. 2006. Ameliorating conflicts of interest in auditing: Effects of recent reforms on auditors and their clients. *Academy of Management Review* 31 (1): 30–42.

Nissim, D., and S. Penman. 2001. Ratio analysis and equity evaluation: From research to practice. *Review of Accounting Studies* 6 (1): 109–54.

Paterson, J. S., and A. Valencia. 2011. The effects of recurring and non-recurring tax, audit-related, and other nonaudit services on auditor independence. *Contemporary Accounting Research* 28 (5): 1510–36.

Payne, J. L. 2008. The influence of audit firm specialization on analysts' forecast errors. *Auditing: A Journal of Practice and Theory* 27 (2): 109–36.

Prawitt, D. F., N. Y. Sharp, and D. A. Wood. 2012. Internal audit outsourcing and the risk of misleading or fraudulent financial reporting: Did Sarbanes-Oxley get it wrong? *Contemporary Accounting Research* 29 (4): 1109–36.

Raghunandan, K., W. J. Read, and J. S. Whisenant. 2003. Initial evidence on the association between nonaudit fees and restated financial statements. *Accounting Horizons* 17 (3): 223–34.

Reichelt, K. J., and D. Wang. 2010. National and office-specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research* 48 (3): 647–86.

Reynolds, J. K., and J. R. Francis. 2001. Does size matter? The influence of large clients on office-level auditor reporting decisions. *Journal of Accounting and Economics* 30 (3): 375–400.

Reynolds, J.K., D.R. Deis Jr., and J. Francis. 2004. Professional service fees and auditor objectivity. *Auditing: A Journal of Practice and Theory* 23 (1): 29–52.

Robinson, D. 2008. Auditor independence and auditor-provided tax service: Evidence from going-concern audit opinions prior to bankruptcy filings. *Auditing: A Journal of Practice and Theory* 27 (2): 31–54.

Ruddock, C., S. J. Taylor, and S. L. Taylor. 2006. Nonaudit services and earnings conservatism: Is auditor independence impaired? *Contemporary Accounting Research* 23 (3): 741–86.

Sarbanes-Oxley Act of 2002. Public Law 107-2040. H.R. 3763.

Schneider, A., B. K. Church., and K. M. Ely. 2006. Non-audit services and auditor independence: A review of the literature. *Journal of Accounting Literature* 25 : 169–211.

Securities and Exchange Commission. 2003. Strengthening the Commission's Requirements Regarding Auditor Independence Release No. 33-8183, available online at http://www.sec.gov/rules/final/33-8183.htm, retrieved November 30, 2012.

Seetharaman, A., Y. Sun, and W. Wang. 2011. Tax-related financial statement restatements and auditor-provided tax services. *Journal of Accounting Auditing and Finance* 26 (4): 677–98.

Simunic, D. 1984. Auditing, consulting, and auditor independence. *Journal of Accounting Research* 22 (2): 679–702.

Skinner, D., and R. Sloan. 2002. Earnings surprises, growth expectations, and stock returns or Don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies* 7 (2–3): 289–312.

Sloan, R. 1996. Do stock prices fully reflect information in accruals and cash flows about future earnings? *The Accounting Review* 71 (3): 289–315.

Srinidhi, B. N., and F. A. Gul. 2007. The differential effects of auditors' nonaudit and audit fees on accrual quality. *Contemporary Accounting Research* 24 (2): 595–629.

Trompeter, G. 1994. The effect of partner compensation schemes and generally accepted accounting principles on audit partner judgment. *Auditing: A Journal of Practice and Theory* 13 (2): 56–68.

Wu, M.. 2006. An economic analysis of audit and non-audit services: The trade-off between competition crossovers and knowledge spillovers. *Contemporary Accounting Research* 23 (2): 527–54.

Wyatt, A. R. 2003. Accounting professionalism—They just don't get it. Speech before the American Accounting Association Annual Meeting in Honolulu, Hawaii, August 4, 2003.

Ye, P., E. Carson, and R. Simnett. 2011. Threats to auditor independence: The impact of relationship and economic bonds. *Auditing: A Journal of Practice and Theory* 30 (1): 121–48.

Zeff, S. A. 2003. How the U.S. accounting profession got where it is today: Part II. *Accounting Horizons* 17 (4): 267–86.

SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:
Table S11. Earnings management when incentives to manage earnings are high or low.