Client Consulting Opportunities and the Reemergence of Big 4 Consulting Practices: Implications for the Audit Market

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Abstract: Consulting service revenues recently surpassed audit revenues as the primary income source for the largest accounting firms. Since SOX limits the provision of consulting services to audit clients, this shift in revenues implies that firms and many clients likely choose between audit and consulting relationships. We explore the implications of this by developing and validating a measure of client-level consulting needs that can likely be fulfilled by accounting firms, which we refer to as "consulting opportunities." As predicted, we find that consulting opportunities relate positively to auditor switches. We also find that consulting opportunities relate negatively to subsequent Big 4 auditor selection, the firms focusing most on consulting, but we fail to find evidence that consulting opportunities relate to deteriorations in audit quality. Together, our results suggest that legislation limiting firms' ability to deliver consulting services to audit clients may have reduced audit market concentration without discernably impacting quality.

KEYWORDS: Audit Firm Consulting, Audit Market Structure, Latent Dirichlet Allocation

DATA AVAILABILITY: All data used are publicly available from sources cited in the text.

1. Introduction

Numerous provisions of the Sarbanes Oxley Act of 2002 (SOX) restrict the nature and amount of non-audit, or "consulting" services that public accounting firms can offer to their audit clients. Despite these restrictions, many accounting firms have committed to rebuilding and expanding their consulting practices over the last decade through both acquisitions of smaller consulting firms and shifts in hiring practices and, as a result, have experienced significant increases in consulting revenues. In fact, among the Big 4, consulting services have surpassed audit services as the largest revenue source, and growth in these services accounts for the vast majority of overall revenue growth in recent years (Rapoport 2018). This phenomenon has raised concerns regarding the broader implications of consulting revenue growth in the audit market, including how lucrative opportunities in the consulting market could affect overall firm culture, strategy, and audit quality (ACAP 2008; Causholli et al. 2015; PCAOB 2014; Hermanson 2009; Dey et al. 2012).

At first glance, the trend towards consulting services among accounting firms may seem like a return to the pre-SOX environment. However, this trend differs along one specific and important dimension. Namely, it implies a shift in accounting firms' business strategy since the restrictions imposed by SOX mean that, as highlighted by former PCAOB board member Stephen B. Harris, "Most of these services are now provided to non-audit clients" (PCAOB 2014). Therefore, unlike in the pre-SOX environment where each accounting firm served as a "one-stop shop" for both auditing and consulting, auditors and their clients must now more frequently choose to engage in either an auditing *or* a consulting relationship.[1] We develop a novel measure to

[1] A former Big 4 partner confirmed that these discussions occur within firms and that the nature of this "channel choice" varies by—and often at the request of—the client, with some clients preferring to retain the accounting firm for consulting instead of audit services.

capture the extent of potential client consulting needs that could likely be fulfilled by the accounting firm and refer to it as "consulting opportunities."[2] Consistent with channel choice affecting auditor and client alignment decisions, we expect that consulting opportunities impact several features of the audit market.

Most prior literature in this area examines consulting from an auditor perspective, largely focusing on how consulting services provided to *audit* clients via allowable non-audit services impact audit quality (e.g., Frankel et al. 2002; Ashbaugh et al. 2003; Paterson and Valencia 2011; Lennox 2016; Carcello et al. 2020). Likely due to data limitations, limited research exists on the broader role of consulting services within accounting firms, particularly those provided to *non-audit* clients. Some recent evidence suggests that, in the post-SOX era, increases in *firm-wide* consulting revenues have had no significant effect on either actual or investor perceptions of aggregate audit quality (Lisic et al. 2019). Other work examines the impact of Big 4 consultancy acquisitions on audit quality and finds mixed evidence (Donelson et al. 2020). However, this research does not consider cross-sectional variation in consulting opportunities, which likely plays a key role in the relationship between companies and their auditors.[3]

Measuring consulting opportunities presents a considerable challenge, as much of this construct is unlikely captured by traditional financial statement or stock return data. Therefore, we first develop and validate a client-specific measure of consulting opportunities. Specifically, we employ Latent Dirichlet Allocation (LDA) to classify and quantify the thematic content of a large sample of companies' quarterly earnings conference calls. We then measure the similarity between

[2] These "opportunities" include a number of services generally demanded by companies and their management and alluded to in corporate disclosures. For example, some of the consulting-related services that are most heavily advertised by accounting firms include systems design and implementation, management consulting, information technology risk assessment, human resources consulting, risk consulting, and M&A/deal advisory.

[3] An interviewee in Donelson et al. (2020; p. 14) alludes to this cross-sectional variation in consulting opportunities, citing quarterly meetings to discuss client strategy. This individual notes, "From a revenue and profitability standpoint, you got [sic] to be strategic about where you want to audit, and where you want to do consulting work."

each topic and materials describing the consulting services offered by accounting firms. In short, our approach measures the similarity between "what the client needs" and "what the accounting firms offer," yielding a proxy for client-specific consulting opportunities.[4]

Descriptive properties of our measure suggest that it captures the desired construct. Specifically, focusing on aggregate market behavior by the Big 4 firms, we find that clients located in markets (defined as metropolitan statistical areas, or MSAs), industries, and years where the Big 4 have acquired consulting practices have more consulting opportunities, suggesting our measure aligns with where firms have made investments in expanding their consulting focus. Our measure also correlates with the intensity of Big 4 firms' recruitment of consulting-related job candidates. In addition, we observe significant increases in consulting opportunities leading up to the disclosure of merger and acquisition activity and internal control issues, two company-specific events likely prompting opportunities for consulting work. Finally, we use XBRL tags in clients' financial statements to identify companies in our sample that separately report "consulting" or "professional services" expenses, an *ex post* indication of consulting outlays. While limited to a small subset of our sample, these expenses allow for a direct comparison between our measure and companies' consulting expenditures and exhibit a strong, positive correlation with our measure of consulting opportunities. While we recognize that the opacity of consulting opportunities prevents us from conclusively validating our measure, the totality of the evidence is consistent with our measure capturing the intended theoretical construct.

We use this measure to test two hypotheses. Our first hypothesis predicts that auditor-client

[4] We utilize the Big 4 service offerings to develop our measure since the substantial growth in their consulting activities has been the focus of regulators. However, other accounting firms, notably the "Next Four" national firms (i.e., Grant Thornton, BDO, RSM, and Crowe), offer consulting services that also likely affect auditor choice for some clients. We do not include the service offering of these firms in the development of our measure because we expect their offerings are largely subsumed by those offered by the Big 4, but we do include their clients in our sample. A simple comparison between the services offerings of these firms and those of the Big 4 suggests that this is the case.

realignments occur more frequently in the presence of more consulting opportunities. These decisions could be driven by the client's comfort with and preference for their auditor's consulting service offerings, many of which are likely prohibited by SOX if they choose to retain their auditor, and/or the accounting firm's willingness to eschew future audit fees in favor of higher-margin consulting fees.[5] Consistent with our prediction, we find that the likelihood of an auditor change is increasing in a client's level of consulting opportunities. In cross-sectional tests, we show that the association between consulting opportunities and auditor switches is attenuated for larger, more prestigious clients, for clients likely better able to fulfill consulting needs internally, and for clients with a revealed preference for auditor quality. Each of these tests identifies frictions that likely mitigate the degree to which consulting opportunities influence the decision to switch auditors.

Our second hypothesis is comprised of two parts and focuses on the potential consequences of consulting-related auditor switches. We begin by examining subsequent auditor selection among companies that switch auditors. We expect that the Big 4's renewed focus on consulting work, along with recent improvements in audit quality offered by smaller accounting firms (e.g., DeFond and Lennox 2011; Moon et al. 2019), makes clients with greater consulting opportunities less likely to engage a Big 4 auditor following a decision to switch auditors. Consistent with our prediction, we find that the likelihood of engaging a Big 4 auditor following the decision to switch is decreasing in a client's level of consulting opportunities. Additionally, we document a general decrease in Big 4 audit market share over time and find that this trend is most pronounced both in MSAs with relatively more consulting opportunities (suggesting that markets with relatively more

[5] Our discussions with a former Big 4 partner suggest that, for audit clients, non-audit services often experience "scope creep," meaning that what starts as an allowable service approaches a grayer area as the auditor-client relationship develops. We anticipate this phenomenon is more likely for clients with greater consulting opportunities and, therefore, precipitates an auditor switch before the "creep" results in an independence violation. We explore this premise further in Section 4.3.

consulting opportunities have experienced greater shifts in market structure) and in the middle of our sample period (implying that the broader market may be approaching a new equilibrium).

We then consider the impact of consulting-related auditor switches on audit quality. Several prior studies find that, on average, quality suffers in the early years of an audit engagement (e.g., Carcello and Nagy 2004; Davis et al. 2009; Geiger and Raghunandan 2002; Myers et al. 2003). If consulting-driven switches result in poorer auditor-client matches, consulting opportunities may exacerbate this effect and be associated with greater post-switch deteriorations in audit quality. However, using three measures of audit quality, we fail to find evidence that consulting opportunities relate to changes in audit quality following an auditor switch. In fact, when we more broadly examine how audit quality varies with *ConOpp*, we actually find some evidence of *higher* audit quality following an auditor switch for companies with more consulting opportunities. Additional evidence suggests that this effect is driven by switches to the "Next Four" audit firms, who have adequate resources to serve certain former Big 4 audit clients and have recently closed the "quality gap" with respect to the Big 4 (DeFond and Lennox 2011; Moon et al. 2019).

We conclude our analyses by considering the impact of consulting opportunities on audit pricing. The previous results collectively suggest that companies that switch auditors for consulting reasons are more likely to choose a non-Big 4 auditor that delivers quality similar to their prior auditor. This combination suggests that these companies may be able maintain their pre-switch level of quality while potentially experiencing a savings on audit fees. However, we fail to find evidence of an association between consulting-related switches and changes in audit fees. A potential explanation for these results is that the incoming auditors are less willing to offer an initial fee discount for these clients when they are unable to recoup fees through the future sale of

consulting services (e.g., through allowable non-audit service fees). Consistent with this explanation, we observe a significant reduction in non-audit service fees paid to the incoming auditor (relative to the outgoing auditor) following a switch for clients with more consulting opportunities, suggesting these clients continue to purchase allowable consulting-related services from their prior auditor.

Our paper provides several contributions to the auditing literature that should be of interest to various stakeholders, including regulators, accounting firms, and their clients. We construct and validate a novel client-specific measure of consulting opportunities. Doing so allows us to examine the consequences of accounting firms' focus on consulting revenues at a more granular level than prior studies in this area. We expect that our measure will be useful to future researchers wanting to further explore client-specific implications of shifts in the auditing and consulting markets.

We also contribute to a growing literature examining auditor-client realignments and their impact on audit market structure (e.g., Gerakos and Syverson 2015; Keune et al. 2016; Aobdia and Shroff 2017). While policymakers have tried for years to weaken the Big 4's dominance (Jones 2018), audit market concentration continues to receive considerable attention from regulators in both the U.S. and abroad (European Commission 2016; Marriage 2018; FRC 2020; PCAOB 2017a, 2017b; U.K. CMA 2013, 2019). Our results suggest that SOX-imposed restrictions may have indirectly decreased Big 4 U.S. audit market share in recent years by forcing accounting firms and their clients to choose between an auditing or consulting relationship. In light of the aforementioned research suggesting that some smaller accounting firms offer quality similar to the Big 4, this finding suggests that attrition of Big 4 market share could provide opportunities for smaller firms to grow their role and influence in the audit market (Gerakos and Syverson 2015).

In addition, our findings inform ongoing regulator discussions regarding the audit quality

implications of accounting firms providing consulting services to audit clients. For example, U.S. regulators continue to express concerns that audit quality may suffer if the Big 4 further increase their focus on consulting services (PCAOB 2014). Relatedly, Britain's Financial Reporting Council (FRC) has recently decided to force a split of the Big 4's accounting and consulting units in order to achieve "operational separation" of audit practices by 2024 (FRC 2020). On the other hand, regulators have also deliberated "risks posed by the current high level of [audit market] concentration" (PCAOB 2017a), and the FRC has argued that "sufficient choice of audit firms [helps to ensure] market reliance," which requires "one or more firms outside the Big Four to grow their market share" (FRC 2020). Our findings are directly relevant to these regulator concerns and suggest that the regulatory decision in the U.S. to limit the ability of auditors to provide consulting services to their audit clients may have inadvertently reduced audit market concentration without having a significant adverse effect on audit quality.

2. Prior Literature and Hypotheses

2.1 Prior Literature

The role of consulting services in accounting firms has been subject to extensive debate among regulators, practitioners, and academics for decades.[6] The debate over auditor-provided consulting services came to a head following the revelation of a number of significant corporate frauds, notably Enron and Worldcom, and shortly thereafter, the collapse of Arthur Andersen. While serving as auditor, Andersen provided a litany of consulting services to these companies, which the public and regulators concluded significantly impaired auditor independence, and thus

[6] An extensive line of literature examines the relationship between non-audit services provided to audit clients and the resulting effects on audit quality (e.g., Simunic 1984; Beck et al. 1988; Frankel et al. 2002; PCAOB 2014, 2015; Carcello et al. 2020). Our study is distinct from this literature in that we examine the audit market implications of the growth in non-audit services provided to *non-audit* clients. See Church et al. (2006) for a comprehensive review of the literature on non-audit services.

audit quality. In response, Congress passed SOX, which, among other mandates, significantly limited the amount of non-audit, or "consulting" work accounting firms could provide for their audit clients.[7] SOX Section 202 further requires that the Audit Committee pre-approve any and all non-audit services that are not specifically prohibited under Section 201 (United States Code 2002). Faced with heightened scrutiny and limited opportunities, three of the Big 4 accounting firms divested much of their consulting practices during this period, drastically reducing the level of non-audit services provided to clients. Thus, the constraints introduced by SOX initially served as a mechanism through which accounting firms shifted focus away from their consulting practices and experienced dramatic decreases in their consulting revenues.

Over the past decade, however, accounting firms have invested heavily in developing their consulting lines, suggesting a potential shift in equilibrium among audit market participants. This is particularly true for the Big 4, who have expanded their consulting practices through both internal growth and external acquisitions. Former PCAOB board member Stephen B. Harris alluded to this shift in a November 2014 speech, stating "the advisory practices for the firms are growing much faster than the other service lines" (PCAOB 2014). In fact, from 2012 to 2017, aggregate global consulting service revenues for the Big 4 rose 44 percent compared to just 3 percent for auditing services (Rapoport 2018). Furthermore, Big 4 annual reports for 2018 indicate that aggregate non-audit services (which include all consulting-related work) account for 43 percent of total Big 4 global revenues, compared to just 34 percent from audit services.

[7] SOX Section 201 expressly prohibits auditors from delivering nine specific non-audit services to their audit clients: (1) bookkeeping; (2) financial information systems design and implementation; (3) appraisal or valuation services, fairness opinions, or contribution-in-kind reports; (4) actuarial services; (5) internal audit outsourcing services; (6) management functions or human resources; (7) broker-dealer, investment adviser, or investment banking services; (8) legal services and expert services unrelated to the audit; (9) any other service that the Audit Committee determines to be unlawful (United States Code 2002). A former Big 4 partner suggested to us that systems design and implementation represents one of the most profitable service lines and that one of the Big 4 firms in particular has the reputation of forgoing audits in order to win this type of work.

Three recent studies provide evidence related to the implications of this consulting resurgence by accounting firms on the quality of services provided to audit clients. Using archival data on firm-wide consulting revenues, Lisic et al. (2019) find no evidence that increases in firm-wide consulting revenues have an on-average effect on either audit quality or investor perceptions of audit quality in the post-SOX era. On the other hand, in an experimental market setting, Kowaleski et al. (2018) find that the provision of consulting services by auditors can affect quality, but the effect depends on managerial preferences in the market. Specifically, their evidence suggests that in markets where managers prefer higher (lower) audit quality, the provision of non-audit services improves (deteriorates) audit quality. Finally, Donelson et al. (2020) study whether Big 4 office-level audit quality changes following acquisitions of consulting firms. They find that "audit-related" acquisitions correspond to improvements in audit quality but "non-audit-related" acquisitions do not. We differ from these studies in that we explore whether client-specific consulting opportunities correspond to cross-sectional variation in audit market outcomes.

As suggested above, we expect the revenue trends discussed above are largely attributable to growth in consulting services sold to *non-audit* clients. Figure 1 provides evidence related to this by plotting the level of aggregate firm U.S. revenues for both the Big 4 and the Next Four national firms (i.e., BDO, Grant Thornton, RSM, and Crowe) from 2007 to 2018 across three categories: (1) total audit, (2) total consulting/advisory sold to all clients, and (3) total consulting/advisory sold to *audit* clients (i.e., non-audit services).[8] Consistent with our expectation, we observe fairly stable audit revenues and non-audit service revenues from *audit* clients but a significant, monotonic increase in consulting/advisory revenues across time for both

[8] We obtain total U.S. audit and consulting/advisory fees from Accounting Today, which collects information from each of the accounting firms' annual reports and other publicly available information. Non-audit fees paid by audit clients come from Audit Analytics.

groups. Furthermore, the magnitude of growth is clearly more dramatic for the Big 4, consistent with their substantial economies of scale advantages. These trends also provide support for the premise that the growth in consulting revenue for accounting firms is largely attributable to growth in consulting services sold to *non-audit* clients and therefore suggest that consulting opportunities could encourage some clients to pursue accounting firms (and vice versa) for consulting services instead of an audit engagement.

Research does provide some evidence that the desire for consulting arrangements can impact auditor selection decisions. Dopuch and King (1991) foreshadow our current environment by suggesting that any restriction on the joint provision of audit and non-audit services to audit clients may create an incentive for accounting firms to forgo audits in favor of other opportunities, and interviewees in Donelson et al. (2020) allude to this incentive (see footnote 3). When compared to audit engagements, consulting work offers several advantages, including lower risk and higher margins (Agnew 2015). In addition, clients may view their current auditor as the best choice for fulfilling their consulting needs. Gal-Or (2013) finds that, in the aftermath of SOX, clients that switched away from Deloitte appeared more likely to have greater future consulting needs, suggesting they were more likely to retain Deloitte for consulting work.

2.2 Hypotheses

As mentioned earlier, we develop a client-specific measure of consulting opportunities (summarized in the following section) and use it to test two hypotheses. Our first hypothesis focuses on auditor-client realignment decisions. Prior literature documents substantial variation in both client preferences and auditor capabilities (e.g., Brown and Knechel 2016; Johnson and Lys 1990; Numan and Willekens 2012; Shu 2000), suggesting that client preferences for specific attributes will lead them to choose a provider with the set of characteristics that best meets their

needs. Consistent with this notion, discussions with several practitioners and company executives suggest that companies often look to their current audit firm to fill a variety of consulting needs given the firm's exclusive knowledge and familiarity with the client's business. For example, an incumbent auditor is extremely knowledgeable about a client's accounting and reporting process, putting their firm in a better position to design and implement a financial information system compared to another consulting firm. Thus, we expect that a large portion of growth in consulting services derives from both clients leveraging their existing relationships with accounting firms to fulfill their consulting needs and accounting firms leveraging their existing relationships with audit clients to attract new consulting business and expand their consulting practices. Consulting opportunities can produce benefits not only for clients, who receive value-add services related to a specific need from a firm familiar with the company's operations, but also for partners of the accounting firm, who are increasingly evaluated and compensated on their ability to generate profit and growth for the firm (Carter and Spence 2014). Accordingly, we anticipate that a client's consulting opportunities increase the likelihood of auditor-client realignment, which we predict in our first hypothesis (stated in alternative form):

> ***H1***: Auditor-client realignments are more likely for clients with relatively more consulting opportunities.

Several factors provide tension for *H1*. First, clients may, on average, be more willing to forgo value-adding consulting arrangements in exchange for higher auditor quality (i.e., they may prefer to retain their current auditor even if that auditor is well suited for consulting work). Additionally, high switching costs (e.g., for large clients), company prestige, and/or the ability to satisfy consulting needs in-house may also preclude companies and their auditors from deciding

to make a change (Stefaniak et al. 2009; Rapoport 2019).[9] Moreover, some clients' consulting needs may be allowable under SOX and provide valuable knowledge spillovers for the audit team. Finally, while growth in overall firm revenue likely increases partner compensation, audit partners' pay may ultimately suffer following the loss of an audit client, leading them to try to actively block consulting-driven realignments.

Our second hypothesis focuses on the consequences of consulting-related auditor switches and consists of two parts: 1) subsequent auditor selection and 2) changes in audit quality following an auditor switch. We first consider the effect of consulting opportunities on subsequent auditor selection. Historically, the audit market has functioned like a natural oligopoly in which the number of firms participating in the market is small due to high barriers to entry, mergers of large audit firms, and significant vertical product differentiation (Simunic and Stein 1986). However, there are several reasons why companies may prefer to use the Big 4 firms to meet their consulting needs. First, the Big 4 have invested significantly more into building their consulting practices than other accounting firms, likely due at least in part to their strong brand recognition and existing relationships with senior management (Bendor-Samuel 2018). Second, the Big 4's ability to combine strategy and large-scale execution allows them to benefit from economies of scale unmatched by smaller accounting firms. Third, these same economies of scale enable the Big 4 to offer a more comprehensive and lower-priced set of services than traditional consulting firms (McCabe and Lindsay 2018). There are also several reasons why companies may be willing to consider a suitable non-Big 4 alternative for their audit. Prior research suggests a convergence in the audit quality offered by the Big 4 and non-Big 4 firms (e.g., DeFond and Lennox 2011; Moon

[9] Some clients are likely precluded from switching auditors due to factors such as their size and/or lack of alternative options in the market. For example, GE struggled to replace KPMG as its auditor because "the only other audit firms big enough to take on GE's massive audit all have potential conflicts of interest that could prevent them from doing so" (Rapoport 2019).

et al. 2019). In addition, Cassell et al. (2013) provide evidence that shareholders no longer perceive differences in quality between the Big 4 and the Next Four national firms, suggesting that many clients could potentially save on audit fees and still experience similar audit quality. Furthermore, discussions with a current Big 4 partner revealed that, in some cases, the Big 4 have actively avoided taking on new audit clients to retain or target more lucrative consulting engagements. Together, these factors suggest a potential shift in Big 4 choice preferences within the audit market. Therefore, we expect that the likelihood that a company switching auditors subsequently chooses a Big 4 auditor declines with consulting opportunities, which we predict as part of our second hypothesis (stated in alternative form):

> ***H2a***: Among clients that switch auditors, clients with more consulting opportunities are less likely to choose a Big 4 auditor.

Next, we consider the effect of consulting opportunities on changes in audit quality. Prior research generally suggests that auditor switches result in a reduction in audit quality, at least in the short-run (Carcello and Nagy 2004; Davis et al. 2009; Geiger and Raghunandan 2002; Myers et al. 2003). We expect that consulting-related switches may lead to an even greater decline in quality for two reasons. First, if the regulatory restrictions imposed by SOX force clients to choose between an auditing and a consulting relationship, some companies potentially select new auditors for reasons secondary (or even unrelated) to audit quality. In other words, the former auditor engaged for consulting services was the best match, so any subsequently chosen auditor is, at most, second best. Second, the provision of non-audit services by the outgoing auditor to firms with more consulting opportunities may have resulted in knowledge spillovers that increased both the effectiveness and efficiency of the audit. Because such synergies are absent following an auditor

switch, consulting-related realignments may negatively affect audit quality.[10] Together, these factors raise the question of whether auditor changes driven by this forced channel choice result in declines in audit quality, which we predict as the other part of our second hypothesis (stated in alternative form):

> ***H2b:*** Among clients that switch auditors, clients with more consulting opportunities experience greater deterioration in audit quality.

3. Sample Composition, Variable Measurement, and Descriptive Statistics

3.1 Sample Composition

Our sample consists of company-year observations with fiscal years ending between June 2007 and May 2017 (i.e., Compustat fiscal years 2007-2016). We begin our sample period in Compustat fiscal year 2007 as this is the first year for which we have broad coverage in the conference call data necessary for developing our measure.[11] Our sample period ends in 2016 to allow sufficient time for the detection and announcement of financial statement misstatements, one of our primary measures of audit quality. We obtain auditor, audit fee, and audit opinion data from Audit Analytics and financial statement data from Compustat.

We obtain client conference call data from Seeking Alpha to construct our measure of consulting opportunities. Given that conference calls typically occur on a quarterly basis, we begin with a sample of 108,072 client-quarters relating to 34,873 different client-years (not all fiscal

[10] Alternatively, accounting firms that are focused on future consulting business may be less willing to challenge management in the years prior to a consulting-related realignment (i.e., their independence may be impaired). In fact, some prior research suggests potential gains in auditor independence following an auditor switch (Lennox 2005; Fairchild 2008; Chou et al. 2012). If consulting-related realignments are associated with increases in auditor independence, this could instead result in post-switch improvements in audit quality. We explore this possibility in more detail in Section 4.3.

[11] To maximize the power of the topic modeling procedure, we use all earnings call transcripts on Seeking Alpha from 2005 to 2017 to train the LDA model used to construct our measure of consulting opportunities. Note that we exclude 2005 and 2006 from our analyses because those years only contain 407 usable observations. However, inferences throughout are similar if we include these observations. We also note that our sample period covers the financial crisis. In untabulated analyses we exclude these years and find that our inferences are unchanged.

years have four conference calls available in Seeking Alpha). We construct a consulting opportunity score for each quarterly transcript and use the yearly average to form client-year observations. After removing observations that we failed to match to Compustat and Audit Analytics and other observations with missing data, our final sample is comprised of 17,180 client-year observations, representing 3,630 unique companies and 153 unique auditors.[12]

3.2 Measurement of Client Consulting Opportunities

A key distinction in our research approach centers around an *ex ante, client-specific* measure of consulting opportunities. Ideally, we could observe the exact level of future consulting services demanded by a client from an accounting firm (i.e., the potential consulting fees per client or the number of RFPs related to consulting work). However, since these data are not publicly available, we rely on an indirect approach to estimate consulting opportunities. Our main strategy in formulating a measure is to capture the degree to which themes appearing in companies' conference calls correspond to needs that could be fulfilled by the consulting services offered by accounting firms. We focus on companies' conference calls because they offer a unique platform through which management discusses and answers questions about various aspects of company performance, recent events, and future business plans. As such, we expect conference calls provide insight into potential consulting work that an accounting firm could provide.[13]

Our procedure begins with an application of machine learning commonly referred to as

[12] This attrition is similar to other studies using Seeking Alpha for conference call transcripts (e.g., Allee and DeAngelis 2015).

[13] Conference calls have several advantages relative to other narrative disclosures, such as Management's Discussion and Analysis (MD&A) in 10-K filings. First, much of the language in MD&As constitutes boilerplate, backward-looking, or annually repeated information. Second, while not uninformative, MD&As tend to be less dynamic than other disclosures, like conference calls, which tend to include more forward-looking, interactive discussions (Brown et al. 2004; Matsumoto et al. 2011; Allee and DeAngelis 2015). Third, research suggests conference calls are timelier than the MD&A and could therefore preempt information communicated through the MD&A (Muslu et al. 2015). For comparability, we considered an alternative measure derived from annual MD&A disclosures. Consistent with the relative advantage of conference calls over MD&As, this measure performs poorly across several validation tests (untabulated) that we introduce in the following section.

"topic modeling," a technique used with growing frequency in the accounting and finance literatures to disaggregate narrative disclosures into discrete topics (e.g., Bao and Datta 2014; Dyer et al. 2017). We implement topic modeling using Latent Dirichlet Allocation (LDA), which "reverse-engineers" the latent topics by iteratively generating word and topic probabilities until the "topic-document" matrix contains largely the same information as the original corpus. We apply LDA to call transcripts to identify the thematic content of the conference calls and then quantify the degree to which each theme signals potential consulting opportunities using materials from the Big 4 accounting firms that describe their consulting service offerings.[14,15] The underlying assumption in this approach is that the words companies use to describe events that would yield consulting opportunities are similar to those used by the accounting firms to market their consulting services.

Combining the themes discussed in each client's conference call with the degree to which each theme signals potential consulting opportunities produces our client specific measure of consulting opportunities, *ConOpp*. More specifically, our procedure identifies a vector of topic relevance scores for each transcript (*T*) and the similarity between each topic and the accounting firm marketing materials (*S*). Our procedure suggests 70 total topics, and *ConOpp* is defined by the cross product *TS'*. Table 1 presents the five most relevant words for each topic, the importance

[14] Although we expect many accounting firms and their clients are likely to consider the auditing versus consulting relationship decision, we rely on the language describing the service offerings provided by the Big 4 firms to create our measure because we expect these materials reflect a comprehensive set of services offered throughout the industry.
[15] We obtain service offering materials from the "advisory" or "consulting" portion of each Big 4 website and extract the text. The websites from which we obtain service offerings are listed in the Online Appendix and were each accessed on June 15, 2018; counts of the words most commonly used by the Big 4 firms in describing their service offerings are presented in Table OA1 of the Online Appendix. We use the same set of materials for all years in our sample so that our measure is comparable across time. We also expect that any variation over time in the Big 4 materials reflects marketing choices more so than shifts in fundamental offerings. In an untabulated analysis we used the Wayback Machine (archive.org/web/) to obtain the web pages from 2007 describing consulting offerings for each of the Big 4 firms and find that the correlation between a measure based on this data and the one used in our paper exceeds 90 percent. This suggests many of the key words collected likely persist across time and provides comfort that our decision to use a recent date to obtain service offerings is not the driver of our findings.

of the topic (*Similarity*) for consulting opportunities (based on audit firms' marketing materials), and the prevalence of the topic in the sample (*Prominence*). We sort topics by similarity and observe intuitive patterns. Highly relevant topics (e.g., 3, 4, 5) use language that sounds similar to words used to describe consulting offerings (e.g., solution, software, improvement). Topics exhibiting the lowest similarity refer to specific financial statement items (e.g., 59, 65) or undescriptive dialogue (e.g., 69, 70). The prominence of topics does not appear correlate with similarity. We provide background information on LDA and a more detailed discussion of the development of *ConOpp* in the Online Appendix.

3.3 Validation of ConOpp

Given we cannot observe companies' exact consulting needs, our hypotheses tests face a joint hypothesis problem (i.e., we jointly test our prediction and that our measure captures the intended construct). To mitigate this issue, we perform several tests unrelated to our hypotheses that are explicitly designed to assess whether our measure is indeed capturing the intended construct. For brevity, we briefly discuss each of these tests below; full details for each test and a tabulation of the results are presented in the Online Appendix (specific tables referenced below). We begin by conducting a basic exercise to evaluate the reasonableness of *ConOpp*. Specifically, we sorted our sample into deciles of *ConOpp*, and one coauthor randomly chose 5 company-years from the top and bottom deciles (10 total). A second coauthor then independently rated a transcript corresponding to each of these 10 observations as conveying relatively high or low opportunities. These independent ratings were 100 percent accurate. While by no means definitive, this basic process provided an initial sanity check that our methodology seems to capture elements of consulting opportunities. Excerpts from each of these 10 transcripts are included in Table OA2 in the Online Appendix.

We next perform two market-level validation tests. First, we test whether consulting firm acquisitions by accounting firms are concentrated in markets where our measure suggests there are greater consulting opportunities. Consistent with this prediction, we find evidence that the Big 4 accounting firms have invested more heavily in expanding their consulting practices not only in markets, but also in industries and years within those markets where *ConOpp* is higher. See Table OA3 of the Online Appendix for results of this analysis. Second, we use data from Burning Glass Technologies, an aggregator of job posting data, to examine the recruiting practices of the Big 4 firms. Again, consistent with *ConOpp* capturing consulting opportunities, we find that the intensity of "consulting-related" job postings is significantly higher in markets with greater levels of *ConOpp*. We report these results in Figure OA2 of the Online Appendix.

We then perform two company-level validation tests. First, we examine intertemporal variation in *ConOpp* surrounding the disclosure of significant events that are likely associated with consulting needs. We find that *ConOpp* significantly increases in the periods preceding the disclosure of merger and acquisition activity and internal control issues, concurrent to when these firms would likely seek assistance from consultants related to these events. Figure OA3 of the Online Appendix reports these results. Second, we use XBRL tags in companies' financial statements to identify expenses classified as related to "consulting" or "professional services." Although these tags are available for only 238 observations, or 1.4 percent of our sample, they provide a direct comparison between our measure and companies' consulting expenditures.[16] Consistent with our measure capturing consulting opportunities that exist between accounting firms and companies, we find a strong, positive correlation between *ConOpp* and consulting

[16] Part of this limited availability is due to the fact that XBRL data is not available for the early portion of our sample period. Nonetheless, reporting these types of expenses remains a rarity, and this lack of widespread reporting of consulting expenditures is one of the primary impetuses for our study—i.e., our measure allows for the estimation of otherwise unobservable cross-sectional differences in consulting opportunities.

expenditures within this subsample. Table OA4 of the Online Appendix reports these results.

In summary, while we acknowledge that none of these tests provide conclusive evidence that our measure captures the intended construct, we believe that collectively these tests provide sufficient evidence to validate that *ConOpp* correlates strongly with consulting opportunities.

3.4 Descriptive Statistics

Table 2 presents descriptive statistics for variables used in our study. Detailed variable definitions can be found in the Appendix. *ConOpp* takes a mean (median) value of 0.799 (0.765), suggesting a fairly symmetric distribution.[17] As expected, the distributions of the remaining variables are generally skewed toward larger companies given that these companies are more likely to have conference calls. Pearson correlation coefficients among the variables are presented in Table 3. Coefficients in bold are significant at the one percent level. *ConOpp* is positively associated with both *M&A* and *R&D*, consistent with clients' consulting opportunities being greater when undergoing M&A activity or investing heavily in the future. *ConOpp* also correlates positively with *Cash* and *Loss*, and negatively with *Assets*, *AssetGrowth*, and *Leverage,* suggesting nuanced associations with size, growth, and profitability.

4. Empirical Results

4.1 Test of H1 (Consulting Opportunities and Auditor Switching)

We test *H1* using the following OLS regression model:[18]

$$Switch_{t+1} = \beta_0 + \beta_1 ConOpp_t + \beta Z_t + \varepsilon \quad (1)$$

[17] To ensure that distributional properties of *ConOpp* do not drive our results, we use a decile-ranked version of our measure and find that our inferences are unchanged throughout (untabulated).

[18] We use OLS (i.e., a linear probability model [LPM]) to estimate models with binary dependent variables because it allows for a direct interpretation and comparison of average treatment effects (marginal effects), as well as direct interpretation of interactions in later tests (Wooldridge 2001; Rencher and Schaalje 2008; Angrist and Pischke 2009). Likely due to these benefits, the use of LPM has become increasingly popular in accounting and finance research (see, e.g., Fung et al. 2017; Cunningham et al. 2019; Ahn et al. 2020). However, we observe similar marginal effects at average levels of our regressors if we estimate our hypothesis tests using a logit model (untabulated).

The dependent variable in Equation (1) is *Switch*, which is an indicator variable equal to one if a company switches auditors, and zero otherwise.[19] The variable of interest is *ConOpp. H1* predicts that consulting opportunities will be positively associated with the likelihood of auditor-client realignment, implying a positive estimate for β_1. We generally rely on prior literature on auditor switches (e.g., Landsman et al. 2009) to identify control variables (*Z*). We consider three sets of controls. As described in more detail below, we believe the first set of controls represents the most likely confounders, but we consider all three sets to assess the robustness of our results. The first set includes variables likely "predetermined" with respect to *ConOpp*, making them plausible confounders and thus candidates for causal determinants of our measure and *Switch*. Most capture aspects of performance and resources available for discretionary spending (*Assets*, *AssetGrowth*, *Cash*, *CashFlow, ExternalFinance*, *Inv&Rec*, *Leverage*, *Loss*, *ROA*). We also include the market-to-book ratio (*MTB*), which captures market expectations of growth potential, as well as aspects of the audit opinion (*GoingConcern*, *ModOp*) that might affect consulting opportunities. In addition, we control for companies' foreign operations (*Foreign*) and business complexity (*Segments*). Finally, we control for company life cycle as this could plausibly influence consulting needs (*CFEarly*, *CFMature*).

The second set of controls adds other variables that prior research links to auditor switches but likely capture some of the same construct as *ConOpp*, potentially making them improper controls in our setting given we intend to identify the full effect of consulting opportunities on aspects of the audit market (Angrist and Pischke 2015; Gow et al. 2016; Whited et al. 2021). These variables reflect the fact that accounting firms frequently consult on financial reporting practices

[19] We include all auditor switches rather than focusing on auditor resignations or dismissals since we expect that the severing of an auditor-client relationship in favor of a consultant-client relationship is often mutual, meaning both the accounting firm and client prefer the realignment.

(*AbnAcc*, *MatWeak*, *RestateAnnounce*) and that companies investing in growth likely provide more consulting opportunities as well (*R&D*, *M&A*).

Third, we add several additional auditor-related variables that prior literature links to auditor switches. While most of these variables are likely determinants of *Switch,* they could very likely be affected by (and thus be outcomes of) of *ConOpp*. Therefore, including these variables could inhibit our ability to draw proper inferences (Angrist and Pischke 2015; Gow et al. 2016; Whited et al. 2021). The third set of controls includes auditor attributes (*Big4, IndExpert*), audit attributes (*AuditFees*, *Mismatch, Shop, Tenure*) and measures of audit market competition (*CompMSA, CompMSAInd*). All models include industry (based on two-digit SIC) and fiscal year fixed effects, and we cluster robust standard errors by company (Petersen 2009).[20] Consistent with prior research, all continuous variables are winsorized at the 1st and 99th percent levels.

Table 4 presents the results from estimating Equation (1). As shown, the coefficients on *ConOpp* are positive and significant in all three specifications ($p < 0.01$, $p < 0.05$, and $p < 0.05$, respectively). These results are consistent with *H1* and suggest that auditor-client realignments are increasing in a client's level of consulting opportunities. Economically, the coefficient estimates on *ConOpp* suggest that a one standard deviation increase in *ConOpp* corresponds to approximately a 0.4 percent increase in the likelihood of an auditor switch, around 12 percent of the unconditional rate. These results are consistent with consulting opportunities having a significant effect on auditors' business strategies and auditor-client contracting decisions.

While the *H1* results suggest that relatively more consulting opportunities relate to a higher

[20] Despite our best efforts to control for potential confounds, omitted correlated variables always remain a concern. To better understand the potential risk of this issue in our setting, we employ the approach developed by Oster (2019) and used in recent accounting and finance research (e.g., Call et al. 2018; Green et al. 2019; Jha et al. 2021) to evaluate the impact any omitted variables would need to have to alter our inferences. This analysis (untabulated) suggests that omitted variables would need to be 1 to 3 times more important (depending on hypothesis) than the combined effects of all included controls to alter our inferences. Consistent with Oster (2019), this evidence suggests the coefficients of interest in our hypothesis tests are stable and unlikely to be significantly affected by any omitted variable(s).

likelihood of an auditor switch, we expect that this association is moderated by certain client-specific and market-level factors. Accordingly, we examine three characteristics that we expect reduce the likelihood of consulting-driven auditor switches: 1) client size/prestige, 2) the ability of clients to fulfill their own consulting needs, and 3) demand for auditor quality.

We expect that the likelihood of an auditor forgoing an existing audit engagement for consulting work declines as the opportunity cost (i.e., the cost of lost audit revenues) increases. Further, GE struggled to replace KPMG as its auditor because of conflicts of interest with the only other firms large enough to perform its audit (Rapoport 2019). We expect this phenomenon is not limited to GE and that other similarly large/prestigious companies are also constrained in their ability to switch auditors. We test this cross-sectional prediction by re-estimating Equation (1) after interacting *ConOpp* with an indicator variable for whether the client is a member of the S&P 500 Index (*S&P500*). Columns (1) through (3) of Table 5 present results from these estimations; we suppress results for control variables for brevity. As shown, we find that the coefficient on *ConOpp*×*S&P500* is negative and significant ($p < 0.05$) in each specification. Furthermore, the joint tests of *ConOpp* + *ConOpp*×*S&P500* fail to reject the null, indicating that the positive association between consulting opportunities and the likelihood of an auditor switch does not exist among S&P 500 companies.

The previous result is also consistent with larger firms being better able to satisfy consulting needs internally. We more directly test this assertion using data from Burning Glass Technologies, which we use to measure the percentage of consulting-related job postings per company (*%ConsultingJobs*).[21] We then re-estimate Equation (1) after interacting *ConOpp* with

[21] To identify jobs likely relevant to consulting needs, we review all O*NET job postings by the Big 4 and for several companies that likely satisfy their own consulting needs internally (specifically, Citrix, IBM, Oracle, S&P Global, and SAP). In total, we inspect jobs corresponding to 226 unique codes and classify 162 as consulting-related. These job codes also identify companies that provide consulting services to others, where we also expect results to weaken.

%ConsultingJobs, with the expectation that the higher the percentage of consulting-related job postings, the better equipped the company should be to fulfill its own consulting needs, thus attenuating the relation between *ConOpp* and the likelihood of an auditor switch. We report these results in columns (4) through (6) of Table 5. Consistent with our expectation, we observe a significantly negative coefficient ($p < 0.05$) on the interaction term in each specification.[22] In addition, the joint test of *ConOpp* + *ConOpp*×*%ConsultingJobs* fails to reject the null at the 75th percentile of *%ConsultingJobs* in each specification, indicating that the positive association between consulting opportunities and the likelihood of an auditor switch does not exist among companies with high internal consulting capability.

Though our main results suggest that clients with more consulting opportunities are, on average, more likely to pursue consulting-related auditor switches, we predict that this relationship diminishes among clients with a revealed preference for auditor quality. We test this by re-estimating Equation (1) after interacting *ConOpp* with a continuous measure of auditor industry expertise (*AuditorMktShare*) that captures auditors' industry market share (Aobdia and Shroff 2017). We expect higher values of *AuditorMktShare* correspond to greater demand for auditor quality. Columns (7) through (9) of Table 5 present the results. As shown, we find that the coefficient on *ConOpp*×*AuditorMktShare* is negative and significant ($p < 0.05$) in each specification. Furthermore, by the 75th percentile of *AuditorMktShare*, the joint test of *ConOpp* + *ConOpp*×*AuditorMktShare* fails to reject the null in each specification, indicating that the positive association between consulting opportunities and the likelihood of an auditor switch is mitigated for clients employing auditors with more industry expertise. This finding is consistent with client demand for higher auditor quality reducing the likelihood of a consulting-driven auditor switch.

[22] Results are similar if we require at least 100 total job postings per client per year.

In summary, the results of these cross-sectional tests indicate that consulting opportunities relate to auditor-client realignments in a predictable manner that is consistent with *ex ante* expectations. As such, these results provide additional comfort that consulting opportunities (and not some other mechanism or construct) explains our results for *H1*.

4.2 Test of H2a (Consulting Opportunities and Subsequent Auditor Choice)

H2a predicts that the increase in auditor-client realignments associated with the renewed focus on consulting is primarily driven by the Big 4 accounting firms. If this is the case, then we should observe a negative association between consulting opportunities and the likelihood of choosing a Big 4 auditor following an auditor switch. We test this by re-estimating all three specifications of Equation (1) after limiting the sample to those observations that change auditors and replacing the dependent variable with a Big 4 indicator variable (*Big4*), indicating that the company employs a Big 4 auditor in year *t+1*.

Table 6 presents the results for this test. As shown, the coefficient on *ConOpp* is negative and significant ($p < 0.05$) in each specification, providing support for *H2a*.[23] Economically, a one standard deviation increase in consulting opportunities is associated with approximately a 4 percent decrease in the likelihood of selecting a Big 4 auditor. To ensure that our findings related to Big 4 choice are not the product of companies that were unlikely to ever choose a Big 4 auditor, we further limit the sample to those observations with an incumbent Big 4 auditor (i.e., $Big4_t = 1$) and find (untabulated) that the results are even stronger among this subsample of observations.[24]

[23] We expect the Big 4's focus on consulting varies across markets due to variance in the demand for consulting work, consistent with the logic used in several of our validation tests. This also implies that our *H2a* prediction applies more (less) to markets with greater (fewer) consulting opportunities. To explore this possibility, we re-estimate the Big 4 choice model after restricting the sample to the markets with the most consulting opportunities—MSAs above the sample median of average *ConOpp*—and find that the coefficients on *ConOpp* almost double in magnitude and become more statistically significant ($p < 0.01$ in each specification, untabulated).

[24] Results of our other hypothesis tests are similar using a sample limited to observations with an incumbent Big 4 auditor.

Overall, these findings suggest that clients with more consulting opportunities are less likely to choose a Big 4 auditor following an auditor switch.[25]

Our evidence thus far suggests a potential shift in the audit market toward a new equilibrium. To assess this potential change in equilibrium more closely, we plot across-time market trends in Big 4 audit market share (based on number of audit clients) in Figure 2. We present the overall average, as well as a comparison between MSAs where we expect accounting firms are most likely to focus their consulting efforts (i.e., markets with above-median *ConOppMSA*) and MSAs where we expect there to be less emphasis on consulting (i.e., markets with below-median *ConOppMSA*), where *ConOppMSA* equals the mean value of *ConOpp* for each MSA in the sample. We observe that: (1) there is a general decline in Big 4 market share, (2) the decline in Big 4 market share is greater in markets where the Big 4 are likely to be emphasizing their consulting practices, and (3) the rate at which Big 4 market share is declining has lessened in more recent years, potentially signaling the approach of a new audit market equilibrium.[26]

4.3 Test of H2b (Consulting Opportunities and Changes in Audit Quality)

To test *H2b*, we estimate the following OLS regression model:

$$\Delta AQ_{t+1} = \alpha_0 + \alpha_1 ConOpp_t + \alpha \Delta Z_{t+1} + \varepsilon \quad (2)$$

AQ in Equation (2) takes the form of one of three proxies for audit quality. Our first proxy is *Misstate*, an indicator variable equal to one if the company's current fiscal year financial statements are subsequently restated in an 8-K Item 4.02 filing, and zero otherwise. Material

[25] A multinomial logistic regression approach allows for *H1* and *H2a* to be jointly examined. We implement this approach in an untabulated analysis by specifying all non-switchers as a benchmark group and then defining three types of auditor switches (lateral switches, upward switches, and downward switches). We find that, consistent with our predictions, *ConOpp* is significantly associated with downward switches (i.e., switches from a Big 4 firm to a Next Four or smaller firm, or a switch from a Next Four firm to a smaller firm) but not lateral or upward switches.

[26] Untabulated regression analyses confirm that the trends between MSAs with above-median *ConOppMSA* and below-median *ConOppMSA* statistically differ across the sample period for changes in Big 4 market share. We also find similar evidence both graphically and in regression analyses using audit fees to measure market share.

misstatements represent "egregious audit failures" and are a reliable measure of audit quality (Aobdia 2019; DeFond and Zhang 2014). In addition to misstatements, we use two other proxies that Aobdia (2019) finds to be suitable measures of audit quality: (1) unsigned abnormal accruals (*AbnAcc*) and (2) an indicator for companies that "just meet or beat" prior year ROA (*MeetBeat*). We use changes in audit quality (as well as changes in each of the control variables) because *H2b* predicts that companies with more consulting opportunities that switch auditors will experience greater deteriorations in audit quality following the switch, relative to audit quality prior to the switch. *H2b* suggests α_1 should be positive since each proxy inversely measures audit quality. Table 7 presents the results for this test. Inconsistent with our prediction, the coefficient on *ConOpp* is not significantly positive in any of the specifications. Overall, these results are inconsistent with *H2b*. Thus, our evidence does not suggest that consulting-related shifts in the audit market correspond to deteriorations in audit quality.

Our primary test of *H2b* uses each firm as its own benchmark (i.e., we examine changes in audit quality following a switch). An alternative approach is to examine how cross-sectional differences in levels of audit quality vary with *ConOpp*, particularly following an auditor switch. To test this, we use our full sample of observations and estimate a modified form of Equation (2) that includes *Switch* and the interaction of *Switch* and *ConOpp* as additional regressors and uses the levels of our audit quality proxies as dependent variables. We report these results in Table 8. We again fail to find evidence suggesting *ConOpp* is associated with poorer post-switch audit quality. In fact, the coefficient on the interaction of interest is *negative* and marginally significant in two of three specifications with abnormal accruals as the dependent variable ($p < 0.10$ in columns (4) and (5); $p = 0.12$ in column (6)), providing some limited evidence of *higher* audit quality following an auditor switch when the switch was likely consulting-related.

To better understand the driver of this surprising result, we explore how the observed effect varies by audit firm "tier" (i.e., the Big 4, the Next Four, and other auditors). Our motivation for this comparison is largely based on the recently documented convergence in audit quality between the Big 4 and Next Four audit firms (DeFond and Lennox 2011; Moon et al. 2019). We expect that any improvements in quality from consulting-related auditor changes are likely driven by switches to the Next Four audit firms, who have adequate resources to serve certain former Big 4 audit clients. While these firms have also grown their consulting practices, engaging a former Big 4 client is likely a significant "win" for these firms (similar to the S&P 500 for the Big 4). Untabulated tests indicate that the abnormal accruals results are in fact driven by the subset of companies switching from Big 4 audit firms to Next Four audit firms.

Another potential explanation for the lack of *H2b* results is that consulting-focused accounting firms may be less willing to challenge client management in the years prior to a consulting-related realignment (i.e., their independence may be impaired). Therefore, companies that are more likely to change auditors for consulting-related reasons may have had lower quality prior to the switch. We explore this possibility by plotting trends in our three audit quality proxies for the years surrounding an auditor switch for high vs. low *ConOpp* companies (based on sample median of *ConOpp*). These trends are presented in Figure 3. In general, the trends suggest similar pre-switch audit quality between high *ConOpp* companies and low *ConOpp* companies. Although the misstatement rate appears to be relatively higher for high *ConOpp* companies in the pre-switch years, a t-test (untabulated) fails to reject the null that the rates are similar.[27]

[27] In fact, the only statistical differences across the two groups for any of the results plotted in Figure 3 correspond to the quality provided by the incoming auditor. Specifically, the misstatement rate is significantly *lower* for high *ConOpp* companies in the year following the switch, and mean abnormal accruals are significantly *lower* for high *ConOpp* companies in the year of the switch. These results provide further evidence that consulting-related switches may actually be associated with improvements (and not deteriorations) in audit quality.

4.4 Consulting Opportunities and Changes in Audit and Non-Audit Service Fees

The results from tests of *H2a* suggest that companies that switch auditors for consulting reasons are less likely to subsequently choose a Big 4 auditor, but we do not find evidence in tests of *H2b* that their audit quality suffers as a result. Together, these findings suggest that these companies may be able maintain their existing level of audit quality while saving on audit fees by switching to a smaller auditor. To more directly test this, we estimate a modified form of Equation (2) that replaces the dependent variable with *ΔAuditFees*, which is defined as the year-over-year change in the natural log of audit fees paid to the external auditor surrounding the switch. As shown in Table 9, we fail to find evidence of an association between consulting opportunities and changes in audit fees, suggesting that, on average, companies that switch auditors for consulting reasons do not appear to realize a significant savings in audit fees.

A potential explanation for the lack of an on-average audit fee effect is that the incoming auditors are less willing to offer an initial audit fee discount when they are unable to recoup fees in the future through the sale of allowable consulting services (i.e., non-audit service (NAS) fees). NAS fees are a function of *allowable* "consulting" services provided to an audit client (i.e., any consulting/advisory service approved by the audit committee that is not explicitly prohibited under SOX 201), and we expect that companies switching auditors for consulting reasons often retain the outgoing auditor for the previously allowable services.[28]

We explore this possibility by plotting trends in companies' purchases of non-audit services from their auditor over rolling seven-year periods and examining how these purchases

[28] For example, a client may employ PwC for allowable tax services, and then decide it wants to engage PwC to assist with systems implementation or internal control redesign, services prohibited by SOX. In this instance, PwC could not continue as the auditor, yet we expect they would likely continue to deliver the tax services they provided when serving as auditor. On the other hand, if PwC is dismissed for reasons other than consulting (e.g., unsatisfied with audit staff, investor-demanded switch), we expect the client would also be more open to using the new auditor for the allowable tax services.

change across time. More specifically, we compare the evolution of NAS fees for three groups of observations (high *ConOpp* switchers, low *ConOpp* switchers, and non-switchers) by plotting the ratio of total NAS fees paid to the company's auditor to total company assets. Figure 4 presents these plots and reveals a pattern consistent with our expectations. That is, both low *ConOpp* switchers and non-switchers exhibit relatively flat trends in NAS purchases. However, high *ConOpp* switchers exhibit a dramatic increase in NAS purchases in the two years prior to the switch, and then a precipitous drop in the year of the switch (i.e., the year capturing NAS fees paid to the incoming auditor).[29] In addition to highlighting the reduction in NAS fee opportunities for the incoming auditor, the trends in Figure 4 provide *ex post* validation of *ConOpp* by suggesting that companies we expect to switch auditors for consulting reasons likely retain their former auditor (now consultant) for the previously allowable non-audit services.

5. Conclusion

Regulators have expressed concern that revenues from non-audit, consulting service lines have become too much of a focus for prominent accounting firms. Since the enactment of SOX, accounting firms have increasingly shifted their focus to providing consulting services to *non-audit* clients. Unlike prior work in this area, we use a combination of textual analysis techniques to develop a novel measure of consulting opportunities that allows us to investigate the effects of client-specific consulting opportunities on several aspects of the audit market. We provide evidence that consulting opportunities relate positively to the likelihood of switching auditors and negatively to the likelihood of selecting a Big 4 auditor following a switch. However, we find no evidence that consulting-related switches contribute to deteriorations in audit quality. Overall, our

[29] Untabulated regression analyses confirm that the observed on-average decline in NAS purchases in Year 0 for switching companies with high *ConOpp* is significantly different than both the change for switching companies with low *ConOpp* and the change for non-switchers.

study documents several important consequences of consulting-related auditor switches and suggests that consulting opportunities play an important role in broader shifts in the audit market.

Besides adding to the literature on the role of consulting practices in accounting firms by examining consulting services sold to *non-audit* clients, we expect our measure of consulting opportunities will offer unique avenues for future research to explore how product mixes within the Big 4 affect various market outcomes. In summary, by developing a measure of client-specific consulting opportunities and documenting its implications in the audit market, our study should be of interest to a range of stakeholders, including auditors, their clients, and regulators.

Our study is subject to limitations. First, despite the distinct nature of each validation test, as well as the fact that any measurement error would need to exhibit correlations (and conditional correlations in cross-sectional tests) that mimic those predicted across all our specifications, we can never fully eliminate the possibility that other constructs confound *ConOpp.* Second, *ConOpp* is constructed using conference calls, which means companies in our sample tend to be larger and that market-wide measures disproportionately represent firms in a region which have conference calls, potentially affecting the generalizability of some inferences. Finally, as with any archival study, there is always some remaining possibility that an omitted variable could affect inferences.

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Figure 1: Trends in Aggregate Accounting Firm Revenues by Service Line Over Time

Figure 1 plots accounting firm aggregate U.S. revenues (in $Billions) by service line (consulting/advisory, audit, and non-audit services to audit clients (NAS)) from 2007 through 2018, split between Big 4 firms and Next Four firms. Aggregate consulting/advisory and audit revenues are obtained from Accounting Today, while the aggregate non-audit fees paid by audit clients are obtained from Audit Analytics.

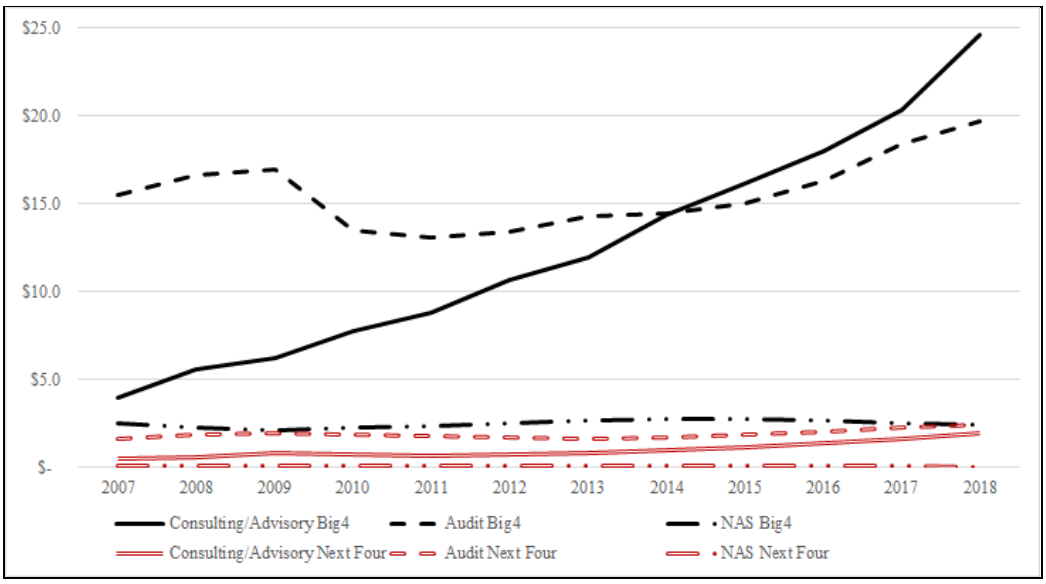


Figure 2: Consulting Opportunities and Trends in Big 4 Audit Market Share

Figure 2 plots Big 4 audit market share, which is measured using the total number of audit clients, across the sample period. Mean market share is plotted over five, two-year windows (2007-08, 2009-10, 2011-12, 2013-14, and 2015-16). Mean market share is separately calculated and plotted for three groups (the full sample of MSA-year observations, observations with *ConOppMSA* below the sample median, and observations with *ConOppMSA* above the sample median).

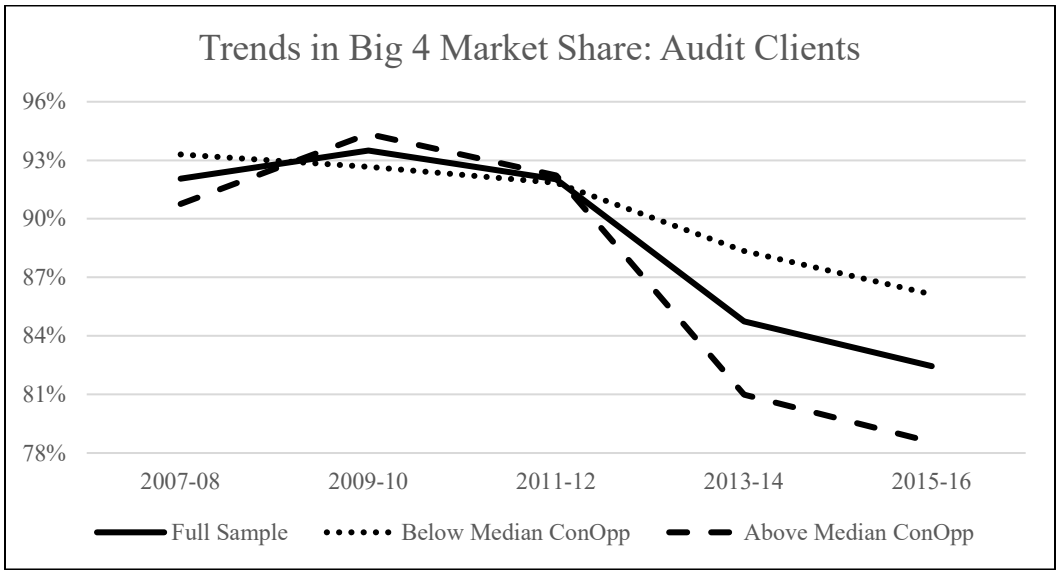
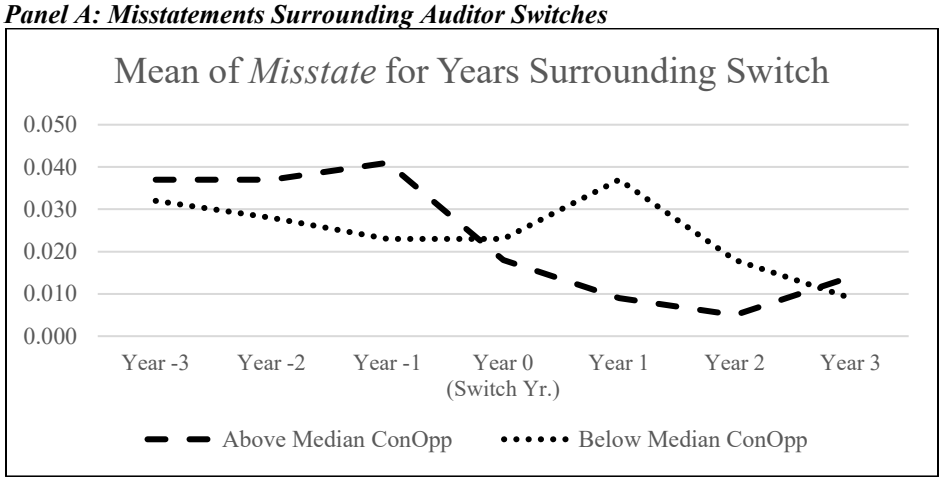


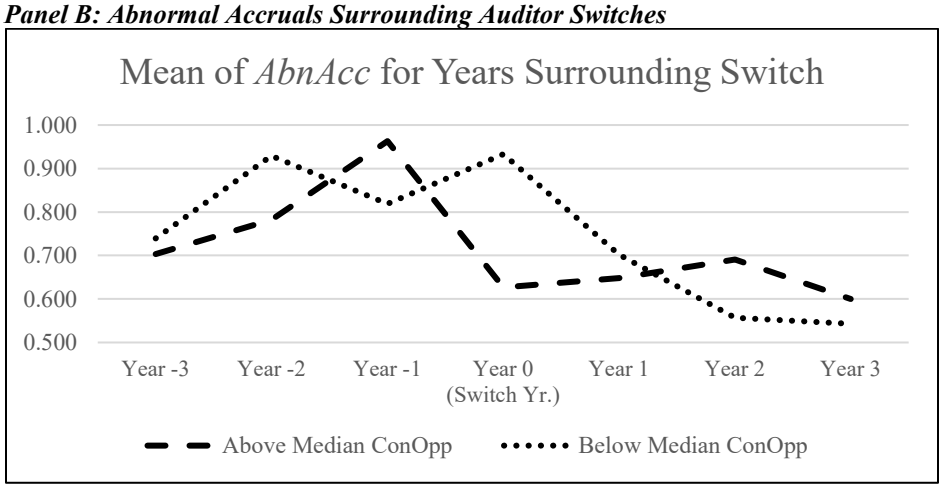
Figure 3: Audit Quality Trends Surrounding Auditor Switches

Figure 3 plots the mean values of our three audit quality proxies for high vs. low *ConOpp* companies for the years surrounding an auditor switch (*Misstate* in Panel A; *AbnAcc* in Panel B; *MeetBeat* in Panel C). Year 0 represents the year of the switch, Years -3 through -1 represent the three years prior to the switch, and Years 1 through 3 represent the three years following the switch. The means are separately calculated for each proxy and group of observations.

Panel A: Misstatements Surrounding Auditor Switches



Panel B: Abnormal Accruals Surrounding Auditor Switches



Panel C: Meet or Beat Surrounding Auditor Switches

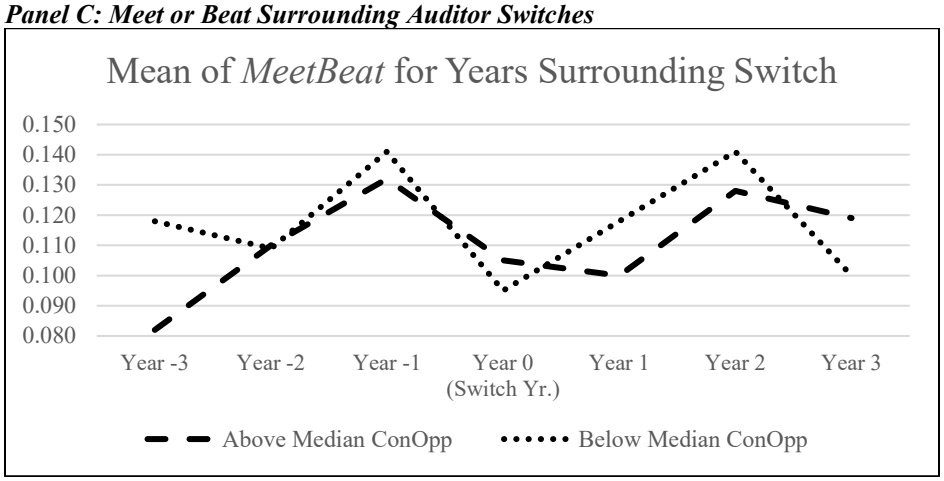


Figure 4: Consulting Opportunities and Trends in Non-Audit Service Fees

Figure 4 plots trends in companies' purchases of non-audit services from their auditor using rolling seven-year windows based on the timing of auditor switches. For companies that switch auditors during the sample period, Year 0 represents the year of the switch, Years -1 through -3 represent the three years prior to the switch, and Years 1 to 3 represent the three years following the switch. For companies that do not switch auditors, Years -3 through 3 represent seven-year rolling windows within the sample period. For comparability purposes, Figure 4 plots the ratio of total non-audit service fees paid to the company's auditor to total company assets, centered about the mean (thus yielding some negative estimates). Trends in companies' purchases of non-audit services are separately plotted for three groups (companies that switch auditors and have *ConOpp* above the sample median, companies that switch auditors and have *ConOpp* below the sample median, and companies that do not switch auditors).

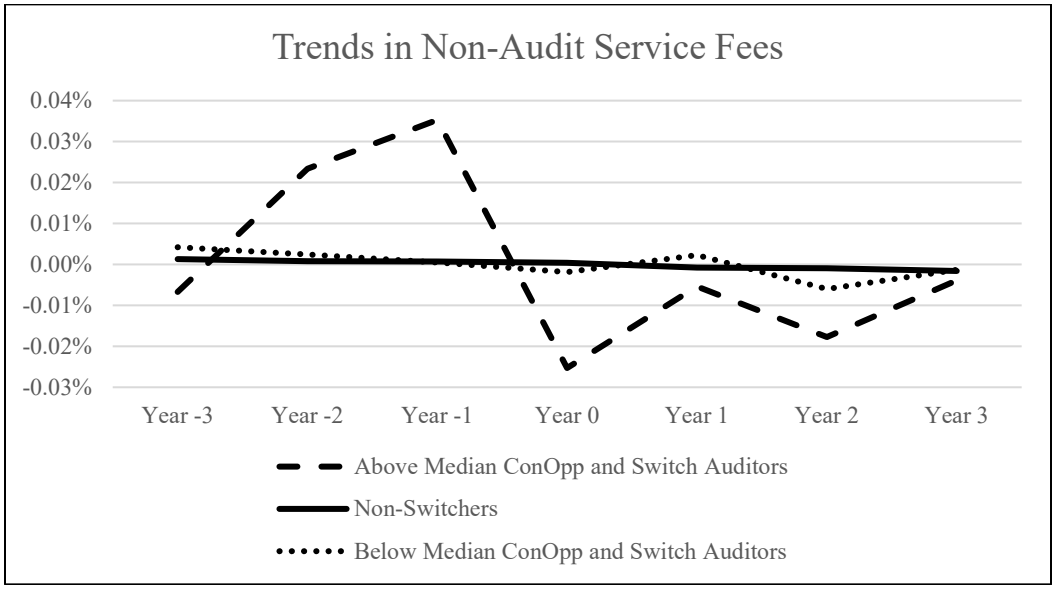


Table 1: Top Five Words in Each Topic, Similarity Scores, and Prominence

Table 1 presents the five most relevant words for each of the 70 topics extracted from Latent Dirichlet Allocation (LDA). Topics are sorted by similarity, which equals the average cosine similarity between the 25 most relevant topics to each topic and Big 4 consulting offerings materials. Prominence equals the average topic relevance for each transcript used to construct *ConOpp*.

Topic No.	Top 5 Words	Similarity	Prominence	Topic No.	Top 5 Words	Similarity	Prominence
1	shareholder value earnings capital provide	0.294	3.02%	36	loan bank portfolio deposit credit	0.062	2.03%
2	fund asset fee equity investment	0.289	1.24%	37	contract program government award work	0.061	1.19%
3	revenue solution customer software cloud	0.277	1.85%	38	brand retail channel consumer product	0.055	1.30%
4	service revenue services margin segment	0.247	1.10%	39	store sale comp customer margin	0.055	1.85%
5	focus improve team improvement ve	0.219	3.21%	40	production drill barrel oil day	0.054	1.68%
6	client revenue large service margin	0.203	0.90%	41	patient study trial data clinical	0.053	3.41%
7	sale sell force team growth	0.157	1.51%	42	customer revenue margin gross growth	0.053	1.74%
8	mobile game user online launch	0.156	0.45%	43	work don believe process need	0.052	3.06%
9	technology revenue design application gross	0.131	1.99%	44	jim center data open class	0.051	0.20%
10	platform growth really technology drive	0.129	2.65%	45	price volume pricing low ton	0.050	1.73%
11	rate earnings power utility customer	0.123	1.54%	46	international growth strong grow domestic	0.049	1.11%
12	order backlog customer equipment product	0.123	1.43%	47	sale margin segment gross profit	0.047	2.42%
13	loss premium insurance ratio rate	0.123	1.14%	48	ebitda adjusted adjust flow debt	0.046	1.02%
14	network customer carrier wireless revenue	0.116	0.73%	49	growth margin strong ve segment	0.046	4.38%
15	compare revenue net expense decrease	0.114	2.98%	50	care health hospital healthcare medical	0.041	1.01%
16	china demand supply product inventory	0.110	1.42%	51	restaurant sale food brand open	0.04	0.82%
17	product launch gross margin revenue	0.103	1.47%	52	pro professional basis combine leverage	0.038	0.05%
18	plant industrial group month reduce	0.101	0.01%	53	mike vehicle car unit industry	0.036	0.34%
19	test bob volume perform reference	0.094	0.16%	54	currency impact growth foreign exchange	0.033	1.17%
20	production capital low flow operation	0.094	1.04%	55	gaap non revenue guidance range	0.032	2.34%
21	lease property rent square asset	0.093	0.40%	56	fourth rate expense tax growth	0.031	1.31%
22	gas oil energy natural price	0.092	0.57%	57	fuel coal fleet capacity price	0.028	0.50%
23	site cell small activity target	0.092	0.15%	58	slide presentation rate page day	0.022	0.68%
24	growth category consumer brand grow	0.091	1.48%	59	fiscal prior calendar current income	0.020	0.47%
25	portfolio investment asset capital debt	0.085	1.25%	60	north america europe american asia	0.020	0.91%
26	hotel city property room york	0.081	0.37%	61	state california water commercial texas	0.020	0.46%
27	acquisition integration acquire organic synergy	0.079	1.38%	62	brian phase really mention ll	0.019	0.05%
28	decline reduction reduce charge low	0.078	2.57%	63	ve ll thing really lot	0.017	5.34%
29	project work construction large backlog	0.078	0.87%	64	june steve month july september	0.017	0.38%
30	tom group life earnings capital	0.076	0.44%	65	approximately expense rate month period	0.016	3.01%
31	rig fleet mexico contract work	0.069	0.84%	66	march december january april february	0.013	0.47%
32	billion actually growth course let	0.068	1.02%	67	amp indiscernible open thanks ahead	0.013	0.47%
33	pipeline partner joint venture opportunity	0.067	0.98%	68	home community land price lot	0.011	0.48%
34	capacity facility unit distribution expansion	0.066	0.96%	69	kind little bit really yes	0.002	6.12%
35	revenue digital advertising content medium	0.064	0.99%	70	okay thanks yeah morning hi	0.001	2.41%

Table 2: Descriptive Statistics

Table 2 presents descriptive statistics for the full sample. All variables are formally defined in the Appendix.

Variable	N	Mean	Std. Dev.	p(25)	Median	p(75)
$ConOpp_t$	17,180	0.799	0.241	0.628	0.765	0.939
$Switch_{t+1}$	17,180	0.034	0.182	0.000	0.000	0.000
$Big4_{t+1}$	17,180	0.828	0.378	1.000	1.000	1.000
$\Delta Misstate_{t+1}$	17,180	-0.001	0.103	0.000	0.000	0.000
$\Delta AbnAcc_{t+1}$	17,180	0.011	2.042	-0.118	-0.001	0.123
$\Delta MeetBeat_{t+1}$	17,180	-0.003	0.464	0.000	0.000	0.000
$Assets_t$	17,180	7.330	2.036	5.880	7.382	8.724
$AssetGrowth_t$	17,180	0.127	0.406	-0.033	0.047	0.156
$Cash_t$	17,180	0.195	0.214	0.038	0.113	0.276
$CashFlow_t$	17,180	0.061	0.161	0.030	0.083	0.135
$CFEarly_t$	17,180	0.388	0.487	0.000	0.000	1.000
$CFMature_t$	17,180	0.468	0.499	0.000	0.000	1.000
$ExternalFinance_t$	17,180	0.942	0.233	1.000	1.000	1.000
$Foreign_t$	17,180	0.600	0.490	0.000	1.000	1.000
$GoingConcern_t$	17,180	0.016	0.125	0.000	0.000	0.000
$Inv\&Rec_t$	17,180	0.243	0.193	0.088	0.200	0.342
$Leverage_t$	17,180	0.562	0.263	0.374	0.557	0.729
$Loss_t$	17,180	0.283	0.451	0.000	0.000	1.000
$ModOp_t$	17,180	0.249	0.433	0.000	0.000	0.000
MTB_t	17,180	3.145	5.565	1.262	2.131	3.772
ROA_t	17,180	-0.007	0.187	-0.012	0.032	0.076
$Segments_t$	17,180	2.753	3.447	1.000	1.000	3.000
$AbnAcc_t$	17,180	0.680	1.624	0.035	0.132	0.545
$M\&A_t$	17,180	0.341	0.474	0.000	0.000	1.000
$MatWeak_t$	17,180	0.031	0.172	0.000	0.000	0.000
$R\&D_t$	17,180	0.050	0.104	0.000	0.000	0.052
$RestateAnnounce_t$	17,180	0.078	0.268	0.000	0.000	0.000
$AuditFees_t$	17,180	14.313	1.140	13.554	14.257	15.067
$Big4_t$	17,180	0.832	0.374	1.000	1.000	1.000
$CompMSA_t$	17,180	0.292	0.117	0.234	0.258	0.295
$CompMSAInd_t$	17,180	0.565	0.272	0.337	0.491	0.804
$IndExpert_t$	17,180	0.872	0.334	1.000	1.000	1.000
$Mismatch_t$	17,180	0.137	0.344	0.000	0.000	0.000
$Shop_t$	17,180	0.024	0.055	-0.010	0.013	0.047
$Tenure_t$	17,180	7.394	2.981	5.000	9.000	10.000

Table 3: Correlations

Table 3 presents Pearson correlation coefficients for the full sample. Bold coefficients indicate significance at p<0.01. All variables are formally defined in the Appendix.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
ConOpp$_t$ (1)	1.00																			
Switch$_{t+1}$ (2)	**0.03**	1.00																		
Big4$_{t+1}$ (3)	**-0.06**	**-0.13**	1.00																	
ΔMisstate$_{t+1}$ (4)	-0.01	**-0.02**	-0.02	1.00																
ΔAbnAcc$_{t+1}$ (5)	-0.01	0.00	0.02	-0.01	1.00															
ΔMeetBeat$_{t+1}$ (6)	0.00	-0.01	0.00	-0.01	**-0.02**	1.00														
Assets$_t$ (7)	**-0.07**	**-0.11**	**0.45**	0.00	0.00	0.00	1.00													
AssetGrowth$_t$ (8)	**-0.04**	**0.02**	**-0.05**	0.00	**-0.02**	0.02	**-0.05**	1.00												
Cash$_t$ (9)	**0.13**	0.02	**-0.08**	0.00	0.00	0.01	**-0.46**	**0.16**	1.00											
CashFlow$_t$ (10)	0.00	**-0.05**	**0.19**	0.00	0.02	-0.01	**0.33**	**-0.05**	**-0.37**	1.00										
CFEarly$_t$ (11)	**-0.05**	**0.03**	**-0.10**	-0.01	-0.02	0.02	**-0.07**	**0.35**	**0.07**	**-0.21**	1.00									
CFMature$_t$ (12)	**-0.02**	**-0.04**	**0.15**	0.00	0.01	-0.02	**0.18**	**-0.23**	**-0.22**	**0.37**	**-0.75**	1.00								
ExternalFinance$_t$ (13)	**-0.06**	-0.01	**0.07**	0.00	0.00	0.02	**0.08**	**0.09**	-0.01	**-0.02**	**0.14**	**-0.08**	1.00							
Foreign$_t$ (14)	**0.12**	**-0.03**	**0.17**	0.00	0.00	0.00	**0.16**	**-0.07**	**-0.04**	**0.23**	**-0.17**	**0.18**	**0.05**	1.00						
GoingConcern$_t$ (15)	0.01	**0.06**	**-0.14**	0.02	-0.02	0.00	**-0.20**	**-0.03**	**0.08**	**-0.34**	**0.07**	**-0.10**	-0.01	**-0.10**	1.00					
Inv&Rec$_t$ (16)	**-0.08**	0.01	**-0.08**	0.01	0.00	-0.01	**0.03**	**-0.11**	**-0.27**	**0.03**	-0.01	0.01	**-0.03**	**0.04**	**-0.03**	1.00				
Leverage$_t$ (17)	**-0.03**	-0.01	**0.13**	-0.01	0.00	0.00	**0.36**	**-0.11**	**-0.36**	**-0.05**	**0.03**	0.00	**0.02**	**-0.10**	**0.10**	**0.16**	1.00			
Loss$_t$ (18)	**0.05**	**0.07**	**-0.17**	0.00	0.00	**0.02**	**-0.39**	**-0.03**	**0.30**	**-0.49**	**0.13**	**-0.27**	**-0.03**	**-0.10**	**0.19**	**-0.12**	0.00	1.00		
ModOp$_t$ (19)	**-0.05**	-0.02	**0.13**	-0.02	**0.06**	0.00	**0.10**	-0.01	**-0.05**	**0.09**	**-0.03**	0.01	**0.05**	**0.08**	**-0.07**	**-0.04**	0.00	**-0.03**	1.00	
MTB$_t$ (20)	0.01	-0.01	**0.03**	0.01	0.00	-0.01	**-0.07**	**0.09**	**0.15**	0.01	0.02	0.00	**0.03**	0.02	-0.01	**-0.07**	**-0.05**	0.01	-0.02	1.00
ROA$_t$ (21)	-0.02	**-0.07**	**0.20**	0.00	0.01	-0.01	**0.40**	-0.01	**-0.38**	**0.82**	**-0.19**	**0.31**	-0.01	**0.22**	**-0.37**	**0.13**	**-0.06**	**-0.67**	**0.07**	-0.01
Segments$_t$ (22)	**0.07**	0.00	0.00	-0.01	**-0.05**	-0.02	**0.10**	**-0.04**	**-0.11**	**0.03**	**-0.03**	**0.06**	-0.02	**0.07**	-0.02	**-0.03**	**0.05**	**-0.04**	**-0.15**	0.00
AbnAcc$_t$ (23)	**-0.05**	0.01	**-0.04**	0.01	**-0.58**	0.01	**-0.15**	**0.11**	**0.20**	**-0.17**	**0.05**	**-0.08**	0.01	0.01	**0.06**	**-0.10**	**-0.08**	**0.12**	-0.01	**0.06**
M&A$_t$ (24)	**0.03**	**-0.02**	**0.12**	-0.01	-0.01	0.01	**0.28**	**0.09**	**-0.16**	**0.14**	**0.06**	0.02	**0.09**	**0.19**	**-0.07**	**0.03**	**0.03**	**-0.17**	**0.08**	**-0.03**
MatWeak$_t$ (25)	**0.04**	**0.11**	**-0.04**	0.00	0.00	0.00	**-0.05**	**-0.02**	-0.01	**-0.04**	0.01	**-0.03**	-0.01	0.02	0.02	0.01	0.01	**0.06**	**0.04**	0.00
R&D$_t$ (26)	**0.05**	0.02	**-0.09**	0.00	0.01	0.00	**-0.44**	0.02	**0.63**	**-0.61**	**0.08**	**-0.23**	**0.04**	**-0.07**	**0.26**	**-0.18**	**-0.14**	**0.40**	**-0.05**	**0.12**
RestateAnnounce$_t$ (27)	**0.02**	**0.05**	**0.03**	-0.02	0.00	0.00	0.00	-0.01	**-0.02**	-0.01	-0.01	-0.01	-0.01	0.01	0.02	0.00	**0.03**	**0.04**	0.00	-0.01
AuditFees$_t$ (28)	**0.04**	**-0.08**	**0.51**	0.00	0.01	0.00	**0.83**	**-0.07**	**-0.31**	**0.27**	**-0.14**	**0.21**	**0.09**	**0.38**	**-0.14**	-0.02	**0.28**	**-0.26**	**0.16**	-0.02
Big4$_t$ (29)	**-0.06**	**-0.07**	**0.96**	-0.01	0.01	0.00	**0.44**	**-0.06**	**-0.08**	**0.18**	**-0.10**	**0.14**	**0.07**	**0.18**	**-0.12**	**-0.08**	**0.13**	**-0.16**	**0.13**	**0.03**
CompMSA$_t$ (30)	**-0.04**	0.00	**0.05**	0.00	0.00	0.01	**0.04**	-0.01	**-0.09**	**0.02**	**-0.02**	**0.04**	0.01	0.00	**-0.03**	**0.06**	**0.05**	**-0.06**	-0.02	**-0.03**
CompMSAInd$_t$ (31)	**-0.14**	-0.02	**0.11**	0.01	-0.01	0.01	**0.11**	**-0.05**	**-0.18**	**0.05**	**-0.07**	**0.10**	-0.02	**-0.09**	**-0.02**	**0.08**	**0.12**	**-0.10**	-0.02	**-0.02**
IndExpert$_t$ (32)	**-0.06**	**-0.07**	**0.77**	-0.01	0.01	0.01	**0.39**	**-0.06**	**-0.09**	**0.19**	**-0.09**	**0.13**	**0.07**	**0.17**	**-0.13**	**-0.06**	**0.11**	**-0.16**	**0.12**	0.01
Mismatch$_t$ (33)	0.00	**0.07**	**-0.53**	0.02	0.00	0.00	**-0.32**	**0.03**	**0.16**	**-0.17**	**0.09**	**-0.14**	**-0.03**	**-0.14**	**0.07**	**0.02**	**-0.10**	**0.14**	**-0.07**	0.00
Shop$_t$ (34)	**-0.06**	0.01	**-0.02**	0.01	**-0.11**	0.00	**-0.04**	**-0.07**	**0.11**	**0.19**	**-0.10**	**0.14**	**-0.03**	**0.10**	**-0.04**	**0.09**	**-0.05**	**-0.31**	**-0.51**	**0.23**
Tenure$_t$ (35)	**-0.04**	**-0.02**	**0.36**	-0.01	0.00	-0.01	**0.32**	**-0.16**	**-0.14**	**0.14**	**-0.15**	**0.16**	**0.02**	**0.12**	**-0.06**	**0.02**	**0.08**	**-0.18**	-0.01	0.00

Variable	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
ROA$_t$ (21)	1.00														
Segments$_t$ (22)	**0.05**	1.00													
AbnAcc$_t$ (23)	**-0.16**	-0.01	1.00												
M&A$_t$ (24)	**0.17**	-0.01	**-0.02**	1.00											
MatWeak$_t$ (25)	**-0.04**	0.02	0.01	-0.01	1.00										
R&D$_t$ (26)	**-0.63**	**-0.08**	**0.25**	**-0.13**	0.01	1.00									
RestateAnnounce$_t$ (27)	-0.01	**0.03**	-0.01	-0.02	**0.14**	**-0.02**	1.00								
AuditFees$_t$ (28)	**0.30**	**0.14**	**-0.09**	**0.30**	**0.02**	**-0.29**	**0.04**	1.00							
Big4$_t$ (29)	**0.18**	0.00	**-0.04**	**0.12**	**-0.03**	**-0.09**	**0.04**	**0.52**	1.00						
CompMSA$_t$ (30)	**0.04**	0.01	**-0.02**	0.01	-0.01	**-0.05**	0.00	-0.01	**0.05**	1.00					
CompMSAInd$_t$ (31)	**0.08**	**0.03**	**-0.11**	-0.01	-0.02	**-0.16**	0.00	**0.06**	**0.11**	**0.39**	1.00				
IndExpert$_t$ (32)	**0.19**	0.00	**-0.05**	**0.10**	-0.02	**-0.11**	**0.03**	**0.45**	**0.80**	**0.05**	**0.11**	1.00			
Mismatch$_t$ (33)	**-0.17**	**-0.03**	**0.06**	**-0.10**	**0.04**	**0.18**	**-0.02**	**-0.34**	**-0.54**	**-0.02**	**-0.06**	**-0.36**	1.00		
Shop$_t$ (34)	**0.22**	**0.10**	**0.17**	0.01	0.00	0.01	-0.01	-0.02	-0.02	**0.02**	0.01	0.00	0.01	1.00	
Tenure$_t$ (35)	**0.17**	**0.07**	**-0.04**	**0.11**	**-0.05**	**-0.10**	**-0.02**	**0.31**	**0.37**	**0.05**	**0.10**	**0.32**	**-0.23**	**0.07**	1.00

Table 4: Consulting Opportunities and Auditor Switching

Table 4 presents the results of our OLS regression estimations of Equation (1). The dependent variable in each estimation is $Switch_{t+1}$. All variables are formally defined in the Appendix. Year and industry specific intercepts are not included for brevity. *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. We report one-tailed significance when a prediction is made and two-tailed otherwise. Robust standard errors are clustered by company.

	(1)	(2)	(3)
		DV: $Switch_{t+1}$	
$ConOpp_t$ (+)	***0.0183******	***0.0162****	***0.0145****
	(2.416)	***(2.163)***	***(1.877)***
$Assets_t$	-0.0103***	-0.0105***	-0.0136***
	(-9.892)	(-9.825)	(-6.622)
$AssetGrowth_t$	0.0119**	0.0104**	0.0142***
	(2.317)	(2.001)	(2.647)
$Cash_t$	-0.0380***	-0.0161	-0.0247**
	(-3.637)	(-1.433)	(-2.061)
$CashFlow_t$	0.0413*	0.0298	0.0274
	(1.785)	(1.307)	(1.202)
$CFEarly_t$	-0.0018	-0.0021	-0.0010
	(-0.355)	(-0.402)	(-0.200)
$CFMature_t$	-0.0043	-0.0032	-0.0032
	(-0.881)	(-0.666)	(-0.662)
$ExternalFinance_t$	-0.0029	-0.0009	-0.0003
	(-0.431)	(-0.127)	(-0.037)
$Foreign_t$	0.0024	0.0012	-0.0005
	(0.638)	(0.329)	(-0.132)
$GoingConcern_t$	0.0573***	0.0590***	0.0572***
	(2.923)	(3.076)	(2.968)
$Inv\&Rec_t$	0.0042	0.0005	-0.0073
	(0.364)	(0.047)	(-0.613)
$Leverage_t$	0.0064	0.0070	0.0035
	(0.870)	(0.979)	(0.458)
$Loss_t$	0.0119**	0.0077	0.0115**
	(2.297)	(1.519)	(2.062)
$ModOp_t$	0.0066*	0.0028	0.0080
	(1.731)	(0.745)	(1.591)
MTB_t	-0.0006**	-0.0004*	-0.0006**
	(-2.020)	(-1.707)	(-2.112)
ROA_t	-0.0306	-0.0488**	-0.0518**
	(-1.254)	(-1.977)	(-2.093)
$Segments_t$	0.0000	-0.0000	-0.0003
	(0.101)	(-0.032)	(-0.543)
$AbnAcc_t$		-0.0004	-0.0009
		(-0.370)	(-0.741)
$M\&A_t$		0.0040	0.0020
		(1.258)	(0.615)
$MatWeak_t$		0.1048***	0.1017***
		(7.160)	(6.915)
$R\&D_t$		-0.1068***	-0.1161***
		(-4.116)	(-4.319)
$RestateAnnounce_t$		0.0172***	0.0177***
		(2.655)	(2.699)
$AuditFees_t$			0.0072**
			(2.289)
$Big4_t$			0.0124
			(1.347)
$CompMSA_t$			0.0076
			(0.554)
$CompMSAInd_t$			-0.0073
			(-1.075)
$IndExpert_t$			-0.0236***
			(-2.780)
$Mismatch_t$			0.0199***
			(2.834)
$Shop_t$			0.0896
			(1.423)
$Tenure_t$			0.0024***
			(4.408)
Constant/Industry FE/Year FE	Yes	Yes	Yes
Observations	17,180	17,180	17,180
Adjusted R^2	0.019	0.031	0.034

Table 5: Auditor Switching Cross-Sectional Analyses

Table 5 presents the results of our cross-sectional analyses of the auditor switch model specified in Equation (1). In columns (1) through (3) we examine the effect of a company's membership in the S&P 500 index, in columns (4) through (6) we examine the effect of a company's consulting job postings, and in columns (7) through (9) we examine the effect of a company's demand for auditor quality. The dependent variable in each estimation is $Switch_{t+1}$. All variables are formally defined in the Appendix. We only report coefficients of interest for brevity. *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. We report one-tailed significance when a prediction is made and two-tailed otherwise. Robust standard errors are clustered by company.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	DV: $Switch_{t+1}$								
$ConOpp_t$	0.0261***	0.0237***	0.0231***	0.0565***	0.0532**	0.0493**	0.0377**	0.0368**	0.0382**
	(2.995)	(2.745)	(2.663)	(2.579)	(2.452)	(2.257)	(2.498)	(2.470)	(2.511)
$ConOpp_t$×$S\&P500_t$ (–)	***-0.0206***	***-0.0187***	***-0.0185***						
	(-2.050)	***(-1.873)***	***(-1.814)***						
$S\&P500_t$	-0.0014	0.0004	0.0019						
	(-0.163)	(0.049)	(0.223)						
$ConOpp_t$×$\%ConsultingJobs_t$ (–)				***-0.0618***	***-0.0601***	***-0.0568***			
				(-1.955)	***(-1.922)***	***(-1.813)***			
$\%ConsultingJobs_t$				0.0433*	0.0425*	0.0418*			
				(1.720)	(1.709)	(1.665)			
$ConOpp_t$×$AuditorMktShare_t$ (–)							***-0.1313***	***-0.1401***	***-0.1601***
							(-1.735)	***(-1.873)***	***(-2.128)***
$AuditorMktShare_t$							0.0743	0.0922	0.1301**
							(1.261)	(1.578)	(2.200)
Controls	Set 1	Set 2	Set 3	Set 1	Set 2	Set 3	Set 1	Set 2	Set 3
Constant/Ind. FE/Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,180	17,180	17,180	17,180	17,180	17,180	17,180	17,180	17,180
Adjusted R^2	0.015	0.027	0.030	0.020	0.032	0.034	0.020	0.032	0.034
Joint Tests:									
$ConOpp_t$ + $ConOpp_t$×$S\&P500_t$	***0.0056***	***0.0049***	***0.0046***						
	(0.66)	***(0.59)***	***(0.54)***						
$ConOpp_t$ + $ConOpp_t$×$\%ConsultingJobs_t$ (p25)				***0.0238***	***0.0214***	***0.0193***			
				(2.81)	***(2.57)***	***(2.25)***			
$ConOpp_t$ + $ConOpp_t$×$\%ConsultingJobs_t$ (p50)				***0.0165***	***0.0143***	***0.0126***			
				(2.19)	***(1.93)***	***(1.64)***			
$ConOpp_t$ + $ConOpp_t$×$\%ConsultingJobs_t$ (p75)				***0.0100***	***0.0080***	***0.0066***			
				(1.22)	***(1.00)***	***(0.80)***			
$ConOpp_t$ + $ConOpp_t$×$AuditorMktShare_t$ (p25)							***0.0257***	***0.0241***	***0.0236***
							(2.67)	***(2.53)***	***(2.41)***
$ConOpp_t$ + $ConOpp_t$×$AuditorMktShare_t$ (p50)							***0.0187***	***0.0166***	***0.0151***
							(2.46)	***(2.21)***	***(1.94)***
$ConOpp_t$ + $ConOpp_t$×$AuditorMktShare_t$ (p75)							***0.0111***	***0.0085***	***0.0058***
							(1.46)	***(1.13)***	***(0.75)***

Table 6: Consulting Opportunities and Subsequent Auditor Choice

Table 6 presents the results of our OLS regression estimations of the modified form of Equation (1), where $Big4_{t+1}$ is the dependent variable. The sample consists of observations where $Switch_{t+1}$ is equal to one. All variables are formally defined in the Appendix. Year and industry specific intercepts are not included for brevity. *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. We report one-tailed significance when a prediction is made and two-tailed otherwise. Robust standard errors are clustered by company.

	(1)	(2)	(3)
		DV: $Big4_{t+1}$	
$ConOpp_t$ (–)	***-0.1601*** *(-1.768)*	***-0.1595*** *(-1.744)*	***-0.1663*** *(-1.777)*
$Assets_t$	0.1345***	0.1359***	0.0782***
	(9.493)	(9.414)	(3.155)
$AssetGrowth_t$	0.0408	0.0499	0.0545
	(1.171)	(1.355)	(1.382)
$Cash_t$	0.2328**	0.1889	0.1848
	(2.075)	(1.593)	(1.397)
$CashFlow_t$	0.1505	0.1996	0.2089
	(0.954)	(1.229)	(1.191)
$CFEarly_t$	-0.0325	-0.0256	-0.0146
	(-0.660)	(-0.522)	(-0.294)
$CFMature_t$	-0.0161	-0.0088	-0.0122
	(-0.282)	(-0.155)	(-0.216)
$ExternalFinance_t$	0.1719**	0.1799**	0.1756**
	(2.269)	(2.412)	(2.387)
$Foreign_t$	-0.0038	-0.0033	-0.0516
	(-0.084)	(-0.073)	(-1.063)
$GoingConcern_t$	-0.0364	-0.0489	-0.0585
	(-0.556)	(-0.729)	(-0.836)
$Inv\&Rec_t$	-0.0025	-0.0087	-0.0318
	(-0.017)	(-0.060)	(-0.215)
$Leverage_t$	0.0738	0.0685	0.0182
	(1.049)	(0.958)	(0.249)
$Loss_t$	-0.0544	-0.0513	-0.0666
	(-1.085)	(-1.021)	(-1.211)
$ModOp_t$	0.0192	0.0209	0.0076
	(0.363)	(0.398)	(0.122)
MTB_t	0.0020	0.0017	0.0022
	(0.625)	(0.522)	(0.697)
ROA_t	0.0570	0.0775	0.1019
	(0.440)	(0.596)	(0.766)
$Segments_t$	0.0130*	0.0143*	0.0151**
	(1.748)	(1.926)	(2.062)
$AbnAcc_t$		-0.0000	-0.0007
		(-0.000)	(-0.048)
$M\&A_t$		-0.0409	-0.0524
		(-0.955)	(-1.224)
$MatWeak_t$		0.0441	0.0002
		(0.782)	(0.004)
$R\&D_t$		0.2767	0.2372
		(1.127)	(0.944)
$RestateAnnounce_t$		0.0193	0.0047
		(0.348)	(0.086)
$AuditFees_t$			0.1130***
			(2.863)
$Big4_t$			-0.1890**
			(-2.029)
$CompMSA_t$			0.3222*
			(1.932)
$CompMSAInd_t$			-0.0709
			(-0.899)
$IndExpert_t$			0.1828*
			(1.961)
$Mismatch_t$			-0.0902*
			(-1.894)
$Shop_t$			0.0832
			(0.188)
$Tenure_t$			-0.0005
			(-0.070)
Constant/Industry FE/Year FE	Yes	Yes	Yes
Observations	583	583	583
Adjusted R^2	0.336	0.333	0.351

Table 7: Consulting Opportunities and Changes in Audit Quality

Table 7 presents the results of our OLS regression estimations of Equation (2). The dependent variable in columns (1) through (3) is $\Delta Misstate_{t+1}$, the dependent variable in columns (4) through (6) is $\Delta AbnAcc_{t+1}$, and the dependent variable in columns (7) through (9) is $\Delta MeetBeat_{t+1}$. The sample consists of observations where $Switch_{t+1}$ is equal to one. All variables are formally defined in the Appendix. Year and industry specific intercepts are not included for brevity. *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. We report one-tailed significance when a prediction is made and two-tailed otherwise. Robust standard errors are clustered by company.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	DV: $\Delta Misstate_{t+1}$			DV: $\Delta AbnAcc_{t+1}$			DV: $\Delta MeetBeat_{t+1}$		
$ConOpp_t$ (+)	***0.0267***	***0.0248***	***0.0224***	***-0.8333***	***-0.8050***	***-0.7013***	***0.0762***	***0.0709***	***0.0506***
	(0.706)	***(0.641)***	***(0.588)***	***(-1.589)***	***(-1.523)***	***(-1.322)***	***(0.815)***	***(0.748)***	***(0.512)***
$\Delta Assets_{t+1}$	-0.0343	-0.0430*	-0.0419	-0.0846	-0.0072	0.2306	0.0255	0.0214	0.0185
	(-1.488)	(-1.783)	(-1.448)	(-0.184)	(-0.016)	(0.481)	(0.636)	(0.510)	(0.384)
$\Delta AssetGrowth_{t+1}$	0.0134	0.0066	-0.0001	-0.0963	-0.0265	0.0155	-0.0010	-0.0041	-0.0064
	(1.443)	(0.626)	(-0.008)	(-0.365)	(-0.096)	(0.058)	(-0.048)	(-0.189)	(-0.283)
$\Delta Cash_{t+1}$	-0.0798	-0.0908	-0.0657	0.2834	0.5715	0.1062	-0.0080	-0.0068	0.0124
	(-0.831)	(-0.924)	(-0.634)	(0.224)	(0.454)	(0.087)	(-0.061)	(-0.050)	(0.085)
$\Delta CashFlow_{t+1}$	-0.1371	-0.1671*	-0.1372	-0.0632	0.1881	-0.1971	0.1773	0.1717	0.2024
	(-1.640)	(-1.855)	(-1.433)	(-0.037)	(0.108)	(-0.120)	(1.177)	(1.138)	(1.271)
$\Delta CFEarly_{t+1}$	-0.0197	-0.0240	-0.0243	-0.2035	-0.1579	-0.1788	-0.0377	-0.0396	-0.0451
	(-0.904)	(-1.080)	(-1.106)	(-0.691)	(-0.554)	(-0.636)	(-0.889)	(-0.910)	(-1.023)
$\Delta CFMature_{t+1}$	-0.0047	-0.0073	-0.0058	-0.3260	-0.2679	-0.3136	-0.0285	-0.0287	-0.0263
	(-0.232)	(-0.350)	(-0.283)	(-1.151)	(-0.980)	(-1.151)	(-0.635)	(-0.627)	(-0.573)
$\Delta ExternalFinance_{t+1}$	-0.0356	-0.0306	-0.0381	-0.1613	-0.1798	-0.0376	-0.0433	-0.0439	-0.0462
	(-0.912)	(-0.798)	(-0.989)	(-0.409)	(-0.455)	(-0.091)	(-0.929)	(-0.938)	(-0.947)
$\Delta Foreign_{t+1}$	-0.0384	-0.0441	-0.0450	-0.1533	-0.1700	-0.0673	-0.0298	-0.0278	-0.0115
	(-0.851)	(-0.957)	(-0.950)	(-0.328)	(-0.357)	(-0.155)	(-0.360)	(-0.337)	(-0.137)
$\Delta GoingConcern_{t+1}$	-0.0145	-0.0082	-0.0096	1.6973***	1.5581**	1.4800**	-0.0719	-0.0606	-0.0786
	(-0.511)	(-0.308)	(-0.378)	(2.841)	(2.550)	(2.478)	(-1.142)	(-0.913)	(-1.187)
$\Delta Inv\&Rec_{t+1}$	0.0428	0.0278	0.0431	-1.6901	-1.6230	-2.1321	0.1001	0.1171	0.0951
	(0.294)	(0.192)	(0.281)	(-1.050)	(-0.966)	(-1.232)	(0.450)	(0.508)	(0.390)
$\Delta Leverage_{t+1}$	-0.0750	-0.0647	-0.0692	-1.9964**	-2.0360**	-1.9833**	-0.0230	-0.0277	-0.0213
	(-1.126)	(-0.983)	(-1.024)	(-1.991)	(-2.039)	(-2.007)	(-0.233)	(-0.283)	(-0.220)
$\Delta Loss_{t+1}$	0.0618**	0.0613**	0.0521*	-0.0814	-0.0677	0.0446	-0.0213	-0.0246	-0.0408
	(2.112)	(2.112)	(1.746)	(-0.305)	(-0.255)	(0.158)	(-0.558)	(-0.638)	(-1.000)
$\Delta ModOp_{t+1}$	0.0199	0.0157	-0.0032	0.0915	0.1277	0.3653	-0.0555	-0.0550	-0.0868*
	(0.789)	(0.623)	(-0.118)	(0.446)	(0.618)	(1.501)	(-1.377)	(-1.342)	(-1.793)
ΔMTB_{t+1}	0.0006	-0.0000	0.0010	0.0062	0.0113	-0.0004	-0.0011	-0.0012	0.0004
	(0.289)	(-0.027)	(0.536)	(0.283)	(0.568)	(-0.021)	(-0.952)	(-0.886)	(0.276)
ΔROA_{t+1}	0.1073**	0.1046**	0.0993**	0.3402	0.4291	0.2904	-0.0808	-0.0853*	-0.1039*
	(2.496)	(2.460)	(2.246)	(0.307)	(0.419)	(0.296)	(-1.542)	(-1.649)	(-1.913)
$\Delta Segments_{t+1}$	0.0144**	0.0129*	0.0113*	0.1415*	0.1476*	0.1814**	-0.0146	-0.0140	-0.0133
	(2.100)	(1.920)	(1.688)	(1.670)	(1.756)	(2.090)	(-0.716)	(-0.681)	(-0.625)

$\Delta M\&A_{t+1}$		0.0139	0.0158		-0.0413	-0.0907		0.0200	0.0212
		(0.699)	(0.803)		(-0.234)	(-0.520)		(0.573)	(0.607)
$\Delta MatWeak_{t+1}$		-0.0069	-0.0273		0.4165	0.7594*		-0.0036	-0.0203
		(-0.222)	(-0.802)		(1.193)	(1.941)		(-0.087)	(-0.454)
$\Delta R\&D_{t+1}$		-0.3011	-0.2535		3.7127	3.2876		-0.1210	-0.0321
		(-1.489)	(-1.257)		(0.815)	(0.756)		(-0.563)	(-0.146)
$\Delta RestateAnnounce_{t+1}$		-0.0398	-0.0342		0.0919	0.0194		0.0242	0.0296
		(-1.577)	(-1.355)		(0.352)	(0.076)		(0.663)	(0.800)
$\Delta AuditFees_{t+1}$			0.0074			-0.7257***			-0.0146
			(0.233)			(-2.656)			(-0.362)
$\Delta Big4_{t+1}$			0.0002			0.0720			0.0109
			(0.010)			(0.240)			(0.219)
$\Delta CompMSA_{t+1}$			-0.0692			1.3774			-0.3088
			(-0.475)			(0.713)			(-0.790)
$\Delta CompMSAInd_{t+1}$			-0.0680			1.0681			0.1029
			(-1.521)			(1.502)			(0.642)
$\Delta IndExpert_{t+1}$			-0.0123			0.2085			-0.0394
			(-0.402)			(0.607)			(-0.701)
$\Delta Mismatch_{t+1}$			-0.0004			-0.0910			0.0023
			(-0.032)			(-0.389)			(0.079)
$\Delta Shop_{t+1}$			-0.2808			3.3636**			-0.3864
			(-1.504)			(2.085)			(-1.518)
$\Delta Tenure_{t+1}$			-0.0010			0.0177			0.0093
			(-0.417)			(0.631)			(1.435)
Constant/Industry FE /Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	583	583	583	583	583	583	583	583	583
Adjusted R^2	-0.017	-0.011	-0.014	0.006	0.008	0.023	-0.025	-0.032	-0.036

Table 8: Audit Quality Alternative Research Design

Table 8 presents the results of OLS regression estimations of a modified form of Equation (2) that includes $Switch_{t+1}$ and the interaction of $Switch_{t+1}$ and $ConOpp_t$ as additional independent variables and uses levels specifications for all variables in the model. The dependent variable in columns (1) through (3) is $Misstate_{t+1}$, the dependent variable in columns (4) through (6) is $AbnAcc_{t+1}$, and the dependent variable in columns (7) through (9) is $MeetBeat_{t+1}$. All sample observations are included in these estimations. All variables are formally defined in the Appendix. Year and industry specific intercepts are not included for brevity. *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. We report one-tailed significance when a prediction is made and two-tailed otherwise. # indicates two-tailed significance ($p \leq 0.10$) opposite our prediction. Robust standard errors are clustered by company.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	DV: $Misstate_{t+1}$			DV: $AbnAcc_{t+1}$			DV: $MeetBeat_{t+1}$		
$ConOpp_t$	-0.0019	-0.0024	-0.0026	0.1633***	0.1599***	0.1645***	0.0036	0.0037	0.0141
	(-0.275)	(-0.345)	(-0.378)	(3.306)	(3.215)	(3.266)	(0.232)	(0.239)	(0.905)
$Switch_{t+1}$	0.0134	0.0114	0.0075	0.3214	0.3110	0.3183	0.0029	0.0074	0.0098
	(0.909)	(0.774)	(0.524)	(1.376)	(1.333)	(1.347)	(0.070)	(0.178)	(0.232)
$ConOpp_t \times Switch_{t+1}$ (+)	***-0.0081***	***-0.0086***	***-0.0101***	***-0.4249#***	***-0.4090#***	***-0.3793***	***-0.0284***	***-0.0293***	***-0.0295***
	(-0.541)	***(-0.562)***	***(-0.661)***	***(-1.753)***	***(-1.690)***	***(-1.564)***	***(-0.607)***	***(-0.623)***	***(-0.625)***
Controls (In Levels Form)	Set 1	Set 2	Set 3	Set 1	Set 2	Set 3	Set 1	Set 2	Set 3
Constant/Industry FE /Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,180	17,180	17,180	17,180	17,180	17,180	17,180	17,180	17,180
Adjusted R^2	0.007	0.009	0.010	0.312	0.313	0.314	0.100	0.101	0.102

Table 9: Consulting Opportunities and Changes in Audit Fees

Table 9 presents the results of OLS regression estimations of a modified form of Equation (2) that replaces the dependent variable with $\Delta AuditFees_{t+1}$. The sample consists of observations where $Switch_{t+1}$ is equal to one. All variables are formally defined in the Appendix. Year and industry specific intercepts are not included for brevity. *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively. Robust standard errors are clustered by company.

	(1)	(2)	(3)
		DV: $\Delta AuditFees_{t+1}$	
ConOpp$_t$	***0.1211***	***0.1098***	***0.1292***
	(1.158)	***(1.058)***	***(1.283)***
$\Delta Assets_{t+1}$	0.4858***	0.4777***	0.3449***
	(7.484)	(7.354)	(5.813)
$\Delta AssetGrowth_{t+1}$	-0.0999***	-0.0890**	-0.0261
	(-2.650)	(-2.454)	(-0.802)
$\Delta Cash_{t+1}$	-0.2460	-0.2333	-0.2260
	(-1.125)	(-1.081)	(-1.150)
$\Delta CashFlow_{t+1}$	-0.0635	-0.0483	-0.1355
	(-0.266)	(-0.203)	(-0.649)
$\Delta CFEarly_{t+1}$	-0.0553	-0.0503	-0.0440
	(-1.119)	(-1.037)	(-1.047)
$\Delta CFMature_{t+1}$	-0.0563	-0.0493	-0.0494
	(-1.028)	(-0.941)	(-1.064)
$\Delta ExternalFinance_{t+1}$	0.0776	0.0750	0.0903
	(0.994)	(0.945)	(1.202)
$\Delta Foreign_{t+1}$	0.1129	0.1142	0.1135
	(1.094)	(1.137)	(1.290)
$\Delta GoingConcern_{t+1}$	-0.0665	-0.0548	-0.0733
	(-0.732)	(-0.605)	(-0.876)
$\Delta Inv\&Rec_{t+1}$	-0.6621	-0.7700*	-0.5585*
	(-1.613)	(-1.924)	(-1.726)
$\Delta Leverage_{t+1}$	0.0123	-0.0275	-0.0150
	(0.072)	(-0.160)	(-0.107)
$\Delta Loss_{t+1}$	0.0458	0.0403	0.0329
	(0.898)	(0.806)	(0.706)
$\Delta ModOp_{t+1}$	0.0551	0.0663	0.0818
	(1.051)	(1.257)	(1.580)
ΔMTB_{t+1}	0.0031	0.0034	-0.0015
	(0.946)	(1.101)	(-0.482)
ΔROA_{t+1}	-0.3699**	-0.3648***	-0.2605**
	(-2.563)	(-2.596)	(-2.106)
$\Delta Segments_{t+1}$	0.0107	0.0152	0.0233
	(0.689)	(0.974)	(1.648)
$\Delta AbnAcc_{t+1}$		-0.0212**	-0.0256***
		(-2.002)	(-3.002)
$\Delta M\&A_{t+1}$		-0.0380	-0.0468
		(-0.846)	(-1.159)
$\Delta MatWeak_{t+1}$		0.1674**	0.1815***
		(2.557)	(3.002)
$\Delta R\&D_{t+1}$		0.3459	0.1038
		(0.798)	(0.271)
$\Delta RestateAnnounce_{t+1}$		0.0230	-0.0047
		(0.409)	(-0.099)
$\Delta Big4_{t+1}$			0.2111***
			(4.527)
$\Delta CompMSA_{t+1}$			0.3207
			(1.231)
$\Delta CompMSAInd_{t+1}$			0.1914
			(1.280)
$\Delta IndExpert_{t+1}$			0.1984***
			(3.060)
$\Delta Mismatch_{t+1}$			0.0272
			(0.707)
$\Delta Shop_{t+1}$			0.6408
			(1.558)
$\Delta Tenure_{t+1}$			0.0159***
			(2.669)
Constant/Industry FE/Year FE	Yes	Yes	Yes
Observations	583	583	583
Adjusted R^2	0.108	0.123	0.306

Appendix: Variable Definitions

Variable	Definition
AbnAcc	The absolute value of abnormal accruals calculated according to the Modified Jones Model (Dechow et al. 1995).
Assets	The natural logarithm of the company's total assets.
AssetGrowth	The percentage change in year-over-year growth in reported total assets.
AuditFees	The natural logarithm of audit fees paid to the company's auditor.
AuditorMktShare	The total number of clients audited by a particular auditor in an industry, divided by the total number of companies in the industry (Aobdia and Shroff 2017).
Big4	Indicator variable equal to one if the company is audited by PwC, Deloitte, KPMG or Ernst & Young, and zero otherwise.
Cash	Cash divided by total assets.
CashFlow	Cash flow from operations.
CFEarly	Indicator variable equal to one if cash flows indicate the company is in the introduction or growth stage of life cycle, and zero otherwise (Dickinson 2011).
CFMature	Indicator variable equal to one if cash flows indicate the company is in the mature stage of life cycle, and zero otherwise (Dickinson 2011).
CompMSA	Audit market competition at the MSA-level; calculated as the Herfindahl-Hirschman index using total audit fees.
CompMSAInd	Audit market competition at the MSA-industry-level; calculated as the HHI index using total audit fees.
ConOpp	Measure of consulting opportunities formed using LDA topic modeling (multiplied by 10 for expositional convenience). Additional detail on the measurement of *ConOpp* is provided in the Online Appendix.
ConOppMSA	Mean value of *ConOpp* by MSA.
ConsultingAcq	Indicator variable equal to one if a Big 4 firm acquires a consulting practice in a given market (i.e., MSA-industry or MSA-industry-year), and zero otherwise.
ConsultingAuditRatio	By MSA, the ratio of consulting-related job postings to audit-related job postings (calculated using data from Burning Glass Technologies).
ConsultingExpenseByRevt	By company-year, total consulting expenses scaled by total revenues (calculated using XBRL tags in companies' financial statements).
ConsultingJobs	By MSA, the total number of consulting-related job postings (calculated using data from Burning Glass Technologies).
%ConsultingJobs	By company, the percentage of all job postings constituting consulting-related jobs (calculated using data from Burning Glass Technologies).
ExternalFinance	Indicator variable equal to one if the company issues new debt or equity securities during the year, and zero otherwise.

Foreign	Indicator variable equal to one if the company reports foreign taxes, and zero otherwise.
GoingConcern	Indicator variable equal to one if the company receives a going-concern opinion, and zero otherwise.
IndExpert	Indicator variable equal to one if the company's auditor is an industry expert, and zero otherwise (Landsman et al. 2009).
Inv&Rec	Changes in accounts receivable and inventory scaled by total assets.
Leverage	Total liabilities divided by total assets.
Loss	Indicator variable equal to one if the company has a current net loss, and zero otherwise.
M&A	Indicator variable equal to one if the company completes at least one merger or acquisition (identified using the SDC Platinum M&A Database), and zero otherwise.
MatWeak	Indicator variable equal to one if the company receives an adverse SOX 404(b) opinion, and zero otherwise.
MeetBeat	Indicator variable equal to one if the year-on-year change in ROA is between 0% and 1%, and zero otherwise (Aobdia 2019).
Mismatch	Following the methodology in Shu (2000), indicator variable equal to one if the company and auditor are mismatched, and zero otherwise.
Misstate	Indicator variable equal to one if the company's current fiscal year financial statements are subsequently restated in an 8-K Item 4.02 filing, and zero otherwise.
ModOp	Indicator variable equal to one if the company's audit opinion is modified for anything other than a going concern, and zero otherwise.
MTB	Market value of equity and liabilities divided by the book value of the company's total assets.
R&D	Research and development expenditures scaled by total assets.
RestateAnnounce	Indicator variable equal to one if the company announces a restatement of its prior financial statements during the current fiscal period, and zero otherwise.
ROA	Net income divided by average total assets.
S&P500	Indicator variable equal to one if the company is a member of the S&P 500 index, and zero otherwise.
Segments	Number of business segments.
Shop	Measure of a company's opinion shopping incentives, calculated following Newton et al. (2016).
Switch	Indicator variable equal to one if the company switches auditors, and zero otherwise.
Tenure	The number of years the incumbent auditor has consecutively audited the company, with a maximum of 10 years.

Online Appendix: Measurement and Validation of *ConOpp*

Measurement of ConOpp

Topic modeling refers to the use of a machine learning technique to identify the relative frequency with which words co-occur. Words that occur frequently together are considered "topics." We implement topic modeling using Latent Dirichlet Allocation (LDA). First presented in Blei et al. (2003), LDA imposes a three-level hierarchical model where each document is comprised of a set of *K* topics, each of which is designated by a vector of word probabilities. Each unique word, *w*, in the full corpus appears with some probability, p_w, in each topic, *k,* and each topic *k* occurs with probability p_k in document, *d*. The word "latent" refers to the fact that we observe neither the specific topics nor the distribution of words within each topic; instead, we observe the words in the documents. Under a set of assumptions related to topic and word distributions, LDA "reverse-engineers" the two latent features by iteratively re-generating each document, or picking probability distributions for both topics and words in topics, until the model converges.

We implement LDA by first parsing the transcripts with a series of Python scripts to extract the transcript text. Since we expect both the planned remarks and Q&A section of the calls to contain discussions relevant to prospective consulting opportunities, we utilize the entire call transcript in our analyses. We further prepare the transcripts by removing stop words, or words with no semantic meaning, and lemmatizing each word.[1] We then generate a document-term matrix, or matrix of word frequencies by document, restricted to the 1,000 most common words in the corpus.

A key input to any topic modeling procedure is the number of topics in the corpus. Following Dyer et al. (2017), we rely on perplexity scores to evaluate models using between 5 and 400 topics (in increments of 5). We estimate the LDA model on our corpus of documents, excluding a random 10 percent as a holdout sample. We then apply the LDA parameter estimates to the holdout sample and estimate perplexity. The objective of this approach is to identify the number of topics around which the incremental improvement (decrease) in perplexity begins to level off. Figure OA1 presents a plot of the perplexity output, including both the level of (dashed line) and gain in perplexity (solid line). Based on an analysis of the incremental improvements in perplexity across the range of number of topics, we estimate a "leveling off" around 70 topics, denoted by the vertical line.[2]

We next identify the service offerings provided by the Big 4 accounting firms by searching the "advisory" or "consulting" portion of each Big 4 website and extracting the text (we accessed and collected language from each of the Big 4 websites on June 15, 2018).[3] We lemmatize this text to be consistent with the procedure applied to the call transcripts. To collect the service offerings, we followed each link (and each related subservice link) to identify every service offered by each firm under the "advisory" or "consulting" umbrella. We present counts of the words most

[1] Lemmatizing refers to adjusting words of different forms back to some base form (e.g., recognized → recognize). We utilize the WordNet lemmatizer within Python's NLTK package to perform this lemmatization.

[2] While we estimate 70 topics as the "leveling off" point, there is still some improvement (decrease) in model perplexity beyond that point. To ensure this additional change does not significantly affect our inferences, we re-estimate each of our analyses with a measure computed using 90 topics. In untabulated analyses we find that our results are consistent throughout (and in some cases stronger) using 90 topics rather than using the 70-topic measure.

[3] Current versions of these materials can be found at: https://www2.deloitte.com/us/en/services/consulting.html (Deloitte), https://www.ey.com/us/en/services/advisory (EY), https://home.kpmg/xx/en/home/services/advisory.html (KPMG), and https://www.pwc.com/gx/en/services/advisory/consulting.html (PwC).

commonly used by the Big 4 firms in describing their service offerings in Table OA1.

We then assess the similarity of each topic generated by the LDA procedure to the service offerings provided by the Big 4 accounting firms. Specifically, we compute the cosine similarity between the 25 words most indicative of each topic and the service offerings language. Table 1 of the paper presents the five most relevant words for each of the 70 topics produced by the LDA procedure. Topics are sorted by similarity scores such that lower topic numbers correspond to topics identified as more related to potential consulting services. Inspections of similarities suggest our procedure identifies topics likely to be relevant to consulting opportunities. For instance, a topic containing the words "ebitda adjusted adjust flow debt" exhibits a relatively low score of approximately 0.05, whereas a topic containing the words "revenue solution customer software cloud" exhibits a relatively high score of approximately 0.28.[4] Additionally, "nonsense" topics, such as "kind little bit really yes" predictably exhibit very low similarities and thus makes their impact on our measure negligible.

The final step in our procedure is to compute the overall consulting opportunity score, *ConOpp*, which is the product of the vector of topic relevance scores (T) for each transcript and the vector of similarities (S) computed in the previous step, as shown below:

$ConOpp = TS'$

Validation of ConOpp

Consulting Acquisitions and Consulting Opportunities

The Big 4 firms have invested heavily in expanding their consulting lines through both internal growth and external acquisitions. We expect that the patterns of these external acquisitions correlate with consulting opportunities in the region within which the acquired consulting firm operates. Additionally, these consultancies frequently specialize in certain industries, allowing us to identify the specific types of companies most likely serviced by the acquired consulting firms. In other words, acquisitions provide an indication of the likely demand for consulting work for a specific set of clients within a given MSA. We use Crunchbase to identify 36 consulting firms acquired by the Big 4 during our sample period. Crunchbase provides the date of the acquisition, the name of the acquiring Big 4 firm, and a description (including location) of the acquired firm. For each acquisition we utilize the description provided by Crunchbase, as well as Bloomberg, press releases, and Google searches, to identify the industry or industries (up to three) serviced by the acquired consulting firm. We then code each acquisition according to the most representative one-digit SIC codes.[5]

To assess the association between our measure and consulting firm acquisition activity, we compare average consulting opportunities (by industry and industry-year) across markets with and without a consulting acquisition, denoted by *ConsultingAcq*. For the MSA-industry specification, we compare MSA-industry observations with a consulting acquisition to both all other MSA-

[4] The "ebitda adjusted adjust…" topic highlights a limitation of lemmatization. Lemmatization requires part-of-speech tagging and will not change the part of speech of a word. While "adjust" is clearly a verb, "adjusted" is frequently and correctly identified as an adjective so lemmatizing does not change this word to "adjust" (a verb). "Service" and "services" also appear in topic 4, further illustrating limitations of part-of-speech tagging and lemmatization. Additionally, given accounting firms often fail to use complete sentences when labeling their service lines, lemmatization was less effective for these documents.

[5] For this procedure, two researchers independently searched for information pertaining to each acquired consulting firm and manually coded the corresponding industries. Discrepancies, which were infrequent, were discussed and resolved by the author team.

industry observations and to MSA-industry observations in MSAs with at least one acquisition during the sample period (i.e., a within MSA comparison). Similarly, for the MSA-industry-year specification, we compare MSA-industry-year observations with a consulting acquisition to both all other MSA-industry-year observations and to MSA-industry-year observations in MSA-industries with at least one acquisition during the sample period (i.e., a within MSA-industry comparison). As shown in Panel A of Table OA3, we observe significantly higher mean consulting opportunities (*Average ConOpp*) for observations where *ConsultingAcq* is equal to one at both the MSA-industry and MSA-industry-year (denoted with subscripts *m, k,* and *t* for MSA, industry, and year, respectively) levels. In Panel B of Table OA3, we regress *ConsultingAcq* on *Average ConOpp*, the same sets of controls described in Section 4.1 of the paper (averaged at either the MSA-industry or MSA-industry-year level, consistent with the measurement of *Average ConOpp*), and MSA, industry, and year (where applicable) fixed effects, and we cluster robust standard errors by MSA-industry. As shown, the coefficient on *Average ConOpp* is positive and statistically significant across all specifications, suggesting that accounting firms have increased efforts to expand their consulting practices not only in markets, but also industries and years where *ConOpp* is higher.

Consulting-Related Job Postings and Consulting Opportunities

Our second validation test examines the relation between our measure of consulting opportunities and the Big 4's focus on increasing their own consulting workforce. We use data from Burning Glass, a company that aggregates job posting data from over 40,000 different sites.[6] Using these data, we identified consulting-related job postings by the Big 4 in the MSAs appearing in our sample. For example, postings that included the following keywords in the job titles were identified as consulting-related: Advisory, Consultant, Consulting, Oracle or SAP (i.e., systems expertise), etc. If *ConOpp* captures markets where the Big 4 is more likely to focus on consulting services, then the job posting data should reflect this focus. To consider whether this is the case, we plot the mean of *ConsultingJobs* (number of consulting-related job postings by MSA) and *ConsultingAuditRatio* (ratio of consulting-related job postings to audit-related job postings by MSA) across the ten deciles of average *ConOpp* by MSA. As shown in Figure OA2, we find consistent evidence that *ConOpp* is higher in MSAs where the Big 4 have expended additional effort in recruiting and expanding their consulting workforce. Untabulated tests confirm that this increasing trend is statistically significant.[7] This test provides further evidence that our measure is capturing the intended construct and also helps alleviate any potential concern related to the relatively small number of consulting firm acquisitions used in the previous validation test.

Intertemporal Variation in Consulting Opportunities

Our third validation test examines intertemporal variation in *ConOpp* surrounding the disclosure of events that likely increase clients' demand for consulting services, similar to the analysis conducted in Khan and Watts (2009) to evaluate how their measure of accounting conservatism behaves around events likely to affect the demand for conservatism. We identify the disclosure of two client-specific events that we expect to be *preceded* by an increased demand for consulting services. Specifically, we focus on M&A work (e.g., transaction services) and internal

[6] See https://www.burning-glass.com/about/faq/ for more detail.

[7] Specifically, regressions of *ConsultingJobs* (or *ConsultingAuditRatio*) on average *ConOpp* by MSA yield a significant positive coefficient on average *ConOpp* in both instances ($p<0.01$). The results are consistent using both the continuous measure of average *ConOpp* as well as the decile-ranking of average *ConOpp*, and the results hold after controlling for any on-average time effects using year fixed effects.

controls and process redesign (e.g., internal audit or IT audit services). Figure OA3 plots the mean values of *ConOpp* for the five years surrounding the initial disclosure of one of these events. Results presented in Panel A suggest an increase in *ConOpp* preceding a significant M&A event, and results presented in Panel B suggest the same pattern prior to identification of a material weakness.[8,9] The increasing values in *ConOpp* observed in the periods preceding the disclosure of these events likely associated with increased demand for consulting is consistent with *ConOpp* capturing the intended construct.

Consulting Expenses and Consulting Opportunities

Our fourth validation test is also performed at the company level and examines whether *ConOpp* correlates with companies' reported consulting-related expenses. Specifically, we use XBRL tags to identify expenses in annual financial statements that are classified as related to "consulting" or "professional services." These expenses differ from *ConOpp,* which is constructed with the intent to capture *ex ante* consulting opportunities, in two ways. First, reported expenses are an *ex post* indication of consulting outlays, and prior period spending on consulting may not always be indicative of future opportunities. Second, companies may sometimes spend money on consulting-related services that accounting firms do not offer. These limitations notwithstanding, we expect that *ConOpp* will be correlated with realized consulting-related expenses. One constraint in this analysis is that only 238, or 1.4 percent, of our sample observations have XBRL tags on expense items that allow us to compare these companies' consulting expenditures to their *ConOpp* score. Using data on the available subset of observations, we estimate several regressions of companies' consulting expenses (scaled by total revenues) on *ConOpp*. The results of these regressions are reported in Table OA4. As shown, the coefficient on *ConOpp* is positive and statistically significant in each specification. These results provide additional company-specific validation of our proxy and suggest that our measure reasonably captures a company's outside consulting expenditures.

[8] In untabulated tests, we verify that these changes are statistically significant. Specifically, the change in consulting activities from year -2 to year 0 for companies disclosing M&A or internal control material weakness in year 0 is significantly larger than companies not disclosing these events ($p \leq 0.04$ or better and $p \leq 0.08$ or better, respectively).

[9] The increase in *ConOpp* preceding a material weakness may seem odd considering that this association suggests that greater demand for consulting work leads to a future disclosure of poor internal controls. However, this relationship is consistent with accounting firms supporting clients in diagnosing existing internal control problems, *disclosing* those matters, and subsequently remediating the underlying issues (EY 2017).

Figure OA1: Perplexity by Number of Topics

Figure OA1 depicts the perplexity (left y-axis) and change in perplexity (right y-axis) of the LDA model by number of topics (x-axis). Perplexity scores were generated using Python's gensim package. The vertical line designates 70, the number of topics around which the incremental decrease in perplexity begins to level off.

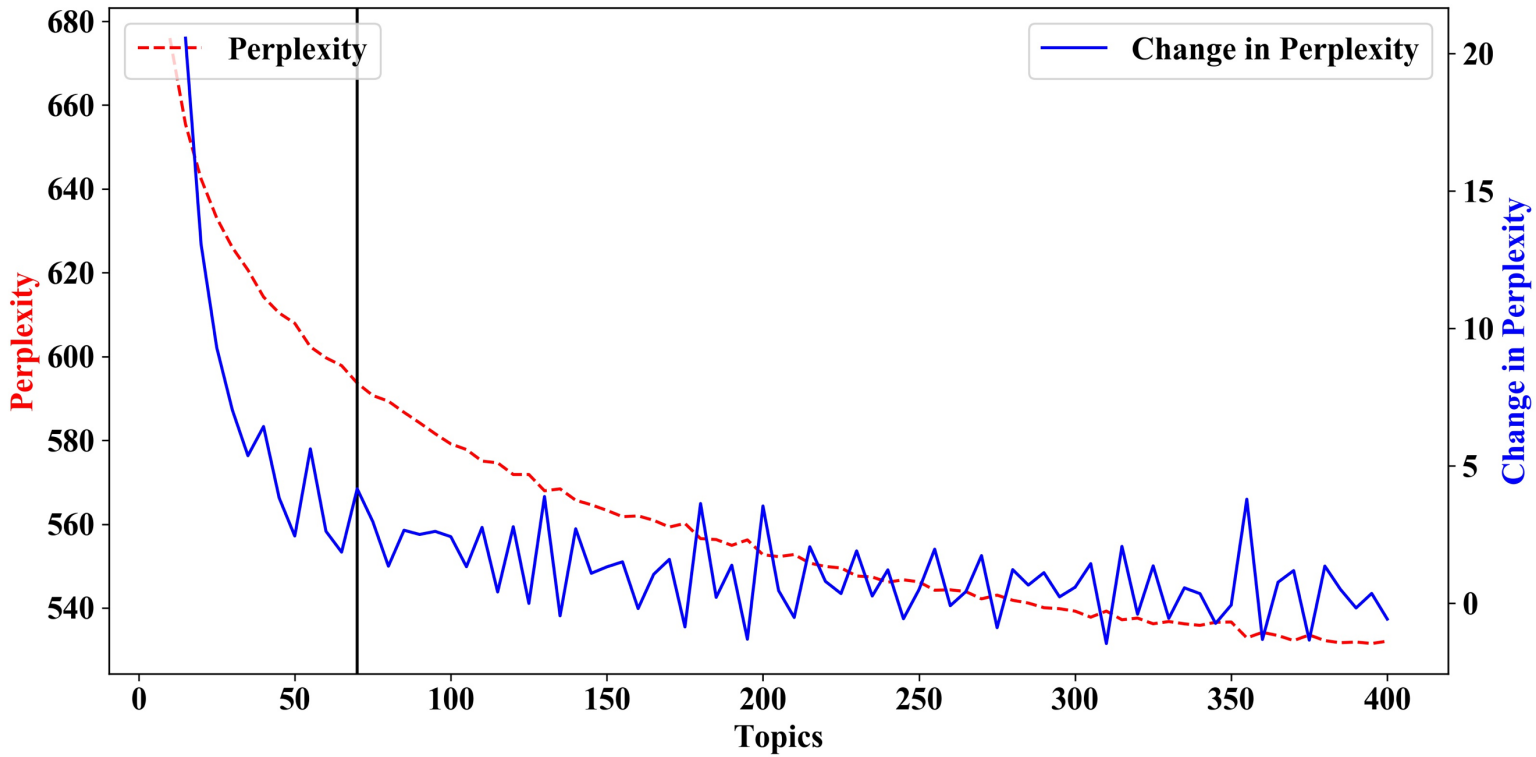
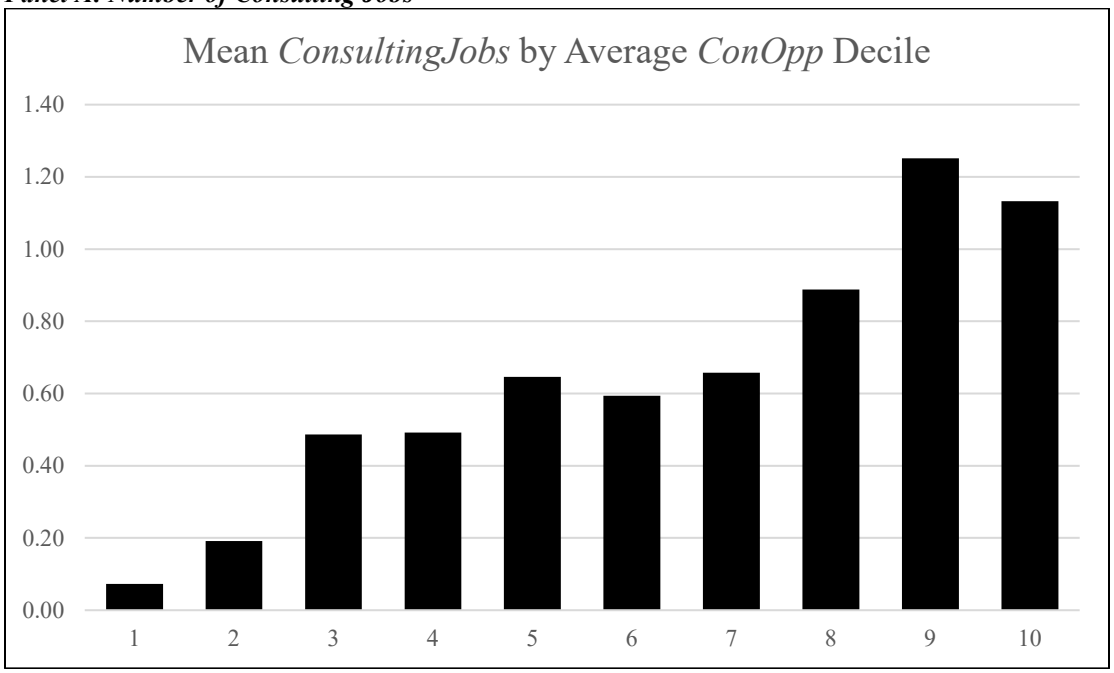


Figure OA2: Consulting-Related Job Postings and Consulting Opportunities

Figure OA2 charts the mean of *ConsultingJobs* (*ConsultingAuditRatio*) across the ten deciles of average *ConOpp* by MSA in Panel A (Panel B). Decile 1 (Decile 10) consists of MSAs with the lowest (highest) mean *ConOpp*.

Panel A: Number of Consulting Jobs



Panel B: Ratio of Consulting Jobs to Audit Jobs

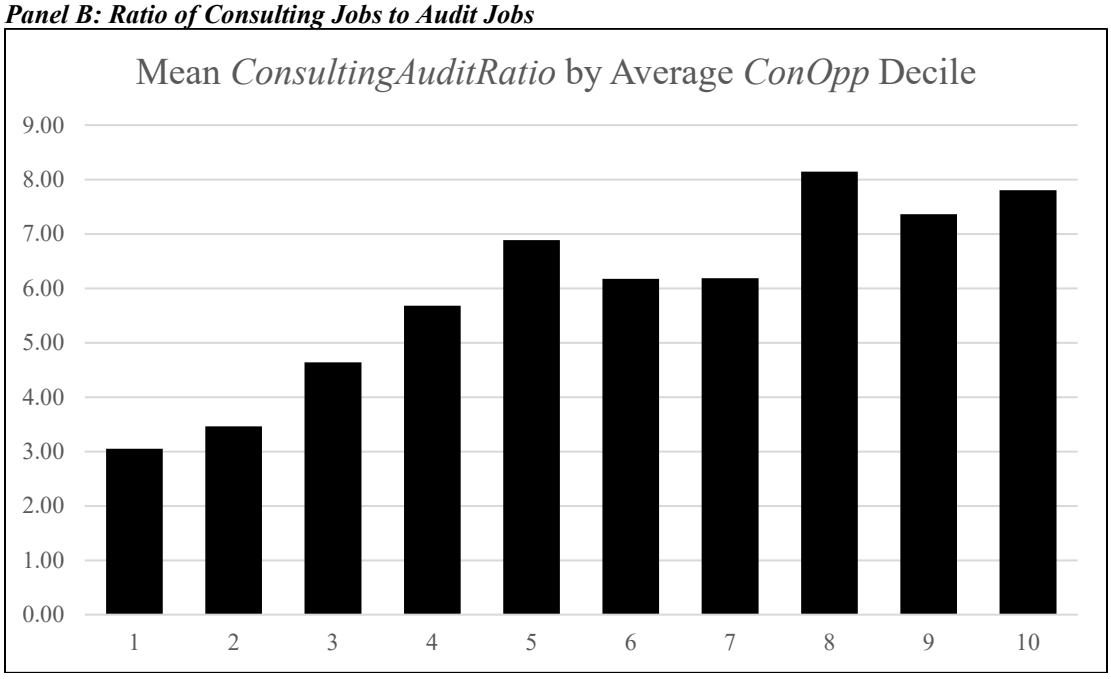
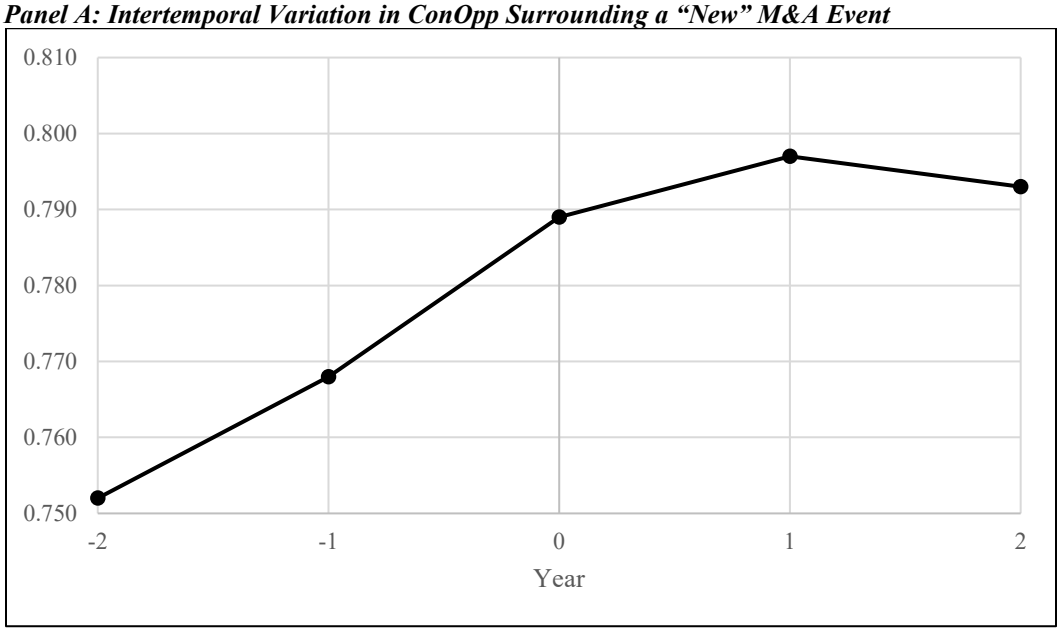


Figure OA3: Intertemporal Variation in Consulting Opportunities

Figure OA3 presents plots of the mean values of *ConOpp* across time for companies that experience an event reflective of the need for consulting services (in Year 0). Panel A plots the mean values of *ConOpp* for companies where a "new" M&A event (i.e., no M&A event the preceding two years) occurs in Year 0, and Panel B plots the mean values of *ConOpp* for companies where a "new" internal control material weakness (i.e., no material weakness is disclosed in the preceding two years) is disclosed in Year 0.

Panel A: Intertemporal Variation in ConOpp Surrounding a "New" M&A Event



Panel B: Intertemporal Variation in ConOpp Surrounding a "New" Material Weakness

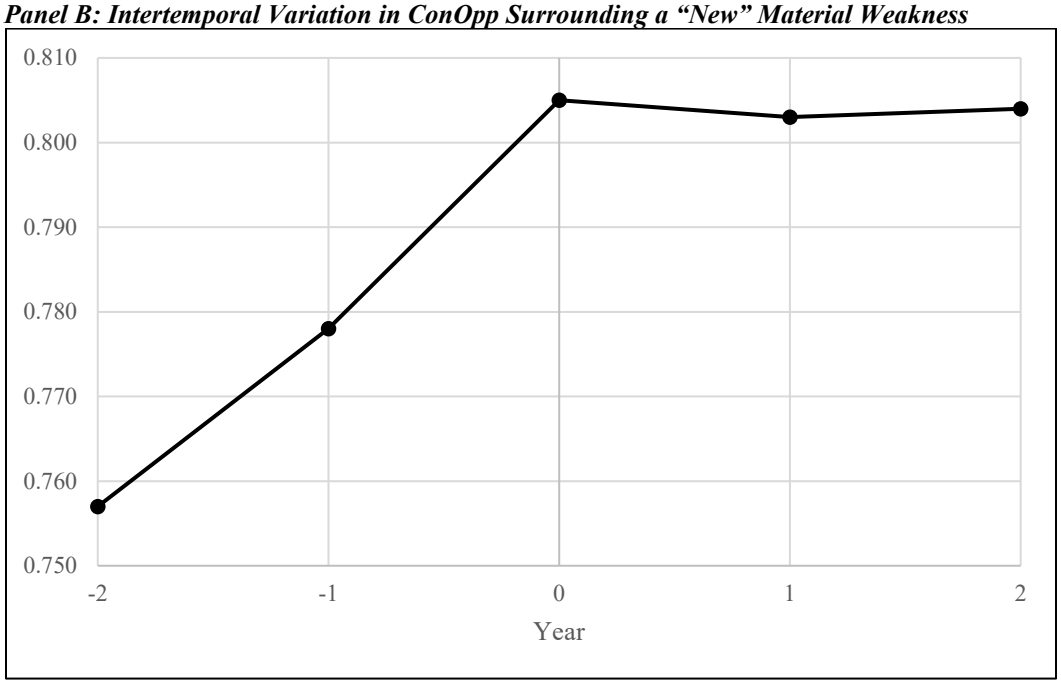


Table OA1: Frequency of Words Describing Big 4 Firm Consulting Offerings

Table OA1 presents the counts of the 40 individual words most commonly used by the Big 4 firms in describing their consulting/advisory service offerings as collected from their websites.

	Word	Deloitte	EY	KPMG	PwC	Total
1	strategy	78	26	18	80	202
2	management	41	29	34	46	150
3	risk	10	54	28	10	102
4	transformation	62	15	7	8	92
5	service	21	25	16	20	82
6	business	24	19	13	18	74
7	technology	12	22	12	17	63
8	customer	14	13	11	15	53
9	digital	8	11	9	21	49
10	services	17	9	20	0	46
11	finance	8	18	5	14	45
12	process	1	16	8	18	43
13	design	4	6	7	24	41
14	operation	11	8	5	17	41
15	product	22	2	1	16	41
16	enterprise	17	8	7	8	40
17	supply	13	9	4	14	40
18	chain	13	10	4	13	40
19	data	10	17	6	6	39
20	capital	10	10	8	11	39
21	model	12	3	1	22	38
22	innovation	15	4	1	16	36
23	analytics	15	7	2	10	34
24	cost	6	8	3	17	34
25	advisory	3	14	13	1	31
26	development	13	2	2	13	30
27	optimization	4	6	1	19	30
28	performance	7	7	4	10	28
29	strategic	3	13	5	7	28
30	financial	1	9	13	4	27
31	information	3	15	5	3	26
32	operations	14	2	3	7	26
33	asset	0	7	6	12	25
34	value	3	7	7	8	25
35	compliance	0	4	18	1	23
36	organization	2	6	3	12	23
37	growth	5	4	2	12	23
38	acquisition	10	2	0	10	22
39	improvement	0	7	2	13	22
40	integration	4	0	7	10	21
	all other words	*482*	*819*	*702*	*669*	*2,672*
	Total	**998**	**1,273**	**1,023**	**1,252**	**4,546**

Table OA2: Excerpts from Conference Call Transcripts

Table OA2 includes excerpts from ten conference call transcripts randomly drawn from our dataset. Of these, five were randomly drawn from the bottom 10% of *ConOpp* scores and five were randomly drawn from the top 10% of *ConOpp* scores. As shown, the contrast between conference call transcripts for companies with high and low *ConOpp* is quite stark.

High *ConOpp*	Low *ConOpp*
Assurant: Overall, we're pleased with our performance for the quarter, despite weaker results at Health. We continued to execute on our strategy by evolving our mix of business to produce more earnings and cash flow over time. We're actively managing our business and aligning resources to support our best opportunities. In the third quarter and during October, we strengthened our mobile business with 2 acquisitions. First, we invested in a device repair facility in the U.S. to support our growing customer base and expand our logistics capabilities. Second, earlier this week, we signed an agreement to purchase CWI Group, a leading mobile insurance administrator in France, with approximately $40 million in annual fee income. In addition, we further enhanced our mortgage value chain offerings by acquiring eMortgage Logic. These deals are in areas we have targeted for growth and also fit our acquisition playbook. They will add long-term value to our business. During the quarter, we also announced an agreement to sell our general agency property and casualty business. In combination with continued expense discipline, we're finding additional resources to direct toward our best opportunities. Strong cash flow generation provides us the flexibility to grow both organically and through acquisitions and return capital to shareholders… Assurant Solutions delivered another strong quarter. The earnings improvement was primarily driven by our success providing services across the mobile value chain. The 2 acquisitions in mobile will further improve our operational efficiency and expand our distribution into France, one of the largest mobile markets in the world. At the same time, our core service contract business continues to perform well. We're adapting our distribution through e-tailers and original equipment manufacturers while moving resources away from certain retailers. We continue to capitalize on opportunities to strengthen our competitive advantage by meeting the needs of our customers. This will serve us well in a rapidly changing environment.	***American Woodmark:*** Residential investment as a percent of GDP for the fourth calendar quarter 2014 remained flat at 3.1%. The indexes remained flat for the last 5 calendar quarters and the index remains well below the historical average of 4.6 from 1960 to 2000. Home ownership rates also continue to decline. The percent of Americans who own their own home in the fourth calendar quarter was 64%. This is the lowest reported level since the first quarter of 1995. Share of first-time buyers remains low. The December reported rate was 29%, which is well below the historical norm of 40%, represents a 27-year low. Median existing home price rose 6% for December, 34th straight month of year-over-year gains, which impacts our consumers' affordability index. Consumer confidence has increased but the middle income consumer's willingness to purchase a new home or begin big-ticket discretionary home improvement projects remains a concern. We believe we will continue to be faced with difficult market conditions for the remainder of the fiscal year but our performance will continue to outpace the market. Inflation pressure has slowed with hardware lumber prices stabilizing. We continue to generate favorable leverage on our semi-fixed and fixed overhead with additional volume, and we delivered an incremental gross margin rate of 46%. As stated for the prior 2 quarters, we believe the company has established a 3- to 4-year trend of improvement, which mirrors the improving housing market. Some quarters have been below the trend line and some have been above the trend line. The third quarter was a good quarter and again above the trend line. Looking forward, we maintain our expectation we shared in our last call that we will increase margin rates and grow net income in fiscal year 2015. Although we remain optimistic about future revenue growth, we're somewhat cautious on current industry projections. This concludes our prepared marks. We'd be happy to answer any questions you have at this time.
Legg Mason Inc: We are ready to take advantage of opportunities this year, but to be clear; more progress needs to be made in restoring growth and improving margins… Strategically, as I look forward for Legg Mason in our global asset management industry, I'm very encouraged. Particularly by the visits with clients, consultants and distribution partners I had over the last quarter across the globe, in Europe, in Asia, and throughout the Americas. I believe clients are all about more scrutiny, more do diligence, and increased appreciation for specialized skills for specialized mandates. Second, priority managing our costs, we're going to continue to expand our focus on costs and efficiencies while we pursue growth initiatives. With revenues expanding our operating margin, excluding the lease charge, continues to improve. Third, in gauging with the affiliates on performance, risk management and other strategic initiatives, the performance has improved strongly over the year. So I think what the Board and the Management Team are focused on, now is the time to take this improved performance, unite with our distribution capabilities, and really work harder, and on that regard, we will be thinking outside of the box of how to kind of deploy our collective resources against that… From our shareholders, we believe strongly that Legg Mason is a franchise, is undervalued. We're going to do all that we can to improve in the areas specifically of growth and outflows, and the inflows, and improve margin. As one caller said, think outside of the box, to do that, on any and every front that could make sense.	***Macatawa Bank Corporation:*** First of all with the provision for loan losses. For the third quarter we had only $1.5 million in net charge-offs for the quarter. We did record a provision of $2.4 million. Our internal allowance for loan losses computation showed the need to do a little reserve building over and above the charge-offs, and so that's why the provision was slightly above the charge-off level. Just a couple of brief comments on the loan portfolio and the change during the quarter in the loan portfolio. Total loans were up about $12 million for the quarter. Our commercial portfolio was about flat, finished and ended the quarter at about the same level. So our growth in loans came in the consumer area. Our consumer loans, HELOCs were up about $5 million for the quarter. And then residential retail mortgages were up about $7 million. Much of that growth was in jumbo mortgages which have proven to be a very healthy cross section of retail mortgages for us. Deposits, I touched on briefly in talking about margin. I know Phil will have some more comments on that. So I will turn that over to Phil
Convergy: As a well-capitalized leader, we are in a unique position to invest in what matters most to our clients. Our clients are clear that consistent quality delivery is their #1 priority. We continually upgrade our global operating model to ensure clients receive cost-effective quality service, regardless of channel and location. This includes hiring and retaining highly skilled agents who are able to manage increasingly complex call types, as	***Murphy Oil Corporation:*** Higher E&P earnings for 2010 were mostly attributable to the previously mentioned higher crude oil prices, which were up about 50%, but higher natural gas sales prices and volumes along with lower exploration expenses also contributed. Crude oil, condensate and gas liquids production for the current quarter averaged approximately 139,100 barrels per day in 2010 slightly lower than the 2009 quarter.

well as investments in tools and processes that deliver the metrics that matter to our clients. Our strong capital position also allows us to actively pursue growth through acquisition, as well as our internal investment strategy. We remain focused on adding new client relationships with the potential to become material over the long term, expanding our current footprint to provide additional English and Spanish language capabilities and obtaining capabilities that complement our global infrastructure while improving the company's competitive position. In summary, our improving results and significant cash position give us the flexibility to invest in the business and enhance client and shareholder value. Our solutions deliver quality and value to our clients, strengthen our relationships, increase program retention, allow us to win more business and help us grow our market share. And our consistent positive results allow us to raise our guidance for the full year.	In the corporate segment, the net loss in the first quarter of 2010 of $68.4 million and this compares to a net benefit in the first quarter of 2009 of $10.1 million. This unfavorable variance is attributable to losses on transactions denominated in foreign currencies. These losses were generated by a combination of a stronger US dollar compared to the British pound and a weaker US dollar compared to Malaysian Ringgit.
Pegasystems: Let me say a few words about the operations of the business, because what we expect going forward is over the next few quarters we'll continue to invest, to take advantage of what we see as a significant growth opportunity in front of us. We plan to continue to increase our distribution capacity both direct and with partners. Our partner community continues to grow and it's growing with both traditional partners and a number of new well-regarded organizations that are signing up on a more regional basis. You're going to see us reinvesting in a stronger digital community and really trying to build relationships between our customers and between our customers and ourselves more digitally as a company ourselves. And we're going to continue to invest in Pega's expert services to make sure that we've got the depths and the sophistication of staff to deal with clients as they address some of the most sophisticated business problems in the world. It's highly appealing to us to be able to engage with clients not at the alphabet soup level but in the area of business outcomes. And one thing that I think is very positive is we're seeing considerable interest in relationships with some of the world's leading management consulting firms such as Accenture, McKinsey and Boston Consulting Group. And these firms are being engaged at very high levels within their clients, being asked for advice on how to become a digital enterprise. And as I mentioned, you need a strategy, but we see all these firms as green, that execution requires software and a better approach to software. And we think that they're realizing that Pega software is an ideal solution for the execution of a digital strategy.	***PriceSmart:*** Overall net warehouse growth of 11% during that three month period resulted from a 10.2% growth in transactions and a 0.7% growth in average ticket. We saw sales growth in nearly all countries, exception being Jamaica which has experienced a significant devaluation of it's local currency over the past year. We also experienced a rather significant devaluation of the Costa Rican colon in February of approximately 5% compared to the average rate in January and also the year ago period. While overtime we will adjust prices on our important merchandise to reflect these devaluation in merchandise lots at a higher cost. In the short term sales that are transacted in the local currency and translated back to U.S. dollars will do so at a lower rate which can negatively affect sales growth. We continue to see strong sales in Panama, Trinidad and Aruba with each of them recording double-digit sales growth in the quarter.
MagnaChip Semiconductor: I'd like to thank you for your patience and support during the financial review and restatement process which is now behind us with the filing of the related reports in February 2015. We have emerged from the reinstatement process with enhanced financial discipline and stronger internal controls… Before I discuss Q1 results I like to present to you our key priorities. We are facing many challenges but our management team is committed to restoring shareholder value and regaining investor confidence over time. We are taking immediate actions designed to help move the company in the right direction. Specifically we have launched a comprehensive cost and portfolio optimization review, engaged in independent business advisory firm to exist with evaluation of our cost structure and product portfolio, combined our display and power solution business lines into a standard products group and appointed a Chief Compliance Officer a newly created position reporting directly to the Board of Directors. Let me first discuss the cost and portfolio optimization review. During Q1 we started implementing cost savings programs affecting every area of the company including manufacturing, procurement, supply chain management, capital expenditures and human resources. While we have made progress, we have determined that more can and must be done to restore and enhance our long term competitive position. I am personally overseeing a comprehensive review process that will results in a detailed set of plans design to improve our cost structure and optimize our product portfolio, we have also hired a top tier consulting firm to assist the management team with the review process.	***Norwegian Cruise Line Holdings:*** The reasons for our revision can be attributed to four primary drivers: a challenging operating environment in Europe, the impact of weaker foreign currencies, a sharp increase in Miami-based Caribbean capacity, and our decision to maintain pricing discipline consistent with our go-to-market strategy. The main drag to our earnings expectation has been the rapid and steep deterioration of the operating environment in Europe and the negative impact that successive incidences and geopolitical events have had on cruise demand for the region, especially from our core North American consumers. The guidance we provided at the time assumed no upside from an improved European booking environment whose slowdown we believe was behind us. Unfortunately, the opposite happened and the faint traction we had seen following Brussels quickly collapsed by the occurrence of further events, fulminating with the attack at the Istanbul airport and only deteriorated further with the Bastille Day tragedy in Nice and the failed military coup in Turkey.

Table OA3: Consulting Acquisitions and Consulting Opportunities

Table OA3 presents the results of our analysis of Big 4 consulting acquisitions and our proxy for consulting opportunities. In Panel A we report the results of our univariate tests of the difference in average *ConOpp* between MSAs and MSA-industries with and without a consulting acquisition. In Panel B we report the results of our multiple regression tests. Columns (1) through (6) present the results using MSA-industry observations, and columns (7) through (12) present the results using MSA-industry-year observations. The dependent variable in each estimation is *ConsultAcq*. All variables are formally defined in the paper's Appendix. MSA, industry, and year specific intercepts (where applicable) are not included for brevity. *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests). Robust standard errors are clustered by MSA-industry.

Panel A: Univariate Comparison of MSAs and MSA-Industries with and without a Consulting Acquisition

		ConsultingAcq = 1		*ConsultingAcq* = 0			
Variable	Comparison Group	N	Mean	N	Mean	Difference	t-test
MSA-Industry Observations							
Average $ConOpp_{m,k}$	All observations	52	0.914	457	0.769	0.145	5.63***
Average $ConOpp_{m,k}$	MSAs with at least one consulting acquisition	52	0.914	78	0.736	0.178	6.40***
MSA-Industry-Year Observations							
Average $ConOpp_{m,k,t}$	All observations	106	0.941	3,154	0.774	0.167	8.81***
Average $ConOpp_{m,k,t}$	MSA-industries with at least one consulting acquisition	106	0.941	217	0.872	0.069	3.53***

Panel B: Multiple Regression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	MSA-Industry Level						**MSA-Industry-Year Level**					
	All observations			*MSAs with at least one consulting acquisition*			*All observations*			*MSAs with at least one consulting acquisition*		
	ConsultAcq	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*	*ConsultAcq*
Average ConOpp	***0.2109****	***0.2037****	***0.2681****	***0.8199****	***0.8489****	***0.8313****	***0.0800*****	***0.0785*****	***0.0784*****	***0.8685*****	***0.6739****	***0.8049****
	(2.126)	***(1.990)***	***(2.272)***	***(2.160)***	***(2.193)***	***(2.004)***	***(3.282)***	***(3.262)***	***(3.120)***	***(3.043)***	***(2.237)***	***(2.405)***
Average Assets	-0.0128	-0.0107	0.0053	-0.0334	-0.0538	0.0165	-0.0030	-0.0029	-0.0027	-0.0115	0.0058	0.1163
	(-1.130)	(-0.888)	(0.223)	(-0.638)	(-0.950)	(0.191)	(-0.762)	(-0.748)	(-0.433)	(-0.265)	(0.114)	(1.582)
Average AssetGrowth	0.0473	0.0045	0.0124	0.4367	0.0475	-0.5193	0.0104	0.0096	0.0053	0.4543	0.4281	0.3084
	(0.514)	(0.050)	(0.131)	(1.432)	(0.110)	(-0.803)	(0.707)	(0.645)	(0.352)	(1.661)	(1.646)	(1.126)
Average Cash	0.0745	0.0411	0.1056	0.6647	0.2969	-0.3943	-0.0236	-0.0343	-0.0258	-0.7764	-1.2751***	-1.2886***
	(0.575)	(0.327)	(0.761)	(0.864)	(0.339)	(-0.363)	(-0.664)	(-0.999)	(-0.748)	(-1.519)	(-3.028)	(-3.036)
Average CashFlow	0.1864	0.0881	0.1930	-0.3049	-0.3936	-1.3400	0.1160***	0.1172***	0.1266***	0.2035	0.3997	0.2783
	(0.715)	(0.333)	(0.724)	(-0.303)	(-0.314)	(-1.049)	(2.615)	(2.615)	(2.782)	(0.310)	(0.624)	(0.465)
Average CFEarly	-0.1106	-0.1018	-0.0977	-0.4614	-0.3088	-0.0695	0.0088	0.0085	0.0062	0.1381	0.2005	0.2246
	(-1.099)	(-1.006)	(-0.924)	(-1.147)	(-0.727)	(-0.128)	(0.754)	(0.738)	(0.543)	(0.598)	(0.917)	(0.995)
Average CFMature	-0.1630*	-0.1556*	-0.1118	-0.5925*	-0.3924	-0.0809	-0.0021	-0.0022	-0.0021	0.0540	0.1045	0.1449
	(-1.719)	(-1.650)	(-1.131)	(-1.891)	(-1.198)	(-0.193)	(-0.242)	(-0.261)	(-0.249)	(0.324)	(0.607)	(0.839)
Average ExternalFinance	0.0129	-0.0251	0.0032	0.2951	0.0688	0.0176	-0.0180	-0.0202	-0.0209	-0.2645	-0.2773	-0.3691
	(0.131)	(-0.285)	(0.035)	(1.010)	(0.169)	(0.034)	(-1.102)	(-1.233)	(-1.280)	(-0.800)	(-0.756)	(-1.058)

Average Foreign	0.0273	0.0399	0.0404	0.0020	0.0550	0.1658	0.0071	0.0064	0.0055	-0.0752	-0.0990	-0.0563
	(0.663)	(0.946)	(0.903)	(0.013)	(0.311)	(0.853)	(0.980)	(0.878)	(0.691)	(-0.512)	(-0.668)	(-0.357)
Average GoingConcern	0.0827	0.0589	0.0385	-0.8113	-1.1775	-2.3770	0.0052	0.0004	-0.0041	0.2932	0.5896	0.5937
	(0.837)	(0.544)	(0.321)	(-0.656)	(-0.857)	(-1.351)	(0.250)	(0.019)	(-0.192)	(0.547)	(1.227)	(1.303)
Average Inv&Rec	-0.0158	-0.0078	0.0635	0.2389	0.2981	0.0296	0.0001	-0.0009	0.0116	-0.5413	-0.7515**	-0.6878*
	(-0.212)	(-0.103)	(0.750)	(0.714)	(0.820)	(0.068)	(0.005)	(-0.047)	(0.594)	(-1.542)	(-2.088)	(-1.853)
Average Leverage	0.0211	0.0161	0.0391	0.0072	0.0321	0.1396	0.0007	0.0001	0.0045	0.1616	0.1255	0.1088
	(0.250)	(0.192)	(0.440)	(0.018)	(0.073)	(0.334)	(0.033)	(0.007)	(0.225)	(0.506)	(0.389)	(0.316)
Average Loss	0.0010	-0.0099	-0.0129	-0.4444**	-0.4726**	-0.4884*	0.0097	0.0113	0.0093	0.0682	0.1645	0.2167
	(0.017)	(-0.155)	(-0.212)	(-2.541)	(-2.299)	(-1.660)	(1.015)	(1.213)	(1.012)	(0.422)	(1.014)	(1.332)
Average ModOp	-0.0570	-0.0687	-0.0865	-0.1957	-0.2503	-0.3858	-0.0125*	-0.0134*	-0.0184**	-0.0047	-0.0412	-0.1548
	(-0.862)	(-1.060)	(-1.348)	(-0.870)	(-0.875)	(-1.081)	(-1.660)	(-1.734)	(-2.229)	(-0.032)	(-0.299)	(-0.951)
Average MTB	-0.0037	-0.0044	0.0001	-0.0481	-0.0452	-0.0379	-0.0002	-0.0002	0.0003	-0.0054	-0.0120	-0.0134
	(-0.827)	(-0.992)	(0.020)	(-1.181)	(-1.089)	(-0.801)	(-0.244)	(-0.364)	(0.509)	(-0.469)	(-1.070)	(-1.215)
Average ROA	0.2870	0.3865	0.3419	1.1939	1.6288	1.4743	-0.0206	0.0030	0.0027	-0.1220	0.4391	0.4978
	(1.063)	(1.298)	(1.111)	(0.980)	(1.135)	(0.892)	(-0.630)	(0.087)	(0.078)	(-0.177)	(0.644)	(0.726)
Average Segments	-0.0092*	-0.0102*	-0.0080	-0.0113	-0.0134	-0.0048	0.0001	0.0001	0.0001	-0.0113	-0.0016	0.0033
	(-1.734)	(-1.910)	(-1.473)	(-0.450)	(-0.514)	(-0.170)	(0.083)	(0.110)	(0.083)	(-0.362)	(-0.052)	(0.128)
Average AbnAcc		-0.0217	-0.0275		-0.0650	-0.1332*		-0.0035**	-0.0037**		-0.0359	-0.0331
		(-0.865)	(-1.097)		(-1.103)	(-1.930)		(-2.056)	(-2.147)		(-1.642)	(-1.539)
Average M&A		-0.0039	0.0204		0.0914	0.1566		0.0042	0.0065		0.0681	0.0949
		(-0.067)	(0.340)		(0.443)	(0.615)		(0.681)	(1.039)		(0.538)	(0.753)
Average MatWeak		0.3059	0.4640**		0.6708	1.4550***		0.0219	0.0228		0.1029	0.2056
		(1.420)	(2.021)		(1.427)	(2.755)		(0.851)	(0.862)		(0.333)	(0.644)
Average R&D		0.2447	0.2537		2.2010	3.7366		0.0949	0.1092		3.6047***	3.4308***
		(0.632)	(0.596)		(1.444)	(1.640)		(1.120)	(1.179)		(2.936)	(3.028)
Average RestateAnnounce		-0.0486	-0.0156		-0.0895	-0.1198		0.0001	0.0084		-0.1197	-0.0248
		(-0.484)	(-0.153)		(-0.340)	(-0.439)		(0.014)	(0.774)		(-0.698)	(-0.114)
Average AuditFees			-0.0474			-0.2318			-0.0002			-0.2152**
			(-1.041)			(-1.369)			(-0.022)			(-2.109)
Average Big4			-0.0864			-0.8994			-0.0372			-0.3959
			(-1.001)			(-1.577)			(-1.595)			(-1.168)
Average CompMSA			0.1509			1.1781			-0.1004			-1.9969***
			(0.533)			(0.565)			(-1.401)			(-4.137)
Average CompMSAInd			-0.1493*			-0.3575			-0.0313			-0.0704
			(-1.770)			(-1.038)			(-1.546)			(-0.281)
Average IndExpert			0.0515			0.9336*			0.0202			0.5979**
			(0.739)			(1.717)			(1.327)			(2.206)
Average Mismatch			-0.1346*			-0.6224*			-0.0213			-0.0006
			(-1.866)			(-1.786)			(-1.325)			(-0.002)
Average Shop			-0.7851*			-0.7605			-0.1420**			-1.2733
			(-1.819)			(-0.368)			(-2.316)			(-1.191)
Average Tenure			0.0041			0.0388			0.0018			0.0094
			(0.670)			(0.749)			(1.336)			(0.414)
MSA FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry (1-digit SIC) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Observations	509	509	509	130	130	130	3,260	3,260	3,260	323	323	323
Adjusted R^2	0.315	0.314	0.318	0.349	0.337	0.332	0.171	0.170	0.172	0.087	0.102	0.122

Table OA4: Consulting Expenses and Consulting Opportunities

Table OA4 presents the results of regressions of company-year-level consulting expenses scaled by total revenues (*ConsultingExpenseByRevt*$_t$) on *ConOpp*$_t$. All variables are formally defined in the paper's Appendix. Year and industry specific intercepts (where applicable) are not included for brevity. Robust *t*-statistics are presented in parentheses below the corresponding coefficients. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on two-tailed tests).

	(1)	(2)	(3)	(4)	(5)
			DV: *ConsultingExpenseByRevt*$_t$		
***ConOpp*$_t$**	***0.1841******	***0.1786****	***0.1442****	***0.1653****	***0.1673****
	(3.274)	***(2.373)***	***(2.104)***	***(2.341)***	***(2.217)***
Assets$_t$			0.0163**	0.0103	0.0290**
			(2.416)	(1.493)	(2.140)
AssetGrowth$_t$			0.0263	0.0153	0.0267
			(1.246)	(0.648)	(1.173)
Cash$_t$			0.1238*	0.2597***	0.2816***
			(1.710)	(2.742)	(2.813)
CashFlow$_t$			0.0035	-0.0502	-0.0917
			(0.021)	(-0.354)	(-0.562)
CFEarly$_t$			0.0130	0.0082	0.0066
			(0.425)	(0.269)	(0.207)
CFMature$_t$			0.0348	0.0292	0.0339
			(0.748)	(0.627)	(0.728)
ExternalFinance$_t$			-0.0504	-0.0204	0.0166
			(-0.916)	(-0.440)	(0.275)
Foreign$_t$			-0.0060	0.0025	0.0166
			(-0.172)	(0.075)	(0.519)
GoingConcern$_t$			-0.0957**	-0.1253***	-0.1213**
			(-2.551)	(-2.604)	(-2.591)
Inv&Rec$_t$			-0.3279***	-0.2561***	-0.2804**
			(-3.930)	(-2.768)	(-2.548)
Leverage$_t$			0.2585***	0.2923***	0.2909***
			(3.585)	(3.916)	(3.930)
Loss$_t$			0.0135	0.0255	0.0399
			(0.421)	(0.793)	(1.113)
ModOp$_t$			-0.0118	0.0003	0.0545
			(-0.535)	(0.012)	(1.622)
MTB$_t$			0.0022	0.0003	-0.0002
			(1.055)	(0.140)	(-0.087)
ROA$_t$			0.1256	0.1478	0.1061
			(1.047)	(1.312)	(0.822)
Segments$_t$			0.0010	-0.0008	0.0008
			(0.255)	(-0.208)	(0.197)
AbnAcc$_t$				0.0039	-0.0001
				(0.506)	(-0.010)
M&A$_t$				0.0018	0.0068
				(0.061)	(0.209)
MatWeak$_t$				-0.0996*	-0.1409
				(-1.658)	(-1.563)
R&D$_t$				-0.7200***	-0.7488***
				(-3.115)	(-3.108)
RestateAnnounce$_t$				0.0955	0.0770
				(1.314)	(1.080)

AuditFees$_t$					-0.0227
					(-1.376)
Big4$_t$					-0.0415
					(-0.779)
CompMSA$_t$					0.0883
					(0.594)
CompMSAInd$_t$					0.1031
					(1.312)
IndExpert$_t$					0.0319
					(0.688)
Mismatch$_t$					0.0278
					(0.692)
Shop$_t$					0.9397*
					(1.872)
Tenure$_t$					-0.0076*
					(-1.684)
Constant	Yes	Yes	Yes	Yes	Yes
Year and Industry (one-digit SIC) FE	No	Yes	Yes	Yes	Yes
Observations	238	238	238	238	238
Adjusted R^2	0.052	0.187	0.271	0.296	0.321