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Do Managers Successfully Shop for Compliant Auditors? Evidence from Accounting Estimates

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Abstract

Existing research on opinion shopping focuses primarily on managers' attempts to switch auditors in order to avoid the receipt of an unfavorable audit opinion. We extend this literature by examining whether managers successfully shop for auditors who will allow questionable accounting practices, as evidenced by opportunistic changes in accounting estimates following auditor switches. Using manually collected data from SEC filings, we find an increase in the frequency and magnitude of discretionary income-increasing changes in accounting estimates (DICE) following auditor switches. We further find that companies reporting DICE following an auditor switch are more likely to subsequently restate earnings downward, receive fewer goingconcern opinions, experience lower abnormal stock returns in the years following the switch, and tend to switch auditors during the fourth quarter or following a disagreement with the predecessor auditor. These findings provide ex-post evidence that managers successfully shop for more lenient auditors. We also find that managers' switch decisions maximize the ex-ante likelihood of reporting income-increasing changes in estimates, and that companies are more likely to switch to auditors whose clients have a greater likelihood of reporting income-increasing changes in estimates. Taken together, we provide both ex-ante and ex-post evidence that auditor-switch companies shop for compliant auditors that will allow the use of opportunistic accounting that meets management's reporting objectives.

Keywords: opinion shopping, opportunistic changes in accounting estimates, auditor switches, earnings management, financial reporting quality

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Data Availability: Data used in this study are available from public sources identified in the text.

Do Managers Successfully Shop for Compliant Auditors? Evidence from Opportunistic Changes in Accounting Estimates

1. Introduction

The SEC defines opinion shopping as "the search for an auditor willing to support a proposed accounting treatment designed to help a firm achieve its reporting objectives even though that treatment might frustrate reliable reporting" (SEC Financial Reporting Release No. 31, 1988). Traditionally, research on opinion shopping has primarily studied attempts by managers to switch auditors in order to avoid the receipt of an unfavorable audit opinion. However, regulators' concerns about "opinion shopping" are not limited to settings in which managers shop for a clean audit opinion (PCAOB 2011). The broader concern, as suggested in the SEC's definition, is that managers are able to shop for an auditor who will allow an accounting treatment that is proposed by management for the purpose of achieving an opportunistic reporting objective. While recent studies provide evidence that managers, *ex-ante*, consider shopping for a clean audit opinion in their switch decisions (Lennox 2000), there is no *ex-post* evidence of successful opinion shopping and no evidence that managers successfully shop favorable accounting treatments. The purpose of this study is to examine, both *ex-ante* and *ex-post,* whether managers successfully shop for opportunistic changes in accounting estimates.

Manager-proposed changes in accounting estimates present an attractive setting in which to study opinion shopping for several reasons. One reason is that accounting estimates are likely to be an appealing mechanism through which managers are able to achieve their reporting objectives. By their nature, accounting estimates require significant judgment and are often difficult for auditors to objectively verify. These features make estimates particularly susceptible to management manipulation. The discretion embedded in accounting estimates also means that

manager-proposed changes in estimates have a relatively high likelihood of being challenged by the incumbent auditor. This is important because a challenge from the incumbent auditor provides the manager with an incentive to shop for a more compliant auditor.

Another reason why changes in accounting estimates are well-suited for studying opinion shopping is that their inherent subjectivity facilitates the manager's ability to find an auditor who is willing to accept a questionable accounting treatment. The subjective discretion in arriving at estimates means that even well-intentioned managers and auditors can legitimately disagree over the proper accounting (Magee and Tseng 1990, and Bratten, et al. 2013). This provides a justification for managers to shop for a more compliant auditor after the incumbent auditor objects to the change. Management's ability to successfully identify a successor auditor who is willing to accept their questionable accounting treatment is further strengthened by the fact that successor auditors possess less information about the firm's underlying economics relative to the incumbent. Thus, a successor auditor may allow management's opportunistic treatment due to lack of knowledge of the client, rather than out of an explicit willingness to acquiesce to substandard financial reporting. In summary, changes in accounting estimates provide managers with an opportunity to manage earnings, an incentive to opinion shop, and a reasonably high likelihood of finding a successor auditor that is willing to accept management's opportunistic accounting treatment. Taken together, this makes changes in accounting estimates a unique setting that is well-suited for testing whether managers successfully shop for more compliant auditors.[1]

Changes in accounting estimates also have important benefits for our setting when compared with alternative measures of opportunistic accounting. For example, measures of discretionary

[1] We emphasize, however, that we are not suggesting that opportunistic changes in accounting estimates represent the only financial reporting objective that is likely to induce managers to shop for a more compliant auditor. We focus on changes in estimates because they provide a setting that is particularly well-suited to studying opinion shopping.

accruals attempt to capture the net effects of all discretionary accounting choices across a broad range of unspecified accounts. As a result, these measures lack precision and contain significant measurement errors (McNichols 2000; Lennox, Wu, and Zhang 2016; Badertscher, Collins, Lys, 2012; Ball 2013). In contrast, changes in accounting estimates require footnote disclosures that report their exact dollar effect on earnings, and thus contain no measurement error. The footnote disclosures also discuss the reason for the change, including whether the change is initiated or significantly influenced by third parties. This additional disclosure is particularly important in our setting because it allows us to gauge the extent to which the change is likely to result from management discretion.[2]

If opportunistic accounting choices motivate managers to opinion shop, and if managers successfully shop for a more compliant auditor, we expect to observe an increase in opportunistic changes in accounting estimates following auditor switches. However, we do not expect all changes in estimate to originate from management opportunism. While auditors have strong litigation incentives to prevent upward earnings management, downward earnings management can be justified as "conservative" accounting, which reduces auditor litigation risk (Basu 1997; Watts 2003; DeFond, Lim and Zang 2016). Thus, because incumbent auditors are unlikely to object to income-*decreasing* changes in estimates, we do not expect them to trigger opinion shopping. In addition, changes in estimates that result from actions of third parties, such as the settlement of a lawsuit or the outcome of an IRS audit, are non-discretionary and thus also unlikely to trigger opinion shopping. Therefore, we only expect *discretionary income-increasing changes in accounting estimates* (hereafter DICE) to capture management incentives to opinion shop; and

[2] A potential limitation of using changes in accounting estimates is that it captures only a small set of the possible discretionary accounting choices.

we do not expect income-decreasing changes or non-discretionary changes in accounting estimates (hereafter NDICE) to capture management incentives to opinion shop. However, because there may be similarities among firms that report changes in estimates, firms that report NDICE are ideally-suited for use in falsification tests of our predictions.

Our sample consists of all firms with available data that switch auditors at least once during the period 2004-2015. We restrict our analysis to firms that switch auditors because they are likely to share similar unobservable characteristics, which helps mitigate the concern that the endogenous decision to switch auditors explains the results.[3] The final sample is composed of 8,484 firm-year observations, which includes 1,528 unique firms, 1,809 auditor switches, and 586 changes in accounting estimates. We identify firms that report changes in accounting estimates using the Audit Analytics database.[4] We then obtain the SEC filings for each firm and manually collect the detailed footnotes that disclose the changes in estimates. Descriptively, we find that 6.9% of the firm-years in our sample report a change in estimate. Among these changes in estimates, 59% increase income and 73% are discretionary.

Our first analysis compares the frequency and magnitude of changes in accounting estimate during the three years before an auditor switch with the three years following the switch. This test finds a significant increase in both the frequency and magnitude of DICE following auditor switches. Specifically, the likelihood of DICE increases by 2.49% from the pre-switch mean likelihood of 2.00%, which represents an increase of 124.5% (2.49%/2.00%); and the magnitude of DICE increases by 1.50% from the pre-switch mean magnitude of 1.10% of lagged total assets,

[3] In sensitivity tests we use non-switchers to perform a Dif-in-Dif-in-Dif analysis and find similar results. A limitation of using all firms, however, is that due to data collection costs, we do not collect information on whether the changes in estimates are *discretionary* for the non-switch firms.

[4] Audit Analytics is the only database we are aware of that reports comprehensive data on changes in accounting estimates. They began disclosing this item starting from October of 2013, which may explain the lack of prior research on changes in estimates.

which represents an increase of 136.4% (1.50%/1.10%). We assess the validity of this analysis by performing falsification tests (Prasad and Jena 2013) that repeat the above analysis after replacing the DICE firms with "placebo" firms composed of auditor switch firms that report NDICE. These falsification tests find no significant change in the frequency or magnitude of NDICE following auditor switches.[5]

If opinion shopping explains why there is an increase in the likelihood of DICE following an auditor switch, then we expect the DICE reported following the switch to "frustrate reliable reporting." We test this by examining whether the increased frequency and magnitude of the DICE following an auditor change are associated with three financial reporting quality measures: earnings restatements, the frequency of going concern opinions, and abnormal stock returns. We employ a difference-in-difference (DiD) research design with firm-years that report DICE as our treatment group, and the remaining firm-years as our control group. This analysis finds that, when compared to other firm-years, firm-years that report DICE following an auditor switch are more likely to: (1) restate earnings downwards to correct an overstatement, with larger magnitudes of DICE being associated with larger downward earnings restatements; (2) report a decline in the likelihood of receiving a GC opinion, with larger magnitudes of DICE being associated with larger declines, consistent with managers using DICE to increase earnings in order to avoid a GC opinion[6]; and (3) report a decline in abnormal stock returns during the years following the switch, with larger magnitudes of DICE associated with larger declines, consistent with the information contained in DICE failing to reflect improved fundamentals. In contrast, we do not find any change

[5] We also find that our results are robust to a number of sensitivity tests, including the use of a propensity score matched sample of auditor switch firms that are matched on the characteristics of firms that report DICE.

[6] Our GC results are particularly interesting in that they provide *ex-post* evidence that managers successfully avoid unfavorable audit opinions through income-increasing changes in estimates. This contrasts with prior literature which only finds *ex-ante* evidence that managers shop for clean opinions. The likely reason we find this result (while prior studies have not) is that our tests focus on a subset of switches that are expected to be opportunistically motivated.

in the association between the incidence and magnitude of NDICE and any of these three reporting quality measures following auditor switches. We assess the validity of the parallel trends assumption underlying our DiD analysis by plotting the outcome variables for companies reporting DICE and NDICE over the three years before and after the auditor switch. We find that the trends are generally parallel during the periods before and after the switches, but that the trends in restatement (GC, abnormal return) shift upward (downward) for DICE firm-years from the year before to the year after the auditor switches.

We further assess whether DICE firms are likely to be opinion shopping by analyzing the disclosures in the auditor-change 8-Ks. We find that the frequency and magnitude of DICE is associated with auditor changes during the 4th quarter of the fiscal year, and that the frequency of DICE is associated with switch firms that report disagreements with the predecessor auditor. Falsification tests find that the frequency and magnitude of NDICE is not associated with any of the 8-K disclosures. In addition, we find that the all of the above changes associated DICE are economically significant.

The analysis described above finds that firms are more likely to report DICE following an auditor switch, and that DICE following an auditor switch are associated with poor reporting quality. These results provide *ex-post* evidence that is consistent with managers successfully shopping for preferred accounting treatments. However, if opinion shopping explains our results, we also expect managers to consider the *ex-ante* likelihood of the post-switch auditor allowing them to report an income-increasing change in estimate. To assess this, we adapt the framework from Lennox (2000) to test whether firms' switch decisions are explained by the expected likelihood of reporting an income-increasing change in estimate. The results from this analysis are consistent with firms' switch decisions maximizing the likelihood of reporting an income-

increasing change in accounting estimate. We further find that auditor-switching firms, on average, are more likely to switch to auditors whose clients have a greater likelihood of reporting income-increasing changes in estimates than the predecessor auditor's clients. These findings provide evidence consistent with DICE firms, *ex-ante*, searching for an auditor that is more likely to allow DICE.[7]

We contribute to the literature by providing new evidence on opinion shopping. While opinion shopping has long been a concern among regulators, prior literature on opinion shopping focuses primarily on whether firms' auditor-switch decisions maximize the likelihood of receiving a clean audit opinion. That is, whether firms are able to successfully avoid an unfavorable audit opinion from an *ex-ante* point of view. A limitation of these prior studies is that they do not address the wider concerns expressed by regulators that managers are able to successfully find auditors who will allow accounting treatments that frustrate reliable financial reporting. Our study is unique in finding evidence consistent with managers successfully switching to auditors who (either knowingly or unknowingly) permit questionable reporting that achieves management's opportunistic reporting objectives.

Our study is also unique in that we provide both *ex-post* as well as *ex-ante* evidence of opinion shopping. Specifically, we find that, *ex post*, managers are able to increase the frequency and magnitude of discretionary income-increasing changes in estimates after switching auditors, while *ex ante*, managers are more likely to switch to auditors that are more likely to permit their clients to report DICE. These findings are new to the academic literature and should be informative

[7] We note, however, that our analysis is unable to discern whether the successor auditor knowingly allows the new client to engage in opportunistic reporting through the use of DICE; or whether the successor auditor unknowingly allows substandard reporting due to lack of experience with the new client. In the former case, the auditor is complicit with management, and in the latter case the auditor is essentially being "fooled' by management. In both cases, however, the successor auditors that allow DICE are lower quality, as compared with the successor auditors who do not allow DICE, or with the predecessor auditors who allow DICE.

to regulators and standard setters who have long expressed concerns about the threat from opinion shopping to financial reporting quality (PCAOB 2011, SEC 1988, US Senate 1977).

2. Background and motivation

2.1 Regulatory concerns over opinion shopping

Regulators have expressed concerns for decades that firms may change auditors in order to obtain a more favorable accounting treatment (DeFond and Zhang 2014). Regulatory attempts to discourage opinion shopping include the SEC requirement that registrants file form 8-K within five business days following the dismissal or resignation of their auditor (SEC 1988), and that registrants disclose whether they received a qualified opinion or had a disagreement with the predecessor auditor during the previous two years. Further attempts to discourage opinion shopping include auditing standard SAS 50 (superseded by PCAOB auditing standards AU 625 & 9625), which requires managers to report whether they consulted with a non-incumbent auditor regarding the prospective application of GAAP and/or the type of audit opinion that may be rendered. More recently, opinion shopping concerns have motivated the PCAOB to consider mandatory auditor rotation (PCAOB 2011).[8]

Despite a long history of regulatory concern, there is limited *ex-post* evidence that opinion shopping is likely to be successful. Early studies fail to find that switchers are more likely to receive a clean opinion from the successor auditor (Chow and Rice, 1982; Smith, 1986; Krishnan, 1994). However, Lennox (2000) observes that clients are, *ex-ante*, likely to compare the expected probability of receiving a modified opinion from the incumbent auditor versus a successor auditor. Using UK data, Lennox (2000) documents that this difference in expected probability explains

[8] Proponents argue that mandatory rotation can reduce opinion shopping by reducing incumbent auditors' incentives to accept substandard financial reporting in order to retain clients, while critics argue that mandatory rotation would exacerbate the problem, since periodically choosing a new auditor provides an opportunity for management to shop for a more compliant auditor (Cameran, Francis, Marra and Pettinicchio 2015).

clients' switch decisions, consistent with successful opinion shopping. The Lennox (2000) framework has been adopted to document successful opinion shopping to avoid modified opinions at the individual partner level in China (Chen, Peng, Xue, Yang, and Ye 2016), and to avoid internal control weakness opinions in the U.S. (Newton et al., 2016). While these studies find evidence consistent with managers shopping for clean audit opinions *ex ante*, we are unaware of evidence that shows that managers are able to successfully obtain their preferred accounting treatment, *ex-post*, by switching auditors. More importantly, there is no evidence that supports the broader concern that managers are able to successfully shop for accounting treatments that are designed to achieve reporting objectives that "frustrate reliable reporting." The purpose of this study is to provide both *ex ante* and *ex post* evidence on this broader concern by examining whether managers successfully shop for favorable changes in accounting estimates.

2.2 Changes in accounting estimates as a setting for examining opinion shopping

Managers have incentives to artificially overstate earnings for a variety of reasons, including to meet or beat earnings expectations and to avoid going-concern opinions. A channel through which managers may achieve such objectives is by changing accounting estimates. Accounting estimates are defined as the "approximation of a financial statement element, item or account." ASC 250 provides accounting guidance and requires disclosures for changes in accounting estimates (FASB 2005). To achieve comparability across accounting periods, the assumptions regarding accounting estimates are generally expected to remain unchanged. If the company has a good reason to change them, ASC 250 requires disclosure of their effect on continuing operations, net income, and any related per-share amounts.[9]

[9] ASC 250 requires companies to report the effect on income for a change in estimate that affects several future periods, such as a change in service lives of depreciable assets. Disclosure of those effects for estimates made each period in the ordinary course of accounting, such as uncollectible accounts or inventory obsolescence, is required only when the effect is material.

Changes in estimates are an appealing setting for tests of opinion shopping for several reasons. First, the discretion allowed in computing accounting estimates provides managers with an opportunity to propose accounting treatments that achieve opportunistic reporting objectives. For example, revenue recognition under long-term contracts depends on many subjective assumptions that are difficult to verify. The considerable discretion allowed to managers in formulating accounting estimates stems from the fact that many accounting standards under U.S. GAAP are principles-based (Ball 2009; Folsom, Hribar, Mergenthaler, and Peterson 2017; DeFond, Lennox, and Zhang 2018). This discretion also stems from the inherent uncertainty regarding the outcome of future events, and the infeasibility of obtaining relevant data for past events on a timely, cost-effective basis (PCAOB, AU 342).

Second, accounting estimates are relatively more likely to be the subject of disagreements between managers and incumbent auditors, providing managers with an incentive to shop for a more compliant auditor.[10] Auditors are aware of both the flexibility afforded to managers in making accounting estimates, and management's incentives to meet reporting objectives that do not necessarily result in fair presentation. As a result, auditors are likely to be relatively more skeptical of accounting choices that involve estimates, and thus more likely to disagree with management.[11] In addition, because GAAP is not "cut and dried", managers can legitimately disagree with their incumbent auditor about the appropriateness of a proposed change, even when both the manager and the auditor are well-intentioned and well-informed (Magee and Tseng 1990; and Bratten, et al. 2013). The fact that managers can legitimately disagree with their auditors is important because it provides an "excuse" for opportunistic managers to shop for a more compliant

[10] Anecdotally, this is consistent with several of the 8-K filings from our sample firms. For example, PWC resigned as the auditor for Sonic Wall in 2005 because of a disagreement with management over the estimation of sales return reserves.

[11] PCAOB, AU 342 prescribes the auditor's responsibilities in auditing accounting estimates.

auditor.

Finally, the subjective nature of accounting estimates facilitates the manager's ability to find an auditor who is willing (either intentionally or unintentionally) to support opportunistically motivated changes (Magee and Tseng 1990; Bratten, et al. 2013). The manager's ability to find an accommodating successor auditor is further enabled by the fact that a new auditor is unfamiliar with the client's operations. Management's information advantage over the successor auditor reduces the new auditor's ability to successfully challenge managers' estimates (Gul, Fung, and Jaggi 2009). This conjecture that managers are better able to "fool" new auditors is consistent with the large number of studies that finds a relatively higher rate of audit failures during the earlier years of the auditor-client relationship (DeFond and Zhang, 2014).

Taken together, the above arguments suggest that changes in accounting estimates provide a unique setting that is well suited for testing whether managers successfully opinion shop.

2.3 Changes in accounting estimates following auditor switches

We begin our analysis by first examining whether managers successfully shop for their preferred accounting estimates *ex post*. If managers are successful in shopping, we expect to observe an increase in opportunistic changes in accounting estimates following auditor switches. However, not all changes in estimates are expected to be associated with management opportunism. In particular, many changes to accounting estimates are triggered or influenced by outside parties that are potentially independent of management. For example, changes may reflect the actions of tax authorities, the courts, and insurance companies; or are the result of estimates provided by independent engineers, appraisers, and actuaries. Since these estimates are not strictly discretionary, we do not expect these changes in estimates to motivate opinion shopping.

We also do not expect management-initiated income-*decreasing* changes in accounting

estimates to be associated with management attempts to seek a more accommodating auditor. Incumbent auditors have little incentive to disagree with client-initiated income-*decreasing* changes in accounting estimates (Basu 1997; Watts 2003). This is because auditors are sued almost exclusively for earnings overstatements, and are rarely (if ever) sued for earnings understatements (Carcello and Palmrose 1994; Heninger 2001). Thus, auditors have economic incentives to prefer income-decreasing accounting choices (Nelson, Elliott, and Tarpley 2002). This is consistent with empirical research that finds accounting conservatism reduces the risk of auditor litigation (DeFond, Lim and Zang 2016).

We acknowledge, however, that auditor-initiated income-decreasing changes in estimate might well motivate auditor switches. Specifically, clients may have incentives to switch away from an auditor who proposes an income-decreasing change in estimates (Ayres, Neal, Reid, and Shipman 2018). However, it is unclear whether auditor-initiated income-*decreasing* changes in accounting estimates are prevalent.[12] This is because prior research suggests that when auditing complex estimates, auditors "overwhelmingly" focus on the verification and confirmation of management's models, rather than developing their own independent expectations (Griffith, Hammersley and Kadous 2015), which would be required for an auditor-initiated change in estimate. Thus, we expect the likelihood of an auditor initiating a discretionary income-decreasing change in estimate to be low relative to the likelihood of an auditor challenging a client-initiated income-increasing change in estimate. Notably, this conjecture is consistent with our empirical evidence. Specifically, if clients tend to switch away from auditors who initiate discretionary

[12] While Lennox, Wu and Zhang (2016) find more downward than upward audit adjustments, these auditor-initiated downward adjustments potentially capture the auditor's *response* to management-initiated income-increasing accruals. As such, they may be capturing the auditor's denial of a *manager-initiated* income increasing accruals, and do not necessarily indicate *auditor-initiated* income-decreasing accruals. In addition, Lennox et al. (2016) study audit adjustments to all accruals, which are not limited to changes in accounting estimates.

income-decreasing changes, we would expect to see a drop in the income-decreasing changes in estimates following auditor switches. As we show later, however, we observe no change in the frequency of discretionary income-decreasing changes in estimates following auditor switches. Thus, we find no evident to suggest that auditor-initiated income-decreasing changes in estimates motivate auditor switches.

In summation, following an auditor switch, we expect to observe an increase in discretionary income-increasing changes in estimates (DICE), but not an increase in *income-decreasing* or *non-discretionary* changes in estimates (NDICE). However, NDICE provide an opportunity to perform falsification tests to rule out alternative explanations for our findings, such as changes in operations that may drive both auditor switches and changes in estimates.

2.4 Evidence of ex-post reporting opportunism among DICE firms

We next examine whether DICE that follow auditor switches are likely to be opportunistically-motivated. We test this by examining whether the frequency and magnitude of DICE made following auditor switches are associated with: (1) the likelihood of reporting a subsequent income-decreasing earnings restatement; (2) the likelihood of receiving a GC opinion; (3) abnormal stock returns over the period following the switch. Each of these measures provide unique evidence on whether the changes in estimates are intended to meet opportunistic reporting objectives.

Finding that DICE following auditor switches are associated with overstated earnings (as evidenced by subsequent income-decreasing restatements) is consistent with managers of these firms engaging in relatively more upward earnings management. While a change in accounting estimate, *per se*, may not lead directly to an earnings restatement (unless it is deemed deliberately misleading), a restatement is a strong indicator that the firm's financial statements are not fairly

presented. Thus, we expect DICE to essentially be the "tip of the iceberg," in terms of indicating that managers of these firms are bad actors who engage more extensively in earnings management.[13] Finding that DICE after auditor switches are associated with fewer going-concern opinions would be consist with managers using the changes in estimates to boost earnings in order to avoid receiving an unfavorable opinion. Finding that DICE after auditor switches are associated with a decline in abnormal stock returns would be consistent with DICE not capturing the firm's true underlying economics (Lilien, Mellman, and Pastena 1988), and with DICE being perceived by the market to result in low quality earnings.[14]

2.5 Successful opinion shopping and 8-K filings

We also examine whether DICE firms are acting opportunistically by testing whether the required disclosures contained in the auditor change 8-Ks explain the frequency and magnitude DICE reported by switch firms.[15] Specifically, we examine the following disclosures: (1) the quarter in which the switch occurred; (2) whether there was an auditor-client disagreement during the two years prior to the switch; (3) whether the client consulted with the successor auditor before

[13] For example, one of our sample DICE firms, Swisher Hygiene Inc (cik: 0001504747) decreased its depreciation expense by $1.6 million by extending the useful life of its fixed assets in 2011. In 2016, the SEC charged the company for fraudulent accounting in six areas during 2011: (i) the treatment of prepayment penalties incurred in connection with the extinguishment of debt; (ii) earnout accruals; (iii) compensation for employees of acquired entities; (iv) unfavorable contracts; (v) insurance reserves; and (vi) the allowance for doubtful accounts receivable (AAER 3775).

[14] DeFond and Subramanyam (1998) examine a comprehensive sample of auditor switchers and find that discretionary accruals, on average, are income-decreasing before the auditor switches, and *insignificant* following the auditor switches. We focus on switchers who report DICE following an auditor switch, and predict that this subset of switchers will artificially *increasing* earnings following the switch. As such, the motivation (and supporting evidence) for the switches examined in DeFond and Subramanyan (1998) are much different than in our study. Thus, if supported, our findings cannot be explained by the results in DeFond and Subramanyam (1998).

[15] Under Item 304 of Regulation S-K, the SEC requires firms that switch auditors to disclose (i) whether the former accountant resigned, declined to stand for re-election or was dismissed and the date thereof (Item 304(a)(1)(i)); (ii) whether there was a disagreement between the company and the auditors within the two most recent fiscal years and any subsequent interim periods (Item 304(a)(1)(iv)); (iii) whether the firm consulted with the successor auditor within two fiscal years before the switch (Item 304(a)(1)(v)), as well as other relevant information related to the switch. Importantly, the SEC also requests a letter from the predecessor auditor addressed to the SEC indicating whether the auditor agrees with the characterization of the firm's 8-K disclosure.

the switch; and (4) whether the predecessor auditor resigned or was dismissed. [16]

Switches that occur later in the fiscal year are more likely to be motivated by opinion shopping (Newton et al. 2016). This is because disagreements between auditors and managers that lead to opinion shopping are more likely to occur, and more difficult to reconcile, as it gets closer to year end. We also expect that opportunistically-motivated switches are more likely to be preceded by auditor-client disagreements, which would motivate managers to seek a more accommodating auditor (DeFond and Jiambalvo 1993; Haislip, Myers, Scholz, and Seidel 2017).[17] While consultation with a potential successor auditor may also facilitate shopping for a preferred accounting treatment, the disclosure requirements may dissuade firms from engaging in this behavior, and truthful reporting of this disclosure is likely to be difficult to enforce.[18] Thus, the net effect of disclosed consultation on the likelihood of income-increasing changes in estimates is unclear.[19] Finally, there may be a difference between resignations and dismissals when managers opinion shop. However, the prediction for DICE is unclear. On one hand, managers dismiss auditors who will not approve DICE. On the other hand, DICE may trigger auditor resignations, perhaps due to concerns about management integrity.

2.6 Successful opinion shopping as captured by the ex-ante probability that managers consider the auditor's propensity to allow income-increasing changes in accounting estimates

[16] We use the terms "incumbent" and "predecessor" auditor interchangeably to refer to the pre-switch auditor.

[17] Specifically, DeFond and Jiambalvo (1993) find that firms under greater pressure to engage in income-increasing earnings management due to debt covenant or compensation incentives are more likely to report a disagreement with their auditors before the switch. Dhaliwal, Schatzberg, and Trombley (1993) find that firms reporting a disagreement with the auditor tend to have poor earnings and stock price performance, more debt, and lower current assets. Haislip et al. (2017) find that firms are more likely to dismiss their auditors when earnings announced in unaudited earnings release are subsequently revised, and that the likelihood of dismissal is greater when the earnings revisions cause clients to miss important earnings benchmarks.

[18] Truthful reporting is likely difficult because both the manager and the successor auditor have incentives not to disclose that they engaged in pre-switch discussions of proposed accounting treatments. In contrast, auditor-client disagreement disclosures require the predecessor auditor to verify the accuracy of management disclosures of auditor-client disagreements, and the predecessor has reputation incentives to assure that management truthfully reports.

[19] In addition, there may be informal ways in which managers can avoid reporting consultation with prospective auditors regarding the willingness to go along with a particular accounting treatment. For example, managers may look at the prospective successor auditor's history of allowing its clients to report income-increasing discretionary changes in estimates.

The above described analysis focuses on examining *ex-post* evidence from actual auditor switches. However, if managers are shopping for a compliant auditor, they are likely to consider, *ex-ante*, whether the auditor is likely to allow them to report an income-increasing change in estimate. To assess whether this is the case, we adapt the framework from Lennox (2000). This analysis examines whether managers consider the likelihood of reporting an income-increasing change in estimate when contemplating an auditor switch; and whether, *ex ante,* managers switch to auditors who are expected to be more compliant. While the analysis in Lennox (2000) examines the likelihood of firms receiving modified opinions, we examine the likelihood of firms reporting income-increasing changes in accounting estimates, which implicitly relies upon the auditors' willingness to allow such reporting.

3. Empirical analyses

3.1 Sample and descriptive statistics

We start with all COMPUSTAT firms with at least one auditor switch during 2004-2015. We use Audit Analytics to identify firms with changes in estimates and to obtain our audit-related variables. We start in 2004 because Audit Analytics has sparse coverage of changes in accounting estimates prior to 2004. We remove observations in the financial (SIC code between 6000 and 6999) and regulated industries (SIC code between 4900 and 4939) because their accounting estimates are heavily influenced by regulation. We obtain stock return data from CRSP. Our tests compare the last three years of the predecessor auditor with the first three years of the successor auditor. For firms that switch auditors multiple times, we retain the first switch and subsequent switches that are at least six years apart. This approach avoids overlap of the pre and post-switch

periods.[20] To construct a constant-firm sample, we require that each firm has the necessary data for at least one year before the switch and one year after the switch. Our data selection process is shown in Table 1. For our tests of whether firms are more likely to report DICE after an auditor switch, we have 8,484 firm-year observations, representing 1,528 unique firms, 1,809 auditor switches, and 586 changes in estimates. Because each subsequent test imposes different data restrictions, the sample size varies for each analysis.

Table 2 Panel A presents the descriptive statistics for the variables used in the analysis. Among the full sample, 6.9% of the observations report a change in estimate (CHGEST), with 4.1% reporting discretionary income-increasing changes (DICE) and 2.8% reporting non-discretionary income-increasing changes or income-decreasing changes (NDICE). The reporting quality measures indicate that 4.8% of the observations are associated with subsequent income-decreasing restatements (REST_Dec), and 28.7% of the financially distressed firms receive GC opinions (GC) . On average, sample firms report 3% abnormal annual stock returns (ABRET). Post-switch firm-years account for 52.4% of total observations (AFTER), indicating that our sample is relatively well-balanced before and after the switch.

Panel B of Table 2 presents a univariate comparison of the frequency of the changes in estimates (CHGEST) before and after the auditor switch. We find that the mean CHGEST is 7.8% after the switch, compared to 5.9% before the switch, with the difference being statistically significant at $p<1\%$. We also find that the mean positive change (POSCHG) is 5.1% after the switch, and 3.0% before the switch, with the difference being statistically significant at $p<1\%$. In contrast, the mean negative change (NEGCHG) is 2.7% after the switch and 2.9% before the

[20] Our inferences do not change if we retain only the first auditor switch for each switching firm.

switch, and the difference is insignificant.[21]

For each change in estimate, we read the SEC filings and manually classify the change as discretionary or non-discretionary based on whether the change involves an independent third party. We classify the following agents as independent third parties: government agencies, plaintiffs or defendants in litigation, vendors, service providers, customers, insurance firms, independent appraisers, engineers, actuaries, attorneys, sublessees, and counter-parties in merger or acquisition transactions. We define the changes in estimates that involve one or more of these third parties as non-discretionary, because the estimates are likely to be triggered by the third party's action (such as the completion of an IRS audit), reflect the third party's judgment (such as an independent appraiser's valuation or an actuary's estimation), monitored by a third party (such as by the court in litigation), or can be verified by the auditor with the third party (such as the modification of the lease term by the sub-lessee). We define DISCRET (NONDISCRET) to be equal to 1 if a firm has a discretionary (non-discretionary) change in estimates, and 0 otherwise. Panel B of Table 2 indicates that, for the CHGEST firms, mean DISCRET significantly increases from 4.2% before the switch to 5.8% after the switch, while mean NONDISCRET is insignificantly different before and after the switch. In addition, the mean DISCRET for POSCHG significantly increases from 2.0% before the switch to 4.1% after the switch. This means that the significant increases in CHGEST and POSCHG are driven by the discretionary changes.

Panel B of Table 2 also compares the proportion of income-increasing changes to all changes before and after the switch. If the changes in estimates are randomly distributed, then we

[21] The 226 (122) income-increasing changes in estimates after (before) the switch consist of 189 (149) unique firms. Of these firms, 154, 33, and 2 (104, 9, and 0) report 1, 2, and 3 changes during the three-year period after (before) the switch. In comparison, the 121 (117) income-decreasing changes in estimates after (before) the switch consist of 101(100) unique firms. Of these firms, 84, 14, and 3 (85, 13, and 2) report 1, 2, and 3 changes during the three-year period after (before) the switch. Removing firms that make multiple changes in estimates before or after the auditor switch does not change the inferences of our univariate or multivariate tests.

would expect the proportion of income-increasing changes to all changes to be 0.5. We find that before the auditor switch, the proportion of income-increasing changes (POSCHG/CHGEST) is 0.51 and insignificantly different from 0.5. However, after the auditor switch, POSCHG/CHGEST is 0.651 and significantly higher than 0.5. Similarly, the proportion of discretionary income-increasing changes to all discretionary changes (POSCHG_DISC/CHGEST_DISC) increases from 0.482 before the switch to 0.703 after the switch. In contrast, the proportion of non-discretionary income-increasing changes to all non-discretionary changes (POSCHG_NONDISC /CHGEST_NONDISC) does not change significantly after the switch.

Panel C of Table 2 compares the frequency of the changes in estimates between the pre- and post-switch period using a two-by-two frequency table. The sample is comprised of 586 firm-years that report a change in accounting estimates. During the pre-switch period, a chi-square test cannot reject the null hypothesis that the frequency of each cell is the same as expected if the direction is independent of the discretionary nature of the change. However, during the post-switch period, the chi-square test rejects the null hypothesis at $p<0.001$. This is because the number of DICE increases from 82 to 180 from the pre- to post-switch period. In contrast, the number of NDICE increases modestly from 157 (=40+29+88) to 167 (=45+46+76).

Panel D of Table 2 compares the magnitude of the changes in estimates before and after the auditor switch. The sample is again comprised of the 586 firm-years that report a change in accounting estimate. We find that the magnitude of the discretionary income-increasing changes in estimate (scaled by total assets) increases significantly from 0.011 before the switch to 0.022 after the switch. In contrast, none of the other changes in estimates (income-decreasing changes or non-discretionary income-increasing changes) have a significant change in magnitude before and after the switch.

Panel E of Table 2 presents the underlying reasons of the changes in estimates manually collected from SEC filings. The most frequent reason is "useful life and salvage value for L-T assets." Out of 586 changes in estimates, 147 (25.09%) fall into this category. The next two most frequent reasons are "revenue recognition" and "tax related issues", representing 9.90% and 9.39% of the changes, respectively. We report the pre- and post-switch frequency separately, and find that for changes related to "useful life and salvage value of L-T assets", the DICE doubles from 25 cases before the switch to 50 cases after the switch. For changes related to "revenue recognition", the DICE increase from 1 case before the switch to 25 cases after the switch. While non-discretionary income-increasing changes exhibit an increase in some categories, consistent with Panel C, the total increase in non-discretionary income-increasing changes is much smaller than that for DICE.

3.2 The incidence of changes in accounting estimates before and after the auditor switch

Table 3 reports the multivariate analysis of the change in the frequency and magnitude of DICE after the auditor switch. Specifically, we estimate the following logit regression model:

$$\begin{aligned} DICE_{it} / DICE\_MAG_{it} &= \alpha_0 + \alpha_1 AFTER + \alpha_2 LAGPOSCHG + \alpha_3 LAGNEGCHG_{it} \\ &+ \alpha_4 TA_{it} + \alpha_5 ROA_{it} + \alpha_6 LOSS_{it} + \alpha_7 MERGER_{it} + \alpha_8 FIN_{it} + \alpha_9 LEV_{it} + \alpha_{10} SALEGR_{it} \\ &+ \alpha_{11} ROAGR_{it} + \alpha_{12} ATGR_{it} + \alpha_{13} MB_{it} + \alpha_{14} BIG_{it} + \alpha_{15} SPECIALIST_{it} + \alpha_{16} LOGTENURE_{it} \\ &+ \alpha_{17} AUDFEE_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where AFTER equals 1 for observations after the auditor switch, and 0 otherwise. Appendix A discusses the motivation for the control variables in this and all subsequent models. Appendix B provides the definition of all variables. All analyses include industry and year fixed effects unless otherwise noted.

The dependent variable in Column (1) of Table 3 is the incidence of changes in accounting estimate (CHGEST). This analysis finds that the coefficient on AFTER is 0.430 and significant at

p<0.01. Thus, the overall frequency of changes in estimates increases following auditor switches. The dependent variable in Column (2) is the incidence of DICE. This analysis finds that the coefficient on AFTER is 0.852 and significant at p<0.01. Consistent with our univariate tests, these results indicate that after controlling for potentially confounding factors, firms report significantly more frequent DICE following an auditor switch. The average marginal effect of 0.0249 reported at the bottom of Table 3 indicates that the likelihood of reporting DICE increases by 2.49 percentage points following an auditor switch. This represents a 124.5% increase from the pre-switch mean likelihood of 2.00% (2.49%/2.00%), which is economically significant.[22]

Column (3) reports the results of a falsification test that replaces the dependent variable with the incidence of NDICE, which is comprised of discretionary income-decreasing changes in estimates and all non-discretionary changes. As expected, the coefficients on AFTER is insignificant in Columns (3). Because opinion shopping is not expected to affect the changes in estimates that are non-discretionary or income-decreasing, this falsification test corroborates our findings in Column (2) by failing to find a "placebo" effect on the outcomes that are expected to be unaffected by opinion shopping.[23]

At the bottom of Table 3, we test the difference in the coefficients on AFTER between Column (2) and (3). We find that the coefficient on AFTER in Column (2), minus the coefficient on AFTER in Column (3), equals 0.814 (p<0.01). This difference in the coefficient on AFTER captures a difference-in-difference effect between DICE and NDICE, and indicates that the

[22] We use the area under the ROC curve (AUC) to measure how powerful our logistic regression model is at predicting the dichotomous dependent variable (Hosmer and Lemeshow 2000). The area under the ROC curve in Table 3 varies from 0.745 in Column (2) to 0.788 in Column (3), which implies acceptable level of discrimination according to Hosmer and Lemeshow (2000).

[23] Falsification tests provide evidence that helps validate associations found in observational studies by examining a claim that is not likely to be causally related to the treatment effect being examined (Prasad and Jena 2013). While the failure to support an implausible falsification hypothesis does not mean that the primary association of interest is causal, "when many false relationships are present, caution is warranted in the interpretation of a study findings."

increase in DICE subsequent to the auditor switches is significantly higher than the change in NDICE. Since the DICE and NDICE firms are expected to share similar unobservable characteristics, the significantly higher increase in DICE after the auditor switch is consistent with auditor-switching firms successfully shopping for discretionary income-increasing changes in estimates. [24]

The dependent variable in Column (4) of Table 3 is the magnitude of changes in accounting estimate (MAG). This sample is restricted to firm-year observations that report a change in estimate. We find that the coefficient on AFTER is 0.013 and significant at $p<0.05$. Thus, the magnitude of the changes in estimates also increases following auditor switches. The dependent variable in Column (5) is the magnitude of DICE. This sample is further restricted to firm-year observations that report a DICE. This analysis finds that the coefficient on AFTER is 0.015 and significant at $p<0.05$. This result indicates that after controlling for confounding factors, the magnitude of DICE also increases significantly following an auditor switch. The increase in the magnitude, 1.5% of lagged total assets, is economically significant, representing a 136.4% increase from the pre-switch mean magnitude of DICE of 1.1% (1.5%/1.1%). In contrast, the coefficient on AFTER is insignificant in Column (6) when the magnitude of NDICE is the dependent variable, where the sample is restricted to observations that report a NDICE. The pseudo dif-in-dif test at the bottom of Table 2 shows that the coefficient difference on AFTER between Column (5) and (6) is again significant at $p<0.10$.

Taken together, Table 3 finds that both the frequency and magnitude of DICE increases significantly after the auditor switch, while there is no change in the frequency and magnitude of

[24] DICE firms may be similar to the firms that report non-discretionary income-increasing changes, because both make income-increasing changes in estimates. Similarly, DICE firms may be similar to firms that report discretionary income-decreasing changes, because both make discretionary changes in estimates.

NDICE. These findings are consistent with firms successfully shopping for their preferred accounting treatment by switching auditors.

3.3 Evidence from ex-post reporting opportunism

In this section we investigate whether the increased incidence of DICE following the auditor switches are likely to be opportunistically-motivated. If opinion shopping explains the increase in DICE, then we expect that the DICE result from management attempts to manipulate earnings. To assess this, we perform a DiD analysis that examines three outcome-based measures that we expect to provide evidence on this issue: (1) subsequent income-decreasing earnings restatements; (2) the incidence of a going-concern audit opinion; (3) abnormal stock returns during the years following the auditor change. Our treatment group is comprised of DICE firms, and our control group is comprised of all other auditor changes.

3.3.1 Restatements

If our treatment firms are engaged in opinion shopping during the year of the auditor switch, then we expect them to be "bad actors' that are also more likely to engage in other forms of earnings management. If so, these firms are more likely to report downward earnings restatements for earnings that are reported subsequent to the auditor switch. We test this by estimating the following logistic model based on the prior restatement literature (Lennox and Pittman 2010; Lobo and Zhao 2013).

$$\begin{aligned} REST\_Dec_{it} &= \alpha_0 + \alpha_1 AFTER + \alpha_2 DICE_{it} + \alpha_3 AFTER * DICE_{it} + \alpha_4 TA_{it} + \alpha_5 AGE_{it} + \alpha_6 ROA_{it} \\ &+ \alpha_7 LOSS_{it} + \alpha_8 CUR\_ACC_{it} + \alpha_9 MERGER_{it} + \alpha_{10} FIN_{it} + \alpha_{11} LEV_{it} + \alpha_{12} EXFIN_{it} + \alpha_{13} SALEGR_{it} \\ &+ \alpha_{14} ROAGR_{it} + \alpha_{15} ATGR_{it} + \alpha_{16} MB_{it} + \alpha_{17} BIG_{it} + \alpha_{18} SPECIALIST_{it} + \alpha_{19} LOGTENURE_{it} \\ &\alpha_{20} OFFICESIZE_{it} + \alpha_{21} OIMPORT_{it} + \alpha_{22} FIMPORT_{it} + \alpha_{23} NAS_{it} + \alpha_{24} WEAK\_302_{it} \\ &+ \alpha_{25} AUDFEE_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

The dependent variable is REST_Dec, which equals 1 if any current-year quarterly or

annual financial report is subsequently restated and the restatement decreases originally reported net income, 0 otherwise. Table 4 Column (1) finds a significantly positive coefficient on AFTER×DICE, indicating that DICE reported by the treatment firms after the auditor switch are associated with a higher likelihood of future income-decreasing restatements. The marginal effect of AFTER×DICE reported at the bottom of the table indicates an increase of 6.29 percentage points in the likelihood of an income-decreasing restatement. Compared to the sample mean of 4.8 percentage points for all firms, this represents an economically meaningful increase of 131% (6.29/4.8). Column (1) also finds that the control group experiences an insignificant change in the likelihood of having a restatement (AFTER =-0.171, $p>0.10$), while the treatment firms experience a significant increase (AFTER+AFTER×DICE =1.275, $p<0.05$).[25] In contrast, the falsification test reported in Columns (2) shows that the coefficients on AFTER×NDICE is insignificant, indicating that the placebo firms are not associated with a higher likelihood of a restatement after the auditor switch.

Columns (3)-(4) replace the incidence of DICE (NDICE) with the magnitude of DICE (NDICE). The coefficient on AFTER×DICE_MAG is insignificant, suggesting that higher magnitudes of DICE after the auditor switch do not have an incremental effect on the likelihood of restatement. However, in Column (5)-(6) we use the magnitude of the restatement as the dependent variable and estimate the model using an OLS regression. We find that the coefficient on AFTER×DICE_MAG is significantly negative. This indicates that higher magnitudes of DICE are associated with larger downward earnings restatements. Further, this effect is economically significant, with each 1% increase in the magnitude of the DICE resulting in an increase in the

[25] The insignificant coefficient on DICE suggests that before the auditor switch, DICE are not significantly related to the likelihood of restatements. However, after the auditor switch, DICE are significantly positively associated with restatements (DICE+AFTER×DICE =1.015, $p<0.01$).

magnitude of the income-decreasing restatement by 0.56% of total assets. In Column (7) and (8) we rerun the analysis in Columns (5) and (6) after limiting the sample to firm-years with restatements and find similar results indicating that higher magnitudes of DICE are associated with larger downward earnings restatements. Overall, the findings in Table 4 are consistent with DICE identifying auditor switch firms that engage in opportunistic earnings management subsequent to the switch.

3.3.2 GC opinions

We next examine whether shopping for a preferred accounting treatment lowers the likelihood of the auditor issuing a GC. We expect the DICE reported after the switch to lower the likelihood of receiving a GC opinion, because earnings are an important factor in the auditors' assessment of the firm's prospects as a going-concern (Reichelt and Wang 2010; DeFond and Lennox 2011). Consistent with prior literature, we restrict this test to the subsample of firms that are financially distressed, defined as either ROA < 0 or cash flow from operations < 0 (DeFond et al. 2002). Specifically, we estimate the following logistic regression:

$$\begin{aligned} GC_{it} = {} & \gamma_0 + \gamma_1 AFTER_{it} + \gamma_2 DICE_{it} + \gamma_3 AFTER_{it} * DICE_{it} + \gamma_4 TA_{it} + \gamma_5 AGE_{it} + \gamma_6 LEV_{it} \\ & + \gamma_7 LAGLOSS_{it} + \gamma_8 INVESTMENT_{it} + \gamma_9 CURR_{it} + \gamma_{10} CFO_{it} + \gamma_{11} ZSCORE_{it} + \gamma_{12} MB_{it} \\ & + \gamma_{13} BIG_{it} + \gamma_{14} LAGGC_{it} + \gamma_{15} DELAY_{it} + \gamma_{16} AUDFEE_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

where *GC* equals 1 if the auditor issues a GC opinion for the current year, 0 otherwise.

Table 5 presents results from estimating Model (3). Column (1) finds a significantly negative coefficient on AFTER×DICE, indicating that DICE made after the auditor switch have a stronger effect on reducing a firm's likelihood of receiving a GC than DICE made before the switch. The marginal effect of AFTER×DICE reported at the bottom of the table indicates that after the switch, DICE firms have an incremental reduction of 15.20 percentage points in the likelihood of a GC. Compared to the sample mean of 28.7% for distressed firms (Panel A, Table 2), this

represents an economically significant decrease of 53% (15.2/28.7) in the likelihood of receiving a GC. Column (1) also finds that the control group experiences a small but significant increase in the likelihood of receiving a GC (AFTER =0.199, $p<0.10$), while the treatment firms experience a significant decrease (AFTER+AFTER×DICE =-1.763, $p<0.05$).[26] In contrast, the falsification test reported in Columns (2) shows that the coefficient on AFTER×NDICE is insignificant.

Column (3) replaces the incidence of DICE with the magnitude of DICE and finds a significantly negative coefficient on AFTER×DICE_MAG. This indicates that higher magnitudes of DICE have an incremental effect on reducing the likelihood of GC after the auditor switch. The marginal effect reported at the bottom of Table 5 shows that relative to DICE firms before the switch, the probability of receiving a going concern opinion decreases by an additional 2.5 percentage points for each 1% increase in the magnitude of DICE after the switch. In contrast, Column (4) indicates that our falsification test finds an insignificant coefficient on AFTER×NDICE_MAG. These findings make an important contribution to the previous stream of literature that examines auditor switches to avoid GC opinions. Specifically, while prior research finds that auditor switches do not directly reduce the likelihood of a GC opinion (e.g., Chow and Rice, 1982; Smith, 1986; Krishnan, 1994), our findings indicate that auditor switches indirectly lower the likelihood of receiving a GC among DICE firms by increasing reported earnings.

3.3.3 Stock returns

Since stock returns are summary statistics for firm fundamentals, if the DICE made after the auditor switch reflect improvement in firm fundamentals, then we expect these changes to be positively associated with stock returns. In contrast, if the DICE made after the auditor switch

[26] The insignificant coefficient on DICE indicates that before the auditor switch, the discretionary income-increasing changes in estimates are not significantly related to the likelihood of GC opinion. However, after the auditor switch, DICE are significantly negatively associated with GC (DICE+AFTER×DICE= -1.694, $p<0.01$).

reflect opportunistic opinion shopping, and the market is reasonably efficient, then we expect these changes to be discounted by the market. We estimate the following OLS model:

$$\begin{aligned} ABRET_{it} &= \gamma_0 + \gamma_1 AFTER_{it} + \gamma_2 DICE_{it} + \gamma_3 AFTER_{it} \times DICE_{it} + \gamma_4 CH\_NI_{it} \\ &+ \gamma_5 BETA_{it} + \gamma_6 VOLATILITY + \gamma_7 ANALYST_{it} + \gamma_8 LAGSIZE_{it-1} + \gamma_9 LAGMB_{it-1} + \gamma_{10} GC_{it} \\ &+ \gamma_{11} WEAK\_302_{it} + \gamma_{12} DELAY_{it} + \gamma_{13} AUDFEE_{it} + \varepsilon_{it} \end{aligned} \quad (4)$$

where ABRET is the annual stock return adjusted by value-weighted stock index return, and CH_NI is the change in EPS before extraordinary items scaled by stock price at the beginning of the year.

Table 6 presents the results from this analysis. Column (1) finds that the coefficient on AFTER×DICE is significantly negative, indicating that DICE made after the auditor switch is associated with lower stock returns than those made before the switch. These findings suggest that the market discounts firms who report DICE after the switch. Specifically, the stock returns are 26% lower for DICE firms after the switch compared to DICE firms before the switch. Column (1) also finds that the control group experiences a marginally significant increase in ABRET (AFTER =0.032, $p<0.10$) following the switch, while the treatment firms experience a significant decrease (AFTER+AFTER×DICE =-0.228, $p<0.01$).[27] The falsification test in Column (2) shows that there is no return differential for our placebo firms.

Column (3) replaces the incidence of DICE with the magnitude of DICE. We find a significantly negative coefficient on AFTER×DICE_MAG, suggesting that a larger magnitude of DICE results in a larger negative abnormal return following the auditor change. Specifically, each 1% increase in DICE after the switch is associated with 8.5% lower stock returns compared to the same 1% increase in DICE before the switch. Again, Column (4) finds no such market discount

[27] The significant coefficient on DICE suggests that before the auditor switch, DICE are positively associated with ABRET. However, after the auditor switch, DICE are significantly negatively associated with ABRET (DICE+AFTER×DICE =-0.116, $p<0.01$).

for the magnitude of NDICE. Together with our prior tests, results in Table 6 indicate that the changes in estimates made by the treatment firms not only have low actual financial reporting quality, but also low perceived quality. The market discount also suggests that the income-increasing changes in estimates by our treatment firms are not an indication of improved firm fundamentals following the auditor switch.

3.3.4 Parallel trend analysis

An assumption underlying our DiD analysis is that the trends in the outcome variables are similar for the treatment and control firms in the absence of the auditor switch. Thus, we graphically compare the trends for the treatment and control groups during the pre- and post-switch periods in Figure 1. We begin with a comparison of the number of DICE with the number of NDICE surrounding the auditor switches. Figure 1a shows that while the number of DICE and NDICE exhibit a generally similar trend before the auditor switch, the number of DICE increases sharply from year -1 to 1. In contrast, the number of NDICE drops slightly from year -1 to 1.[28] Figure 1b compares the magnitude of DICE with the magnitude of NDICE. While the magnitudes of DICE and NDICE have a similar trend before the auditor switch, the magnitude of DICE increases significantly from year -1 to 1, and the magnitude of NDCE increases only slightly from year -1 to 1. Taken together, the trends in Figure 1a and 1b are consistent with the findings in Table 3 and indicate that firms that switch auditors make more frequent and larger DICE after the auditor switch, consistent with firms successfully shopping for preferred accounting treatments.

Figures 1c to 1e present the parallel trend analysis for each of the three reporting quality variables. Figure 1c compares the frequency of income-decreasing restatements for the DICE and

[28] We also note that the number of DICE is fewer than the number of NDICE before the auditor switch, as expected. This is because, in the absence of opinion shopping, we expect a quarter of the changes in estimates to be DICE and three quarters of the changes to be NDICE, which comprises of discretionary income-decreasing changes, non-discretionary income-decreasing changes, and non-discretionary income-increasing changes.

control firms for the three years before and after the auditor switch. We observe that the trend in restatements is similar between the DICE and control firms before the switch. However, the frequency of restatements increases sharply for the DICE firms from the year before the switch to the year after, while the frequency of restatements stays flat for the control firms throughout the six-year period. Figure 1d compares the frequency of GC opinions for the DICE and control firms. It shows the percentage of GC starts to drop from year -2 to -1 and further drops from year -1 to 1.[29] In contrast, the frequency of GC for the control firms increases slightly from year -2 to -1 and further increases from year -1 to 1. Finally, Figure 1e compares the abnormal return between the DICE and control firms. We observe a similar trend in the abnormal return before the auditor switch, but the abnormal return drops significantly for the DICE firms from year -1 to 1, while it stays flat for the control firms.

Taken together, the parallel trend analysis in Figure 1 finds that the DICE and control firms have generally similar trends before the auditor switch, but after the auditor switch the DICE firms not only report more DICE but also are associated with more restatements, fewer GC, and lower abnormal returns. These findings provide validity for our dif-in-dif test and also provide corroborating evidence to our main findings.

3.3.5 Evidence from auditor change 8-K disclosures

In this section we examine whether information provided in the auditor change 8-K is consistent with opinion shopping by our treatment firms. Specifically, we examine the association between DICE and the timing of the auditor switch, the disclosure of an accounting dispute between the manager and predecessor auditor, whether management consulted with the successor

[29] The drop in GC frequency from year -2 for DICE firms is consistent with managers of the opinion shopping firms having some success in pressuring their predecessor auditors to accept a greater level of DICE in the year prior to the switch and thus lowering the likelihood of GC.

auditor, and whether the auditor resigned.[30] Table 7 presents the results of this analysis. Column (1) finds a significant positive coefficient on both AFTER×4THQ and AFTER×DISPUTE, but an insignificant coefficient on AFTER×CONSULT and AFTER×RESIGN.[31] We also perform falsification tests in Column (2) find that none of the auditor change 8-K variables are associated with the placebo firms. Column (3) finds a significant positive coefficient on AFTER×4THQ when the magnitude of DICE is the dependent variable, but the coefficient on AFTER×DISPUTE is insignificant. Column (4) finds that none of the auditor change 8-K variables are associated with the magnitude of changes in estimates for placebo firms. Overall, our analysis in Table 7 provides further evidence that is consistent with opinion shopping motivating the auditor changes among our treatment firms.

3.4 Evidence from the ex-ante probability that managers consider the auditor's propensity to allow income-increasing changes in accounting estimates

Following the approach in Lennox (2000), we first model the likelihood of firms reporting an income-*increasing* (POSCHG) or income-*decreasing* change (NEGCHG) in accounting estimates as a function of the auditor switch (SWITCH), control variables from Model (1), and the interactions between SWITCH and the controls:[32]

[30] To implement these tests, we set 4THQ to 1 for auditor switches announced during the 4th quarter of the fiscal year, and 0 otherwise; we set DISPUTE to 1 if the 8-K report discloses a dispute over accounting treatment between the manager and the predecessor auditor, 0 otherwise; we set CONSULT to 1 if the 8-K disclosure indicates that the firm consulted with the successor auditor before the switch, 0 otherwise; we set RESIGN to 1 if the auditor resigns, and 0 otherwise. We then supplement Model (1) with the interaction terms between AFTER and each of the above four indicator variables.

[31] The marginal effect of AFTER_4THQ suggests that compared to benchmark firms, i.e., firms with no auditor-client dispute, no subsequent auditor consultation, and no auditor resignation, firms that switch auditor in the 4th quarter has 1.30% higher probability of reporting DICE after the switch. The marginal effect of AFTER_DISPUTE suggests that compared to the benchmark firms, firms that report manager-auditor dispute has 1.06% higher probability of reporting DICE after the switch.

[32] Note that this analysis includes both switchers and non-switchers. Due to the high cost of manually collecting footnote information, we are unable to assess whether the changes in accounting estimates are discretionary for the sample of non-switchers. Thus, discretion is not included in the model.

$$
\begin{aligned}
&POSCHG_{it} / NEGCHG_{it} = \alpha_0 + \alpha_1 SWITCH + \alpha_2 LAGPOSCHG_{it} / LAGNEGCHG_{it} + \alpha_3 SWITCH \\
&\times LAGPOSCHG_{it} / LAGNEGCHG_{it} + \alpha_4 TA_{it} + \alpha_5 ROA_{it} + \alpha_6 LOSS_{it} + \alpha_7 MERGER_{it} \\
&+\alpha_8 FIN_{it} + \alpha_9 LEV_{it} + \alpha_{10} SALEGR_{it} + \alpha_{11} ROAGR_{it} + \alpha_{12} ATGR_{it} + \alpha_{13} MB_{it} + \alpha_{14} BIG_{it} + \alpha_{15} SPECIALIST_{it} \\
&+\alpha_{16} LOGTENURE_{it} + \alpha_{17} AUDFEE_{it} + \alpha_{18} SWITCH \times TA_{it} + \alpha_{19} SWITCH \times ROA_{it} + \alpha_{20} SWITCH \times LOSS_{it} \\
&+\alpha_{21} SWITCH \times MERGER_{it} + \alpha_{22} SWITCH \times FIN_{it} + \alpha_{23} SWITCH \times LEV_{it} + \alpha_{24} SWITCH \times SALEGR_{it} \\
&+\alpha_{25} SWITCH \times ROAGR_{it} + \alpha_{26} SWITCH \times ATGR_{it} + \alpha_{27} SWITCH \times MB_{it} + \alpha_{28} SWITCH \times BIG_{it} \\
&+\alpha_{29} SWITCH \times SPECIALIST_{it} + \alpha_{30} SWITCH \times LOGTENURE_{it} + \alpha_{31} SWITCH \times AUDFEE + \varepsilon_{it}
\end{aligned}
\tag{5}
$$

Table 8 Panel A reports the results from the probit regression of equation (5). We find that the coefficient on SWITCH is significantly positive in Column (1). Since the regression also includes SWITCH×LAGPOSCHG, the coefficient on SWITCH captures the likelihood of reporting an income-increasing change in estimates for firms with LAGPOSCHG=0, i.e., firms that did not report an income-increasing change before the switch. The significant positive coefficient on SWITCH suggests that auditor switches significantly increase the likelihood of reporting an income-increasing change in estimates for firms without income-increasing changes before the switch.[33]

Using the coefficients in Column (1) of Panel A, we compute the predicted probability of each firm in our sample reporting an income-*increasing* change in estimate if the firm switches auditors (SWITCH=1), minus the predicted probability of reporting an income-*increasing* change in estimate if the firm does not switch auditors (SWITCH=0). We label this "opinion shopping variable" POSCHG_SCORE. A positive (negative) POSCHG_SCORE indicates a higher (lower) predicted probability of reporting an income-increasing change in estimate if the firm switches auditors than if the firm does not switch auditors. We repeat these steps using the coefficients in Column (2) of Panel A to compute the predicted probability of the firms in our sample reporting

[33] This finding is consistent with the finding in Lennox (2002) that the coefficient on SWITCH×LAGGC is significantly negative, which means that auditor switches significantly reduce the likelihood of GCs for firms that had a GC opinion before the switch.

income-*decreasing* changes in estimates (NEGCHG_SCORE).

We then apply the Lennox (2000) framework to estimate the following probit regression:

$$\begin{aligned} SWITCH_{it} &= \alpha_0 + \alpha_1 POSCHG\_SCORE_{it} + \alpha_2 NEGCHG\_SCORE_{it} + \alpha_3 BIG_{it} + \alpha_4 SPECIALIST_{it} \\ &+ \alpha_5 LOGTENURE_{it} + \alpha_6 OIMPORT_{it} + \alpha_7 FIMPORT_{it} + \alpha_8 REST_{it} + \alpha_9 TA_{it} + \alpha_{10} ROA_{it} + \alpha_{11} CFO_{it} \\ &+ \alpha_{12} LOSS_{it} + \alpha_{13} LEV_{it} + \alpha_{14} INV_{it} + \alpha_{15} REC_{it} + \alpha_{16} SALEGR_{it} + \alpha_{17} MB_{it} + \alpha_{18} MERGER_{it} + \alpha_{19} GC_{it} \\ &\alpha_{20} WEAK\_302_{it} + \alpha_{21} MISMATCH_{it} + \alpha_{22} DANALYST_{it} + \varepsilon_{it} \end{aligned} \quad (6)$$

Table 8 Panel B reports the results from this analysis, where SWITCH equals 1 if the firm switches auditors in year *t*, and 0 otherwise. We find that POSCHG_SCORE is significantly positive, which indicates that firms are more likely to switch auditors if their predicted likelihood of reporting an income-increasing change in estimate is higher under the switch scenario than under the non-switch scenario. This is consistent with managers considering the likelihood of reporting an income-increasing change in estimates in contemplating the auditor switch decision, consistent with opportunistic accounting treatments motivating opinion shopping. In contrast, we find that NEGCHG_SCORE is insignificant, suggesting that the expected likelihood of income-decreasing changes in estimates do not affect firms' decisions to switch auditors.

To further examine whether *ex ante* switchers search for auditors that allow income-increasing changes in estimates, we refine the switch dummy to take into account the likelihood that the new auditor's clients report changes in accounting estimates. This likelihood may be viewed as the new auditor's attitude towards allowing its clients to report changes in estimates. We first calculate the *unexpected likelihood* that an audit-office's clients will report an income-increasing change in estimates (excluding the switching firm of interest), by year. Specifically, we estimate Column (1) in Panel A excluding SWITCH and its interaction terms to obtain the predicted likelihood of having an income-increasing change in estimates for each firm-year. Then we subtract this predicted likelihood from the realized value to obtain the unexpected likelihood of

having an income-increasing change in estimates. We average this unexpected probability for the clients of each auditor office-year after excluding the focal firm, and compute AUDITOR_POSCHG. Higher values of AUDITOR_POSCHG indicate that the audit office has clients with a higher average unexpected likelihood of reporting an income-increasing change in estimates, consistent with the auditor office being more lenient in allowing their clients to report income-increasing changes in estimates. We repeat these steps for income-decreasing changes in estimates to obtain AUDITOR_NEGCHG for each auditor office-year, with higher values of AUDITOR_NEGCHG indicating that the audit office, on average, has clients with a higher unexpected likelihood of reporting an income-decreasing change in estimates.[34] We then compute the change in the auditor attitude (ΔAUDITOR_POSCHG) as the difference between AUDITOR_POSCHG for the successor auditor and the predecessor auditor, measured during the year before the auditor switch. We compute ΔAUDITOR_NEGCHG similarly. A positive ΔAUDITOR _POSCHG (ΔAUDITOR_NEGCHG) suggests that the successor auditor is more lenient toward income-increasing (more demanding toward income-decreasing) changes in estimates than the incumbent auditor.

Panel C of Table 8 presents the descriptive statistics for AUDITOR_POSCHG and AUDITOR_NEGCHG.[35] We observe that the average predecessor auditor's AUDITOR_POSCHG is -0.015, which is significantly lower than the 0.005 of the successor auditor. This suggests that successor auditors are more lenient in allowing income-increasing changes in estimates, compared

[34] Chen et al. (2016) uses a similar approach to calculate the audit partner's "conservatism" score toward modified audit opinions. However, their auditor conservatism score remains constant across years. We refine the methodology in Chen et al. (2016) by allowing each audit office's score toward changes in accounting estimate to vary each year.
[35] Among the 1,809 audit switches in the switcher sample, we exclude 283 observations due to missing values in calculating the AUDITOR_POSCHG or AUDITOR_NEGCHG for the successor or the predecessor auditor office.

to predecessor auditors.[36] In contrast, there is no significant difference between the mean AUDITOR_NEGCHG of the successor and predecessor auditor, indicating that successor auditors' clients do not have lower income-decreasing changes in estimates as compared with predecessor auditors.

Next we examine whether firms are more likely to switch to successor auditors that are more lenient towards income-increasing changes in estimates. We define $SWITCH\_Type_t$ to be equal to two if the successor auditor's clients have a higher average unexpected likelihood of reporting income-increasing changes in estimates as compared to clients of the predecessor auditor (ΔAUDITOR_POSCHG>0); one if the successor auditor's clients have a lower average unexpected likelihood of reporting income-increasing changes in estimates as compared to clients of the predecessor auditor (ΔAUDITOR _POSCHG<=0); and 0 for firms that do not switch. Panel D reports the results from a multinomial probit regression of $SWITCH\_Type_t$ on the opinion shopping variable and controls. Column (1) reports that POSCHG_SCORE is significantly positive when $SWITCH\_Type_t$ equals two, suggesting that firms are more likely to switch to more compliant auditors. The marginal effect of POSCHG_SCORE is 0.1309 in column (1), translating into a 2.47% (0.1309*0.01/0.053) increase in the probability of having an auditor switch, relative to the sample mean probability, for each 1% increase in POSCHG_SCORE. In contrast, we find that POSCHG_SCORE is insignificant in Column (2) when $SWITCH\_Type_t$ is equal to one, suggesting that firms are not more likely to switch to less lenient auditors.

In summary, using the framework in Lennox (2000), our results are consistent with auditor switching firms considering the expected likelihood of reporting an income-increasing change in

[36] Note that this difference is not driven by the firms that make income-increasing changes in estimates after the auditor switch because we exclude these firms in computing AUDITOR_POSCHG.

estimates in their switch decisions. In addition, switching firms are more likely to choose new auditors that are more lenient towards income-increasing changes in estimates.

3.6 Sensitivity analyses (untabluated)

3.6.1 Alternative measure of restatements

In our restatements analysis in Table 4, we include both annual and quarterly restatements. After restricting the restatements to annual restatements we find qualitatively similar results.

3.6.2 Alternative measure of stock returns

We use equal-weighted index returns in Table 6 and find similar results.

3.6.3 Earnings persistence as an alternative financial reporting quality measure

We also explore earnings persistence as an additional measure of financial reporting quality. We find that earnings persistence drops significantly after the auditor switch for the firms that report DICE, but not for firms that report other types of changes in estimates. Further, we find that the lower persistence of ROA is driven by the accrual component, not the cash flow component.

3.6.4 Constant sample

We repeat our Table 3 analysis after requiring our sample firms to have observations during all three years before and after the auditor switch, which reduces the sample size to 1,794 observations (representing 294 firms). This analysis continues to find a significantly higher likelihood of firms reporting DICE after the auditor switch as compared to firms reporting NDICE.

3.6.5 Alternative auditor change window

We repeat our analysis in Table 3 after including only one year after the auditor switch and find similar results.

3.6.6 The effects of switches to and from Big N auditors

Factors that may influence discretionary changes in estimates include operational changes, such as growth or contraction of a firm's operating activities, and our models include many control variables that attempt to capture these effects. One potential indication that a firm is undergoing operational changes is a switch from a Big 4 to a non-Big 4 auditor (a downgrade) or from a non-Big 4 to a Big 4 auditor (an upgrade). While the Big 4 dummy included in our DiD regressions controls for these effects, we perform an additional test to assure that our results are not confounded by auditor downgrades or upgrades. Specifically, we repeat our analysis in Table 3 after limiting our analysis to the 5,605 observations for 1,274 lateral switches in our sample (Big 4 to Big 4, and non-Big 4 to non-Big 4) and find that our results are qualitatively unchanged.[37]

4. Conclusions

We provide new evidence on opinion shopping by focusing on whether clients successfully shop for favorable accounting treatments. We find that firms that switch auditors are more likely to increase the frequency and magnitude of discretionary income-increasing changes in estimates after the switch. Importantly, these changes in estimates are associated with more restatements, fewer GCs, and lower market returns. Further, we find that firms consider the likelihood of reporting an income-increasing change in estimates in their switch decision, and that companies are more likely to switch to auditors whose clients have a greater likelihood of reporting income-increasing changes in estimates as compared with their predecessor auditor. Our evidence is consistent with managers successfully shopping for more compliant auditors who are willing to support a preferred reporting practice even though the practice lowers financial reporting quality. Our findings extend the literature by providing evidence that is consistent with managers

[37] We also perform the analysis in Table 3 for upgrade and downgrade switches. Using 2,551 observations for 466 downgrade switches, we find all results are similar to that in Table 3. We find the coefficient on AFTER is positive but insignificant (z=1.40) when DICE is the dependent variable for upgrade switches, possibly because the test power becomes weaker for the 69 upgrade switches.

successfully shopping for compliant auditors who allow the use of opportunistic accounting to meet management's reporting objectives.

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Appendix A – Motivation for the control variables used in the analyses

Table 3: The Likelihood of Changes in Accounting Estimates Before and After an Auditor Switch

We include *LAGCHGEST/LAGPOSCHG /LAGNEGCHG* to address the autocorrelation of changes in estimates across time. We include return on assets (*ROA*) and the occurrence of loss (*LOSS*) because poorly performing firms may make income-decreasing changes in estimate to reflect poor future prospects, and because they may have greater incentives to book income-increasing changes to mask the poor performance. We include size (*TA*) and mergers and acquisitions (*MERGER*) to proxy for the increased need to change estimates due to complexity. We include leverage (*LEV*) and external financing activities (*FIN*) to proxy for the effects of financing on incentives to manage earnings. We include sales growth (*SALEGR*), *ROA* growth (*ROAGR*), total asset growth (*ATGR*), and market-to-book- ratio (*MB*) to proxy for changes in operations and growth, which may be related for the need to revise estimates (Johnson and Lys 1990). Finally, we include big N auditor (*BIG*), specialist auditor (*SPECIALIST*) and auditor tenure (*LOGTENURE*) to proxy for auditor quality and the auditor's familiarity with the client (DeAngelo 1981; Reichelt and Wang 2010; Gu, Fung, and Jaggi 2009). Audit fees (*AUDFEE*) is included to control for the potential effects of fee-driven changes, such as lowballing.

Table 4: Changes in Accounting Estimates and Subsequent Financial Report Restatements

In addition to the control variables included in Table 3, we include several determinants of financial report misstatement based on prior research. We include *AGE* and *LOSS* as younger firms with less established accounting and control policy and loss firms are more likely to misstate (Lennox and Pittman 2010); we include *CUR_ACC* and the *EXFIN* because firms with greater current accruals and greater ex-ante demand for financing are more likely to engage in misreporting (Dechow, Ge, Larson and Sloan 2011; Dechow, Sloan, and Sweeney 1996). We include *OFFICESIZE* because audits conducted by large offices are of higher quality (Francis and Yu 2009). We include *OIMPORT*, *FIMPORT*, and *NAS* to control for the effect of client importance and non-audit service on audit quality (Paterson and Valencia 2011; Markelevich and Rosner 2013). Finally, we include material weakness in internal control (*WEAK_302*) and total audit fees (*AUDFEE*) because firms with weak internal controls and firms where the auditor spend more effort are more likely to report misstatements (Hribar, Kravet, and Wilson 2014; Czerney et al. 2014; Ettredge et al. 2014).

Table 5: Changes in Accounting Estimate and Auditor Going Concern Opinion for Financially Distressed Firms

We control for the effect of factors known to influence the likelihood of receiving a going concern auditor opinion, including firm size and age (*TA, AGE*), prior year losses (*LAGLOSS*), cash and short-term investments (*INVESTMENT*), current ratio (*CURR*), cash flow from operations (*CFO*), z-score (*ZSCORE*), market-to-book ratio (*MB*), Big N auditor (*BIG*), prior-year audit opinion (*LAGGC*) and audit delay (*DELAY*),. We expect that the probability of receiving a going concern opinion decreases with *SIZE*, *INVESTMENT*, *CURR*, *CFO* (Lim and Tan 2008; Reichelt and Wang 2010; DeFond and Lennox 2011), and increases with *LAGLOSS* (Lim and Tan 2008), *DELAY* (DeFond et al. 2002), *LAGGC* (Craswell et al. 2002), and *ZSCORE* (Lim and Tan 2008). We also control for total audit fees (*AUDFEE*) to account for the effect of audit effort on the issuance of a going concern opinion.

Table 6: Changes in Accounting Estimate and Stock Market Returns

We include *CH_NI* to control for the effect of changes in EPS on stock return. We include *BETA*, *VOLATILITY*, *ANALYST*, *LAGSIZE* and *LAGMB* to control for the effects of firm risk, analyst following, size, and growth on stock returns (Teoh and Wong 1993), and include *GC*, *WEAK_302*, *DELAY*, and *AUDFEE* to control for the effects of auditor going concern opinions, internal control quality, audit delay,

and total audit fees on stock returns (Hammersley, Myers, and Shakespeare 2008; Menon and Williams 2010).

Table 7: The likelihood of changes in estimates and auditor-change 8-K disclosures

We include the same set of control variables as those in table 3. We further include four indicator variables for the period after the auditor switch if (i) the switch is made during the fourth quarter of the fiscal year (*AFTER_4THQ*); (ii) any accounting treatment dispute between the manager and the predecessor auditor is disclosed in the 8-K disclosure (*AFTER_DISPUTE*); (iii) in the 8-K disclosure on auditor change, the firm admits consulting with the successor auditor within two years before the switch (*AFTER_CONSULT*); and (iv) auditor resignation is disclosed in the 8-K disclosure (*AFTER_RESIGN*).

Table 8: Auditor switch decision and the expected likelihood of reporting an income-increasing change in estimate using the Lennox (2000) framework

In Panel A, the dependent variable is income-increasing and income-decreasing change in accounting estimates (*POSCHG* and *NEGCHG*), so we include the same set of control variables as in Table 3. Following Lennox 2000), we also include auditor switch (*SWITCH*), the lagged value of income-increasing (*LAGPOSCHG*) and income-decreasing changes (*LAGNEGCHG*), as well as the interaction terms between *SWITCH* and each of the control variables. In Panel B, We follow prior literature in the inclusion of the control variables in the auditor switch model (Shu 2000; Ettredge et al.2007; Landsman et al. 2009; Newton et al. 2016). Specifically, we include Big N (*BIG*) and specialist auditor (*SPECIALIST*) status, auditor tenure (*LOGTENURE*), client importance measured at both the audit office (*OIMPORT*) and audit firm (*FIMPORT*) level, financial report restatements (*REST*), total assets (*TA*), return on assets (*ROA*), cash flows from operations (*CFO*), the occurrence of a loss (*LOSS*), financial leverage (*LEV*), inventory (*INV*) and receivable (*REC*) as a percentage of total assets, sales growth (*SALEGR*), market-to-book ratio (*MB*), merger and acquisition (*MERGER*), going concern audit opinion (*GC*), material weakness in internal control (*WEAK_302*), mismatch score (*MISMATCH*), and analyst following (*DANALYST*).

Appendix B – Variable Definitions

Variable		Definitions
Dependent Variables		
CHGEST	=	One if the firm makes a change in accounting estimate in the current year, zero otherwise.
DICE	=	One if the firm makes a discretionary change in accounting estimate that increases earnings in the current year, zero otherwise. A discretionary change is a change in estimate that is not motivated by the actions of a third party in the transaction. Based on SEC filings, we identify the following categories as third party: governance agency, plaintiff or defendant in a litigation, vendor, service provider, customer, insurance firm, independent appraiser, engineer, actuary, legal counsel, sublessee, the county-party in a merger or acquisition transaction.
NDICE	=	One if the firm makes a non-discretionary income-increasing change or an income-decreasing change in accounting estimate in the current year, zero otherwise.
CHGEST_MAG	=	The pre-tax effect of change in accounting estimate scaled by lagged total assets.
POSMAG	=	The pre-tax effect of income-increasing change in accounting estimate scaled by lagged total assets.
NEGMAG	=	The pre-tax effect of income-decreasing change in accounting estimate scaled by lagged total assets.
DICE_MAG	=	The pre-tax effect of discretionary income-increasing change in accounting estimate scaled by lagged total assets.
NDICE_MAG	=	The pre-tax effect of non-discretionary income-increasing or any income-decreasing change in accounting estimate scaled by lagged total assets.
REST_Dec	=	One if any of the current year quarterly or annual report has subsequent income-decreasing restatement due to an income-increasing misstatement in the original financial report, zero otherwise.
REST_MAG	=	Restated net income minus the original net income scaled by lagged total assets.
GC	=	One if the auditor issues a going-concern opinion for the current year, zero otherwise.
ABRET	=	Abnormal stock return for the current fiscal year. It is calculated as monthly stock returns accumulated from the beginning of the fourth month after the end of the prior fiscal year to the third month after the end of the current fiscal year adjusted by value-weighted market index return.
Test Variable		
AFTER	=	One for the first three years after the auditor switch, and zero for the last three years before the auditor switch.
Variables used in the Descriptive Statistics (Table 2)		
DISCRET	=	One if the change in estimate is not motivated by the actions of a third party in the transaction, zero otherwise on SEC filings, we identify the following categories as third party: governance agency, plaintiff or defend litigation, vendor, service provider, customer, insurance firm, independent appraiser, engineer, actuary counsel, sublessee, the county-party in a merger or acquisition transaction.
NONDISCRET		One if the change in estimate is motivated by the actions of a third party in the transaction, zero otherwise.
POSMAG	=	The pre-tax effect of income-increasing change in accounting estimate scaled by lagged total assets.
NEGMAG	=	The pre-tax effect of income-decreasing change in accounting estimate scaled by lagged total assets.
Control Variables in the Change in Estimate Regression (Table 3)		
LAGCHGEST	=	Lagged value of CHGEST.
LAGPOSCHG	=	Lagged value of POSCHG.
LAGNEGCHG	=	Lagged value of NEGCHG.
TA	=	Natural log of total assets: $\ln(AT_t)$.
ROA	=	Return on lagged total assets: (IB_t/AT_{t-1}).
LOSS	=	One if a firm incurred a loss in the current year, zero otherwise.
MERGER	=	One if the firm had an acquisition that contributed to sales ($AQS_t>0$), zero otherwise.
FIN	=	One if the sum of newly issued long-term debt plus new equity exceeds 2 percent of lagged total assets $((DLTIS_t + SSTK_t)/((AT_{t-1})>2\%)$, zero otherwise.
LEV	=	Leverage ratio calculated as total liabilities divided by total assets: $((LT_t)/AT_t)$.

SALEGR	=	Sales growth calculated as the current-year sale minus prior year sale divided by prior year sale: $((SALE_t-SALE_{t-1})/SALE_{t-1})$.
ROAGR	=	Return on asset growth calculated as the current-year ROA minus prior year ROA divided by prior year ROA: $((ROA_t-ROA_{t-1})/ROA_{t-1})$.
ATGR	=	Asset growth calculated as the current-year asset minus prior year assets divided by prior year assets: $((AT_t-AT_{t-1})/AT_{t-1})$.
MB	=	Book-to-market ratio at the end of the fiscal year: $(CEQ_t)/(PRCC\_F_t*CSHO_t)$.
BIG	=	One if the client selects one of the Big 4 accounting firms, zero otherwise.
SPECIALIST	=	One 1 if in a particular year the accounting firm has the largest market share of audit fee revenue in the client's industry (by two digit SIC code) and its market share is at least 10 percent greater than the second industry leader in the market, zero otherwise.
LOGTENURE	=	Natural log of the number of years the firm is audited by the same audit firm.
AUDFEE	=	Natural log of total audit fees received from the auditor by the client during the current year.
Additional Control Variables in the Restatement Regression (Table 4)		
CUR_ACC	=	Change in noncash current assets from year t-1 to t scaled by average total assets. [(ΔCurrent assets-ΔCash and short-term investments)-(ΔCurrent liabilities - ΔDebt in current liabilities-ΔTaxes payable)] / Average total assets. $((\Delta ACT_t-\Delta CHE_t)-(\Delta LCT_t-\Delta DLC_t-\Delta TXP_t))/((AT_t+AT_{t-1})/2)$.
EXTFIN	=	1 if FREECASH<-0.5, 0 otherwise. FREECASH is cash flows from operations minus average capital expenditure scaled by lagged current assets, $(OANCF_t$ - average $CAPX_t)/ACT_{t-1}$. Capital expenditures are averaged over the preceding three years (t-3 to t-1) if data CAPX is available in each year. Capital expenditures are averaged over the preceding two years (t-2 to t-1) if data CAPX is unavailable in year t-3. Capital expenditures are lagged by 1 year (t-1) if data CAPX is unavailable in year t-2.
OFFICESIZE	=	Natural log of the number of total audit clients of an audit office.
OIMPORT	=	Total fees from the client divided by total fee income of the same audit office.
FIMPORT	=	Total fees from the client divided by total fee income of the same audit firm.
NAS	=	Non-audit fees divided by total fees from the client.
WEAK_302	=	Equals one if the firm report material weakness in internal control under SOX 302 during the current year, zero otherwise.
Additional Control Variables in the GC Regression (Table 5)		
AGE	=	Natural log of the number of years since the firm's IPO.
LAGLOSS	=	Lagged value of LOSS.
INVESTMENT	=	Cash and short-term investment securities scaled by total assets.
CURR	=	Current ratio calculated as current assets divided by total assets (ACT_t/AT_t).
CFO		Cash flow from operations divided by lagged total assets $(OANCF_t/AT_t)$.
ZSCORE	=	Zmijewski (1984) score.
LAGGC	=	Lagged value of GC.
DELAY	=	Natural logarithm of the number of days from fiscal year-end to the signature date of audit opinion.
Additional Control Variables in the Stock Return Regression (Table 6)		
CH_NI	=	Change in net income. It is calculated as change in earnings per share before extraordinary items between the current and prior fiscal year scaled by stock price per share at the beginning of the current fiscal year.
BETA	=	Market model beta for the fiscal year.
VOLATILITY	=	Variance of the stock return over the fiscal year.
ANALYST	=	The number of analysts following a firm during the current year.
LAGSIZE	=	Lagged value of SIZE, which is the market capitalization of equity at end of the year.
LAGMB	=	Lagged value of market-to-book ratio.
Additional Conditioning Variables in Auditor Change 8-K Analysis (Table 7)		
4THQ	=	One if the auditor switch occurs during the 4th quarter of the fiscal year, zero otherwise.
DISPUTE	=	One if in 8-K disclosure on auditor change, the firm discloses disputes in accounting treatment with the predecessor auditor, and zero otherwise.

CONSULT	=	One if in the 8-K disclosure, the firm reports consulting with the successor auditor before the switch, and zero otherwise.
RESIGN	=	One if the auditor resigns from the engagement, zero otherwise.
Dependent Variables used in the Lennox (2000) analysis (Table 8)		
POSCHG	=	One if the firm makes a change in accounting estimate that increases earnings in the current year, zero
NEGCHG	=	One if the firm makes a change in accounting estimate that decreases earnings in the current year, zero
SWITCH	=	Equals one for the first year following the switch to a new auditor, zero otherwise.
POSCHG _SCORE	=	Difference in the predicted probability of having an income-increasing change in estimate if the firm switches the auditor relative to if the firm does not switch the auditor. A positive (negative) POSCHG_SCORE indicates a higher (lower) probability of having an income-increasing change in estimate if the firm switches the auditor.
NEGCHG _SCORE	=	Difference in the predicted probability of having an income-decreasing change in estimate if the firm switches the auditor relative to if the firm does not switch the auditor. A positive (negative) NEGCHG_SCORE indicates a higher (lower) probability of having an income-decreasing change in estimate if the firm switches the auditor.
AUDITOR _POSCHG	=	The average unexpected likelihood of clients reporting an income-increasing change in estimate at the audit office-year level. Following Chen, Peng, Xue, Yang, and Ye (2016), we first estimate a firm's expected likelihood of reporting an income-increasing changes in estimates by excluding SWITCH and its interaction terms from the first stage estimation in the Lennox (2000) approach. Then we subtract this expected likelihood from the actual value of having an income-increasing change in estimate to obtain an unexpected likelihood of having an income-increasing change in estimate. We average this unexpected probability for clients of each auditor office-year after excluding the focal firm and obtain the average unexpected likelihood of clients reporting an income-increasing change in estimate at the auditor office-year level.
AUDITOR _NEGCHG	=	The average unexpected likelihood of clients reporting an income-decreasing change in estimate at the audit office-year level, calculated similarly to AUDITOR_POSCHG above by replacing income-increasing changes with income-decreasing changes in estimates.
SWITCH_TYPE	=	Equals two if the firm switches the auditor in year t and, and the new auditor's clients have higher unexpected likelihood of income-increasing changes in estimate than the incumbent auditor's clients during the year prior to the auditor switch (ΔAUDITOR_POSCHG$_t$>0); one if the new auditor's clients have lower unexpected likelihood of income-increasing changes than the incumbent auditor's clients during the year prior to the auditor switch (ΔAUDITOR _POSCHG$_t$<=0); and 0 if a firm does not switch the auditor. ΔAUDITOR_POSCHG$_t$ is the difference in AUDITOR_POSCHG$_t$ between the new auditor office and the incumbent auditor office.
Additional Control Variables in the Auditor Switch Regression (Table 8)		
REST	=	One if any of the current year quarterly or annual report of the firm is subsequently restated, zero otherwise.
INV	=	Inventory scaled by total assets ($INVT_t/AT_t$).
REC	=	Accounts receivable scaled by total assets ($RECT_t/AT_t$).
LAG_MISMATCH	=	The lagged value auditor-client mismatch score calculated based on Shu (2000).
DANALYST	=	Equals one if the firm has analyst following during the current year, zero otherwise.

Figure 1. Parallel trend analysis

Figure 1a

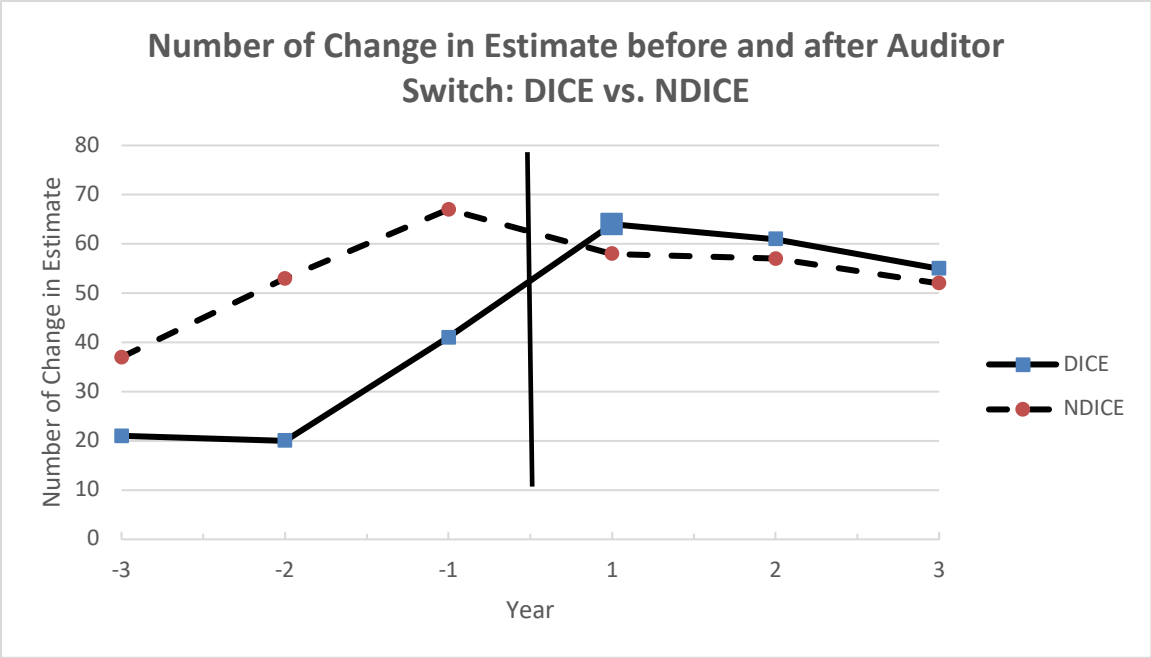


Figure 1b

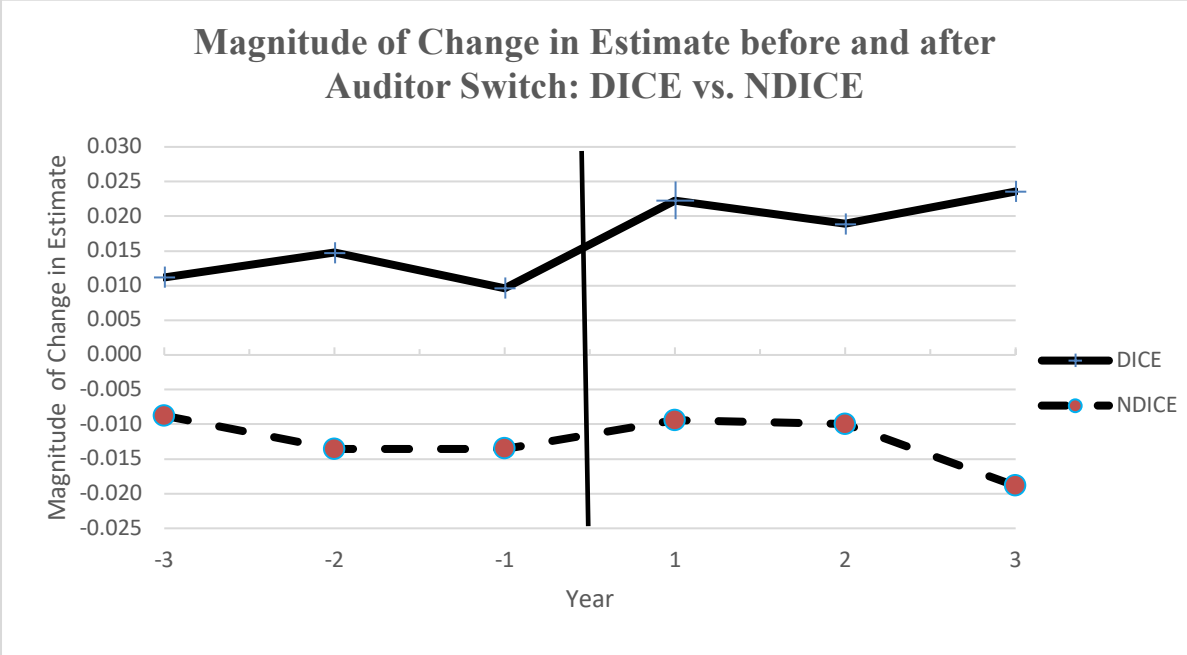


Figure 1c: (Table 4)

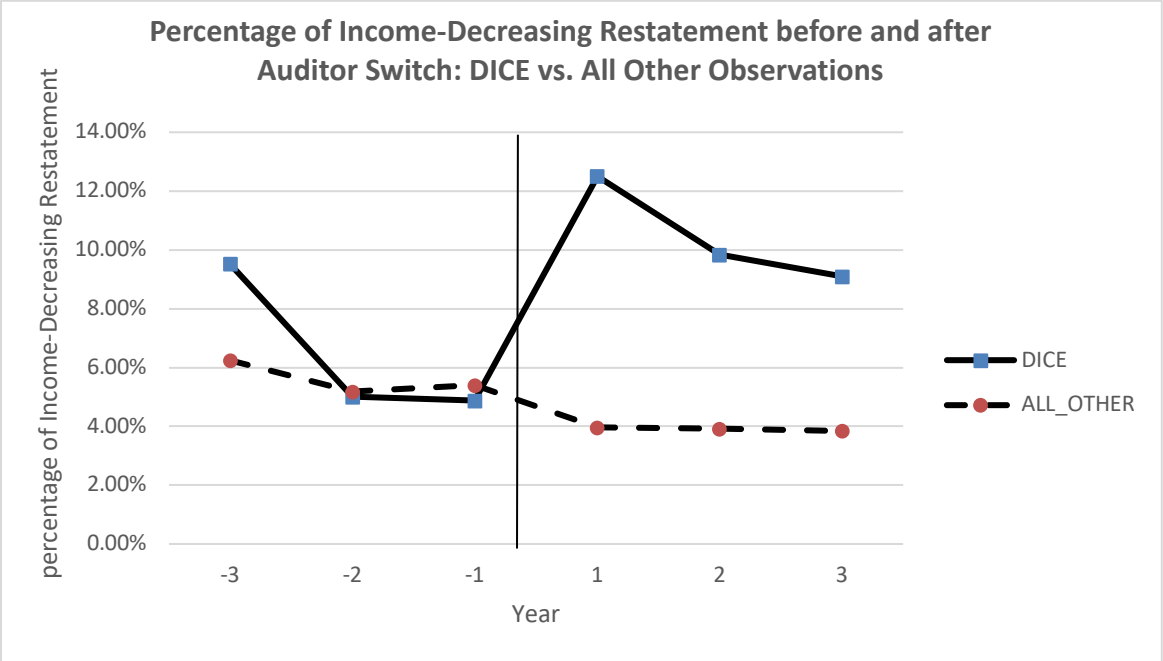


Figure 1d: (Table 5)

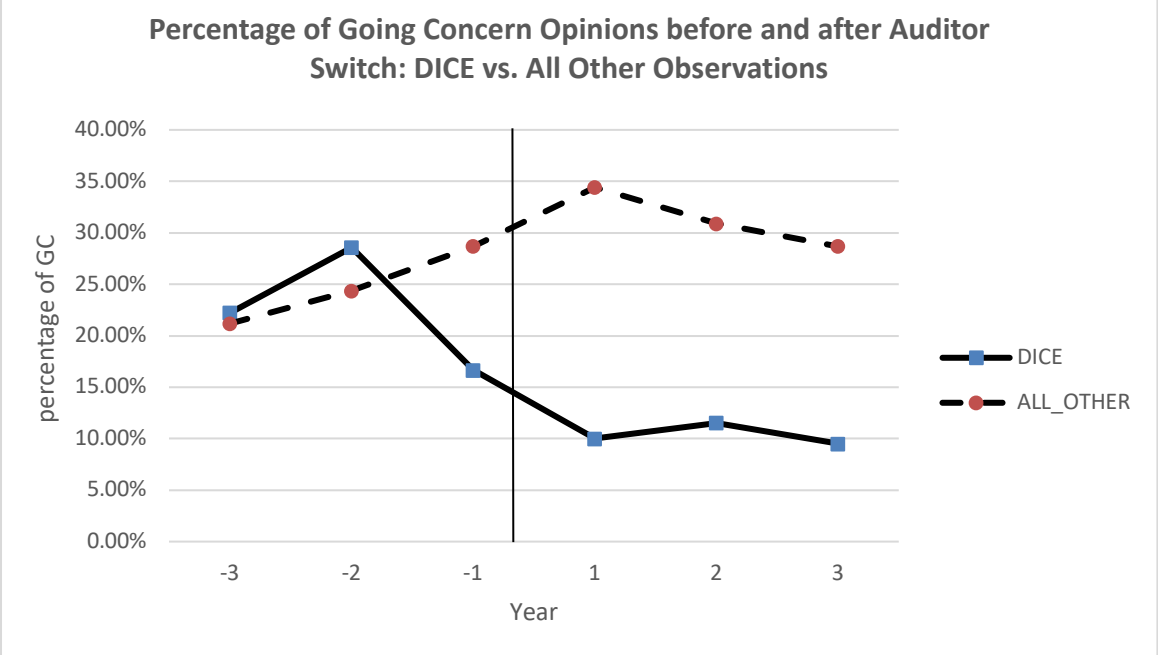
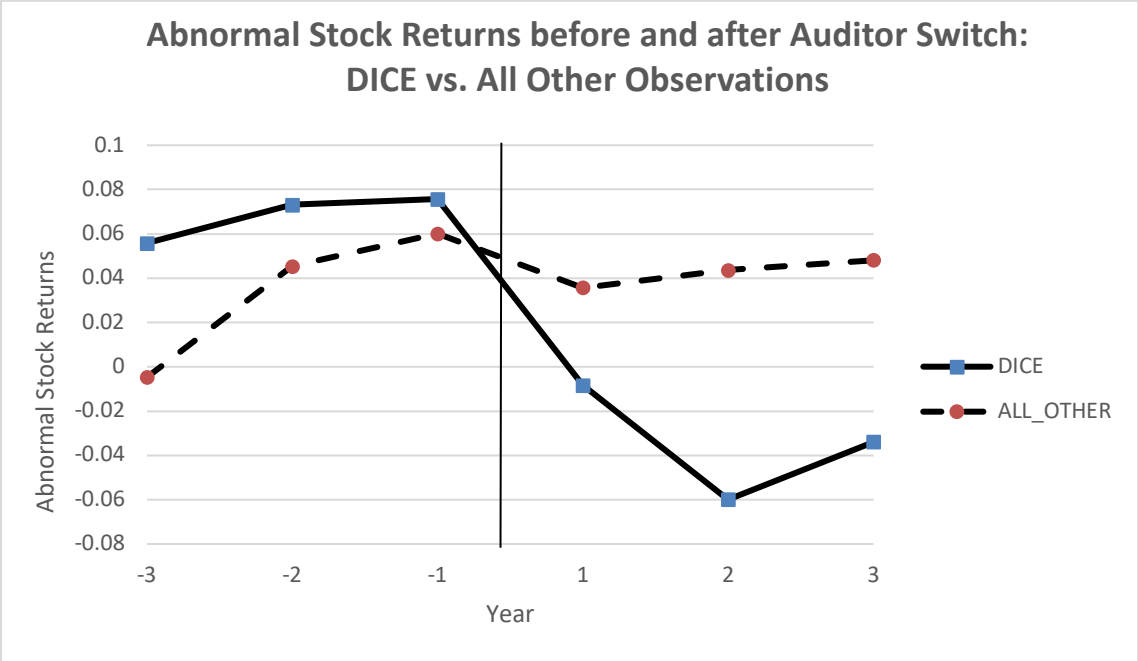


Figure 1e: (Table 6)



This figure presents an analysis of parallel trends. Figure 1a graphs the number of DICE and NDICE in the three years before and after the auditor switch. Figure 1b graphs the magnitude of DICE and NDICE in the three years before and after the auditor switch. The sample is comprised of 586 firm-year observations with changes in accounting estimates. Figure 1c plots the percentage of income-decreasing restatements for the treatment (DICE) firm and control (NDICE and no-change-in-estimates) firms respectively. Figure 1d plots the percentage of going-concern opinions for treatment and control firms respectively. Figure 1d plots the annual abnormal returns for treatment and control firms respectively. The sample is comprised of 8,484 firm-year observations for firms with at least one auditor switch during the sample period.

Table 1 - Sample Selection Process

	Firm-years
Observations in COMPUSTAT with at least one auditor change during 2004-2015	40,646
Less: observations with missing value for audit-related control variables	(13,093)
Less: observations with missing value for non-audit related control variables	(5,392)
Less: observations in financial services and regulated industries	(828)
Less: observations without enough data in the six-year window around the auditor switch	(10,964)
Less: observations associated with auditor switch due to auditor or client merger	(835)
Less: observations with overlap between the pre- or post-switch period	(1,047)
Final sample for change in estimate regression (Tables 3 and 4)	8,484
Number of unique firms in the final sample (Tables 3 and 4)	1,528
Number of auditor switch in the final sample (Tables 3 and 4)	1,809
Less: non-financially distressed observations	(3,573)
Less: observations with missing value for additional control variables	(699)
Final sample for audit going concern opinion regression (Table 5)	4,212
Number of unique firms in the going concern sample (Table 5)	837
Number of auditor switch in the going concern sample (Table 5)	963
Less: observations with missing value for stock market return tests	(3,863)
Final sample for stock market return tests (Table 6)	4,621
Number of unique firms in the stock return sample (Table 6)	811
Number of auditor switch in the stock return sample (Table 6)	918
Less: observations with missing value for 8-K disclosures	(1,265)
Final sample for change in estimate and auditor-change 8-K tests (Table 7)	7,219
Number of unique firms for change in estimate and auditor-change 8-K tests (Table 7)	1,386
Number of auditor switch for change in estimate and auditor-change 8-K tests (Table 7)	1,628
Sample Selection for the Lennox (2000) regression (Table 8)	
Observations in COMPUSTAT without any auditor change during 2004-2015	67,122
Less: observations with missing value for audit-related control variables in Audit Analytics	(40,401)
Less: observations with missing value for non-audit related control variables	(5,099)
Less: observations in financial service and regulated industry	(1,274)
Observations for non-switching firms in step 1 of Lennox (2000) regression (Table 8 Panel A)	20,348
Observations for switching firms in step 1 of Lennox (2000) regression (Table 8 Panel A)	8,484
Total observations in step 1 of Lennox (2000) regression (Table 8 Panel A)	28,832
Less: observations with missing value for auditor score in step 2 of Lennox (2000) regression	(283)
Final sample in step 2 of Lennox (2000) regression (Table 8 Panels B and D)	28,549
Number of unique firms in step 2 of Lennox (2000) regression (Table 8 Panels B and D)	5,850
Number of auditor switch in step 2 of Lennox (2000) regression (Table 8 Panels B and D)	1,526

Table 2 - Descriptive Statistics

Panel A Descriptive statistics of the variables used in the analyses

	N	Mean	Median	Std Dev
Dependent Variables				
CHGEST	8,484	0.069	0.000	0.254
DICE	8,484	0.041	0.000	0.198
NDICE	8,484	0.028	0.000	0.165
CHGEST_MAG	586	0.001	0.001	0.051
POSMAG	348	0.017	0.004	0.045
NEGMAG	238	-0.022	-0.006	0.050
DICE_MAG	262	0.018	0.004	0.050
NDICE_MAG	324	-0.012	-0.003	0.047
REST_Dec	8,484	0.048	0.000	0.214
REST_MAG	1,151	-0.007	0.000	0.086
GC	4,212	0.287	0.000	0.452
ABRET	4,622	0.030	-0.094	0.601
Test Variable				
AFTER	8,484	0.524	1.000	0.499
Control Variables – Change in estimate analysis (Table 3)				
LAGCHGEST	8,484	0.058	0.000	0.233
LAGPOSCHG	8,484	0.032	0.000	0.177
LAGNEGCHG	8,484	0.025	0.000	0.157
TA	8,484	4.516	4.541	2.531
ROA	8,484	-0.324	-0.012	1.052
LOSS	8,484	0.530	1.000	0.499
MERGER	8,484	0.101	0.000	0.301
FIN	8,484	0.591	1.000	0.492
LEV	8,484	0.975	0.488	2.256
SALEGR	8,484	0.231	0.066	0.987
ROAGR	8,484	-0.277	-0.185	4.245
ATGR	8,484	0.155	0.030	0.634
MB	8,484	2.161	1.540	7.704
BIG	8,484	0.436	0.000	0.496
SPECIALIST	8,484	0.133	0.000	0.339
LOGTENURE	8,484	1.691	1.609	0.723
AUDFEE	8,484	12.796	12.735	1.411
Additional Control Variables – Restatement analysis (Table 4)				
CUR_ACC	8,484	-0.018	0.003	0.228
EXTFIN	8,484	0.107	0.000	0.309
OFFICESIZE	8,484	15.667	15.656	2.120
OIMPORT	8,484	0.193	0.069	0.282
FIMPORT	8,484	0.067	0.002	0.175
NAS	8,484	0.132	0.085	0.147

WEAK_302	8,484	0.180	0.000	0.385
Additional Control Variables – Going Concern Opinion analysis (Table 5)				
AGE	4,212	2.402	2.398	0.702
LAGLOSS	4,212	0.754	1.000	0.431
INVESTMENT	4,212	0.255	0.153	0.263
CURR	4,212	0.560	0.577	0.278
CFO	4,212	-0.274	-0.060	0.580
ZSCORE	4,212	7.623	-0.094	26.108
LAGGC	4,212	0.250	0.000	0,.433
DELAY	4,212	4.420	4.419	0.331
Additional Control Variables – Stock market return analysis (Table 6)				
CH_NI	4,621	0.020	0.004	0.426
BETA	4,621	1.012	0.979	0.655
VOLATILITY	4,621	0.152	0.130	0.090
ANALYST	4,621	3.107	1.000	4.720
LAGSIZE	4,621	5.425	5.259	1.964
LAGMB	4,621	2.820	1.828	6.241
Additional Conditioning Variables in Auditor Change 8-K Analysis (Table 7)				
4THQ	7,219	0.140	0.000	0.347
DISPUTE	7,219	0.256	0.000	0.437
CONSULT	7,219	0.020	0.000	0.139
RESIGN	7,219	0.221	0.000	0.415
Additional Control Variables – Auditor switch analysis (Table 8)				
SWITCH	28,549	0.053	0.000	0.225
POSCHG_SCORE	28,549	0.012	0.014	0.034
NEGCHG_SCORE	28,549	0.003	0.002	0.024
AUDITOR_POSCHG	28,549	0.002	-0.020	0.098
AUDITOR_NEGCHG	28,549	0.001	-0.017	0.082
SWITCH_TYPE	28,549	0.081	0.000	0.361
REST	28,549	0.122	0.000	0.328
INV	28,549	0.100	0.056	0.123
REC	28,549	0.136	0.113	0.114
LAG_MISMATCH	28,549	0.086	0.000	0.400
DANALYST	28,549	0.547	1.000	0.498

Panel B: Univariate comparison of the likelihood of changes in estimates before and after the auditor switch (N=8,484)

	After Switch		Before Switch		Mean Difference		Median Difference	
Likelihood of changes	(1)	(2)	(3)	(4)	(1)-(3)		(2)-(4)	
	mean	median	mean	median	Mean Diff.	t-stat	Median Diff.	z-stat
CHGEST	0.078	0.000	0.059	0.000	0.019	3.46***	0.000	3.44***
DISCRET	0.058	0.000	0.042	0.000	0.016	3.30***	0.000	3.28***
NONDISCRET	0.020	0.000	0.017	0.000	0.003	1.16	0.000	1.15
POSCHG	0.051	0.000	0.030	0.000	0.021	4.80***	0.000	4.86***
DISCRET	0.041	0.000	0.020	0.000	0.020	5.47***	0.000	5.38***
NONDISCRET	0.010	0.000	0.010	0.000	0.000	0.21	0.000	0.21
NEGCHG	0.027	0.000	0.029	0.000	-0.002	-0.48	0.000	-0.48
DISCRET	0.017	0.000	0.022	0.000	-0.005	-1.55	0.000	-1.56
NONDISCRET	0.010	0.000	0.007	0.000	0.003	1.47	0.000	1.46
N	4,443	4,443	4,041	4,041				
		t-stat		t-stat				
POSCHG/CHGEST	0.651	5.91***	0.510	0.33				
POSCHG_DISC/CHGEST_DISC	0.703	7.10***	0.482	-0.46				
POSCHG_NONDISC/CHGEST_NONDISC	0.506	0.10	0.580	1.33				

Panel C: The comparison of the frequency of the changes in accounting estimates before or after the auditor switch, partitioned by whether the change is discretionary or non-discretionary, income-increasing or income-decreasing (N=586)

	Before Switch		After Switch		
	Income-increasing	Income-decreasing	Income-increasing	Income-decreasing	Total
Non-discretionary	40	29	46	45	160
Discretionary	82	88	180	76	426
Total	122	117	226	121	586
Chi-Square	1.86		11.55		
p-value	0.200		<0.001		

Panel D: Univariate comparison of the magnitude of changes in estimates before and after the auditor switch (N=586)

	After Switch			Before Switch			Mean Difference		Median Difference	
Magnitude of changes		(1)	(2)		(3)	(4)	(1)-(3)		(2)-(4)	
	N	mean	median	N	mean	median	Mean Diff.	t-stat	Median Diff.	z-stat
CHGEST_MAG	347	0.005	0.001	239	-0.004	0.000	0.009	2.38**	0.001	3.67***
DISCRET	256	0.009	0.002	170	-0.004	0.000	0.013	2.81***	0.002	4.56***
NONDISCRET	91	-0.006	0.000	69	-0.006	0.001	0.000	0.01	-0.001	0.21
POSMAG	226	0.019	0.005	122	0.013	0.003	0.006	1.53	0.002	1.71*
DISCRET	180	0.022	0.005	82	0.011	0.003	0.011	2.03**	0.002	1.72*
NONDISCRET	46	0.012	0.006	40	0.016	0.004	-0.004	-0.86	0.002	0.70
NEGMAG	121	-0.021	-0.006	117	-0.022	-0.006	0.001	0.19	0.000	0.33
DISCRET	76	-0.020	-0.004	88	-0.018	-0.005	-0.002	-0.27	0.001	0.12
NONDISCRET	45	-0.024	-0.007	29	-0.037	-0.014	0.013	0.98	0.007	0.99

Panel E: Reasons of the changes in accounting estimates, partitioned by whether the change is discretionary or non-discretionary, before or after the auditor switch, and income-increasing or income-decreasing (N=586)

			Non-discretionary changes in accounting estimates				Discretionary changes in accounting estimates			
Reasons	Subtotal		Before Switch		After Switch		Before Switch		After Switch	
			Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.
Useful life and salvage value for L-T assets	147	25.09%	1	12	5	6	25	17	50	31
Revenue recognition	58	9.90%	4	5	8	2	1	5	25	8
Tax related issues	55	9.39%	8	1	14	4	9	3	15	1
Costs for restructure, merger, acquisition, and discontinued operations	51	8.70%	3	0	1	7	13	14	7	6
Forfeiture rate for stock-based compensation	41	7.00%	4	1	3	3	6	9	12	3
Legal and professional liability expense	39	6.66%	4	3	5	5	2	9	7	4
Accruals for compensation, pension, or severance pay	35	5.97%	8	2	3	3	9	1	8	1
Costs of sales	27	4.61%	3	1	2	1	4	5	6	5
Accruals for product warranty	24	4.10%	2	2	0	2	4	3	10	1
Accruals for sublease liability	20	3.41%	1	0	1	3	1	9	3	2
Reserve for inventory write-down	19	3.24%	0	1	1	1	1	3	9	3
Accounts receivable collection	15	2.56%	1	0	0	4	1	3	5	1
Sales returns	9	1.54%	1	0	0	1	2	3	1	1
Gift card breakage revenue	8	1.37%	0	0	1	0	1	0	3	3
Accounts payable and trade payable	5	0.85%	0	0	1	0	1	0	3	0
Accruals for air travel mileage	3	0.51%	0	0	0	0	1	2	0	0
Valuation reserve	3	0.51%	0	0	0	1	0	0	0	2
Medicaid rebate estimates	2	0.34%	0	0	0	0	0	1	1	0
Other	25	4.27%	0	1	1	2	1	1	15	4
Total	586	100.00%	40	29	46	45	82	88	180	76

This table presents the descriptive statistics. Panel A reports the descriptive statistics for the variables used in the analyses. Panel B presents univariate comparisons of the likelihood of a change in estimates before and after an auditor switch. Panel C compares the frequency of the changes in accounting estimates partitioned by whether the change is before or after the auditor switch, discretionary or non-discretionary, income-increasing or income-decreasing. Panel D presents univariate comparisons of the magnitude of a change in estimates before and after an auditor switch. Panel E presents the frequency of changes in estimates categorized by the underlying accounting event, partitioned by whether the change is discretionary or non-discretionary, before or after the auditor switch, and income-increasing or income-decreasing.

Table 3 - The Likelihood of Changes in Accounting Estimates Before and After an Auditor Switch

	(1) CHGEST	(2) DICE	(3) NDICE	(4) CHGEST_MAG	(5) DICE_MAG	(6) NDICE_MAG
Sample	Full	Full	Full	CHGEST=1	CHGEST=1	CHGEST=1
AFTER	0.430***	0.852***	0.038	0.013**	0.015**	-0.001
	(3.61)	(5.18)	(0.23)	(2.45)	(1.97)	(-0.14)
LAGCHGEST	1.693***			-0.001		
	(12.25)			(-0.22)		
LAGPOSCHG		1.744***	1.125***		0.016*	0.008
		(8.56)	(4.74)		(1.68)	(1.43)
LAGNEGCHG		0.905***	1.999***		0.002	-0.008
		(3.29)	(10.08)		(0.44)	(-1.25)
TA	0.004	-0.049	0.052	-0.007**	-0.009***	-0.005*
	(0.09)	(-0.70)	(0.91)	(-2.56)	(-2.61)	(-1.71)
ROA	0.116	0.028	0.306*	-0.024**	-0.028***	0.041***
	(0.99)	(0.21)	(1.86)	(-2.25)	(-3.11)	(2.75)
LOSS	0.022	-0.279*	0.297**	-0.013***	-0.013**	0.009
	(0.20)	(-1.83)	(2.09)	(-3.32)	(-2.34)	(1.54)
MERGER	0.211	0.177	0.230	-0.004	-0.022***	0.007
	(1.43)	(0.88)	(1.14)	(-0.77)	(-2.93)	(1.16)
FIN	0.017	-0.063	0.115	-0.005	-0.006	0.011*
	(0.16)	(-0.41)	(0.90)	(-1.08)	(-0.91)	(1.80)
LEV	-0.247*	-0.144	-0.452*	0.022**	0.025**	-0.002
	(-1.95)	(-1.41)	(-1.82)	(2.33)	(2.09)	(-0.28)
SALEGR	0.065	0.145**	-0.043	0.003	-0.001	-0.001
	(1.12)	(2.04)	(-0.52)	(1.18)	(-0.46)	(-0.39)
ROAGR	-0.006	-0.003	-0.005	0.001*	0.000	0.001***
	(-0.45)	(-0.14)	(-0.37)	(1.89)	(0.91)	(3.03)
ATGR	-0.180*	-0.102	-0.263*	0.018***	0.032***	-0.005
	(-1.76)	(-0.72)	(-1.91)	(2.91)	(3.93)	(-0.93)
MB	-0.010	-0.012	-0.006	0.000	-0.000	-0.000
	(-1.55)	(-1.41)	(-0.86)	(0.02)	(-0.06)	(-0.37)
BIG	0.122	0.162	0.075	0.006	0.007	-0.000
	(0.96)	(0.88)	(0.44)	(1.13)	(1.15)	(-0.07)
SPECIALIST	-0.028	-0.043	-0.008	0.003	-0.001	0.003
	(-0.20)	(-0.22)	(-0.05)	(0.42)	(-0.13)	(0.42)
LOGTENURE	0.082	0.070	0.074	0.005*	0.011	0.001
	(1.05)	(0.60)	(0.75)	(1.70)	(1.51)	(0.23)
AUDFEE	0.318***	0.296***	0.294***	0.000	0.002	-0.000

	(4.14)	(2.73)	(2.99)	(0.08)	(0.60)	(-0.07)
INTERCEPT	-7.514***	-7.839***	-8.074***	0.023	0.029	-0.004
	(-8.44)	(-6.30)	(-6.96)	(0.70)	(0.64)	(-0.08)
Industry Fixed Effects	Included	Included	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included	Included	Included
pseudo R^2	0.116	0.092	0.116	0.246	0.522	0.124
N	8,484	8,484	8,484	586	262	324
Area under ROC curve	0.753	0.745	0.788	N/A	N/A	N/A
Coefficient Difference						
Column (2) versus (3)		0.814***				
Column (5) versus (6)					0.016*	
Marginal effect of *After*	0.0255	0.0249	0.0026	N/A	N/A	N/A

This table presents regressions on the change in the frequency and magnitude of discretionary income-increasing changes in estimates after firms switch auditors compared to before the switch. The dependent variables are (1) an indicator variable for changes in estimates (CHGEST), (2) an indicator variable for discretionary income-increasing changes in estimates (DICE), (3) an indicator variable for all other changes in estimates (NDICE), (4) the magnitude for all changes in estimates (CHGEST_MAG), (5) the magnitude for discretionary income-increasing changes in estimates (DICE_MAG), (6) the magnitude for non-discretionary income-increasing or income-decreasing changes in estimates (NDICE_MAG). Columns (4)-(6) are estimated using only observations with changes in estimate, only observations with discretionary income-increasing changes in estimates, and only observations with non-discretionary income-increasing or income-decreasing changes in estimates. The treatment variable, AFTER, is an indicator variable equal to one for the three years after the auditor switch, and zero for the three years before the auditor switch. Columns (1)-(3) are estimated with the logistic regression, and columns (4)-(6) are estimated using the OLS regression. ***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% level, respectively. Appendix B provides detailed definitions of all variables.

Table 4 - Changes in Accounting Estimates and Subsequent Financial Report Restatements

	Full Sample						Observations with restatement	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Var.=	REST_Dec	REST_Dec	REST_Dec	REST_Dec	REST_MAG	REST_MAG	REST_MAG	REST_MAG
AFTER	-0.171	-0.062	-0.121	-0.092	0.000	-0.000	0.001	-0.005
	(-1.16)	(-0.42)	(-0.84)	(-0.63)	(0.50)	(-0.29)	(0.21)	(-0.59)
DICE	-0.431							
	(-0.79)							
AFTER× DICE	**1.446****							
	(2.38)							
NDICE		0.259						
		(0.82)						
AFTER× NDICE		-0.766						
		(-1.30)						
DICE_MAG			6.122		0.008		0.165	
			(0.34)		(0.05)		(0.56)	
AFTER× DICE_MAG			**5.105**		**-0.557*****		**-2.221*****	
			(0.28)		**(-3.61)**		**(-5.88)**	
NDICE_MAG				-0.270		0.002		-0.042
				(-0.04)		(0.25)		(-0.25)
AFTER× NDICE_MAG				8.847		-0.007		0.263
				(0.96)		(-0.65)		(0.98)
TA	0.160**	0.158**	0.162***	0.158**	-0.001*	-0.001	-0.002	-0.002
	(2.52)	(2.50)	(2.58)	(2.50)	(-1.82)	(-0.91)	(-0.48)	(-0.36)
AGE	-0.173*	-0.172*	-0.172*	-0.173*	0.001	0.001	0.002	0.002
	(-1.73)	(-1.72)	(-1.73)	(-1.74)	(1.19)	(1.21)	(0.47)	(0.66)
ROA	-0.000	0.000	0.017	-0.001	0.001	0.001	0.005	0.019
	(-0.00)	(0.00)	(0.11)	(-0.01)	(1.23)	(0.51)	(0.31)	(0.88)
LOSS	0.205	0.197	0.210	0.198	-0.001	-0.001	-0.004	-0.000
	(1.36)	(1.31)	(1.39)	(1.31)	(-1.16)	(-1.11)	(-0.89)	(-0.03)
CUR_ACC	-0.157	-0.125	-0.212	-0.127	-0.006***	-0.007	-0.082	-0.103
	(-0.30)	(-0.23)	(-0.41)	(-0.24)	(-3.27)	(-1.03)	(-1.33)	(-1.49)
MERGER	0.403**	0.404**	0.416**	0.404**	-0.001	-0.000	-0.002	-0.000
	(2.01)	(2.03)	(2.09)	(2.03)	(-0.48)	(-0.36)	(-0.31)	(-0.02)
FIN	0.460***	0.459***	0.470***	0.456***	0.001	0.001	0.006	0.006
	(3.30)	(3.28)	(3.36)	(3.26)	(0.94)	(1.08)	(1.39)	(1.23)
LEV	-0.100	-0.098	-0.114	-0.099	-0.000	-0.000	-0.013	-0.011
	(-1.38)	(-1.37)	(-1.45)	(-1.38)	(-0.78)	(-1.26)	(-1.59)	(-1.63)
EXTFIN	-0.275	-0.278	-0.269	-0.280	0.001	0.001	0.008	0.016
	(-1.00)	(-1.01)	(-0.98)	(-1.02)	(0.46)	(0.52)	(0.40)	(0.75)

SALEGR	0.013	0.015	0.014	0.015	0.000	0.000	-0.001	0.001
	(0.22)	(0.26)	(0.24)	(0.25)	(0.64)	(0.16)	(-0.13)	(0.19)
ROAGR	-0.006	-0.006	-0.006	-0.006	0.000	0.000	0.000	0.000
	(-0.49)	(-0.45)	(-0.50)	(-0.46)	(0.99)	(0.69)	(0.49)	(0.55)
ATGR	0.058	0.060	0.042	0.062	-0.002***	-0.002	-0.013	-0.017*
	(0.74)	(0.76)	(0.52)	(0.78)	(-3.26)	(-1.55)	(-1.31)	(-1.68)
MB	0.004	0.004	0.004	0.004	0.000***	0.000*	0.001*	0.001*
	(0.48)	(0.46)	(0.53)	(0.44)	(2.92)	(1.84)	(1.91)	(1.94)
BIG	-0.321	-0.324	-0.330	-0.329	0.001	0.001	0.004	0.003
	(-1.49)	(-1.49)	(-1.53)	(-1.52)	(1.02)	(1.37)	(0.63)	(0.52)
SPECIALIST	0.039	0.044	0.040	0.044	0.001	0.001	0.008	0.009*
	(0.19)	(0.22)	(0.20)	(0.22)	(1.18)	(1.53)	(1.53)	(1.66)
LOGTENURE	-0.018	-0.027	-0.032	-0.024	0.000	-0.000	0.002	-0.001
	(-0.19)	(-0.27)	(-0.33)	(-0.24)	(0.22)	(-0.16)	(0.55)	(-0.29)
OFFICESIZE	-0.067	-0.061	-0.063	-0.060	-0.000	-0.000	-0.005*	-0.005
	(-0.90)	(-0.82)	(-0.84)	(-0.81)	(-1.03)	(-1.32)	(-1.76)	(-1.57)
OIMPORT	-0.001	0.056	0.053	0.063	-0.000	-0.000	-0.012	-0.008
	(-0.00)	(0.15)	(0.14)	(0.17)	(-0.00)	(-0.01)	(-0.81)	(-0.53)
FIMPORT	-0.024	-0.067	-0.066	-0.072	-0.004	-0.004	-0.022	-0.027
	(-0.06)	(-0.17)	(-0.16)	(-0.18)	(-1.62)	(-1.24)	(-0.82)	(-1.00)
NAS	0.321	0.344	0.331	0.342	0.005*	0.004*	0.056***	0.050**
	(0.77)	(0.83)	(0.80)	(0.82)	(1.92)	(1.88)	(3.03)	(2.43)
WEAK_302	0.959***	0.941***	0.943***	0.946***	0.001	0.000	0.004	0.005
	(7.26)	(7.14)	(7.12)	(7.16)	(0.56)	(0.43)	(0.83)	(0.93)
AUDFEE	0.146	0.147	0.144	0.147	0.001	0.001	0.010*	0.009
	(1.32)	(1.32)	(1.30)	(1.32)	(1.45)	(0.85)	(1.65)	(1.45)
INTERCEPT	-5.593***	-5.687***	-5.601***	-5.679***	-0.006	-0.004	-0.061	-0.051
	(-4.57)	(-4.70)	(-4.64)	(-4.68)	(-0.81)	(-0.44)	(-1.25)	(-1.03)
Industry Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
pseudo /adjusted R^2	0.101	0.098	0.100	0.097	0.031	0.004	0.153	0.060
N	8,484	8,484	8,484	8,484	8,484	8,484	1,151	1,151
Area under ROC curve	0.747	0.742	0.744	0.741				
Obs. With REST_Dec=1	409	409	409	409				
Marginal effect								
AFTER× DICE	0.0629							
AFTER× NDICE		-0.0333						
AFTER x DICE_MAG			0.2222					
AFTER× NDICE_MAG				0.3859				

The table reports regressions that examine the association between subsequent restatements and changes in estimates. In columns (1)-(4), the dependent variable REST_Dec equals 1 if the current-year financial report has a subsequent income-decreasing restatement due to income-increasing misstatement in the original report, 0 otherwise. Columns (1) and (2) separately examine the effect of the incidence of discretionary income-increasing changes in estimate (DICE) and the incidence of all other changes in estimate (NDICE), respectively. Columns (3) and (4) separately examine the effect of the magnitude of discretionary income-increasing changes in estimate (DICE_MAG) and the magnitude of all other changes in estimate (NDICE_MAG), respectively. In columns (5)-(8), the dependent variable REST_MAG equals the restated net income minus the original net income scaled by lagged assets. Columns (5) and (6) separately examine the effect of the magnitude of discretionary income-increasing changes in estimate (DICE_MAG) and the magnitude of all other changes in estimate (NDICE_MAG), respectively, using the full sample. Columns (7) and (8) separately examine the effect of the magnitude of discretionary income-increasing changes in estimate (DICE_MAG) and the magnitude of all other changes in estimate (NDICE_MAG), respectively, within the restatement subsample. Columns (1)-(4) and columns (5)-(8) are estimated using logistic regression and OLS regression, respectively. ***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% level, respectively. Appendix B provides detailed definitions of all variables.

Table 5: Changes in Accounting Estimates and Auditor Going Concern Opinion for Financially Distressed Firms

Dep. Var.=GC	(1)	(2)	(3)	(4)
AFTER	0.199*	0.164	0.177	0.157
	(1.68)	(1.36)	(1.50)	(1.33)
DICE	0.268			
	(0.44)			
AFTER× DICE	**-1.962****			
	(-2.43)			
NDICE		0.057		
		(0.12)		
AFTER× NDICE		-0.271		
		(-0.41)		
DICE_MAG			8.480	
			(0.64)	
AFTER×DICE_MAG			**-32.352****	
			(-2.10)	
NDICE_MAG				-2.988
				(-0.20)
AFTER× NDICE_MAG				15.456
				(0.89)
TA	-0.519***	-0.518***	-0.518***	-0.517***
	(-6.55)	(-6.51)	(-6.49)	(-6.49)
AGE	0.037	0.045	0.043	0.046
	(0.41)	(0.51)	(0.48)	(0.51)
LEV	-0.002	-0.001	-0.003	-0.001
	(-0.76)	(-0.55)	(-0.89)	(-0.55)
LAGLOSS	0.528***	0.528***	0.513***	0.529***
	(3.44)	(3.41)	(3.34)	(3.41)
INVESTMENT	-1.678***	-1.677***	-1.701***	-1.675***
	(-5.07)	(-5.05)	(-5.12)	(-5.04)
CURR	-0.827***	-0.845***	-0.812***	-0.846***
	(-2.84)	(-2.89)	(-2.79)	(-2.89)
CFO	-1.167***	-1.190***	-1.160***	-1.189***
	(-4.18)	(-4.31)	(-4.06)	(-4.31)
ZSCORE	0.017	0.015	0.019	0.015
	(1.34)	(1.28)	(1.31)	(1.28)

MB	-0.007	-0.007	-0.007	-0.007
	(-1.34)	(-1.37)	(-1.28)	(-1.37)
BIG	0.187	0.190	0.193	0.188
	(1.22)	(1.24)	(1.27)	(1.24)
LAGGC	3.155***	3.137***	3.140***	3.138***
	(21.88)	(21.94)	(21.92)	(21.95)
DELAY	1.221***	1.236***	1.225***	1.237***
	(6.46)	(6.46)	(6.47)	(6.48)
AUDFEE	0.335***	0.320***	0.317***	0.318***
	(3.44)	(3.31)	(3.25)	(3.28)
INTERCEPT	-10.018***	-9.969***	-9.903***	-9.947***
	(-7.90)	(-7.90)	(-7.83)	(-7.87)
Industry Fixed Effects	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
pseudo R^2	0.552	0.550	0.552	0.550
N	4,212	4,212	4,212	4,212
Area under ROC curve	0.943	0.942	0.943	0.942
Obs. With GC=1	1,205	1,205	1,205	1,205
Marginal effect				
AFTER× DICE	-0.1520			
AFTER× NDICE		-0.0211		
AFTER x DICE_MAG			-2.5072	
AFTER× NDICE_MAG				1.2026

This table reports logit regressions that examine the association between the likelihood of reporting a GC opinion and changes in estimates before and after the auditor switch. The sample is restricted to financially distressed firms. The dependent variable is the incidence of receiving a going concern audit opinion. GC equals 1 if auditors issue a going concern opinion for the current year, 0 otherwise. Columns (1) and (2) separately examine the effect of the incidence of discretionary income-increasing changes in estimate (DICE) and the incidence of all other changes in estimate (NDICE) on the likelihood of receiving a GC. Columns (3) and (4) separately examine the effect of the magnitude of discretionary income-increasing changes in estimate (DICE_MAG) and magnitude of all other changes in estimate (NDICE_MAG) on the likelihood of receiving a GC. ***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% level, respectively. Appendix B provides detailed definitions of all variables.

Table 6: Changes in Accounting Estimates and Stock Market Returns

Dep. Var.=ABRET	(1)	(2)	(3)	(4)
AFTER	0.032*	0.025	0.026	0.024
	(1.80)	(1.39)	(1.47)	(1.36)
DICE	0.144**			
	(2.06)			
AFTER× DICE	**-0.260*** **			
	(-3.13)			
NDICE		0.013		
		(0.23)		
AFTER× NDICE		-0.031		
		(-0.43)		
DICE_MAG			4.880*	
			(1.88)	
AFTER_DICE_MAG			**-8.515*** **	
			(-2.66)	
NDICE_MAG				-1.357
				(-1.06)
AFTER_ NDICE_MAG				0.551
				(0.38)
CH_NI	0.312***	0.312***	0.312***	0.312***
	(10.74)	(10.76)	(10.77)	(10.76)
BETA	-0.016	-0.017	-0.016	-0.017
	(-0.95)	(-0.96)	(-0.97)	(-0.97)
VOLATILITY	1.664***	1.661***	1.663***	1.661***
	(9.76)	(9.72)	(9.74)	(9.72)
ANALYST	0.006***	0.007***	0.007***	0.007***
	(3.33)	(3.39)	(3.33)	(3.40)
LAGSIZE	-0.025***	-0.025***	-0.025***	-0.025***
	(-2.68)	(-2.73)	(-2.71)	(-2.74)
LAGMB	-0.003**	-0.003**	-0.003**	-0.003**
	(-2.37)	(-2.40)	(-2.41)	(-2.42)
GC	-0.440***	-0.438***	-0.439***	-0.438***
	(-9.09)	(-9.04)	(-9.05)	(-9.03)
WEAK_302	-0.148***	-0.148***	-0.149***	-0.149***
	(-5.79)	(-5.81)	(-5.81)	(-5.83)
DELAY	-0.106***	-0.104***	-0.105***	-0.105***
	(-3.58)	(-3.54)	(-3.56)	(-3.57)
AUDFEE	0.045***	0.045***	0.045***	0.045***
	(3.57)	(3.59)	(3.60)	(3.57)
INTERCEPT	-0.338*	-0.347*	-0.340*	-0.338*
	(-1.84)	(-1.88)	(-1.85)	(-1.84)
Industry Fixed Effects	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
adj. R^2	0.209	0.207	0.208	0.207
N	4,621	4,621	4,621	4,621

This table presents OLS regressions that examine the association between annual stock returns and changes in accounting estimates. The dependent variable is the annual stock returns accumulated from the beginning of the fourth month after the end of the prior fiscal year to the third month after the end of the current fiscal year adjusted by value-weighted market index return. CH_NI is change in net income, calculated as change in earnings per share before extraordinary items between the current and prior fiscal year scaled by stock price per share at the beginning of the current fiscal year. Columns (1) and (2) separately examine the effect of the incidence of discretionary income-increasing changes (DICE), and the incidence of all other changes in estimate (NDICE), respectively. Columns (3) and (4) separately examine the effect of the magnitude of discretionary income-increasing changes (DICE_MAG) and the magnitude of all other changes in estimate (NDICE_MAG), respectively. ***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% level, respectively. Appendix B provides detailed definitions of all variables.

Table 7 - Evidence from auditor-change 8-K disclosures

Dep. Var.=	(1) DICE	(2) NDICE	(3) DICE_MAG	(4) NDICE_MAG
AFTER	0.413*	0.011	0.000	-0.000
	(1.85)	(0.06)	(1.06)	(-0.40)
AFTER_4THQ	0.518**	0.247	0.002***	0.000
	(1.98)	(0.96)	(4.98)	(1.05)
AFTER_DISPUTE	0.422**	-0.189	-0.000	0.000
	(1.99)	(-0.91)	(-0.29)	(0.84)
AFTER_CONSULT	-0.962	0.055	-0.000	0.001**
	(-0.94)	(0.09)	(-0.49)	(2.49)
AFTER_RESIGN	-0.040	-0.114	-0.001	0.000
	(-0.10)	(-0.29)	(-1.22)	(0.90)
LAGPOSCHG	1.504***	1.005***	0.002***	0.000
	(6.49)	(4.23)	(5.46)	(0.47)
LAGNEGCHG	0.677**	1.994***	0.001**	-0.004**
	(2.10)	(10.33)	(2.35)	(-2.50)
TA	-0.020	0.046	-0.000***	-0.000
	(-0.26)	(0.69)	(-2.73)	(-0.59)
ROA	0.202	0.329	0.000	0.000
	(0.93)	(1.36)	(1.09)	(1.31)
LOSS	-0.323*	0.321**	-0.000	-0.000**
	(-1.80)	(2.08)	(-0.83)	(-2.04)
MERGER	0.260	0.197	-0.000	0.000
	(1.10)	(0.97)	(-0.59)	(0.05)
FIN	-0.061	0.171	0.000	0.000
	(-0.38)	(1.21)	(0.28)	(1.11)
LEV	-0.066	-0.498*	-0.000	0.000
	(-0.47)	(-1.89)	(-0.07)	(0.46)
SALEGR	0.182**	-0.049	0.000*	-0.000
	(2.31)	(-0.51)	(1.66)	(-0.31)
ROAGR	-0.013	-0.011	0.000	0.000*
	(-0.70)	(-0.71)	(0.98)	(1.82)
ATGR	-0.210	-0.209	0.000	-0.000
	(-1.24)	(-1.37)	(1.15)	(-0.61)
MB	-0.005	-0.007	-0.000	-0.000
	(-0.41)	(-0.69)	(-0.37)	(-0.21)
BIG	0.303	-0.056	0.000	-0.000
	(1.42)	(-0.32)	(0.71)	(-0.26)
SPECIALIST	-0.103	0.061	0.000	-0.000
	(-0.50)	(0.36)	(0.61)	(-0.66)
LOGTENURE	0.076	0.040	0.000	-0.000
	(0.59)	(0.37)	(0.51)	(-0.10)
AUDFEE	0.292**	0.335***	0.000*	-0.000
	(2.42)	(3.25)	(1.74)	(-0.65)
INTERCEPT	-9.544***	-8.409***	-0.002	0.001
	(-5.59)	(-6.66)	(-1.51)	(0.68)
Industry Fixed Effects	Included	Included	Included	Included
Year Fixed Effects	Included	Included	Included	Included
pseudo /adjusted R2	0.106	0.120	0.013	0.014
N	7,219	7,219	7,219	7,219
Area under ROC curve	0.772	0.794	N/A	N/A
Marginal Effect				
AFTER_4THQ	0.0130			
AFTER_DISPUTE	0.0106			

This table presents cross-sectional analyses of the likelihood of the changes in estimates conditioned on items reported in the auditor change 8-K. The dependent variables are (1) an indicator variable for discretionary income-increasing changes in estimates (POSCHG_DISC), (2) an indicator variable for all other changes in estimates (NDICE), (3) the magnitude of discretionary income-increasing changes in estimates (DICE_MAG), (4) the magnitude of all other changes in estimates (NDICE_MAG). 4THQ equals 1 if the auditor switch occurs during the 4th quarter of the fiscal year, 0 otherwise. DISPUTE equals 1 if in 8-K disclosure on auditor change, the firm discloses disputes in accounting treatment with the predecessor auditor, and 0 otherwise. An accounting treatment dispute is defined as (i) issues related to disagreement with accounting treatment was disclosed (iss_accounting=1); or (ii) during the audit engagement, there was a matter of disagreement regarding accounting principle, controls issues, etc. between the auditor and the firm (dismissed_disagree=1). CONSULT equals 1 if in the 8-K, the firm reports consulting with the successor auditor before the switch and 0 otherwise. RESIGN equals 1 if the auditor resigns and 0 otherwise. ***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% level, respectively. Appendix B provides detailed definitions of all variables.

Table 8 Evidence from ex ante probability of an auditor switch

Panel A Changes in Accounting Estimate Prediction Model

	(1) POSCHG	(2) NEGCHG
SWITCH	1.587**	-0.303
	(1.98)	(-0.27)
LAGPOSCHG	1.000***	
	(15.45)	
SWITCH×LAGPOSCHG	-0.160	
	(-0.78)	
LAGNEGCHG		1.070***
		(16.01)
SWITCH×LAGNEGCHG		-0.219
		(-0.90)
TA	-0.035*	-0.012
	(-1.65)	(-0.66)
ROA	0.112**	0.177***
	(1.97)	(2.86)
LOSS	-0.023	0.266***
	(-0.52)	(6.59)
MERGER	0.092***	0.021
	(2.83)	(0.44)
FIN	-0.038	-0.052
	(-1.16)	(-1.53)
LEV	-0.004	0.011
	(-0.36)	(0.55)
SALEGR	0.007	-0.049*
	(0.28)	(-1.79)
ROAGR	-0.004	-0.001
	(-0.81)	(-0.12)
ATGR	-0.089**	-0.054
	(-2.06)	(-1.32)
MB	-0.007***	0.003
	(-2.60)	(1.33)
BIG	0.017	0.139**
	(0.39)	(2.17)
SPECIALIST	-0.005	-0.052
	(-0.22)	(-1.36)
LOGTENURE	-0.024	-0.018
	(-1.30)	(-0.72)
AUDFEE	0.170***	0.131***
	(4.31)	(4.53)
SWITCH×TA	0.052	0.054
	(1.17)	(0.89)
SWITCH×ROA	0.184	-0.052
	(1.39)	(-0.26)
SWITCH×LOSS	-0.165	-0.242
	(-1.16)	(-1.38)
SWITCH×MERGER	-0.587***	-0.193
	(-3.40)	(-0.76)
SWITCH×FIN	0.113	0.087
	(0.81)	(0.57)
SWITCH×LEV	0.031	-0.324*
	(0.81)	(-1.68)

SWITCH×SALEGR	0.117	0.092
	(1.59)	(1.14)
SWITCH×ROAGR	-0.001	0.012
	(-0.09)	(1.05)
SWITCH×ATGR	-0.285**	-0.263
	(-2.01)	(-1.26)
SWITCH×MB	-0.000	0.001
	(-0.02)	(0.17)
SWITCH×BIG	0.112	-0.145
	(0.84)	(-0.79)
SWITCH×SPECIALIST	-0.053	-0.185
	(-0.34)	(-0.75)
SWITCH×LOGTENURE	0.025	0.029
	(0.24)	(0.27)
SWITCH*AUDFEE	-0.133*	0.025
	(-1.80)	(0.24)
INTERCEPT	-3.696***	-3.788***
	(-8.30)	(-12.10)
pseudo R2	0.084	0.090
N	28,832	28,832
Area under ROC curve	0.704	0.728
POSCHG=1	1,304	
NEGCHG=1		863

Panel B The effect of the opinion shopping consideration in the auditor switch decision

Regression	Probit
Sample	Full sample
Dep. Var.	$SWITCH_T$
POSCHG_SCORE	1.983**
	(2.50)
NEGCHG_SCORE	-0.947
	(-1.08)
BIG	-1.142***
	(-19.36)
SPECIALIST	0.035
	(0.71)
LOGTENURE	-0.922***
	(-27.96)
OIMPORT	0.080
	(1.16)
FIMPORT	0.150
	(1.21)
REST	0.111**
	(2.43)
TA	0.048***
	(3.74)
ROA	-0.030
	(-0.88)
CFO	0.185***
	(2.88)
LOSS	0.080**
	(1.98)
LEV	0.046***
	(3.88)

INV	0.008
	(0.06)
REC	-0.045
	(-0.34)
SALEGR	-0.062***
	(-3.11)
MB	0.021**
	(1.99)
MERGER	0.060
	(0.91)
GC	0.327***
	(5.48)
WEAK_302	0.213***
	(4.98)
LAGMISMATCH	0.480***
	(10.47)
DANALYST	0.059
	(1.63)
Intercept	-5.128***
	(-44.50)
pseudo R^2	0.364
N	28,549
N for $SWITCH_{t+1}$=0	27,023
N for $SWITCH_{t+1}$=1	1,526
Area under ROC curve	0.915
Marginal effect of POSCHG_SCORE	0.0075

Panel C Descriptive statistics of the unexpected likelihood of reporting an income-increasing or income-decreasing changes in estimate at the audit office level

	Predecessor Auditor		Successor Auditor		After – Before			
	(N=1,526)		(N=1,526)		Δ AUDITOR_POSCHG		Δ AUDITOR_NEGCHG	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
AUDITOR_POSCHG	-0.015	-0.020	0.005	-0.019	0.020***	0.001***		
AUDITOR_NEGCHG	0.004	-0.014	-0.001	-0.016			-0.005	-0.002

Panel D Multinomial regression of the effect of shopping for income-increasing changes in estimate on the type of auditor in the auditor switch decision

	(1)	(2)
Regression	Probit	Probit
Sample	Full Sample	Full Sample
Dep. Var.	SWITCH_Type$_T$=2	SWITCH_Type$_T$=1
POSCHG_SCORE	3.892***	1.172
	(3.12)	(0.86)
NEGCHG_SCORE	-1.992	0.132
	(-1.48)	(0.08)
BIG	-1.760***	-1.371***
	(-18.47)	(-14.65)
SPECIALIST	-0.005	0.084
	(-0.06)	(0.99)
LOGTENURE	-1.225***	-1.142***
	(-22.28)	(-21.34)
OIMPORT	0.051	0.072
	(0.46)	(0.63)
FIMPORT	-0.047	0.356*
	(-0.25)	(1.93)
REST	0.063	0.114
	(0.81)	(1.52)
TA	0.116***	0.040**
	(5.80)	(2.04)
ROA	-0.062	-0.029
	(-1.19)	(-0.57)
CFO	0.095	0.294***
	(0.97)	(3.11)
LOSS	0.174***	0.047
	(2.64)	(0.69)
LEV	0.026	0.068***
	(1.43)	(4.05)
INV	0.212	0.074
	(1.15)	(0.39)
REC	0.186	-0.304
	(0.91)	(-1.43)
SALEGR	-0.102***	-0.066**
	(-3.19)	(-2.08)
MB	0.000	-0.005
	(0.00)	(-1.34)
MERGER	0.225**	0.146
	(2.14)	(1.31)
GC	0.341***	0.416***
	(3.77)	(4.64)
WEAK_302	0.375***	0.314***
	(5.51)	(4.53)
MISMATCH	0.832***	0.475***
	(11.26)	(6.64)
DANALYST	0.178***	0.084
	(2.94)	(1.41)
INTERCEPT	-1.047***	-0.745***
	(-7.30)	(-5.40)
N	28,549	28,549
N for SWITCH_Type$_T$=2	795	
N for SWITCH_Type$_T$=1		731

Wald Chi-squre	3,197.17	3,197.17
Marginal effect of POSCHG_SCORE	0.1309	0.0156

This table adapts the Lennox (2000) framework to our setting. Panel A reports the probit model that predicts the changes in estimates. The sample includes both switchers and non-switchers during 2004-2015. The dependent variable is POSCHG or NEGCHG. SWITCH equals 1 if the firm switches the auditor during the current year, 0 otherwise. From Column (1) of Panel A we obtain the predicted probability of having an income-increasing change in estimates if the firm switches auditors (SWITCH=1) and the predicted probability of having an income-increasing change in estimates if the firm does not switch auditors (SWITCH=0). We define the difference to be the opinion shopping variable POSCHG_SCORE. A positive (negative) POSCHG_SCORE indicates a higher (lower) probability of reporting an income-increasing change in estimates if the firm switches auditor than if it doesn't. We repeat these steps for income-decreasing changes in estimate to obtain NEGCHG_SCORE. Panel B reports the analysis of regressing the switching dummy on the opinion shopping variables (POSCHG_SCORE, NEGCHG_SCORE) and controls. The sample includes all switchers and non-switchers. The dependent variable, $SWITCH_t$, equals 1 if the firm switches auditors in the current year, 0 otherwise. Panel C reports the descriptive statistics of AUDITOR_POSCHG and AUDITOR_NEGCHG, the unexpected likelihood of clients reporting income-increasing or income-decreasing changes in estimates at the auditor office-year level. Following Chen et al. (2016), we first estimate Column (1) in Panel A excluding SWITCH and its interaction terms, and obtain the predicted likelihood of having an income-increasing change in estimates for each firm-year. Then we subtract this predicted likelihood from the actual value of having an income-increasing change in estimates to obtain an unexpected likelihood of having an income-increasing change in estimates. We average this unexpected likelihood for clients of each auditor office-year after excluding the focal firm and obtain AUDITOR_POSCHG. A higher value of AUDITOR_POSCHG indicates that on average the auditor office has clients with a higher unexpected likelihood of income-increasing changes in estimates. We repeat these same steps for negative changes to obtain AUDITOR_NEGCHG. We then compute the change in AUDITOR_POSCHG and AUDITOR_NEGCHG between the predecessor and the successor auditor (ΔAUDITOR_POSCHG, ΔAUDITOR_NEGCHG). Panel C presents the descriptive statistics for AUDITOR_POSCHG and AUDITOR_NEGCHG before and after the auditor switch. We then define $SWITCH\_Type_t$ to be equal to 2 if the new auditor has a higher unexpected likelihood of income-increasing changes in estimates than the predecessor auditor (ΔAUDITOR_POSCHG>0), 1 if the new auditor has lower unexpected likelihood of income-increasing changes in estimates than the predecessor auditor (ΔAUDITOR_POSCHG<=0), and 0 if a firm does not switch auditors. Panel D reports results from the multinomial probit regression of $SWITCH\_Type_t$ on the opinion shopping variables, POSCHG_SCORE and NEGCHG_SCORE, and controls. ***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% level, respectively. Appendix B provides detailed definitions of all variables.

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