Auditor Dismissals After Accounting Restatements

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ABSTRACT

This study examines the conditions under which financial restatements lead corporate boards to dismiss independent auditors and how the market responds to those dismissal announcements. We find that auditors are dismissed at higher than normal rates after restatements, but in contrast to prior research on CEO/CFO turnover, we find no evidence of differential dismissal rates across restatement types (i.e., irregularities vs. errors) for Big 4 auditors. For non-Big 4 firms, however, we do find that dismissal rates are higher for restatements resulting from irregularities as compared to errors. This evidence is consistent with the benefits from re-establishing reporting credibility outweighing the lower switching costs for smaller auditors after more damaging restatements. In addition, we test the market reaction to auditor dismissals and find that the market responds positively to auditor dismissal announcements after restatements. The reaction to the dismissal is significantly more positive following restatements involving irregularities (7.6%) rather than errors (1.3%) when the client engages a comparably sized or larger successor auditor. This positive market reaction is consistent with a firm's ability to restore credibility by replacing their auditor and highlights the important role that auditors play in monitoring financial reporting.

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I. INTRODUCTION

Restatements are significant events that can impose high costs on firms. Depending on the type of restatement, costs can range from relatively minimal incremental expenses of revising financial statements to more substantial costs stemming from increases in the cost of capital, debt covenant violations, and shareholder litigation. The purpose of this study is to provide evidence on the circumstances under which auditors are dismissed in response to restatements and to examine how the market responds to those dismissal announcements.

Stakeholders are likely to hold auditors accountable for restatements when the auditors recommend or affirm accounting methods that are not consistent with GAAP or otherwise fail to detect a material misapplication of GAAP. In particular, if the board believes the auditor should have identified the accounting problem before a restatement was necessary, then we expect the board to consider dismissing the auditor over this performance failure. Similarly, if the misstatement raises concerns about the auditors' ability to monitor future financial reporting, then we expect the board to replace the auditor to improve their financial reporting credibility.

We begin our investigation into auditor dismissals by examining whether the type of restatement affects the likelihood of subsequent auditor dismissals. Hennes et al. (2008) report that a strong predictor of CEO/CFO dismissals is whether the restatement was the result of an irregularity (intentional misstatement by management) or the result of an accounting error (e.g., misapplication of GAAP). However, in contrast to management, auditors are hired solely for their financial reporting role and are expected to be experts in GAAP. They are charged with detecting material misstatements, regardless of origin, making it unclear that the error/irregularity distinction is important to the board when it comes to auditor accountability.

Boards potentially have an incentive to dismiss auditors after an irregularity is disclosed if they believe an auditor change will help to restore financial reporting credibility. Alternatively, boards may in fact hold auditors more accountable for errors if they believe the auditor should have been able to detect the errors. By definition, irregularities result from managements' intentional misreporting, which will be harder to detect if managers collude and override controls systems to hide the manipulation. If the board considers the increased difficulty auditors face in detecting these irregularities, we would expect auditor dismissals to occur at a higher rate for restatements caused by errors compared to those caused by irregularities.

To investigate the impact of restatement type on auditor turnover, we examine a sample of 2,101 restatements between 1997 and 2010. Overall, we find higher auditor turnover rates following restatements resulting from irregularities relative to those resulting from accounting errors. However, further investigation reveals that the higher auditor turnover for irregularity restatements is driven by auditor resignations rather than auditor dismissals. Specifically, although there is significant evidence of a higher rate of auditor *resignations* for irregularities (9.13%) relative to error restatements (5.25%), there is no significant evidence of a differential likelihood of auditor *dismissals* when the restatements are caused by errors (9.45%) versus those caused by irregularities (11.83%). This evidence is consistent with auditors resigning more in restatement cases where there is a substantial increase in client risk, but auditors being dismissed similarly for both errors and irregularity restatements.

We next examine whether auditor turnover is differentially affected by characteristics of the auditor. Prior research reports that firms who have selected large auditors are more likely to have larger, more complex operations requiring more audit services (Healy and Lys 1986) and pay a quality premium for a Big 4 auditor capable of providing those services (Francis 1984; Palmrose

1986).¹ If the incumbent auditor is a Big 4 auditor, the firm faces larger potential startup costs to switch and has a limited choice of comparable Big 4 auditors. In contrast, smaller firms who have selected smaller auditors have a larger set of accounting firms to choose from and face lower auditor switching costs, so smaller auditors could be more easily replaced. However, *a priori* it is unclear whether smaller auditors will turn over at higher rates than their larger counterparts, as clients of Big 4 auditors may face higher agency costs and thus could be more likely to replace the auditor to satisfy their investors' demand for higher audit quality (Francis and Wilson 1988).

To determine whether auditor size impacts the likelihood that the auditor is replaced after a restatement, we examine auditor turnover for small and large auditors after error and irregularity restatements. We find that non-Big 4 auditors face a much higher overall turnover rate for irregularity restatements (43.40%) than their Big 4 counterparts (18.18%). Further, non-Big 4 auditors are much more likely to be dismissed than Big 4 auditors when they were involved in an irregularity restatement. In fact, after controlling for firm performance and other factors that affect auditor changes, we find that the predicted probability for auditor dismissal after an irregularity is over twice as high for small incumbent auditors compared to Big 4 incumbent auditors. Interestingly, we find no evidence of differential dismissal rates across errors or irregularities for Big 4 auditors, suggesting that Big 4 auditors face similar consequences for either type of restatements.² Overall, the evidence of higher dismissals for smaller audit firms is consistent with the benefits of re-establishing financial reporting credibility by changing auditors outweighing the lower switching costs for smaller auditors when there is an irregularity.

¹ We use "Big 4" throughout the paper to designate Big 4, Big 5, or Big 6 audit firms, depending on the period. ² We do note, however, that there are increased odds of auditor resignation following restatements involving

irregularities (rather than errors) for both Big 4 and non-Big 4 auditors.

Next, we examine the market reaction to auditor turnover announcements. Prior research investigating the market reaction to voluntary auditor turnover outside the restatement setting generally finds either insignificant or negative reactions to auditor change announcements. These negative reactions are regularly found after auditor resignations or auditor changes with reportable conditions (e.g., disclosed disagreements) and are often attributed to investors' concerns that the auditor change signals heretofore-unknown accounting problems or "opinion shopping." In our restatement setting, however, the accounting problems are revealed in a separate restatement announcement, so the impact of the auditor change is isolated from other negative signals. As such, we expect investors to respond positively to the auditor change announcement in the restatement setting if the dismissal is viewed as the appropriate response and is expected to improve financial reporting credibility.

Our initial univariate results provide some weak evidence of a negative market reaction after auditor change announcements for the total restatement sample. However, once we partition on resignations and dismissals, we find that auditor resignations are associated with a significantly negative (-6.22%) market response and that auditor dismissals are associated with a significantly positive (1.57%) market response. We also find that the market reaction is more positive in cases where the restatement was an irregularity and firms make either a lateral switch or a switch up from a smaller to larger auditor. Our analyses indicate that firms that dismiss their auditors and engage a comparably sized or larger auditor see a positive market response large enough to recoup a substantial portion of the market value generally lost during the restatement announcement. This positive market reaction is consistent with firms being able to restore credibility by replacing their auditor.

This study contributes to research on the consequences of restatements by focusing on auditor dismissals after restatements, as prior research on the employment consequences of restatements has been generally limited to management and the board of the restating firm.³ Our evidence on the circumstances in which termination penalties are imposed on auditors for failing to detect accounting misstatements should be useful to both academics and regulators concerned with limited competition in the audit market and the corresponding ability of the audit market to self-regulate. Further, the evidence on the positive market reaction to auditor dismissal announcements after restatements is also important as it suggests that firms can restore credibility by dismissing their auditors and highlights the important role that auditors play in monitoring financial reporting.

II. BACKGROUND AND HYPOTHESES DEVELOPMENT

Prior research suggests that restatements can be extremely costly to a firm. These costs, which vary depending on the nature of the restatement, can include: negative market reactions to restatement announcements (Palmrose et al. 2004), increases in the cost of capital (Hribar and Jenkins 2004), declines in the information content of earnings after restatements (Wilson 2008), and increases in litigation risk (Palmrose and Scholz 2004). Direct costs include the preparation, filing, and communication of new financial statements.

Prior research also tests whether the negative impact restatements have on firms leads boards to dismiss the executives who are ultimately responsible for financial reporting. The CEO and CFO are primarily responsible for [the quality of] financial reporting and are required to sign

³ For studies of restatements and executive turnover see: Beneish (1999); Agrawal, Jaffe, and Karpoff (1999); Arthaud-Day et al. (2006); Desai, Hogan, and Wilkins (2006); Hennes, Leone, and Miller (2008); Collins, Masli, Reitenga, and Sanchez (2009); Burks (2010); and Leone and Liu (2010). Examples of audit committee consequences of restatements include Farber (2005), Srinivasan (2005), and Arthaud-Day, Certo, Dalton, and Dalton (2006). Studies that investigate differential market reactions to restatements include Palmrose, Richardson, and Scholz (2004) and Hennes et al. (2008).

10-K/Q filings on behalf of the company. Even though CEOs and CFOs serve numerous other roles within the firm, the importance of credible financial reporting to investors makes them vulnerable to termination when firms are required to restate. Several studies report an increased likelihood of CEO and/or CFO turnover after restatements are announced (Arthaud-Day et al. 2006; Desai et al. 2006; Hennes et al. 2008; Burks 2010; Leone and Liu 2010).

One of the most significant determinants of CEO/CFO turnover is whether the restatement is caused by an accounting "error" or "irregularity." Hennes et al. (2008) classify a restatement as an irregularity if the firm refers to the restatement as "fraud" or "irregularity," announces an independent investigation, or announces a regulatory investigation (e.g., SEC or DOJ). All other restatements are considered to be errors (e.g., misapplication of GAAP).⁴ They argue that boards have little choice but to dismiss senior managers if they are suspected of being complicit in the misstatement. Intentionally misstating earnings is indicative of poor judgment on the part of managers and merits termination. Taking such visible action (firing managers responsible for the misstatement) also helps to restore financial reporting credibility and potentially reduces the costs associated with future SEC enforcement actions. Hennes et al. (2008) report that CEO (CFO) turnover is 54% (70%) in the 13 month period (six months before through six months after) surrounding the announcement of an irregularity.

In contrast to the announcement of irregularities, CEO/CFO turnover rates after errors roughly mirror typical executive turnover rates in the population as a whole. Hennes et al. (2008) report turnover rates of 8% for CEOs and 12% for CFOs after restatements classified as errors. Low turnover rates for these key executives when restatements caused by errors are reported are likely due to the high cost of replacing key executives, the fact that they are evaluated on

⁴ As Hennes et al (2008) acknowledge, it is impossible to observe intent and, therefore, their partitioning proxy likely contains error. However, they conduct a number of tests to validate this procedure and misclassification rates appear to be small.

multiple dimensions of performance beyond financial reporting quality (e.g., stock returns, growth, earnings, etc.), and the possibility that the board does not directly blame managers for restatements resulting from various types of errors.

In addition to executive turnover, prior research reports evidence that board member turnover increases after restatements. Srinivasan (2005) reports that director turnover increases from 33% to 48% after a restatement and the rate is even higher for audit committee directors. Farber (2005) also finds that board governance improves (through changes in board members) after fraud-related restatements are reported. This evidence is consistent with investors also holding board members, who investors rely on to monitor the firm on their behalf, responsible for restatements. In addition to research on the impact of restatements on executive and board turnover, prior literature also examines the association between restatements and auditor turnover but the evidence is comparatively limited.⁵ Wallace (2005) and Thompson and McCoy (2008) observe high auditor turnover around restatements (but do not report statistical tests), and Srinivisan (2005) provides univariate evidence that auditor turnover is significantly higher for restating firms than for non-restating firms. Calderon and Ofobike (2008) and Agrawal and Cooper (2009) report similar univariate results but fail to find evidence in their multivariate analyses. Williams (1988), the most closely related study, examines auditor changes between 1977-1982 and finds that clients accused of fraud, financial statement errors, foreign bribes, or issuing misleading financial information are more likely to make a lateral switch to another Big 8

⁵ A broad literature exists on auditor changes outside the restatement setting. For example, prior literature on auditor change examines voluntary auditor changes driven by gradually increasing misalignment between the client and auditor (Johnson and Lys 1990; Shu 2000; Boone and Raman 2001) as well as forced auditor switches after the demise of Arthur Andersen (Barton 2005; Blouin, Grein, and Rountree 2007; Chen and Zhou 2007; Asthana, Balsam, and Krishnan 2010). Similar to the forced auditor turnover studies, our restatement setting offers readily identifiable shocks to the auditor-client relationship that likely trigger a re-evaluation of that auditor-client relationship within a fairly narrow time period. However, in contrast to the post-Andersen setting that necessitated an auditor change in all cases, restatements provide a setting with variation in the degree of audit and reporting failure and less than 100% turnover.

auditor. As this research design does not focus solely on restatements or distinguish between turnover resulting from auditor resignations and turnover resulting from dismissals by clients, we cannot infer whether the switches were prompted by auditor resignations in response to an increase in client risk or by client dismissals in response to poor auditor performance.

In summary, prior literature finds that restatements are costly to firms and both board members and executives face an increased likelihood of dismissal as a result of these restatements. A key factor in the decision to terminate executives is whether the restatement is caused by an intentional misstatement (irregularity) or by an error. Besides reflecting poor management judgment, irregularities are extremely damaging to firms and, therefore, it is not surprising that board members and managers are considerably more likely to be dismissed when irregularities are disclosed. Although the distinction between errors and irregularities is important for dismissal decisions with respect to board members and executives, it is unclear how this distinction and other factors impact auditor dismissal decisions.⁶ In the following section, we develop hypotheses that predict variation in auditor dismissals after restatement announcements.

Hypothesis Development

The primary role of a firm's outside auditor is to independently assess and opine on the appropriateness of the firm's application of GAAP. The audit serves to increase investor confidence in financial statement quality, and to reduce agency costs by mitigating the extent to which managers can report opportunistically (Jensen and Meckling 1976; Ng 1978; Watts and

⁶ A separate line of research (including Carcello and Nagy 2004a, 2004b; Romanus et al. 2008; and Lennox and Pittman 2010) considers auditor turnover as a predictor of subsequent restatements (rather than the impact of restatements on subsequent auditor turnover). We distinguish our results from this alternate timeline by focusing on auditor dismissals that occur on or *after* the restatement announcement.

Zimmerman 1983). Corporate boards and investors must rely primarily on audit firm reputation to infer audit quality, since neither firm management nor investors can assess the quality of a given audit by casual observation (DeAngelo 1981; Healy and Lys 1986). One exception is the case of restatements. A restatement of financial statements that were previously audited or reviewed suggests that the outside auditor may have overlooked a material accounting issue. Given auditors' specific responsibility to evaluate the appropriate application of GAAP, subsequent costs imposed on firms, and the limited set of other observable auditor performance measures, it is likely that a restatement will prompt firms to consider dismissing its auditor.

Although a restatement tarnishes the audit team's reputation and raises concerns about the auditor's ability to monitor future financial reporting, restatements will not always be sufficient cause to dismiss an auditor. Dismissing the incumbent auditor is costly in terms of incremental managerial time and startup fees paid to a new auditor for training and review or re-audit of prior years (AICPA Cohen Commission Report 1978; DeAngelo 1981; Beattie and Fearnley 1995). Further, just as executives possess various levels of firm-specific human capital that make them more or less replaceable (Villalonga and Amit 2006; Leone and Liu 2010), auditors have firm-specific knowledge and experience. Hence, changing auditors also means sacrificing firm-specific expertise and efficiency developed by the incumbent auditor (Myers, Myers, and Omer 2003; Beck and Wu 2006).

So although prior research (e.g., Farber 2005; Wilson 2008) suggests that governance and management changes hasten the restoration of financial reporting credibility after restatements, auditor dismissals will only occur when the expected benefits outweigh the expected switching costs. Consequently, we expect auditor dismissal decisions around restatements to be a function of auditor performance (i.e., the extent to which they are responsible for the restatement),

switching costs, and the value of the signal a dismissal sends to investors in terms of restoring financial reporting credibility. We formalize hypotheses related to each of these issues in the following section.

Restatement Type: Errors versus Irregularities

We begin by considering whether restatements caused by errors versus those caused by irregularities differentially affect the probability of auditor dismissal. Prior research finds that irregularities are much more costly to the firm and investors relative to restatements caused by errors. For example, Hennes et al. (2008) report that, compared to restatements resulting from errors, restatements resulting from irregularities are associated with a significantly higher probability of class action law suits and significantly more negative market reactions.⁷ Since an irregularity implies that at least some members of management intended to mislead investors, it is not surprising that Hennes et al. (2008) also find that irregularities lead to much higher CEO/CFO turnover rates compared to restatements caused by errors. However, since both errors and irregularities are potentially indicative of audit failure, the expected differential *auditor* dismissal rate (for irregularities versus errors) is more ambiguous.

If a firm discloses an accounting irregularity that requires the restatement of prior financial statements, the implication is that the accounting manipulation was not discovered during the audit process. Although auditors are expected to assess the risk of a material misstatement, including those resulting from fraud, boards will likely consider the complexity of the fraud when making a dismissal decision. If the board determines that the degree of collusion and internal control override was so extensive that it would have been virtually impossible to detect the fraud at an early point, it may consider retaining the auditors. At the same time, boards also

⁷ In addition, Palmrose et al. (2004) find that the market reaction to restatements involving fraud is considerably more negative than other types of restatements.

must consider whether dismissing their auditor after an irregularity is disclosed will help to restore financial reporting credibility to the firm.

Restatements caused by accounting errors are also potential signals of audit failure and, consequently, are likely to increase the probability of auditor dismissals. Consider the following disclosure of an accounting error by PDG Environmental: "The necessity to restate fiscal 1998 earnings is extremely unfortunate, particularly since the restatement 'charge' is non-cash in nature and the previous accounting treatment for the options was fully disclosed and approved by our independent auditors" (PR Newswire 1999). This statement reflects the Company's view that the auditors either failed to review the transactions adequately before the financial statements were filed or reversed their position on the appropriate accounting treatment. PDG Environmental dismissed its auditor shortly thereafter, providing anecdotal evidence that restatements involving errors can lead to auditor dismissals.

Given the differing role and expertise of the auditors relative to management, auditors may be more or as likely to be dismissed after restatements involving errors as restatements involving irregularities. These countervailing factors lead to the following alternative hypotheses:

H1a: Auditor dismissals are more likely after restatements classified as errors than for restatements classified as irregularities.

H1b: Auditor dismissals are more likely after restatements classified as irregularities than for restatements classified as errors.

Auditor Size

We next examine whether auditor size affects the relationship between auditor changes and restatements. Firms who select Big 4 auditors are more likely to have larger, more complex operations requiring more audit services (Healy and Lys 1986) and pay a quality premium for a Big 4 auditor capable of providing those services (Francis 1984; Palmrose 1986). The additional

complexity and demand for more audit service implies higher switching costs for Big 4 clients. Higher switching costs for Big 4 clients, suggests that, all else equal, Big 4 auditors are less likely than smaller auditors (whose clients face lower switching costs) to be dismissed after a restatement.

In addition to higher switching costs, two additional factors decrease the probability of Big 4 auditors being dismissed. First, a client needing the services of a Big 4 auditor only has a few firms to choose from if it is considering a switch (less if they have other consulting arrangements with independence conflicts), making change potentially more difficult than for firms seeking a non-Big 4 auditor. Second, a Big 4 auditor could (and sometimes does) switch out the entire local engagement team after a restatement as a slightly less drastic way to regain credibility with the client's board, but a smaller audit firm is less likely to have sufficient depth to offer this option nationwide. For these reasons, we test the following hypothesis (in alternative form):

H2: Non-Big 4 auditors are more likely than Big 4 auditors to be dismissed after a restatement is disclosed.

Although we expect Big 4 auditors to be dismissed at a lower rate than non-Big 4 auditors, there is some theoretical support for the inverse to be true. Francis and Wilson (1988) suggest that the size of the client firm can proxy for the agency costs of the firm. As agency costs increase, the demand for audit quality increases. To the extent that the average Big 4 client is larger in size than the average non-Big 4 client, then Big 4 clients have increased demand for audit quality. When a Big 4 client experiences a restatement, the increased concern over inadequate monitoring could translate into increased pressure to replace the auditor. Given that this agency cost argument provides a valid interpretation if Big 4 dismissal rates are higher than Non-Big 4 dismissal rates, we conduct a two-tailed test of H2.

Market Response

Finally, we consider the market response to auditor dismissal announcements to determine whether investors perceive the dismissal of an underperforming auditor as a positive step toward restoring credibility. Prior research investigating the market reaction to auditor turnover announcements finds either a negative and statistically significant reaction (Fried and Schiff 1981; Eichenseher, Hagigi, and Shields 1989) or one that is not significantly different from zero (Schwartz and Soo 1995; Johnson and Lys 1990; Klock 1994).⁸ The negative market reaction is most pronounced for auditor resignations (DeFond, Ettredge, and Smith 1997; Wells and Loudder 1997; Griffin and Lont 2010) or auditor changes with reportable events (Whisenant, Sankaraguruswamy, and Raghunandan 2003; Beneish et al. 2005).

The evidence from prior literature is consistent with investors viewing audit changes as a signal of low earnings quality and discounting reported earnings in their valuation estimates. In our setting, however, the accounting issues (restatement) and the auditor dismissal are revealed in two separate disclosures.⁹ Thus, the market reaction to an auditor dismissal will be positive if investors view the firm's actions as appropriately terminating a poorly performing auditor and improving the firm's financial reporting credibility. Our third hypothesis (in alternative form) follows:

H3: The market reaction to auditor dismissals announcements that follow restatement announcements is positive.

⁸ One exception to these insignificant or negative market reaction findings occurs in the unique case of eventual forced auditor changes for ex-Andersen clients after the demise of Arthur Andersen. Here Asthana et al. (2010) find that as the investigation of Arthur Andersen unfolded there was a positive market reaction to more timely dismissals of that audit firm.

⁹ As discussed further Section IV, we eliminate observations with confounding events (including the restatement announcement itself) in the auditor termination announcement window.

III. SAMPLE AND DESCRIPTIVE DATA

Sample Selection

We obtain our sample from both the GAO (2003; 2006a; 2006b) and Audit Analytics databases. The GAO portion of the sample begins with 2,705 restatements that were announced between January 1997 and June 2006, and the Audit Analytics sample begins with 5,061 restatements that were announced between January 2006 and December 2010. As summarized in Table 2, we apply similar sample selection criteria to observations from both sources to create a pooled sample spanning 1997-2010.

First, to focus the sample on only those observations involving misstated SEC filings, we exclude as non-relevant any observations that involve only corrections of earnings announcement press releases, announcements of potential restatements that do not eventually result in a restatement, pro forma restatements for mergers or newly discontinued operations, and restatements related to the adoption of new accounting pronouncements or clarifications of existing pronouncements (including FIN 48, SAB 101, SAB 108, the SEC's 2005 letter to the AICPA regarding leases, new EITF guidance, etc.). This step eliminates 359 observations from the GAO database and 2,932 observations from the Audit Analytics Database.¹⁰

We drop 645 (406) GAO (Audit Analytics) additional observations with insufficient Compustat data and 6 (8) GAO (Audit Analytics) observations where firms deregistered during the restatement process without naming a new auditor. We further eliminate 149 GAO restatements occurring in 2001 or later where Arthur Andersen audited the most recent fiscal year, as the incidence of auditor turnover for those clients is 100% irrespective of any restatement effects. We also exclude observations where an audit switch occurred within a year

¹⁰ For many firms, the adoption of FIN 48 required an adjustment to beginning retained earnings as well as adjustments and reclassifications to various tax accounts. As noted in Table 2, these FIN 48-related changes to previously reported financials represent a large number of observations in some Audit Analytics feeds.

prior to the restatement.¹¹ This restriction eliminates 110 (72) observations from the GAO (Audit Analytics) samples.

To avoid firm-level effects across observations, we retain only one restatement per firm. We thus eliminate 208 (492) GAO (Audit Analytics) observations that represent multiple announcements of the same restatement or additional subsequent restatements by the same firm within each restatement subsample. After combining the remaining restatements from each data source, we eliminate 278 duplicates (i.e., restatements appearing in both databases). Our final restatement sample consists of 2101 observations.

Auditor Turnover

As the aim of our study is to test whether firms dismiss the auditors after a restatement is discovered, it is necessary to exclude auditor changes that might have "caused" the restatement. For example, a new auditor might interpret standards differently and require its client to restate. Accordingly, we define auditor turnover in our sample as any auditor change that occurs within a year after the board of directors likely became aware of the misstatement. The internal information flow to the board is unobservable, which makes it difficult to precisely pinpoint the date a misstatement was first discovered. To be sure we only include audit changes prompted after a misstatement was discovered, we first include only auditor changes that occur in the one-year period starting on the day a restatement is announced. We then review any audit changes that occur within a month prior to the restatement announcement, and we retain only those cases

¹¹ Removing observations with auditor change in the year prior to the restatement has two major implications for our study. First, it enables us to focus on the impact of restatement on auditor turnover by eliminating cases where an auditor change potentially prompted the restatement. As previously discussed, this design choice differentiates our paper from stream of literature that considers auditor turnover as a predictor of subsequent restatements (Carcello and Nagy 2004a, 2004b; Romanus et al. 2008; and Lennox and Pittman 2010). Second, requiring the auditor to be in place for one full year ensures that we identify a culpable auditor since they opined on at least one misstated fiscal year prior to the restatement announcement.

where the filings clearly indicate that the board was aware of the misstatement prior to the auditor change.

Our auditor turnover window is based on the first announcement of termination. As such, if the termination of the incumbent auditor is announced separately from the appointment of a new auditor, the termination announcement date is used to determine whether or not the turnover occurs in the defined window.¹² We follow the same search procedures to identify any auditor changes in the 12 months *prior* to the restatement to ensure compliance with our sample restriction that the auditor engaged at the time of restatement has been engaged for at least one year prior to restatement.

To identify auditor changes for the GAO restatement sample, we search EDGAR for 8-Ks filed in the two years around the restatement announcement date that contain "Item 4.01" or a section titled "Changes in Registrant's Certifying Accountants." We supplement our 8-K search by cross-checking any changes in the firm's auditor code as reported by Compustat. We also confirm auditor continuance for any observation where the Compustat auditor code is missing or is the nonspecific "other" auditor.

To identify auditor changes for the Audit Analytics restatement sample, we begin with all auditor turnovers listed for sample firms in the Audit Analytics Auditor Change file in the two years around the restatement announcement day. For each auditor change noted, we review the related 8-K filing to confirm the announcement date, to determine the dismissal/resignation classification, and to validate the turnover observation.

¹² Announced auditor changes that apply only to subsidiaries or related pension plans are disregarded. In cases of audit firm mergers, the termination of the predecessor auditor and immediate subsequent hiring of the newly merged auditor is not considered turnover. For example, if a firm was previously audited by Coopers & Lybrand but announces a change to PricewaterhouseCoopers at the time of the Coopers & Lybrand and Price Waterhouse merger, this is not considered an auditor change in our study.

For all relevant auditor changes in our final sample, we review the 8-K filing announcing the auditor departure and note whether the 8-K describes the auditor change as a resignation or a dismissal. This partition is imperfect to the extent that the auditor and client negotiate the terms of the end of their relationship or the firm announces a dismissal to preempt an impending resignation. Although any misclassification likely only creates noise, we cannot completely rule out the possibility that misclassifications are potential sources of bias. To alleviate potential concerns with the quality of the dismissal versus resignation disclosure, we report separate results for both dismissals and resignations as well as total turnover (combined dismissals and resignations).

Descriptive Statistics

Table 3 provides summary statistics on general firm characteristics as well as specific restatement classifications for the firms included in our sample. Financial variables are calculated using Compustat data measured at the date of the last 10-K before the restatement announcement. All continuous variables are winsorized at the 1% and 99% levels. Our irregularity classification follows Hennes et al. (2008), while the other restatement characteristics are largely based on classification schemes from the GAO (2003; 2006a; 2006b). We provide further descriptions of both firm and restatement characteristics in Section IV, and all variable definitions are summarized in Table 1.

IV. RESULTS

Univariate Analyses: Auditor Turnover

Table 4 reports auditor turnover frequencies in the twelve months after the restatement announcement.¹³ Panel A provides information on all auditor changes, and Panels B and C provide information on auditor changes classified as resignations or dismissals, respectively. Beginning with all turnovers in Panel A, we find that 16.13% of the restatement firms announce an auditor change in the twelve months after the restatement announcement. The frequency of auditor turnover is higher for restatements caused by irregularities (20.95%) versus those caused by errors (14.70%) and for firms with predecessor non-Big 4 auditors (22.32%) versus Big 4 auditors (14.37%).

The last section of Panel A partitions the sample across both errors and irregularities and Big 4 and non-Big 4 auditors. We observe the highest occurrence of turnover (43.40%) for irregularity firms with non-Big 4 auditors and the smallest rate of turnover (13.02%) for error firms with Big 4 auditors. Looking across the rows, turnover rates increase from errors to irregularities for both auditor populations. Within each restatement type, the turnover rate is higher for firms with smaller auditors. In a Breslow-Day test, we reject the null hypothesis of homogenous odds ratios across the partitions (two-tailed p-value = 0.026), which suggests that there is an interaction effect between auditor type and restatement type. Auditor turnover is more

¹³ Although our study focuses on differential turnover within a restatement sample, we also confirm that turnover levels for restating firms are higher than for non-restating firms. We construct a control sample (untabulated) by matching each GAO restatement firm in our sample one to one with a non-restatement firm on year, two-digit SIC code, Big 4/non-Big 4 auditor, and closest total assets at the end of the last fiscal year preceding the restatement announcement. We find auditor dismissals in 12% of the restatement sample relative to 3% in the control sample of non-restatement firms. As expected, we find that restatements are significantly positively related to auditor dismissals (and overall auditor turnover) even after controlling for factors such as firm performance, leverage, growth, size, and auditor tenure.

likely following restatements classified as irregularities or when the predecessor auditor is non-Big 4, and auditor turnover is incrementally more likely when both of those conditions exist.

Panels B and C of Table 4 repeat the auditor frequency tabulation from Panel A of Table 4 but focus only on resignations or dismissals, respectively. In Panel B, we observe that 6.14% of the sample firms announce an auditor resignation in the year after the restatement; resignations thus represent about 38% of the total auditor changes observed after restatements. Similar to the overall turnover rates, the observed resignation rate is higher (9.13%) for irregularity restatements than for errors (5.25%) and for non-Big 4 auditors (9.66%) than for Big 4 auditors (5.14%). Unlike in Panel A, there is no evidence of a differential impact of the restatement type on the odds of resignation within each group. The evidence in Panel B suggests that auditor resignation is more likely following restatements classified as irregularities or when the predecessor auditor is non-Big 4 but that there is no incremental interaction effect. This evidence of increased resignation rates for the irregularity restatements with their more severe risk implications is consistent with prior literature (e.g., Krishnan and Krishnan 1997, Bockus and Gigler 1998, and Shu 2000) that hypothesizes that auditor resignations are driven by increases in the litigation-related riskiness of the client firm.

Panel C reports the frequency of auditor dismissals after our sample restatements. The dismissal subsample is the primary setting for our hypotheses that clients replace their auditor after a restatement as part of a plan to restore credibility. About 62% of the auditor changes we observe in the 12 months after the restatement announcements are dismissals, so the auditor dismissal rate across the sample is 9.99%. Interestingly, the dismissal rates are similar for errors (9.45%) and irregularities (11.83%), suggesting that clients hold auditors similarly responsible for both types of restatements. Similar to the prior two panels, the auditor dismissal rate is higher

(12.66%) when the predecessor auditor is not Big 4 than when the predecessor auditor is a Big 4 auditor (9.24%).

The third section of Panel C provides some interesting cross-tabulations. In the subsample of error restatements, the frequency of auditor dismissal is fairly similar across non-Big 4 (11.14%) and Big 4 auditors (8.87%). For firms with a Big 4 predecessor auditor, there is also no evidence of a significant difference in dismissal rates after errors (8.87%) versus after irregularities (10.26%). When the incumbent auditor is non-Big 4, however, there is a significantly higher rate of dismissal after irregularities (24.53%) than after errors (11.14%). Within the irregularities subsample then, the rate of dismissal is significantly higher for non-Big 4 auditors (24.53%) than Big 4 auditors (10.26%). In a Breslow-Day test, we reject the null hypothesis of homogenous odds ratios across the partitions (two-tailed p-value = 0.046), which suggests that there is an interaction effect between auditor type and restatement type. Overall, Panel C suggests that non-Big 4 auditors are more likely to be dismissed after a restatement relative to Big 4 auditors and are incrementally more likely to be dismissed if that restatement involved an irregularity rather than an error.

Multivariate Analyses: Auditor Turnover

The results from Panel C of Table 4 support our predictions that auditor dismissals are more likely when clients of smaller auditors are involved in an irregularity. We next examine whether these results hold after controlling for other factors that may be related to auditor turnover. All variables discussed below are also defined in Table 1.¹⁴

¹⁴ In addition to the variables discussed in this section, we also consider a control variable for the Shu (2000) measure of auditor-client mismatch to control for auditor-driven changes unrelated to the restatement. The additional data requirements to calculate the mismatch variable reduce the sample by more than 10%, so we elect not to include the measure in our primary model. In untabulated analyses, the mismatch variable is positive but insignificant in all models, and all inferences for our variables of interest are unaffected.

Prior research suggests that there is an increased likelihood of auditor turnover for firms in financial distress (Schwartz and Menon 1985; Kluger and Shields 1989) or experiencing extreme expansion or contraction (Johnson and Lys 1990), so we construct controls for *LEVERAGE* (debt to total assets), *ROA*, and *GROWTH*. We also require a control for firms' total assets (*LOG_SIZE*) as firm size may affect the auditor client relationship (Reynolds and Francis 2000). All financial statement variables are obtained from Compustat and are measured at the last 10-K date before the restatement announcement.

We control for the tenure (*LOG_TENURE*) of the incumbent auditor because prior studies (e.g., Knapp 1991; Johnson, Khurana, and Reynolds 2002; Iyer and Rama 2004; Ghosh and Moon 2005) find that auditor tenure is associated with perceptions of audit quality and could thus influence the board's decision to change auditors. Auditor tenure is estimated from Compustat and verified for any firms with non-continuous data availability or employing "other" small auditors without a specific Compustat auditor code.¹⁵

In addition to these firm-level factors, we also control for additional characteristics of the restatements that have been used in prior literature (e.g., Agrawal and Chadha 2005; Wilson 2008; Burks 2010) to capture aspects of the severity of the restatement different than the error/irregularity partition. Based on the text of the restatement announcement, we construct an indicator variable to distinguish between restatement involving audited annual financial statements (*ANNUAL*) rather than only reviewed quarterly financial statements, as auditors are less likely to be held liable for quarterly misstatements (Fuerman 1997; 1999). We also control for the directional impact of the restatement on net income (increase or decrease) with an indicator variable for income-decreasing restatements (*RESTATE_NEG*). For restatements where

¹⁵ All results are comparable using the Johnson et al. (2002) definitions of short or long auditor tenure or firm size quintiles rather than continuous measures.

the directional impact of the restatement is not available in Audit Analytics, this variable is based on the text of the restatement announcement.¹⁶

We also control for restatements related to improper revenue recognition (*REV_REC*) or involving merger and acquisition accounting (*M&A*) that may have involved input from multiple audit teams or audit firms. These variables are constructed based on the restatement classifications provided by the GAO or Audit Analytics for observations from each respective source.

We add an indicator variable (*AUDITOR_INIT*) that flags observations that are or would be classified as auditor-initiated under the GAO classification scheme (2003; 2006). This control is included because prior literature (e.g., Hribar and Jenkins 2004; Arthaud-Day et al. 2006; Desai et al. 2006; Agrawal and Cooper 2009) hypothesizes that the disclosed initiator of the restatement is related to the expected consequences of the restatement. For restatements in the GAO database, this variable is constructed from the "Prompter" variable provided by the GAO. For restatements from the latter part of the sample, this variable is based on the presence or absence of the mention of the auditor's involvement in the text of the initial restatement announcement.¹⁷

Finally, we note that there are substantial changes in both restatement characteristics and the auditing environment during our sample period (1997-2010). For example, Hennes et al. (2008) document that the frequency and severity of restatements changes over this time, and Burks (2011) finds that the average market reaction to those restatements also changes. For both restatement and non-restatement firms, auditor switching decisions are also influenced by the

¹⁶ We thank Gennaro Bernile for sharing data on the income statement effect of the GAO restatements.

¹⁷ The identity of the party who first discovered the misstatement is not always disclosed and is rarely verifiable. We follow the GAO and classify the restatement as auditor-initiated if the restatement announcement states that the auditor was partially responsible or involved in the discussions related to the restatements. We note, however, that this is likely not perfectly correlated with whether or not the auditor actually uncovered the misstatement.

supply shocks from the contraction of the Big N from auditor mergers and the disappearance of

Arthur Andersen (Landsman, Nelson, and Rountree 2009) during the sample period.

Additionally, board perceptions of who is liable for misstatements may have been impacted by

the Sarbanes-Oxley Act (2002) and Statement on Auditing Standards No. 99 (2002). We include

year fixed effects in our primary turnover analysis to control for the potential impact of time

trends on the consequences of restatements during our sample period.¹⁸

We thus begin our multivariate analysis by estimating the following logistic regression for all

auditor turnover:

$$AUDITOR_TO = f(\alpha_0 + \beta_1 IRREGULARITY + \beta_2 LEVERAGE + \beta_3 ROA + \beta_4 GROWTH + \beta_5 LOG_SIZE + \beta_6 LOG_TENURE + \beta_7 AUDITOR_INIT + \beta_8 ANNUAL + \beta_9 RESTATE_NEG + \beta_{10} M \& A + + \beta_{11} REV_REC + \beta_i YEAR FIXED EFFECTS + \varepsilon$$

$$(1)$$

where,

AUDITOR_TO	=	1 if the auditor turned over in the 12 months after the restatement
		announcement, and 0 otherwise;
IRREGULARITY	=	1 if the restatement is classified as an irregularity using the
		classification scheme in Hennes et al. (2008), and 0 otherwise;
LEVERAGE	=	Debt / Total Assets;
ROA	=	Operating income before interest and taxes scaled by assets;
GROWTH	=	Change in sales from $t-2$ to $t-1$ scaled by sales in $t-2$;
LOG_SIZE	=	Log of total assets;
LOG_TENURE	=	Log of auditor tenure;
AUDITOR_INIT	=	1 if the restatement is classified as auditor-initiated using the GAO
		classification scheme (2003; 2006), and 0 otherwise;
ANNUAL	=	1 if the restatement amends a 10-K filing, and 0 otherwise;
RESTATE_NEG	=	1 if the restatement is income-decreasing, and 0 otherwise;
M&A	=	1 if any part of the restatement involves improper acquisition or
		merger accounting, and 0 otherwise;
REV_REC	=	1 if any part of the restatement involves improper revenue
		recognition, and 0 otherwise.

¹⁸ The unconditional maximum likelihood estimator is biased in nonlinear models in the presence of fixed effects (See Neyman and Scott 1948, Lancaster 2000, or Greene 2004b for a discussion of the issue), but Monte Carlo studies show that this bias diminishes rapidly as group size increases. Katz (2001) argues that the bias is negligible if the number of observations in each group exceeds fifteen, and Greene (2004a) suggests that the fixed effects model may be preferable to a pooled model (which ignores the expected heterogeneity) once group size exceeds eight. Our results are not sensitive to the omission of the year fixed effects.

Column 1 of Table 5 reports the logistic regression results for Equation 1. Consistent with our univariate results, the significantly positive coefficient on *IRREGULARITY* suggests that auditor turnover is more likely to occur when the restatement is classified as an irregularity. Looking at the control variables in Column 1 of Table 5 shows that larger firms are less likely to experience audit turnover, which is consistent with larger firms having higher switching costs and fewer choices of qualified auditors. The coefficient on our auditor tenure measure is significantly negative, which suggests longer client-auditor relationships may have benefits that outweigh the credibility concerns associated with a restatement. The variables *AUDITOR_INIT* and *RESTATE_NEG* are also weakly significant, indicating that there is a greater likelihood of auditor turnover when the auditor is named in the restatement announcement and when the income impact of the restatement is negative.

The second column in Table 5 repeats the regression in Equation 1 as a multinomial logistic regression with separate coefficients for the likelihood of auditor resignation and the likelihood of auditor dismissal relative to the no turnover group. The coefficient on *IRREGULARITY* remains positive and significant for auditor resignations, indicating that there is an increased likelihood of an auditor resignation after restatements that involve irregularities rather than after restatements that involve errors. As the *IRREGULARITY* partition attempts to capture those restatements that are closer to intentional fraud than accidental errors, the increased resignation rate after irregularities reflects the auditors' inability to continue to rely on management's assertions or the auditor's dissatisfaction with the client's revised risk profile. The coefficient on *IRREGULARITY* is insignificant for dismissals. Overall, the evidence from Column 2 is consistent with auditors resigning more after irregularities due to increased risk but provides no

evidence of differential dismissals for restatements involving errors relative to restatements involving irregularities.

In terms of the control variables, we continue to find strong evidence that larger client firms are less likely to experience auditor turnover of either kind. Longer auditor tenure reduces the likelihood of resignation but there is no evidence that the length of the auditor-client relationship impacts the odds of dismissal. We do find that auditors are more likely to be dismissed for annual restatements (as opposed to quarterly restatements), which is consistent with auditors being held more responsible for audited (relative to reviewed) financial statements.

Overall, Table 5 documents an increased likelihood of auditor resignations after restatements involving irregularities but not for auditor dismissals. Given that the results from the univariate analysis in Table 4 indicate the impact of irregularities on the odds of turnover (or dismissal) varies by auditor size, we move on to our second set of hypotheses involving auditor size and modify Equation 1, accordingly. Specifically, we add the variable *NONBIG4* and the interaction term *IRREGULARITY*NONBIG4*, where *NONBIG4* is equal to one if the firm was not a client of a Big N auditing firm at the time of the restatement announcement, and zero otherwise. All other variables remain as previously defined, and we repeat our logistic regression analyses on the following model:

$AUDITOR_TO = f(\alpha_0 + \beta_1 IRREGULARITY + \beta_2 NONBIG4 + \beta_3 IRREGULARITY*NONBIG4 + B_4 LEVERAGE + \beta_5 ROA + \beta_6 GROWTH + \beta_7 LOG_SIZE + \beta_8 LOG_TENURE + (2)$ $\beta_9 AUDITOR_INIT + \beta_{10} ANNUAL + \beta_{11} RESTATE_NEG + \beta_{12} M &A + \beta_{13} REV_REC + \beta_i YEAR FIXED EFFECTS + \varepsilon$

Column 1 of Table 6 reports the logistic regression results for Equation 2 with all auditor turnover as the dependent variable. The coefficients on *IRREGULARITY* and *NONBIG4* are not significant, but the coefficient on *IRREGULARITY*NONBIG4 is* significantly positive. The lack

of main effects implies that there is no difference in the likelihood of auditor turnover for Big 4 versus non-Big 4 auditors after errors and that there is no difference in the expected turnover rate for Big 4 auditors across either restatement type. There is, however, evidence that the odds of auditor turnover are higher on average for non-Big 4 auditors after irregularities than for any other combination (non-Big 4 and errors, Big 4 and errors, Big 4 and irregularities). Using tests of the sums of the relevant coefficients, we conclude from Column 1 that the odds of auditor turnover after a restatement increase significantly more for non-Big 4 auditors if the restatement involved an irregularity rather than an error. We can also conclude that within the set of irregularities, the odds of auditor turnover increase significantly more for non-Big 4 auditors than for Big 4 auditors.¹⁹

The second column in Table 6 repeats the regression in Equation 2 as a multinomial logistic regression with separate coefficients for the likelihood of auditor resignation and the likelihood of auditor dismissal relative to the no turnover group. For both columns, the control variables are generally insignificant or consistent with the results discussed previously. For the variables of interest, we observe an interesting contrast between the resignation and dismissal turnovers. For the resignation group, we find significant positive coefficient on *IRREGULARITY*, but the coefficients on *NONBIG4* and *IRREGULARITY*NONBIG4* are not significant. This evidence, combined with the tests of the coefficient sums presented at the bottom of the table, indicates increased odds of auditor resignation following restatements involving irregularities (rather than errors) for both Big 4 and non-Big 4 auditors. Consistent with univariate inferences from Panel B

¹⁹ We further examine the interaction effect using the statistical and graphical approaches advocated by Ai and Norton (2003) and Greene (2010) for all interaction terms reported in Table 6. Inferences on the direction and significance of the interaction effect are consistent with the coefficient in all columns in Table 6.

of Table 4, there is no evidence that this impact of irregularities on resignation rates differs by auditor size.

For the dismissals in Column 2, the coefficient on *IRREGULARITY*NONBIG4 is* significantly positive, but the coefficients on *IRREGULARITY* and *NONBIG4* are insignificant. Similar to our inferences from the overall auditor turnover presented in column 1, we find no evidence of a difference in the likelihood of auditor dismissals for Big 4 versus non-Big 4 auditors after errors and no evidence of a difference in the expected dismissal rate for Big 4 auditors by restatement type. There is, however, evidence that the likelihood of an auditor dismissal after a restatement is significantly higher for non-Big 4 auditors if the restatement involved an irregularity rather than an error.

Evaluating the dismissal coefficients in Column 2 at the mean or median of the other variables, we find that non-Big 4 auditors are more than twice as likely to be dismissed if the restatement involved an irregularity than if the restatement involved only an error. We also show that within the set of irregularities, auditor dismissal is significantly more likely for non-Big 4 auditors than for Big 4 auditors. Evaluated at the mean or median of the other variables, auditor dismissals after irregularities are also more than twice as likely when the incumbent auditor is a non-Big 4 auditor than when the incumbent auditor is a Big 4 auditor. Overall, we conclude from Table 6 that non-Big 4 clients are more likely to dismiss their auditors if the restatement involved an irregularity rather than an error. This evidence is consistent with smaller firms having greater need to restore credibility after a restatement involving intentional misrepresentation than when there was simply an unintentional error.

Market Reaction to Auditor Turnover

We next examine the market's reaction to the auditor turnover announcement conditional on various aspects of the announcement. In contrast to the insignificant or negative market reactions found in prior auditor change studies, the restatement setting offers a unique opportunity to capture a positive market reaction to an auditor dismissal announcement. Specifically, if restating firms dismiss their underperforming auditor as part of a strategy of restoring financial reporting credibility, we predict a positive market reaction corresponding to the decreased risk profile of the firm.

We calculate the mean and median cumulative abnormal returns over the five-day window centered on the auditor departure announcements in our sample. To ensure that our returns are not confounded by the restatement news, we eliminate any auditor turnovers that occur within seven days of the restatement announcement. We next search Lexis-Nexis for press coverage of the firm around the auditor turnover announcement and eliminate observations with other major confounding events (e.g., CEO turnover, bankruptcy filing, debt downgrade to junk status, etc.) in the auditor turnover return window. We also eliminate observations where the stock price was less than a dollar, trading was suspended during the returns window, or price is unavailable on CRSP. These requirements reduce the sample to 195 auditor change announcement observations.

Panel A of Table 7 provides a summary of the auditor turnover announcement returns. For all turnovers combined, the mean announcement return is weakly negative (-1.35%). However, when we separate the resignation and dismissals, we find a significant negative market reaction (-6.22%) for the resignation subsample (consistent with some of the prior evidence on resignations outside the restatement setting) and, as predicted, a significant positive market reaction (1.57%) to the auditor dismissal subsample. This positive market response to an auditor

dismissal announcement is consistent with investors' approving of the firm's decision to replace the auditor in this unique restatement setting.

We explore whether the market reaction to the dismissal announcement is more positive in cases where the restatement involved an irregularity rather than only an error. Despite the fairly small sample size, we find evidence that market reaction to auditor dismissals is significantly more positive after irregularities (4.52%) than following errors (0.77%). For completeness, we further partition the dismissal announcement returns for the irregularity subsample by whether or not the dismissed auditor is Big 4 or Non-Big 4. Although there is some evidence that the market reaction to the auditor dismissals is more positive when the incumbent auditor is a non-Big 4 auditor versus a Big 4 auditor, the small number of observations in select cells preclude any strong conclusions.

We next consider the identity of the incoming auditor as well as the identity of the dismissed auditor as both the dismissal and new engagement could occur in our returns window. Prior studies (e.g., Eichenseher et al. 1989) note that the switches into or out of the Big 4 are sometimes interpreted as a signal of the firm's future prospects with correspondingly different market reactions than a lateral switch. We thus review our auditor dismissal announcements for information on the successor auditor and find that in all but ten cases the auditor dismissal announcement also identifies the newly engaged auditor.

Panel B reports the cumulative abnormal return around the auditor dismissal announcements separately depending on whether the client switches up from a non-Big 4 auditor to a Big 4, makes a switch to a similarly sized auditor, or switches down from a Big 4 auditor to a non-Big 4 auditor. The average market reaction to those firms that do announce a move from a non-Big 4 to a Big 4 auditor is positive in sign (3.94%) but insignificantly different from zero with only

twelve observations. The average market reaction to dismissals that result in a lateral auditor switch remains significantly positive (2.50%). This is consistent with Panel A and indicative that the positive market response reported there is not driven only by firms that announce a switch to a larger auditor concurrent with the auditor dismissal.

The observations from the dismissal sample where a successor auditor of similar or larger size was named represent the changes most likely to restore reporting credibility. Focusing on this subsample, we find that market reaction for this group is both significantly positive (2.75%), and significantly greater than the reaction for the group of firms that switched to a smaller auditor. Finally, we re-examine the market reaction to the dismissal announcements partitioning on restatement type. Consistent with Panel A, we continue to find that the market reaction to the dismissal is significantly more positive after irregularities than after errors in both the lateral switch and lateral plus upgrade samples.

Overall, we find evidence that the market responds positively, on average, to firms that dismiss their auditors after a restatement and engage a comparably sized or larger successor auditor. This reaction is significantly more positive following restatements involving irregularities rather than errors. Although auditor changes are costly, our study isolates a unique setting (auditor dismissals after restatements) where investors perceive that the benefits to the firm in terms of financial reporting credibility outweigh the costs.

V. CONCLUSION

The literature investigating the consequences of restatements has grown substantially over the past several years. This study extends that literature by examining auditor dismissals after restatement announcements and the market reactions to the dismissals in these circumstances. We find that the likelihood of an auditor dismissal after a restatement is significantly higher for

non-Big 4 auditors if the restatement involved an irregularity rather than an error, which is consistent with the firm's credibility concerns leading to higher dismissal rates when reputation is lowest (i.e., when the auditor has less reputational capital and the restatement is more damaging). We find no evidence of differential dismissal rates across errors or irregularities for Big 4 auditors, suggesting that Big 4 clients hold auditors equally accountable for the two types of restatements. We do note, however, that there are increased odds of auditor resignation following restatements involving irregularities (rather than errors) for both Big 4 and non-Big 4 auditors. Overall, this evidence on the circumstances in which termination penalties are imposed on auditors for failing to detect accounting misstatements should be useful to both academics and regulators concerned with limited competition in the audit market and the corresponding ability of the audit market to self-regulate.

We also document that the market responds positively, on average, to firms that dismiss their auditors after a restatement and engage a comparably sized or larger successor auditor despite substantial switching costs associated with moving to a new auditor. This reaction is significantly more positive following restatements involving irregularities rather than errors. This positive market response is notable as the auditor turnover literature generally shows a negative or insignificant reaction to auditor change announcements in more general settings. Our unusual evidence on a positive market reaction to auditor dismissal announcements after restatements is important as it suggests that firms reap market benefits by dismissing their auditors in this setting.

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TABLE 1Variable Definitions (Alphabetical Order)

Variable Name	Definition
ANNUAL	is equal to one if the firm restated a 10-K, and zero if the firm restated only 10-Qs.
AUDITOR_INIT	is equal to one if the restatement is classified as auditor-initiated using the GAO classification scheme
	(2003; 2006), and zero otherwise.
AUDITOR_TO	is equal to one if the auditor changes within twelve months after the restatement, and zero otherwise.
ATO_CAR	is the firm's cumulative abnormal return from two trading days prior to the auditor change announcement
	through two trading days after the announcement, where expected returns are the CRSP value-weighted returns inclusive of dividends.
ERROR	is equal to one if the restatement is classified as an error using the classification scheme in Hennes, Leone,
	Miller (2008), and zero otherwise.
GROWTH	is the change in sales from $t-2$ to $t-1$ scaled by sales in $t-2$.
IRREGULARITY	is equal to one if the restatement is classified as an irregularity using the classification scheme in Hennes,
	Leone, Miller (2008), and zero otherwise.
LEVERAGE	is debt scaled by total assets.
LOG_SIZE	is the log of total assets.
LOG_TENURE	is the log of auditor tenure.
M&A	is equal to one if the restatement involves improper acquisition or merger accounting, and zero otherwise.
NONBIG4	is equal to one if the firm was not a client of a Big 4 (Big 4, 5, or 6 depending on the period) auditing firm
	at the time of the restatement, and zero otherwise.
RESTATE_NEG	is equal to one if the restatement was income-decreasing, and zero otherwise.
REV_REC	is equal to one if the restatement involves improper revenue recognition, and zero otherwise.
ROA	is operating income before interest and taxes scaled by assets.
SALES	is net sales.
SIZE (ASSETS)	is total assets.

Note: All financial statement variables are measured at the date of the last 10-K before the restatement announcement.

	GAC) Database		
Combined GAO Database (January 1997 - September 2006)		2705		
Less non-relevant restatements	-359	2346		
Less firms with insufficient data in Compustat	-645	1701		
Less duplicate announcements / firms	-208	1493		
Less firms audited by Arthur Andersen after 2000	-149	1344		
Less firms where auditor tenure is less than 12 months	-110	1234		
Less firms that deregistered prior to naming new auditor	-6	1228		
Total GAO Restatement Sample		1228		
	Audit Analytics Database			
Audit Analytics Database (January 2006 - December 2010)		5061		
Less FIN 48 adoptions	-2218	2843		
Less other non-relevant restatements	-714	2129		
Less firms with insufficient data in Compustat	-406	1723		
Less duplicate announcements / firms	-492	1231		
Less firms where auditor tenure is less than 12 months	-72	1159		
Less firms that deregistered prior to naming new auditor	-8	1151		
Total Audit Analytics Restatement Sample		1151		
	Combin	ed Databases		
Combined Databases (GAO + Audit Analytics)		2379		
Less overlapping observations and repeated firms between GAO and Audit Analytics samples	-278	2101		
Final Restatement Sample		2101		

Notes: The sample selection procedures are discussed in detail in Section III. Our final sample of restatements consists of both restatements identified by the GAO (2003; 2006a; 2006b) as well as restatements identified by Audit Analytics. We perform similar selection procedures in both samples. First, to focus only on examples involving misstated SEC filings, we eliminate as non-relevant any observations that involve only corrections of earnings announcement press releases, announcements of potential restatements that do not eventually result in a restatement, pro forma restatements for mergers or newly discontinued operations, and restatements related to the adoption of new accounting standards (including FIN 48, SAB 108, new EITFs, etc.). We eliminate any duplicate announcements and any subsequent restatements made by the same firm so that each firm appears in the sample only once. We also exclude observations in 2001 or later where the incumbent auditor is Arthur Andersen as auditor turnover there is 100% irrespective of any restatement effect. We require the auditor to have been engaged for at least one year at the time of the restatement, so we eliminate observations where auditor tenure at the time of the restatement announcement is less than twelve months. We eliminate companies with insufficient Compustat data and cases where firms deregistered during the restatement process without naming a new auditor. Finally, we combine the GAO and Audit Analytics samples and eliminate any duplicate firms from the combined samples.

TABLE 2Restatement Sample Selection

		Restatem	ent Sample	
	Ν	Mean	Median	Std
Firm Characteristics				
SALES	2101	2,093	215	6,763
GROWTH	2101	29.85%	10.54%	91.49%
SIZE (ASSETS)	2101	5,471	359.6	24,437
ROA	2101	-6.90%	1.07%	30.25%
NONBIG4	2101	22.18%	0.00%	41.56%
LEVERAGE	2101	25.62%	19.44%	26.02%
TENURE	2101	8.8	6.0	10.1
Restatement Characteristics				
IRREGULARITY	2101	22.94%		
AUDITOR_INIT	2101	13.66%		
M&A	2101	7.57%		
RESTATE_NEG	2101	53.26%		
REV_REC	2101	22.46%		
ANNUAL	2101	70.87%		

TABLE 3Descriptive Statistics

Notes: This table provides descriptive statistics for combined restatement sample. Variable definitions are provided in Table 1. Details of the sample selection procedure for restatement firms are provided in Table 2. All variables are winsorized at the 1% and 99% levels. Financial variables are measured at the date of the last 10-K before the restatement announcement. These data are obtained from the Compustat annual files and are thus primarily the original reported numbers (not restated) but will include restated numbers for the most timely restatements as Compustat's treatment of the restatement varies at different stages in their data acquisition timeline.

TABLE 4Turnover Frequency

Panel A: All Turnover Errors versus Irregularities

	Total		Irregularities		Errors			Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Restatement	2101	16.13%	482	20.95%	1619	14.70%	6.25%	10.74 ***

Big 4 versus Non-Big 4

	Total		Non-Big 4		Big 4			Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Restatement	2101	16.13%	466	22.32%	1635	14.37%	7.95%	16.91 ***

Errors versus Irregularities and Big 4 versus Non-Big 4

	Total		Irre	Irregularities		Errors		Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Non-Big 4	466	22.32%	53	43.40%	413	19.61%	23.79%	15.3 ***
Big 4	1635	14.37%	429	18.18%	1206	13.02%	5.16%	6.86 ***
N Differences %	2101	7.95%	482	25.22%	1619	6.59%	18.63%	
Chi Square Statistic		16.91 ***		18.11 ***		10.67 ***		4.97 ##

Notes: This table presents auditor turnover frequencies in the 12 months after a restatement for various subsamples. Panel A provides a summary for all turnover. Panel B (Panel C) presents the frequency of auditor changes reported as resignations (dismissals). Big 4 (Non-Big 4) indicates firms that were (not) a client of a Big N (Big 4, Big 5, or Big 6 depending on the period) auditing firm at the time of the restatement announcement. Irregularities and errors are based on the classification scheme in Hennes, Leone, Miller (2008). *** and ** indicate p-values of less than 1% or 5%, respectively, for two-tailed Chi-Square tests of the difference in auditor turnover frequency by groups.^{##} indicates a p-value of less than 5% for a two-tailed Breslow-Day test of the homogeneity of the odds ratio across the partitions.

TABLE 4 (Continued)Turnover Frequency

Panel B: Resignation Turnovers Errors versus Irregularities

	Total		Irregularities		Errors			Chi Square		
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic		
Restatement	2101	6.14%	482	9.13%	1619	5.25%	3.88%	9.70 ***		

Big 4 versus Non-Big 4

	Total		Non-Big 4		Big 4			Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Restatement	2101	6.14%	466	9.66%	1635	5.14%	4.52%	12.85 ***

Errors versus Irregularities and Big 4 versus Non-Big 4

	Total		Irregularities		Errors			Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Non-Big 4	466	9.66%	53	18.87%	413	8.47%	10.40%	5.82 **
Big 4	1635	5.14%	429	7.93%	1206	4.15%	3.78%	9.27 ***
N Differences %	2101	4.52%	482	10.94%	1619	4.32%	6.62%	
Chi Square Statistic		12.85 ***		6.81 ***		11.59 ***		0.262

Notes: This table presents auditor turnover frequencies in the 12 months after a restatement for various subsamples. Panel A provides a summary for all turnover. Panel B (Panel C) presents the frequency of auditor changes reported as resignations (dismissals). Big 4 (Non-Big 4) indicates firms that were (not) a client of a Big N (Big 4, Big 5, or Big 6 depending on the period) auditing firm at the time of the restatement announcement. Irregularities and errors are based on the classification scheme in Hennes, Leone, Miller (2008). *** and ** indicate p-values of less than 1% or 5%, respectively, for two-tailed Chi-Square tests of the difference in auditor turnover frequency by groups.^{##} indicates a p-value of less than 5% for a two-tailed Breslow-Day test of the homogeneity of the odds ratio across the partitions.

TABLE 4 (Continued)Turnover Frequency

Panel C: Dismissal Turnovers Errors versus Irregularities

	Total		Irregularities			Errors		Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Restatement	2101	9.99%	482	11.83%	1619	9.45%	2.38%	2.33

Big 4 versus Non-Big 4

	Total		Non-Big 4			Big 4		Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Restatement	2101	9.99%	466	12.66%	1635	9.24%	3.42%	4.73 **

Errors versus Irregularities and Big 4 versus Non-Big 4

	Total		Irregularities		Errors			Chi Square
	Ν	Turnover %	Ν	Turnover %	Ν	Turnover %	Differences %	Statistic
Non-Big 4	466	12.66%	53	24.53%	413	11.14%	13.39%	7.62 ***
Big 4	1635	9.24%	429	10.26%	1206	8.87%	1.39%	0.72
N Differences %	2101	3.42%	482	14.27%	1619	2.27%	12.00%	
Chi Square Statistic		4.73 **		9.21 ***		1.85		3.98 ##

Notes: This table presents auditor turnover frequencies in the 12 months after a restatement for various subsamples. Panel A provides a summary for all turnover. Panel B (Panel C) presents the frequency of auditor changes reported as resignations (dismissals). Big 4 (Non-Big 4) indicates firms that were (not) a client of a Big N (Big 4, Big 5, or Big 6 depending on the period) auditing firm at the time of the restatement announcement. Irregularities and errors are based on the classification scheme in Hennes, Leone, Miller (2008). *** and ** indicate p-values of less than 1% or 5%, respectively, for two-tailed Chi-Square tests of the difference in auditor turnover frequency by groups. ## indicates a p-value of less than 5% for a two-tailed Breslow-Day test of the homogeneity of the odds ratio across the partitions.

	Pred.	(1)	(2	2)
	Sign	All Turnovers	Resigned	Dismissed
IRREGULARITY	+	0.391 **	0.653 ***	0.219
		(2.54)	(2.85)	(1.16)
LEVERAGE	+	0.499 **	0.119	0.713 **
		(2.06)	(0.31)	(2.50)
ROA	-	0.333	0.296	0.392
		(1.64)	(1.03)	(1.55)
GROWTH	+	0.035	-0.030	0.077
		(0.55)	(-0.29)	(1.04)
LOG_SIZE	+/-	-0.294 ***	-0.344 ***	-0.268 ***
		(-8.13)	(-6.03)	(-6.23)
LOG_TENURE	+/-	-0.183 **	-0.410 ***	-0.063
		(-2.08)	(-2.88)	(-0.60)
AUDITOR_INIT	+/-	0.300 *	0.263	0.302
		(1.74)	(1.02)	(1.45)
ANNUAL	+	0.215	-0.120	0.444 **
		(1.48)	(-0.57)	(2.41)
RESTATE_NEG	+	0.234 *	0.237	0.243
		(1.78)	(1.17)	(1.53)
M&A	-	0.013	-0.229	0.103
		(0.05)	(-0.51)	(0.36)
REV_REC	+	0.095	0.250	-0.005
		(0.63)	(1.12)	(-0.02)
VEAD FIVED FFFECTS		VES	VI	FS
I LAK FIALD EFFEUIS		1 ES	11	
Psuedo- R^2 (%)		8.47%	8.6	0%
Log Likelihood		157.21	198	3.32
Ν		2101	21	01

TABLE 5Logistic Regression - Auditor Turnover

Notes: This table reports logistic and multinomial logistic regression results for Equation 1 with Z statistics reported in parentheses below each coefficient. Variable definitions are provided in Table 1. The constant is not reported as year fixed effect regressions are estimated. Details of the sample selection procedure for restatement firms are provided in Table 2 for the 2101 restatement observations (1762 no turnover, 129 resignation s, 210 dismissals). Column 1 shows the logistic regression results with auditor turnover in the twelve months following the restatement as the dependent variable. Column 2 shows the results from multinomial logistic regression with type of turnover (zero for no turnover, one for resignation turnover, and two for dismissal turnover) as the dependent variable. Pseudo-R2 is McFadden's Pseudo-R2. ***, **, and * represent two-tailed p-values based on Z statistics that are less than 1%, 5%, and 10%.

 TABLE 6

 Logistic Regression: Big 4 and Non-Big 4 Auditor Turnover

r	Pred.	(1)	(1) (2)	
	Sign	All Turnovers	Resigned	Dismissed
IRREGULARITY	+	0.223	0.553 **	0.022
		(1.31)	(2.12)	(0.10)
NONBIG4	+	-0.039	0.053	-0.102
		(-0.21)	(0.19)	(-0.46)
IRREGULARITY*NONBIG4	+	0.881 **	0.551	1.079 **
		(2.47)	(1.11)	(2.51)
LEVERAGE	+	0.498 **	0.113	0.715 **
		(2.04)	(0.29)	(2.49)
ROA	-	0.348 *	0.309	0.407
		(1.71)	(1.08)	(1.60)
GROWTH	+	0.044	-0.024	0.088
		(0.70)	(-0.23)	(1.19)
LOG_SIZE	+/-	-0.281 ***	-0.327 ***	-0.258 ***
		(-7.08)	(-5.19)	(-5.47)
LOG_TENURE	+/-	-0.165 *	-0.388 ****	-0.047
		(-1.82)	(-2.65)	(-0.44)
AUDITOR_INIT	+/-	0.315 *	0.269	0.322
		(1.82)	(1.03)	(1.54)
ANNUAL	+	0.231	-0.108	0.460 **
		(1.59)	(-0.51)	(2.49)
RESTATE_NEG	+	0.240 *	0.243	0.248
		(1.82)	(1.20)	(1.56)
M&A	-	0.019	-0.225	0.110
		(0.07)	(-0.51)	(0.38)
REV_REC	+	0.103	0.259	0.002
		(0.68)	(1.15)	(0.01)
VEAD EIVED EFFECTS		VES	VE	c
I EAR FIAED EFFECTS		I EO	1 1.4	5
CHI-SQUARE STATISTIC - TEST OF:				
IRREGULARITY + IRREGULARITY*N	ONBIG4 > 0	11.63 ###	6.41 ##	8.03 ###
NONBIG4 + IRREGULARITY*NONBIC	G4 > 0	6.29 ##	1.71	5.87 ##
Psuedo-R ² (%)		8.81%	8.89	%
Log Likelihood		163.68	205.	14
N		2101	210	1

Notes: This table reports logistic and multinomial logistic regression results for Equation 2 with Z statistics reported in parentheses below each coefficient. Variable definitions are provided in Table 1. The constant is not reported as year fixed effect regressions are estimated. Details of the sample selection procedure for restatement firms are provided in Table 2 for the 2101 restatement observations (1762 no turnover, 129 resignations, 210 dismissals). Column 1 shows the logistic regression results with auditor turnover in the twelve months following the restatement as the dependent variable. Column 2 shows the results from multinomial logistic regression with type of turnover (zero for no turnover, one for resignation turnover, and two for dismissal turnover) as the dependent variable. Pseudo-R2 is McFadden's Pseudo-R2. ***, **, and * represent two-tailed p-values based on Z statistics that are less than 1%, 5%, and 10%. ^{###} and ^{##} represent two-tailed p-values based on Chi-Square test statistics that are less than 1% and 5%.

Table 7 Analysis of Auditor Turnover Announcement Returns

Panel A – Univariate Statistics - All Auditor Turnover after Restatement Announcement Breakdown of Dismissed vs. Resigned

Dicakuowii of Disinisseu vs. Resigneu										
	Pred.		25th			75th				
	Sign	Ν	Percentile	Mean	Median	Percentile				
Combined		195	-5.26%	-1.35% *	-0.92% *	3.05%				
Auditor Dismissed	+	122	-2.16%	1.57% **	0.17%	5.20%				
Auditor Resigned	-	73	-10.94%	-6.22% ***	-3.72% ***	0.88%				
Difference				7.79% ***	3.89% ***	_				

All Dismissals

Irregularity vs. Error				Irregularity vs. Error				
	Ν	Mean	Median		Ν	Mean	Median	
Auditor Dismissed	122	1.57% **	0.17%	Non-Big 4 Dismissed	26	1.35%	0.86%	
Irregularity	26	4.52% *	3.09%	Irregularity	3	12.62%	5.16%	
Error	96	0.77%	0.01%	Error	23	-0.12%	0.85%	
Difference		3.75% **	3.08%	Difference		12.75% ****	4.31%	

Non-Big 4 Auditor Dismissals

Big 4 Auditor Dismissals

Auditor Dismissals after Irregularities

Big 4 vs. Non-Big 4				Irregularity vs. Erro	or		
	Ν	Mean	Median		Ν	Mean	Median
Irregularity	26	4.52% *	3.09%	Big 4 Dismissed	96	1.63% *	0.01%
Non-Big 4	3	12.62%	5.16%	Irregularity	23	3.46%	2.31%
Big 4	23	3.46%	2.31%	Error	73	1.05%	-0.05%
Difference		9.16%	2.85%	Difference		2.41%	2.36%

Notes: This table reports univariate statistics for audit turnover announcement returns. The announcement return is the firm's cumulative abnormal return from two trading days prior to the auditor turnover announcement through two trading days after the announcement. Panel A reports results from univariate analysis for all turnover. Panel B reports results from univariate analysis incorporating the newly appointed auditor after turnover. Auditor turnover occurred 339 times in the primary restatement sample. That sample is reduced to 195 turnover events (122 dismissals and 73 resignations) here after eliminating observations where returns data is unavailable, where there was a major confounding event in the 5-day return window, where stock price was less than a dollar, or where the auditor turnover was announced seven days or less after the restatement announcement. ***, **, and * represent two-tailed p-values based on t statistics that are less than 1%, 5%, and 10%.

Table 7 (Continued)

Analysis of Auditor Turnover Announcement Returns

Panel B - Univariate Statistics - Turnover after Restatement Announcement with Newly Appointed Auditor Breakdown by Newly Appointed Auditor

	Pred. Sign	N	25th Percentile	Mean	Median	75th Percentile
Auditor Dismissed	+	122	-2.16%	1.57% **	0.17%	5.20%
Switch Up (Non-Big 4 Switch to Big 4)	+	12	-1.35%	3.94%	1.57%	4.71%
Lateral Switch	+	58	-1.58%	2.50% **	0.28%	5.62%
Switch Down (Big 4 Switch to Non-Big 4)	-	42	-2.85%	-0.45%	-0.19%	3.05%
New Auditor Not Announced at Turnover	+/-	10	-3.82%	1.81%	0.49%	8.66%

Comparison of Lateral Switches and Switches Up with Switches Down

	Pred.		25th			75th
	Sign	Ν	Percentile	Mean	Median	Percentile
Combined Lateral Switches and Switches Up	+	70	-1.45%	2.75% ***	0.63% *	5.44%
Switch Down (Big 4 Switch to Non-Big 4)	-	42	-2.85%	-0.45%	-0.19%	3.05%
Difference				3.20% **	0.82%	

All Dismissals with Lateral or Switches Up Irregularity vs. Error

All Dismissals with Lateral Switches Only Irregularity vs. Error Mean Median ъr Mean

	Ν	Mean	Median		Ν	Mean	Median
Auditor Dismissed	70	2.75% ***	0.63% *	Auditor Dismissed	58	2.50% **	0.28%
Irregularity	16	7.57% **	4.77% **	Irregularity	15	5.92% *	4.10%
Error	54	1.32%	-0.04%	Error	43	1.31%	-0.15%
Difference		6.25% ***	4.81%	Difference		4.61% **	4.25%

Notes: This table reports univariate statistics for audit turnover announcement returns. The announcement return is the firm's cumulative abnormal return from two trading days prior to the auditor turnover announcement through two trading days after the announcement. Panel A reports results from univariate analysis for all turnover. Panel B reports results from univariate analysis incorporating the newly appointed auditor after turnover. Auditor turnover occurred 339 times in the primary restatement sample. That sample is reduced to 195 turnover events (122 dismissals and 73 resignations) here after eliminating observations where returns data is unavailable, where there was a major confounding event in the 5-day return window, where stock price was less than a dollar, or where the auditor turnover was announced seven days or less after the restatement announcement. ***, **, and * represent two-tailed p-values based on t statistics that are less than 1%, 5%, and 10%.