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The Responses of Non-Switching Audit Clients and Investors to Damaged Auditor Office Reputation

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1. Introduction

Reputation is a first-order consideration for auditors to attract and retain clients (DeAngelo 1981; DeFond and Zhang 2014). Research documents that when client restatement announcements impair auditor office reputation, the damaged offices lose clients and market share (Swanquist and Whited 2015).[1] However, despite this market penalty due to auditor office reputation losses, approximately 80 percent of audit clients do not switch away from reputationally-damaged auditor offices, likely due to auditor switching costs.[2] Much less is known about whether restatement revelations affect non-restating firms within the same audit office, along with their investors' perceptions. In this study, we are interested in examining whether and how these non-switching clients alter management forecast levels to mitigate the lower audit quality concern due to auditor office reputational damage. We also investigate whether and how investors of the non-restating firms change their reactions to reported earnings and management forecasts given this negative audit quality reputation shock.

We are interested in management forecasts in this setting for the following two key reasons. First, seminal survey research by Graham, Harvey, and Rajgopal (2005) reveals that managers use management forecasts as an important channel to improve financial reporting transparency. Second, compared to hiring a new auditor, which involves significant switching costs, we expect

[1] We investigate these issues at the auditor office level, instead of the audit firm level, because research indicates offices are the primary decision-making units when it comes to audit engagements (e.g., Francis and Michas 2013; Swanquist and Whited 2015). Further, these studies find differences in audit quality and the flight of some clients due to reputational damage at the office level instead of the audit firm level.

[2] Auditor switching costs include increased managerial time spent hiring and getting to know a new auditor, start-up fees paid to a new auditor for new engagement team training and reviews of prior financial statements, the time necessary for the new auditor to learn about the client's internal control and financial reporting systems, negative stock price reactions to switching from an industry expert auditor to a non-expert, and the indirect costs of the loss of firm-specific client expertise possessed by the outgoing auditor (Knechel, Naiker and Pacheco 2007; Hennes, Leone and Miller 2014). Further, if the outgoing auditor is an expert in the client's industry, it may be difficult to find another industry expert auditor without incurring additional travel costs into the future if there is no local substitute.

non-switching clients possess incentives to achieve a new equilibrium after the prior equilibrium of perceived audit quality and audit costs is broken. We expect these non-switching firms incur lower costs from issuing more forecasts compared to switching auditors, which is the reason they choose not to switch.[3] We focus exclusively on management forecasts (all management forecasts, earnings forecasts, and all line-item forecasts) because they are precisely measured, credible and comparable across firms (Healy and Palepu 2001; Ajinkya, Bhojraj and Sengupta 2005).

Utilizing a sample of reputationally-damaged and non-damaged auditor offices, we find that non-switching clients with a damaged auditor office issue more management forecasts compared to clients with a non-damaged office. Specifically, we document an increase of between 12.8 and 13.8 percent in disclosure levels compared to our unconditional sample mean, indicating these results are economically important. Our results hold when we measure forecasts using all management forecasts, earnings forecasts as well as forecasts of line items (e.g., Ajinkya et al. 2005; Guay, Samuels, and Taylor 2016; Bourveau and Schoenfeld 2017). Further, clients that switch from damaged auditor offices to another office do not exhibit this pattern. This contrast provides further evidence that non-switching clients make a different cost/benefit decision in response to auditor office reputation damage compared to switching clients.

To mitigate the possibility that clients may select auditor offices based on certain characteristics, including a client's expectation that their office will become damaged at some point in the future, and that these characteristics may drive our results, we implement a changes specification. We find our results are robust to this analysis whereby we analyze the effect of changes in auditor office reputation damage on changes in voluntary disclosure levels. We further

[3] Voluntary disclosure costs include direct costs and indirect costs. Direct costs are mainly the costs of information preparation and information publication. Indirect costs include litigation costs and proprietary costs (Skinner 1994; Skinner 1997; Piotroski 1999; Verrecchia 2001).

hypothesize, and provide evidence, that non-switching firms issue even more management forecasts when their information demands are higher. Specifically, non-switching clients with damaged auditor offices issue increasingly more forecasts when the client firm is followed by more analysts, is owned by a higher percentage of institutional investors, and is larger in size. Such findings are consistent with the disclosure literature suggesting firms provide voluntary disclosures to satisfy the demands of outside investors (e.g. Healy and Palepu 2001).

Further, we explore two additional cross-sectional spillover factors that affect the relationship between office reputation damage and client disclosure and find that forecast issuance varies based on the extent of auditor reputation spillovers. Specifically, we find the association between office reputation damage and client disclosure is greater (1) when the return correlation between the disclosure firm and the restating firm (i.e. the firm that 'caused' the reputation shock) is higher, and (2) when the disclosing firm and the restating firm are headquartered in the same metropolitan geographical area. This evidence indicates that non-switching firms more aligned with the restating firm react more, in terms of management disclosure levels, to an auditor office reputation damage event. Next, we find non-switching clients also consider the costs of issuing management forecasts. Specifically, our results indicate that increases in the number of management forecasts after auditor office damage are mitigated by firms' proprietary costs of disclosure.

We also investigate how investors of non-switching firms change their responses to the information contained in audited reported earnings as well as management forecasts after an audit office reputational damage event. We find, using earnings response coefficient tests, that investors react less to audited earnings releases of firms audited by a damaged auditor compared to those audited by a non-damaged auditor. Conversely, we find that investors impound more information from management forecasts for client firms of auditors that are damaged compared to those that are not damaged. Atiase, Li, Supattarakul, and Tse (2005) provide evidence that investors trade off relevance and reliability. Our results suggest that when the perceived reliability of current earnings is damaged by auditor office reputation, investors rely more on future earnings forecasts, which are more forward looking and relevant.

Finally, we examine the economic consequences of issuing more management forecasts by non-switching clients. First, we find that reputational damage results in a higher cost of equity for firms that do not issue management forecasts. However, for firms with a damaged auditor office that do issue forecasts, we find that issuing forecasts increasingly offsets the rise in cost of equity as the number of forecasts rises. This finding suggests one reason the vast majority of clients choose to stay with their damaged auditor office: they are able to mitigate the negative effects of auditor reputation damage by increasing their own disclosure levels, which is likely less costly than switching auditors, in order to decrease the costs of raising capital, which is a significant consideration in business operations.

Our study makes four important contributions to the literature. First, our study contributes to the voluntary disclosure literature by documenting a significant new incentive of such disclosures. This literature traditionally focuses on how managerial litigation concerns, proprietary cost considerations, and insider trading incentives affect disclosure choices (Healy and Palepu 2001; Ajinkya et al. 2005). Conversely, our study focuses on a new incentive by managers related to offsetting the signal of decreased audit quality due to auditor office reputational damage. Our study also extends disclosure-related research that examines whether voluntary and mandatory disclosure are substitutes or complements (Verrecchia 1990; Gigler and Hemmer 1998; Ball et al. 2012; Li 2013; Noh 2019; Guay et al. 2016; Frankel et al. 2021). In our non-switching client setting, we demonstrate that managers use voluntary disclosures as a substitute for damaged auditor reputations. In contrast to extant management forecast credibility studies that focus on managerial incentives and forecast reputation/accuracy (Hutton and Stocken 2007; Ng, Tuna, and Verdi 2013), we demonstrate that investors, upon observing auditor reputation damage, shift somewhat away from responding to reported earnings and toward responding to management forecasts. This finding extends research that examines the relative information content of both earnings and management forecasts (Atiase et al. 2005).

Second, extant studies suggest that because the quality level of assurance produced by auditors is not directly observable, stakeholders must infer it and form perceptions of audit quality based on factors such as auditors' brand names, the amount of non-audit services provided to clients, and events suggestive of audit failures such as client restatements (O'Keefe, Simunic, and Stein 1994; Casterella, Jensen, and Knechel 2009; Schmidt 2012).[4] When there is a negative shock to perceived audit quality, our study, which focuses on non-switching clients (and which is different from Swanquist and Whited [2015] in that way), sheds light on the understanding of how non-switching clients react. We show that investors of non-restating firms respond less to reported earnings after auditor reputational damage, which provides direct empirical support that investors respond to changes in perceived audit quality.

Third, we extend the relatively new literature on auditor office reputation damage (Francis and Michas 2013; Swanquist and Whited 2015). It is important to note that most clients with a damaged auditor office choose to stay with that office (again, over 80 percent of cases in our sample). It is therefore important to understand how these non-switching clients respond to signals of decreased audit quality and the consequences of such a response. Therefore, our study responds

[4] Consistent with this, Knechel, Krishnan, Pevzner, Shefchik and Velury (2013) discuss that it is important to remember audit quality is "a *perceived,* rather than directly *observed*, trait since we can only learn about cases when audit quality is compromised."

to the call for research by DeFond and Zhang (2014, pp. 313) who state that “a variety of evolving developments call for a deeper understanding of the factors that drive the demand for auditing and audit quality.” It is also consistent with studies showing real costs to audit clients as well as auditor reputation in reaction to a lowering of perceived audit quality (e.g. Weber, Willenborg and Zhang 2008; Barton 2005).

Finally, the Public Company Accounting Oversight Board can take our results into account when considering the costs and benefits of existing and new audit regulations intended to increase audit quality, as we show client firms themselves voluntarily react to decreases in perceived audit quality. Such knowledge can inform the Board on audit client actions that offset a negative shock to audit quality, and the extent of regulation necessary to maintain audit quality. Further, investors can benefit from the knowledge that many client firms take steps to mitigate decreases in perceived audit quality. Thus, client firm-specific responses to auditor reputational damage are useful for investors when making future capital allocation choices.

2. Literature review and hypotheses development

Literature on auditor reputation and auditor office reputation damage

One important incentive auditors possess to supply high-quality audits is to develop and preserve reputational capital, which enhances their ability to attract and retain clients (DeAngelo 1981; DeFond and Zhang 2014). The underlying rationale is that clients demand high-quality audits to signal high-quality financial reporting and to reduce the cost of equity and debt capital (Jensen and Meckling 1976; Francis and Wilson 1988; Lambert, Leuz, and Verrecchia 2007; Fortin and Pittman 2007; Li, Xie, and Zhou 2010; Krishnan, Li, and Wang 2013). Studies find that auditors’ reputational risk is associated with factors such as audit firm size, auditor office size and auditor industry specialization (e.g., DeAngelo 1981; Craswell, Francis, and Taylor 1995; Francis and Wilson 1988; Francis and Yu 2009; Choi, Kim, Kim, and Zang 2010; Numan and Willekens 2012; Francis, Michas, and Yu 2013).

In order to investigate the value of auditor reputation to clients and audit firms, research exploits the negative implications of auditor reputation shocks on clients and auditors utilizing different settings such as SEC disciplinary actions, specific engagement failures (i.e., accounting scandals), negative peer reviews, PCAOB inspection reports and sanctions, client restatements, gains and losses of major industry clients, and misconduct by clients unrelated to financial reporting issues (Wilson and Grimlund 1990; Chaney and Philipich 2002; Hilary and Lennox 2005; Weber et al. 2008; Dee, Lulseged, and Zhang 2015; Swanquist and Whited 2015; Francis, Mehta, and Zhao 2017; Acito, Hogan, and Mergenthaler 2018; Donelson, Ege and Leiby 2019).

Further studies have provided evidence that clients that are related to, but which are not the focal point of the failures described above, also suffer from decreased perceived audit quality following the reputation shock. For example, studies find that clients of reputationally-damaged auditors experience significant negative stock market reactions (e.g., Chaney and Philipich 2002; Krishnamurthy et al. 2006; Weber et al. 2008). Also, Weber et al. (2008) also find KPMG suffered client losses in reaction to the 2002 ComROAD scandal in Germany. Similarly, Rauterkus and Song (2005) find that clients of Arthur Andersen experienced more significant negative market reactions to seasoned equity offering announcements compared to clients of other Big Five firms between October 2001 and August 2002, one year following the revelation of the Enron audit failure.

In addition, studies provide evidence some of these auditor reputation damage events can persist for years. For example, Francis and Michas (2013) provide evidence that auditor office reputational damage (which they term ‘contagion’) is not rectified, in terms of actual audit quality, by an office for up to five years after the first damage event. Given this finding, incumbent clients may possess incentives to take actions to mitigate the negative effects of decreased perceived audit quality into the future. Consistent with this argument, studies find auditors are faced with market share losses after reputational damages are incurred (e.g., Wilson and Grimlund 1990; Swanquist and Whited 2015).

Literature on management forecasts

One possible action managers can take in response to this deterioration in perceived audit quality is to communicate more with investors and other outsiders. Financial disclosures are important means for managers to communicate their private information to outsiders to reduce information asymmetry (Diamond 1985; Diamond and Verrecchia 1991; Healy and Palepu 2001). Studies on managers' disclosure incentives are mainly related to capital market equity and debt issuances (Lang and Lundholm 1993; Lang and Lundholm 2000; Bochkay, Chychyla, Sankaraguruswamy and Willenborg 2018), managers' stock-based compensation (Miller and Piotroski 2000; Aboody and Kasznik 2000), litigation considerations (Skinner 1994) and proprietary cost considerations (Piotroski 1999).

Among various types of voluntary disclosures, management forecasts are important ways for firms to build a reputation of transparent reporting, according to the seminal survey study by Graham, Harvey, and Rajgopal (2005). Further, studies establish that firms can and do change management forecast policies to meet investor information needs. For example, Balakrishnan, Billings, Kelly, and Ljungqvist (2014) document that firms respond to an exogenous reduction of public information by providing timelier and more informative earnings guidance. Further, Lo (2014) finds that borrowers increase the quantity of management forecasts when their banking relationships are threatened by declining bank health. Sethuraman (2019) establishes that firms increase voluntary disclosures when credit rating agencies associated with their bond offerings suffer a loss of reputation. Finally, Bochkay et al. (2018) find that voluntary disclosures of going concern uncertainties by IPO firms contain information content on IPO price formation.

Despite these benefits, issuing management forecasts is costly and can consume a significant amount of firm resources (Bamber and Cheon 1998). Extant research documents that firms also consider the costs of management forecasts when making such decisions. For example, Verrecchia (1990) points out that firms with less-precise private information are more likely to withhold that information. Further, Chen, Matsumoto, and Rajgopal (2011) find that firms disclose more when earnings are easier to predict. Finally, Li (2010) finds that firms operating in more competitive industries issue fewer forecasts, which is consistent with proprietary cost considerations.[5]

Hypotheses development

Extant research examines the interplay between mandatory financial reporting and voluntary disclosure and finds mixed evidence on whether they are substitutes or complements, depending on the specific setting and/or disclosure attributes analyzed. For example, theoretical work by Verrecchia (1990) suggests investors exert less pressure on managers to provide private information when they know more about the firm. Empirically, Li (2013) documents firms are more likely to accelerate material contract filings when their forward disclosures lack credibility. Further, Noh, So and Weber (2019) provide evidence of a negative association between mandatory 8-K filings and voluntary disclosure. Finally, Guay et al. (2016) find that a lower amount of information accessibility, in the form of higher complexity of mandatory disclosures, is associated with increases in voluntary disclosure. Thus, these studies provide evidence of a substitution effect.

[5] We note that Ali, Klasa, and Yeung (2014) argue Compustat-based competition measures are noisy. They instead use a U.S. Census-based measure and find the opposite result.

However, Ball, Jayaraman and Shivakumar (2012) provide evidence of the "confirmation hypothesis" and suggest that audited financial statements may be complements instead of substitutes, for voluntary disclosure. Specifically, they find that "independent verification and reporting of financial outcomes encourages managers to be more truthful, and hence more precise, in their disclosures".[6] Further, Gigler and Hemmer (1998) model a setting whereby mandatory financial reports (i.e. statutory financial statements which are audited) serve a confirmatory, rather than a primary, role in informing stock prices where forward-looking, voluntary disclosures serve the primary role. Finally, a recent study by Frankel, Kalay, Sadka and Zou (2021) finds increases in voluntary disclosure for former clients of Arthur Andersen after these clients were forced to switch to a different audit firm after Andersen's demise, whereby audit quality is expected to have increased after the switch.[7] Therefore, these studies provide evidence of a complementary relationship between voluntary disclosure and mandatory financial reporting and disclosure. Finally, Francis, Nanda and Olsson (2008) find both substitutive and complementary relationships between earnings quality and different forms of voluntary disclosure.

As discussed above, most client firms, approximately 80 percent in our sample, stay with a damaged auditor office rather than switching to a different auditor since the costs of switching for these clients is evidently greater than the benefits derived from switching. Extant research suggests managers commit to an optimal level of disclosure given information demands and the net cost of providing disclosures. For clients that stay with their damaged auditor office, the

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[6] However, and importantly, this is evidence of this relationship *in equilibrium.* In other words, client firms choose levels of audit quality and voluntary disclosure continuously *over time*. However, Ball et al. (2012) do not investigate what occurs when this equilibrium is broken, as it is in our setting. Therefore, it is not clear based on their evidence whether client firms would *reduce* voluntary disclosure *in reaction to* a revelation of decreased quality on the part of their auditor through a reputation damage event.

[7] In our setting of voluntary switching clients (in contrast to the forced auditor switching in Frankel et al. [2021]), we find no changes in voluntary disclosure in reaction to perceived lower audit quality. Thus, we attribute the difference in results being driven by our alternative setting.

damage provides a negative shock and signal regarding the perceived audit and financial reporting quality of the client firm by outsiders. As a result, information asymmetry between the client firm and outsiders increases. In turn, information demands from outsiders increase. Therefore, to reach a new equilibrium after an auditor office reputation damage event, we expect non-switching firms increase the number of management forecasts they issue afterward.

There are three reasons non-switching firms may not change disclosure policies, or even decrease voluntary disclosures, after a reputation damage event. First, it is not clear to what extent such an event would impair the perceived financial reporting quality of other clients that perhaps do not exhibit similar misstatement issues. Second, firms may not change disclosures if they believe audit quality is informative, but not significantly enough to market participants to justify the increased costs of management forecast disclosures. Finally, consistent with the studies discussed above on voluntary and mandatory disclosures serving as complements, if investors view voluntary disclosures as being less credible due to auditor reputation damage, managers may react by actually reducing voluntary disclosure. All in all, if the benefits of reduced information asymmetry following increases in disclosure are not substantial, managers may wish to avoid committing to a new policy of issuing more forecasts that persist into the future (Verrecchia 2001; Graham et al. 2005).

Notwithstanding these counterarguments, we believe the prior equilibrium between perceived audit quality, audit costs and voluntary disclosure levels are disrupted when an auditor office reputational damage event occurs. Therefore, we expect client firms rationally respond by altering their disclosure actions in order to reach a new equilibrium. Because increasing management forecast levels is a manageable way to offset some of the negative perception by outsiders about a firm's financial reporting quality due to auditor office reputational damage, we predict that increasing disclosure is a first-order behavior non-switching client firms can implement to establish a new equilibrium. This leads to our first hypothesis, stated in alternative form:

> HYPOTHESIS 1: *Non-switching firms issue more management forecasts following an auditor office reputation damage event compared to firms with no such event.*

Healy and Palepu (2001) state that managers provide voluntary disclosures mainly to satisfy outside information demands. In addition, research demonstrates that firms respond to these information demands through increases in earnings forecasts (Balakrishnan, Billings, Kelly, and Ljungqvist 2014; Lo 2014; Sethuraman 2019). In our setting, we similarly expect increases in management forecasts to vary with the information demands of outsiders. The negative shock from the decrease in perceived audit quality due to auditor office reputation damage sends a signal to outsiders about lower perceived audit/financial reporting quality. In turn, institutional investors, being sophisticated relative to many other investors, often exhibit a higher demand for information, and thus more disclosure (Healy, Hutton, and Palepu 1999; Ajinkya et al. 2005). Financial analysts also demand more information in order to generate more accurate earnings forecasts (Lang and Lundholm 1996; Cotter et al. 2006). For these reasons, we expect auditor office reputation damage will have a larger impact on firm disclosures when outside investors and market intermediaries demand more information overall from firms. This leads to our second hypothesis, stated in alternative form:

> HYPOTHESIS 2: *The positive association between management forecasts and an auditor office reputation damage event is greater as outsider information demands increase.*

We next turn to cross-sectional variation in the extent of perceived audit quality concerns that can spill over from the restating firm to peer firms that use the same auditor office. We argue firms possess stronger perceived audit quality and reputational concerns if such concerns are more easily spilled over from the restating firm that caused the damage event in the first place. Extant research finds that information transfers between peer firms are more likely to occur when interdependencies between the two firms are higher (Lang and Stulz 1992; Durnev and Mangen 2009). In addition, studies find that peer effects are more likely to occur for peer firms located in the same geographical area (Kedia, Koh, and Rajgopal 2015). As a result, for firms that are more interdependent with the restating firm, and for firms headquartered in the same geographical area as the restating firm, we expect the perceived audit quality concern is more pronounced after the damage. This leads to our third hypothesis, stated in alternative form:

> HYPOTHESIS 3: *The positive association between management forecasts and an auditor office reputation damage event is greater as the perceived audit quality concern is more easily spilled over to peer firms.*

It is equally important to consider the costs of providing additional forecasts. Studies establish that proprietary costs constrain firms' incentives to provide voluntary disclosures based on competition with peer firms (e.g., Verrecchia 1990; Clinch and Verrecchia 1997). While somewhat mixed, studies support this proprietary cost hypothesis overall (e.g., Piotroski 1999; Berger and Hann 2007; Verrecchia and Weber 2006; Li 2010; Huang, Jennings, and Yu 2017; Cao, Ma, Tucker, and Wan 2018).[8] For example, Graham et al. (2005) find proprietary cost concerns are the second largest barrier to voluntary disclosure, and that nearly three-fifths of firms surveyed agree or strongly agree they limit voluntary disclosure of financial information to avoid "giving away company secrets" or otherwise harming their competitive position. Finally, the literature differentiates proprietary costs based on the nature of competition. Specifically, Verrecchia (1990) argues that greater competition constrains disclosure in post-entry markets, and

[8] We note that Berger and Hann (2007) find mixed evidence for the proprietary cost hypothesis.

Li (2010) provides evidence that competition from existing rivals (rather than competition from potential entrants) also constrains disclosure quantity. Based on this literature, we expect non-switching firms also consider proprietary costs, especially competition from existing rivals, when making disclosure policy decisions. These expectations lead to our fourth hypothesis, stated in alternative form:

> HYPOTHESIS 4: *The positive association between management forecasts and an auditor office reputation damage event is weaker for firms with higher proprietary costs of disclosure.*

Finally, investors are not able to directly observe audit quality. Given this, a restatement provides a negative shock to investors not only about the restating firm, but also about the reputation of the restating firm's audit office (Francis and Michas, 2003). This, in turn, may alter investors' assessments of financial reporting credibility for all client firms of that same audit office. Further, managers often possess incentives to mislead investors about the true underlying performance of the firm (Healy and Wahlen 1999). In response, auditing provides assurance and verification that firms report more accurately (Watts and Zimmerman 1986). As a result, investors' responses to reported accounting information are related to their perceptions of audit quality and auditors' reputations for providing high audit quality. Following this argument, and utilizing higher non-audit fees to proxy for lower audit quality, Francis and Ke (2006) document that the market valuation of quarterly earnings surprises is significantly lower for firms with high levels of non-audit fees.

Furthermore, Atiase et al. (2005) find that current earnings are more reliable, while management forecast are more forward looking, and thus relevant. They document evidence that investors trade off reliability and relevance. When the perceived reliability of current earnings decreases due to audit office reputation damage, we expect investors will shift to the more relevant information of management forecasts to form their expectations of the firm's future performance. This leads to our fifth and final hypothesis, stated in alternative form:

HYPOTHESIS 5: *Investors respond less to reported earnings and more to management forecasts following an auditor office reputation damage event.*

3. Sample selection, research design and descriptive statistics

Sample selection

We obtain firm financial data from Compustat, stock price data from the Center for Research in Security Prices (CRSP) files, audit and restatement data from Audit Analytics, management forecast and analyst coverage data from the Institutional Brokers' Estimate System (I/B/E/S) database, and institutional ownership data from the Thomson Financial 13-F Institutional Holdings database. We begin our sample period in 2003 to avoid the potential effect of SOX implementation. We end the sample in 2016 to allow additional time for restatements, used to calculate our test variable of interest, to be uncovered and announced after the original financial statements were released. We begin with 57,120 non-restating firm-year observations we can successfully merge between Compustat and Audit Analytics. We then delete 22,109 'damaged' client observations during year t to allow time for client firms to revise their forecast decisions (from year t-1 to year t+1). Finally, we retain only a sample of non-switching damaged and non-damaged clients that continue to use either a previously damaged or non-damaged auditor. This eliminates an additional 4,971 observations. These procedures leave us with 30,040 firm-year observations of non-switching audit clients of both damaged (our test firms) and non-damaged (our control firms) auditor offices for our main analyses.

Research design

We test the effect of auditor office reputation damage on the number of clients' management forecasts (Hypothesis 1) using the following ordinary least squares model:

MF = f (*DAMAGE*, Controls, Year/Industry Fixed Effects) (1)

The dependent variable, *MF*, is one of the following variables: *MF_ALL*, *MF_EARN*, or *MF_LINE*. Following prior literature (e.g., Ajinkya et al. 2005; Guay et al. 2016; Bourveau and Schoenfeld 2017), these three variables measure the number of annual management forecasts, earnings forecasts, and forecasts of line items issued by a firm throughout a year, respectively.[9] Following Guay et al. (2006), we focus on the number of forecasts since this measure can be calculated for all firms and captured for different forms of forecasts (i.e., EPS, sales, capital expenditures, etc.).

The test variable, *DAMAGE*, is an indicator variable assigned to each client-year observation that equals one if that client's auditor office has become damaged in one or more of the previous three years (i.e., year t-1, t-2 or t-3), and zero otherwise. An auditor office-year is defined as being damaged when one or more clients of that office announce a "Big-R" non-reliance restatement in that year.[10] More succinctly, we consider a specific client-year observation to be damaged in year t when its auditor office is associated with a client restatement over the past three years.[11] We consider auditor office reputational damage during the previous three years, instead of just the prior one year, because Francis and Michas (2013) show that office-level damage is persistent for up to five years.[12] Further, this allows time for client firms to react to the damage event in terms of altering their amount of management forecasts.

[9] Our main conclusions remain unchanged if we define the dependent variable as a dichotomous variable based on an indicator of whether each of the three kinds of management forecasts occur at all in a year.

[10] Non-reliance restatements are those issued along with an 8-K Item 4.02 disclosure. Firms are required to publicly announce these restatements, signal to investors and other outsiders to no longer rely on the previously issued financial statements, and to issue updated, audited financial statements after they are compiled and audited.

[11] The restatement year here refers to the year during which the restatement was *announced* as this provides information to client firms and outsiders their auditor office is damaged, which instigates the decision to either stay with their auditor or leave and find a different auditor.

[12] Our conclusions remain unchanged if we consider only office-year damage events that occur in year t-1 instead of years t-3 through t-1.

We control for firm characteristics that affect management forecast levels, based on prior literature. We include *SIZE* as larger firms are expected to issue more management forecasts (Lang and Lundholm 1993; Kasznik and Lev 1995). Evidence on the association between profitability (*ROA*) and voluntary disclosure is mixed in prior studies. The signaling hypothesis predicts a positive association, whereas the proprietary cost hypothesis predicts a negative association (Berger and Hann 2007). We also include *LEV* and *MTB* to control for the demand for information (Huang et al. 2017). Extant studies find that firms with higher leverage issue more management forecasts (Huang et al. 2017). We do not provide a prediction on *MTB* since evidence its association with disclosure levels is mixed in prior studies (e.g., Huang et al. 2017; Houston, Lin, Liu, and Wei 2019). We control for *LOSS* since prior studies find loss firms issue lower amounts of management forecasts (Ajinkya et al. 2005). Lo (2014) finds R&D firms exhibit higher levels of disclosure to mitigate the negative effects of associated higher information asymmetry and perceived credit risk on loan access. Koo and Lee (2018) also find that firm-level innovation is positively associated with the issuance and number of management revenue forecasts. Finally, we include return volatility *(RET_VOL)*. Studies find management forecast numbers are lower when investors' uncertainty regarding future performance is higher (Waymire 1985; Guay et al. 2016). We also include four auditor control variables to account for general auditor and office differences. We do not believe these auditor controls are systematically related to disclosure levels. However, we include them for completeness.[13] For brevity, we refer the reader to the Appendix for the detailed definitions of all variables. We calculate robust standard errors and cluster them at the firm level in all analyses.

Alternative model specification

[13] Our conclusions remain unchanged if we exclude these auditor controls from our models.

Lawrence, Minutti-Meza, and Zhang (2011) argue clients may choose their auditor, at least partially, based on their own characteristics, and that these characteristics may drive the higher Big Four audit quality results in the literature. Based on this, it is possible clients also take into account the *a priori* expectation their auditor office will become damaged at some point in time, and that this expectation and auditor choice decision is also driven by their own characteristics. If this is the case, this possible selection bias could potentially drive our results. To mitigate this endogeneity concern we employ a changes alternative specification where we regress the year-over-year change in management forecast levels on changes in our test variable and all control variables. As with our levels specification, we include year and industry fixed effects. Thus, firms are held as their own control and we are able to examine how firms react to a change in reputational damage.

Investors' information demands

To test Hypothesis 2, the moderating effect of information demands on client firms, we expand equation (1) by introducing and interacting three variables that proxy for various information demands by outsiders with our test variable of interest, *DAMAGE*. Our first proxy for information demand is *ACOV*, which is the number of analysts covering a firm during year t. The second proxy, *INSTOWN*, is the percentage of shares held by institutional investors for a firm in year t. Prior studies document both analyst coverage and institutional ownership measure investor demand for information, (O'Brien and Bhushan 1990; Bhushan 1989; Ajinkya et al. 2005). We use firm size (*SIZE)* as our third proxy for information demand as studies suggest investors demand more information from larger firms (King, Pownall, and Waymire 1990; Lang and Lundholm 1993; Kasznik and Lev 1995). A positive and significant coefficient on these three interactions would provide evidence consistent with Hypothesis 2, which predicts that non-switching clients of damaged offices with higher information demands will issue even more management forecasts to meet these higher information demands.

Spillover effects

To test Hypothesis 3 on spillover concerns from the restating client firm to peer client firms using the same auditor office, we split the *DAMAGE* firms into two groups. We use the correlation of daily raw stock returns between the restating firm and each disclosure peer firm over the fiscal year prior to the year of the restatement announcement as a measure of firm interdependence (Durnev and Mangen 2009).[14] We then separate the *DAMAGE* firms into two groups based on return correlation. Specifically, we define *DAMAGE_HighRetCorr* (*DAMAGE_LowRetCorr*) as equal to one for peer clients in a damaged auditor office for which the return correlation with the restating client is above (below) the median value across all observations, and zero otherwise. Evidence of stronger disclosure results for the *DAMAGE_HighRetCorr* group compared to the *DAMAGE_LowRetCorr* would be consistent with Hypothesis 4, which predicts that the positive association between management forecasts and auditor office reputational damage is greater when perceived audit quality concerns spill over to a greater extent between the restating and peer firm.

To test the geographical proximity factor (also Hypothesis 3), we split the *DAMAGE* firms based on whether each peer disclosure firm and the restating firm are headquartered in the same metropolitan statistical area (MSA). Specifically, *DAMAGE_SameMSA* (*DAMAGE_DiffMSA*) equals one for peer clients in a damaged auditor office that are headquartered within the same (a different) MSA as the restating firm, and zero otherwise. Evidence of a more pronounced

[14] Results are similar when using daily returns from one year prior to the restatement date instead.

disclosure reaction for the *DAMAGE_SameMSA* group compared to the *DAMAGE_DiffMSA* group would also be consistent with Hypothesis 3.[15]

The moderating effect of proprietary costs of disclosure

To test Hypothesis 4, the moderating effect of firm proprietary costs, we interact the test variable *DAMAGE* with *HICOMP*, an indicator of high within-industry competition for sales between client firms based on the Herfindahl-Hirschman Index (i.e., the HHI).[16] Higher values of the HHI reflect higher concentration within an industry, and thus lower competition from competitors within the industry. We then define *HICOMP* as equal to one if the HHI for a client's industry is *below* the median level of the HHI across all industries, and zero otherwise. A negative coefficient on the interaction term would be consistent with Hypothesis 4, which predicts non-switching clients will increase voluntary disclosures less in reaction to auditor office reputational damage, as the proprietary cost of doing so increases.

Investors' response to reported earnings and management forecasts

To test the first part of Hypothesis 5, whether investors respond less to reported earnings following client firms' auditor reputation damage, we investigate whether earnings response coefficients (ERCs) are lower for clients with an auditor office that has become reputationally damaged compared to non-damaged clients. We estimate the following quarterly ERC model from both Nelson, Price and Rountree (2008) and Cahan, Chaney, Jeter, and Zhang (2013), modified for our setting:

CAR3_EA = f (*UE*, *DAMAGE*, *UE*DAMAGE, UE*MBQ, UE*BETA, UE*SIZEQ,*

[15] Given that our main variable of interest, *DAMAGE*, is defined based on office reputational damage in the previous three years, one peer disclosure firm is likely to be associated with multiple restating firms that determine the reputational damage. For this analysis we select the largest restating firm associated with a disclosure firm in the previous three years. Our results are similar if we utilize all restating firms instead of only the largest, and calculate the mean value of the return correlation and whether the firms are headquartered in the same MSA between the peer firm and all restating firms.

[16] Following prior literature (e.g. Li 2010), we calculate the HHI for each industry based on four-digit SIC codes. Specifically, the HHI for a firm's industry equals the sum of squared market shares of all firms within the industry, where each firm's market share is calculated as that firm's sales scaled by total sales within the industry in a year.

MBQ, BETA, SIZEQ, Quarter/Year/Industry Fixed Effects) (2)

Following the majority of ERC studies (e.g., Easton and Zmijewski 1989; Krishnan, Sami, and Zhang 2005; Nelson, Price, Rountree 2008; Cahan, Chaney, Jeter, and Zhang 2013), we use quarterly earnings announcements to reduce other concurrent information released together with annual earnings announcements. *CAR3_EA* is the value-weighted, market-adjusted cumulative abnormal return measured in the (-1, +1) day window surrounding firms' quarterly earnings announcements.[17] *UE* is unexpected earnings, measured as the difference between actual quarterly earnings and the median value of analysts' most recent quarterly forecasts before earnings announcements, scaled by quarter-end stock price. We include other determinants of ERCs based on prior studies as control variables. We control for firms' growth opportunities and persistence (*MBQ*) since studies suggest they are positively related to ERCs (Collins and Kothari 1989; Teoh and Wong 1993). *BETA* is included in the model and captures a firm's systematic risk. While firm risk is theoretically expected to have a negative effect on ERCs, we do not make a directional prediction due to the conflicting results in previous work (Collins and Kothari 1989; Teoh and Wong 1993; Hackenbrack and Hogan 2002; Aobdia Lin, and Petacchi 2015). We also include firm size but do not make a prediction about its effect on ERCs due to the mixed evidence in extant studies (Easton and Zmijewski 1989; Shevlin and Shores 1993; Teoh and Wong 1993). Detailed definitions of all control variables are included in the Appendix. A negative coefficient on *UE*DAMAGE* would be evidence consistent with Hypothesis 5, which predicts that investors of clients of damaged auditor offices react less to earnings announcements compared to clients of non-damaged auditor offices.

[17] We obtain similar results when we measure the abnormal return using (0, +1) or (-2, +2) earnings announcement windows.

To test the second part of Hypothesis 5, whether investors respond more to management forecasts following client firms' auditor reputation damage, we examine the difference in the sensitivity of market responses to management forecasts using our *DAMAGE* variable. Specifically, we estimate the following model from Li and Zhang (2015):

CAR3_MF = f (*MFNEWS*, *DAMAGE*, *MFNEWS*DAMAGE, SIZER, MTBR,*
*SIZER*MFNEWS, SIZER* DAMAGE, SIZER*MFNEWS* DAMAGE,*
*MTBR*MFNEWS, MTBR* DAMAGE, MTBR *MFNEWS* DAMAGE,*
Year/Industry Fixed Effects) (3)

The dependent variable *CAR3_MF* is again the value-weighted market-adjusted cumulative abnormal return measured in the (-1, +1) day window surrounding the management forecast release date.[18] We measure management forecast news (*MFNEWS*), as the difference between management-forecasted annual EPS and the prevailing analyst forecast consensus (which is the mean value of outstanding analyst forecasts at the time management issues their forecast), scaled by the beginning-of-year stock price. Following Li et al. (2015) we control for the decile ranks of market capitalization (*SIZER*) and growth opportunities (*MTBR*), measured at the beginning of the year, and include their interactions with *MFNEWS* and *DAMAGE*. A positive coefficient on *MFNEWS*DAMAGE* would be evidence consistent with Hypothesis 5, which predicts that investors of non-switching clients with damaged offices react more to the information contained in management forecasts compared to clients of non-damaged auditors.

Descriptive statistics

Table 1 presents distributional characteristics for the variables used in our study. Sample sizes are reduced compared to our main sample of 30,040 observations for some of our tests due to missing additional necessary data. Further, we use quarterly data to test part of Hypothesis 5,

[18] We obtain similar results when we use a three-day event window.

which results in 81,199 quarterly observations for these tests. We find that 44 percent of non-switching client firms are damaged clients (i.e., clients with one or more auditor office-years from the previous three years that are damaged).[19] The mean number of management forecasts (*MF_ALL*) issued by sample firms throughout a year is 4.03. The median value of 0.00 shows that more than half our sample firms issue no forecasts. The mean values for earnings forecasts (*MF_EARN*) and line-item forecasts (*MF_LINE*) are both 1.85. In an expanded sample of both staying and leaving clients, 80.7 percent (untabulated) of damaged clients stay with their damaged auditor office, which is comparable to findings in Swanquist and Whited (2015) where their value equals 87.7 percent.[20] We find a positive and statistically significant ($p<0.01$) correlation between auditor office reputational damage (*DAMAGE*) and our three management forecast variables (untabulated). This presents initial univariate evidence consistent with Hypothesis 1.[21]

4. Results

Baseline results

Table 2, Panel A presents our main results for Hypothesis 1 on the association between auditor office reputational damage and the number of management forecasts. We find our test variable *DAMAGE* is positively and significantly associated with all three of our management forecast variables ($p<0.01$ in all cases, two-tailed).[22] This finding provides evidence that for staying clients with a damaged auditor office, the total number of forecasts issued by management

[19] For brevity, we use the term "damaged clients" to refer to clients with one or more auditor office-years from the previous three years (t-1, t-2 and t-3) that are damaged.
[20] The difference in these values is due to different sample years used, different sample restrictions due to different variable requirements, different "non-switching" client definitions, and the fact that we exclude firms whose auditor offices in the current year are damaged from our sample.
[21] We note correlations between our test and control variables are low, with a maximum correlation of 0.27 between *DAMAGE* and *OFFICESIZE*. This indicates multicollinearity regarding our test variables is not of concern in our models. This conclusion is supported by variance inflation factor (VIF) values on our test variables that are below 3.0 in all regressions, well below the threshold of 10.0 indicated by Kennedy (2003).
[22] T-statistics and p-values are two-tailed throughout the study.

is higher compared to clients of non-damaged auditor offices.[23] This result holds for all types of forecasts including earnings and line-item forecasts.[24] This result is also economically significant as the coefficients show that clients with a damaged auditor office issue between 0.2367 and 0.5571 more forecasts compared to non-damaged clients. This is an increase of between 12.8 and 13.8 percent compared to the unconditional sample mean of our disclosure variables as shown in Table 1.[25]

Table 2, Panel B presents test results similar to those in Panel A, except here we add back the 4,971 clients that switch auditors. We also separate these clients into those that stay (leave) their damaged auditor office using the variable *DAMAGE_STAY* (*DAMAGE_LEFT*). We find our increased disclosure results for non-switching clients of damaged auditor offices (the coefficient on *DAMAGE_STAY*) continues to hold ($p<0.01$). However, we find a statistically insignificant association between reputational damage and disclosure levels for clients who switch to a different auditor (the coefficient on *DAMAGE_LEFT*). This provides evidence the two different client types reach new equilibria in different ways. Some clients choose to leave a damaged auditor office and find another auditor, but do not change the number of management forecasts they issue. Conversely, many more clients of damaged offices choose to stay (again, approximately 80 percent), but achieve a new equilibrium by increasing the number of management forecasts issued. We interpret this as evidence that the net costs of switching auditors for these non-switching clients are greater than the net costs associated with these increases in management forecasts.

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[23] We note the coefficients on our auditor control variables are not consistently statistically significant. We believe this reflects, and provides support for, the equilibrium we argue exists between perceived audit quality and management forecast levels. Therefore, we do not necessarily expect these auditor control variables will systematically vary with disclosure levels. However, we are conservative and include them to capture audit characteristics that could perhaps affect both reputational damage and disclosure levels.

[24] These results also hold if we scale the number of restatements by the total number of audit-office clients. Further, these results hold if we code auditor office *DAMAGE* equal to zero (one, two or three) depending on whether damage events do not occur from year t-3 through t-1 (occur in one, two or three of the years t-3 through t-1). We describe these tests in detail later in the sensitivity analyses section of the study.

[25] Specifically, 0.2367 / 1.85 = .128 and 0.5571 / 4.03 = .138.

Changes specification

Table 3, Panel A presents our change analysis that mirrors Table 2. We find that changes in the reputational damage status of a client are positively and significantly (p<0.05 or 0.01) associated with changes in the number of management forecasts issued by firms. Thus, this result provides some level of confidence our results are not likely driven by firm-specific characteristics or selection concerns.

Outsider information demands as a moderating variable

Table 4 presents our results of testing Hypothesis 2 on whether outsider information demands moderate the association between auditor office reputational damage and management forecasts. In all three panels we find our information demand variables significantly increase the association between auditor office damage and the number of management forecasts issued given the positive and significant coefficients on the interaction terms *DAMAGE*ACOV* in Panel A, *DAMAGE*INSTOWN* in Panel B and *DAMAGE*SIZE* in Panel C. Significance levels are at the p<0.01 level except for one case where p<0.05. Taken together, Table 4 provides evidence that clients of damaged auditor offices that stay with their auditor issue even more management forecasts as outsider information demands increase. This provides additional evidence that clients that choose to stay with their damaged office reach new disclosure equilibria in response to auditor office reputational damage depending on the level of demand for information from outside information users

Spillover effects

Table 5 presents our tests of Hypothesis 3. Panel A presents our results using the return correlation metric. First, the coefficients on both *DAMAGE_HighRetCorr* and *DAMAGE_LowRetCorr* are all positive and significant (p<0.01), which is consistent with our previous tests showing firms in damaged auditor offices exhibit increased disclosure levels compared to those in non-damaged offices. More importantly for testing Hypothesis 3, the F-tests analyzing whether these two coefficients are different show that the coefficient on *DAMAGE_HighRetCorr* is significantly larger than that on *DAMAGE_LowRetCorr* in two of the three models.[26] This provides evidence supporting Hypothesis 3 that peer firms with higher spillover concerns react more in terms of disclosure levels compared to peer firms with lower spillover concerns.

Panel B presents our test of Hypothesis 3 using our geographical proximity measure (located in the same versus different MSA locations). These results are consistent with those in Panel A. The coefficients on both *DAMAGE_SameMSA* and *DAMAGE_DiffMSA* are again all positive and statistically significant. More importantly, the test of coefficient differences between *DAMAGE_SameMSA* and *DAMAGE_DiffMSA* shows that in all three cases the coefficients on *DAMAGE_SameMSA* are statistically larger than those on *DAMAGE_DiffMSA*, which is again consistent with our Hypothesis 3 prediction.[27]

Client firm proprietary costs of disclosure

Table 6 presents our tests of Hypothesis 4 on whether increased client proprietary costs lead to a weaker association between auditor office reputational damage and management forecasts. We find this coefficient is negative and significant ($p<0.05$, $p<0.10$ and $p<0.01$,

[26] We note that the model where these coefficients are not statistically different from each other shows the lowest R-squared value of all three models.

[27] We also test a potential third factor, namely whether disclosure firms in the same industry as the restating firm exhibit a spillover effect. We fail to find significant results here. We propose two possible reasons for this. First, this test may suffer from a low power issue. Specifically, less than ten percent of disclosure firms operate in the same industry as the restating firm. Second, a disclosure firm's incentives to increase disclosure after an auditor office reputational damage event may be somewhat reduced when the disclosure firm and the restating firm are from the same industry and compete for market share between one another. Specifically, when the disclosure firm is a direct competitor to the restating firm, the restatement announcement can lead to a transfer of market share from the restating firm to the disclosure firm, and thus a positive market reaction for the disclosure firm (Kim, Lacina, and Park 2008). In this case, the disclosure firm may possess less incentive, compared to disclosure firms in different industries from the restating firm, to increase disclosure levels after auditor office reputational damage because the negative effects (e.g., stock market effect) of damage may be dampened by this potential increase in market share.

respectively) in all three models indicating firms issue fewer management forecasts, in reaction to auditor office reputational damage, as the proprietary costs of doing so increase. This finding suggests firms also consider the costs of disclosure when reaching a new disclosure equilibrium after their auditor office exhibits reputational damage.

Investors' response to reported earnings and management forecasts

Table 7 reports the results of testing Hypothesis 5 on investor responses. Table 7, Panel A presents the quarterly ERC test results on investors' reliance on reported earnings. We find negative and significant coefficients ($p<0.01$) on the interaction coefficient *DAMAGE*UE* in both columns. These results indicate that clients respond less to the information contained in reported earnings when the firm's auditor office is reputationally damaged, consistent with Hypothesis 5.[28]

Table 7, Panel B reports the results of testing investors' responses to the news contained in management forecasts for firms with reputationally-damaged audit offices compared to non-damaged offices. The positive and significant coefficients ($p<0.01$ and $p<0.05$) on *MFNEWS*DAMAGE* suggest that clients rely more on the information contained in management earnings forecasts when a firms' audit office has become reputationally damaged, consistent with Hypothesis 5.[29] Taken together, the evidence in Table 7 supports Hypothesis 5 that investors respond less to the information contained in reported earnings, and more to the information contained in management forecasts, when the firm's auditor office suffers from reputational damage. This suggests investors shift away from reported earnings and towards management forecasts when the perceived quality of the firm's auditor has suffered damage.

Economic consequences tests

[28] Further, the positive and significant coefficient on *UE* in column (1) is consistent with the information content of earnings documented by prior ERC studies (e.g., Collins and Kothari 1989; Easton and Zmijewski 1989). The signs on the control variables are also consistent with those found in prior studies.

[29] Further, and consistent with prior studies we find a positive and significant coefficient on *MFNEWS* in both columns (Li and Zhang 2015).

Next, we perform an additional analysis on the economic consequences of management forecast levels after auditor office reputational damage. Extant studies suggest firms use voluntary disclosure to reduce their cost of capital (Botosan 1997; Graham et al. 2005; Baginski and Rakow 2012). Therefore, we examine whether firms are able to mitigate any negative effects on cost of equity that may come about due to auditor office reputational damage by issuing more management forecasts.[30] Further, following Dhaliwal, Judd, Serfling, and Shaikh (2016), we measure firms' cost of equity capital (*COE*) as the average of four implied cost of equity estimates derived from four different models (i.e., Gebhardt, Lee, and Swaminathan 2001; Claus and Thomas 2001; Easton 2004; Ohlson and Juettner-Nauroth 2005). In addition, following Chen et al. (2011), we measure the level of management forecasts using the logarithm of one plus the number of all forecasts, earnings forecast, and line-item forecasts issued by a firm throughout year t (*LnMF_ALL*, *LnMF_EARN*, and *LnMF_LINE*) in this analysis because we believe the effects of management forecasts on cost of equity are concave.[31] We then examine the association between the cost of equity capital and the interaction of management forecast levels with auditor office reputational damage.[32]

Table 8 presents the empirical findings. First, we find the coefficients on *DAMAGE* are positive and significant (p<0.10) in all three models. These coefficients capture the impact of reputational damage on cost of equity for firms that do not issue any management forecasts. As

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[30] Since the perceived audit quality of reputationally-damaged offices is more likely to decrease when the restatement client experiences a negative stock market reaction, in this analysis we retain only damaged firms in offices where the restatement firm's three-day cumulative abnormal return around the restatement announcement date is negative. Further, we use the average value of cumulative abnormal returns when there is more than one restatement announcement associated with the damaged office during the previous three years. Also, results are similar when we use a sample derived from the full sample (N=30,040) after deletions due to missing data for the cost of equity capital analysis (N = 11,945). The only difference in results here is that the coefficient on *DAMAGE* is insignificant. This result is driven by the non-negative return restatements added back here.

[31] Results are similar if we use the raw number of management forecasts as in other analyses.

[32] Following Dhaliwal et al. (2016), we control for firm size (*SIZE*), the market-to-book ratio (*MTB*), return on assets (*ROA*), leverage (*LEV*), return momentum (*MOMENTUM*), analyst forecast dispersion (*DISP*), analysts' forecast of long-term growth rate (*LTG*), value-weighted beta (*BETAVW*) and idiosyncratic risk (*IDRISK*).

expected, auditor office reputational damage is associated with a higher cost of equity for these firms. Second, we find the coefficients on the interaction terms between reputational damage and management forecast levels are all negative and significant ($p<0.05$). This indicates that reputationally-damaged firms are able to mitigate this negative effect of damage on cost of equity by issuing more forecasts.[33] In untabulated analyses, we also find these disclosures can reduce analysts' forecast errors and dispersion. Taken together, this evidence indicates increases in disclosure levels provide significant economic benefits to damaged clients.

Audit fees (untabulated analysis)

We investigate audit fee changes in reaction to an auditor reputation damage event. If negotiated audit fees for non-switching clients increase after a damage event, this suggests the possibility audit offices react to this reputation downgrade by increasing the amount of effort they put forward on their audit engagements. However, if clients negotiate fees downward after a damage event, this would suggest they do in fact perceive a diminished level of audit quality that is consistent with auditor reputation damage, and which is not rectified by increased auditor effort. Finally, if fees do not change this would suggest that perhaps staying clients are 'blaming' the specific restating client firm for the restatement instead of it providing evidence of lower-quality auditing by the office overall than was previously assumed.

We examine this by regressing the percentage change in audit fees paid by a client from year t-1 to year t on our *DAMAGE* test variable. The coefficient on *DAMAGE* is negative and significant ($p<0.01$ and 0.05), indicating that staying clients with reputationally-damaged auditor

[33] We note the coefficients on our forecast variables are insignificant. This finding is consistent with Botosan (1997) who finds disclosure levels, *on average*, do not affect cost of capital. However, Botosan (1997) also finds that disclosure levels affect cost of capital when information asymmetry is high.

offices negotiate fees downward following the damage event.[34] Thus, it seems staying clients do assign at least partial blame, on average, for the restatement to the auditor and lower the level of audit quality they perceive they are receiving, which is reflected in the amount of audit fees they are willing to pay the auditor. Further, in a separate test, we also include our management forecast variables as well as an interaction with *DAMAGE.* We find clients negotiate audit fees downward even more as they increase the amount of management forecasts issued. This provide more evidence that clients are substituting, to some extent, information contained in voluntary disclosures with audited financial statements users may find as somewhat less credible after an auditor reputation damage event.

Sensitivity analyses

We perform a battery of sensitivity analyses and discuss the untabulated results here. First, we augment our changes analysis in Table 3 with a difference-in-difference specification, while also matching damaged and non-damaged offices within the same office size quintile and year.[35] We then compare damaged to non-damaged offices, after the matching, in the post period and find a positive and significant interaction between reputation damage and our post-period indicator.[36] This provides additional evidence that firm-specific factors are not driving our results that client firms increase disclosures after an audit office reputation damage event.

[34] This result is unchanged if we measure the damage event over the years t-3 through t-1 and the percentage change in audit fees averaged over year t-3 though t-1 compared to year t, or if we measure the damage event only in year t-1 and the percentage change in audit fees from year t-1 to year t.

[35] We implement a one-to-many match (one damaged office to many non-damaged offices) to increase the power of our test (Shipman, Swanquist, and Whited 2017). Further, we retain only offices that are not damaged for at least three consecutive years so that offices are similar on this characteristic in the pre period.

[36] Our estimation includes a variable equal to one for clients of offices that become damaged at some point during our sample period (i.e. *TREAT*), a variable equal to one indicating the time period after a damage event for an auditor office (i.e. the *POST* period), and an interaction between the two (i.e. *TREAT*POST*), representing our difference-in-difference test variable in this specification. A detailed description of the design and results of the difference-in-difference estimations are available from the authors upon request.

Second, we rerun our tests after requiring that non-switching clients use the exact same auditor office during all years from t-3 through year t. Our results become slightly weaker but are largely qualitatively unchanged for the vast majority of the tabulated results. Third, we define *DAMAGE* based on auditor office damage only in year t-1, (whereas in our main analysis we consider auditor office damage in years t-1, t-2, and t-3). Again, our results remain largely similar, but are statistically weaker in eight out of 37 total tests.

Fourth, we implement two alternative definitions of *DAMAGE.* We first alter this test variable by scaling the number of clients of an auditor office that restate over years t-3 through t-1 by the total number of clients of that office over those years. Thus, this continuous measure reflects the relative *magnitude* of the overall reputation damage event for a given auditor office. The second is a count variable based on the number of office-years damaged over the previous three years. Results using both alternative variables indicate the number of management forecasts issued continues to be positively and significantly ($p<0.05$) associated with auditor office reputation damage events measured in these ways.

Fifth, we consider only clients of Big 6 auditors (Deloitte, KPMG, EY, PwC, Grant Thornton and BDO) as these auditors comprise the majority of our sample at 76 percent. We find our results are virtually identical to most tabulated results. Sixth, we interact *DAMAGE* with the auditor controls to consider whether the level of audit quality interacts with reputational damage in determining firm disclosure levels. We find that none of the coefficients on the interactions between *DAMAGE* and these auditor controls are statistically significant, supporting our theory of an equilibrium between perceived audit quality and client disclosure before auditor office reputational damage, and that damage imposes a shock to perceived audit quality.

Seventh, given that the median firm in our sample issues no management forecasts, we rerun all our tests replacing our dependent variables with dichotomous variables indicating whether firms issue forecasts. Our results are qualitatively similar, albeit a bit statistically weaker in some cases. This is not surprising as we lose variation in the number of forecasts. Finally, we check how persistent the effect of office reputational damage is on clients' disclosure levels is. We find that increased disclosure results are persistent through five years into the future, which is consistent with Francis and Michas (2013).

5. Conclusion

An auditor office reputational damage event occurs when one or more clients of the office issue a restatement of previously-released financial statements. The announcement of such a damage event sends a negative signal about auditor office quality and reputation (Francis and Michas 2013), and leads to negative consequences such as the loss of audit clients (Swanquist and Whited 2015). However, due to the significant cost of switching auditors, roughly 80 percent of clients in our sample remain with a reputationally-damaged auditor office. We investigate how non-switching clients and their investors respond to such audit office reputation damage to better understand firms' and investors' incentives and actions taken to mitigate this negative signal.

We argue firms choose optimal disclosure levels based on their own assessments of audit quality, information needs and disclosure costs. An auditor office reputational damage event breaks this disclosure equilibrium as it increases information asymmetry between outsiders and the firm. As a result, we hypothesize and find that non-switching firms with a damaged auditor office issue more management forecasts compared to firms with a non-damaged office. However, clients that switch from a damaged office to a non-damaged office do not increase their management forecasts. Such contrast suggests that non-switching firms make different disclosure cost/benefit assessments compared to switching firms. We further hypothesize and find that non-switching firms provide incrementally more disclosures when there exist higher overall information demands, and when the spillover effects from the restating firm (that caused the reputational damage) are higher. We also find firms of damaged offices provide incrementally fewer disclosures when the proprietary costs of doing so are higher. In analyses that investigate the information sources used by investors of non-switching clients, we find investors impound more (less) information from management forecasts (audited financial reports) after an auditor reputational damage event.

Our findings provide insights into the incentives and costs of non-switching firms to change voluntary disclosure amounts in response to auditor office reputational damage events. We also document that increased management forecasts have market benefits for firms as we show that a reputational damage event is associated with higher costs of equity capital for firms that do not issue management forecasts. However, as firms issue forecasts, and increase the amount of these forecasts, the negative cost of equity consequences are mitigated.

Our study should be informative to both researchers and practitioners who are interested in the economic outcomes of damaged auditor office reputation. Our analyses also contribute to the disclosure literature as we highlight a new disclosure incentive to offset a negative signal about perceived audit quality. One caveat of our study is that we focus exclusively on auditor office reputation damage defined using client restatements. There are other measures that can be useful in indicating that an auditor office provides lower-quality audits than was previously perceived. However, restatements are large 'shock' announcements that are meaningful to investors in providing a signal about poor audit quality.

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Appendix

Variable definitions (in alphabetical order)

Variable		**Definition**
ACOV	=	the number of analysts covering firm i in year t [IBES]
BETA	=	the market model regression coefficient estimated using daily returns during the one year before earnings announcements [CRSP]
BETAVW	=	the coefficient from regressing daily returns for firm i over year t on contemporaneous CRSP value-weighted market returns, corrected for nonsynchronous trading (Scholes and Williams 1977) [CRSP]
BIG6	=	one if a client's auditor in year t is a Big 6 auditor (Deloitte, KPMG, EY, PwC, Grant Thornton or BDO), and zero otherwise [Audit Analytics]
CAR3_EA	=	the three-day value-weighted market-adjusted cumulative abnormal return surrounding the release of quarterly earnings announcements [COMPUSTAT, CRSP]
CAR3_MF	=	the three-day value-weighted market-adjusted cumulative abnormal return surrounding the release of annual EPS management forecasts [CRSP, IBES]
CITY_LEADER	=	one if a client's auditor office in year t is the number one auditor office in an industry in terms of total audit fees at the MSA level, and zero otherwise [Audit Analytics]
COE	=	the mean value of implied cost of equity calculated based on four models (i.e., Gebhardt et al. 2001; Claus and Thomas 2001; Easton 2004; Ohlson and Juettner-Nauroth 2005), subtracting the yields on 10-year treasury bonds (i.e., risk-free rate), following Dhaliwal et al. (2016) [COMPUSTAT, CRSP, Federal Reserve Bank, IBES]
DAMAGE	=	one if one or more auditor office-years in the previous three years (i.e., year t-1, t-2 or t-3) of a specific client are reputationally damaged, and zero otherwise. An auditor office-year is defined as being damaged when one or more clients of that office announce a "Big-R" non-reliance restatement (i.e., a restatement issued along with an 8-K Item 4.02 disclosure) in that year [Audit Analytics]
DAMAGE_DiffMSA	=	one for peer clients in a reputationally-damaged auditor office that are headquartered within a different MSA as the restating firm [COMPUSTAT]
DAMAGE_HighRetCorr	=	one for peer clients in a reputationally-damaged auditor office for which the return correlation with the restating client is above the median value across all observations, and zero otherwise [CRSP]
DAMAGE_LEFT	=	one if the following two criteria are met: (1) the client is reputationally damaged in year t (based on the definition of *DAMAGE*) and (2) the client uses an auditor office in year t that is different from any of the damaged offices in the previous three years, and zero otherwise [Audit Analytics]
DAMAGE_LowRetCorr	=	one for peer clients in a reputationally-damaged auditor office for which the return correlation with the restating client is below the median value across all observations, and zero otherwise [CRSP]
DAMAGE_SameMSA	=	one for peer clients in a reputationally-damaged auditor office that are headquartered within the same MSA as the restating firm [COMPUSTAT]
DAMAGE_STAY	=	one if the following two criteria are met: (1) the client is reputationally damaged in year t (based on the definition of *DAMAGE*) and (2) the client uses an auditor office in year t that is the same as one of the damaged offices in the previous three years, and zero otherwise [Audit Analytics]
DISP	=	the standard deviation of analyst earnings per share forecasts made by analysts in year t for year t+1, scaled by the end-of-year stock price in year t [IBES]
HICOMP	=	one if the Herfindahl-Hirschman Index (HHI) of the industry for firm i in year t, measured as the sum of squared market shares of sales of all firms in firm i's four-digit SIC industry, is below the median level of HHI across industries [COMPUSTAT]

Appendix (continued)

Variable definitions (in alphabetical order)

Variable		Definition
IDRISK	=	the idiosyncratic risk, calculated as the annualized standard deviation of the residuals regressing daily returns for firm i over year t on contemporaneous CRSP value-weighted market returns, corrected for nonsynchronous trading (Scholes and Williams 1977) [CRSP]
INSTOWN	=	the percentage of institutional ownership for firm i in year t [Thomson Reuters]
LEV	=	total long-term debt scaled by total assets for firm i in year t [COMPUSTAT]
LOSS	=	one if income before extraordinary items is less than zero for firm i in year t, and zero otherwise [COMPUSTAT]
LTG	=	the median value of analysts' forecasts of long-term growth rates for firm i in year t [IBES]
MBQ	=	market value of equity scaled by the book value of equity at the quarter end [COMPUSTAT]
MF_ALL	=	the number of annual management forecasts issued by a firm throughout a year [IBES]
MF_EARN	=	the number of annual earnings forecasts issued by a firm throughout a year [IBES]
MF_LINE	=	the number of annual management forecasts of line-items (such as sales, capital expenditures, and operating profits) issued by a firm throughout a year [IBES]
MFNEWS	=	management forecast news, calculated as the difference between management forecasted EPS value minus the prevailing analyst forecast consensus, scaled by the beginning-of-year stock price [COMPUSTAT, IBES]
MOMENTUM	=	the stock return for firm i over year t [CRSP]
MTB	=	market value of equity scaled by the book value of equity for firm i at the end of year t [COMPUSTAT]
MTBR	=	decile rank of the firm's beginning-of-year market-to-book ratio [COMPUSTAT]
NATIONAL_LEADER	=	one if a client's auditor in year t is the number one auditor in an industry in terms of total audit fees at the national level, and zero otherwise [Audit Analytics]
OFFICESIZE	=	the number of public company audits that are performed by a client's auditor office in year t [Audit Analytics]
RD	=	one if research and development expense is greater than zero for firm i in year t, and zero otherwise [COMPUSTAT]
RET_VOL	=	the standard deviation of monthly stock returns for firm i in year t, with a minimum of six months of returns required [CRSP]
ROA	=	income before extraordinary items scaled by total assets for firm i in year t [COMPUSTAT]
SIZE	=	the natural logarithm of the market value of equity for firm i at the end of year t [COMPUSTAT]
SIZEQ	=	the natural logarithm of the market value of equity at the quarter end [COMPUSTAT]
SIZER	=	decile rank of the firm's beginning-of-year market value of equity [COMPUSTAT]
UE	=	unexpected earnings, calculated as the difference between actual quarterly earnings and the median value of analysts' most recent quarterly forecasts before earnings announcements, scaled by quarter-end price [COMPUSTAT, IBES]

TABLE 1
Descriptive statistics

Variable	N	Mean	STD	25%	Median	75%
ACOV	30,040	8.39	9.04	1.00	6.00	12.00
BETA	81,199	1.10	0.48	0.78	1.07	1.39
BETAVW	10,357	1.16	0.46	0.85	1.12	1.43
BIG6	30,040	0.76	0.43	1.00	1.00	1.00
CAR3_EA	81,199	0.00	0.08	-0.04	0.00	0.04
CAR3_MF	30,202	0.00	0.08	-0.03	0.00	0.04
CITY_LEADER	30,040	0.42	0.49	0.00	0.00	1.00
COE	10,357	0.05	0.03	0.03	0.05	0.07
DAMAGE	30,040	0.44	0.50	0.00	0.00	1.00
DAMAGE_DiffMSA	27,852	0.20	0.40	0.00	0.00	0.00
DAMAGE_HighRetCorr	26,650	0.18	0.39	0.00	0.00	0.00
DAMAGE_LEFT	35,011	0.09	0.28	0.00	0.00	0.00
DAMAGE_LowRetCorr	26,650	0.18	0.39	0.00	0.00	0.00
DAMAGE_SameMSA	27,852	0.19	0.40	0.00	0.00	0.00
DAMAGE_STAY	35,011	0.37	0.48	0.00	0.00	1.00
DISP	10,357	0.59	43.02	0.00	0.00	0.01
HICOMP	30,040	0.50	0.50	0.00	0.00	1.00
IDRISK	10,357	0.33	0.18	0.20	0.29	0.41
INSTOWN	30,040	0.37	37.09	0.00	0.28	0.74
LEV	30,040	0.22	0.22	0.03	0.17	0.34
LOSS	30,040	0.29	0.45	0.00	0.00	1.00
LTG	10,357	0.13	0.21	0.09	0.13	0.18
MBQ	81,199	3.12	4.28	1.23	1.97	3.35
MF_ALL	30,040	4.03	6.32	0.00	0.00	6.00
MF_EARN	30,040	1.85	3.62	0.00	0.00	3.00
MF_LINE	30,040	1.85	3.11	0.00	0.00	3.00
MFNEWS	30,202	0.00	0.01	0.00	0.00	0.00
MOMENTUM	10,357	0.25	0.55	-0.06	0.17	0.43
MTB	30,040	2.93	4.22	1.10	1.79	3.10
MTBR	30,202	1.42	1.23	0.00	1.00	2.00
NATIONAL_LEADER	30,040	0.20	0.40	0.00	0.00	0.00
OFFICESIZE	30,040	47.55	104.56	7.00	16.00	40.00
RD	30,040	0.38	0.48	0.00	0.00	1.00
RET_VOL	30,040	0.12	0.08	0.07	0.10	0.15
ROA	30,040	-0.03	0.23	-0.01	0.02	0.06
SIZE	30,040	6.19	2.05	4.67	6.18	7.64
SIZEQ	81,199	6.98	1.73	5.74	6.92	8.12
SIZER	30,202	0.87	1.00	0.00	1.00	1.00
UE	81,199	0.00	0.02	0.00	0.00	0.00

Note: All variables are defined in the Appendix.

TABLE 2
Auditor office reputational damage and management forecasts (Hypothesis 1)

Panel A: Main results

		Dependent Variable		
		(1) *MF_ALL*	(2) *MF_EARN*	(3) *MF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE	+	**0.5571*****	**0.2367*****	**0.2387*****
		-5.060	(3.53)	(4.37)
SIZE	+	1.0506***	0.5496***	0.4053***
		(22.42)	(18.52)	(18.90)
ROA	?	1.3638***	0.4596***	0.8710***
		(6.99)	(4.10)	(9.83)
LEV	+	3.2872***	1.8213***	1.2742***
		(10.54)	(9.59)	(8.62)
MTB	?	-0.0058	-0.0036	0.0047
		(-0.45)	(-0.49)	(0.78)
LOSS	-	-0.5949***	-0.3856***	-0.2197***
		(-5.69)	(-6.23)	(-4.38)
RD	+	1.2431***	0.7038***	0.4805***
		(5.38)	(4.96)	(4.41)
RET_VOL	-	-2.3308***	-1.8803***	-0.3585
		(-4.47)	(-6.21)	(-1.35)
BIG6	?	0.2056	-0.1131	0.2564***
		(1.34)	(-1.29)	(3.51)
NATIONAL_LEADER	?	0.1359	0.0318	0.0879
		(0.85)	(0.33)	(1.13)
CITY_LEADER	?	0.2227	0.1515*	0.0999
		(1.49)	(1.69)	(1.43)
OFFICESIZE	?	-0.0011*	-0.0005	-0.0003
		(-1.79)	(-1.52)	(-1.00)
INTERCEPT	?	-5.2421***	-1.3229	-3.0777***
		(-3.90)	(-0.83)	(-7.02)
N		30,040	30,040	30,040
R-squared		0.320	0.250	0.307
Year & Industry Fixed Effects		YES	YES	YES

TABLE 2 (continued)

Auditor office reputational damage and management forecasts (Hypothesis 1)

Panel B: Non-switching clients vs. clients that switch auditors

		Dependent Variable		
		(1) *MF_ALL*	(2) *MF_EARN*	(3) *MF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE_STAY	+	**0.5608******	**0.2393******	**0.2409******
		(5.21)	(3.66)	(4.51)
DAMAGE_LEFT	?	-0.0965	-0.1229	-0.0174
		(-0.74)	(-1.63)	(-0.27)
SIZE	+	1.0260***	0.5310***	0.4004***
		(23.30)	(19.12)	(19.86)
ROA	?	1.3007***	0.4605***	0.8022***
		(7.43)	(4.60)	(9.95)
LEV	+	3.2335***	1.7498***	1.3015***
		(11.16)	(10.00)	(9.48)
MTB	?	-0.0086	-0.0050	0.0041
		(-0.73)	(-0.74)	(0.72)
LOSS	-	-0.5542***	-0.3644***	-0.2037***
		(-5.73)	(-6.40)	(-4.35)
RD	+	1.2445***	0.7031***	0.4991***
		(5.68)	(5.29)	(4.79)
RET_VOL	-	-1.9483***	-1.5976***	-0.2990
		(-4.22)	(-5.97)	(-1.29)
BIG6	?	0.2741*	-0.0625	0.2631***
		(1.93)	(-0.78)	(3.87)
NATIONAL_LEADER	?	0.1853	0.0651	0.0974
		(1.21)	(0.70)	(1.31)
CITY_LEADER	?	0.2373*	0.1609*	0.1056
		(1.67)	(1.89)	(1.58)
OFFICESIZE	?	-0.0009	-0.0005	-0.0002
		(-1.46)	(-1.34)	(-0.78)
INTERCEPT	?	-5.5722***	-1.7443	-2.9910***
		(-4.77)	(-1.34)	(-6.57)
P-value: *DAMAGE_STAY=DAMAGE_LEFT*		**0.000**	**0.000**	**0.000**
N		35,011	35,011	35,011
R-squared		0.320	0.247	0.307
Year & Industry Fixed Effects		YES	YES	YES

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. *MF_ALL* equals the number of annual management forecasts issued by a firm throughout a year. *MF_EARN* equals the number of annual earnings forecasts issued by a firm throughout a year. *MF_LINE* equals the number of annual management forecasts of line-items issued by a firm throughout a year. *DAMAGE* equals one if one or more auditor office-years in the previous three years of a client are reputationally damaged, and zero otherwise. *DAMAGE_STAY* equals one if (1) the client is reputationally damaged in year t (based on the definition of *DAMAGE*) and (2) the client uses an auditor office in year t that is the same as one of the damaged offices in the previous three years, and zero otherwise. *DAMAGE_LEFT* equals one if (1) the client is reputationally damaged in year t and (2) the client uses an auditor office in year t that is different from any of the damaged offices in the previous three years, and zero otherwise. All other variables are defined in the Appendix.

TABLE 3
Changes model specifications (Hypothesis 1)

		Dependent Variable		
		(1) *dMF_ALL*	(2) *dMF_EARN*	(3) *dMF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
dDAMAGE	+	**0.2605***** (4.12)	**0.1532***** (4.07)	**0.0877**** (2.55)
dSIZE	+	0.2517*** (5.51)	0.1178*** (4.45)	0.1053*** (4.33)
dROA	?	-0.0111 (-0.10)	-0.0332 (-0.56)	0.0368 (0.57)
dLEV	+	-0.0761 (-0.29)	0.0168 (0.11)	-0.1123 (-0.82)
dMTB	?	-0.0127* (-1.79)	-0.0036 (-0.94)	-0.0065 (-1.58)
dLOSS	-	-0.2879*** (-4.58)	-0.1452*** (-3.87)	-0.1106*** (-3.29)
dRD	+	-0.2947 (-1.09)	-0.2076 (-1.49)	-0.1687 (-1.06)
dRET_VOL	-	-1.1263*** (-3.94)	-0.5620*** (-3.25)	-0.4060*** (-2.65)
dBIG6	?	-0.1864 (-0.33)	0.3833 (0.80)	-0.1852 (-0.90)
dNATIONAL_LEADER	?	0.0665 (0.56)	0.0106 (0.15)	0.0289 (0.47)
dCITY_LEADER	?	-0.0255 (-0.26)	-0.0545 (-0.96)	0.0380 (0.78)
dOFFICESIZE	?	-0.0007 (-0.87)	-0.0005 (-1.00)	-0.0001 (-0.17)
INTERCEPT	?	0.6339** (2.36)	0.4066* (1.65)	0.3080*** (3.56)
N		28,878	28,878	28,878
R-squared		0.029	0.018	0.025
Year & Industry Fixed Effects		YES	YES	YES

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. All variables are based on the year-over-year change transformation of the variables. *DAMAGE* equals one if one or more auditor office-years in the previous three years of a client are reputationally damaged, and zero otherwise. *MF_ALL* equals the number of annual management forecasts issued by a firm throughout a year. *MF_EARN* equals the number of annual earnings forecasts issued by a firm throughout a year. *MF_LINE* equals the number of annual management forecasts of line-items issued by a firm throughout a year. All other variables are defined in the Appendix.

TABLE 4
Outsider information demands (Hypothesis 2)

Panel A: Analyst coverage

		Dependent Variable		
		(1) *MF_ALL*	(2) *MF_EARN*	(3) *MF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE	?	0.0423	0.0848	-0.0766
		(0.36)	(1.21)	(-1.33)
DAMAGE*ACOV	+	**0.0533*****	**0.0157****	**0.0324*****
		(4.51)	(2.24)	(5.39)
ACOV	+	0.0644***	0.0197**	0.0436***
		(4.61)	(2.34)	(6.03)
SIZE	+	0.7209***	0.4499***	0.1884***
		(13.27)	(13.65)	(7.22)
ROA	?	1.4963***	0.4998***	0.9587***
		(7.72)	(4.46)	(10.94)
LEV	+	3.2348***	1.8055***	1.2399***
		(10.49)	(9.56)	(8.51)
MTB	?	-0.0004	-0.0020	0.0082
		(-0.03)	(-0.27)	(1.39)
LOSS	-	-0.7354***	-0.4281***	-0.3124***
		(-7.00)	(-6.86)	(-6.22)
RD	+	1.1569***	0.6779***	0.4242***
		(5.01)	(4.78)	(3.89)
RET_VOL	-	-2.5929***	-1.9596***	-0.5315**
		(-5.07)	(-6.57)	(-2.06)
BIG6	?	0.3240**	-0.0777	0.3321***
		(2.14)	(-0.90)	(4.64)
NATIONAL_LEADER	?	0.1148	0.0255	0.0743
		(0.72)	(0.26)	(0.96)
CITY_LEADER	?	0.2087	0.1473	0.0907
		(1.40)	(1.64)	(1.30)
OFFICESIZE	?	-0.0010*	-0.0005	-0.0003
		(-1.70)	(-1.46)	(-0.85)
INTERCEPT	?	-3.4864***	-0.7931	-1.9280***
		(-2.67)	(-0.50)	(-4.17)
N		30,040	30,040	30,040
R-squared		0.327	0.252	0.320
Year & Industry Fixed Effects		YES	YES	YES

TABLE 4 (continued)
Outsider information demands (Hypothesis 2)

Panel B: Institutional ownership

		Dependent Variable		
		(1) *MF_ALL*	(2) *MF_EARN*	(3) *MF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE	?	0.0499	0.0251	0.0147
		(0.41)	(0.34)	(0.25)
DAMAGE*INSTOWN	+	**0.0107*****	**0.0045*****	**0.0046*****
		(4.00)	(2.80)	(3.43)
INSTOWN	+	0.0122***	0.0045***	0.0065***
		(4.99)	(2.90)	(5.43)
SIZE	+	0.9353***	0.5055***	0.3474***
		(19.35)	(16.38)	(15.89)
ROA	?	1.2752***	0.4250***	0.8277***
		(6.65)	(3.82)	(9.51)
LEV	+	3.3689***	1.8525***	1.3152***
		(10.85)	(9.75)	(9.00)
MTB	?	-0.0004	-0.0016	0.0074
		(-0.03)	(-0.21)	(1.25)
LOSS	-	-0.5344***	-0.3626***	-0.1890***
		(-5.15)	(-5.89)	(-3.81)
RD	+	1.2376***	0.7014***	0.4783***
		(5.39)	(4.96)	(4.42)
RET_VOL	-	-1.7485***	-1.6571***	-0.0673
		(-3.41)	(-5.56)	(-0.26)
BIG6	?	0.0887	-0.1568*	0.1960***
		(0.58)	(-1.80)	(2.70)
NATIONAL_LEADER	?	0.1266	0.0279	0.0838
		(0.80)	(0.29)	(1.09)
CITY_LEADER	?	0.2177	0.1499*	0.0968
		(1.47)	(1.68)	(1.39)
OFFICESIZE	?	-0.0011*	-0.0005	-0.0003
		(-1.70)	(-1.47)	(-0.91)
INTERCEPT	?	-5.0177***	-1.2319	-2.9740***
		(-3.76)	(-0.78)	(-6.93)
N		30,040	30,040	30,040
R-squared		0.328	0.254	0.316
Year & Industry Fixed Effects		YES	YES	YES

TABLE 4 (continued)
Outsider information demands (Hypothesis 2)

Panel C: Firm size

		Dependent Variable		
		(1) *MF_ALL*	(2) *MF_EARN*	(3) *MF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE	?	-1.3445***	-0.5268***	-0.6657***
		(-5.47)	(-3.51)	(-5.43)
DAMAGE*SIZE	+	**0.3007*** **	**0.1207*** **	**0.1430*** **
		(6.69)	(4.31)	(6.36)
SIZE	+	0.9107***	0.4934***	0.3387***
		(18.64)	(15.51)	(14.95)
ROA	?	1.3233***	0.4433***	0.8517***
		(6.78)	(3.96)	(9.59)
LEV	+	3.2845***	1.8202***	1.2730***
		(10.54)	(9.59)	(8.61)
MTB	?	-0.0060	-0.0037	0.0046
		(-0.47)	(-0.50)	(0.76)
LOSS	-	-0.5904***	-0.3837***	-0.2175***
		(-5.65)	(-6.21)	(-4.34)
RD	+	1.2417***	0.7033***	0.4798***
		(5.36)	(4.95)	(4.40)
RET_VOL	-	-2.3214***	-1.8765***	-0.3540
		(-4.46)	(-6.21)	(-1.34)
BIG6	?	0.2894*	-0.0795	0.2963***
		(1.89)	(-0.91)	(4.07)
NATIONAL_LEADER	?	0.1134	0.0228	0.0772
		(0.71)	(0.23)	(0.99)
CITY_LEADER	?	0.2220	0.1512*	0.0995
		(1.49)	(1.69)	(1.42)
OFFICESIZE	?	-0.0012**	-0.0006*	-0.0004
		(-2.01)	(-1.68)	(-1.21)
INTERCEPT	?	-4.5644***	-1.0508	-2.7553***
		(-3.50)	(-0.67)	(-6.09)
N		30,040	30,040	30,040
R-squared		0.322	0.251	0.310
Year & Industry Fixed Effects		YES	YES	YES

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. *MF_ALL* equals the number of annual management forecasts issued by a firm throughout a year. *MF_EARN* equals the number of annual earnings forecasts issued by a firm throughout a year. *MF_LINE* equals the number of annual management forecasts of line-items issued by a firm throughout a year. *DAMAGE* equals one if one or more auditor office-years in the previous three years of a client are reputationally damaged, and zero otherwise. *ACOV* equals the number of analysts covering a firm in year t. *INSTOWN* equals the percentage of institutional ownership for a firm in year t. *SIZE* equals the natural logarithm of a firm's market value of equity in year t. All other variables are defined in the Appendix.

TABLE 5
Spillover effects (Hypothesis 3)

Panel A: High return correlation

		Dependent Variable		
		(1) *MF_ALL*	(2) *MF_EARN*	(3) *MF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE_HighRetCorr	+	**0.8184*****	**0.2620*****	**0.4292*****
		(4.94)	(2.59)	(5.21)
DAMAGE_LowRetCorr	+	**0.5301*****	**0.2769*****	**0.1900*****
		(3.71)	(3.17)	(2.77)
SIZE	+	1.0166***	0.5460***	0.3806***
		(20.61)	(17.14)	(17.40)
ROA	?	1.3741***	0.4762***	0.8814***
		(6.57)	(3.95)	(9.32)
LEV	+	3.4532***	1.8769***	1.3572***
		(10.81)	(9.53)	(9.04)
MTB	?	-0.0001	-0.0025	0.0084
		(-0.00)	(-0.32)	(1.30)
LOSS	-	-0.6014***	-0.3846***	-0.2362***
		(-5.49)	(-5.92)	(-4.51)
RD	+	1.1678***	0.6638***	0.4401***
		(4.80)	(4.42)	(3.86)
RET_VOL	-	-2.3863***	-1.9306***	-0.3300
		(-4.39)	(-6.02)	(-1.20)
BIG6	?	0.1186	-0.1463	0.2121***
		(0.74)	(-1.59)	(2.84)
NATIONAL_LEADER	?	0.1339	0.0282	0.0826
		(0.83)	(0.29)	(1.05)
CITY_LEADER	?	0.2216	0.1415	0.1079
		(1.46)	(1.53)	(1.53)
OFFICESIZE	?	-0.0011*	-0.0005	-0.0003
		(-1.67)	(-1.50)	(-0.87)
INTERCEPT	?	-4.8637***	-1.0784	-2.9790***
		(-3.48)	(-0.65)	(-6.44)
P-value: *DAMAGE_HighRetCorr = DAMAGE_LowRetCorr*		**0.098**	0.889	**0.005**
N		26,650	26,650	26,650
R-squared		0.321	0.250	0.311
Year & Industry Fixed Effects		YES	YES	YES

TABLE 5 (continued)
Spillover effects (Hypothesis 3)

Panel B: Same metropolitan statistical area

Independent Variables	Pred.	(1) *MF_ALL* Coeff. (t_stat)	(2) *MF_EARN* Coeff. (t_stat)	(3) *MF_LINE* Coeff. (t_stat)
DAMAGE_SameMSA	+	**0.8462*****	**0.3685*****	**0.3657*****
		(5.45)	(3.88)	(4.77)
DAMAGE_DiffMSA	+	**0.3932*****	**0.1474***	**0.1867*****
		(2.72)	(1.69)	(2.67)
SIZE	+	1.0277***	0.5423***	0.3934***
		(21.79)	(17.93)	(18.72)
ROA	?	1.4143***	0.4820***	0.8952***
		(6.98)	(4.13)	(9.78)
LEV	+	3.3351***	1.8335***	1.2975***
		(10.75)	(9.55)	(8.94)
MTB	?	-0.0040	-0.0035	0.0054
		(-0.30)	(-0.47)	(0.87)
LOSS	-	-0.6036***	-0.3950***	-0.2199***
		(-5.63)	(-6.17)	(-4.31)
RD	+	1.2365***	0.7036***	0.4720***
		(5.18)	(4.77)	(4.21)
RET_VOL	-	-2.2590***	-1.8574***	-0.3197
		(-4.24)	(-5.95)	(-1.19)
BIG6	?	0.0935	-0.1567*	0.1981***
		(0.59)	(-1.73)	(2.69)
NATIONAL_LEADER	?	0.1300	0.0248	0.0882
		(0.82)	(0.26)	(1.15)
CITY_LEADER	?	0.2184	0.1434	0.1008
		(1.48)	(1.60)	(1.47)
OFFICESIZE	?	-0.0010	-0.0005	-0.0003
		(-1.64)	(-1.41)	(-0.90)
INTERCEPT	?	-4.8696***	-1.0530	-3.0099***
		(-3.55)	(-0.64)	(-6.50)
P-value: *DAMAGE_SameMSA = DAMAGE_DiffMSA*		**0.008**	**0.031**	**0.029**
N		27,852	27,852	27,852
R-squared		0.318	0.248	0.308
Year & Industry Fixed Effects		YES	YES	YES

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. *DAMAGE_HighRetCorr* (*DAMAGE_LowRetCorr*) equals one for peer clients in a reputationally damaged auditor office for which the return correlation with the restating client is above (below) the median value across all observations, and zero otherwise. *DAMAGE_SameMSA* (*DAMAGE_DiffMSA*) equals one for peer clients in a reputationally-damaged auditor office that are headquartered within the same (a different) MSA as the restating firm, and zero otherwise. All other variables are defined in the Appendix.

TABLE 6
Client firm proprietary costs of disclosure (Hypothesis 4)

		Dependent Variable		
		(1) *MF_ALL*	(2) *MF_EARN*	(3) *MF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE	**-**	**0.7349*****	**0.3276*****	**0.3632*****
		(4.78)	(3.64)	(4.83)
DAMAGE*HICOMP	**-**	**-0.3654****	**-0.1865***	**-0.2553*****
		(-2.10)	(-1.81)	(-2.95)
HICOMP	-	-0.3489**	-0.1724*	-0.2238***
		(-2.25)	(-1.78)	(-2.98)
SIZE	+	1.0587***	0.5536***	0.4106***
		(22.51)	(18.58)	(19.10)
ROA	?	1.3295***	0.4425***	0.8482***
		(6.80)	(3.93)	(9.57)
LEV	+	3.2886***	1.8220***	1.2753***
		(10.53)	(9.58)	(8.64)
MTB	?	-0.0072	-0.0043	0.0037
		(-0.56)	(-0.58)	(0.63)
LOSS	-	-0.5763***	-0.3763***	-0.2074***
		(-5.51)	(-6.08)	(-4.14)
RD	+	1.2753***	0.7199***	0.5017***
		(5.53)	(5.08)	(4.61)
RET_VOL	-	-2.2574***	-1.8437***	-0.3101
		(-4.33)	(-6.08)	(-1.17)
BIG6	?	0.2125	-0.1096	0.2612***
		(1.39)	(-1.25)	(3.59)
NATIONAL_LEADER	?	0.1239	0.0258	0.0797
		(0.78)	(0.27)	(1.03)
CITY_LEADER	?	0.2225	0.1514*	0.0997
		(1.49)	(1.69)	(1.43)
OFFICESIZE	?	-0.0012*	-0.0006	-0.0003
		(-1.89)	(-1.61)	(-1.15)
INTERCEPT	?	-5.3775***	-1.3913	-3.1701***
		(-4.04)	(-0.88)	(-7.10)
N		30,040	30,040	30,040
R-squared		0.321	0.251	0.310
Year & Industry Fixed Effects		YES	YES	YES

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. *MF_ALL* equals the number of annual management forecasts issued by a firm throughout a year. *MF_EARN* equals the number of annual earnings forecasts issued by a firm throughout a year. *MF_LINE* equals the number of annual management forecasts of line-items issued by a firm throughout a year. *DAMAGE* equals one if one or more auditor office-years in the previous three years of a client are reputationally damaged, and zero otherwise. *HICOMP* equals one if the Herfindahl-Hirschman Index within a firm's industry (calculated using 4-digit SIC codes) is below the median level across all industries in year t, and zero otherwise. All other variables are defined in the Appendix.

TABLE 7
Investors' responses to reported earnings and management forecasts (Hypothesis 5)

Panel A: ERC analysis

		Dependent Variable *CAR3_EA*	
		(1)	(2)
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)
UE	+	0.697***	0.178
		(14.33)	(1.52)
DAMAGE	?	0.000	0.000
		(0.47)	(0.60)
UE*DAMAGE	-	**-0.245*****	**-0.223*****
		(-4.08)	(-3.39)
*UE*MBQ*	+		0.034***
			(3.46)
*UE*BETA*	?		-0.217***
			(-4.75)
*UE*SIZEQ*	?		0.154***
			(5.29)
MBQ	?		-0.000
			(-0.31)
BETA	?		-0.000
			(-0.16)
SIZEQ	?		-0.000
			(-1.00)
CONSTANT		0.005	0.006
		(0.90)	(1.08)
N		81,191	81,191
R-squared		0.028	0.033
Quarter Fixed Effects		Yes	Yes
Year Fixed Effects		Yes	Yes
Industry Fixed Effects		Yes	Yes

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. *CAR3_EA* is the three-day value-weighted market-adjusted cumulative abnormal returns surrounding the release of earnings announcements. *UE*, the unexpected earnings, is calculated as the difference between actual earnings and the median of analysts' most recent forecasts before earnings announcements, scaled by quarter-end price. *DAMAGE* equals one if one or more auditor office-years in the previous three years of a client are damaged, and zero otherwise. All other variables are defined in the Appendix.

TABLE 7 (continued)
Investors' responses to reported earnings and management forecasts (Hypothesis 5)

Panel B: Market responses to management forecasts

		Dependent Variable *CAR3_MF*	
		(1)	(2)
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)
MFNEWS	?	2.592***	3.904***
		(14.27)	(9.22)
DAMAGE	?	-0.001	0.000
		(-1.00)	(0.16)
MFNEWS *DAMAGE	+	**0.916*****	**1.306****
		(3.79)	(2.07)
SIZER	?		0.002**
			(2.19)
MTBR	?		0.001
			(1.10)
*SIZER*MFNEWS*	?		-0.408***
			(-3.06)
SIZER DAMAGE*	?		-0.000
			(-0.07)
*SIZER*MFNEWS* DAMAGE*	?		0.099
			(0.47)
*MTBR*MFNEWS*	?		-0.181
			(-1.41)
MTBR DAMAGE*	?		-0.001
			(-0.89)
*MTBR*MFNEWS* DAMAGE*	?		-0.309
			(-1.45)
CONSTANT		0.002	0.001
		(0.92)	(0.44)
N		30,202	30,202
R-squared		0.103	0.109
Year Fixed Effects		Yes	Yes
Industry Fixed Effects		Yes	Yes

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. *CAR3_MF* is the three-day value-weighted market-adjusted cumulative abnormal returns surrounding the release of annual EPS management forecasts. *MFNEWS*, the management forecast news, is calculated as the difference between management forecasted EPS value minus the prevailing analyst forecast consensus, scaled by the beginning-of-year stock price. *DAMAGE* equals one if one or more auditor office-years in the previous three years of a client are reputationally damaged, and zero otherwise. All other variables are defined in the Appendix.

TABLE 8
Cost of equity capital analysis

		Definition of MF		
		(1) *LnMF_ALL*	(2) *LnMF_EARN*	(3) *LnMF_LINE*
Independent Variables	Pred.	Coeff. (t_stat)	Coeff. (t_stat)	Coeff. (t_stat)
DAMAGE	+	0.0036**	0.0021*	0.0023*
		(2.39)	(1.76)	(1.70)
DAMAGE*LnMF	-	-0.0021***	-0.0021***	-0.0019 **
		(-3.20)	(-3.01)	(-2.35)
LnMF	-	0.0001	0.0005	0.0004
		(0.20)	(1.04)	(0.71)
SIZE	-	-0.0028***	-0.0029***	-0.0029***
		(-7.72)	(-7.97)	(-8.10)
MTB	-	-0.0008***	-0.0008***	-0.0008***
		(-6.50)	(-6.50)	(-6.49)
ROA	?	0.0333***	0.0327***	0.0328***
		(6.52)	(6.42)	(6.42)
LEV	+	0.0229***	0.0227***	0.0227***
		(8.07)	(7.96)	(8.00)
MOMENTUM	-	0.0017**	0.0018**	0.0018**
		(2.28)	(2.36)	(2.32)
DISP	+	0.0000***	0.0000***	0.0000***
		(5.20)	(5.48)	(5.35)
LTG	+	0.0123***	0.0122***	0.0122***
		(4.60)	(4.54)	(4.55)
BETAVW	+	0.0011	0.0011	0.0011
		(1.00)	(1.00)	(1.02)
IDRISK	+	-0.0027	-0.0026	-0.0025
		(-0.66)	(-0.63)	(-0.62)
INTERCEPT	?	0.0750***	0.0751***	0.0755***
		(6.42)	(6.50)	(6.31)
N		10,357	10,357	10,357
R-squared		0.243	0.242	0.242
Year & Industry Fixed Effects		YES	YES	YES

Note: *, **, *** indicate statistical significance at the 0.10, 0.05 and 0.01 levels, respectively, two-tailed. T-statistics (in parentheses) are calculated based on standard errors that are clustered at the firm level. *COE* equals the mean implied cost of equity calculated based on four models, following Dhaliwal et al. (2016). *LnMF* equals the logarithm of one plus the number of management forecasts. *LnMF_ALL* equals the logarithm of one plus the number of annual management forecasts issued by a firm throughout a year. *LnMF_EARN* equals the logarithm of one plus the number of annual earnings forecasts issued by a firm throughout a year. *LnMF_LINE* equals the logarithm of one plus the number of annual management forecasts of line-items issued by a firm throughout a year. *DAMAGE* equals one if one or more auditor office-years in the previous three years of a client are reputationally damaged, and zero otherwise. All other variables are defined in the Appendix.