EARNINGS MANAGEMENT PRESSURE ON AUDIT CLIENTS: AUDITOR RESPONSE TO ANALYST FORECAST SIGNALS

A Dissertation

by

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ABSTRACT

This study investigates whether auditors respond to earnings management pressure created by analyst forecasts. Analyst forecasts create an important earnings target for management, and professional standards direct auditors to consider how this pressure could affect their clients. Using annual analyst forecasts available during the planning phase of the audit, I examine whether this form of earnings management pressure affects clients' financial statement misstatements. Next, I investigate whether auditors respond to earnings forecast pressure through audit fees and reporting delay. I find that higher levels of analyst forecast pressure increase the likelihood of client restatement. I also find that auditors charge higher audit fees and delay the issuance of the audit report in response to pressure from analyst expectations. Finally, I find that when audit clients are subject to high analyst forecast pressure, a high audit fee response by auditors mitigates the likelihood of client misstatements.

DEDICATION

To Courtney, Hailey, Lexi, and Johnny

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I. INTRODUCTION

The accounting literature has documented a strong management focus on meeting the earnings expectations of external parties. Survey evidence indicates that managers perceive significant pressure to meet earnings targets (Graham et al. 2005), and research identifies several reasons management feels incentivized to make target achievement a priority (Healy and Wahlen 1999; Bartov et al. 2002; Skinner and Sloan 2002). Moreover, earnings management studies suggest that managers make strategic accounting and economic decisions to ensure their firms meet those targets (Degeorge et al. 1999; Brown and Caylor 2005; Graham et al. 2005).[1] This intense pressure on management is specifically listed as a significant risk factor in professional audit standards (AICPA 2002), yet previous research has not investigated how auditors respond to the risk created by these earnings targets. This study seeks to fill this void in the literature by investigating whether auditors respond to earnings management pressure created by analyst forecasts during the planning phase of the audit. Furthermore, this study examines whether increased auditor response reduces audit risk created from analyst forecast pressure.

Analyst forecasts that differ from management's expectations of company results create audit risk. Because auditors are aware that management is highly incentivized to achieve analyst targets (Nelson et al. 2002), auditors can use analyst forecasts

[1] As discussed later in the paper, management may choose to structure transactions that affect economic income, adjust judgment and estimates in the accounting process, and/or manage the expectations of external parties as components of an earnings management strategy. This paper focuses on the use of accounting to achieve earnings benchmarks because the auditor's attention is on the accounting and financial reporting system.

available at interim periods to evaluate the potential for client manipulation of financial reporting. Prior research has documented that auditors respond to general forms of risk such as complexity, inherently risky accounts, profitability, leverage, and the industry in which the client operates (Hay et al. 2006). In comparison, earnings management pressure from financial analysts represents a unique and specific, directional measure of pervasive financial statement risk that has not been investigated in the literature.

Examining how auditors react to earnings management pressure on their clients is important because it addresses a topic relevant to practitioners, regulators, and academics. The auditor's professional standard regarding the consideration of fraud, SAS 99, specifically instructs auditors to consider the pressure analyst forecasts create for management (AICPA 2002). Additionally, the Public Company Accounting Oversight Board (PCAOB) recently released several audit standards that direct auditors to consider pressure on management—such as from analysts—indicating regulator's recognition of this important audit risk factor (PCAOB 2010b, 2010c). Finally, academics have long been endeared to analyst studies (Ramnath et al. 2008a, 2008b; Beyer et al. 2010) and earnings management studies (Healy and Wahlen 1999; Dechow and Skinner 2000; Dechow et al. 2010). This study builds on those literature streams and investigates how earnings management pressure influences auditors. The audit literature has acknowledged the important role analysts play in incentivizing audit clients, and prior studies examine how auditor characteristics affect a client's propensity to meet or beat analyst forecasts (Reichelt and Wang 2010), how the quality of the auditor affects

analyst forecast characteristics (Behn et al. 2008), or how the presence of an analyst following affects auditor decisions (Keune and Johnstone 2012). However, these studies do not specifically examine how auditors use information provided by analyst forecasts, nor do they examine whether auditors are aware of analyst forecasts at interim periods.

The focus of my study is the difference between earnings information auditors can obtain from their clients' reported results during the planning phase of the audit and concurrently-available analyst forecast information. I focus on earnings numbers because earnings encompass other internal and external business risks and trends, and Graham et al. (2005) find that managers care more about earnings than any other financial numbers. Earnings are also a prominent metric for auditors; professional guidance suggests that auditors should consider expected annual earnings during the planning phase of the audit in connection with their consideration of materiality (AICPA 2006a). Because analysts construct their earnings forecasts based on expectations about both client-specific factors and broader external factors (Rogers and Grant 1997; Chandra et al. 1999; Ramnath et al. 2008b), auditors can use analysts' forecasts to improve their own expectations. Perhaps more importantly, differences between analyst forecasts and company trends at interim periods can alert auditors to the potential for earnings management.

I use the restatement of client financial statements due to errors, fraud, or failure in the application of GAAP (hereafter "restatements") as an indicator of material misstatement. Prior literature uses restatements as a proxy for material misstatements because restatements represent a public acknowledgement by both the client and the

current auditor that previous financial statements were misstated (Cao et al. 2012; Schmidt 2012; Newton et al. 2013). Because managers are willing to engage in earnings management to achieve targets (Graham et al. 2005), audit clients subject to greater pressure from analysts are likely to have a greater number of material misstatements. To the extent that auditors do not detect and prevent all such misstatements during the audit, the possibility of subsequent discovery and correction of misstatements increases. Therefore, I investigate whether managers yield to earnings management pressure created by analysts by examining the association between analyst forecast pressure and financial statement misstatements.

I use audit fees and audit reporting delay as measures of auditor response. Prior literature has found that increased fees may indicate additional audit hours (Bell et al. 2001; Johnstone and Bedard 2001; Johnstone et al. 2004), adjustments to the experience or expertise of the engagement team staffing mix (Johnstone and Bedard 2001), or billed risk premiums (Bedard and Johnstone 2004; Hay et al. 2006). If auditors respond to earnings management pressure from analyst forecasts in any of these ways, their decision should be reflected in higher audit fees. Auditor response to analyst forecast pressure could also be manifested in the number of days the auditor takes to issue the audit opinion. Audit standards suggest that auditors can respond to identified risks by modifying the timing of their procedures to obtain better evidence closer to year-end (PCAOB 2010c). Thus, I also test whether auditors take longer to issue their report in response to analyst forecast pressure on their clients. Finally, auditors' identification of and response to significant risk

should improve audit quality. Therefore, I investigate whether high auditor response (i.e. high fees) in situations of high analyst forecast pressure reduces the likelihood of client misstatements.

My findings indicate that significant pressure from analyst forecasts affects both management and auditors. I find that increasingly high expectations from analyst forecasts increase the propensity for client misstatements. The finding that managers misstate financial accounts when analyst pressure is high is consistent with other studies that show that managers achieve targets by employing various methods such as classification shifting (McVay 2006; Fan et al. 2010), stock repurchases (Hribar et al. 2006), and adjustments to tax accounts (Dhaliwal et al. 2004; Cook et al. 2008). My results contribute to that literature stream by documenting an influence on management (i.e. analyst forecasts at an interim period) that leads to those methods and the potential misstatements derived from them. The increased propensity for restatement also has significant economic implications: the increase in the likelihood of restatement across the interquartile range of analyst forecast pressure is 19.1 percent. Although auditors do not prevent all misstatements related to the increased misstatement risk from analyst forecast pressure, I do find that auditors respond to analyst forecast pressure. Specifically, auditors bill an average of 7.6 percent higher fees and take 3.3 percent longer to issue their opinion for clients subject to high analyst forecast pressure relative to clients subject to low pressure.

I also find that a significant response by auditors mitigates the risk of misstatement associated with high analyst expectations. My results suggest that

auditors whose audit fee response ranks in the 75th percentile reduce the likelihood of restatement by 24.1 percent compared to auditors ranked in the 25th percentile of audit fees when their clients are subject to above-median analyst forecast pressure. Additionally, I find that the likelihood of client restatement is no different for high-response auditors with clients in high-pressure situations than the likelihood of restatement for low-response auditors with clients in low-pressure situations. These findings suggest that on average, auditors who respond to perceived risk from analyst forecasts can reduce the increased likelihood of restatement for clients with high earnings management potential.

This study contributes to the audit literature in several ways. My results show that auditors are attuned to indicators of risk at interim periods in addition to the year-end risk indicators studied in prior audit research. This finding suggests that future audit research should consider other information that is available throughout the course of the year rather than focusing only on year-end variables. This study also contributes to the audit literature by showing that auditors use specific information provided by analysts to tailor their procedures to the individual earnings management risk of their clients. Further, I find that auditors who respond to analyst forecast information can identify and mitigate a significant risk of material misstatement. These findings are particularly interesting because (1) they highlight a scenario in which auditors are following audit standards despite limited attention from regulators or the public, and (2) adherence to these standards significantly enhances audit quality.

This study also offers insights to practitioners and regulators and contributes to other streams of literature. First, auditors should find this study valuable because my results show that following the guidance set forth in SAS 99 and Auditing Standard No. 12 significantly decreases audit risk. The findings of this study should also interest regulators, who may wish to highlight the benefits of auditor attention to analyst forecasts or to issue more specific guidance to auditors to facilitate best practices across the audit industry. Finally, my study extends both the earnings management literature and the analyst forecast literature. I show a link between interim-period analyst forecast pressure and subsequent restatements—a finding that broadens academics' understanding of the potential consequences of management's focus on analysts' expectations.

The remainder of this paper is organized as follows. Section II outlines the background and theory I use to develop my hypotheses. Section III describes my sample selection and research methods, and Section IV presents results from my tests. Finally, Section V summarizes this study.

II. THEORY AND HYPOTHESES

Background on Analysts' Forecasts and Earnings Management

The academic literature includes numerous studies investigating earnings management. Healy and Wahlen (1999) define earnings management as the alteration of financial reports either through judgment in financial reporting choices or through transaction structuring with the intent to influence users of the financial statements (see also Dechow et al. 2010 for a review of earnings management studies). Managers have various incentives to report financial results in a particular light—research finds that implications for stock price, management reputation, employee compensation, and debt considerations motivate managers to present financial statements as favorably as possible (Burgstahler and Dichev 1997; Matsunaga and Park 2001; Cheng and Warfield 2005; Graham et al. 2005; Francis et al. 2008).

Users of financial information often weigh operational results against a particular benchmark when assessing the degree of firm or manager success. This monitoring by investors, lenders, and other stakeholders creates pressure on management to meet common thresholds. Prior literature identifies earnings targets such as positive profits, increases over prior profits, and analyst expectations as prominent earnings targets (Degeorge et al. 1999). However, in the last decade, managers and financial statement users have increasingly measured firm success relative to analyst earnings forecasts. Graham et al. (2005) find that CFOs consider analyst forecasts as one of their top two targets, and Brown and Caylor (2005) demonstrate that managers'

actions indicate that analyst targets are of primary concern. Managers feel this concern for earnings targets because they believe that missing earnings targets sends signals to financial statement users that the firm has "deep previously unknown problems" or "uncertainty about future prospects" (Graham et al. 2005, p. 29).

Prior research has also documented consequences to a firm's performance relative to analyst forecast targets. For example, Kasznik and McNichols (2002) find that the market places a high value on stocks of firms that consistently meet expectations while Skinner and Sloan (2002) find that missing analyst targets can result in large declines in stock price. Furthermore, Bartov et al. (2002) document that firms that meet or beat analyst expectations receive a return premium over those that miss analyst expectations. They also note that even firms that likely reach targets through earnings management receive a small premium. In addition to these documented consequences, financial executives perceive that meeting targets such as analyst forecasts is important for a variety of reasons including building credibility with financial markets, conveying future growth potential to investors, and achieving desired debt ratings (Graham et al. 2005). The combination of known and perceived consequences for firm performance relative to analyst forecasts suggests that managers are subject to significant pressure to align financial statement numbers with earnings targets.

Managers have several alternative methods to achieve earnings targets. Healy and Wahlen (1999) identify judgment in accounting information as well as transaction structuring as possible earnings management tools. The use of non-

accounting mechanisms is supported by studies about "real earnings management" such as Roychowdhury (2006), who finds that managers use price discounting, overproduction, and reduction of discretionary expenses to meet earnings expectations. In fact, survey evidence from Graham et al. (2005) indicates that managers prefer such real actions over accounting-based methods of achieving targets. Another potential management tool to achieve targets is to change the targets themselves. Matsumoto (2002) and Brown and Pinello (2007) find that firms avoid negative earnings surprises using both upward accounting-based earnings management and downward management of analyst expectations. Thus, managers can draw upon multiple methods to ensure that their firms meet the expectations of analysts.

When does earnings management occur? Studies suggest that managers engage in earnings management near the end of the year in order to meet annual expectations. Jacob and Jorgensen (2007) argue that managers are most likely to manage earnings in the fourth quarter because many incentives and expectations relate to the full year. Recent research confirms this assertion, finding that firms achieve earnings targets using changes in tax expense assumptions from the third to fourth quarters (Dhaliwal et al. 2004; Cook et al. 2008) and classification shifting in the fourth quarter (McVay 2006; Fan et al. 2010). Further, Salamon and Stober (1994) find a difference in earnings characteristics in the fourth quarter relative to

earnings in other quarters. This evidence suggests that managers make adjustments late in the year to meet external expectations.[2]

The timing of earnings management described above as well as the inclination for managers to use earnings management techniques to meet benchmarks (Healy and Wahlen 1999; Graham et al. 2005; Roychowdhury 2006) suggests that managers make interim evaluations of firm performance relative to annual earnings targets. Research documents that managers are optimistic about the future prospects of their firms (Lev 2003; Graham et al. 2005), and the management choice to wait until the final portion of the year to manage earnings is consistent with this notion. An optimistic manager is likely to rely on economic earnings until it becomes apparent that the firm's present earnings trend will not reach the earnings target. At that point managers can either structure transactions or attempt to "borrow" earnings from future periods to meet current earnings targets. Lev (2003) and Graham et al. (2005) indicate that managers are optimistic that their firms will recover and be able to make up borrowed income in a future period.

A manager's interim evaluation of firm progress toward an annual target can result in several possible scenarios. First, when analyst forecasts are greater than the company's current earnings trajectory, management may feel pressure to report more aggressively. This decision increases the possibility that the financial statements include materially misstated amounts that are restated in a future year. Second, when

[2] Brown and Pinello (2007) suggest that earnings management opportunities are actually greater at interim periods due to constraints on the financial reporting process at year-end (e.g. an independent audit). However, results from prior studies and from my tests indicate that earnings management does occur in the later part of the year regardless of these constraints.

analyst expectations are similar to the company's current trajectory, the expected likelihood of misstatement is lower than under the first scenario, although management could use accounting discretion to ensure the company stays on track. Finally, when analyst expectations are below the company's current trajectory, analyst forecasts would not create pressure on management to manage earnings upward.[3] In fact, this case might provide an opportunity for managers to establish "cookie-jar reserves" (Levitt 1998). However, income-decreasing earnings management is less likely to result in future restatements than income-increasing earnings management. Evidence suggests that financial statement users prefer conservative reporting (Basu 1997; Watts 2003a; Watts 2003b), and Newton et al. (2013) document that most restatements correct prior overstatements. Because managers and auditors are generally more focused on income-increasing earnings management (Nelson et al. 2002), conservative-leaning misstatements are less likely to result in future restatements.

In summary, because a firm's performance relative to earnings benchmarks results in significant economic consequences, managers are likely to feel external pressure to meet earnings targets. On average, managers tend to be optimistic about their firms' progress towards earnings targets. When interim firm results are not trending toward analysts' expectations, managers are incentivized to employ available methods of earnings management, including changing accounting

[3] Another possible scenario is that the difference between analyst forecasts and management's expectation is so extreme that meeting analysts' expectations is unrealistic. I attempt to focus on the scenarios where analyst forecasts create pressure on management, so I exclude this potential scenario from my study by using only observations within certain thresholds discussed later in this paper.

presentation and assumptions. Management's use of accounting-based techniques increases the likelihood of material misstatements in the financial statements. If auditors do not fully prevent these misstatements, the client and/or auditors are more likely to discover and report these misstatements in future years, resulting in financial statement restatements. Thus, my first hypothesis is as follows:

H1: The likelihood of restatement is positively associated with interim-period analyst forecast pressure.

Background on Auditor Response

Auditors are likely to notice earnings pressure on their clients and respond to the pressure as a significant risk factor.[4] The audit profession has undergone a risk-focused transformation beginning in the 1990s. This evolution started as audit firms increasingly incorporated risk-management principles in their audit methodologies (Knechel 2007). Firms evolved further in accordance with professional guidance such as SAS 99 that directed engagement teams to consider fraud risks in planning their audits (AICPA 2002). The passage of the Sarbanes Oxley Act and the establishment of the PCAOB further incentivized auditors to focus on risk. The following statement made in 2010 by Daniel L. Goelzer, acting PCAOB chairman, describes the importance of auditor attention to risk:

> Assessing and responding to risk is at the core of what auditors do. The [PCAOB's] mandate is to ensure quality auditing and to promote investor

[4] Audit standards indicate that client efforts to meet earnings expectations may result in qualitatively material misstatements, so auditors should be attuned to risks present from analyst forecasts (AICPA 2006a). In addition, the design of this study is based on conversations with current and former audit partners, managers, and seniors from several Big 4 firms. My discussions with these auditors indicate that audit procedures evaluating analyst forecasts are common on audit engagements, and that audit plans are sensitive to analyst forecast pressure.

> confidence in audited financial statements. Therefore, focusing on the risk assessment process and the auditor's response to risk is one of the most important steps we can take to fulfill our statutory mandate. (Goelzer 2010)

Mr. Goelzer's statement corresponded to the PCAOB's release of new audit standards on audit risk (PCAOB 2010a), risk assessment (PCAOB 2010b), and response to risk (PCAOB 2010c).

In light of the increasing focus of the audit profession and audit regulators on risk, researchers have investigated how a variety of risk factors affect auditor response. Charles et al. (2010) show that audit fees are positively associated with overall financial reporting risk. Other studies find that auditors increase audit fees due to risks associated with internal control weaknesses (Hogan and Wilkins 2008; Hoag and Hollingsworth 2011), aggressive business strategy (Bentley et al. 2012), short interest (Cassell et al. 2011), or optimistic pro forma numbers (Chen et al. 2012). These studies build on the results in the meta-analysis of audit fees conducted by Hay et al. (2006). Their summary of numerous studies indicates that audit fees reflect risks from inherently risky accounts, client complexity, client operations, and other risk-related client attributes. Thus, prior evidence suggests that auditors increase audit fees in response to identified risk factors.

Auditors must plan their audit engagement—including anticipated response to potential risks—based on incomplete client information. Bell et al. (2005) note that auditors often begin planning how they will address identified risk factors in the first two quarters of the year. The benefit of this timing is that auditors can observe early pressure on management from analyst earnings forecasts. Thus, as managers begin

planning strategies to achieve earnings targets (hypothesized in H1), auditors can tailor their audits to mitigate the anticipated increase in the risk of misstatement. When auditors identify significant risks relating to material misstatement, they may increase planned procedures, include more senior staff, or involve specialists (Bell et al. 2005). In addition, identification of such risk factors early in the year gives auditors more time to plan specific adjustments to their audit plan to mitigate identified risks.[5]

The studies of auditor attention to risk cited above use audit fees to measure auditors' responses. Audit fees are representative of strategic decisions auditors make to tailor the audit to mitigate risks of material misstatements. Any of the audit plan adjustments noted by Bell et al. (2005) would result in increases in audit fees, so I use audit fees as a proxy for auditor response.[6] Due to the prominence of risk assessment in professional standards, the focus of the PCAOB on monitoring auditors' risk assessment and response, and changes in the firms' methodologies toward risk assessment, I expect that auditors will respond to the analyst forecast pressure on their clients. This expectation leads to the following hypothesis:

[5] The ability to adjust audit fees based on an interim-period modification of the audit plan requires some flexibility in the amount auditors can charge their clients. Based on my discussions with practicing auditors, audit engagement contracts include such flexibility in the form of contracts that stipulate a rate-per-hour but allow an open-ended amount of hours (particularly in the few years after SOX) or a range of expected audit hours.

[6] Prior literature indicates that audit fees represent changes in audit effort (e.g. hours, involvement of specialists, or involvement of more experienced auditors) or a risk premium (O'Keefe et al. 1994; Bedard and Johnstone 2004; Bell et al. 2005; Hay et al. 2006). I measure analyst forecast pressure during an interim period when the rate per hour is already generally set, so my results are unlikely to result from risk premiums.

H2: Audit fees are positively associated with interim-period analyst forecast pressure.

Auditor response to potential earnings management can also be manifested in delayed issuance of the audit report. Bell et al. (2005) note that auditors who identify elevated risks of misstatement usually modify audit procedures throughout the remaining audit engagement. This modification can include obtaining more reliable evidence, auditing more locations, or performing more procedures at year-end. Audit standards indicate that auditors should modify the timing of their procedures to obtain better evidence closer to year-end in response to identified risks (PCAOB 2010c). An increase in procedures at year-end increases the likelihood that auditors take longer to issue the audit report. Ettredge et al. (2006) study audit report delay and find that delays are longer when auditors encounter and adjust audit procedures for problems in their client's internal control quality. Based on such findings, I expect that auditors who modify their procedures due to earnings management pressure will take longer to issue the audit report because of increased effort at year-end. I state this expectation formally in the following hypothesis:

H3: Audit report delay is positively associated with interim-period analyst forecast pressure.

The discussion of auditor response thus far has focused on auditors' concern that their clients meet analyst expectations through income-increasing accounting discretion. However, pessimistic analyst expectations could also be an indication of potential risk. Research suggests that auditors are not as concerned about understatements (Nelson et al. 2002), but auditors might interpret overly pessimistic

analyst forecasts as a signal of potential client problems. If auditors believe that analyst pessimism is indicative of expected declines in their clients' operations or industry, the auditors are likely to increase the scope of their procedures to arrive at an acceptable level of audit risk. Prior literature notes that auditors are defendants in the majority of litigation that occurs against a bankrupt client (Carcello and Palmrose 1994), so auditors will likely react to analyst forecasts that foreshadow trouble for their clients.[7] Because pessimistic analyst forecasts can provide information that is useful to auditors, I also examine whether auditors increase audit effort when analyst expectations are pessimistic relative to client trajectory. If auditors respond to analyst pessimism in addition to analyst optimism, the relationship between auditor response and analyst forecast pressure would be nonlinear. This relationship would result in auditor effort increasing as analyst forecasts become increasingly positive or increasingly negative relative to the client's projected results. I explore this relationship by examining the following research question:

RQ1: Are audit fees and audit report delay higher in response to both optimistic and pessimistic analyst forecasts?

The adjustments in audit methodology and increased focus on risk assessments by professional standards and the PCAOB should have implications for audit quality. For the purposes of this study, I define audit quality in terms of audit risk. Audit risk is the risk that auditors express an unqualified opinion when the financial statements are materially misstated (PCAOB 2010a). Instances where financial statements are

[7] My conversations with current and former auditors provide anecdotal evidence that auditors consider large differences between analyst forecasts and client trajectory as risk indicators, regardless of the direction of the difference.

subsequently restated due to errors or failure in the application of GAAP are indicative of audit failure, and thereby considered to be of poor quality.[8] It follows that financial statements that are subsequently restated are associated with lower quality, on average, than financial statements that are not subsequently restated.

Theoretically, auditors who exert higher effort should detect and prevent a greater number of misstatements (Matsumura and Tucker 1992). Two recent studies confirm this theory by finding that higher audit fees are associated with a lower likelihood of restatement (Blankley et al. 2012; Lobo and Zhao 2013). These studies indicate that restatements are due to low audit effort, so I expect that auditors who exert higher effort reduce the likelihood of misstatements. However, it is not obvious whether an appropriate auditor response can fully mitigate the increased likelihood of restatement hypothesized in H1. Blankley et al. (2012) and Lobo and Zhao (2013) indicate that additional effort decreases the likelihood of restatement, but not that additional effort eliminates restatements. Thus, the following hypothesis predicts that auditors whose clients are subject to high pressure can reduce the likelihood of client restatement by increasing audit effort, although I also investigate the extent to which the efforts of these auditors reduce the likelihood of restatements relative to auditors whose clients are subject to lower pressure from analyst expectations.

H4: Abnormal audit fees are negatively associated with subsequent restatements for audit clients subject to elevated interim-period analyst forecast pressure.

[8] Recent survey evidence documented by Christensen et al. (2012) indicates that audit partners view restatements as the number one public signal of low audit quality.

III. SAMPLE SELECTION AND RESEARCH METHODS

Client Restatement Tests

In this section I describe the sample selection process and the empirical models used to test my hypotheses. First, I construct the dataset using company data from Compustat, analyst forecast data from I/B/E/S, auditor data from Audit Analytics, stock return data from CRSP, and institutional ownership from Thomsen Financial. I exclude years prior to 2003 to focus on the years when important changes in the audit profession relating to risk were in place (i.e. implementation of SAS 99 and the Sarbanes Oxley Act). I end the study period in 2010 to ensure sufficient time to capture subsequent restatements. As shown in Table 1, the dataset used to examine auditor response consists of 14,522 firm-years with available data for all variables. Further data limitations reduce this number to 12,507 for the restatement tests. All continuous control variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers. Table 2 provides definitions for all variables used in this study.

My first hypothesis predicts that managers subject to higher analyst forecast pressure are more likely to engage in earnings management. I measure earnings management using two versions of subsequently-announced restatements of current-year financial statements. The first variable, *Restated*, includes any restatement due to fraud, errors, or failure in the application of GAAP. The second restatement variable, *Restated_adverse*, includes only those restatements that have a negative impact on the financial statements. Because analyst forecast pressure is a measurement of income-increasing earnings management incentive, I expect *Restated_adverse* to align more directly with the actions

taken by management to meet analysts' expectations. I use the following logistic regression model to test this hypothesis. The model includes year and Fama and French (1997) 48 industry indicators, and standard errors are clustered by firm (Petersen 2009).[9]

$$\begin{aligned} \textit{Restated or Restated\_adverse} = {} & \beta_0 + \beta_1 \textit{Pressure} + \beta_2 \textit{Size} + \beta_3 \textit{Segs} + \beta_4 \textit{Firm\_age} + \\ & \beta_5 \textit{Volatility} + \beta_6 \textit{Leverage} + \beta_7 \textit{Merger} + \beta_8 \textit{Restructure} + \beta_9 \textit{Xtra} + \beta_{10} \textit{Growth} + \\ & \beta_{11} \textit{Loss} + \beta_{12} \textit{ROA} + \beta_{13} \textit{Lit\_risk} + \beta_{14} \textit{Material\_weakness} + \beta_{15} \textit{Analysts} + \\ & \beta_{16} \textit{Forecast\_err} + \beta_{17} \textit{Big4} + \beta_{18} \textit{Specialist} + \beta_{19} \textit{New\_auditor} + \beta_{20} \textit{F\_score} + \\ & \textit{FF48 Indicators} + \textit{Year Indicators} + \varepsilon \end{aligned} \quad (1)$$

The variable of interest in Model (1) is *Pressure*, which captures the degree to which annual analyst forecasts available shortly after the second quarter differ from the company's projected earnings based on two quarters of results. A positive coefficient on *Pressure* would support Hypothesis 1 and suggest that managers are more likely to record misstated numbers in an attempt to meet analyst expectations.

The estimation model uses control variables present in other restatement studies (Kohlbeck et al. 2008; Romanus et al. 2008; Carcello et al. 2011; Cao et al. 2012; Lobo and Zhao 2013; Newton et al. 2013), as well as variables to control for audit quality (Davis et al. 2009; Francis and Yu 2009; Reichelt and Wang 2010). I also include *F_score*, which is a measure of the probability of a fraud-related restatement developed by Dechow et al. (2011) and *Analysts*, which represents the number of analysts following the company. Finally, I include forecast error (*Forecast_err*) in year *t-1* to control for previous differences between reported and actual earnings.

[9] Tests following Belsley et al. (1980) indicate that multicollinearity is not an issue any of the regression models.

Construction of Analyst Pressure

The variable *Pressure* represents the difference between analyst forecasts and the company's expected annual results based on actual performance through the second quarter. To construct *Pressure*, I first obtain annual EPS forecasts from the I/B/E/S unadjusted detail dataset. I construct a median consensus estimate using the most recent forecast made by each analyst available one week after the end of the second quarter. I delete forecasts made before earnings were announced for the first quarter because the information in those forecasts may be stale. I use this consensus as the analyst expectation of annual earnings available to managers and auditors during the auditors' performance of the second-quarter review. My expectation is that managers—having just completed the quarterly reporting process—are likely to evaluate and update their expectations about the likelihood of the company reaching expected annual earnings targets. Because my measurement of *Pressure* corresponds to the timing of audit planning, I also expect that auditors will update their planned procedures based on risks identified from recent financial information.

To determine the extent to which analyst forecasts represent earnings management pressure on the company, managers and auditors must create an annual expectation and compare it to analyst forecasts. Managers calculate their own projection to determine what they need to do to achieve analyst expectations. Auditors are also likely to make their own predictions about annual earnings based on professional guidance for materiality calculations (AICPA 2006a). An important consideration in this process is that analysts focus on Street numbers rather than GAAP accounting numbers (Bradshaw

and Sloan 2002). Despite this reporting difference, managers must compare their anticipated performance to analyst expectations, and auditors must consider how analyst forecasts might put pressure on management. Thus, I anticipate that both managers and auditors will reconcile the difference between results year-to-date and analyst forecasts.

I follow Bradshaw and Sloan (2002) in reconciling between I/B/E/S analyst forecasts and GAAP information. They note that data compiled by I/B/E/S excludes extraordinary items and discontinued operations, and they indicate that many of the remaining differences between Street earnings and GAAP earnings are coded as special items in Compustat. Using data from the Compustat Unrestated Quarterly dataset, I sum together earnings before extraordinary items, discontinued operations, and special items from the first two quarters. I then project the two-quarter results onto a full year, adjusting for the prior-year seasonality of the company's operations.[10] Finally, I transform the projected expectation into an EPS number that is comparable to analyst forecasts. I use either the diluted or basic shares used for EPS from Compustat based on the I/B/E/S basic/diluted flag. I also adjust the analyst forecast number for stock splits occurring between the forecast date and year-end using the split-adjustment factors in CRSP. These procedures result in two annual earnings projections (i.e. an analyst forecast and a projection based on two-quarter results) as of the period shortly after the second-quarter period-end.

[10] I adjust the current-year earnings projection for differences in the company's earnings among the quarters in the prior year. Specifically, I calculate the percentage of the firm's prior-year operating income that occurred in the first two quarters and then divide the current year's two-quarter results by this percentage. The adjustment ensures that current year expectations account for the company's business cycle (e.g. retail firms earn more income in the quarter that includes November and December than in other quarters).

The final step in constructing the variable *Pressure* is to compare the two expectations. I subtract the annualized projection from the consensus forecast, which provides an EPS-value difference where larger numbers are indicative of greater earnings expectations from analysts relative to the projection based on results.[11] This difference is negative when analyst forecasts are lower than the company's current trajectory and positive when analyst forecasts are higher than the company's current trajectory. I define the variable *Pressure* such that increasing values of *Pressure* correspond to increasing levels of income-increasing analyst expectations for the company.

The distribution of *Pressure* includes a wide range of differences between analyst expectations and projections from second-quarter results. Prior meet-or-beat studies generally use small ranges such as plus or minus one cent, five cents, or 15 cents per share (Dhaliwal et al. 2004; Cook et al. 2008) and exclude observations outside of the selected range. Degeorge et al. (1999) show a distribution of forecast errors, with the tails trimmed at plus/minus 20 cents per share. However, Degeorge et al. (1999) and other similar studies use differences between actual earnings and the prevailing analyst consensus near year-end (e.g. Degeorge et al. have an average horizon of six weeks). My study differs significantly from those studies because I compare expected earnings and analyst forecasts approximately six months before actual annual earnings are known, and

[11] My study uses unscaled EPS differences between analyst forecasts and projected earnings because analysts and managers tend to focus on raw EPS numbers (Graham et al. 2005; Cheong and Thomas 2011), and I expect that auditors will similarly consider EPS. Furthermore, Cheong and Thomas (2011) find that forecast error does not vary with scale, and *Pressure*'s construction is similar to forecast error. In robustness tests, I rerun all models after scaling *Pressure* by price and assets with consistent inferences.

larger differences are expected because of greater uncertainty. In addition, my study focuses on the difference between analyst forecasts and company trajectory rather than actual annual earnings (i.e. *Pressure* differs from forecast error). *Pressure* indicates a preliminary indication of the distance managers might adjust earnings, and they can make those adjustments through several methods including judgment in the application of GAAP, altering real activities, and managing analysts' expectations. In contrast, meet or beat studies often examine analyst forecast pressure at year-end, when management has less flexibility in achieving targets.

In order to focus my study on a range of differences that is likely to impact managers and auditors and that is not due to unusual events that could cause extreme differences in expectations, I eliminate values of *Pressure* in the tails of the distribution. I retain observations where the difference between the analyst earnings forecasts and a simple projection is between negative and positive $1.[12] The variable *Pressure* used in subsequent regressions is the decile-ranked value of this difference, which I use for ease of interpretation of economic significance.[13] Figure 1 shows the distribution of *Pressure* based on the final sample of firm-year observations.

[12] The use of a cutoff of plus/minus $1 leads to a sample containing 87 percent of the observations in the complete dataset. Because the selection of $1 is subjective, I perform sensitivity tests using all observations after trimming the top and bottom 1 percent or trimming at plus/minus $1.50, $0.50, and $0.25. Inferences for these cutoffs are generally consistent with my main results. See the additional analyses section for further discussion of these tests.

[13] Statistical inferences are consistent when I use the raw value of the difference between analyst forecasts and projected earnings.

Audit Fee Tests

Hypothesis 2 predicts that auditors respond to the earnings management pressure placed on audit clients by analyst forecasts. Specifically, I examine whether auditors charge higher fees as the pressure on management increases. I use the following OLS model to test this prediction. The model includes year and Fama and French (1997) 48 industry indicators, and standard errors are clustered by firm.

$$\begin{aligned} LFees = {} & \beta_0 + \beta_1 Pressure + \beta_2 Size + \beta_3 Segs + \beta_4 Inv\_rec + \beta_5 Cata + \beta_6 Liquidity + \\ & \beta_7 Leverage + \beta_8 Merger + \beta_9 Restructure + \beta_{10} Xtra + \beta_{11} Growth + \beta_{12} Financing \\ & + \beta_{13} Loss + \beta_{14} ROA + \beta_{15} Foreign + \beta_{16} Restate\_announced + \beta_{17} Lit\_risk + \\ & \beta_{18} Material\_weakness + \beta_{19} Analysts + \beta_{20} Forecast\_err + \beta_{21} Ded\_inst + \beta_{22} Big4 \\ & + \beta_{23} Specialist + \beta_{24} New\_auditor + \beta_{25} Fee\_ratio + \beta_{26} Dec\_ye + \beta_{27} GC\_opinion \\ & + \beta_{28} Report\_delay + FF48\ Indicators + Year\ Indicators + \varepsilon \end{aligned} \quad (2)$$

Model (2) regresses the log of audit fees from Audit Analytics on a comprehensive set of independent variables. As in Model (1), I am primarily interested in the coefficient on the variable *Pressure*. A positive coefficient would support H2, which suggests that auditors respond to the earnings management pressure that is placed on management. To investigate whether audit fees have a nonlinear association with analyst forecast pressure, I add the squared term of *Pressure* to Model (2). For both tests, I include the control variables related to analyst following and prior forecast accuracy from Model (1). The remaining control variables follow the categories described in Hay et al. (2006) and include variables for client attributes of size, complexity, inherent risk, profitability, leverage, ownership, internal control weaknesses, and industry as well as auditor attributes such as quality, tenure, audit timing, audit problems, and non-audit services.

Audit Report Delay Tests

As another test of auditor response to earnings management pressure, I investigate whether audit reporting delay increases as forecast pressure increases. To test this hypothesis, I use a negative binomial model that regresses audit report delay on *Pressure* and control variables. I use negative binomial regression because the dependent variable is a count of days from year-end to report date, and the distribution is over-dispersed (Long and Freese 2006). As in the previous models, I include industry and year indicators and cluster standard errors by firm:

$$\begin{aligned} Report\_delay = {} & \beta_0 + \beta_1 Pressure + \beta_2 Size + \beta_3 Segs + \beta_4 Large\_filer + \beta_5 Leverage + \\ & \beta_6 Merger + \beta_7 Restructure + \beta_8 Xtra + \beta_9 Growth + \beta_{10} Financing + \beta_{11} Loss + \\ & \beta_{12} ROA + \beta_{13} Restate\_announced + \beta_{14} Material\_weakness + \beta_{15} Analysts + \\ & \beta_{16} Forecast\_err + \beta_{17} Big4 + \beta_{18} Specialist + \beta_{19} New\_auditor + \beta_{20} Dec\_ye + \\ & \beta_{21} GC\_opinion + \beta_{22} Scaled\_fees + FF48\ Indicators + Year\ Indicators + \varepsilon \end{aligned} \quad (3)$$

Hypothesis 3 predicts a positive coefficient on *Pressure*, indicating that year-end audit reporting delay is longer when clients experience greater analyst forecast pressure shortly after the end of the second quarter. This finding would be consistent with the idea that auditors increase planned procedures when they perceive additional risks during the year. To investigate whether report delay has a nonlinear association with analyst forecast pressure, I add the squared *Pressure* term to the model and investigate the coefficients on both *Pressure* and *Pressure_squared*. Under both specifications, the included control variables primarily follow the model in Ettredge et al. (2006), and I add analyst-related variables from the prior models.

Auditor Effort and Audit Quality Tests

My final hypothesis predicts that auditors who adjust their procedures in response to earnings management risk will be more likely to prevent material misstatements from occurring. To test this hypothesis, I augment Model (1) with the auditor response variable – abnormal audit fees. I use *Restated_adverse* as the dependent variable because I expect it to be better aligned with the income-increasing expectations of analyst forecast pressure. To obtain abnormal audit fees, I estimate Model (2) excluding *Pressure*. The resulting fee model captures elements identified in Hay et al. (2006), with residuals (*Abnormal_fees*) representing auditor response beyond the expected level (i.e., without accounting for analyst forecast pressure). I estimate the modified Model (1) with *Abnormal_fees* included in four separate ways. First, I control for *Pressure* and examine the association between *Abnormal_fees* and annual restatements across the full sample. Second, I examine the effect of *Abnormal_fees* on restatements for observations with above-median values of *Pressure*. This regression tests whether auditor effort is effective in reducing audit risk even in situations of high analyst expectations. Third, I examine the effect of *Abnormal_fees* on restatements for observations with below-median values of *Pressure*. Finally, I replace *Pressure* and *Abnormal_fees* with indicator variables representing above-median values of each variable and interact the two indicator variables. The purpose of this test is to determine how audit effort affects the likelihood of restatement for audit clients subject to high analyst forecast pressure

relative to clients subject to low pressure. Across each of these four tests, I expect that auditors who have a high response to high pressure can reduce client misstatements.[14]

[14] Lobo and Zhao (2013) argue that auditor effort (higher audit fees) reduces restatements of audited financials only. Thus, my sample excludes all firm-years that included restatements of interim periods only.

IV. RESULTS

Descriptive Statistics

Table 3 presents descriptive statistics for the sample. The key variable is *Pressure*, which is the ranked difference between analyst forecasts and the second-quarter projected EPS of the company. Table 3 presents descriptive statistics of the raw value of *Pressure* (*Pressure_raw*). The sample mean and median values are $0.029 per share, while the standard deviation of *Pressure_raw* is $0.35 per share. The mean log of number of analysts following the sample firms is 2.1, which corresponds to about 8 analysts. This value is similar to other research (e.g. Cheong and Thomas 2011; Keune and Johnstone 2012). *Forecast_err* is the absolute value of the difference between analyst forecasts at prior-year second quarter and actual earnings at the end of the prior year. The mean value is $0.22 per share, although the mean of the signed value (untabulated) is $0.06. These values are larger than short-horizon forecast errors common to many studies because of the long horizon at the point of measurement.

The remaining variables in Table 3 are commonly found in prior audit fee and restatement studies. The descriptive statistics for these variables indicate that client and auditor characteristics as well as financial reporting problems or audit issues are reasonable in comparison to other studies (e.g. Francis et al. 2005; Hay et al. 2006; Ettredge et al. 2006; Romanus et al. 2008; Bentley et al. 2012; Cao et al. 2012; Chen et al. 2012; Keune and Johnstone 2012; Munsif et al. 2012; Lobo and Zhao 2013; Newton et al. 2013).

Table 4 presents the Pearson correlations between certain pairs of variables. The table includes correlations between the variable of interest, the dependent variables in the following regressions, and other variables used in the multivariate analyses representing client-related events occurring during the year.[15] Pairwise correlations that are significant at $p<0.05$ are presented in bold. *Pressure* is positively correlated with restatements and audit report delay in the hypothesized direction but is correlated with audit fees in the direction opposite of the prediction in Hypothesis 2. However, *Pressure* is positively correlated with audit fees purged of other influences on auditor response (*Abnormal_fees*). *Pressure* is not highly correlated with any of the event-related variables included in the table, which supports the assertion that *Pressure* is capturing analyst forecast pressure rather than expectations about an infrequent transaction.

Multivariate Results

I report tests of Hypothesis 1 in Table 5. Hypothesis 1 predicts that managers are influenced by analyst pressure during the year and engage in earnings management to meet analyst expectations. As shown in the first column of Table 5, the coefficient on *Pressure* is positive and significant. This association indicates that increasing pressure on management due to analyst expectations increases the likelihood of restatement. The second regression in Table 5 replaces the general restatement indicator with an indicator for instances of restatements that adversely affect the financial statements. The results of this regression also indicate a positive association that is highly significant. These

[15] The variable *Pressure* captures the difference between company trajectory and analyst expectations. These event-related control variables are included in the correlation table as well as the multivariate analyses to ensure that *Pressure* is not capturing an unusual event or transaction.

findings support Hypothesis 1 and are consistent with the idea that management uses accounting-based earnings management to increase earnings.

The results presented in Table 5 also have economic significance. I focus the discussion on the results in the second regression of Table 5 because restatements with negative effects on the financial statements would be the most likely restatement consequence to instances where management was significantly influenced by income-increasing analyst forecast pressure. I use the odds ratio on *Pressure* (untabulated) to determine the change in the likelihood of restatement for a one-unit change in *Pressure*. The odds ratio indicates that a one-decile increase in *Pressure* results in a 3.6 percent increase in the likelihood of an adverse-effect restatement. The increased likelihood is particularly meaningful when considering that a change across the interquartile range (from decile 3 to decile 8) increases the likelihood of restatement by 19.1 percent. Thus, the results suggest that analyst pressure on management has both statistical and economic significance.

The control variables in the regression also offer a few interesting inferences. For example, Big 4 clients and industry specialist auditors are not any less likely to have restatements, but clients of first-year auditors are less likely to restate their financial statements. Firms that have volatile stock returns, material weakness in internal controls, or larger analyst followings are more likely to experience a restatement, and adverse restatements are more likely when the fraud-related factors identified by Dechow et al. (2011) are present.

Table 6 presents results from the tests of auditor response through adjustments to audit fees (Hypothesis 2). In the first column of results, the focus is the variable *Pressure*. The results indicate that auditors respond to analyst forecast pressure on management. Specifically, *Pressure* is positive and highly significant, supporting the notion that auditors are aware of the risk imposed on their clients by optimistic analyst forecasts. Because the fee model includes risk-based control variables from prior research, I conclude that auditors are aware of and respond to risk created by analyst forecasts in addition to other types of risk. The second column of results displays a significant coefficient on both *Pressure* and *Pressure_squared*. Figure 2, Panel A shows the predicted relationship between *Pressure* and audit fees based on the coefficients of this regression. Findings from this regression indicate that auditors increase audit fees in response to both pessimistic and optimistic analyst forecasts. However, it is interesting to note that predicted values are much higher when audit clients have significant pressure to increase earnings, consistent with auditors' focus on overstatements (Nelson et al. 2002).

The audit fees test does not identify exactly how auditors respond to the risk from analyst forecasts. Professional guidance suggests that auditors can change the nature, extent, or timing of their procedures (AICPA 2006b), and research suggests they alter staffing experience, increase hours, or use experts (Bedard and Johnstone 2004; Bell et al. 2005). Although I am unable to identify the exact auditor response, I attempt to determine the economic significance of the auditor fee adjustment in response to *Pressure*. Because the relationship is shown to be nonlinear in the second regression, I

use the coefficients on *Pressure* and *Pressure_squared* to determine the economic significance. I find that a change from the point where analyst forecasts are aligned with client trajectory at the second quarter (i.e. decile 5) to the highest level of *Pressure* (i.e. decile 10) increases audit fees 7.6 percent, or approximately $88,000, based on the mean level of audit fees in the sample. These findings indicate that auditor response to analyst forecast pressure is both statistically and economically significant.

There are interesting results for other variables in the fee model as well. For example, I find that auditors charge higher fees for other risk-related events included in the model (e.g. mergers, restructuring, foreign operations, number of business segments, etc.). I also find that auditors charge lower fees when clients have a greater analyst following. The remaining variables are common to fee models in other studies, and the associations generally follow expectations based on that research (Francis et al. 2005; Hay et al. 2006; Cassell et al. 2011; Bentley et al. 2012).

The results in Table 6 provide preliminary evidence that auditors respond to analyst forecast pressure on their clients. I use the audit report delay regressions in Table 7 to further test this prediction. Hypothesis 3 posits that auditors respond to analyst forecast pressure by increasing procedures during the year-end portion of the audit. As shown in the first set of results in Table 7, the coefficient on *Pressure* is significantly positive, indicating that auditors take longer to issue their opinion when analyst pressure is higher. The second set of results in Table 7 further documents the nonlinear relationship found in the audit fee tests. The results from Table 7 suggest that at least some of the auditor

response noted in Table 6 is due to increases in audit procedures during the post-year-end timeframe of the audit.

Figure 2 Panel B shows the predicted effect of *Pressure* on audit report delay using the coefficients from the second regression in Table 7. The nonlinear relationship between analyst pressure and audit report delay is similar to the relationship between *Pressure* and audit fees. The two panels of Figure 2 indicate that auditors respond to both optimistic and pessimistic analyst forecasts. In both cases, however, auditors appear to respond more significantly when analyst pressure incentivizes their clients to manage earnings upward. In terms of economic significance for the audit reporting delay model, the coefficients on *Pressure* and *Pressure_squared* in the second regression indicate that an increase in *Pressure* from the point where analyst forecasts and auditor expectations are similar (i.e. decile 5) to the highest level of *Pressure* (i.e. decile 10) would increase audit report delay by 3.3 percent, or an average of 2.1 days based on the sample mean. These results indicate that auditors respond to high earnings management pressure with a moderate increase in audit hours during the final phase of the audit.[16] Thus, the results for the audit reporting delay test support Hypothesis 3 and are consistent with the results in Table 6.

My final hypothesis predicts that auditors whose clients are facing elevated analyst forecast pressure are able to reduce the risk of material misstatement through adjustments to audit effort. I measure auditor effort using the residuals from a

[16] The increase in audit delay likely would not account for the full increase in audit fees. This suggests that the auditor response documented in Table 6 includes other actions such as use of experts or additional work during interim periods.

comprehensive fee model. Prior literature commonly uses fee-model residuals as an indication of abnormal audit effort (Gul 2006; Srinidhi and Gul 2007; Lobo and Zhao 2013). The rationale for the use of abnormal fees in this test is that additional effort by auditors above that which is expected based on certain auditor and client characteristics can contribute to lower overall audit risk, and should benefit auditors and clients facing high risk of earnings management. Table 8 presents four analyses testing the relationship between abnormal audit fees and adverse-effect restatements of the financial statements. The first regression uses the full sample of observations and controls for the amount of *Pressure*. The variable of interest is *Abnormal_fees*, which is the decile-ranked value of the residuals from the audit fee model. The coefficient on *Abnormal_fees* is negative and significant, which suggests that auditors can reduce material misstatements by increasing effort (as proxied by audit fees). The results from this regression show that auditors can decrease the likelihood of restatement by increasing audit effort while holding the level of earnings management pressure constant.

The next two regressions in Table 8 examine the association between abnormal auditor effort and restatements for subgroups of the full sample. The second regression includes only those firm-years where *Pressure* is in the top half of the distribution, and *Pressure* is omitted from the estimation. These observations represent the audit clients where managers are likely to feel the most pressure to increase earnings. The variable of interest is *Abnormal_fees*, which is the raw value of fee-model residuals ranked into deciles across the subsample. The results indicate that abnormal auditor effort in the presence of elevated analyst forecast pressure is effective at reducing the likelihood of

client restatement in accordance with H4. The third regression examines the association between *Abnormal_fees* and restatements when analyst forecast pressure is low. The effect of auditor effort in this regression is weaker than in the high pressure sample.

The final regression in Table 8 uses indicator variables for clients subject to high pressure (i.e. above median *Pressure*) and auditors exerting high effort (i.e. above median *Abnormal_fees*). I also interact these two indicators to further investigate whether any incremental benefit exists for additional effort in the presence of high analyst forecast pressure. The coefficient on the *High_pressure* variable is positive, which is consistent with previous results. The coefficients on *High_fees* and the interaction term are negative but are not significant. The sum of these three variables represents the difference in likelihood of restatement for auditors exerting high effort when their clients are subject to high pressure relative to auditors exerting low effort when their clients are subject to low pressure. I test whether the sum of the coefficients on these three variables differs from zero to determine differences between these groups. A chi-square test indicates that the sum of the coefficients on the three variables does not differ from zero. This result provides evidence of the benefit auditors obtain by responding to situations of high analyst forecast pressure: their clients are at no higher risk of subsequent restatements than auditors exerting low effort when analyst forecast pressure is low.

The economic significance of my findings provides an interesting application for auditors. The results previously discussed in Table 5 indicate that clients in the 75th percentile of *Pressure* are 19.1 percent more likely to restate their financial statements

than a client in the 25th percentile. The results from the second regression in Table 8 indicate how an auditor's response affects client restatement for an average client subject to high pressure (i.e. at the 75th percentile of *Pressure*). The economic significance of the coefficient in this regression indicates that auditors that increase abnormal audit effort from the 25th to 75th percentile decrease the likelihood of client restatement by 24.1 percent. This decrease in restatement likelihood provides further support to the idea that increases in audit effort can reduce restatement likelihood to a level similar to auditor-client relationships with low *Pressure* and low audit effort. Furthermore, the results in the first regression in Table 8 indicate that auditors can reduce the likelihood of restatement by increasing audit effort controlling for the level of *Pressure*. The overall results from Table 8 indicate that auditors can reduce the likelihood of restatement by increasing audit effort. The application for practicing auditors is that increasing audit effort in the presence of earnings management risk is necessary to mitigate misstatement risk, but additional effort increases audit quality regardless of the level of misstatement risk.

Sensitivity Analyses

To explore the robustness of the findings documented in the main tests of this study, I conduct several sensitivity analyses by varying the sample selection and design choices as documented in the following sections.

Separate Analyses of Positive and Negative Pressure – In the tests documented above, the raw values underlying the ranked variable *Pressure* have included both positive and negative values. My tests have shown that positive and negative values have

somewhat different effects on the actions of management and auditors. This finding is consistent with prior research, which indicates that managers and auditors tend to be more focused on income-increasing earnings management (Nelson et al. 2002; Caramanis and Lennox 2008). Because of the different incentives for positive and negative earnings management, I conduct tests on positive and negative analyst pressure separately. To investigate these possibilities, I separate *Pressure_raw* into two variables. The variable *Pressure_pos* is a decile ranking of positive values of *Pressure_raw* and is set to zero when *Pressure_raw* is negative. Similarly, the variable *Pressure_neg* is a decile ranking of negative values of *Pressure_raw* and is set to zero when *Pressure_raw* is positive. Using these adjusted analyst pressure variables, I rerun the regressions in Table 5, 6 and 7.

Results from these regressions largely confirm the results previously tabulated. In the restatement regression, I find a marginally significant, positive slope on *Pressure_pos* but an insignificant slop on *Pressure_neg*. Further investigation indicates that *Pressure_pos* is positively associated with restatements to a point (i.e. approximately $0.29 per share) before the association disappears. These results provide some support for the idea that most of the increased restatement likelihood documented in Table 5 is due to the association between upward earnings-management pressure and client restatements but only when the analyst target is relatively more achievable. In the audit fee regression, the coefficients on *Pressure_pos* and *Pressure_neg* are statistically significant. These results indicate that auditors charge higher fees as the analyst forecast increases in distance from the current trajectory of the company. An F-test also indicates

that the slope is greater on the positive value of analyst pressure (p=0.01), suggesting that auditors are more responsive to income-increasing earnings management pressure. In the audit report delay regression, the coefficients on both variables are also significant, and an F-test indicates a steeper slope on the positive values of *Pressure*. This result is consistent with the fee model, and supports the inference that auditors are more responsive to income-increasing pressure. My results are consistent with prior literature. Nelson et al. (2002) present survey evidence that auditors are more likely to require that management correct income-increasing attempts at earnings manipulation. Keune and Johnstone (2009) examine adjustments recorded under SAB 108 and find that auditors are more likely to consider income-decreasing misstatements immaterial than income-increasing misstatements. My results are consistent with these findings, indicating that auditors place a higher priority on addressing income-increasing misstatements.

Raw Value of Analyst Pressure – All previous analyses use a decile-ranked value of *Pressure* for ease of interpretation. To ensure that my results are not driven by the use of this ranking, I rerun the regressions in each table using the raw value of *Pressure*. The coefficient on *Pressure* is significant in the *Restated_adverse* regression, but weaker in the *Restated* regression. The coefficient on the raw value of *Pressure* is statistically significant in the audit fee and audit report delay regressions with p-values of less than 0.05. In the nonlinear specification model for audit fees and audit report delay, the squared *Pressure* term is also statistically significant. The variable *Abnormal_fees* used in the auditor response model in Table 8 is also a ranked variable. For this robustness

test, I use the raw value of *Abnormal_fees*, and the coefficient on *Abnormal_fees* remains significantly negative. Thus, inferences are unchanged using the raw values of *Pressure* and *Abnormal_fees*.

Other Ranges of Analyst Pressure – Throughout my main tests, I have limited the dataset to values of analyst pressure between -$1 (i.e. analysts are pessimistic relative to current company trajectory) and +$1 (i.e. analysts are optimistic relative to current company trajectory). My selection of this range was based on an examination of the distribution of *Pressure* and my intention to study a range where managers and auditors recognize earnings management pressure. To ensure my results are not driven by my selection of the +/- $1 range, I rerun the restatement tests (Table 5), audit fees tests (Table 6), and audit report delay tests (Table 7) using the following +/- ranges: $1.50, $0.50, and $0.25 as well as the full dataset after trimming the top and bottom 1 percent of *Pressure*. The linear associations across each of these ranges are consistent with the results presented in the tables except for the audit report delay model in the +/- $0.25 range. The nonlinear relationship in the fee and audit report delay models gets weaker as the range gets narrower. This result is not surprising because an increasingly small range of the *Pressure* distribution eliminates the elevated ends of the nonlinear relationship shown in Figure 2. Because the relationship is stronger on the income-increasing end, the linear relationship holds in narrower ranges. The general results of these analyses are consistent with my main tests, supporting the inference that auditors increase fees and audit work at year-end in response to high income-increasing analyst pressure.

Analyst Pressure Scaled by Price or Assets – The unranked value of *Pressure* in my models is an earnings per share value. Some studies examining analyst forecasts scale EPS values by price (Bradshaw and Sloan 2002) or assets per share (Doyle et al. 2003). First, I rerun the models in Tables 5-7 using a decile ranking of *Pressure* scaled by the share price at prior-year end. I also scale the variable *Forecast_err* because it is an EPS number. To limit the influence of outliers, I delete observations with share prices less than $1. All inferences documented in my main tests are identical using this alternate variable construction. Next, I repeat this scaling process using price from the end of the second quarter, which occurs shortly before the measurement of *Pressure*. All inferences are also consistent under this method. Finally, I rerun each of my main models using a decile ranking of *Pressure* scaled by total assets per share at prior-year end. All inferences in the restatement and audit fee models are consistent using this definition of *Pressure*; however, I find only a linear relationship between pressure and audit report delay.

Clients Audited by Big 4 Auditors – Some audit-related studies focus only on Big 4 auditors (e.g. Francis and Yu 2009) because of noted differences in quality between Big 4 and non-Big 4 auditors (Behn et al. 2008). Thus, I conduct a sensitivity test by rerunning the audit fee model and the audit report delay model in Tables 6 and 7 using only clients audited by Big 4 auditors. The results of these regressions are consistent with the findings in my main models.

Company Trends at Other Interim Quarters – For my main tests I use an expected earnings result for a company based on its actual results through the second quarter. The

rationale for this timeframe is that optimistic managers can wait and see how the company performs through two quarters before recognizing a potential shortfall in earnings. After results from the second quarter are finalized, managers have time to incorporate earnings management strategies into the third and fourth quarters. The timing for auditors is also relevant because it occurs during the planning phase of the audit. During planning, auditors determine a preliminary materiality level, often by considering annualized income. This step enables them to compare projected income to analyst forecasts, alerting them to a potential red flag of client risk. However, some research identifies the fourth quarter as a key period for earnings management (Dahliwal et al. 2004; Cook et al. 2008), and managers are likely aware of the company's trends throughout the entire year. Additionally, auditors begin their planning as early as the first quarter and continue to reevaluate risks throughout the year (Bell et al. 2005). Thus, I also consider pressure on management at both the first and third quarters.

I construct *Pressure* variables at each quarter following the methodology previously described for the second-quarter measurement. Then, I rerun the restatement and audit fee models using the new *Pressure* variables. In the restatement model, inferences from these tests are consistent with the results presented in Table 5. I find a significant linear relationship between *Pressure* and restatements at each quarter. The results of the audit fee regressions are shown in Table 9. In Panel A, I find consistent results in the regressions testing the linear relationship between *Pressure* and audit fees. However, Panel B indicates that the nonlinear relationship between *Pressure* and fees is significant

only in the second and third quarters. Thus, it appears that audit plans are more responsive to information obtained later in the year.

I also compare the magnitude of the effects of *Pressure* on restatements and audit fees across the three quarters. For restatements, the coefficients are 0.049 for Q1, 0.035 for Q2, and 0.046 for Q3. Economically, these coefficients mean that companies in the 75th percentile of *Pressure* are 27.8 percent, 19.1 percent, and 25.9 percent more likely to have a restatement than companies in the 25th percentile when *Pressure* is measured in Q1, Q2, and Q3, respectively. Using seemingly-unrelated regression, I compare these coefficients but find that they do not differ statistically. I next examine the economic significance of analyst pressure on audit fees across the two quarters where the nonlinear association is significant (i.e. Q2 and Q3). The economic significance of a change in *Pressure* from the point where analyst forecasts are similar to auditor expectations to the highest level of *Pressure* results in an increase of audit fees of approximately $88,000 in Q2 and $105,000 in Q3, and the differences in the coefficients in Q2 and Q3 compared to Q1 are statistically significant ($p<0.05$). These results suggest that auditors are most likely to respond to forecast pressure on management when they observe the pressure in the latter half of the year.

V. CONCLUSION

This study investigates how managers and auditors respond to analyst forecast pressure. I find evidence that increased analyst forecast pressure results in an increased risk of misstatements in the financial statements. Companies in the 75th percentile of analyst forecast pressure are 19.1 percent more likely to subsequently restate their financial statements than companies in the 25th percentile of analyst pressure. This finding is consistent with results in prior studies that show analyst forecasts as a primary concern of management. I also find that auditors respond to this increased risk factor by increasing both audit fees and the time between year-end and the audit report date. This response is also economically significant: auditors bill an average of 7.6 percent higher fees and take 3.3 percent longer to issue their opinion for clients subject to high analyst forecast pressure relative to clients subject to low pressure. Further, I find that auditors who increase audit fees when their clients are subject to high earnings management pressure are able to significantly reduce the likelihood of subsequent restatement.

During the past decade, practitioners, regulators, and academics have recognized a shift in the audit process toward increased risk assessment and appropriate auditor response. This study is important because it identifies a specific timeframe in which both managers and auditors identify and respond to outside earnings pressure. This study also suggests that, on average, audit clients subject to elevated analyst forecast pressure file financial statements with more material misstatements, but auditors who respond to this publicly-available risk factor can reduce the likelihood that their clients' financial statements are misstated. These findings suggest that auditors can mitigate the risk of

audit failure and provide greater service to financial statement users by following the guidance set forth in recent auditing standards.

This study provides several contributions to the accounting literature. Prior studies have examined many facets of the relationship between analyst forecasts and firms' propensity to manage earnings toward those forecasts. My study links interim-period analyst forecast pressure and client restatements. Because of this link, my study demonstrates that analyst forecasts are useful to auditors. In addition, whereas previous literature focuses on meeting analyst targets at year-end, I demonstrate that auditors begin altering their audit procedures in response to analyst forecasts as early as the first quarter. These findings extend both the earnings management literature and the analyst forecast literature. Finally, my focus on practical auditing considerations indicates that in general, the audit profession proactively follows certain audit standards issued by the PCAOB and the Auditing Standards Board in order to mitigate audit risk. Auditors follow these procedures despite the fact that these specific actions are rarely, if ever, included in public statements and inspection reports issued by the PCAOB or in other public discussions related to audit quality. My results show a significant benefit to auditors who adjust their procedures in response to risk created by analyst forecasts, which should be of interest both to the auditing profession and to regulatory agencies charged with improving audit quality.

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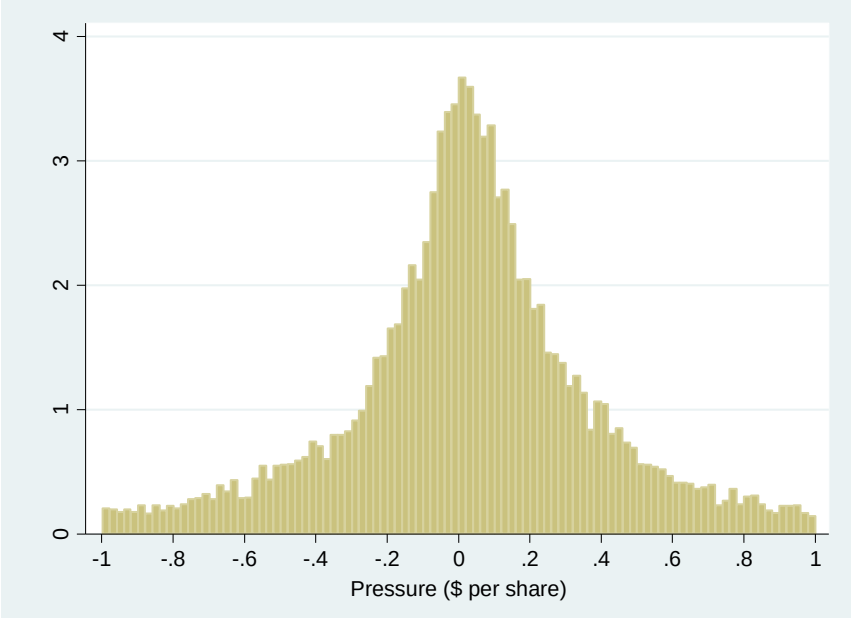
APPENDIX

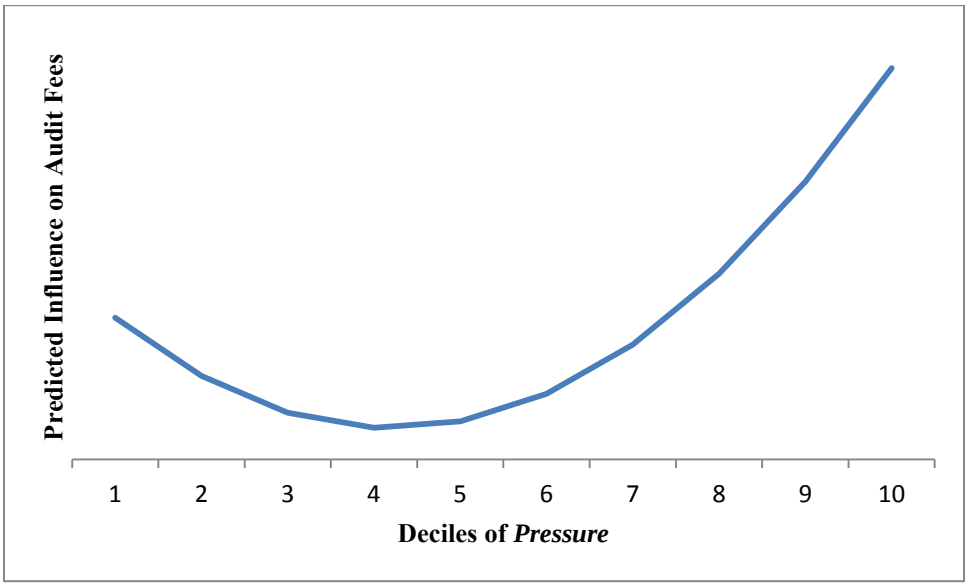
FIGURE 1
Distribution of Analyst Forecast Pressure



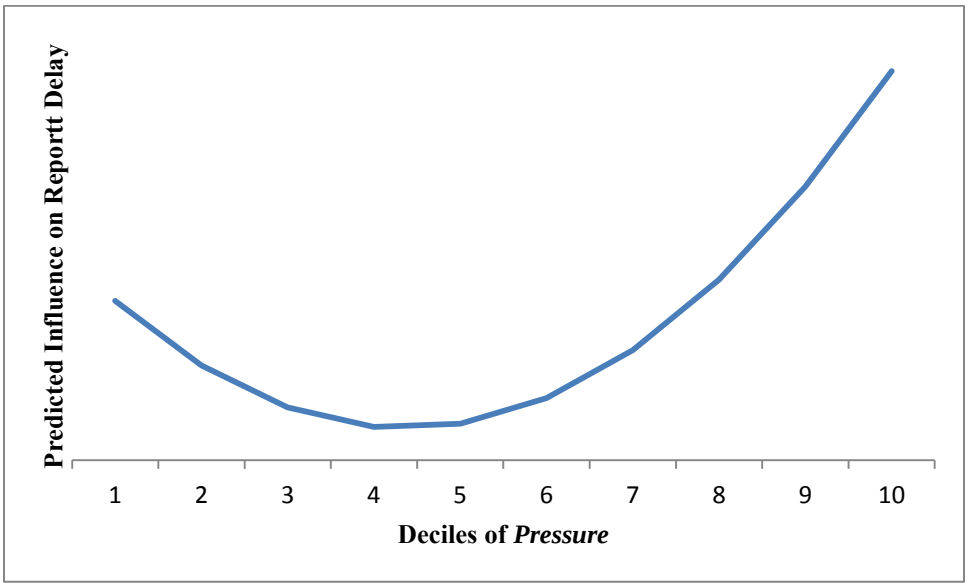
Note: This figure shows the distribution of the variable *Pressure*. *Pressure* is measured as the difference between the median consensus of annual analyst forecasts and a projection of the company's income based on actual results through two quarters of operations. *Pressure* is trimmed at values of -$1 and $1.

FIGURE 2
Influence of Analyst Forecast Pressure on Audit Fees and Audit Report Delay

Panel A – Audit Fees



Panel B – Audit Report Delay



Note: This figure shows the predicted effect of analyst forecast pressure on audit fees (Panel A) and audit report delay (Panel B) using the coefficients from regression models in Tables 6 and 7. The raw values of *Pressure* range from -$1 to $1. The value of zero for analyst forecast pressure is included in the fifth decile.

TABLE 1
Sample Selection

Total Compustat firms 2003-2010	74,253
Variable of Interest	
Less: firm-years without timely I/B/E/S forecasts	(45,188)
Less: firm-years without Compustat Quarterly data to calculate *Pressure*	(1,438)
Control Variables	
Less: firm-years with missing Compustat data	(6,094)
Less: firm-years with missing Audit Analytics data	(2,318)
Less: firm-years with missing CRSP data	(12)
Less: firm-years with missing I/B/E/S data	(2,472)
Dataset Screening	
Less: firm-years with values of *Pressure* exceeding +/- $1	(2,179)
Observations in auditor response dataset	14,552
Restatement Dataset	
Less: firm-years missing data for additional restatement variables	(1,501)
Less: firm-years with non-annual restatements	(5,44)
Observations in restatement dataset	12,507

TABLE 2
Variable Definitions

Analyst Variables	
Pressure_raw	The difference between the prevailing median consensus estimate and projected annual income. The median consensus is calculated using the most recent annual forecast from each analyst made in the period after Q1 results are announced through one week after the end of Q2. Projected income is calculated by annualizing current-year income before extraordinary and special items through Q2 with an adjustment for the seasonality of the business based on prior-year operating income
Pressure	Decile ranking of the variable, *Pressure_raw*
Pressure_squared	The squared value of the decile-ranked variable, *Pressure*
Analysts	The log of the number of unique analysts following the company during year *t*
Forecast_err	The absolute value of the difference between the analyst consensus forecast using prior-year second-quarter information and the actual prior-year EPS value
Auditor Variables	
LFees	Log of audit fees
Scaled_fees	Audit fees divided by total assets
Abnormal_fees	Residuals from the fee model shown in model (2) except that *Pressure* is excluded from the model
Report_delay	The number of days between year-end and the audit report date
Big4	Indicator variable if client is audited by a Big 4 auditor
Specialist	Indicator variable set to one if client is audited by an auditor with both 50 percent MSA-industry market share and 30 percent national-industry market share
Fee_ratio	The ratio of non-audit fees to total fees paid by the client to its auditor
New_auditor	Indicator variable set to one if the client/auditor engagement is in its first year
GC_opinion	Indicator variable set to one if client received a going-concern opinion
Client Variables	
Restate_announced	Indicator variable set to one if the client announced a restatement in the current year

TABLE 2 Continued

Client Variables Continued

Restated	Indicator variable set to one if the financial statements at year-end are subsequently restated
Restated_adverse	Indicator variable set to one if the financial statements at year-end are subsequently restated due to a restatement that has an adverse effect on the financial statements
Cata	Current assets divided by total assets
Ded_inst	The percentage of the client's shares owned by dedicated institutional owners following Bushee and Noe (2000) and Bushee (2001)
Leverage	Long-term debt divided by total assets
Foreign	Profit before tax from foreign operations divided by total profit before tax
Growth	Percentage change in sales from year *t-1* to year *t*
Inv_rec	Inventory plus receivables divided by lagged total assets
Firm_age	Log of number of years since the client first appeared in Compustat
Financing	Indicator variable set to one if the client's long-term debt increased 20% or the client's shares increased 10% during the current year
F_score	The scaled probability of a fraud-related restatement following Dechow et al. (2011). Probability is estimated by regressing an indicator for a fraud-related restatement on RSST accruals, change in receivables, change in inventory, soft assets, change in cash sales, change in ROA, issuance of securities, abnormal change in number of employees, existence of operating leases, market-adjusted stock return, and lagged market-adjusted stock return
Large_filer	Indicator variable set to one if the client's filing status is large, accelerated filer
Liquidity	Current assets less inventory divided by current liabilities
Lit_risk	Indicator variable set to one if client operates in a litigious industry (SIC 2833-2836, 3570-3577, 3600-3674, 5200-5961, or 7370)
Loss	Indicator variable set to one if client has negative net income in year *t*
Material_weakness	Indicator variable set to one if the client has a material weakness reported at year-end
Merger	Indicator variable set to one if the client experiences a merger in year *t* (as described in a footnote)

TABLE 2 Continued

Client Variables Continued

Restructure	Indicator variable set to one if the client has any restructuring expenses in year *t*
ROA	Income before extraordinary items divided by total assets
Segs	Square root of the number of business segments
Size	Log of total assets
Xtra	Indicator variable set to one if the client has extraordinary items or discontinued operations in year *t*
Dec_ye	Indicator set to one if the client reports on a calendar year-end
Volatility	Standard deviation of the client's daily stock returns for year *t* from CRSP

Note: This table provides definitions of the variables used in regressions. All continuous control variables used in the regression models are winsorized at the 1st and 99th percentiles.

TABLE 3
Descriptive Statistics

Variables	Mean	Std. Dev.	Q1	Median	Q3
Pressure_raw	0.029	0.346	-0.143	0.029	0.210
LFees	13.959	1.080	13.227	13.898	14.631
Size	6.651	1.740	5.375	6.554	7.782
Segs	1.406	0.504	1.000	1.000	1.732
Inv_rec	0.251	0.185	0.102	0.220	0.356
Cata	0.483	0.241	0.297	0.478	0.668
Liquidity	2.292	2.235	1.001	1.538	2.648
Leverage	0.178	0.196	0.000	0.130	0.285
Merger	0.216	0.411	0.000	0.000	0.000
Restructure	0.024	0.154	0.000	0.000	0.000
Xtra	0.095	0.293	0.000	0.000	0.000
Growth	0.137	0.327	-0.002	0.088	0.203
Financing	0.196	0.397	0.000	0.000	0.000
Loss	0.270	0.444	0.000	0.000	1.000
ROA	-0.004	0.188	-0.006	0.041	0.080
Foreign	0.165	0.551	0.000	0.000	0.238
Restate_announced	0.070	0.256	0.000	0.000	0.000
Lit_risk	0.300	0.458	0.000	0.000	1.000
Material_weakness	0.064	0.245	0.000	0.000	0.000
Analysts	2.064	0.831	1.609	2.079	2.708
Forecast_err	0.223	0.345	0.045	0.110	0.255
Ded_inst	0.081	0.080	0.008	0.061	0.129
Big4	0.872	0.334	1.000	1.000	1.000
Specialist	0.151	0.358	0.000	0.000	0.000
New_auditor	0.047	0.213	0.000	0.000	0.000
Fee_ratio	0.171	0.152	0.050	0.134	0.255
Dec_ye	0.693	0.461	0.000	1.000	1.000
GC_opinion	0.013	0.115	0.000	0.000	0.000
Report_delay	62.682	20.240	54.000	60.000	72.000
Large_filer	0.361	0.480	0.000	0.000	1.000
Scaled_fees	0.003	0.003	0.001	0.002	0.003
Firm_age	2.765	0.722	2.197	2.639	3.332
Volatility	0.030	0.015	0.020	0.027	0.037
Restated	0.138	0.345	0.000	0.000	0.000
Restated_adverse	0.125	0.330	0.000	0.000	0.000
F_score	1.009	0.579	0.530	0.887	1.385

Note: Variable definitions are shown in Table 2. N=14,522 for all variables except *F_score*, where N=12,507.

TABLE 4
Correlation Table

Variables		1	2	3	4	5	6	7	8	9	10	11	12
1	Pressure												
2	LFees	**-0.02**											
3	Abnormal_fees	**0.04**	**0.44**										
4	Report_delay	**0.07**	**-0.05**	**0.02**									
5	Restated	**0.06**	**-0.02**	**-0.02**	**0.17**								
6	Restated_adverse	**0.06**	**-0.02**	**-0.02**	**0.15**	**0.88**							
7	Merger	0.01	**0.13**	0.00	0.01	0.01	0.01						
8	Restructure	**0.02**	**0.03**	0.00	0.02	**0.02**	**0.03**	0.01					
9	Xtra	0.01	**0.17**	-0.01	0.00	0.01	0.00	0.01	0.01				
10	Financing	**-0.03**	**-0.07**	0.00	0.00	0.00	0.00	**-0.26**	-0.01	**-0.02**			
11	Restate_announced	**0.04**	**0.03**	-0.01	**0.17**	**0.28**	**0.24**	-0.01	0.02	**0.03**	0.01		
12	Material_weakness	**0.06**	**0.04**	0.00	**0.37**	**0.34**	**0.29**	**0.02**	**0.03**	0.00	-0.01	**0.18**	
13	GC_opinion	0.00	**-0.09**	0.01	**0.11**	-0.01	-0.01	**-0.04**	0.00	**-0.02**	**0.06**	0.01	**0.04**

Note: Variable definitions are shown in Table 2. This table presents Pearson correlations for certain variables used in the multivariate analyses. Bolded coefficients are significant at $p<0.05$, two tailed.

TABLE 5
The Effect of Analyst Forecast Pressure on the Likelihood of Restatements

	DV = Restated		DV = Restated_adverse	
Variables	**Coef.**	**p-value**	**Coef.**	**p-value**
Pressure	0.025**	(0.037)	0.035***	(0.005)
Size	-0.016	(0.745)	-0.009	(0.855)
Segs	0.037	(0.741)	-0.001	(0.991)
Firm_age	-0.112	(0.157)	-0.089	(0.272)
Volatility	13.396***	(0.001)	11.716***	(0.003)
Leverage	0.458*	(0.079)	0.408	(0.119)
Merger	-0.009	(0.925)	-0.053	(0.576)
Restructure	-0.146	(0.450)	-0.071	(0.710)
Xtra	-0.060	(0.640)	-0.149	(0.262)
Growth	-0.183	(0.143)	-0.070	(0.563)
Loss	-0.031	(0.790)	-0.029	(0.803)
ROA	0.606*	(0.062)	0.528	(0.113)
Lit_risk	0.391**	(0.021)	0.328**	(0.047)
Material_weakness	2.228***	(0.000)	2.087***	(0.000)
Analysts	0.171**	(0.023)	0.182**	(0.016)
Forecast_err	0.189*	(0.085)	0.125	(0.259)
Big4	0.195	(0.246)	0.250	(0.148)
Specialist	0.022	(0.870)	-0.030	(0.826)
New_auditor	-0.486***	(0.009)	-0.332*	(0.065)
F_Score	0.081	(0.386)	0.165*	(0.072)
FF48 & Year Indicators	Yes		Yes	
Observations	12,507		12,341	
ROC	0.780		0.762	
Pseudo R^2	0.163		0.144	

Note: This table presents regression results examining the association between analyst forecast pressure and restatements after controlling for other determinants of restatements. The regression model presented in the table uses logistic regression and clusters standard errors by firm (Petersen 2009). Restated firm-years in the first regression that do not have an adverse effect on the financial statements are excluded from the second regression. Variable definitions are shown in Table 2. The intercept and coefficients on year and Fama & French 48 industry fixed effects are not reported for brevity. ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively.

TABLE 6
The Effect of Analyst Forecast Pressure on Audit Fees

	DV = LFees		DV = LFees	
Variables	**Coef.**	**p-value**	**Coef.**	**p-value**
Pressure	0.006***	(0.000)	-0.015**	(0.024)
Pressure_squared			0.002***	(0.001)
Size	0.559***	(0.000)	0.558***	(0.000)
Segs	0.142***	(0.000)	0.142***	(0.000)
Inv_rec	-0.010	(0.875)	-0.010	(0.875)
Cata	0.792***	(0.000)	0.788***	(0.000)
Liquidity	-0.058***	(0.000)	-0.057***	(0.000)
Leverage	-0.000	(0.994)	-0.003	(0.958)
Merger	0.084***	(0.000)	0.084***	(0.000)
Restructure	0.082***	(0.005)	0.083***	(0.004)
Xtra	0.116***	(0.000)	0.114***	(0.000)
Growth	-0.063***	(0.000)	-0.065***	(0.000)
Financing	0.001	(0.929)	0.002	(0.882)
Loss	0.099***	(0.000)	0.098***	(0.000)
ROA	-0.222***	(0.000)	-0.221***	(0.000)
Foreign	0.114***	(0.000)	0.114***	(0.000)
Restate_announced	0.119***	(0.000)	0.118***	(0.000)
Lit_risk	-0.032	(0.344)	-0.031	(0.359)
Material_weakness	0.267***	(0.000)	0.266***	(0.000)
Analysts	-0.035***	(0.004)	-0.034***	(0.004)
Forecast_err	0.006	(0.680)	-0.002	(0.907)
Ded_inst	-0.120	(0.179)	-0.121	(0.175)
Big4	0.244***	(0.000)	0.243***	(0.000)
Specialist	0.085***	(0.000)	0.085***	(0.000)
New_auditor	-0.134***	(0.000)	-0.134***	(0.000)
Fee_ratio	-0.611***	(0.000)	-0.609***	(0.000)
Dec_ye	0.070***	(0.000)	0.071***	(0.000)
GC_opinion	0.075*	(0.078)	0.077*	(0.071)
Report_delay	0.004***	(0.000)	0.003***	(0.000)
FF48 & Year Indicators	Yes		Yes	
Observations	14,522		14,522	
Adjusted R^2	0.798		0.798	

Note: This table presents regressions examining the association between analyst forecast pressure and audit fees after controlling for other determinants of audit fees. Regression models presented in the table use OLS regression and cluster standard errors by firm (Petersen 2009). Variable definitions are shown in Table 2. Intercepts and coefficients on year and Fama & French 48 industry fixed effects are not reported for brevity. ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively.

TABLE 7
The Effect of Analyst Forecast Pressure on Audit Report Delay

	DV = Report_delay		DV = Report_delay	
Variables	**Coef.**	**p-value**	**Coef.**	**p-value**
Pressure	0.002***	(0.001)	-0.007**	(0.012)
Pressure_squared			0.001***	(0.001)
Size	-0.012***	(0.000)	-0.013***	(0.000)
Segs	0.006	(0.287)	0.006	(0.306)
Large_filer	-0.091***	(0.000)	-0.091***	(0.000)
Leverage	0.063***	(0.000)	0.062***	(0.000)
Merger	0.023***	(0.000)	0.024***	(0.000)
Restructure	0.017	(0.379)	0.017	(0.370)
Xtra	0.022***	(0.009)	0.021**	(0.012)
Growth	0.004	(0.486)	0.004	(0.564)
Financing	-0.007	(0.171)	-0.007	(0.193)
Loss	0.021***	(0.003)	0.020***	(0.004)
ROA	0.010	(0.581)	0.011	(0.536)
Restate_announced	0.087***	(0.000)	0.086***	(0.000)
Material_weakness	0.291***	(0.000)	0.290***	(0.000)
Analysts	-0.019***	(0.000)	-0.018***	(0.000)
Forecast_err	0.010*	(0.056)	0.006	(0.228)
Big4	0.006	(0.503)	0.006	(0.522)
Specialist	0.000	(0.961)	0.000	(0.950)
New_auditor	0.046***	(0.000)	0.046***	(0.000)
Dec_ye	0.016**	(0.017)	0.016**	(0.016)
GC_opinion	0.095***	(0.000)	0.095***	(0.000)
Scaled_fees	9.620***	(0.000)	9.653***	(0.000)
FF48 & Year Indicators	Yes		Yes	
Observations	14,522		14,522	
Wald	3683.37		3683.95	
Wald p-value	0.00		0.00	

Note: This table presents regression results examining the association between analyst forecast pressure and audit report delay after controlling for other determinants of audit report delay. Regression models presented in the table use negative binomial regression and cluster standard errors by firm (Petersen 2009). Variable definitions are shown in Table 2. Intercepts and coefficients on year and Fama & French 48 industry fixed effects are not reported for brevity. ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively.

TABLE 8
The Effect of Auditor Response to Analyst Forecast Pressure on the Likelihood of Restatements

	DV = Restated_adverse Full Sample		DV = Restated_adverse High Pressure Sample		DV = Restated_adverse Low Pressure Sample		DV = Restated_adverse Full Sample	
Variables	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
Pressure	0.037***	(0.003)						
High_pressure							0.317***	(0.001)
Abnormal_fees	-0.042***	(0.008)	-0.055***	(0.003)	-0.029	(0.179)		
High_fees							-0.111	(0.339)
High_pressure*High_fees							-0.217	(0.120)
Size	-0.010	(0.844)	0.016	(0.779)	-0.039	(0.581)	-0.008	(0.878)
Segs	0.001	(0.990)	0.020	(0.891)	-0.001	(0.995)	-0.003	(0.980)
Firm_age	-0.087	(0.285)	-0.093	(0.327)	-0.086	(0.438)	-0.090	(0.266)
Volatility	12.503***	(0.002)	15.413***	(0.003)	9.739*	(0.086)	12.431***	(0.002)
Leverage	0.408	(0.119)	0.343	(0.255)	0.475	(0.223)	0.393	(0.135)
Merger	-0.054	(0.573)	-0.073	(0.547)	0.010	(0.942)	-0.056	(0.557)
Restructure	-0.070	(0.712)	-0.303	(0.218)	0.265	(0.338)	-0.059	(0.758)
Xtra	-0.148	(0.261)	-0.153	(0.375)	-0.139	(0.473)	-0.147	(0.266)
Growth	-0.073	(0.549)	0.029	(0.853)	-0.222	(0.206)	-0.070	(0.565)
Loss	-0.028	(0.811)	0.138	(0.330)	-0.323	(0.109)	-0.025	(0.829)
ROA	0.551	(0.100)	0.901**	(0.048)	0.129	(0.766)	0.538	(0.108)
Lit_risk	0.328**	(0.048)	0.356*	(0.079)	0.281	(0.162)	0.322*	(0.053)
Material_weakness	2.085***	(0.000)	1.892***	(0.000)	2.401***	(0.000)	2.082***	(0.000)
Analysts	0.185**	(0.014)	0.111	(0.217)	0.266**	(0.014)	0.184**	(0.015)
Forecast_err	0.124	(0.267)	0.236*	(0.056)	0.022	(0.913)	0.125	(0.260)
Big4	0.253	(0.142)	0.268	(0.191)	0.250	(0.279)	0.255	(0.140)

TABLE 8 Continued

	DV = Restated_adverse Full Sample		DV = Restated_adverse High Pressure Sample		DV = Restated_adverse Low Pressure Sample		DV = Restated_adverse Full Sample	
Variables	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
Specialist	-0.026	(0.852)	-0.321*	(0.068)	0.212	(0.239)	-0.031	(0.824)
New_auditor	-0.329*	(0.066)	-0.475**	(0.038)	-0.120	(0.683)	-0.336*	(0.061)
F_Score	0.182**	(0.045)	0.155	(0.148)	0.183	(0.137)	0.177*	(0.052)
FF48 & Year Indicators	Yes		Yes		Yes		Yes	
Observations	12,341		6,173		6,168		12,341	
ROC	0.762		0.770		0.774		0.763	
Pseudo R^2	0.146		0.155		0.155		0.146	

Chi-square Test of Coefficients

High_pressure + High_fees + High_pressure*High_fees = 0 chi2(1) = 0.01, Prob > chi-square = 0.9207

Note: This table presents regression results examining the association between auditor response and adverse-effect restatements after controlling for other determinants of restatements. Regression models presented in the table use logistic regression and cluster standard errors by firm (Petersen 2009). Variable definitions are shown in Table 2. Intercepts and coefficients on year and Fama & French 48 industry fixed effects are not reported for brevity. ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively.

TABLE 9
The Effect of Analyst Forecast Pressure on Audit Fees at Interim Quarters

Panel A – Tests of Linear Relationship

	1st Quarter DV = LFees		2nd Quarter DV = LFees		3rd Quarter DV = LFees	
Variables	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
Pressure	0.005***	(0.001)	0.006***	(0.000)	0.005***	(0.002)
Control Variables	Yes		Yes		Yes	
FF48 & Year Indicators	Yes		Yes		Yes	
Observations	12,102		14,522		15,163	
Adjusted R^2	0.796		0.798		0.798	

Panel B – Tests of Nonlinear Relationship

	1st Quarter DV = LFees		2nd Quarter DV = LFees		3rd Quarter DV = LFees	
Variables	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
Pressure	-0.000	(0.957)	-0.015**	(0.020)	-0.021***	(0.001)
Pressure_squared	0.001	(0.369)	0.002***	(0.001)	0.003***	(0.000)
Control Variables	Yes		Yes		Yes	
FF48 & Year Indicators	Yes		Yes		Yes	
Observations	12,102		14,522		15,163	
Adjusted R^2	0.796		0.798		0.798	

Note: This table presents regressions examining the association between analyst forecast pressure and audit fees at each of the quarterly reporting periods. Regression models presented in the table use OLS regression and cluster standard errors by firm (Petersen 2009). Variable definitions are shown in Table 2. Intercepts and coefficients on controls and year and Fama & French 48 industry fixed effects are not reported for brevity. ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively.