

**Read All About It:
Do Auditors Respond to Press Visibility?**

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Abstract

I examine whether auditors respond to business press coverage. Using the number of articles covering a client firm (a proxy for *visibility*) I find that auditors charge higher audit fees for clients with higher *visibility* incremental to other determinants of fees. The audit fee evidence is corroborated using other proxies for auditor decisions: audit report modifications, the level of accruals, and auditor turnover. The evidence suggests that auditors respond to risks driven by press coverage. I conclude that the press not only participates in the external monitoring of financial reporting, but that through its influence on official external monitors the press actually also affects financial reporting.

Members of the Society of Professional Journalists believe that *public enlightenment is the forerunner of justice* and the foundation of democracy. The duty of the journalist is to further those ends by seeking truth and providing a fair and comprehensive account of events and issues. Conscientious journalists *from all media and specialties* strive to serve the public with thoroughness and honesty. Professional integrity is the cornerstone of a journalist's credibility. Members of the Society share a dedication to ethical behavior and adopt this code to declare the Society's principles and standards of practice.

—*Preamble to the Society of Professional Journalists Code of Ethics* (emphasis added)

One of journalists' fundamental roles is that of a gatekeeper—responsible for selecting which subjects and stories receive circulation in the press. Journalists perform this gatekeeping role by both disseminating public information and uncovering private information. Recent research provides evidence of different ways that the press identifies and disseminates important business news which include highlighting excessive executive compensation (Core, Guay, and Larcker 2008), exposing board ineffectiveness (Joe, Louis, and Robinson 2009), and identifying fraud (Miller 2006; Dyck, Morse, and Zingales 2010).² In this paper, I study one effect of the gatekeeping role played by the business press—that the volume of press coverage targeting individual companies increases the incentives of official watchdogs to monitor financial reporting. Specifically, I ask whether auditors respond to the *visibility* of their clients in the business press.

I provide evidence that measures of business press coverage are associated with several auditor decisions. I use auditor effort as the primary measure of auditor response to press coverage. I also perform tests using measures of audit opinion modifications, reported accruals, and auditor turnover.³ I find that audit fees, a proxy for effort, are larger for companies that are

² One reason for auditors to respond to business press coverage of their clients is the concern that the press can uncover fraud that was not prevented or detected during the preparation of the financial statements or during the external audit. Auditors have incentives to avoid the reputational costs of the business press uncovering such problems that investors expect auditors to identify. However, due to the low frequency of fraud this is not considered to be the auditors' primary concern pertaining to business press coverage.

³ Francis and Krishnan (1999) summarize five tactics auditors select from when auditing firms with large accruals.

more visible in the media even after controlling for other known fee determinants. I also report a positive association between business press coverage and an auditor's propensity to include modified audit opinion reporting language. Tests of the propensity to issue going concern opinions yield similar results. I find that signed accruals (a proxy for reporting quality) are negatively related to press coverage. I also find that the probability of auditor turnover is positively associated with press coverage. The evidence suggests that auditors do respond to business press coverage of their client firms.

I. Background and Motivation

Financial reporting is central to the efficient functioning of capital markets and as such there has long been strong concern for improving reporting and disclosure (Basu and Waymire 2006; Barton and Waymire 2004). One critical aspect of improving reporting and disclosure is external auditing (Watts and Zimmerman 1983; Kinney 2005). The role of auditing has come under increased scrutiny in the last decade. For example, in response to a series of major accounting scandals, the passage of the Sarbanes-Oxley Act of 2002 included several sections affecting auditors.⁴ More recently the Public Company Accounting Oversight Board has reconsidered implementing auditor rotation requirements to improve auditor independence (PCAOB News Release August 2011) and has solicited public comments on proposed changes to

They use "effort" specifically to denote increasing audit procedures, but the other choices are not likely to be effortless. Alternative actions including lowering the threshold for issuing modified reports, requiring accrual reducing adjustments, and charging increased risk premiums will all require justification and negotiation with clients. Even filtering out the client would call for the replacement auditor to consider the effect of media coverage on engagement risk. I consider effort, opinion modifications, reported accruals, and turnover each separately as evidence that auditors do respond to press *visibility*, but acknowledge that the primary decision I investigate, auditor effort, is likely related to many of the proxies I employ.

⁴*Title I* for example details the creation of the Public Company Accounting Oversight Board which ended the self-regulation of the audit industry.

the auditor's reporting model.⁵ However, auditing as an effort to provide assurance on and improve financial reporting disclosure can hardly be considered in isolation (Beyer, Cohen, Lys, and Walther 2010; Berger 2011). Accordingly, this study analyzes the effect of the business press (a key component of the information environment) on the effort and effectiveness of the institutional monitoring (by auditors) of financial reporting.

The Business Press and the Auditor's Risk Environment

There are at least two reasons to expect the business press to influence auditors' decisions. First, press coverage influences auditor business risk.⁶ In a footnote of Statement on Auditing Standards 47 auditor business risk is described as follows: "In addition to audit risk, the auditor is also exposed to loss or injury to his professional practice from litigation, adverse publicity, or other events arising in connection with financial statements that he has examined and reported on."⁷ The risk of adverse publicity from connection with a client is greater for clients that are already receiving more press.⁸

The reputation effect of adverse publicity is perhaps the most important effect of the media on auditor decisions and is highlighted by the demise of Arthur Andersen. Ball (2009) summarizes some of the research on the reputational damage of the Enron scandal and

⁵ Proposed changes under consideration include: the addition of an auditor's discussion and analysis, required and expanded use of emphasis paragraphs, auditor assurance on other information outside the financial statements, and clarification of language in the standard auditor's report (PCAOB News Release June 2011)

⁶ Auditor business risk is distinct from audit risk, the latter of the two being defined as a function of inherent risk, control risk, and detection risk.

⁷ This definition of auditor business risk is consistent with common audit textbook definitions of engagement risk (Arens, Elder, and Beasley 2010; Messier, Glover, and Prawitt 2006). Auditor business risk is also defined as a component of engagement risk closely related to client business risk (Colbert, Luehlfing, and Alderman 1996). Arens, Elder, and Beasley (2010) acknowledge that there is some disagreement regarding the ability and appropriateness of auditors attempting to reduce auditor business risk through methods other than the client acceptance/retention decision.

⁸ Green, Hand, and Penn (2011) find that coverage in the previous month is a strong predictor of the dissemination a news story will receive. They also find that bad news bias (defined as the wider dissemination of bad news stories relative to good news and neutral stories) is greater for firms that were subject to high levels of press coverage in the prior month.

conjectures that even without regulatory intervention “the audit market would have closed Andersen on its own accord, because the firm’s greatest asset (a reputation for quality, independent auditing) . . . [was] in ruins.” In related work, Barton (2005) shows that client firms with high media visibility were more concerned about auditor reputation and responded to the Enron scandal by replacing Arthur Anderson as their auditor sooner than less visible firms.⁹ While the Enron case is an extreme example of fraud and audit failure, Barton (2005) and the research summarized in Ball (2009) support the significant role of the business press in increasing auditors’ exposure to severe declines in reputation.

The example of Arthur Anderson emphasizes the potential costs of damaged reputation following a serious audit failure. Auditors also suffer reputational damage and costly litigation in cases when audits are performed in compliance with standards as proposed in SAS 47. By design audits provide reasonable rather than complete assurance, so there is always some risk that auditors will fail to detect and report on material misstatements. The probability of investors, regulators, or the media uncovering material misstatements that have been missed by auditors increases as the media and other stakeholders more closely scrutinize financial reports.¹⁰ The heightened scrutiny spurred on by media coverage increases the expectation that fraud and material misstatements from GAAP that auditors fail to detect will be subsequently uncovered increasing both litigation costs¹¹ and negative reputation effects for the auditor.¹²

⁹ Barton (2005) measures press visibility as the number of articles a firm appears in during the year preceding his sample period where the client is named in the headline or first paragraph of the article. Article tone is not assessed.

¹⁰ Anecdotally, two “Grumpy Old Accountants” have tried to help by frequently writing on deviations from GAAP by Groupon (a company subject to substantial press coverage). In a blog entry on September 24, 2011, they express satisfaction that their writing has had an “impact on practice” noting that they had sent a copy of a previous article to the SEC and reported on improper revenue recognition practices through the SEC’s Whistleblower Program. Groupon has since restated revenues. See: <http://blogs.smeal.psu.edu/grumpyoldaccountants/archives/327>.

¹¹ Even when audits have been properly executed following the standards of the Public Company Accounting Oversight Board (United States), auditors bear the costs of defense or settlement when sued.

¹² Similar to the discussion of fraud in footnote 2, I do not expect the uncovering of material misstatements by the press to happen frequently enough to be the primary risk factor of concern to auditors. I do recognize it as a possible

Auditors also face the concern of increased scrutiny by regulators such as the SEC who may target investigations for client firms that are in the business press' spotlight. SEC investigations increase the probability that undetected material misstatements are uncovered. I expect regulators consider media coverage in their selection process because they have limited resources and can increase the visibility of their efforts by targeting highly visible firms for investigations and regulatory actions. This selection strategy also reduces the set of companies investigated to firms in which the investing public is perceived to have the greatest interest.

A second reason to predict that auditors respond to the business press is because journalists can uncover private information such that auditors learn details about management incentives, the corporate environment, or the probability of reporting irregularities which the client might otherwise hide from its auditors. However, because auditors have specialized technical training in evaluating financial statements, access to private information unavailable to the press, and potentially many years of experience auditing the firm's financial statements, coverage by the press may not be informative to the audit process.¹³ Unlike the press, the work of auditors is regulated. Auditors follow the standards of the Public Company Accounting Oversight Board (United States) which they need to consistently apply across audits of the specific set of companies they are engaged to report on. Press coverage on the other hand is substantially less restricted in both the method of coverage and the selection of topic. The press is not required to cover all companies equally (or at all) and can report on issues outside of the scope of the financial statement audit. Also, while the press may adhere to codes supporting truthfulness, accuracy, and objectivity, they are not required to follow a set of standards in

source of risk though. Since I do not attempt to separate the different sources of risk related to *visibility*, I identify each acknowledging that some may be deemed to have a negligible effect.

¹³ In discussions with auditors, they do not dispute that they follow the press coverage of their clients and related industries. One partner described the concern that failure to consider risks identifiable through the press would be a great embarrassment.

evaluating the companies subject to their reporting. This lack of standardized investigation will result in coverage that varies in comprehensiveness from story to story. Consequently, the auditor having technical expertise, access to private information, client-specific experience, and extensive performance standards may not be influenced by the type or extent of coverage an auditee receives in the business press.

Even when allowing for the press to play an informative role, it may be the case that the auditor is able to use press coverage to enhance its understanding of a business without responding by increasing audit effort, altering opinion modification thresholds, or altering other decision processes. Auditors can read from the business press to enhance their understanding of the client's industry or business without responding to the clients' relative levels of coverage by revising audit decisions.

An auditor may also desire the prestige of being associated with a highly visible client and respond in ways inconsistent with my predictions in order to acquire and maintain the client. Lower fees, a reduced propensity to modify audit reports, and laxness in permitting larger positive accruals could each result from this strategy. Still, I predict the reputation and litigation risks associated with high *visibility* will lead to auditor responses to press coverage that are consistent with greater effort and increased auditor scrutiny.

These reasons point to the expectation that greater media coverage increases auditors' awareness of or exposure to risk. It is noteworthy that it is not necessary for the press to provide new information to the auditor for this risk adjustment to take place. *Visibility* can increase auditor effort even when news coverage is not investigatory. For that reason, I expect *visibility* to induce an auditor response even when the articles are primarily dissemination and not investigation oriented. Similarly, the articles could all be favorable towards the company and still

affect auditors' decisions simply because the increased positive coverage also represents amplified risk from the additional scrutiny. With the increased positive coverage the risk of adverse publicity is also heightened for those clients that do subsequently experience a negative event.

To be more precise, the most visible firms represent the highest auditor business risk because should the client fail or some other undesirable outcome occur, the risk of adverse publicity for the auditor is greatest. Therefore, *visibility* does not represent past or current adverse outcomes so much as risk of adverse publicity should adverse outcomes occur in the future.

Auditor Responses to Press Coverage Risks

Auditors choose from multiple actions to reduce exposure to relevant risks. Choices include increasing auditing effort, modifying audit opinions, negotiating lower accruals, or dropping a client (Krishnan and Krishnan 1997; Francis and Krishnan 1999; Schelleman and Knechel 2010). For a given level of risk tolerance, auditors can reduce overall audit risk by increasing the extent of their auditing procedures.¹⁴ This method of risk reduction leads to more thorough and more costly audits which correspond to greater audit fees.

Although I argue for a positive relation between *visibility* and auditor effort, this relation is not obvious. An alternative prediction is that auditors may perceive effort reducing benefits to client media coverage. Since the media can serve as an additional unofficial monitor, the auditor

¹⁴ There are both philosophical and practical arguments against auditors attempting to offset auditor business risk by reducing audit risk. Ideally, clients engage and compensate an auditor to provide reasonable assurance that financial statements are not materially misstated from GAAP and should not be required to purchase a more expensive and more thorough audit to offset and/or reduce the expected costs of auditor business risk. Bell, Landsman, and Shackelford (2001) report that in their discussions with practitioners multiple reasons were given that auditor business risk should not or could not be priced into the audit. Bell, Landsman, and Shackelford (2001) find however that audit hours billed for an engagement are increasing in the perceived auditor business risk for a large international audit firm.

might anticipate that auditees subject to greater coverage will proactively choose to report more accurately. This would be consistent with the findings of Joe, Louis, and Robinson (2009) who show that media exposure of board ineffectiveness leads to improvements in corporate governance. I expect that despite this potential improvement, auditors will be skeptical. They may be concerned that their client firms will not improve rapidly enough to consider media coverage to be risk reducing. This suggests that a study on the long term effects of media coverage may merit further investigation. Regarding the setting examined in Joe, Louis, and Robinson (2009), the board changes may also result in the auditor receiving more support to work harder as well (Abbott, Parker, Peters, and Raghunandan 2003).

Following the argument that media coverage leads to greater auditor effort my primary tests are aimed to address the hypothesis stated in the alternative form:

H1: Audit effort is positively associated with the client firm's media coverage *visibility*.

I use the proxy audit fees to test auditor effort. I also consider other auditor responses to business press coverage which are related to the effort decision.

Another choice auditors can make is to increase their propensity to issue modified audit reports including issuing going concern opinions. This decision results in a lower threshold for opinion modification and is indicative of greater auditor independence from the client firm. This auditor decision is aimed at protecting the auditor's reputation which would be damaged if the auditor issued a clean opinion and a client firm subsequently was discovered to have merited an opinion modification.¹⁵ The related hypothesis is stated in the alternative:

¹⁵ Although the opinion modification can protect the auditors reputation under the presumption that the state of the client will subsequently be revealed, the auditor may also consider the opinion modification to be detrimental to their present reputation and relationship with the client. This could lead to predictions that more visible firms will be less likely to modify the audit opinion. I thank Karl Muller for highlighting this alternate possibility, but base my

H2: The probability that an auditor issues a modified audit opinion is positively associated with the client firm's media coverage *visibility*.

Auditors may also respond to press coverage by choosing to be less tolerant of aggressive accounting estimates. Observing a negative relationship between signed accruals and *visibility* would provide evidence of this auditor response. This relationship results from auditors placing greater scrutiny on potential overstatements than understatements (Barron, Pratt, and Stice 2001). Positive accruals can be determined to be overstated and negative accruals can be assessed to be insufficiently low and be adjusted further downward. Negotiating lower accruals is a strategy auditors can use to counter the uncertainty of accruals and is expected to increase with the risk associated with *visibility*. The hypothesis is stated in the alternative as follows:

H3: Signed accruals are negatively associated with the client firm's media coverage *visibility*.

A final auditor response to consider is that the auditor could drop the client. If the auditor considers the risk associated with press coverage to be too great to offset through the decisions already discussed, the auditor may decide to end the audit engagement. Stated in the alternative, the related hypothesis is as follows:

H4: The probability of auditor turnover is positively associated with the client firm's media coverage *visibility*.

Press Coverage Proxies

To measure attributes of media coverage, I use news story analytics from RavenPack.¹⁶

predictions on the assumption that when auditors deem an opinion modification to be necessary, they assess the benefits of reporting it to be greater for highly visible clients.

¹⁶ RavenPack is a provider of real time news analytics whose primary clientele include large and second tier investment banks.

To capture a company's level of *visibility* in the business press, I use the number of stories in which the company appeared in the headline or was identified as having a significant role in the story (e.g. the company is the plaintiff in a story about a pending lawsuit).

RavenPack also includes sentiment analytics on each story. Using multiple specialized business event focused dictionaries, stories are assigned positive, neutral, or negative sentiment scores. To alleviate the concern that results are driven by underlying bad news events rather than actual press coverage attributes, I also create *visibility* scores partitioned by news story tone. In additional tests I measure the mean tone of these articles to capture the company's *prevalent sentiment* in the business press.

The results in this paper emphasize the importance of understanding the information environment (Beyer, Cohen, Lys, and Walther 2010; Berger 2010) as a whole when determining the effectiveness of the monitoring of financial reporting. I find evidence that suggests that the business media enhances the monitoring role of at least one key monitor, auditors. I find that auditor effort increases in response to press coverage, and that auditors also respond to media coverage through opinion modifications, accrual adjustments, and auditor turnover. This study suggests several avenues for future research, some of which I discuss in concluding this paper.

Relevant Research

Supplying evidence of a relationship between attributes of press coverage and decisions made by the external auditor is an important step in the growing literature on the role of the business press. Core, Guay, and Larcker (2008) show that the media follows a “sophisticated approach” in story selection evidenced by the relationship between negative coverage and excess compensation as opposed to raw compensation. They do not find evidence that this coverage has

any influence on the excessive pay structures or CEO turnover though. The titular implication of these findings is that the press has no power to influence firms' executive compensation practices.

Recent research provides evidence that the business press does operate as a unique information intermediary influencing firms' information environments as the press both disseminates previously disclosed information and generates new information (Bushee, Core, Guay, and Hamm 2010). The dissemination of firm information by the business press has been shown to impact trading and other firm-level market activity measures including bid-ask spreads and idiosyncratic volatility (Engelberg and Parsons 2011; Soltes 2010). There is also evidence that the sentiment of press coverage relates predictably to market prices and trading volume (Tetlock 2007). Previously noted evidence suggests that in generating new information the press plays an external monitoring role as a watchdog identifying a large proportion of discovered instances of accounting fraud prior to monitors that are actually tasked to detect and uncover fraud (Miller 2006; Dyck, Morse, and Zingales 2010).

In addition to these studies which have examined the role of the press and its influence in the market place, Kothari, Li, and Short (2009) provide some initial evidence of the interaction between press coverage and other information intermediaries. Dependent on coverage sentiment, they show that business press coverage affects firm-specific measures of the cost of capital, stock return volatility, and analyst forecast dispersion. The effect of press coverage attributes on analyst forecast dispersion is an interesting first look at how the business press as one information intermediary influences another intermediary. The business press/analyst setting does not, however, incorporate the differential access to private information that exists¹⁷ between

¹⁷It is important to recognize that while auditors do have greater access to private information necessary for the performance of their attestation duties, this does not mean that they have free access to all firm records. Since

the business press and auditors since analysts are no longer privy to such information in the post Reg FD environment.

Some research has also investigated the relationship between bad news press coverage and audit opinions. In an experimental setting Joe (2002) finds that auditors are more likely to issue going concern opinions if they are presented with a bad news event article along with the auditee's financial statements.¹⁸ Using the experimental setting, Joe (2002) is able to design the news article so that it does not convey information to the auditor that is not already contained in the financial statements. Her findings are consistent with archival studies by Frost (1991) and Mutchler, Hopwood, and McKeown (1997) which both find that auditor assessments are influenced by media coverage of bad news.¹⁹ These prior studies on the relationship between press coverage and auditing have focused on specific bad news events and do not consider the full media coverage environment of the client or the effects of media coverage of good news events.

II. Methodology

The primary challenges to my study include the imperfect measurement of key variables of interest and the potential for omitted correlated variables. Audit fees are the proxy for the main decision I investigate, auditor effort. Some problems with this measure include that a portion of it may be attributable to a risk premium and there is no way to detect what portion is

requests for information are made to the client firm, the firm does have an opportunity to attempt to hide information from or misreport information to the auditor. This is one of the challenges that make fraud more difficult to discover than a simple accounting error.

¹⁸ Specifically, Joe (2002) considers loan default by the audit client.

¹⁹ Frost (1991) examines whether new loss contingencies receive financial statement disclosure and result in qualified audit opinions. Mutchler, Hopwood, and McKeown (1997) find that auditors are more likely to issue a modified audit opinion for debt defaults by audit clients when the defaults receive coverage in *The Wall Street Journal*.

actually due to increased work.²⁰ Ideally I would like to directly observe auditor effort in response to external stimuli and the audit fee is an imperfect proxy. However, recent research provides some assurance related to this proxy (Hribar, Kravet, and Wilson 2010).²¹ To further mitigate this concern I perform additional tests of other auditor decisions.

Similarly, the variables for media coverage attributes may not be measured over the correct time period. To the extent that the measures capture “old news” which the auditor does not deem relevant in their risk assessment, the effects may be dampened. Finally, regarding potential omitted correlated variables, it is possible that media coverage attributes do not affect the audit process, but that the underlying news events are driving the results. To alleviate this concern I control for firm performance and the amount and tone of news that a firm experiences. I include market adjusted cumulative returns as a control for the average tone of events experienced by a firm over the period examined along with measures of return volatility and trading volume to capture the amount of news events that a firm experienced during the year. Including these variables requires media coverage attributes to be associated with auditor decisions incrementally to the market responses to all forms of news released during the measurement period in order to find significant results.

²⁰ Bell, Landsman, and Shackelford (2001) are able to directly examine the number of hours billed and the billing rate per hour charged for a sample of engagements of one large auditor. One of their findings is that the amount of audit hours, not the hourly fee rate, is increased when auditor business risk is assessed to be high. If this result is applicable to other auditors, it supports the use of increased fees as a proxy for increased audit hours billed on an engagement. A lingering concern is that even with access to the actual number of hours billed, unbilled hours are not known. I assume that auditor hours and auditor fees are correlated.

²¹ Specifically they find that firms with larger residuals from an audit fee model are lower quality. The posit that unexplained audit fees are larger because auditors recognize the low quality accounting and respond by increasing their effort incremental to what would be expected based on the audit fee model’s explanatory variables.

Audit Fees as a Proxy for Auditor Effort

I rely on prior²² and concurrent literature in selecting audit fee determinants which may be correlated with *visibility*. Hribar, Kravet, and Wilson (2010) develop a comprehensive model of audit fee determinants which I draw from. Consistent with Price, Sharp, and Wood (2010), I omit some variables which would restrict the size of my sample and make adjustments based on data availability. Detailed descriptions of variable calculations are included in the appendix.

To test H1 I regress the natural log of audit fees (*LnFee*) on measures of firm *visibility* estimated over different time windows corresponding to the fiscal year audited. As noted earlier, one of the challenges in assessing the influence of media coverage is selecting an appropriate window to calculate the media coverage variables. According to discussions with practicing auditors, the audit fee is typically set sometime from the end of the first fiscal quarter to the end of the second quarter. In unusual circumstances, there can be adjustments or changes in scope which lead to increased fees.^{23,24} To reflect the more common timing for setting fees, media coverage is estimated over the first two fiscal quarters. Then to allow for scope changes and fee adjustments, measures of media coverage are estimated over the entire fiscal year.

My primary variables of interest are *LnVis_EarlyQuarters* and *LnVis_FiscalYear* which capture a company's level of *visibility* in the business press. *LnVis_Early Quarters* is the natural log of one plus the number of stories a firm appears in during the first two quarters of the fiscal

²²Audit fee models have been studied extensively. In a survey of the literature, Hay, Knechel, and Wong (2006) summarize the research following the seminal work of Simunic (1980) and identify 186 independent variables that have been tested as determinants of audit fees. Hay, Knechel, and Wong (2006) provide a taxonomy classifying these variables categorically as client attributes, auditor attributes, and engagement attributes.

²³ Scope changes were described as generally uncommon, but it was noted that following the market crash of 2008 scope adjustments were widespread due to the unanticipated effort needed to reassess valuations post-crash. A senior manager with a Big 4 auditor qualified this statement saying that changes to the initially agreed upon audit fee can be more frequent depending on the preferences of the managing partner, the audit client, and the circumstances of the audit.

²⁴ Anecdotally, a senior manager for one Big 4 firm reported a recent engagement fee was not agreed upon until after the audit was completed.

year. This is the time period that fees are more commonly established and will only be missing relevant news items for firms that subsequently adjust audit scope. *LnVis_FiscalYear* is calculated over the entire fiscal year. *LnVis_FiscalYear* is also used for tests of the other auditor decisions. Media coverage variables measured during the fiscal year contain information about the news coverage which had been released prior to the beginning of the audit as well as coverage which took place during much of the audit performance. These annual measures of media coverage capture the information set that auditors would most likely be influenced by during the critical planning stages of an audit as well as the information related to the current year's financial statements which could potentially influence auditor decisions.

For news printed after the fee is set when there is no adjustment to audit scope, the auditor may also perform additional work without requesting additional compensation in the current year.²⁵ In such cases I would expect the auditor to take the additional effort into account when determining the audit scope and negotiating fees in the following year. For this reason I also examine the association between media coverage attributes and the subsequent year's audit fee. In untabulated results, I show the main findings are robust to this specification.

As mentioned earlier, one of the greatest concerns is that the statistical associations I observe do not represent the relationship between the media and auditor decision proxies, but are instead attributable to an omitted correlated variable pertaining to the actual news events experienced by the firm. It is possible for example that increased effort occurs solely due to distress experienced by firms or other risk increasing events that are strongly correlated with news coverage. I attempt to rule out this threat to my inferences by controlling for several proxies for firm distress and newsworthy events.

²⁵ A former Big 8 auditor gleefully reminisced about learning the motto shared by the managers in his first office: Work late and charge eight!

To control for the market's assessment of the underlying news events I include the variables *CRet_EQ*, *RetVol_EQ*, and *TradeVol_EQ*, each measured over the course of the first two quarters of the fiscal year. I also calculate corresponding measures for the entire year identified with the suffix *FY*. *CRet_EQ* is a company's cumulative market adjusted return for the year being audited. I include this to account for the market's assessment of a firm's news sentiment so that my news measures will capture the effect of media coverage controlling for the market's assessment of a firm's actual performance. Similarly, I include *RetVol_EQ* and *TradeVol_EQ* to account for the volume of news events taking place during the year. *RetVol_EQ* is the standard deviation of a company's daily market adjusted returns during the fiscal year. *TradeVol_EQ* is the standard deviation of a company's daily trading volume adjusted for the number of shares outstanding. I include these so that my news measures will reflect the effect of media coverage a company receives after controlling for the level of activity in the market during the year to control for the frequency of potential news events.

I also include controls for newsworthy characteristics of the audit clients. I include *LnAssets* which is the natural log of total assets. I include *ROA* which is a measure of the return on assets, and *Loss* which is an indicator variable equal to one if income before extraordinary items was negative in the current or either of the two previous years. Both of these measures attempt to capture the performance and possible distress a company is experiencing. *Debt* is also included and indicates how severely leveraged a firm is. *ModOpinion* is an indicator variable set equal to one when the audit report includes anything other than a standard unqualified audit opinion. *Acq* is an indicator variable set equal to one when a firm has non-zero acquisition or restructuring costs. Other controls for firm size and litigation risk are also included.

Collectively these controls are intended to capture the nature of the underlying news

events providing some evidence that the primary results are not driven by the nature of the company, the news coverage, or events coinciding with different levels of news coverage. The remaining control variables are defined in the appendix and are included to control for audit complexity, inherent risk, and litigation risk. With the exception of indicator variables, all variables are winsorized at the 1 and 99 percentile levels. Equation (1) below is run as a panel regression with standard errors clustered by firm. Year (*Year*) and industry (*Ind*) fixed effects are also included.

My model for tests of H1 is as follows with subscripts omitted for convenience:

$$\begin{aligned} LnFee = & \beta_0 + \beta_1 LnVis_EarlyQuarters + \beta_2 Big4 + \beta_3 LnAssets + \beta_4 LnMVE + \beta_5 Inventory \\ & + \beta_6 Receivables + \beta_7 Debt + \beta_8 ROA + \beta_9 Loss + \beta_{10} ModOpinion + \beta_{11} LitRisk \\ & + \beta_{12} Acq + \beta_{13} CRet_FY + \beta_{14} RetVol_FY + \beta_{15} TradeVol_FY + \Sigma Year + \Sigma Ind + \varepsilon \end{aligned} \quad (1)$$

The above analysis identifies associations between audit effort and levels of media coverage variables. As a stricter test of the relationship I also estimate how changes in media coverage attributes relate to changes in audit fees. My predictions are consistent with the discussion for a levels test in that I expect increases in *visibility* to result in higher audit fees.

Tone Conditional Measures of Visibility

One concern is that the results are attributable to the events underlying the business press coverage and not to the actual coverage attributes. I include several controls described above to control for market responses to all news, major firm events, and firm performance characteristics. I also partition the measure of firm *visibility* based on the tone of the news.²⁶ I create three new *visibility* measures which correspond to good news, bad news, and neutral news

²⁶ Joe (2002) suggests examining the influence of redundant positive news coverage on auditors as a future area for research.

story coverage, and I substitute these measures into the audit fee model (1). I replace *LnVis_EarlyQuarters* with the tone based partitions of the news data.

LnBadNewsVis_EQ is the natural log of one plus the number of stories about a client firm with a Composite Sentiment Score (*CSS*) value that indicates negative tone. The *CSS* value is a measure of the sentiment or tone of each news story and is subjected to a linear transformation so that positive values indicate a positive story sentiment, the value zero indicates a neutral sentiment, and negative values correspond to a negative sentiment or tone. The calculation of *CSS* is described in greater detail in Section III. *LnNeutralNews_EQ* and *LnGoodNews_EQ* are calculated similarly to *LnBadNewsVis_EQ* for stories where *CSS* indicates a neutral or positive tone respectively.

Including the separate *visibility* measures permits an asymmetric response by auditors to news conditional on the tone of coverage. This design allows me to assess whether bad news coverage is driving the results in the primary analysis and will also indicate whether good news and neutral news are incrementally effort increasing when controlling for the level of bad news story coverage.

Increased Propensity to Issue Modified Audit Opinions

There are other aspects of auditing work and output that reflect auditor decisions aside from audit fees. I next test the type of audit report issued for evidence that auditors respond to media coverage. Auditors can offer opinions that provide some indication on the extent of misstatements or other problems found during the audit. If auditors decrease their level of acceptable audit risk then I anticipate that the probability of receiving anything other than a clean unqualified opinion will be increasing in firm *visibility*. I also test separately the probability that

the audit report contains a going concern opinion modification.

A benefit of examining the audit opinion is that it helps alleviate the concern that fee increases are caused by auditors charging a risk premium without changing any audit procedures or actions. It also provides evidence that speaks to the effect of the media on auditor independence. Consistent with prior research (DeFond, Raghunandan, and Subramanyam 2002; and Li 2009) I test the propensity of auditors to issue modified audit opinions,²⁷ and I then test the propensity for auditors to modify their reports to issue a going concern opinion. I follow prior literature in developing the following logistic model where the dependent variable is an indicator variable set equal to one if the audit report includes an opinion modification (specifically a going concern opinion in one variation of the test). The *visibility* variable is as defined above. Other additional control variables include the natural log of annual revenues (*Sales*), the natural log of the market value of equity (*LnMVE*), the change in long-term debt divided by total assets (*ChgDebt*), an indicator set equal to one if the firm had negative operating cash flows in the previous year (*Prnocf*), the number of days between the fiscal year end and the auditor's report signing date (*Delay*), and an indicator variable set equal to one if the firm issues new debt in the following year (*NewDebt*).

$$\begin{aligned} \text{Opinion Variable} = & \beta_0 + \beta_1 \text{LnVis_FiscalYear} + \beta_2 \text{Sales} + \beta_3 \text{ROA} + \beta_4 \text{LnMVE} + \beta_5 \text{Debt} \\ & + \beta_6 \text{ChgDebt} + \beta_7 \text{Loss} + \beta_8 \text{Prnocf} + \beta_9 \text{Big4} + \beta_{10} \text{Delay} + \beta_{11} \text{NewDebt} \\ & + \beta_{12} \text{Cret_FY} + \beta_{13} \text{RetVol_FY} + \beta_{14} \text{TradeVol_FY} + \Sigma \text{Year} + \varepsilon \end{aligned} \quad (2)$$

I also restrict the sample for this test to companies that are experiencing financial distress²⁸ defined as firms that report either negative net income or negative operating cash flows

²⁷ Consistent with prior literature, I define a modified audit report as one receiving anything other than a standard unqualified opinion coded as one in Compustat.

²⁸ This is consistent with research finding that combining stressed and nonstressed firms is not reflective of the auditor's decision problem (Hopwood, McKeown, and Mutchler 1994).

during the current fiscal year (DeFond, Raghunandan, and Subramanyam 2002).

Signed Accruals as a Proxy for Increased Auditor Scrutiny of Financials

As another test of the effects of media coverage on auditor decisions, I examine the underlying financial reporting that the auditor is opining on. Prior research has used accruals as a proxy for audit quality (see Francis 2004 for a brief review; Venkataraman, Weber, and Willenborg 2008). Conceptually, since accruals are subjective measures, reasonable assurance is challenging to obtain. Also, since manipulating accruals is viewed as a ready means of committing earnings management, auditors should be relatively more concerned when assessing them. Francis and Krishnan (1999) emphasize the risk posed by accruals to auditors because of their uncertainty and the challenges in verifying them even with additional effort.²⁹ It is presumed that a high quality audit will constrain earnings management and will be associated with smaller absolute accruals. However, prior research suggests that auditors are asymmetric in their responses to the type of problems encountered in their auditing process. Specifically, auditors appear to be more averse to the risk of errors that overstate performance than to the risk of potential performance understatements (Barron, Pratt, and Stice 2001; Abbot, Parker, and Peters 2006). Therefore, I study the relation between *visibility* and signed accruals and predict that they will be negatively related.

To test the relationship between media coverage and accruals, I run a panel regression using signed total accruals (*Acc*) as the dependent variable with standard errors clustered by firm.

²⁹ In a panel discussion at the 2011 AAA Annual Meeting, Zoe-Vonna Palmrose spoke extensively about using abnormal accruals as a proxy for non-GAAP earnings management. The tenor of her remarks was that abnormal accruals are a very poor measure of material non-GAAP misstatements. Without disagreeing with her remarks, I propose to test accruals because of the risk associated with their uncertainty, and rely on there being a correlation between changes in accruals and auditor efforts to negotiate lower accruals. I do not contend that these changes are indicative of quality though.

I remove observations from the financial industry and observations with extreme absolute accruals.³⁰ Control variables not previously defined include the lagged value of net property, plant and equipment scaled by lagged total assets (*PPE*), the change in total assets scaled by lagged total assets (*AssetGrowth*), the change in total revenue scaled by lagged total assets (*DSales*), net operating cash flow scaled by lagged total assets (*CFO*), and the market value of equity divided by the book value of common equity (*MB*).

$$\begin{aligned}
 Acc = & \beta_0 + \beta_1 LnVis_FiscalYear + \beta_2 LnAssets + \beta_3 LnMVE + \beta_4 PPE + \beta_5 AssetGrowth \\
 & + \beta_6 DSales + \beta_7 ROA + \beta_8 CFO + \beta_9 MB + \beta_{10} Debt + \beta_{11} Loss + \beta_{12} Cret_FY \\
 & + \beta_{13} RetVol_FY + \beta_{14} TradeVol_FY + \Sigma Year + \Sigma Ind + \varepsilon
 \end{aligned} \tag{3}$$

Increased Probability of Auditor Turnover

Finally, I test the effect of media coverage on auditor turnover. Francis and Krishnan (1999) identify the screening of clients as one of the auditor's potential responses to the uncertainty of accruals.³¹ Krishnan and Krishnan (1997) also examine auditor resignations as a response to litigation risk. Following my prediction that auditors consider increased media coverage of clients to represent increased risk, I expect media coverage to be positively associated with auditor turnover.

The logistic regression model (4) below describes the structure of this test. The dependent variable (*Turnover*) is an indicator variable set equal to one if there is a change of auditors in the subsequent year, and zero otherwise. Control variables not previously defined include the change in sales scaled by lagged sales (*Growth*), an indicator variable set equal to one if an auditor has

³⁰ I exclude observations where absolute total accruals are greater than the value of total assets. The results are not sensitive to this exclusion.

³¹ Client screening involves both ending existing client relationships and declining to accept new clients. I am only able to observe instances of the former type of client screening.

worked for the client for less than four years (*ShortTenure*), and an indicator variable set equal to one if the auditor has worked for the client for more than eight years (*LongTenure*).

$$\begin{aligned}
 \text{Turnover} = & \beta_0 + \beta_1 \text{LnVis_FiscalYear} + \beta_2 \text{LnAssets} + \beta_3 \text{LnMVE} + \beta_4 \text{Sales} + \beta_5 \text{ROA} \\
 & + \beta_6 \text{Growth} + \beta_7 \text{Debt} + \beta_8 \text{Big4} + \beta_9 \text{ShortTenure} + \beta_{10} \text{LongTenure} \\
 & + \beta_{11} \text{Cret_FY} + \beta_{12} \text{RetVol_FY} + \beta_{13} \text{TradeVol_FY} + \Sigma \text{Year} + \varepsilon
 \end{aligned} \tag{4}$$

Additional Analyses

As an alternate assessment of the tone of coverage, I also consider the effect of a firm's *prevalent sentiment* on auditor effort when controlling for total *visibility*. *PrevSent_EQ* is the mean *CSS* value for all stories a firm appears in during the first two quarters of the fiscal year. *PrevSent_EQ* is added to model (1) as an additional explanatory variable.

As a final test I examine year to year changes to better infer a causal relationship between the media coverage variables and auditor effort proxies. I perform a changes analysis on my primary test of audit effort using audit fees as a proxy as well as a changes analysis when *visibility* is disaggregated by tone.

III. Data Sources

The data used for measurement of business press attributes is obtained from RavenPack, a publicly available data source. RavenPack provides real-time news analytics on a broad number of textual business news sources primarily including newswires,³² but also including newspapers such as *The Wall Street Journal*, major regional newspapers, and reputable blogs and other

³² RavenPack analyzes news stories from many different news sources, but their representatives indicate that the largest source of the data is newswires. The complete list of publishers and sources used by RavenPack is proprietary, but they do indicate that they include Dow Jones Newswires, PRNewswire, Businesswire, Globe Newswire, Marketwire, AP, CNW, The Wall Street Journal, Midnight Trader, Barron's, and more.

internet sources for financial news. The RavenPack data cover the years 2005 through May of 2011.

When a news story becomes available on these sources, RavenPack instantly analyzes the text and identifies all companies named. A separate observation is maintained for each company in the story. Each observation includes a *RELEVANCE* score based on the prominence of the company in the story. *RELEVANCE* scores range from 0 to 100 with 100 being the most relevant.³³ Knowing how relevant a company is in a story aids in assessing how relevant other news analytics may be to that company. I limit my sample to observations with scores greater than or equal to 90. According to RavenPack this restriction retains only companies appearing in headlines and companies with identifiable roles from the category list³⁴ which includes 5,610,986 news story observations.³⁵

[INSERT TABLE 1 ABOUT HERE]

Stories are classified as one of five news types including full articles, press releases, hot news flashes, news flashes, and tabular material. I eliminate press release observations which are generated by firms in order to focus on the relationship between external media coverage and audit effort. This leaves 4,413,682 relevant news story observations. The sample is further reduced as I require observations to have an ISIN for merging RavenPack data with the Compustat, CRSP, and Audit Analytics databases. After merging and removing observations

³³ Companies with identifiable roles in one of approximately 280 news categories (e.g. the firm is the plaintiff in a patent infringement lawsuit) are assigned relevance scores of 100. An example of why a company would receive a *RELEVANCE* score of 0 would be a firm's press release on a newswire that includes tags of other companies' names at the bottom of the press release. The companies not mentioned in the body of the text, only appearing as tags at the end are identified by RavenPack's algorithm, but receive low relevance scores.

³⁴ RavenPack instructed that companies named in headlines generally receive scores of 90 or more.

³⁵ As advised by RavenPack, I also remove all observations pertaining to market imbalance reports.

missing data for the calculation of control variables, 17,356 firm year observations remain for use in the main tests using audit fees for the dependent variable. Additional data requirements reduce this sample for each of the supporting tests as denoted in Table 1. Each of these firm year observations combines information from multiple RavenPack observations to create news coverage attribute variables as described earlier. For firms without any press coverage, I set *visibility* values to correspond to zero coverage, and for additional tests *prevalent sentiment* values (which are described below) to correspond with a neutral media tone.

[INSERT TABLE 2 ABOUT HERE]

Most stories in my sample are full articles with 2,245,105 observations, with the second greatest news type being regular news flashes having 1,641,450 observations.

Five measures of sentiment are also assigned to each observation. These analytics indicate whether the tone of the story is negative, positive, or neutral.³⁶ A sixth measure of tone is created using a proprietary combination of the first five scores. I use this composite of the other sentiment scores, the Composite Sentiment Score (*CSS*), as my proxy for the tone of each story in additional tests. I perform a linear transformation of *CSS* so it can be used as a measure of tone which ranges from -0.5 to 0.5 in value. Negative values indicate the story has a negative tone, *CSS* values of zero are considered neutral, and positive values are considered positive in tone. The mean *CSS* values for all news types are slightly negative and the median values are all zero corresponding with neutral tones for the median news story. A large portion of the scores are zero which supports the notion of an objective presentation of business press stories.

³⁶ The five measures utilize separate dictionaries developed to assess tone in different business contexts. Recent research has highlighted that the use of general language dictionaries fails to account for the specialized meanings words can take in a business context (Loughran and McDonald, 2011).

The *CSS* analytic is used to develop three new measures of *visibility* which partition news stories into negative, neutral and positive tone subgroups. *BadNewsVis* is the natural log of one plus the number of stories published about a firm during the first two quarters of the fiscal year that had a negative *CSS* value. *GoodNewsVis* and *NeutralNewsVis* are calculated similarly. I also calculate measures corresponding to the full fiscal year for untabulated tests. These measures are implemented as additional analysis of the effect of media attributes other than “tone-deaf” *visibility*.

In additional tests *CSS* is used to create two testable measures of a client’s coverage sentiment. *PrevSent_EarlyQuarters* is the mean *CSS* value for a firm’s coverage (the stories counted in *visibility* measures) for the first two quarters of the fiscal year, and a measure for the full fiscal year is also calculated. This measure is intended to capture the average tone of a firm’s coverage.

Pearson correlation coefficients are presented in Table 3. The main dependent variable, *Ln_Fee* is significantly correlated with all of the test variables. *Visibility* measures are positively correlated with measures of *prevalent sentiment*. This is consistent with the observation in Green, Hand, and Penn (2011) that there are more good news and neutral articles than bad news articles in the business press.

[INSERT TABLE 3 ABOUT HERE]

IV. Results

I find support for H1 both when measuring *visibility* over the first half of the fiscal year and when permitting it to cover the entire fiscal year. The results of these panel regressions are

shown in Table 4 with the results for tests with the coverage variables measured over the first two fiscal quarters displayed in Panel A and those for the tests with fiscal year measured coverage variables presented in Panel B. The significant positive coefficients for measures of *visibility* are consistent with greater media coverage being associated with greater auditor effort as proxied for by audit fees. As with prior studies, the coefficient on *LnAssets* is positive and highly significant, and the adjusted R^2 is high at about 0.83 in both specifications.

[INSERT TABLE 4 ABOUT HERE]

To further address the concern that bad news events are the actual cause of the primary test results I investigate the impact of tone on auditor effort. Three new measures of *visibility* are employed: *BadNewsVis*, *GoodNewsVis* and *NeutralNews_Vis* replace *LnVis_EarlyQuarters* in model (1). Each is predicted to be positive, but by measuring them separately auditor effort reactions to *visibility* are permitted to vary with the tone of coverage. Results reported in Table 5 show that, as predicted, each tone-sensitive *visibility* variable has a significant and positive coefficient.

[INSERT TABLE 5 ABOUT HERE]

Further evidence supporting the other auditor response hypotheses is provided through tests of the effect of *visibility* on audit opinion modifications, accrual values, and auditor turnover. As shown in the first two columns of Table 6, *visibility* is positively related to the probability of the auditor issuing a modified audit opinion when tested in sample of all firm year

observations (Column 1) as well as when the sample is restricted to distressed firms (Column 2). The probability of issuing a going concern opinion in the distressed firms subsample is also positively associated with *visibility*. Unlike with the tests of audit fees, an audit opinion is not final until the end of the engagement, so it is not necessary to evaluate the tests using *LnVis_EarlyQuarters* as a measure of client firm media *visibility*.

[INSERT TABLE 6 ABOUT HERE]

The results from the test of signed accruals are displayed in Table 7. The coefficient on *LnVis_FiscalYear* is -0.008 and is statistically significant with a t-statistic of -4.4. This result is consistent with auditors influencing accruals downward. This is the expected relationship for auditors responding to the uncertainty of accruals and the increased risk pertaining to client *visibility* by asymmetrically requiring downward adjustments of accruals in audited financial statements. This result serves as another piece of evidence that auditors respond to media coverage of a client firm.

[INSERT TABLE 7 ABOUT HERE]

Results for tests of turnover confirm predictions that auditor turnover is positively related to levels of media coverage. Controlling for several client characteristics (size, market value, and performance) and auditor attributes (size and tenure) *LnVis_FiscalYear* has a significantly positive coefficient. Interpreted with the previous tests of audit fees, opinion modifications, and reported accruals it appears that auditors do respond to media coverage of audit clients by

increasing audit effort and altering other audit decisions. The probability of an auditor client relationship ending also increases significantly.

[INSERT TABLE 8 ABOUT HERE]

Additional Analyses Results

Table 9 shows that there is also a significant relationship in the predicted direction for *PrevSent_FiscalYear* when it is added to model (1). This evidence supports the hypothesis that auditor effort is greater for firms with more negatively toned coverage on average. The sign for the *visibility* measure is still positive and significant.

[INSERT TABLE 9 ABOUT HERE]

As a stricter test of the relationship between media *visibility* and auditor effort, I test changes in audit fees regressed on changes in fee determinant variables, I find the same support when using a changes design for the audit fee variable. Results for tests of early quarters measures of *visibility* and fiscal year measures are presented in panels A and B of Table 10. The coefficient on the audit fee variable is positive and significant in each of these tables. In Panel C, results are reported for a changes design using tone-partitioned measures of *visibility*. The signs for changes in *NeutralNewsVis* and *GoodNewsVis* are both positive and significant. The coefficient for changes in *BadNewsVis* is negative but is not even marginally significant.

[INSERT TABLE 10 ABOUT HERE]

Robustness

The tests reported in Table 10 provide greater assurance that the relationship between *visibility* and auditor effort is robust. For additional evidence, I perform several alternate tests on the primary decision proxy – audit fees. I first estimate the model (1) regression by year and size decile.³⁷ I also estimate the model as a rank regression, and then as a quantile regression at the median. These tests are performed using *visibility* measures calculated both over the first two quarters and the full fiscal year. The sign for measures of *visibility* remains positive through all of these regressions and is statistically significant.

To investigate whether effort increases related to news coverage from the previous year are eventually priced I regress lagged *visibility* on current year audit fees and find a significant positive coefficient for *visibility*. This result also holds when combining lagged measures of *visibility* with an additional variable that captures *visibility* during the first quarter of the fiscal year.

Several other specifications for the other auditor decisions have also been checked. Tests of audit opinions are robust to measurement with standard errors clustered by firm. Coefficient signs and significance are also qualitatively the same when specified as linear probability regressions with standard errors clustered by firm and year fixed effects included. Turnover regressions have been run using total asset size quintile and decile dummy variables in place of *LnAssets*. Results are also robust to alternate specifications of the control for trading volume. Calculating trading volume as the number of days that volume exceeds the mean volume for the year, and calculating volume as the standard deviation of daily share turnover during the year do not affect the variable of interest.

³⁷ Picconi and Reynolds (2009) find that this improves both the estimation and explanatory power of audit fee models that regress the natural log of audit fees on the natural log of assets and other independent variables.

Some final specifications include: removing financial industries from all tests and removing firms with absolute accruals greater than total assets; expanding the news stories to include all articles with RELEVANCE values greater than or equal to 75 (indicating the firm was identified by the end of the first paragraph of a news story); and restricting news stories to include only articles with RELEVANCE values equal to 100 (indicating that the firm has an identified role in RavenPack's category index of events of interest).

V. Conclusion

This study analyzes the effect of the business press (a key component of the information environment) on the effort and effectiveness of the institutional monitoring (by auditors) of financial reporting. Using the number of articles covering a client firm (a proxy for *visibility*) I find that auditors charge higher audit fees for clients with higher *visibility* incremental to other determinants of audit fees. The audit fee evidence is corroborated using other proxies for auditor decisions: audit report modifications, the level of accruals, and auditor turnover. Proving robust to several alternate specifications, the evidence supports the contention that there is a significant relationship between business press coverage and auditor decisions. My findings show that as the media performs increased monitoring of individual firms, external auditors do respond by working harder, increasing their propensity to modify audit opinions, negotiating lower reported accruals, and terminating the engagement with greater probability.

I test the impact of media tone and find that audit effort increases in response to measures of positive, negative, and neutral *visibility*. Additionally, I find limited evidence that audit effort is negatively related to the average tone (*prevalent sentiment*) of coverage. Collectively, the evidence suggests that the business press has an important effect on auditor decisions. I conclude

that the press not only participates in the external monitoring of financial reporting, but that through its influence on official external monitors the press actually also affects financial reporting.

Research Agenda

In a concurrent working paper, Green, Hand, and Penn (2011) find evidence that although there are a greater number of business press articles that are positive and neutral in tone relative to bad news articles, there does exist a bad news bias in the business press. They find bad news stories receive a greater number of follow up stories than good news stories. In addition to documenting the presence of bias, they provide evidence supporting two different causes and document how bias affects market reactions to the release of news stories. One finding of interest is that there is a stronger bad news bias for firms which have recently received relatively greater press coverage measured using the number of stories about a firm in the previous month. Market responses to subsequent news releases appear to be dampened for these firms suggesting that market participants seek out more information privately in the presence of bad news bias.

In this study I seek to understand in general how auditors respond to increased coverage levels for firms. The Green, Hand, and Penn (2011) findings suggest that as firms receive greater press coverage, they are both subjected to more biased coverage and are greater scrutinized by investors. I expect auditors to increase their effort in anticipation of this increased scrutiny. Subsequent to this paper, I propose to further examine the relationship between media coverage and auditor effort by considering issues such as the effect of auditor expertise on the influence of media coverage, as well as the influence of media source on auditor responses.³⁸ Some other

³⁸ Joe (2002) suggests future research could consider the influence of redundant positive information on auditor decisions, how the source of the redundant information affects its influence on auditors, and how the type and

areas for future research include the internal control audit, and the possible contagion effects of industry level media measures on audit engagements. In future drafts of this paper I will be looking specifically at the costs of high *visibility* to external auditors to better understand the expected costs auditors perceive in press coverage. An example in the existing literature is documented by Barton (2005) who shows that clients with high *visibility* were faster to replace Arthur Andersen as their auditor following the Enron scandal.

quantity of press coverage affect the influence of redundant information.

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Appendix:

Variable	Definition
<i>Acc</i>	The signed value of total accruals scaled by lagged total assets.
<i>Acq</i>	An indicator variable set equal to one if either acquisitions or restructuring costs after-tax are nonzero amounts.
<i>AssetGrowth</i>	Total assets less the lagged value of total assets scaled by lagged total assets.
<i>Big4</i>	An indicator variable set equal to one for firms audited by a Big 4 auditor and zero otherwise.
<i>CFO</i>	Net operating cash flow scaled by lagged total assets.
<i>ChgDebt</i>	The change in long-term debt divided by lagged total assets.
<i>CRet_EQ</i>	A firm's cumulative market adjusted return for the first two quarters of the fiscal year.
<i>CRet_FY</i>	A firm's cumulative market adjusted return for the fiscal year.
<i>D_</i>	Prefix indicating that a variable is measured as a change (current year less previous year value).
<i>Debt</i>	The sum of total debt in current liabilities and total long-term debt divided by lagged total assets.
<i>Delay</i>	The number of days between the fiscal year end and the auditor's report signing date.
<i>DSales</i>	Total revenue less lagged total revenue scaled by lagged total assets.
<i>GConcern</i>	An indicator variable equal to one if the firm receives a going concern opinion in the audit report.
<i>Growth</i>	Total sales less lagged sales scaled by lagged sales.
<i>Ind</i>	Fixed effect indicating the observation firm's two-digit SIC.
<i>Inventory</i>	Total inventory divided by lagged total assets.
<i>LitRisk</i>	An indicator variable equal to one if the firm belongs to a high litigation risk industry following Francis, Philbrick, and Schipper (1994). The SICs for the industries are: 2833 through 2836, 3570 through 3577, 3600 through 3674, 5200 through 5961, 7370 through 7374, and 8731 through 8734.
<i>LnAssets</i>	The natural log of total assets.
<i>LnBadNewsVis</i>	The natural log of one plus the number of stories a firm appears in during the first two quarters of the fiscal year which have a CSS value indicating negative tone.
<i>LnFee</i>	The natural log of audit fees.
<i>LnGoodNewsVis</i>	The natural log of one plus the number of stories a firm appears in during the first two quarters of the fiscal year which have a CSS value indicating a positive tone.
<i>LnMVE</i>	The natural log of the market value of equity.

<i>LnNeutralNewsVis</i>	The natural log of one plus the number of stories a firm appears in during the first two quarters of the fiscal year which have a CSS value indicating neutral tone.
<i>LnVis_EarlyQuarters</i>	The natural log of one plus the number of stories a firm appears in during the first two quarters of the fiscal year.
<i>LnVis_FiscalYear</i>	The natural log of one plus the number of stories a firm appears in during the fiscal year.
<i>LongTenure</i>	Indicator variable set equal to one if an auditor has worked for the client for more than eight years.
<i>Loss</i>	An indicator variable equal to one if income before extraordinary items was negative in the current or either of the two previous years.
<i>MB</i>	The market value of equity divided by the book value of common equity.
<i>ModOpinion</i>	An indicator variable equal to one if the firm receives a modified audit opinion which is defined as anything other than a standard unqualified audit opinion coded as one in Compustat.
<i>NewDebt</i>	An indicator variable set equal to one if the firm issues new debt in the subsequent year.
<i>PPE</i>	The lagged value of net property, plant and equipment scaled by lagged total assets.
<i>PrevSent_FY</i>	The mean Composite Sentiment Score (CSS) value for stories used in calculating <i>LnVis_FiscalYear</i> .
<i>Prnocf</i>	An indicator variable set equal to one if the firm had negative operating cash flows in the previous year.
<i>Receivables</i>	Total receivables divided by lagged total assets.
<i>RetVol_EQ</i>	The natural log of the standard deviation of a firm's daily market adjusted returns for the first two quarters of the fiscal year.
<i>RetVol_FY</i>	The natural log of the standard deviation of a firm's daily market adjusted returns for the fiscal year.
<i>ROA</i>	Operating income after depreciation divided by lagged total assets.
<i>Sales</i>	The natural log of annual revenues.
<i>ShortTenure</i>	Indicator variable set equal to one if an auditor has worked for the client for less than four years.
<i>TradeVol_EQ</i>	The natural log of the mean value of a firm's daily trading volume measured as trading volume scaled by shares outstanding.
<i>TradeVol_FY</i>	The standard deviation of a firm's daily trading volume for the fiscal year where trading volume is calculated as the day's trading volume scaled by the number of shares outstanding.
<i>Turnover</i>	Indicator variable set equal to one if there is an auditor change in the subsequent year.
<i>Year</i>	Fixed effect indicating the observation's fiscal year.

Table 1: Sample composition

This table presents information on the number of observations used in the test samples. Analytics for news stories appearing from January 2005 through May 2011 are collected from RavenPack, a publicly available news analytics provider. Separate observations are created for each firm named in a news story and assigned a *RELEVANCE* score from 0 to 100, with higher scores corresponding to greater prominence of the firm in the story. News stories are classified as one of five news types including journalist generated full articles, news flashes, hot news flashes, tabular material, and firm generated press releases. RavenPack observations are condensed to firm year measures of *visibility* which is the natural log of one plus the number of articles about a firm and *prevalent sentiment* which is the average sentiment of articles covering a firm. Data from CRSP, Compustat, and Audit Analytics are merged to the RavenPack data.

	N
Individual US story company observations with <i>RELEVANCE</i> score greater than or equal to 90	5,610,986
Press release observations removed	4,413,682
Unique firm years with ISIN	34,491
Firm year observations with CRSP data and Compustat data*	20,626
Observations with Audit Analytics data and not missing data for computation of variables for tests of audit fees	17,356
Observations with data for computation of variables for audit opinion tests	16,960
Observations with data for computation of variables for audit opinion tests for distressed firms	5,751
Observations with data for computation of variables for auditor turnover tests	15,143
Observations with data for computation of variables for accruals tests	13,468
Observations with sufficient data to calculate one year changes for audit fee tests	12,889

* For years without coverage, *visibility* and *prevalent sentiment* measures are set to indicate no coverage and a neutral press sentiment.

Table 2: Sample data descriptive statistics

This table presents descriptive statistics for the test samples and variables. Analytics for news stories appearing from January 2005 through May 2011 are collected from RavenPack, a publicly available news analytics provider. Separate observations are created for each firm named in a news story and assigned a *RELEVANCE* score from 0 to 100, with higher scores corresponding to greater prominence of the firm in the story. Observations with *RELEVANCE* scores greater than or equal to 90 are retained. News stories are classified as one of five news types including journalist generated full articles, news flashes, and hot news flashes, tabular material, and firm generated press releases which are excluded. Each story is assigned five sentiment scores which are each calculated using dictionaries designed to capture sentiment of textual language more accurately in business settings. A composite of these scores (*CSS*) is also created for each score.

Panel A: News data composition

Panel A displays descriptive statistics for a linear transformation of *CSS* are provided by news type. Positive values of *CSS* denote a positive sentiment, negative values denote a negative sentiment, and zero indicates a neutral sentiment.

News Type	N	Mean CSS	Median CSS	Std Dev CSS
Full Article	2,245,105	-0.0036	0.0000	0.0473
Hot News Flash	62,865	-0.0192	0.0000	0.0853
News Flash	1,641,450	-0.0106	0.0000	0.0751
Tabular Material	464,262	-0.0049	0.0000	0.0215
Total	4,413,682			

Panel B: Test variables descriptive statistics

Panel B provides descriptive statistics for the test variables. Fee data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. Refer to the appendix for variable definitions.

Variable	N	Mean	25th Pctl	Median	75th Pctl	Std Dev
<i>Acq</i>	17,356	0.484	0.000	0.000	1.000	0.500
<i>Big4</i>	17,356	0.694	0.000	1.000	1.000	0.461
<i>CRet_EQ</i>	17,356	1.020	0.832	0.977	1.141	0.340
<i>CRet_FY</i>	17,356	1.003	0.720	0.933	1.179	0.480
<i>Debt</i>	17,356	0.233	0.023	0.165	0.344	0.256
<i>Inventory</i>	17,356	0.092	0.000	0.025	0.141	0.132
<i>LitRisk</i>	17,356	0.273	0.000	0.000	1.000	0.446
<i>LnAssets</i>	17,356	6.407	4.973	6.443	7.777	2.064
<i>LnBadNewsVis</i>	17,356	2.180	1.609	2.197	2.773	0.996
<i>LnFee</i>	17,356	13.603	12.729	13.605	14.422	1.266
<i>LnGoodNewsVis</i>	17,356	2.499	1.946	2.485	3.045	0.965
<i>LnMVE</i>	17,356	6.058	4.625	6.016	7.407	1.999
<i>LnNeutralNewsVis</i>	17,356	3.136	2.485	3.135	3.738	0.907
<i>LnVis_EarlyQuarters</i>	17,356	3.826	3.258	3.807	4.317	0.841
<i>LnVis_FiscalYear</i>	17,356	4.516	3.970	4.489	4.970	0.803
<i>Loss</i>	17,356	0.417	0.000	0.000	1.000	0.493
<i>ModOpinion</i>	17,356	0.487	0.000	0.000	1.000	0.500
<i>PrevSent_EQ</i>	17,356	-0.010	-0.019	-0.005	0.004	0.022
<i>PrevSent_FY</i>	17,356	-0.010	-0.018	-0.006	0.002	0.019
<i>Receivables</i>	17,356	0.234	0.061	0.142	0.282	0.254
<i>RetVol_EQ</i>	17,356	-3.686	-4.097	-3.716	-3.311	0.580
<i>RetVol_FY</i>	17,356	-3.607	-4.010	-3.632	-3.231	0.562
<i>ROA</i>	17,356	0.029	0.007	0.053	0.117	0.205
<i>TradeVol_EQ</i>	17,356	-0.124	-0.592	-0.212	0.277	0.604
<i>TradeVol_FY</i>	17,356	-0.030	-0.485	-0.135	0.357	0.584

Table 3 Pearson correlation coefficients

This table provides correlations for the test variables. Fee data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. Refer to the appendix for variable definitions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	
(1) <i>Acq</i>	-																									
(2) <i>Big4</i>	0.24	-																								
(3) <i>CRet_EQ</i>	-0.01	0.03	-																							
(4) <i>CRet_FY</i>	0.00	0.07	0.69	-																						
(5) <i>Debt</i>	0.08	0.11	0.03	0.01	-																					
(6) <i>Inventory</i>	0.05	-0.01	0.06	0.04	-0.02	-																				
(7) <i>LitRisk</i>	0.04	0.05	0.02	0.01	-0.18	0.06	-																			
(8) <i>LnAssets</i>	0.25	0.45	0.00	0.05	0.26	-0.12	-0.23	-																		
(9) <i>LnBadNewsVis</i>	0.23	0.38	0.03	0.04	0.09	0.03	0.16	0.45	-																	
(10) <i>LnFee</i>	0.42	0.60	0.03	0.06	0.18	0.03	-0.01	0.73	0.59	-																
(11) <i>LnGoodNewsVis</i>	0.28	0.36	0.04	0.05	0.13	0.01	0.10	0.55	0.59	0.63	-															
(12) <i>LnMVE</i>	0.29	0.55	0.12	0.22	0.14	-0.06	-0.04	0.82	0.55	0.79	0.64	-														
(13) <i>LnNeutralNewsVis</i>	0.29	0.42	0.06	0.08	0.13	0.02	0.09	0.57	0.70	0.68	0.68	0.68	-													
(14) <i>LnVis_EarlyQuarters</i>	0.30	0.43	0.03	0.04	0.13	0.02	0.11	0.58	0.78	0.70	0.81	0.69	0.91	-												
(15) <i>LnVis_FiscalYear</i>	0.30	0.44	0.05	0.07	0.14	0.02	0.12	0.60	0.81	0.72	0.84	0.72	0.94	0.96	-											
(16) <i>Loss</i>	-0.04	-0.11	-0.04	-0.08	0.02	-0.03	0.19	-0.36	0.06	-0.14	-0.13	-0.39	-0.15	-0.11	-0.11	-										
(17) <i>ModOpinion</i>	0.16	0.23	0.00	-0.01	0.04	0.05	0.09	0.11	0.19	0.31	0.19	0.22	0.20	0.20	0.22	0.01	-									
(18) <i>PrevSent_EQ</i>	0.08	0.12	0.05	0.03	0.03	0.00	-0.08	0.24	-0.15	0.15	0.33	0.31	0.20	0.19	0.19	-0.45	0.05	-								
(19) <i>PrevSent_FY</i>	0.08	0.13	0.10	0.12	0.04	0.00	-0.09	0.27	-0.19	0.17	0.38	0.36	0.23	0.20	0.21	-0.51	0.04	0.85	-							
(20) <i>Receivables</i>	-0.06	-0.29	-0.05	-0.03	-0.06	-0.10	-0.25	0.10	-0.28	-0.25	-0.18	-0.18	-0.24	-0.25	-0.26	-0.20	-0.22	0.08	0.09	-						
(21) <i>RetVol_EQ</i>	-0.12	-0.27	0.07	0.08	-0.10	0.08	0.18	-0.53	-0.12	-0.36	-0.26	-0.56	-0.24	-0.23	-0.25	0.48	-0.09	-0.36	-0.39	-0.08	-					
(22) <i>RetVol_FY</i>	-0.13	-0.28	0.01	-0.01	-0.07	0.07	0.16	-0.53	-0.12	-0.36	-0.25	-0.61	-0.25	-0.24	-0.25	0.51	-0.07	-0.36	-0.41	-0.06	0.91	-				
(23) <i>ROA</i>	0.15	0.15	0.10	0.14	0.05	0.14	-0.22	0.35	0.03	0.25	0.15	0.36	0.16	0.14	0.15	-0.49	0.02	0.27	0.34	0.11	-0.34	-0.37	-			
(24) <i>TradeVol_EQ</i>	-0.24	-0.46	-0.03	-0.05	-0.10	0.00	0.03	-0.58	-0.42	-0.61	-0.44	-0.69	-0.50	-0.50	-0.52	0.24	-0.20	-0.18	-0.20	0.24	0.40	0.40	-0.25	-		
(25) <i>TradeVol_FY</i>	-0.24	-0.48	-0.06	-0.09	-0.10	-0.01	0.03	-0.60	-0.42	-0.63	-0.45	-0.72	-0.51	-0.52	-0.53	0.26	-0.22	-0.21	-0.23	0.23	0.41	0.44	-0.28	0.90	-	

Those significant at the less than 10% level appear in bold.

Table 4: Panel regressions of audit fees on media *visibility*

This table provides results from panel regressions of *LnFee* on media coverage variables and other control variables. Year and 2-digit SIC industry fixed effects are included. Standard errors are clustered by firm. Fee data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. *LnFee* is the natural log of audit fees. *LnVis_FiscalYear* is the natural log of one plus the number stories a firm appears in during the fiscal year. *Big4* is an indicator variable equal to one for firms audits performed by a Big 4 auditor and zero otherwise. *LnAssets* is the natural log of a firm's total assets. *LnMVE* is the natural log of the market value of equity. *Inventory* is total inventory divided by lagged total assets. *Receivables* is total receivables divided by lagged total assets. *Debt* is equal to the sum of total debt in current liabilities and total long-term debt divided by lagged total assets. *ROA* is operating income after depreciation divided by lagged total assets. *Loss* is an indicator variable equal to one if income before extraordinary items was negative in the current or either of the two previous years. *ModOpinion* is an indicator variable equal to one if the firm receives a modified audit opinion which is defined as anything other than a standard unqualified audit opinion coded as one in Compustat. *LitRisk* is an indicator variable equal to one if the firm belongs to a high litigation risk industry following Francis, Philbrick, and Schipper (1994). *Acq* is an indicator variable set equal to one if either acquisitions or restructuring costs after-tax are nonzero amounts. *CRet_FY* is equal to a firm's cumulative market adjusted return for the fiscal year. *RetVol_FY* is the natural log of the standard deviation of a firm's daily market adjusted returns for the fiscal year. *TradeVol_FY* is the standard deviation of a firm's daily trading volume for the fiscal year where trading volume is calculated as the day's trading volume scaled by the number of shares outstanding. *LnVis_EQ*, *CRet_EQ*, and *TradeVol_EQ* are calculated similarly to their corresponding fiscal year measures but measured over the first two fiscal quarters.

Panel A: Panel regression with the natural log of audit fees as the dependent variable and media *visibility* measured over the first two quarters of the fiscal year as the independent variable of interest

	Pred. Sign	Coeff.	t-stat
Intercept		10.005	[46.6]
<i>LnVis_EarlyQuarters</i>	+	0.156	[12.2]
<i>Big4</i>	+	0.349	[18.0]
<i>LnAssets</i>	+	0.409	[36.3]
<i>LnMVE</i>	+	0.052	[5.3]
<i>Inventory</i>	+	0.277	[3.5]
<i>Receivables</i>	+	0.163	[2.8]
<i>Debt</i>	+	-0.107	[-3.4]
<i>ROA</i>	-	-0.144	[-3.4]
<i>Loss</i>	+	0.202	[13.1]
<i>ModOpinion</i>	+	0.149	[12.8]
<i>LitRisk</i>	+	-0.057	[-1.8]
<i>Acq</i>	+	0.213	[15.9]
<i>Cret_EQ</i>	-	-0.037	[-3.0]
<i>RetVol_EQ</i>	+	0.064	[4.0]
<i>TradeVol_EQ</i>	+	-0.037	[-2.8]
Year FE		Yes	
Industry FE		Yes	
Firm Clustering		Yes	
N		17,356	
Adjusted R2		0.8341	

t-statistics appear in bold if significant at least at the 0.10 level for one-tailed tests.

Panel B: Panel regression with the natural log of audit fees as the dependent variable and media *visibility* measured over the fiscal year as the independent variable of interest

	Pred. Sign	Coeff.	t-stat
Intercept		10.035	[46.7]
<i>LnVis_FiscalYear</i>	+	0.168	[11.1]
<i>Big4</i>	+	0.346	[17.9]
<i>LnAssets</i>	+	0.395	[34.3]
<i>LnMVE</i>	+	0.070	[6.0]
<i>Inventory</i>	+	0.286	[3.6]
<i>Receivables</i>	+	0.164	[2.8]
<i>Debt</i>	+	-0.100	[-2.9]
<i>ROA</i>	-	-0.121	[-2.9]
<i>Loss</i>	+	0.194	[12.5]
<i>ModOpinion</i>	+	0.145	[12.6]
<i>LitRisk</i>	+	-0.066	[-2.1]
<i>Acq</i>	+	0.212	[15.8]
<i>Cret_FY</i>	-	-0.078	[-8.1]
<i>RetVol_FY</i>	+	0.107	[5.8]
<i>TradeVol_FY</i>	+	-0.045	[-3.2]
Year FE		Yes	
Industry FE		Yes	
Firm Clustering		Yes	
N		17,356	
Adjusted R2		0.8354	

t-statistics appear in bold if significant at least at the 0.10 level for one-tailed tests.

Table 5: Panel regressions of audit fees on tone conditional measures of media *visibility*

This table provides results from panel regressions of *LnFee* on media coverage variables and other control variables. Year and 2-digit SIC industry fixed effects are included. Standard errors are clustered by firm. Fee data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. *LnFee* is the natural log of audit fees. *LnNeutralNewsVis* is the natural log or one plus the number of stories a firm appears in during the first two quarters of the fiscal year which have a neutral *CSS* value. *LnBadNewsVis* and *LnGoodNewsVis* are calculated similarly but for stories where *CSS* value correspond to negatively toned articles and positively toned stories respectively. Other variables are defined in Table 4 as well as in the appendix.

Panel regression with the natural log of audit fees as the dependent variable and media tone conditional *visibility* variables measured over the first two quarters of the fiscal year

	Pred. Sign	Coeff.	t-stat
Intercept		10.169	[48.4]
<i>LnNeutralNewsVis</i>	+	0.071	[6.8]
<i>LnBadNewsVis</i>	+	0.042	[5.6]
<i>LnGoodNewsVis</i>	+	0.054	[6.3]
<i>Big4</i>	+	0.350	[18.0]
<i>LnAssets</i>	+	0.407	[35.9]
<i>LnMVE</i>	+	0.049	[5.0]
<i>Inventory</i>	+	0.278	[3.5]
<i>Receivables</i>	+	0.166	[2.8]
<i>Debt</i>	+	-0.107	[-3.1]
<i>ROA</i>	-	-0.140	[-3.4]
<i>Loss</i>	+	0.199	[12.9]
<i>ModOpinion</i>	+	0.148	[12.8]
<i>LitRisk</i>	+	-0.060	[-1.9]
<i>Acq</i>	+	0.213	[15.6]
<i>Cret_EQ</i>	-	-0.038	[-3.1]
<i>RetVol_EQ</i>	+	0.057	[3.6]
<i>TradeVol_EQ</i>	+	-0.043	[-3.1]
Year FE		Yes	
Industry FE		Yes	
Firm Clustering		Yes	
N		17,356	
Adjusted R2		0.8343	

t-statistics appear in bold if significant at least at the 0.10 level for one-tailed test.

Table 6: Logistic regressions of audit opinion variables on media *visibility*

This table provides results from logistic regressions of audit opinion variables on media coverage variables and other control variables. Year fixed effects are included. Audit report data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. The modified audit opinion dependent variable *ModOpinion* is an indicator variable equal to one if the firm receives a modified audit opinion which is defined as anything other than a standard unqualified audit opinion coded as one in Compustat. The going concern opinion dependent variable *GConcern* is an indicator variable equal to one if the firm receives a going concern opinion in the audit report. *LnVis_FiscalYear* is the natural log of one plus the number stories a firm appears in during the fiscal year. *Sales* is the natural log of total revenues. *ChgDebt* is the change in long term debt scaled by lagged total assets. *Prnocf* is an indicator variable equal to one if the firm had negative operating cash flows in the previous year. *Delay* is the number of days between the fiscal year end and the audit report signature date. *NewDebt* is an indicator variable equal to one if the company issues new debt in the following year. Other variables are defined in Table 4 as well as in the appendix.

Independent variables	Dependent variable = Modified audit opinion Pred. Sign	= Modified audit opinion		Going concern opinion
		Coeff. (Pr > χ^2)	Coeff. (Pr > χ^2)	Coeff. (Pr > χ^2)
Intercept		-4.430 (<0.0001)	-4.308 (<0.0001)	-2.022 (0.0377)
<i>LnVis_FiscalYear</i>	+	0.238 (<0.0001)	0.154 (0.0061)	0.667 (<0.0001)
<i>Sales</i>	-	0.136 (<0.0001)	0.043 (0.0397)	0.017 (.3690)
<i>LnMVE</i>	?	0.054 (0.0010)	0.114 (0.0011)	-0.767 (<0.0001)
<i>ROA</i>	-	-0.142 (0.1286)	-0.011 (0.4760)	-3.017 (<0.0001)
<i>Debt</i>	+	-0.045 (0.2900)	0.310 (0.0057)	1.537 (<0.0001)
<i>ChgDebt</i>	?	-0.065 (0.3455)	-0.673 (0.0036)	-2.889 (<0.0001)
<i>Loss</i>	+	0.327 (<0.0001)	0.484 (<0.0001)	0.416 (0.2454)
<i>Prnocf</i>	+	0.246 (<0.0001)	0.168 (0.0089)	0.444 (0.0055)
<i>Big4</i>	+	0.700 (<0.0001)	0.787 (<0.0001)	0.469 (0.0009)
<i>Delay</i>	+	0.015 (<0.0001)	0.020 (<0.0001)	0.028 (<0.0001)
<i>NewDebt</i>	-	-0.200 (<0.0001)	-0.150 (0.0109)	0.364 (0.0039)
<i>Cret_FY</i>	-	-0.028 (0.2391)	-0.151 (0.0073)	-0.373 (0.0052)
<i>RetVol_FY</i>	?	0.235 (<0.0001)	0.233 (0.0070)	1.306 (<0.0001)
<i>TradeVol_FY</i>	?	-0.450 (0.0001)	-0.363 (<0.0001)	-0.793 (<0.0001)
Year FE		Yes	Yes	Yes
N		16,960	5,751	5,751
Percent concordant		75.8	74.9	90.2
Pseudo R2		0.263	0.240	0.390

χ^2 probabilities reported for one-tailed tests.

Table 7: Panel regressions of accruals variables on media *visibility*

This table provides results from panel regressions of accruals variables on media coverage variables and other control variables. Year and 2-digit SIC industry fixed effects are included. Standard errors are clustered by firm. News data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. The dependent variable *Acc* is the signed accruals scaled by lagged total assets. *LnVis_FiscalYear* is the natural log of one plus the number stories a firm appears in during the fiscal year. *PPE* is the lagged value of net property, plant and equipment scaled by lagged total assets. *AssetGrowth* is total assets less the lagged value of total assets scaled by lagged total assets. *DSales* is total revenue less lagged total revenue scaled by lagged total assets. *CFO* is net operating cash flow scaled by lagged total assets. *MB* is the market value of equity divided by the book value of common equity. Other variables are defined in Table 4 as well as in the appendix.

Independent variables	Coeff. (t-stat)
Intercept	-0.135 (-9.89)
<i>LnVis_FiscalYear</i>	-0.008 (-4.37)
<i>LnAssets</i>	0.007 (4.01)
<i>LnMVE</i>	-0.006 (-3.34)
<i>PPE</i>	0.004 (1.00)
<i>AssetGrowth</i>	0.069 (11.94)
<i>DSales</i>	-0.024 (-5.11)
<i>ROA</i>	0.717 (38.64)
<i>CFO</i>	-0.812 (-42.27)
<i>MB</i>	0.000 (-1.26)
<i>Debt</i>	-0.068 (-10.97)
<i>Loss</i>	-0.019 (-7.56)
<i>Cret_FY</i>	0.022 (10.06)
<i>RetVol_FY</i>	-0.034 (-10.75)
<i>TradeVol_FY</i>	0.012 (4.56)
Year FE	Yes
Industry FE	Yes
Firm Clustering	Yes
N	13,468
Adjusted R2	0.4846

Table 8: Logistic regressions of auditor turnover on media *visibility*

This table provides results from logistic regressions of *Turnover* on media coverage variables and other control variables. Year fixed effects are included. Audit tenure data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. The dependent variable *Turnover* is an indicator variable equal to one if there is an auditor change in the subsequent year. *LnVis_FiscalYear* is the natural log of one plus the number stories a firm appears in during the fiscal year. *Growth* is total sales less lagged sales scaled by lagged sales. *ShortTenure* is an indicator variable equal to one if the auditor has worked less than three years with the client. *LongTenure* is an indicator variable equal to one if the auditor has worked more than eight years with the client. Other variables are defined in Table 4 as well as in the appendix.

Independent variables	Pred. Sign	Coeff. (Pr > χ^2)
Intercept		-8.817 (<0.0001)
<i>LnVis_FiscalYear</i>	+	0.166 (0.0191)
<i>LnAssets</i>	-	-0.030 (0.2230)
<i>LnMVE</i>	-	-0.235 (<0.0001)
<i>Sales</i>	-	0.005 (0.4508)
<i>ROA</i>	-	-0.299 (0.0975)
<i>Growth</i>	-	-0.222 (0.0099)
<i>Debt</i>	+	-0.151 (0.1636)
<i>Big4</i>	?	0.749 (<0.0001)
<i>ShortTenure</i>	+	6.801 (<0.0001)
<i>LongTenure</i>	+	2.0852 (0.0230)
<i>Cret_FY</i>	-	0.112 (0.0915)
<i>RetVol_FY</i>	?	-0.143 (0.1158)
<i>TradeVol_FY</i>	?	0.038 (0.3440)
Year FE		Yes
N		15,143
Percent concordant		87.2
Pseudo R2		0.3402

χ^2 probabilities reported for one-tailed tests.

Table 9: Panel regressions of audit fees on media *visibility*

This table provides results from panel regressions of $LnFee$ on media coverage variables and other control variables. Year and 2-digit SIC industry fixed effects are included. Standard errors are clustered by firm. Fee data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. $LnFee$ is the natural log of audit fees. $LnVis_FiscalYear$ is the natural log of one plus the number stories a firm appears in during the fiscal year. $PrevSent_FY$ is the mean Composite Sentiment Score (CSS) value of the stories included in $LnVis_FiscalYear$. $LnNeutralNewsVis$ is the natural log of one plus the number of stories a firm appears in during the fiscal year which have a neutral CSS value. $LnBadNewsVis$ and $LnGoodNewsVis$ are calculated similarly but for stories where CSS value correspond to negatively toned articles and positively toned stories respectively. Other variables are defined in Table 4 as well as in the appendix.

Panel regression with the natural log of audit fees as the dependent variable and media *visibility* and *prevalent sentiment* measured over the first two quarters of the fiscal year

	Pred. Sign	Coeff.	t-stat
Intercept		9.977	[46.2]
$LnVis_EarlyQuarters$	+	0.159	[12.3]
$PrevSent_EarlyQuarters$	-	-0.725	[-3.0]
$Big4$	+	0.349	[18.0]
$LnAssets$	+	0.408	[36.0]
$LnMVE$	+	0.054	[5.4]
$Inventory$	+	0.278	[3.5]
$Receivables$	+	0.165	[2.8]
$Debt$	+	-0.105	[-3.1]
ROA	-	-0.138	[-3.3]
$Loss$	+	0.191	[12.3]
$ModOpinion$	+	0.150	[12.9]
$LitRisk$	+	-0.057	[-1.9]
Acq	+	0.214	[16.0]
$Cret_EQ$	-	-0.035	[-2.8]
$RetVol_EQ$	+	0.061	[3.8]
$TradeVol_EQ$	+	-0.036	[-2.8]
Year FE		Yes	
Industry FE		Yes	
Firm Clustering		Yes	
N		17,356	
Adjusted R2		0.8342	

t-statistics appear in bold if significant at least at the 0.10 level for one-tailed test.

Table 10: Panel regressions of changes in audit fees on changes in media *visibility*

This table provides results from panel regressions of D_LnFee on media coverage variables and other control variables. Year and 2-digit SIC industry fixed effects are included. Standard errors are clustered by firm. Fee data are from Audit Analytics, news data are from RavenPack, financial data are from Compustat, and returns data are from CRSP. D_LnFee is the change in the natural log of audit fees from the previous year. $D_LnVis_FiscalYear$ is the change in the natural log of one plus the number stories a firm appears in during the fiscal year from the previous year. $D_LnVis_EarlyQuarters$ $PrevSent_FY$ is the mean Composite Sentiment Score (CSS) value of the stories included in $LnVis_FiscalYear$. $LnNeutralNewsVis$ is the natural log or one plus the number of stories a firm appears in during the fiscal year which have a neutral CSS value. $LnBadNewsVis$ and $LnGoodNewsVis$ are calculated similarly but for stories where CSS values correspond to negatively toned articles and positively toned stories respectively. Other variables are defined in Table 4 as well as in the appendix.

Panel A: Panel regression with the change in the natural log of audit fees from the previous year as the dependent variable and media *visibility* measured over the first two quarters of the fiscal year

	Pred. Sign	Coeff.	t-stat
Intercept		-0.098	[-0.8]
$D_LnVis_EarlyQuarters$	+	0.027	[4.6]
D_Big4	+	0.240	[9.4]
$D_LnAssets$	+	0.263	[16.7]
D_LMVE	+	-0.016	[-2.7]
$D_Inventory$	+	0.128	[2.0]
$D_Receivables$	+	-0.049	[-1.3]
D_Debt	+	0.019	[1.0]
D_ROA	-	-0.107	[-3.2]
D_Loss	+	0.038	[5.2]
$D_ModOpinion$	+	-0.013	[-2.6]
D_Acq	+	0.027	[4.8]
D_Cret_EQ	-	-0.003	[-0.5]
D_RetVol_EQ	+	0.003	[0.4]
$D_TradeVol_EQ$	+	0.012	[2.0]
Year FE		Yes	
Industry FE		Yes	
Firm Clustering		Yes	
N		12,889	
Adjusted R2		0.1272	

t-statistics appear in bold if significant at least at the 0.10 level for one-tailed test.

Panel B: Panel regression with the change in the natural log of audit fees from the previous year as the dependent variable and media *visibility* measured over the fiscal year

	Pred. Sign	Coeff.	t-stat
Intercept		-0.094	[-0.8]
<i>D_LnVis_FiscalYear</i>	+	0.052	[6.7]
<i>D_Big4</i>	+	0.239	[9.3]
<i>D_LnAssets</i>	+	0.245	[14.8]
<i>D_LMVE</i>	+	0.002	[0.3]
<i>D_Inventory</i>	+	0.124	[1.9]
<i>D_Receivables</i>	+	-0.041	[-1.1]
<i>D_Debt</i>	+	0.025	[1.2]
<i>D_ROA</i>	-	-0.107	[-3.2]
<i>D_Loss</i>	+	0.040	[5.4]
<i>D_ModOpinion</i>	+	-0.013	[-2.6]
<i>D_Acq</i>	+	0.026	[4.5]
<i>D_Cret_FY</i>	-	-0.022	[-3.9]
<i>D_RetVol_FY</i>	+	0.008	[0.8]
<i>D_TradeVol_FY</i>	+	0.010	[1.6]
Year FE		Yes	
Industry FE		Yes	
Firm Clustering		Yes	
N		12,889	
Adjusted R2		0.1314	

t-statistics appear in bold if significant at least at the 0.10 level for one-tailed test.

Panel C: Panel regression with the change in the natural log of audit fees from the previous year as the dependent variable and changes in media tone conditional *visibility* measures estimated for the first two quarters of the fiscal years

	Pred. Sign	Coeff.	t-stat
Intercept		-0.100	[-0.8]
<i>D_LnNeutralNewsVis</i>	+	0.017	[3.4]
<i>D_LnBadNewsVis</i>	+	-0.003	[-1.0]
<i>D_LnGoodNewsVis</i>	+	0.015	[3.8]
<i>D_Big4</i>	+	0.240	[9.4]
<i>D_LnAssets</i>	+	0.262	[16.6]
<i>D_LMVE</i>	+	-0.016	[-2.7]
<i>D_Inventory</i>	+	0.127	[2.0]
<i>D_Receivables</i>	+	-0.048	[-1.3]
<i>D_Debt</i>	+	0.018	[0.9]
<i>D_ROA</i>	-	-0.110	[-3.3]
<i>D_Loss</i>	+	0.040	[5.4]
<i>D_ModOpinion</i>	+	-0.013	[-2.5]
<i>D_Acq</i>	+	0.027	[4.7]
<i>D_Cret_EQ</i>	-	-0.004	[-0.5]
<i>D_RetVol_EQ</i>	+	0.002	[0.3]
<i>D_TradeVol_EQ</i>	+	0.012	[2.0]
Year FE		Yes	
Industry FE		Yes	
Firm Clustering		Yes	
N		12,889	
Adjusted R2		0.1281	

t-statistics appear in bold if significant at least at the 0.10 level for one-tailed test.