# The Impact of Media Coverage on Voluntary Disclosure

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## Abstract

Prior research establishes that media coverage can influence manager behavior by broadly distributing information and directing the attention of investors and other stakeholders. In this study, I investigate whether and how firm-specific media coverage affects managers' voluntary disclosure decisions. I show that prior media coverage is positively associated with the both the likelihood of issuing management guidance and the quantity of guidance issued. The relation between media coverage and guidance is stronger for firms in which investors have a greater ability to influence managers' voluntary disclosure decisions, for media coverage from more credible news sources, and for media articles that disseminate information quickly rather than provide additional commentary. Firms with more media coverage are also significantly more likely to hold earnings conference calls, speak more during conference calls, and issue more press releases. Examining plausibly exogenous variation in media coverage, including restructuring events at the *Wall Street Journal*, I find evidence consistent with my main results. My study suggests that media coverage affects investor demand for public disclosure and provides new insights into the influence of the media on manager behavior.

*Keywords*: business press; news media; information intermediaries; voluntary disclosure
*JEL Codes*: M40, G10, G20

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## 1. Introduction

A growing literature documents that the media play an important role as an information intermediary by broadly disseminating news and creating information for market participants. Broad dissemination and information creation by the media can reduce information acquisition costs (Bloomfield, 2002) and provide investors with new value relevant information (Miller, 2006).[1] Consistent with these arguments, several prior studies find that media coverage can affect corporate information environments, for example, by reducing information asymmetry among investors, reducing the cost of capital, reducing mispricing, improving price discovery, and increasing trading activity.[2]

As an information intermediary, the news media can have a significant influence on manager behavior. By directing the attention and scrutiny of investors and other stakeholders towards managers' actions, media coverage can discipline insider trading (Dai et al., 2015), reduce corporate governance violations (Dyck et al., 2008), and influence capital allocation decisions (Liu and McConnell, 2013). While prior studies find that the media play an important role in affecting stock prices and disciplining manager decision-making, there is little evidence on whether the media can affect voluntary disclosure decisions. This question is especially relevant given recent evidence of the importance of other information intermediaries, such as sell-side analysts and credit rating agencies, in influencing disclosure decisions (Chapman and Green, 2018; Basu et al., 2018). In this study, I examine whether and how media coverage affects managers' voluntary disclosure decisions.

[1] I use the terms "media" and "news media" to refer broadly to platforms for distributing information, including broadcast, digital, and print media. However, the focus of my analysis is on information conveyed through business-focused newspapers and newswires. While I do not examine information conveyed through social media, I see opportunities for future research in this area that might parallel my analysis.

[2] See for example Bushee et al. (2010), Liu et al. (2014), Drake et al. (2014), Peress (2008), Twedt (2016), Soltes (2010), Engerlberg and Parsons (2011), Peress (2014), and Blankespoor et al. (2017).

Media coverage may increase demand for public disclosure by influencing investors' monitoring intensity. Investors demand information from firms in part because greater firm transparency and disclosure reduces monitoring costs and facilitates the assessment of managers' actions (e.g., Gillan and Starks, 2000; Hartzell and Starks, 2003). Indeed, empirical studies suggest that changes in investor demand for information, in particular by institutional investors, affect voluntary disclosure policies (e.g., Bird and Karolyi, 2016; Boone and White, 2015).[3]

Prior literature has established that the media play a role in corporate governance by lowering information acquisition costs and increasing monitoring of managers' actions (e.g., Dyck et al., 2008). I argue that the media's influence on investor monitoring intensity affects investor demand for public information from managers. Supporting this, recent empirical studies find that exogenous changes in investor attention are positively related to managers' voluntary disclosure decisions (Abromova et al., 2019; Basu et al., 2019). If media coverage directs greater investor attention and monitoring intensity towards managers, then greater media coverage may increase managers' propensity to voluntarily disclose information.[4]

On the other hand, media coverage may decrease investors' demand for public disclosure to the extent that journalists produce information that substitutes for management provided information. Media articles can provide markets with new information by aggregating, synthesizing, and certifying information from other information sources, including regulatory filings and sell-side analysts' research, and by engaging in their own original investigations (e.g., Miller, 2006). Unlike other information intermediaries such as sell-side analysts, the media are

[3] Journalists may also directly demand disclosure from managers to reduce their cost of gathering and processing information, as is the case with sell-side analysts (Chapman and Green, 2018). My focus on *investor* demand for disclosure is motivated by prior studies that suggest that journalists have the greatest influence on manager behavior by distributing information to investors and other influential stakeholders (Liu and McConnell, 2013).

[4] It is plausible that greater media coverage could also influence voluntary disclosure decisions by affecting investor beliefs about the likelihood that managers are withholding information (Dye, 1985) or by engaging in whistleblowing activities that reveal non-public information (Dyck et al., 2010). While interesting and impactful, these investigative activities by journalists are relatively infrequent (Miller, 2006) and are not the focus of this study.

less likely to have private ties to managers, and thus news stories could represent a more credible source of information (Kothari et al., 2009). If information production by the media can, in part, substitute for management provided information, then media coverage may reduce voluntary disclosure. Thus, I argue that it is ex-ante unclear whether media coverage is positively or negatively related to voluntary disclosure.

In my baseline analyses, I examine the association between media coverage and the propensity to issue management guidance. I find that media coverage, measured around the previous earnings announcement, is positively associated with both an increased likelihood of issuing guidance and an increased quantity of guidance issued on and following the current earnings announcement.[5] My analysis controls for determinants of general media coverage (e.g., firm size, industry, and performance) and determinants of media coverage around earnings announcements (e.g., unexpected earnings). The relation is robust to the inclusion of firm fixed effects, using alternative definitions for media coverage and management guidance, and entropy balancing observations based on prior media coverage. In addition, I find consistent results within subsamples of firms with the same recent guidance behavior, which suggests that my findings are unlikely to be driven by media coverage increasing in response to prior guidance.

The relation between media coverage and the propensity to issue guidance is significantly stronger for news flash articles (i.e., news articles composed of a headline and no body text) than it is for full-text articles. This suggests that the relation between media coverage and voluntary

[5] I acknowledge that there is a tradeoff to measuring media coverage around the prior quarter earnings announcement. I choose this approach because media coverage concentrates around earnings announcements, and earnings announcements provide a consistent, measurable information event that I can use to compare media coverage across firms (Tetlock et al., 2008). In addition, measuring media coverage with a one-quarter lag before my measurement period for voluntary disclosure mitigates concerns of reverse causality, i.e., that the media coverage is simply responding to voluntary disclosure. However, in additional analyses, I conduct my main tests using a broader measure of media coverage measured during the quarter leading up to my measurement period for voluntary disclosure and find robust results (see section 4.2). To further address concerns about reverse causality, I examine plausibly exogenous changes to media coverage in section 4.7.

disclosure is primarily driven by the media broadly disseminating information rather than creating new information. The relation between media coverage and guidance is also stronger for firms in which investors have a greater ability to influence managers' voluntary disclosure decisions, i.e., firms with greater institutional investor ownership, and for media coverage from more credible news sources, which are more likely to influence investor attention. Examining other guidance characteristics, I also find that greater media coverage is positively associated with the timeliness of guidance, but is not associated with the specificity or accuracy of management forecasts.

In addition, I find evidence that media coverage has an impact across multiple voluntary disclosure channels. In particular, firms with more media coverage are also significantly more likely to hold earnings conference calls, speak more words during conference calls, and issue more press releases.

While my empirical results are robust to a wide range of diagnostic and sensitivity tests, my study faces several challenges to identification that are inherent to studies on the causal impact of the media (Engelberg and Parsons 2011). The primary identification concern is that there may be some unobservable information event or fundamental change to the covered firm that simultaneously affects news coverage and voluntary disclosure.

I adopt several empirical methods to alleviate this concern by identifying sources of plausibly exogenous variation in media coverage. First, I exploit changes in media coverage introduced by two restructuring events at the *Wall Street Journal* (WSJ): the WSJ redesigns in January 2007 and the takeover of the WSJ by News Corp in January 2008.[6] Coverage changes

[6] Guest (2018) is the first to identify this setting to examine whether media analysis influences investors' trading decisions. My empirical approach follows his research design.

associated with these restructuring events are largely exogenous because they are more likely to reflect the leadership strategy of the WSJ rather than firm-specific characteristics.

Next, following Dai et al. (2015), I conduct a two-stage instrumental variable (IV) analysis using a firm's geographic distance to Dow Jones news branches as an instrument for media coverage. Firm media coverage is negatively correlated with the distance between the firm and news outlets because journalists incur higher costs to collect and analyze information from more distant firms (Gurun and Butler, 2012). However, I do not have a strong prior that the distance between a firm and Dow Jones news outlets would otherwise affect a firm's disclosure activity. Thus, I argue that the distance variable is a plausibly exogenous determinant of media coverage. My main results are robust to using both the quasi-natural experiment and instrumental variable approaches, collectively providing support for my main analysis and mitigating concerns about endogeneity.

My study contributes to the literature on the influence of the media on manager behavior. Specifically, prior literature finds that the media play an important role in corporate governance and in influencing investment decisions by disseminating and producing information that disciplines manager behavior, for example in the context of corporate governance violations, insider trading, and investment decisions (Dyck et al., 2008; Dai et al., 2015; Liu and McConnell, 2013). My work is among the first to examine the effect of the media on voluntary disclosure,[7] and I find robust evidence that media coverage influences managers' voluntary disclosure decisions across multiple disclosure channels. My study provides further support that the media can have a broad influence on managerial decision-making.

[7] Bae et al. (2019) analyze whether the "reshaping" of messages in media coverage of prior guidance induces managers to stop providing guidance. My study examines the effect of the media on investor demand for disclosure, and I consider a broader set of disclosure channels.

My study also relates to prior literature on the relation between information intermediaries and voluntary disclosure. Several studies examine the influence of information intermediaries, such as sell-side analysts and credit rating agencies, on voluntary disclosure decisions. For example, Anantharaman and Zhang (2011) find that managers provide greater disclosure to attract analyst coverage after the exogenous loss of analyst coverage, Chapman and Green (2018) find that analysts influence managers' guidance decisions through their questions in conference calls, and Basu et al. (2018) examine whether exogenous changes in credit ratings influence voluntary disclosure decisions. I contribute to this literature by examining the effect of a unique and important information intermediary, the news media, on voluntary disclosure. A growing literature finds that the media serve an important role as an information intermediary in capital markets by disseminating and producing information (e.g., Bushee et al., 2010; Drake et al., 2014). My results suggest that the media's broader dissemination of news can affect manager's voluntary disclosure decisions, and provides additional support for the importance of the media as an information intermediary.

The remainder of my paper proceeds as follows. In Section 2, I discuss prior literature and present my hypotheses. In Section 3, I describe my dataset and research design. In Section 4, I present regression results on the relation between media coverage and voluntary disclosure and discuss alternative explanations for my results. Section 5 concludes.

## 2. Prior Literature and Hypothesis Development

### *2.1 The Role of the Media as an Information Intermediary*

A growing literature in accounting and finance documents that the media serve an important role as an information intermediary by more broadly disseminating news and creating information for market participants. Media articles can influence the market response to

corporate news by more broadly disseminating information to investors and reducing information acquisition costs (Bloomfield, 2002). Investors may also demand information from the media to facilitate information gathering to the extent that media articles can provide useful and reliable information (Miller, 2006).

Consistent with these arguments, several prior studies find that media coverage can influence the market response to corporate news and significantly influence firms' information environment. Twedt (2016) finds that broader dissemination through the media improves the speed and responsiveness of investors' reactions to earnings guidance, consistent with media dissemination improving the efficiency of price discovery. Drake et al. (2014) document that greater media coverage around earnings announcements reduces the mispricing of accounting information. Consistent with this finding, Peress (2008) finds that greater media coverage reduces the post-earnings-announcement drift. In addition, Bushee et al. (2010) find that bid-ask spreads are lower and market depth is higher around earnings announcements that receive greater media coverage, suggesting that media coverage can reduce information asymmetry among investors. Several studies also find that media coverage can lead to greater trading volume (e.g., Soltes, 2010; Engelberg and Parsons, 2011; Li et al., 2011; Peress, 2014; Blankespoor et al., 2017; Bonsall et al., 2019) and a lower cost of capital (e.g., Cook et al., 2006; Kothari et al., 2009; Liu et al., 2014), consistent with the media playing an important role in distributing information and increasing investor awareness.

Overall, this literature is consistent with the media acting as an information intermediary by more broadly disseminating and creating information, which can reduce mispricing, improve price discovery, reduce information asymmetry, increase trading activity, and reduce firms' cost of capital. Notably, many of these studies examine how media coverage affects the market

response to news around earnings announcements, which are widely anticipated events with relatively low information acquisition costs for investors. This suggests that the effect of media coverage on investors is significant even for widely available corporate news.

*2.2 Media Influence on Manager Behavior*

Prior literature suggests that the media can influence manager behavior by both more broadly disseminating news and producing information. Many of these studies are consistent with the media playing a corporate governance role by disciplining manager behavior. Dai et al. (2015) find that media dissemination of insider's stock sales reduces manager's future trading and the profitability of insider trades. Dyck et al. (2008) find that greater media dissemination can lead managers to reduce future corporate governance violations. Liu and McConnell (2013) find that wider dissemination and negative press coverage of the stock price reaction to merger announcements increases the likelihood that managers cancel merger deals. Their evidence is consistent with both media dissemination and information production, playing a role in influencing managers' decisions.

These studies suggest both that managers are aware of their media presence, and that media dissemination and information production can exert a significant influence on managerial decision-making. In particular, media coverage can influence manager behavior by increasing scrutiny by investors and other stakeholders to managers' future actions.

*2.3 Hypothesis Development*

Taken together, the above literatures suggest that media dissemination and information creation can significantly affect firms' information environments, and that media coverage influences manager behavior by increasing the attention and scrutiny of investors and other stakeholders towards managers' actions. Next I discuss my main hypothesis, which states that

media coverage may either increase or decrease voluntary disclosure because of its effect on investor attention and demand for disclosure.

Investors demand information from firms to monitor managers. Greater firm transparency and public disclosure reduces monitoring costs and improves the ability to assess managers' actions (e.g., Gillan and Starks, 2000; Hartzell and Starks, 2003). Furthermore, prior studies document that changes in investor demand for information, in particular by institutional investors, affect firm transparency and voluntary disclosure decisions (e.g., Bird and Karolyi, 2016; Boone and White, 2015).

Media coverage influences investor attention towards firms by disseminating news broadly to market participants and lowering information acquisition costs. I argue that this influence on investor attention can affect the degree to which investors demand public information from managers. Supporting this, two empirical studies suggest that there is a positive relation between investor attention and voluntary disclosure. Abromova et al. (2019) and Basu et al. (2019) examine how exogenous short-term changes in institutional investor attention affect managements' disclosure choices. The studies follow Kempf et al. (2017) and use times when institutional investors experience shocks to unrelated parts of their portfolios as a firm-level shock to institutional investor attention and monitoring intensity. Both studies document that greater (less) investor attention leads to greater (less) voluntary disclosure provided by managers in the form of management forecasts. Their results indicate that firms are more likely to provide voluntary disclosure when investors are more attentive and monitoring firms more closely. In other words, their study suggests that increases in monitoring intensity increase investors' demand for voluntary disclosure, which in turn leads to an increase in the quantity of voluntary disclosure provided by management.

Media coverage can increase investor monitoring intensity by directing attention towards corporate news. As discussed above, prior studies document that by directing attention and scrutiny towards manager actions, media coverage can discipline insider trading (Dai et al., 2015), corporate governance violations (Dyck et al., 2008), and capital allocation decisions (Liu and McConnell, 2013). Because media coverage can direct investor attention and scrutiny towards managers' actions, greater media coverage may increase investor demand for voluntary disclosure and thus the likelihood that managers' voluntarily disclose information.

On the other hand, media coverage may reduce voluntary disclosure if the information provided by the media can substitute, in part, for information provided by management. Media articles can provide markets with new information by aggregating, synthesizing, and certifying information from other information sources, including regulatory filings and sell-side analysts' research, and by engaging in their own original investigations (e.g., Miller, 2006). Unlike other information intermediaries like sell-side analysts, the media are less likely to have private ties to managers, and thus may be a more credible source of information (e.g., Kothari et al., 2009). Empirical support for this hypothesis comes from empirical studies that document that the content of media articles can contain value-relevant information about future firm performance.[8] Most relevantly, Tetlock et al. (2008) find that media sentiment, particularly that in earnings-related news articles, contains useful information in predicting subsequent earnings performance, consistent with the notion that media articles can provide investors with information about future earnings news. If the information content of media articles can, in part, substitute for voluntary disclosure, then greater media coverage may decrease voluntary disclosure.

[8] See Tetlock (2014) for a survey of this literature.

In accordance with my discussion that media coverage may either increase or decrease the quantity of voluntary disclosure provided by management, I state my first hypothesis in null form.

*H1: Media coverage is NOT associated with the quantity of voluntary disclosure.*

The counterfactual to my main hypothesis that media coverage impacts voluntary disclosure decisions is that media coverage is either unrelated to voluntary disclosure; or only the opposite relationship exists: managers can control or influence media coverage via voluntary disclosures, but the media exerts no influence on voluntary disclosure decisions. Indeed, in contrast to prior literature that finds the media exert an influence on manager and firm behavior (e.g., Dyck et al., 2008; Dai et al., 2015), Core et al. (2008) find no evidence that negative press coverage of excess executive compensation leads to decreases in manager pay or turnover. Their evidence is consistent with the media playing more of a role in sensationalizing corporate news (Jensen, 1979), and consequently exerting no significant influence on firm behavior.

Next, I discuss three hypotheses related to cross-sectional variation in the effect of media coverage on voluntary disclosure. If media coverage increases voluntary disclosure by increasing investors' demand for voluntary disclosure, then I expect the effect to be stronger when there is a (1) greater presence of investors who have more influence and demand over voluntary disclosure decisions (i.e., institutional investors) and (2) for media outlets with greater influence over investor attention (i.e., media outlets with greater credibility). Last, the effect of media coverage on voluntary disclosure could be driven by either (3) information dissemination or information creation by the media.

The relation between media coverage and voluntary disclosure could depend on investors' ability to influence disclosure behavior. Prior literature finds that institutional

investors in particular demand greater public disclosure to monitor managers (e.g., Bird and Karolyi, 2016; Boone and White, 2015). For example, Boone and White (2015) find that exogenous increases in institutional ownership due to Russell index reconstitutions are associated with an increase in the issuance of management guidance. Consistent with this, Bird and Karolyi (2016) find evidence that increases in institutional ownership lead to increases in the content of 8-K filings, consistent with institutional investors demanding incremental corporate disclosure. If greater media coverage can increase investor attention and scrutiny towards managers' actions, I would expect the relation between media coverage and voluntary disclosure to be stronger in firms with greater institutional investor ownership.

*H2A: The relation between media coverage and voluntary disclosure increases with institutional investor ownership.*

Next, I examine whether the credibility of media coverage affects the relation between media coverage and voluntary disclosure. If media coverage affects voluntary disclosure by directing investor attention then I would expect media coverage to have a greater effect on voluntary disclosure when there is greater coverage from more credible media sources, as investors are more likely to pay attention to news sources that they consider to be more credible and trustworthy (Dyck and Zingales, 2003). Consistent with this, I state the following hypothesis.

*H2B: The relation between media coverage and voluntary disclosure increases with the credibility of news coverage.*

The relation between media coverage and voluntary disclosure can also depend on the extent of information creation by the media. Media articles that include editorial commentary still increase the dissemination of firm news, but as discussed above, information creation by the

media could also reduce voluntary disclosure if the information content of media articles can, in part, substitute for management provided information. Prior studies suggest that media sentiment can provide investors with useful information about future earnings news (e.g., Tetlock et al., 2008), which can reduce the demand for voluntary disclosure. To the extent that information production by the media can reduce the demand for voluntary disclosure, the effect of articles that include relatively more editorial commentary could lead to a negative (or less positive) relation with voluntary disclosure compared with articles that purely disseminate information.

On the other hand, information production by the media may have no effect on voluntary disclosure if the information produced by the media increases attention and scrutiny towards manager behavior, but is not in itself useful to investors. In this case, media coverage still plays a dissemination role by more broadly disseminating firm news, which can increase the demand for public disclosure, but investors could ignore the content of media articles and simply obtain further information directly from firms. Given that information creation by the media could have differential effects on voluntary disclosure, I state the following hypothesis as a null.

*H2C: The relation between media coverage and the quantity of voluntary disclosure is NOT associated with the extent of information creation by the media.*

**3. Data and Research Design**

I construct my sample by gathering all earnings announcements in Compustat with matching identifiers in CRSP, I/B/E/S, and Ravenpack between 2000-2016.[9] I require firms have a stock price greater than $1, a market capitalization greater than $5 million, at least one following analyst, and that the earnings announcements reported in Compustat and I/B/E/S are

[9] My sample begins in 2000, which is the beginning year for Ravenpack's Dow Jones (DJ) Edition product.

within one day of each other.[10] My final matched sample consists of 147,391 firm-quarter observations (6,195 unique firms) between 2000-2016.

For my baseline analysis, I examine the relation between prior media coverage and the quantity of voluntary disclosure around the current earnings announcement and the following quarter. My baseline model specification is as follows.

$$VoluntaryDisclosure_{i,t} = \alpha_{i,t-1} + \beta_1 * LnPriorMediaEA_{i,t-1} + \beta_2 * LnMVE_{i,t-1} + \beta_3 * BM_{i,t-1} + \beta_4 * LnNumAnalysts_{i,t-1} + \beta_5 * BidAskSpread_{i,t-1} + \beta_6 * Volatility_{i,t-1} + \beta_7 * InstitOwnership_{i,t-1} + \beta_8 * PriorGuider_{i,t-1} + \beta_9 * UE_{i,t-1} + \beta_{10} * UEPos_{i,t-1} + \beta_{11} * UENeg_{i,t-1} + \beta_{12} * Loss_{i,t-1} + \beta_{13} * ProportionMeetBeat_{i,t-1} + \beta_{14} * PriorUE_{i,t-1} + \beta_{15} * PriorAbsUE_{i,t-1} + \beta_{16} * ROA_{i,t-1} + \beta_{17} * SP500_{i,t-1} + \theta_x * YearFE + \theta_y * FiscalQtrFE + \theta_z * IndustryFE + \epsilon_{i,t-1} \quad (1)$$

I define *LnMediaPriorEA* as the number of media articles disseminated in the five trading day window around the prior earnings announcement date.[11] Following Drake et al. (2014), I restrict my attention to flash and full-text media articles with an earnings event type classification.[12] Articles with an earnings event type categorization have the maximum relevance score of 100 by Ravenpack's entity detection algorithm, which helps ensure that the news article is primarily about the identified firm and the associated earnings announcement.[13]

[10] My results are similar if I use an alternative stock price cutoff of $5 or a market capitalization cutoff of $10 million. I require analyst coverage to compute unexpected earnings, which is an important determinant of guidance decisions (Rogers and Van Buskirk, 2013).

[11] I use a five trading day window to be consistent with my measurement window for bundled guidance. As discussed below, I follow Rogers and Van Buskirk (2013) in defining bundled guidance as guidance issued within the five trading day window around the earnings announcement.

[12] I find similar results when I use general media coverage (i.e., not requiring an earnings event type classification).

[13] Ravenpack's DJ Edition product contains data from Dow Jones Newswires, the WSJ, Barron's, and MarketWatch. Prior studies suggest that Ravenpack provides a reasonable proxy for firms' overall media coverage compared with the Factiva database (e.g., Drake et al., 2014; Shroff et al., 2013). In addition, I confirmed with Ravenpack representatives that Ravenpack receives and includes *all* articles/publications from its data contributors. It receives the data through fixed price subscription contracts with contributors.

Measuring media coverage around the prior earnings announcement has several advantages. My proxy for media coverage is measured prior to the current quarter, which mitigates the effect of potential confounding corporate events that occur during the current quarter. Media coverage is persistent and concentrates around earnings announcements (Tetlock et al., 2008), and earnings announcements provide a consistent, measurable information event that I can use to compare media coverage across firms.[14]

$VoluntaryDisclosure_{i,t}$ is defined as the voluntary disclosure for firm *i* in quarter *t*. I use the quantity of management earnings forecasts as my primary proxy for voluntary disclosure, and construct three measures of guidance.[15] First, following Rogers and Van Buskirk (2013), I construct an indicator for bundled guidance, *GuideBundled*, which is equal to one when a firm issues guidance within the five trading day window around the earnings announcement. Second, I use a continuous measure of bundled guidance *GuideBundledCt*, defined as the number of pieces of guidance issued during the five trading day window around the earnings announcement. My third measure, *GuideQtr*, is a continuous measure of both bundled and unbundled guidance over the quarter following the earnings announcement. I measure this by counting the total number of pieces of guidance issued from two days prior to the current earnings announcement to three days prior to the next earnings announcement.[16]

I control for determinants of voluntary disclosure following the voluntary disclosure models of Rogers and Van Buskirk (2013) and Billings et al. (2015). See Appendix A for details on variable construction. I control for standardized unexpected earnings with respect to the

[14] As discussed in section 4.2, I find similar results using the quantity of media coverage during the quarter leading up to the firm's current earnings announcement.
[15] In Section 4.6, I examine whether media coverage has an impact on alternative measures of voluntary disclosure, including conference calls and firm press releases.
[16] As discussed in section 4.2, I also find consistent results when I separately examine unbundled guidance or examine guidance for all types of management forecasts.

consensus analyst forecast (*UE*). This is calculated as the difference between actual earnings and the consensus analyst forecast, scaled by the fiscal quarter end price. I include indicators for positive unexpected earnings (*UEPos*), negative unexpected earnings (*UENeg*), and whether the firm reported negative earnings (*Loss*). I also include a measure of the proportion of the last four fiscal quarters where the firm met or beat analyst expectations (*ProportionMeetBeat*) and whether a firm guided in the previous quarter (*PriorGuider*). Last, I include fixed effects for the current year and the current fiscal quarter to control for time period and seasonality effects.

Because media coverage is not exogenous, I control for determinants of both general media coverage and media coverage around earnings announcements. Unless specified otherwise, I measure the following variables during the quarter preceding the prior earnings announcement, i.e., strictly prior to my measurement of media coverage. Following prior studies (Solomon and Soltes, 2012; Dai et al., 2015; Drake et al., 2014, 2017; Core et al., 2008), I include controls for determinants of investor demand for information, including firm size (*LnMVE*), book-to-market (*BM*), index membership (*SP500*), and industry fixed effects (two-digit SIC). Because firms with more salient performance are more likely to receive news coverage (e.g., Core et al., 2008), I also control for recent firm performance, as proxied by return on assets (*ROA*). In addition, I control for the number of analysts following the firm (*LnAnalystFollowing*) and the proportion of institutional ownership (*InstitOwnership*). I also control for other market variables that may affect both media coverage and voluntary disclosure, including stock return volatility (*Volatility*) and bid-ask spreads (*BidAskSpread*) measured during the twelve months prior to the previous quarter's earnings announcement. Finally, I include controls for characteristics of the prior earnings announcement that may affect media coverage.

Following Drake et al. (2014), I include last quarter's earnings surprise (*PriorUE*) and the magnitude of last quarter's earnings surprise (*PriorAbsUE*).

[Table 1: Summary Statistics]

In Table 1, I present summary statistics for the variables in my analysis. Over my 2000-2016 sample, firms issue bundled guidance in 34.6% of firm-quarters.[17] In addition, 2,749 firms (37,715 observations) never guide, 193 firms (2,917 observations) guide every quarter, and the remaining 3,253 firms (106,759 observations) sometimes guide, i.e., issue guidance in at least one, but not all quarters. The average (median) firm in my sample has a market capitalization of 6,125 (1,065) million and is covered by 6.6 (5) analysts. Firms have positive earnings surprises in 59% of quarters and report a loss in 19% of quarters. The average (median) number of earnings-related media articles around a firm's prior earnings announcement is 3.6 (3).

## 4. Results

### *4.1 Baseline Model*

To test hypothesis H1, I use two model specifications to examine the relation between prior media coverage and voluntary disclosure. In my first model, I estimate OLS regressions using the specification in Equation (1) with year and industry fixed effects and standard errors clustered by firm. In my second model, I use the same specification but include firm and year fixed effects to examine whether media coverage is related to within-firm variation in voluntary disclosure decisions. This second specification also helps to mitigate the influence of omitted firm characteristics that affect both media coverage and voluntary disclosure.

[Table 2: Media Coverage and Management Guidance]

[17] My sample is consistent with that of prior literature on management guidance. For example, Rogers and Van Buskirk (2013) find that 29% of firms issue bundled guidance between 2000-2007, and Billings et al. (2015) find that 31% of firms issue bundled guidance between 2001-2010.

In Table 2, I present the results of my baseline regressions, which regress measures of management guidance on prior media coverage. In columns 1-3, I present the results of my first model specification (Equation 1), and in columns 4-6, I present the results of my second model specification, which adds firm fixed effects to the model. The three dependent variables are *GuideBundled,* an indicator for whether a firm issues bundled guidance, *GuideBundledCt,* a continuous measure of the number of pieces of bundled guidance issued by a firm, and *GuideQtr,* a continuous measures of the number of pieces of bundled guidance and unbundled guidance issued during the subsequent quarter. My main explanatory variable is *LnMediaPriorEA,* which measures the quantity of media coverage around the prior earnings announcement. I standardize continuous independent variables to have mean 0 and standard deviation 1 to ease the interpretation of economic magnitudes.

In columns 1-3, I find that *LnMediaPriorEA* is positively related to each measure of guidance. Firms that receive more media coverage are more likely to issue guidance the following quarter. In columns 4-6, I find that this positive relation is robust to the inclusion of firm fixed effects. This result suggests that within-firm variation in media coverage is associated with a greater issuance of guidance, and mitigates the possibility that an omitted firm characteristic that correlates with media coverage drives my results. In terms of the economic magnitude of these effects, in my baseline model a one standard deviation increase in *LnMediaPriorEA* is associated with a .055 increase in *GuideBundledCt* (an 11% increase over the mean) and a .069 increase in *GuideQtr* (a 10% increase over the mean).[18] Using a logit specification, I find that a one standard deviation increase in *LnMediaPriorEA* leads to a 1.71 times increase in the odds of issuing bundled guidance (*GuideBundled*).

*4.2 Additional Tests*

[18] The results are robust to winsorizing or trimming all continuous variables at the 1% and 99% level.

I run multiple robustness tests on my baseline specification (Equation 1) to examine the sensitivity of my results. First, one concern is that, although I include firm size (*LnMVE*) as a control in my main specification, it is possible that I am not adequately controlling for the relation between firm size and media coverage. To address this, I re-run my analysis (untabulated) using LnMediaPriorEA, first scaled by the logarithm of market value of equity and second scaled by the logarithm of total assets. My results are robust to using both these alternative specifications, i.e., the coefficient on *LnMediaPriorEA_SizeDeflated* is positive and significant at the 1% level across all three guidance measures.

Another potential concern is that my measure of media coverage is affected by omitted characteristics related to the prior earnings announcement. To examine whether my results are sensitive to measuring media coverage around the prior earnings announcement, I re-estimate my analysis using an alternative measurement horizon for media coverage that captures media coverage over the quarter leading up to the current earnings announcement. Specifically, I construct *LnMedia3m,* defined as the logarithm of one plus the total number of all media articles in the twenty trading days ending three trading days prior to the current earnings announcement.

In contrast to my primary measure of media coverage, which is measured around the prior earnings announcement, this measure captures media coverage over a longer horizon and is closer in timing to the current earnings announcement. In untabulated analyses, I find a significant positive relation between prior media coverage and management guidance. This result is also robust to the inclusion of firm fixed effects in specification 2. This suggests that my results are unlikely to be driven by my measurement of media coverage around the prior earnings announcement.

In addition, I re-run my main analysis using a measure of abnormal media coverage, where I replace my measure of media coverage with the residual of a regression of *LnMediaPriorEA* on the determinants of earnings-related media coverage discussed in section 3. The determinants model includes firm size, book-to-market, industry, return on assets, prior guidance issuance, analyst coverage, institutional ownership, volatility, bid-ask spreads, S&P 500 inclusion, and the size and magnitude of the prior earnings surprise. These variables are measured either contemporaneously to media coverage around the prior earnings announcement (for the prior guidance and earnings surprise variables) or strictly prior to the measurement of media coverage (i.e., during the quarter prior to the previous earnings announcement). I find consistent results with this alternative measure of media coverage.

An alternative explanation for my results is that media coverage may increase in response to guidance issued in the prior quarter, which, in combination with persistence in guidance behavior, may explain the positive relation that I find between media coverage at the prior earnings announcement and guidance issued during the following quarter (i.e., reverse causality). While I control for the prior issuance of guidance in my main specification, it is possible that I am still not fully controlling for the relation between media coverage and firms' prior history of guidance. To address this concern, I re-estimate my model within subsamples of firms with a similar history of providing guidance. Specifically, I define *recentguider1q* as an indicator equal to one for firms that issue guidance in the prior quarter and re-run my analysis partitioned by *recentguider1q*. In both subsamples, I find a significantly positive relation between media coverage and subsequent guidance. I repeat this analysis using two alternative definitions of recent guidance*: recentguider4q,* an indicator equal to one for firms that issue at least one piece of guidance in the prior four quarters, and *recentguider12q*, an indicator equal to one for firms

that issued guidance in at least three of the last twelve quarters. I find consistent results across each of these subsamples. This indicates that my results are unlikely to be driven by firm's prior guidance behavior, and it also suggests that the level of prior media coverage relates to firms' decision to start and stop providing guidance.

Next, I divide my sample by time periods to examine whether the effect of media coverage on management guidance depends on the sample period observed. I partition my sample into three time periods: 2000-2005, 2006-2010, and 2011-2016. I find that the effect of media coverage is positive and significant at the 1% level in each subsample. The economic magnitude of *LnMediaPriorEA* is smaller in more recent time periods. While this might indicate the effect of media coverage on voluntary disclosure is weakening over time, it could also reflect investors' increasing reliance on alternative sources of media coverage. For example, many social media sources are not captured in my sample of media outlets, which is likely to lead to a downwards bias in my estimates of the effect of media coverage.

My results are also robust to using various alternative measures of management guidance. Specifically, the coefficient on media coverage remains positive and significant when I measure guidance using only unbundled guidance, using either only quarterly or only annual management guidance, and using all types of management forecasts (i.e., including non-earnings forecasts). I also re-run my analysis excluding the sample of firms that are either never-guiders or always-guiders and find similar results. Last, to check whether my results are sensitive to Ravenpack's count of media article coverage around earnings announcements, I re-run my analysis using a dichotomous measure of media coverage and find consistent results.

*4.3 Media Coverage and Institutional Investor Ownership*

In this section, I examine empirical support for my hypothesis that the relation between media coverage and voluntary disclosure is stronger in the presence of institutional investors. I measure institutional investor ownership using the percentage of outstanding shares owned by institutional investors from the Thomson Reuters database. In Table 3, I present regression results where the dependent variable is *GuideQtr*, the total number of pieces of guidance issued during the current earnings announcement and the following quarter. My main independent variable is the interaction term *LnMediaPriorEAxInstitOwnership,* defined as *LnMediaPriorEA* multiplied by the percentage of institutional owners for the firm.

[Table 3: The Effect of Media Coverage by Institutional Investor Ownership]

In column 1, I find that the interaction term *LnMediaPriorEAxInstitOwnership* has a significantly positive coefficient, consistent with hypothesis H2A that the effect of media coverage on guidance is stronger when a firm has a larger fraction of institutional ownership. In addition, the coefficient on *InstitOwnership* is also positive and significant, which is consistent with prior literature (e.g., Bird and Karolyi, 2016). Column 2 shows that the interaction term is still positive and significant after the inclusion of firm fixed effects. These results suggest that the relation between media coverage and voluntary disclosure is increasing in the presence of institutional investors.

*4.4 Media Credibility and Management Guidance*

Next, I examine whether the credibility of media coverage affects the relation between media coverage and voluntary disclosure. If media coverage affects voluntary disclosure by directing investor attention then I would expect media coverage to have a greater effect on voluntary disclosure when there is greater coverage from more credible media sources, as

investors are more likely to pay attention to news sources that they consider to be more credible and trustworthy.

I obtain data on multiple news sources using Ravenpack's dataset on web media coverage. The advantage of Ravenpack's web edition product is that it includes news articles from thousands of online sources, although this data is only available beginning in 2007.[19] Aside from allowing me to test the generalizability of my results to alternative news sources, the web sources include journalists that vary widely in professionalism and credibility (Drake et al., 2017). This allows me to examine whether variation in the credibility of media coverage affects the relation between media coverage and voluntary disclosure.

I use two proxies for the credibility of media sources. The first measure is derived from Ravenpack's provided measure of the trustworthiness and influence of each of its sources, which takes values between 1 and 10. Based on this measure, I construct the variable *Trustworthiness,* calculated as the average Ravenpack trustworthiness rating of articles published during the five trading day window around the prior earnings announcement. I reverse the order of the ratings (i.e., swapping ratings of 1 and 10, 2 and 9, etc.) so that higher measures indicate more trustworthy sources.

For my second proxy, I use a measure of media professionalism as defined in Drake et al. (2017).[20] They hand-classify Ravenpack sources into three categories of professionalism: professional, semi-professional, and non-professional. The professional sources consist of the sources from the Dow Jones Newswires. The semi-professional sources consist of newspaper

[19] My inferences are unchanged when I replicate my main results in Table 2 incorporating data from Ravenpack's Web database. In subsequent sections, I exclude data from Ravenpack's Web database because the Web dataset only includes data beginning in 2007. In addition, I use news type categorizations (e.g., flash articles, full-text articles, etc.) in my later tests. While the news type categorizations from Dow Jones sources are derived from Dow Jones' publisher tags, for most web sources, the news types are less reliable because they are identified heuristically from the meta-data of articles. I thank Ravenpack representatives for helpful discussions on this.

[20] I gratefully thank Mike Drake and Brady Twedt for generously providing this data.

websites (e.g., New York Times website), business news websites (e.g., CNBC), and investment research websites (e.g., Morningstar, Seeking Alpha, etc.). The non-professional sources consist of non-financial websites (e.g., Scientific American) and all blogs other than those of professional reporters that post on newspaper or business news websites (e.g., Zerohedge). I define *Professionalism* as the ratio of news articles published by professional media sources to total news articles around the prior earnings announcement.[21]

[Table 4: The Effect of Media Coverage by News Source Credibility]

In Table 4, I present regression results where the dependent variable is *GuideQtr*, the total number of pieces of guidance issued during the current earnings announcement and the following quarter. In each regression, I include an interaction term *LnMediaPriorEAxMediaCredibility*, where *MediaCrediblity=Trustworthiness* in columns 1-2 and *MediaCredibility=Professionalism* in columns 3-4. In each column, I find consistent evidence that the interaction term *LnMediaPriorEAxMediaCredibility* is positive and significant, which indicates that the relation between media coverage and voluntary disclosure is more positive when the news articles come from more credible media sources. This evidence is consistent with hypothesis H2B that media coverage has a greater influence on investor attention and investors' demand for disclosure when more credible media sources report on the firm.

*4.5. Media Dissemination and Information Creation*

Next, I test hypothesis H2C that the relation between media coverage and voluntary disclosure can depend on whether the media articles in question consist of pure dissemination of corporate news or contain additional information and analyses. Following prior literature (e.g., Drake et al., 2014; Bonsall et al., 2017), I use Ravenpack's classification of news flash articles

[21] I find similar results when I define professionalism as the ratio of professional and semi-professional news sources divided by total news sources.

and full-text articles as a proxy for media dissemination and media information production respectively. Ravenpack classifies articles as news flashes if they consist of only headline text and full-articles if they include additional editorial content.

In Table 5, I present the results of OLS regressions where I regress management guidance on *LnFlashNewsPriorEA,* defined as the logarithm of one plus the number of news flash articles disseminated around the prior earnings announcement, and *LnFullNewsPriorEA,* defined as the logarithm of one plus the number of full-text media articles disseminated around the prior earnings announcement.

[Table 5: Media Dissemination and Information Creation]

I find that both news flash and full-text articles have a significantly positive relation with *GuideQtr*. The coefficient on news flash articles is significantly larger than that of full-text articles in column 3 (difference p-value < .01) and column 4 which includes firm fixed effects (difference p-value <.01). My results suggest that both news flash and full-text articles lead to more voluntary disclosure, consistent with my hypothesis that media coverage increases investor demand for disclosure. The coefficient on *LnFullNewsPriorEA* is positive but smaller than that of *LnFlashNewsPriorEA*, which suggests that the additional commentary provided in full-text articles has a substitutionary effect with management provided information, reducing demand for disclosure. Because the overall coefficient on *LnFullNewsPriorEA* is positive and significant, this suggests that the increase in demand for disclosure due to greater media dissemination dominates the reduction in demand due to the substitutionary effect of media-provided information.

*4.6 Alternative Measures of Voluntary Disclosure*

In Table 6, I examine the relation between media coverage and alternative measures of voluntary disclosure: conference call disclosures and firm press releases. To measure conference call disclosures, I use a dataset of conference call transcripts from Thomson Reuters StreetEvents and SeekingAlpha.com between 2006-2013.[22] I define *ConfCall* as an indicator equal to one if the firm has an earnings conference call within a five-day window around the earnings announcement. I also define *LnCallWords* as the logarithm of the total number of words spoken during both the presentation and questions and answers sections of the conference call. I use this measure as a proxy for the quantity of voluntary disclosure provided during the conference call. My third alternative measure of voluntary disclosure is the quantity of firm press releases, measured over the same period as *GuideQtr*, i.e., beginning two days prior to the current earnings announcement to three days prior to the next earnings announcement. I collect data on firm press releases from Ravenpack, which includes data on firm press releases beginning in 2004.

[Table 6: Media Coverage and Alternative Measures of Voluntary Disclosure]

Consistent with my prior results with management earnings guidance, I find a positive relation between prior media coverage and each of the three alternative measures of voluntary disclosure. These results provide supporting evidence for a positive relationship between media coverage and voluntary disclosure and suggest that this relationship generalizes to forms of voluntary disclosure beyond management guidance.

*4.7 Addressing Endogeneity Issues*

In this section, I discuss endogeneity issues in my analysis of the effect of media coverage on voluntary disclosure and alternative explanations for my results. One alternative interpretation of my results is that voluntary disclosure influences media coverage, i.e., reverse

[22] See Green et al. (2019) for further details on the data collection procedure.

causality. For example, this could occur if the media were more likely to cover firms that issue more guidance or speak more during conference calls. Indeed, prior literature suggests that firms can influence their media coverage by, for example, issuing more press releases during merger negotiations (Ahern and Sosyura, 2014) or hiring an investor relations firm (Bushee and Miller 2012; Solomon, 2012). Another alternative explanation is that omitted informational events or fundamental changes to the firm are correlated with both my measurement of media coverage around the prior earnings announcement and voluntary disclosure during the next quarter.

In my next set of tests, I perform several types of empirical tests to address endogeneity concerns, including a quasi-natural experiment and an instrumental variables (IV) analysis to examine the relation between plausibly exogenous variation in media coverage and voluntary disclosure. I also use entropy balancing to match firms with and without media coverage around the prior earnings announcement based on observable firm characteristics and compare voluntary disclosure outcomes.

*4.7.1 Wall Street Journal Restructuring Events as a Quasi-Natural Experiment*

To identify the effect of quasi-exogenous variation in media coverage on voluntary disclosure, I exploit changes in media coverage introduced by two restructuring events at the *Wall Street Journal* (WSJ): the WSJ print paper redesign in January 2007 and the takeover of the WSJ by News Corp in January 2008.[23] Changes in WSJ media coverage due to the restructuring events are more likely to reflect changes in the leadership strategy of the WSJ rather than changes in firm-specific information environments. My empirical approach follows Guest (2018), who is the first to identify this setting to examine whether media analysis influences investors' trading decisions. While Guest (2018) uses this setting to examine variation in

[23] See Ellison (2010) for details on these WSJ restructuring events.

coverage of earnings announcements, I exploit changes in overall business news coverage introduced by the two restructuring events.

The WSJ launched a print paper redesign on January 2, 2007 that reduced overall business news coverage. The physical change in the print paper from the 6-column to a 5-column format alone lead to a 10% reduction in news space relative to the previous year. The redesign also involved substantial content changes including expanded coverage in Leisure & Arts and the "Business of Life" (Readers' Guide of the *Wall Street Journal*, January 2, 2007).

Shortly after the redesign, the merger between News Corporation and Dow Jones was completed on December 13, 2007. Rupert Murdoch named Robert Thomson as managing editor, who undid much of the redesigns of the Journal. Thus, I expect this leadership change to increase overall business news coverage.

To examine the validity of the setting, I compare annual WSJ business news coverage changes around these two events relative to changes in other news outlets. I observe a 23% decrease in WSJ business news coverage after the WSJ redesigns and a 34% increase in coverage after the takeover.[24] However, using Factiva news article data from the ten largest print newspapers, I find that there are no significant changes in business news coverage around these two events in the non-WSJ news outlets. These statistics help demonstrate the validity of the setting.[25]

I conduct a difference-in-differences analysis to examine changes in voluntary disclosure around the WSJ restructuring events. Firms are assigned to treatment and control groups based on the change in WSJ coverage from the year before the event to the year following each

[24] I conservatively exclude Guest's (2018) third WSJ restructuring event (i.e., the merging of the DJ Newswires and WSJ newsrooms) because I find a decrease in overall business news coverage while Guest reports a simultaneous increase in coverage of earnings announcements, making the overall effect on investor attention less clear. The results are slightly stronger when including the third event in my analysis.

[25] I gratefully thank Dexin Zhou for providing the Factiva news article data.

restructuring event. Similar to Guest (2018), I define the treatment period as the year before the coverage decreasing event (i.e., 2006) and as the year after the coverage increasing event (i.e., 2008). Defining the treatment indicator in this way allows one to interpret the coefficient as the effect of an increase in media coverage due to the restructuring events.

Specifically, for the first event, firms are assigned to the treatment group if their WSJ news coverage changed from the top to the bottom tercile from 2006 to 2007 and the control group if their news coverage remained in the same tercile from 2006 to 2007. Likewise, for the second event, firms are assigned to the treatment group if their WSJ news coverage changed from the bottom to top tercile from 2007 to 2008 and the control group if their news coverage remained in the same tercile from 2007 to 2008. In untabulated analyses, I find similar results when I use a continuous treatment indicator, i.e., defining treatment in terms of the difference in media articles during the pre- and post-periods.[26]

I use the following specification to conduct my analysis.

$$VoluntaryDisclosure_{i,t} = \beta_1 * TreatYear_t \times Treat_i + \gamma * Z_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$$

Where $TreatYear_t \times Treat_i$ is the treatment indicator, which equals 1 for treatment firms in the treated years (i.e., 2006 or 2008) and 0 otherwise. $Z_{i,t}$ denotes the set of control variables from equation 1. $\alpha_i$ and $\alpha_t$ represent firm and year-quarter fixed effects. The main effects, $TreatYear_t$ and $Treat_i$, are subsumed by the year-quarter and firm fixed effects, respectively. The coefficient $\beta_1$ on the interaction term $TreatYear_t \times Treat_i$ captures the change in voluntary disclosure between the treatment and control groups due the restructuring events. A positive and significant $\beta_1$ would indicate that increases in treatment firm media coverage due to the restructuring events lead to increases in voluntary disclosure, which would provide support for my H1 hypothesis.

[26] For firms that switch from treatment (control) firms in the first event to control (treatment) firms in the second event, I assign these firms to the treatment (control) group for the first two quarters of 2007 and control (treatment) group for the last two quarters of 2007.

Following Guest (2018), I use several methods to address concerns that my results are driven by endogenous differences between treatment and control firms. First, I use coarsened exact matching to ensure treatment and control firms are similar with respect to recent news and firm visibility. To mitigate lost observations, I perform two separate matches using proxies for recent firm news and visibility.[27] The matching tests address concerns that treatment and control firms differ along dimensions that could affect both journalists' coverage decisions and firm voluntary disclosure decisions. Specifically, to capture recent firm visibility, I match treatment and control firms based on *PriorMediaCoverage*, which captures the number of news articles in the last 12 months from the Ravenpack Dow Jones News Archive (excluding the WSJ), as well as *NumAnalysts* and *InstitOwnership*. To capture recent firm news, I match treatment and control firms on *BidAskSpread*, *Volatility*, unexpected earnings (*UE)*, absolute unexpected earnings |*UE*|, and *ROA*. The matching variables are defined in Section 3 (except *PriorMediaCoverage,* which is defined above).

Second, I test whether WSJ coverage changes are informative about future earnings news, hence endogenous. If coverage changes are endogenously chosen by journalists based on private information about a firm's economic prospects, then coverage changes should predict future earnings surprises. To examine this, I test whether treatment is predictive of future earnings news. Specifically, I regress the next quarter absolute earnings surprise on indicators for *Coverage Increase* and *Coverage Decrease* during the post-event periods, with all controls from Equation (1) included. I find that neither of the coefficients for *Coverage Increase* or *Coverage*

[27] Coarsened exact matching (CEM) ensures that treated and control firms are closely matched along a number of dimensions (Iacus et al., 2008). The procedure temporarily coarsens each variable into groups and then exact matches observations on the coarsened data. Control observations are weighted to equal the same number of treated observations with the same values for all coarsened variables.

*Decrease* are significant at the 10% level, which suggests that coverage changes are not indicative of journalists' private information about future firm news.

Third, the validity of using a difference-in-differences design depends on the assumption of "parallel trends", i.e., the average change in the outcome variable is the same for both the treatment and control groups in the absence of treatment. While the parallel trend assumption is not directly testable, following Guest (2018), I conduct a pseudo-event test where treatment is assigned six months earlier than the actual restructuring events. In untabulated analyses, I find that the coefficient for the treatment indicator is not significant at the 10% level. Thus my main results do not hold in the pseudo-event tests, mitigating concerns about the violation of the parallel trends assumption.

[Table 7: Evidence from WSJ Restructuring Events]

Table 7 reports regression results where the dependent variables consist of my management guidance proxies from Table 2, as well as my alternative measures of voluntary disclosure, including conference call and press release disclosures from Table 6. All columns include the control variables from equation 1, as well as firm and year-quarter fixed effects. Standard errors are clustered by firm and year-quarter. I present three sets of results for my baseline (unmatched) sample in Panel A, Firm Visibility Matched Sample in Panel B, and Recent News Matched Sample in Panel C.

For my baseline sample in Panel A, across all columns, I find consistently positive coefficients on $TreatYear_t \times Treat_i$, consistent with H1. For the guidance measures, the coefficients range from *t=1.73* for *GuideBundled* to *t=2.30* for *GuideQtr*, and the economic magnitudes are consistent with that of my full sample association results in Table 2. For the

conference call and press release measures, I also find consistently positive coefficients on $TreatYear_t \times Treat_i$, where the coefficients range in significance from $t$=1.18 to $t$=2.94.

Panels B and C present results for my Firm Visibility and Recent News matched samples, respectively. Consistent with the results of my baseline sample in Panel A, all columns across Panels B and C show positive coefficients at comparable significance levels to those of my baseline sample. The results indicate mitigate concerns that endogenous differences in firm visibility or recent firm news across treatment and control firms drive the results. Moreover, the tests demonstrate consistent results across multiple measures of voluntary disclosure and multiple matching procedures. Taken together, the results from the WSJ restructuring events provide robust evidence on the relation between media coverage and voluntary disclosure.

*4.7.2 Instrumental Variable Analysis*

Next I conduct a two-stage instrumental variable analysis using a firm's geographic distance to a Dow Jones news branch as an instrument for media coverage as in Dai et al. (2015). A valid instrument in my setting should be correlated with firm media coverage, but not otherwise directly affect the firm's information environment or disclosure activity. Gurun and Butler (2012) document that a firm's media coverage is negatively correlated with the distance between the firm and news outlets. To the extent that journalists incur higher costs by collecting and analyzing information from distant firms, I expect firms that are located far from news outlets to receive less news coverage. However, I do not have a strong prior that the distance between a firm and DJ news outlets would otherwise affect a firm's information environment or disclosure activity. Thus, I argue that the distance metric is a plausibly exogenous determinant of media coverage.

I measure *Distance* as the logarithm of one plus the geographic distance between a firm's headquarter location and the closest Dow Jones' news outlet.[28] The results of the IV analysis are presented in Table 8, where the control variables are the same as my baseline specification in equation 1.

[Table 8: Instrumental Variable Analysis: Distance to a Dow Jones News Branch]

Consistent with Dai et al. (2015), in the first stage regression in column 1, the coefficient on *LnDistance* is negative and significant, indicating that the instrument is significantly related to media coverage.[29] Moreover, I reject the null hypothesis of a weak instrument with a Kleibergen-Paap rank LM statistic of 6.524 ($p < .05$) (Stock and Yogo, 2005). In the second stage regressions (columns 2-4), the coefficient on the predicted media coverage variable is positively related to management guidance across all three guidance proxies, where the significance of the coefficients ranges from $t$=1.52 to $t$=2.20. The results collectively provide supporting evidence for a robust relation between media coverage and voluntary disclosure.[30]

*4.7.3 Entropy Balancing*

Finally, I use entropy balancing to match firms with and without media coverage around the prior earnings announcement and compare voluntary disclosure outcomes. Conceptually, I am interested in the difference between firm-quarters that receive high levels of media coverage around the prior earnings announcement with the counterfactual outcome, i.e., the outcome if during the same firm-quarter there was little or no media coverage. Entropy balancing is a technique that assigns a weight to each observation such that the distributions of the covariates

[28] I thank Lili Dai, Jerry Parwada, and Bohui Zhang for generously sharing their data on the geographic distance between firms and Dow Jones news outlets.

[29] The first-stage regression has R-squared and Adjusted R-squared values of 35.8% and 35.7% respectively. The second-stage regressions lack R-squared values because they are not statistically meaningful in the context of two-stage least-squares estimates (Sribney et al., 2017).

[30] In unreported analyses, I also examine the relation between media coverage and my alternative measures of voluntary disclosure (conference calls and press releases). I find a positive but insignificant relation with these alternative disclosure measures, which is perhaps due to the limited power of the time-invariant instrument.

for the treated and control samples are nearly identical (Hainmueller, 2011). It allows me to construct synthetic control samples of observations that are distributionally equivalent on firm characteristics likely to be associated with media coverage and voluntary disclosure. An advantage of entropy balancing over propensity-score matching is that I am able to retain all observations in my analysis.[31]

To implement entropy balancing, I define *LnMediaPriorEAIndic* as an indicator equal to 1 if the firm received at least one earnings-related media article around the prior earnings announcement and 0 otherwise. I match treated and control observations on the determinants of earnings-related media coverage discussed in section 1.3, including firm size, book-to-market, industry, return on assets, prior guidance issuance, analyst coverage, institutional ownership, volatility, bid-ask spreads, S&P 500 inclusion, and the size and magnitude of the prior earnings surprise. I match observations using the first two moments of the covariate distribution.

In untabulated analyses, I replicate my analysis in Table 2. Across each specification, I find that *LnMediaPriorEAIndic* is positive and significant at the 1% level. These results suggest that differences in a broad set of observable determinants of media coverage are unlikely to explain my results, further alleviating concerns about endogeneity.

*4.8 Additional Tests and Extensions*

Media coverage may affect other characteristics other than just the quantity of guidance. Next, I examine whether media coverage has an effect on the timeliness and specificity of guidance. To measure timeliness, I construct the measure *Immediacy*, defined as the number of days between the current earnings announcement and the first management earnings forecast issued, multiplied by -1. To measure forecast specificity, I define the variable *Specificity,* which

[31] My inferences are unchanged when I use a propensity-score matching approach with the same determinants model.

equals 3 if the forecast is a point estimate, 2 if the forecast is a closed range, and 1 if the forecast is an open range (i.e., the guidance consists of one numeric value and an indication that EPS is expected to be above or below that value), for the EPS forecast with the longest horizon during the disclosure period (i.e., the current earnings announcement and following quarter). For firms that issue a closed range EPS forecast, I define an additional measure of guidance specificity *AbsFcRange,* which equals the absolute difference between the upper and lower bounds of the longest horizon EPS forecast during the disclosure period, scaled by price. I examine the relation between media coverage and these additional measures in Table 9. I find that *LnMediaPriorEA* has a significantly positive relation with *Immediacy*, which is consistent with media coverage increasing the timeliness with which guidance is provided. I do not find evidence that media coverage is associated with management forecast specificity. In untabulated additional tests, I also do not find a relation between media coverage and the accuracy of management forecasts.

My findings indicate that media coverage leads to an increase in the quantity and timeliness of management forecasts but not the specificity or accuracy. While increasing forecast specificity and accuracy is consistent with disclosing more information by providing more precise information, I do not find an association with media coverage. This suggests that increasing the accuracy and specificity of management forecasts is less beneficial, from managers' perspective, relative to the cost of improving upon these disclosure characteristics.[32][33]

[32] I also examine whether my main result is consistent across both good and bad news voluntary disclosures. I re-run my main model on subsamples of guidance forecasts based on whether they are issued either above or below analyst expectations. In both subsamples, I find that the coefficients are positive and significant, but the coefficients are not significantly different from each other. Overall, I find little evidence that media coverage affects good and bad news differently.

[33] In an additional extension to my analysis, I examine the relation between the content of media articles and voluntary disclosure. Using a measure of media sentiment derived from machine learning-based classifications from Ravenpack, I find that firms are more (less) likely to provide management guidance when they receive more positive (negative) toned articles in the media. This is consistent with the notion that during more optimistic (pessimistic) periods, investors scrutinize disclosures less (more) rigorously, which decreases (increases) disclosure-related costs. Moreover, I find that the effect of media sentiment is stronger when there are more media articles covering the firm,

## 5. Conclusion

My study contributes to the literature on the influence of media coverage on manager behavior by examining whether media coverage influences voluntary disclosure decisions. I find that media coverage, measured around the previous earnings announcement, is positively related to both the likelihood of issuing guidance and the quantity of guidance issued on and following the current earnings announcement. My results are robust to the inclusion of firm fixed effects, scaling media coverage by firm size, using an abnormal measure of media coverage, and matching firms by media coverage using an entropy balancing approach. In addition, my primary results are robust to empirical tests examining plausibly exogenous variation in media coverage due to restructuring events at the *Wall Street Journal* and using distance to Dow Jones news branches as an instrument for media coverage.

I find that the relation between media coverage and guidance is weaker for full-text articles that provide editorial commentary compared with news flash articles, consistent with the effect of media coverage on voluntary disclosure being driven by the dissemination role rather than the information creation role of the media. I also find that the relation between media coverage and guidance is strongly associated with the presence of institutional investors. Specifically, the effect of media coverage on the propensity to issue guidance is stronger for firms with greater institutional investor ownership, which supports the notion that the effect of media coverage on voluntary disclosure is stronger for firms in which investors have a greater ability to influence managers' voluntary disclosure decisions. I also find that the relation between media coverage and guidance is stronger when firms receive media coverage from more credible news sources, which are more likely to influence investor attention. Examining other guidance

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which intuitively suggests that the effect of media sentiment matters more when there is greater dissemination of the news.

characteristics, I also find that greater media coverage is positively associated with the timeliness of guidance, but is not associated with the specificity or accuracy of management forecasts.

Finally, firms with more media coverage are also significantly more likely to hold earnings conference calls, speak more during conference calls, and issue more press releases, which suggests that media coverage has an impact across multiple voluntary disclosure channels. Taken together, my study documents new evidence that media coverage plays an important role in influencing voluntary disclosure decisions, and provides new insights into the relation between media coverage and manager behavior.

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## Appendix A: Variable Definitions

**Media Variables**

- *LnMediaPriorEA* = The logarithm of one plus the number of media articles within the five trading day window around the prior earnings announcement date (Source: Ravenpack - DJ Edition).
- *Trustworthiness* = the average Ravenpack trustworthiness rating of articles published during the five trading day window around the prior earnings announcement. The ordering of the ratings is reversed so that higher values indicate more trustworthy sources (Source: Ravenpack - DJ & Web Editions).
- *Professionalism* = the ratio of news articles published by professional media sources (as defined by Drake et al. (2017)) to total news articles during the five trading day window around the prior earnings announcement (Source: Ravenpack - DJ & Web Editions).
- *LnDistance* = the logarithm of one plus the minimum distance between a firm's headquarter and a Dow Jones news branch (Source: Dai et al., 2015).

**Voluntary Disclosure Variables**

- *GuideBundled* = An indicator for whether the firm issues guidance during the five trading day window around the current earnings announcement (Source: I/B/E/S Guidance).
- *GuideBundledCt* = The number of pieces of guidance issued during the five trading day window around the current earnings announcement (Source: I/B/E/S Guidance).
- *GuideQtr* = The number of pieces of guidance issued during the period beginning two days prior to the current earnings announcement to three days prior to the next earnings announcement (Source: I/B/E/S Guidance).
- *ConfCall* = An indicator for whether a firm holds a conference call within the five-day trading window around the current earnings announcement date (Source: Thomson Street Events; Seeking Alpha).
- *LnCallWords* = The logarithm of one plus the total number of words spoken during the earnings announcement conference call (Source: Thomson Street Events; Seeking Alpha).
- *LnPressReleases* = The logarithm of one plus the total number of press releases issued during the period beginning two days prior to the current earnings announcement to three days prior to the next earnings announcement (Source: Ravenpack).
- *Immediacy* = The number of days between the first management earnings forecast issued and the current earnings announcement multiplied by -1 (Source: I/B/E/S Guidance).
- *Specificity* = 3 if the forecast is a point estimate, 2 if the forecast is a closed range, and 1 if the forecast is an open range (i.e., the guidance consists of one numeric value and an indication that EPS is expected to be above or below that value). Measured for the EPS forecast with the longest horizon during the current earnings announcement and following quarter (Source: I/BE/S Guidance).
- *AbsFcRange* = The absolute difference between the upper and lower bounds of the EPS forecast with the longest horizon during the current earnings announcement and following quarter, scaled by price (Source: I/B/E/S Guidance).

**Control Variables**

- *LnMVE* = The logarithm of the market value of equity in millions calculated as of the

current fiscal quarter end (Source: Compustat).

- *BM* = The ratio of book value of equity to market value of equity calculated as of the current fiscal quarter end (Source: Compustat).
- *LnAnalystFollowing* = The logarithm of one plus the number of analysts that issue an earnings forecast for the prior quarter in the 90 calendar days prior to the earnings announcement (Source: I/B/E/S).
- *Volatility* = The standard deviation of daily stock returns during the twelve months ending at the lagged fiscal quarter end (Source: CRSP).
- *BidAskSpread* = The average daily bid-ask spread calculated as 100 × (ask − bid)/[(ask + bid)/2], calculated over the twelve months ending at the lagged fiscal quarter end (Source: CRSP).
- *UE* = Standardized unexpected earnings with respect to the consensus analyst forecast. This is computed as the difference between actual earnings and the median of analyst forecasts issued in the 90 days prior to the current earnings announcement, scaled by the fiscal quarter end price. (Source: I/B/E/S)
- *UEPos* = An indicator equal to 1 if UE > 0.0001
- *UENeg* = An indicator equal to 1 if UE < -0.0001
- *Loss* = An indicator equal to 1 if Compustat reported earnings is negative.
- *ProportionMeetBeat* = The proportion of the last four fiscal quarters where the firm met or beat analyst expectations.
- *PriorAbsUE* = The absolute value of *UE* during the prior earnings announcement.
- *InstitOwnership* = The percentage of outstanding shares held by institutional owners (Source: Thomson Reuters).
- *SalesGrowth* = The percentage change in total revenue from the prior quarter (Source: Compustat).
- *ROA* = Net income before extraordinary items scaled by total assets at the fiscal quarter end (Source: Compustat).
- *LnAssets* = The logarithm of the total assets of the firm as of the current fiscal quarter end (Source: Compustat).
- *SP500* = An indicator equal to one if the firm is part of the S&P 500 index (Source: CRSP).
- *Leverage* = The ratio of total liabilities to total equity (Source: Compustat).

## Table 1: Summary Statistics

The sample consists of 147,391 firm-quarter observations (6,195 unique firms) between 2000-2016. Variable definitions are detailed in Appendix A.

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| VARIABLES | Mean | SD | P25 | P50 | P75 |
| GuideBundled | 0.346 | 0.476 | 0.000 | 0.000 | 1.000 |
| GuideBundledCt | 0.490 | 0.775 | 0.000 | 0.000 | 1.000 |
| GuideQtr | 0.699 | 1.158 | 0.000 | 0.000 | 1.000 |
| MediaPriorEA | 3.610 | 3.101 | 2.000 | 3.000 | 5.000 |
| FlashNewsPriorEA | 2.454 | 1.805 | 1.000 | 2.000 | 3.000 |
| FullNewsPriorEA | 1.156 | 2.033 | 0.000 | 0.000 | 2.000 |
| MVE | 6125 | 22794 | 365 | 1065 | 3390 |
| BM | 0.533 | 0.557 | 0.255 | 0.447 | 0.708 |
| NumAnalysts | 6.560 | 5.965 | 2.000 | 5.000 | 9.000 |
| InstitOwnership | 0.648 | 0.261 | 0.467 | 0.697 | 0.859 |
| UE | -0.002 | 0.091 | -0.001 | 0.000 | 0.002 |
| UEPos | 0.590 | 0.492 | 0.000 | 1.000 | 1.000 |
| UENeg | 0.300 | 0.458 | 0.000 | 0.000 | 1.000 |
| Loss | 0.188 | 0.391 | 0.000 | 0.000 | 0.000 |
| ProportionMeetBeat | 0.641 | 0.297 | 0.500 | 0.750 | 1.000 |
| PriorAbsUE | 0.007 | 0.068 | 0.000 | 0.002 | 0.004 |
| BidAskSpread | 0.490 | 0.841 | 0.081 | 0.178 | 0.531 |
| Volatility | 0.030 | 0.017 | 0.018 | 0.025 | 0.036 |
| ROA | 0.000 | 0.440 | 0.000 | 0.008 | 0.019 |
| SP500 | 0.188 | 0.390 | 0.000 | 0.000 | 0.000 |
| Sophistication | 0.746 | 0.334 | 0.400 | 1.000 | 1.000 |
| Trustworthiness | 9.842 | 0.223 | 9.667 | 10.000 | 10.000 |

## Table 2: Media Coverage and Management Guidance

This table presents regression results where the three dependent variables are *GuideBundled*, an indicator for whether a firm issues bundled earnings guidance, *GuideBundledCt*, a continuous measure of the number of pieces of bundled earnings guidance issued, and *GuideQtr*, a continuous measures of the number of pieces of earnings guidance issued around the earnings announcement and following quarter. *LnMediaPriorEA* is the logarithm of one plus the number of media articles disseminated in the five trading day window around the prior earnings announcement date. The sample consists of 147,391 firm-quarter observations (6,195 unique firms) between 2000-2016. All specifications are estimated using OLS and have standard errors clustered by firm. Continuous independent variables are standardized to have mean 0 and standard deviation 1.*/**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Appendix A.

| | BASELINE MODEL | | | FIRM FIXED EFFECTS | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| VARIABLES | GuideBundled | GuideBundledCt | GuideQtr | GuideBundled | GuideBundledCt | GuideQtr |
| LnMediaPriorEA | 0.023*** | 0.055*** | 0.069*** | 0.017*** | 0.038*** | 0.048*** |
| | [14.732] | [15.196] | [11.345] | [10.637] | [12.515] | [10.240] |
| LnMVE | 0.010*** | 0.012* | 0.037*** | 0.038*** | 0.091*** | 0.187*** |
| | [3.685] | [1.915] | [3.555] | [7.962] | [9.725] | [12.607] |
| BM | -0.003*** | -0.009*** | -0.010*** | 0.003** | 0.009*** | 0.015*** |
| | [-2.885] | [-3.725] | [-2.754] | [2.152] | [3.681] | [3.764] |
| LnNumAnalysts | -0.006*** | -0.006 | 0.010* | -0.003** | -0.003 | 0.002 |
| | [-3.786] | [-1.514] | [1.736] | [-2.140] | [-0.919] | [0.358] |
| BidAskSpread | 0.002* | 0.009*** | 0.016*** | 0.007*** | 0.015*** | 0.021*** |
| | [1.923] | [3.552] | [4.184] | [3.417] | [4.154] | [3.928] |
| Volatility | -0.012*** | -0.016*** | -0.014*** | -0.018*** | -0.025*** | -0.032*** |
| | [-7.992] | [-4.936] | [-2.895] | [-8.883] | [-7.084] | [-6.090] |
| InstitOwnership | 0.012*** | 0.023*** | 0.024*** | 0.003 | 0.009** | 0.010* |
| | [7.445] | [6.382] | [4.454] | [1.196] | [2.192] | [1.761] |
| PriorGuider | 0.675*** | 0.943*** | 1.245*** | 0.448*** | 0.609*** | 0.794*** |
| | [141.443] | [95.166] | [81.845] | [71.950] | [59.478] | [52.122] |
| UE | -0.001* | -0.003*** | -0.004*** | 0.000 | -0.001 | -0.002 |
| | [-1.691] | [-2.636] | [-2.596] | [0.389] | [-1.109] | [-1.533] |
| UEPos | 0.024*** | 0.025*** | -0.024* | 0.018*** | 0.021*** | -0.005 |
| | [7.271] | [3.632] | [-1.774] | [6.244] | [3.739] | [-0.513] |
| UENeg | 0.004 | -0.017** | -0.065*** | 0.007** | -0.002 | -0.027*** |
| | [1.228] | [-2.415] | [-5.118] | [2.199] | [-0.369] | [-2.693] |
| Loss | -0.044*** | -0.064*** | -0.092*** | -0.039*** | -0.055*** | -0.097*** |
| | [-13.581] | [-8.816] | [-8.513] | [-10.823] | [-8.758] | [-10.251] |
| ProportionMeetBeat | 0.058*** | 0.131*** | 0.208*** | 0.042*** | 0.082*** | 0.137*** |
| | [16.196] | [16.696] | [18.546] | [11.033] | [11.646] | [13.021] |
| PriorUE | -0.001** | -0.003*** | -0.004*** | 0.000 | -0.001 | -0.001 |
| | [-2.035] | [-2.577] | [-2.799] | [-0.438] | [-1.120] | [-1.133] |
| PriorAbsUE | 0.001 | 0.002** | 0.004** | 0.000 | 0.002*** | 0.004*** |
| | [1.146] | [2.109] | [2.351] | [0.909] | [2.798] | [3.506] |
| ROA | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | [-1.045] | [-0.446] | [-0.564] | [-0.551] | [-0.092] | [-0.279] |
| SP500 | -0.003 | -0.018 | 0.043* | -0.004 | -0.014 | -0.023 |
| | [-0.520] | [-1.120] | [1.749] | [-0.344] | [-0.595] | [-0.644] |
| Observations | 147,391 | 147,391 | 147,391 | 147,391 | 147,391 | 147,391 |
| R-squared | 0.627 | 0.503 | 0.429 | 0.698 | 0.626 | 0.549 |
| Fixed Effects | FQtr-Year-Ind | FQtr-Year-Ind | FQtr-Year-Ind | Firm-FQtr-Year | Firm-FQtr-Year | Firm-FQtr-Year |

## Table 3: The Effect of Media Coverage by Institutional Investor Ownership

This table presents regression results where the dependent variable is *GuideQtr*, a continuous measure of the number of pieces of guidance issued around the current earnings announcement and following quarter. *LnMediaPriorEAxInstitOwnership* is defined as *LnMediaPriorEA* multiplied by the percentage of institutional owners for the firm. The sample consists of 147,391 firm-quarter observations (6,195 unique firms) between 2000-2016. All specifications are estimated using OLS and have standard errors clustered by firm. Continuous independent variables are standardized to have mean 0 and standard deviation 1.*/**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Appendix A.

| | (1) | (2) |
|---|---|---|
| VARIABLES | GuideQtr | GuideQtr |
| LnMediaPriorEA | 0.071*** | 0.048*** |
| | [11.303] | [10.218] |
| LnMediaPriorEAxInstitOwnership | 0.038*** | 0.018*** |
| | [7.444] | [4.662] |
| InstitOwnership | 0.030*** | 0.011* |
| | [5.097] | [1.944] |
| LnNumAnalysts | 0.010* | 0.002 |
| | [1.772] | [0.418] |
| LnMVE | 0.040*** | 0.188*** |
| | [3.807] | [12.636] |
| BM | -0.009** | 0.015*** |
| | [-2.518] | [3.848] |
| BidAskSpread | 0.013*** | 0.020*** |
| | [3.365] | [3.656] |
| Volatility | -0.015*** | -0.032*** |
| | [-3.106] | [-6.078] |
| PriorGuider | 1.239*** | 0.793*** |
| | [81.677] | [51.977] |
| UE | -0.004** | -0.002 |
| | [-2.456] | [-1.471] |
| UEPos | -0.025* | -0.006 |
| | [-1.886] | [-0.558] |
| UENeg | -0.066*** | -0.027*** |
| | [-5.225] | [-2.736] |
| Loss | -0.092*** | -0.097*** |
| | [-8.565] | [-10.260] |
| ProportionMeetBeat | 0.211*** | 0.139*** |
| | [18.761] | [13.160] |
| PriorUE | -0.005*** | -0.001 |
| | [-3.016] | [-1.085] |
| PriorAbsUE | 0.004** | 0.004*** |
| | [2.322] | [3.498] |
| ROA | -0.000 | -0.000 |
| | [-0.650] | [-0.209] |
| SP500 | 0.033 | -0.025 |
| | [1.346] | [-0.728] |
| Observations | 147,391 | 147,391 |
| R-squared | 0.430 | 0.549 |
| Fixed Effects | FQtr-Year-Ind | Firm-FQtr-Year |

## Table 4: The Effect of Media Coverage by News Source Credibility

This table presents regression results where the dependent variable is *GuideQtr*, a continuous measure of the number of pieces of guidance issued around the current earnings announcement and following quarter. *LnMediaPriorEA* is the logarithm of one plus the number of media articles (from all sources) disseminated in the five trading day window around the prior earnings announcement date. In columns 1-2, MediaCredibility equals *Trustworthiness*, calculated as the average Ravenpack trustworthiness rating of articles published during the five trading day window around the prior earnings announcement. The ordering of the ratings is reversed so that higher values indicate more trustworthy sources. In columns 3-4, MediaCredibility equals *Professionalism,* defined as the ratio of news articles published by professional media sources (as defined by Drake et al. (2017)) to total news articles around the prior earnings announcement. The sample consists of firm-quarter observations between 2007-2016. All specifications are estimated using OLS and have standard errors clustered by firm. Continuous independent variables are standardized to have mean 0 and standard deviation 1.*/**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Appendix A.

| | MediaCredibility = Trustworthiness | | MediaCredibility= Professionalism | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| VARIABLES | GuideQtr | GuideQtr | GuideQtr | GuideQtr |
| LnMediaPriorEA | 0.080*** | 0.033*** | 0.105*** | 0.042*** |
| | [8.415] | [5.089] | [9.261] | [5.448] |
| LnMediaPriorEAxMediaCredibility | 0.036*** | 0.016*** | 0.036*** | 0.014*** |
| | [7.093] | [3.691] | [6.584] | [2.999] |
| MediaCredibility | 0.027*** | 0.010** | 0.054*** | 0.017*** |
| | [5.321] | [2.387] | [6.892] | [2.833] |
| LnMVE | 0.026** | 0.109*** | 0.024** | 0.108*** |
| | [2.278] | [6.297] | [2.038] | [6.258] |
| BM | -0.010** | 0.006* | -0.010** | 0.006* |
| | [-2.463] | [1.880] | [-2.466] | [1.890] |
| LnNumAnalysts | 0.015** | -0.006 | 0.014** | -0.006 |
| | [2.108] | [-0.985] | [1.996] | [-0.997] |
| BidAskSpread | 0.030*** | 0.012** | 0.030*** | 0.012** |
| | [5.898] | [2.516] | [5.937] | [2.510] |
| Volatility | -0.022*** | -0.014*** | -0.023*** | -0.014*** |
| | [-3.399] | [-2.628] | [-3.466] | [-2.665] |
| InstitOwnership | 0.019*** | 0.015** | 0.018*** | 0.015** |
| | [3.208] | [2.358] | [3.017] | [2.343] |
| PriorGuider | 1.390*** | 0.760*** | 1.382*** | 0.759*** |
| | [72.517] | [33.556] | [72.299] | [33.604] |
| UE | -0.003* | -0.002 | -0.003* | -0.002 |
| | [-1.927] | [-1.593] | [-1.897] | [-1.595] |
| UEPos | -0.03 | 0.011 | -0.031 | 0.011 |
| | [-1.573] | [0.919] | [-1.602] | [0.917] |
| UENeg | -0.071*** | -0.011 | -0.071*** | -0.011 |
| | [-3.892] | [-0.910] | [-3.908] | [-0.917] |
| Loss | -0.024** | -0.023** | -0.025** | -0.024** |
| | [-1.997] | [-2.445] | [-2.061] | [-2.481] |
| ProportionMeetBeat | 0.170*** | 0.076*** | 0.168*** | 0.076*** |
| | [12.215] | [5.958] | [12.075] | [5.955] |
| PriorUE | -0.008*** | 0 | -0.008*** | 0 |
| | [-3.285] | [0.134] | [-3.280] | [0.138] |
| PriorAbsUE | -0.001 | 0.003** | -0.002 | 0.003** |
| | [-0.560] | [2.174] | [-0.652] | [2.157] |
| ROA | -0.001*** | 0.012 | -0.001*** | 0.012 |
| | [-3.054] | [0.647] | [-3.204] | [0.658] |
| SP500 | 0.038 | -0.035 | 0.032 | -0.035 |

| | | | | |
|---|---|---|---|---|
| | [1.321] | [-0.817] | [1.102] | [-0.827] |
| Observations | 71,685 | 71,685 | 71,685 | 71,685 |
| R-squared | 0.523 | 0.669 | 0.524 | 0.669 |
| Fixed Effects | FQtr-Year-Ind | Firm-FQtr-Year | FQtr-Year-Ind | Firm-FQtr-Year |

## Table 5: Media Dissemination and Information Creation

This table presents regression results where the dependent variable is *GuideQtr*, a continuous measure of the number of pieces of guidance issued around the current earnings announcement and following quarter. *LnFlashNewsPriorEA* (*LnFullNewsPriorEA*) is the logarithm of one plus the number of news flash (full-text) articles disseminated around the prior earnings announcement. The sample consists of 147,391 firm-quarter observations (6,195 unique firms) between 2000-2016. All specifications are estimated using OLS and have standard errors clustered by firm. Continuous independent variables are standardized to have mean 0 and standard deviation 1.*/**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Appendix A.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| VARIABLES | GuideQtr | GuideQtr | GuideQtr | GuideQtr |
| LnFlashNewsPriorEA | 0.076*** | | 0.073*** | 0.039*** |
| | [15.138] | | [14.733] | [9.677] |
| LnFullNewsPriorEA | | 0.040*** | 0.027*** | 0.018*** |
| | | [6.128] | [4.247] | [3.852] |
| LnMVE | 0.047*** | 0.040*** | 0.038*** | 0.190*** |
| | [4.517] | [3.846] | [3.604] | [12.724] |
| BM | -0.009*** | -0.009** | -0.010*** | 0.016*** |
| | [-2.595] | [-2.539] | [-2.758] | [3.889] |
| LnNumAnalysts | 0.012** | 0.010* | 0.010* | 0.002 |
| | [2.098] | [1.674] | [1.652] | [0.383] |
| BidAskSpread | 0.017*** | 0.016*** | 0.015*** | 0.021*** |
| | [4.359] | [4.285] | [4.034] | [3.915] |
| Volatility | -0.014*** | -0.016*** | -0.014*** | -0.031*** |
| | [-2.786] | [-3.182] | [-2.939] | [-5.871] |
| InstitOwnership | 0.026*** | 0.028*** | 0.026*** | 0.011* |
| | [4.704] | [5.086] | [4.802] | [1.937] |
| PriorGuider | 1.232*** | 1.266*** | 1.232*** | 0.792*** |
| | [82.124] | [81.828] | [82.092] | [52.024] |
| UE | -0.004** | -0.004*** | -0.004*** | -0.002 |
| | [-2.571] | [-2.834] | [-2.624] | [-1.534] |
| UEPos | -0.025* | -0.022 | -0.025* | -0.006 |
| | [-1.865] | [-1.611] | [-1.905] | [-0.561] |
| UENeg | -0.066*** | -0.064*** | -0.066*** | -0.027*** |
| | [-5.201] | [-5.032] | [-5.201] | [-2.721] |
| Loss | -0.089*** | -0.092*** | -0.091*** | -0.097*** |
| | [-8.306] | [-8.576] | [-8.537] | [-10.237] |
| ProportionMeetBeat | 0.209*** | 0.212*** | 0.208*** | 0.137*** |
| | [18.783] | [18.821] | [18.615] | [13.033] |
| PriorUE | -0.005*** | -0.005*** | -0.005*** | -0.001 |
| | [-3.046] | [-3.065] | [-3.037] | [-1.158] |
| PriorAbsUE | 0.004** | 0.004** | 0.004** | 0.004*** |
| | [2.515] | [2.368] | [2.281] | [3.538] |
| ROA | -0.000 | -0.000 | -0.000 | -0.000 |
| | [-0.517] | [-0.550] | [-0.465] | [-0.228] |
| SP500 | 0.057** | 0.050** | 0.043* | -0.022 |
| | [2.309] | [2.025] | [1.755] | [-0.621] |
| Observations | 147,391 | 147,391 | 147,391 | 147,391 |
| R-squared | 0.430 | 0.428 | 0.430 | 0.549 |
| Fixed Effects | FQtr-Year-Ind | FQtr-Year-Ind | FQtr-Year-Ind | Firm-FQtr-Year |

## Table 6: Media Coverage and Alternative Measures of Voluntary Disclosure

This table presents regression results where the dependent variables are *ConfCall*, an indicator for whether a conference call was held with the earnings announcement, *LnCallWords*, the logarithm of one plus the total number of words spoken during the conference call, and *LnPressReleases*, defined as the logarithm of one plus the number press releases issued during current earnings announcement and following quarter. Standard errors are clustered by firm and are provided in brackets. Continuous independent variables are standardized to have mean 0 and standard deviation 1.*/**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Appendix A.

| | (1) | (2) | (3) |
|---|---|---|---|
| VARIABLES | ConfCall | LnCallWords | LnPressReleases |
| LnMediaPriorEA | 0.018*** | 0.032** | 0.341*** |
| | [3.667] | [2.323] | [24.516] |
| LnMVE | 0.105*** | 0.330*** | 0.165*** |
| | [11.435] | [11.465] | [8.475] |
| BM | 0.012*** | -0.008 | 0.013* |
| | [2.871] | [-0.624] | [1.685] |
| LnNumAnalysts | 0.011** | 0.240*** | 0.031*** |
| | [2.135] | [16.920] | [3.613] |
| BidAskSpread | -0.011*** | -0.064 | -0.031*** |
| | [-3.109] | [-0.716] | [-3.397] |
| Volatility | 0.002 | 0.105*** | 0.072*** |
| | [0.469] | [5.261] | [7.318] |
| InstitOwnership | 0.088*** | 0.126*** | -0.011 |
| | [16.691] | [6.040] | [-1.175] |
| PriorGuider | 0.049*** | 0.096*** | -0.070*** |
| | [4.435] | [3.321] | [-3.728] |
| UE | 0.001 | 0.010 | 0.006** |
| | [1.127] | [1.055] | [2.467] |
| UEPos | -0.001 | -0.043** | -0.009 |
| | [-0.104] | [-2.072] | [-0.773] |
| UENeg | -0.010 | 0.036 | -0.018 |
| | [-1.342] | [1.646] | [-1.533] |
| Loss | -0.062*** | 0.009 | 0.135*** |
| | [-6.470] | [0.267] | [8.019] |
| ProportionMeetBeat | 0.029*** | 0.020 | 0.024 |
| | [2.624] | [0.609] | [1.303] |
| PriorUE | 0.003 | 0.004 | -0.001 |
| | [0.997] | [0.454] | [-0.692] |
| PriorAbsUE | 0.006* | 0.010 | -0.001 |
| | [1.679] | [0.885] | [-0.387] |
| ROA | 0.016 | -0.293** | 0.000 |
| | [1.403] | [-2.470] | [0.038] |
| SP500 | 0.122*** | -0.004 | 0.037 |
| | [6.298] | [-0.095] | [1.069] |
| Observations | 73,762 | 32,388 | 115,637 |
| R-squared | 0.287 | 0.268 | 0.263 |
| Fixed Effects | FQtr-Year-Ind | FQtr-Year-Ind | FQtr-Year-Ind |

## Table 7: Evidence from Wall Street Journal Restructuring Events

This table presents regression results of voluntary disclosure on changes in Wall Street Journal (WSJ) media coverage around WSJ restructuring events from 2006 to 2008. The WSJ reduced business news coverage from 2006 to 2007 and reversed the change in 2008. The treatment period is defined as the year before the coverage decreasing event (i.e., 2006) and as the year after the coverage increasing event (i.e., 2008). For the first event (second event), firms are assigned to the treatment group if their WSJ news coverage changed from the top (bottom) to the bottom (top) tercile from 2006 (2007) to 2007 (2008) and the control group if their news coverage remained in the same tercile from 2006 (2007) to 2007 (2008). TreatYear×Treat is the treatment indicator, which equals 1 for treatment firms in the treated years (i.e., 2006 or 2008) and 0 otherwise. The dependent variables are the guidance measures examined in Table 2 and the alternative voluntary disclosure measures examined in Table 6. Panel A presents regression results for the baseline (unmatched) sample, Panel B presents regression results for the Firm Visibility Matched Sample, which matches treatment and control firms upon *PriorMediaCoverage, NumAnalysts,* and *InstitOwnership.* Panel C presents regression results for the Recent News Matched Sample, which matches treatment and control firms upon *BidAskSpread*, *Volatility*, unexpected earnings (*UE)*, absolute unexpected earnings |*UE*|, and *ROA*. See Sections 3 and 4.7.1 for variable definitions. Standard errors are clustered by firm and year-quarter and are provided in brackets.*/**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively.

*Panel A: Baseline Results*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| VARIABLES | GuideBundled | GuideBundledCt | GuideQtr | ConfCall | LnCallWords | LnPressReleases |
| TreatYear×Treat | 0.024 | 0.072** | 0.099* | 0.052* | 0.076 | 0.090** |
| | [1.729] | [2.298] | [1.842] | [2.160] | [1.177] | [2.938] |
| Controls Included | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 26,066 | 26,066 | 26,066 | 26,066 | 9,111 | 26,066 |
| R-squared | 0.802 | 0.759 | 0.683 | 0.684 | 0.617 | 0.733 |
| Fixed Effects | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr |

*Panel B: Firm Visibility Matched Sample*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| VARIABLES | GuideBundled | GuideBundledCt | GuideQtr | ConfCall | LnCallWords | LnPressReleases |
| TreatYear×Treat | 0.030* | 0.093** | 0.107* | 0.038 | 0.05 | 0.085*** |
| | [2.109] | [2.581] | [1.927] | [1.677] | [0.707] | [3.206] |
| Controls Included | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 16,631 | 16,631 | 16,631 | 16,631 | 6,960 | 16,631 |
| R-squared | 0.820 | 0.771 | 0.693 | 0.678 | 0.635 | 0.748 |
| Fixed Effects | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr |

*Panel C: Recent News Matched Sample*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| VARIABLES | GuideBundled | GuideBundledCt | GuideQtr | ConfCall | LnCallWords | LnPressReleases |
| TreatYear×Treat | 0.025 | 0.073** | 0.100* | 0.051** | 0.069 | 0.100*** |
| | [1.687] | [2.273] | [1.845] | [2.287] | [1.028] | [3.324] |
| Controls Included | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 24,671 | 24,671 | 24,671 | 24,671 | 9,054 | 24,671 |
| R-squared | 0.798 | 0.752 | 0.672 | 0.664 | 0.617 | 0.743 |
| Fixed Effects | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr | Firm-YearQtr |

## Table 8: Instrumental Variables Tests

This table presents regression results for my instrumental variable analysis. In column 1, the dependent variable is *LnMediaPriorEA* for the first stage IV regression. Columns 2-4 present the second stage IV regressions where the dependent variables are my measures of management guidance from Table 2. LnDistance is the logarithm of one plus the minimum distance between a firm's headquarter and a Dow Jones news branch. All specifications are estimated using OLS and have standard errors clustered by firm. Continuous independent variables are standardized to have mean 0 and standard deviation 1.*/**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Appendix A.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| VARIABLES | LnMediaPriorEA | GuideBundled | GuideBundledCt | GuideQtr |
| | | | | |
| LnDistance | -0.009** | | | |
| | [-2.563] | | | |
| LnMediaPriorEA | | 0.475** | 0.916** | 0.984 |
| | | [2.203] | [2.175] | [1.518] |
| | | | | |
| Controls Included | Yes | Yes | Yes | Yes |
| Observations | 120,790 | 120,790 | 120,790 | 120,790 |
| Fixed Effects | FQtr-Year-Ind | FQtr-Year-Ind | FQtr-Year-Ind | FQtr-Year-Ind |

## Table 9: Guidance Characteristics

This table presents regression results where the dependent variables are *Immediacy*, the number of days between the current earnings announcement and first management forecast issued, multiplied by -1, *Specificity,* which equals 3 if the forecast is a point estimate, 2 if the forecast is a closed range, and 1 if the forecast is an open range, and *AbsFcRange,* the absolute difference between the upper and lower bounds of a forecast, scaled by price. All specifications are estimated using OLS and have standard errors clustered by firm. Standard errors are clustered by firm and are provided in brackets. Continuous independent variables are standardized to have mean 0 and standard deviation 1.*/**/*** */**/*** indicate statistical significance at the 10%, 5%, and 1% levels (two-sided) respectively. Variable definitions are detailed in Appendix A.

| | (1) | (2) | (3) |
|---|---|---|---|
| VARIABLES | Immediacy | Specificity | AbsFcRange |
| LnMediaPriorEA | 0.027*** | -0.002 | 0.008 |
| | [4.116] | [-0.531] | [1.027] |
| LnMVE | 0.032** | 0.006 | -0.027 |
| | [2.511] | [0.689] | [-0.969] |
| BM | -0.030** | -0.001 | -0.015 |
| | [-2.393] | [-0.214] | [-0.904] |
| LnNumAnalysts | -0.024*** | 0.011*** | 0.013 |
| | [-3.351] | [2.971] | [0.982] |
| BidAskSpread | 0.017 | -0.005 | -0.024 |
| | [1.043] | [-0.692] | [-0.980] |
| Volatility | -0.075*** | 0.015*** | 0.017 |
| | [-5.868] | [2.760] | [1.004] |
| InstitOwnership | 0.019** | 0.012** | 0.008 |
| | [2.227] | [2.187] | [0.932] |
| PriorGuider | 0.681*** | -0.003 | -0.022 |
| | [28.015] | [-0.411] | [-0.907] |
| UE | 0.042 | -0.007 | 0.014 |
| | [1.373] | [-0.523] | [1.021] |
| UEPos | 0.063*** | -0.027*** | 0.011 |
| | [4.334] | [-3.851] | [1.075] |
| UENeg | 0.018 | -0.026*** | 0.023 |
| | [1.114] | [-3.239] | [1.151] |
| Loss | -0.068*** | -0.025** | 0.088 |
| | [-2.989] | [-2.219] | [1.054] |
| ProportionMeetBeat | 0.040** | 0.021* | -0.015 |
| | [1.995] | [1.951] | [-1.083] |
| PriorUE | -0.004 | -0.004 | -0.023 |
| | [-0.081] | [-0.237] | [-1.077] |
| PriorAbsUE | -0.008 | -0.005 | -0.042 |
| | [-0.183] | [-0.199] | [-1.049] |
| ROA | -0.069 | -0.053* | -0.099 |
| | [-0.997] | [-1.922] | [-0.980] |
| SP500 | -0.036* | -0.008 | 0.020 |
| | [-1.743] | [-0.598] | [0.935] |
| Observations | 56,411 | 52,901 | 41,830 |
| R-squared | 0.250 | 0.039 | 0.005 |
| Fixed Effects | FQtr-Year-Ind | FQtr-Year-Ind | FQtr-Year-Ind |