China Journal of Accounting Research 17 (2024) 100379

HOSTED BY

Contents lists available at ScienceDirect

China Journal of Accounting Research

journal homepage: www.elsevier.com/locate/cjar

Media coverage and price reactions to earnings news

Miao Yu [a], Hangsoo Kyung [b], Albert Tsang [c]

[a] School of Accountancy Shandong, University of Finance and Economics, China
[b] School of Accounting and Finance Hong, Kong Polytechnic University, China
[c] SUSTech Business School Southern, University of Science and Technology, China

ARTICLE INFO

Article history:
Received 10 November 2023
Accepted 1 July 2024
Available online 18 July 2024

Keywords:
Earnings announcement
Asymmetric stock market reactions
Media coverage
Earnings persistence

ABSTRACT

In this study, we find that relative to firms with less media coverage, stock price sensitivity to positive (negative) earnings surprises in earnings announcements of firms with greater media coverage is stronger (weaker). This asymmetry in the effect of media coverage on stock price sensitivity to positive versus negative earnings surprises suggests that greater media coverage of earnings announcements intensifies stock price reactions to positive earnings surprises but attenuates reactions to negative earnings surprises. Moreover, we find that negative earnings news is less persistent for firms with greater media coverage. Overall, our findings support the conjecture that greater media coverage increases managers' incentive to avoid future negative news, thereby reducing the persistence of poor financial performance and weakening price reactions to negative earnings news.

1. Introduction

An important stream of empirical studies in accounting, finance and economics suggests that news media play an important role in capital markets by alerting capital market participants to firm events. As a result, media coverage can significantly affect investors' reactions to firms' information disclosures, such as earnings releases (Peress, 2008; Griffin et al., 2011; Pinnuck, 2014; Miller and Skinner, 2015; Kong et al., 2017; Huang et al., 2018; Bonsall et al., 2020; Cao et al., 2020; Kyung and Tsang, 2022; Tsang et al., 2024). In support of this view, studies provide strong evidence that news media influence stock price reactions to earnings news by creating and disseminating information (Bushee et al., 2010; Drake et al., 2014; Guest, 2021), disciplining manager behavior (Miller, 2006; Dai et al., 2015) and influencing investor sentiment (Tetlock, 2007).

E-mail addresses: yumiao@sdufe.edu.cn (M. Yu), hangsoo.kyung@polyu.edu.hk (H. Kyung), zengxl@sustech.edu.cn (A. Tsang)

https://doi.org/10.1016/j.cjar.2024.100379
1755-3091/

In summary, studies conclude that high levels of media dissemination of earnings news reduce information asymmetry and enhance price discovery (e.g., Engelberg and Parsons, 2011; Blankespoor et al., 2018).[1]

Another stream of literature examines whether and how stock market reactions to firms' information disclosures vary depending on the content of the information disclosed, namely positive or negative earnings news. These studies generally show that the stock market responds more strongly to negative news than to positive news (e.g., Kothari et al., 2009; Mian and Sankaraguruswamy, 2012; Williams, 2015). Research also suggests that differences in stock market reactions to firms' information disclosures can have important capital market implications and provide possible explanations for asymmetric market reactions to good and bad news.[2] For example, whereas Kothari et al. (2009) attribute this asymmetry to managers withholding bad news, Mian and Sankaraguruswamy (2012) suggest that stock market reactions to earnings news can be affected by differences in investor sentiment.

Surprisingly, despite the crucial role of the media in investors' reactions to firms' information disclosures and the large difference in price reactions to positive and negative earnings news,[3] studies to date have not explored whether and how the level of media coverage of firms affects stock market reactions to positive and negative earnings news. Thus, the main objective of this study is to examine whether and how investors' reactions to firms' earnings announcements containing positive and negative earnings surprises vary depending on the level of media coverage of these announcements.

Based on a large sample of quarterly earnings announcements from U.S. firms, we first demonstrate the existence of asymmetric stock price reactions to negative and positive earnings surprises in firms' earnings announcements, consistent with prior studies (e.g., Kothari et al., 2009; Mian and Sankaraguruswamy, 2012; Williams, 2015). Second, we present robust evidence that stock price reactions to positive and negative earnings surprises in quarterly earnings announcements are influenced by the level of media coverage. Specifically, we find that stock price sensitivity to positive earnings surprises becomes stronger when the level of media coverage of a firm in the pre-earnings announcement period is high; conversely, stock price sensitivity to negative earnings surprises is weakened when the level of media coverage of a firm in the pre-earnings announcement period is high. In other words, we find that the impact of media coverage on price reactions to earnings news varies depending on the direction of earnings surprises. Our finding that greater media coverage intensifies stock price reactions to positive earnings surprises is consistent with research showing that greater media coverage of firms can lead to stronger stock market reactions (Peress, 2008; Engelberg and Parsons, 2011; Li et al., 2011; Twedt, 2016). However, our finding that media coverage mitigates stock price reactions to negative earnings surprises runs counter to the expectation that increased media coverage strengthens price reactions to earnings news, regardless of the nature of the earnings surprises.[4]

Further analysis shows that our main findings are robust across (1) earnings- and non-earnings-related news, (2) different types of media coverage (i.e., full articles, news flashes and press releases) and (3) media coverage with varying emotional tones. Our findings are also robust to an array of additional tests, such as examining yearly earnings announcements instead of quarterly earnings announcements, testing within-firm variations in different levels of media coverage associated with corporate earnings announcements instead of cross-firm variations in media coverage, using an alternative measure of earnings surprises and controlling

[1] Price discovery is generally defined as "the process through which prices converge toward earnings information" (Guest, 2021, p. 1029).

[2] For example, Huang et al. (2018) show that firms influence investors' reactions to positive earnings surprises by manipulating the salience of earnings announcements. Other evidence suggests that managers may be incentivized to limit negative stock price responses by bundling non-earnings press releases with negative earnings news during the earnings announcement period (Liu et al., 2017) or by strategically scheduling and timing their earnings announcements (deHaan et al., 2015). For example, Michaely et al. (2016) show that managers opportunistically disclose bad news on Friday evenings to attenuate negative stock price reactions. Aherna and Sosyura (2014) show that during merger negotiations, bidders tend to publish more news stories in the financial press to manipulate their stock prices.

[3] Research suggests that earnings announcements constitute a major mechanism through which investors receive information about firms (e.g., Holstein, 2008; Solomon and Soltes, 2012; Michaely et al., 2016).

[4] To enhance the robustness of our findings, we use various measures of media coverage derived from the RavenPack database. These measures include media coverage variables that are assessed using a range of pre-earnings announcement windows (e.g., the 90-, 60- and 30-day windows preceding a firm's quarterly earnings announcement). Additionally, we use abnormal levels of media coverage during the pre-earnings announcement window (defined as the residuals from regressing the total level of media coverage during the 90-day pre-earnings announcement window on firm-level determinants identified by Engelberg and Parsons (2011) as an alternative measure of media coverage.

for the potential effects of other information intermediaries on stock price reactions to earnings news. Overall, our findings support the conjecture that media coverage plays an important but asymmetric role in investors' reactions to positive versus negative earnings news.

Finally, we examine the possible underlying channel that contributes to weaker stock price reactions to negative earnings news from firms with greater media coverage. Specifically, we conduct tests to examine two possible channels. First, studies suggest that losses are less persistent than profits (Hayn, 1995) and that loss avoidance is important for both managers and investors (Degeorge et al., 1999; Matsumoto, 2002; Graham et al., 2005). Suk et al. (2021) argue that the boards of directors of firms with lower earnings persistence are more likely to view poor earnings performance as a transitory shock and are therefore less likely to fire CEOs with poor earnings performance.[5] According to these studies, one possible explanation for our finding is that a higher level of media coverage increases a firm's incentive to avoid losses and/or avoid reporting negative news in future periods. Accordingly, we predict that firms with higher levels of media coverage are more likely than their counterparts to exhibit lower levels of negative news persistence, thereby increasing investors' sentiment/optimism about the transient nature of negative earnings news.

Second, research shows that financial media and the business press are more likely to cover firms with deteriorating (versus improving) performance and that greater media coverage foreshadows poor performance and negative earnings surprises (Niessner and So, 2017). Other studies find that the media can play an important corporate governance role and can therefore discipline managers' behavior.[6] In line with this view, research suggests that greater media coverage can increase firms' accounting conservatism (i.e., recognizing bad news in a timely manner while delaying recognition of gains; Kong et al., 2017). The conclusions drawn from these studies regarding the information and/or monitoring role of the media thus suggest another possible explanation for our finding of a weaker stock market reaction to negative earnings news when firms' media coverage is higher. Specifically, for firms with greater media coverage, investors may be aware of declining earnings performance well before the earnings announcement date (e.g., firms may release bad news earlier due to media coverage[7] or the media may release bad news to the market more quickly). As a result, investors may exhibit weak price reactions to negative earnings news released on the earnings announcement date.

Consistent with the first conjecture proposed above (i.e., investors tend to perceive firms with greater media coverage as having lower negative news persistence), our evidence indicates that negative earnings news is less persistent for firms with greater media coverage in the pre-earnings announcement period than for other firms. In contrast, contrary to our second conjecture (i.e., firms with greater media coverage tend to release negative earnings news earlier), repeating our tests using different pre-earnings announcement windows (i.e., –4 days to –2 days, –7 days to –2 days, –30 days to –2 days and –60 days to –2 days) provides no evidence that the weaker stock price response to bad news documented in our study is driven by a stronger market response to bad news before the earnings announcement date.

Our study makes several contributions to the literature. First, a growing body of research documents the significant capital market benefits associated with media coverage. These benefits may take the form of reduced information asymmetry, greater investor responsiveness to information, higher analyst forecast accuracy and reduced incidence of mispricing (Bushee et al., 2010; Engelberg and Parsons, 2011; Drake et al., 2014; Cao et al., 2020).[8] We contribute to this literature by showing that media coverage increases stock price sensitivity to earnings news when the news is positive, but reduces this sensitivity when firms report negative earnings news.

[5] In contrast, they show that CEOs with poor performance are more likely to be fired if their firm's earnings persistence is high (i.e., when poor earnings performance in the current period is more likely to carry forward to future periods).

[6] Given the considerable influence of the media as information intermediaries in capital markets, many studies focus on the role of the media in corporate governance (e.g., Dyck et al., 2008; Griffin et al., 2011; Drake et al., 2014; Hillert et al., 2014; Dai et al., 2015; Rogers et al., 2016).

[7] Kothari et al. (2009) and Baginski et al. (2018) infer the level to which managers withhold bad news by noting differences in the magnitude of stock price sensitivity to bad news relative to good news. They argue that stronger stock price reactions to bad news (than to good news) following earnings announcement dates suggest that managers tend to withhold bad news.

[8] Other studies highlight the importance of the media by showing that firms have incentives to influence media coverage. For example, Bushee and Miller (2012) reveal that hiring investor relations firms increases firms' media coverage. Aherna and Sosyura (2014) show that bidders tend to publish more news stories in the financial press during merger negotiations to manipulate their stock prices.

Second, beginning with Ball and Brown (1968), a substantial number of accounting studies demonstrate asymmetric stock price reactions to negative versus positive corporate news (i.e., stock price sensitivity to earnings surprises is conditional on the sign of the unexpected earnings). This literature identifies various factors that promote asymmetric market responses to good versus bad news (e.g., Soffer et al., 2000; Conrad et al., 2002; Francis et al., 2002; Skinner and Sloan, 2002; Hutton et al., 2003; Kothari et al., 2009; Mian and Sankaraguruswamy, 2012; Williams, 2015). Our study adds to this literature by providing evidence that asymmetric stock market reactions to positive versus negative earnings news can also be attributable to the effect of media coverage on different types of earnings news. Additionally, this study adds to the literature on the value relevance and/or informativeness of earnings (Radhakrishnan and Tsang, 2011; Kim et al., 2019; Martins and Barros, 2021) by providing evidence supporting the importance of the level of media coverage associated with earnings news.

The remainder of this study is organized as follows. Section 2 provides a literature review and develops the study's hypotheses. Section 3 describes the research design. Section 4 presents the data and sample selection. Section 5 discusses the key findings. Section 6 offers our conclusions.

2. Literature review and hypothesis development

The media play an important intermediary role in financial markets by collecting, aggregating, interpreting and disseminating firm-related news. These activities reduce information asymmetry between firms and capital market participants (Miller, 2006; Bushee et al., 2010; Solomon and Soltes, 2012; Solomon et al., 2014; Cao et al., 2020; Tsang et al., 2024). Studies suggest that the business press tends to exert greater influence on capital markets than do other major information intermediaries, such as financial analysts, because the business press has a wider audience base (Fang and Peress, 2009) and greater credibility and timeliness (Kothari et al., 2009). Consistent with this view, studies show that by widely disseminating information to capital market participants, the business press can significantly influence investors' decision-making processes (e.g., Huberman and Regev, 2001; Tetlock, 2007; Peress, 2008; Tetlock et al., 2008; Bushee et al., 2010; Tetlock, 2011; Chen et al., 2013; Drake et al., 2014; Solomon et al., 2014).[9]

Kothari et al. (2009) examine whether the impact of earnings disclosures on capital markets is conditional on news content. They find that favorable (unfavorable) disclosures from the business press can decrease (increase) the costs of capital and stock return volatility. Kuhnen (2015) conducts a laboratory experiment and finds that people tend to form overly pessimistic beliefs based on negative financial news reports and that they react more strongly to negative news than to positive news. Following this reasoning, managers who report negative earnings surprises in their earnings announcements are expected to face stronger negative stock reactions to such information when their firms receive greater media coverage. That is, although a high level of media coverage can intensify stock price reactions to positive news, it can also intensify stock price reactions to negative news.

In addition, many theoretical and empirical studies on capital markets implicitly assume that the media collect, process and disseminate corporate news in a homogeneous, neutral and symmetrical way, without being affected by the nature or sign of the news. This assumption may not be warranted because media reporters (like many other capital market participants) are economic entities in the financial market. Their decisions are therefore affected by numerous factors, such as the nature of corporate news (Mullainathan and Shleifer, 2005; Reuter and Zitzewitz, 2006; Kothari et al., 2009; Gurun and Butler, 2012). For instance, Hamilton (2004) suggests that media decisions regarding news coverage are often driven by the perceived level of audience appeal. In line with this view, studies postulate that media managers have incentives to cover and disseminate more negative news than positive news and even to report negative news more negatively (e.g.,

[9] As Bushee et al. (2010, p. 2) explain, "[t]he business press is perhaps the broadest and most widely disseminated of all potential information intermediaries, reaching both sophisticated and unsophisticated investors, as well as managers, regulators, and other market participants.".

Baumeister et al., 2001; Mullainathan and Shlefier, 2005; Holstein, 2008; Solomon and Soltes, 2012). Niessner and So (2017) reinforce the argument about media bias towards negative financial news.[10] Overall, these studies suggest that capital market participants (e.g., journalists and investors) are likely to pay more attention to negative news than to positive news.[11]

However, research also suggests that firms' poor financial performance can significantly increase the likelihood of CEO turnover and reduce CEOs' chances of obtaining comparable employment opportunities at other firms after their departure (e.g., Cannella et al., 1995; Huson et al., 2001; Dai et al., 2021). In their recent study, Suk et al. (2021) provide evidence that earnings persistence is one of the most important earnings attributes in explaining the sensitivity of CEO turnover to a firm's financial performance. Specifically, they show that negative news disclosed by firms with lower levels of earnings persistence has a weaker influence on CEO turnover decisions made by the board of directors. Following this observation, to the extent that greater media coverage of poor corporate financial performance increases managers' career concerns, we conjecture that managers of firms reporting negative (versus positive) earnings news, particularly those of firms with greater media coverage, have stronger incentives to avoid reporting negative news in a future period. This in turn may increase investor sentiment regarding the future financial performance of firms. In support of this claim, Mian and Sankaraguruswamy (2012) find that although investor sentiment/optimism intensifies stock price reactions to positive news, it weakens stock price reactions to negative news. Analogously, we predict that a higher level of media coverage will weaken stock price reactions to negative news and intensify stock price reactions to positive news, resulting in asymmetric price reactions to positive versus negative earnings news.

Studies also suggest that the media not only affect investors' decision-making processes but also managers' behavior. For example, managers' decisions to pursue acquisitions may be affected by the level and tone of media attention given to the proposed transactions (Liu and McConnell, 2013; Cihan et al., 2017). Dai et al. (2015) show that the dissemination of corporate insider trading news by the media constrains managers' future trading activities by reducing the profitability of insider trading. Dyck and Zingales (2002) show that greater media coverage increases the responsiveness of the private sector to environmental concerns. They conclude that the media play an important role in shaping corporate policy and should not be ignored when analyzing a country's corporate governance system. Kong et al. (2017) find that media coverage increases firms' incentives to adopt conservative accounting practices to avoid public scrutiny.[12] These conclusions again suggest that a higher level of media coverage attenuates stock market reactions to negative earnings news disclosed on earnings announcement dates, because firms with greater media coverage are likely to disclose negative news more quickly. In other words, investors may be aware of declining earnings performance well before firms' earnings announcement dates, especially for firms with greater media coverage.

Overall, *ex ante*, it is unclear whether and how media coverage differently affects stock market reactions to firms' earnings announcements that contain positive and negative earnings news. Given the potentially different role of media coverage in stock price reactions to positive versus negative earnings news, we put forward the following hypotheses:

Hypothesis 1a. Greater media coverage **intensifies** stock price reactions to **negative** earnings news disclosed on the earnings announcement date.

[10] A rational explanation for why the media pay more attention to negative news is provided by psychological research, which confirms that negative events have more significant effects on individual learning and information processing than do positive events (Skowronski and Carlston, 1989; Baumeister et al., 2001; Rozin and Royzman, 2001). For example, studies show that negative news attracts more attention (Fiske, 1980), is easier to remember (Wentura et al., 2000) and is more carefully processed (Klinger et al., 1980) than positive news.

[11] Additionally, research suggests that newspaper readers prefer to read positive news about the firms they own, leading newspapers to skew their coverage toward positive information (Kindleburger, 1989; Galbraith, 1990; Schiller, 2000). In line with this view, the model proposed by Mullanaithan and Shleifer (2002) assumes that the newspaper has an incentive to change a story to match the reader's prior beliefs. Thus, to the extent that readers prefer to read and thus react more strongly to (are likely to discount) positive (negative) news (Jensen, 1979; Mullanaithan and Shleifer, 2002), we also predict that media coverage has an effect on investors' asymmetric responses to good and bad news.

[12] Research suggests that media coverage is positively associated with corporate visibility (e.g., Wartick, 1992; Carroll and McCombs, 2003; Kiousis et al., 2007; Moon and Hyun, 2014).

Hypothesis 1b. Greater media coverage **weakens** stock price reactions to **negative** earnings news disclosed on the earnings announcement date.

3. Research design

3.1. Determinants of media coverage

Our study aims to determine whether greater media coverage of corporate news released through earnings announcements intensifies or attenuates stock market reactions to this news. However, media coverage is not random (Bushee et al., 2010; Soltes, 2010). Both observable and unobservable factors related to the media's decision to cover a particular firm's earnings announcements may be associated with the stock market valuation of the information given in the announcements.[13]

To alleviate the possibility of selection bias in media coverage decisions, we use a Heckman (1979) two-stage selection model. In the first stage, we estimate the following logistic regression model regarding the choice of media coverage:

$$\begin{aligned} Coverage_{i,q} = {} & \alpha_0 + \alpha_1 Dum\_Press\_year(t-1)_{i,q} + \alpha_2 BadNews_{i,q} + \alpha_3 SUE_{i,q} + \alpha_4 BadNews \times SUE_{i,q} \\ & + \alpha_5 LnMVE_{i,q} + \alpha_6 Leverage_{i,q} + \alpha_7 MB_{i,q} + \alpha_8 InstitutionHolding_{i,q} + \alpha_9 NumInstitution_{i,q} \\ & + \alpha_{10} NumAnalyst_{i,q} + \alpha_{11} NumEmployee_{i,q} + \alpha_{12} SP1500_{i,q} + \alpha_{13} PriorReturn_{i,q} \\ & + \alpha_{14} PriorTurnover_{i,q} + \alpha_{15} NumLawsuit_{i,q} + \alpha_{16} Zscore_{i,q} + \alpha_{17} HighTech_{i,q} \\ & + \alpha_{18} Regulate_{i,q} + Industry\ and\ Year - Quarters\ Fixed\ Effects + \varepsilon_{i,q} \end{aligned} \quad (1)$$

The dependent variable $Coverage_{i,q}$ is an indicator variable (e.g., *Dum_Press_90day*) used to measure firm *i*'s media coverage during the (approximately) 90-day window preceding the firm's quarterly earnings announcement in fiscal quarter *q*. Specifically, this variable is measured from 1 day after a firm's earnings announcement date in quarter *q*–1 to 1 day before its earnings announcement date in quarter *q*. The Heckman (1979) two-stage selection model requires an instrument to satisfy the exclusion restriction. We examine whether our instrument is an exogenous variable in the first-stage model but does not affect the dependent variables in the second-stage regressions. For our instrumental variable, we use $Dum\_Press\_year(t-1)$, which is an indicator variable equal to 1 if the business press covers a firm during fiscal year *t*–1 and 0 otherwise. A firm's media coverage in the previous year is likely to be associated with its current media coverage but is unlikely to affect its stock price in response to a current earnings announcement. We calculate the inverse Mills ratio (*IMR*) from Eq. (1) and include *IMR* in the second-stage regressions.[14]

We include a set of factors that may affect the business press's decision to cover a firm's earnings announcements. First, we include unexpected earnings to control for the information content of earnings announcements, because the business press is more likely to cover news with a greater impact on investors. To proxy for unexpected earnings, we follow Mian and Sankaraguruswamy (2012) and use seasonally differenced earnings surprises as a measure of earnings surprises. Our proxy for unexpected earnings surprises (*SUE*) is thus defined as earnings per share before extraordinary items in quarter *q* minus earnings per share before extraordinary items in quarter *q*–4 (i.e., the same quarter of the previous year), scaled by the stock price at the end of

[13] For example, managers who have less incentive to withhold bad news (e.g., managers of firms with weaker stock price reactions to their earnings announcements) are more likely than others to attract media attention. If this conjecture is valid, the research question examined in our study may be subject to selection bias.

[14] We acknowledge the weakness of using media coverage in the previous year as an instrumental variable in our test. For example, firms that received extensive media coverage in the previous year may have acquired a larger shareholder base and analyst following. This prior media coverage may in turn affect investors' responses to the firms' earnings news in subsequent periods. We thus conduct additional tests to determine the validity of our instrument, following Lennox (2012). First, we test the validity of the exclusion restriction. We find that our instrument is associated with media coverage in the current fiscal quarter but is not associated with current stock returns on the earnings announcement dates. In an additional robustness test, we use an alternative instrumental variable and find that our conclusion remains unchanged. Specifically, we define an indicator variable, *Media_Competitor*, equal to 1 if the business press covers a firm's major competitor in its industry during fiscal year *t*–1 and 0 otherwise.

quarter q.[15] In a robustness test, instead of assuming that market earnings expectations follow a random walk model and measuring earnings surprises as seasonally differenced earnings, we define an alternative measure of unexpected earnings surprises, *SUE_Analyst*, using analysts' consensus forecasts as the benchmark.

Studies suggest that the media have a greater incentive to cover negative news than positive news because negative news tends to attract more attention (Baumeister et al., 2001; Mullainathan and Shlefier, 2005; Holstein, 2008; Solomon and Soltes, 2012). Thus, we define the indicator variable *BadNews*, which takes the value of 1 if a firm-quarter's *SUE* is negative and 0 otherwise. We interact this variable with *SUE* to control for possible media negativity bias. We control for firm size (*LnMVE*), leverage (*Leverage*), and growth opportunity (*MB*), because the market demand for information is greater for larger firms, more leveraged firms and faster-growing firms than for their respective counterparts (Bushee et al., 2010). Firms with higher institutional ownership are also more likely than others to receive greater media coverage, because institutional investors are the main clientele of news services (Soltes, 2010). We therefore include institutional ownership (*InstitutionHolding*) and the number of institutional investors (*NumInstitution*) in our analysis. We also include analyst following (*NumAnalyst*) to control for the potential substitution effect between analyst coverage and media coverage (Fang and Peress, 2009).

In addition, as media coverage may be positively related to the potential economic impact of a particular firm in society, we control for the number of employees (*NumEmployee*) as a proxy for the economic impact of the firm. As firms included in major market indexes are of particular interest to the business press (Li et al., 2011), we include an indicator variable for the S&P 1500 Index (*SP1500*). To control for investor attention, we also include stock returns from the previous quarter (*PriorReturn*) and market-adjusted share turnover from the previous quarter (*PriorTurnover*). Kothari et al. (2009) show that litigation costs, managerial career concerns and information asymmetry are all associated with incentives to withhold bad news. Therefore, we include the number of class action lawsuits in each industry (*NumLawsuit*) to control for litigation costs and the Z-score (*Zscore*) to control for managerial career concerns. We also include a classification of high-tech industries (*HighTech*) and a classification of regulated industries (*Regulate*) to control for information asymmetry. The variables are defined in detail in Appendix I.

3.2. Stock price sensitivity to positive versus negative earnings surprises

To examine whether and how media coverage affects investors' responses to earnings announcements that contain positive versus negative earnings news, we follow Mian and Sankaraguruswamy (2012) and create two indicator variables, *Goodnews* and *Badnews*, where *Goodnews* (*Badnews*) equals 1 if a firm's unexpected earnings are positive (negative) and 0 otherwise. We then multiply unexpected earnings surprises (*SUE*) by these indicator variables and obtain *SUEGoodNews* and *SUEBadNews* (i.e., our measures of good and bad earnings surprises, respectively). We further multiply *SUEGoodNews* and *SUEBadNews* by the level of media coverage, *Coverage*, around the earnings announcement dates to create the interaction terms *SUEGoodNews* × *Coverage* and *SUEBadNews* × *Coverage*. These variables allow us to test whether the earnings response coefficient of positive versus negative earnings news varies depending on the level of media coverage. We include the indicator variable *BadNews* as a stand-alone variable to account for the difference in intercepts for good and bad earnings news (Bartov et al., 2002).[16] Furthermore, we include industry and quarter fixed effects to control for time-invariant industry- and quarter-specific effects that may affect stock returns surrounding earnings announcements. We then regress the 3-day cumulative abnormal returns surrounding a firm's quarterly earnings announcements (*CAR (–1, +1)*) on *SUEGoodNews* × *Coverage* and *SUEBadNews* × *Coverage*.[17]

The model is specified as follows:

[15] We adjust earnings when a stock split is observed for better comparison over the years. In an additional test, instead of using quarterly earnings announcements, we examine the role of media coverage using yearly earnings announcements. Although we have a much smaller number of observations, our results remain unchanged.

[16] Following Mian and Sankaraguruswamy (2012), we also include two additional control variables, *NonlGood*, measured as the square of *SUEGoodnews*, and *NonlBad*, measured as the square of *SUEBadnews* multiplied by –1.

[17] In a robustness test, we use the 7-day cumulative abnormal returns surrounding earnings announcements, *CAR (–3, +3)*, instead of the 3-day cumulative abnormal returns, *CAR (–1, +1)*. We find that our inferences remain unchanged.

$$CAR(-1,+1)_{i,q} = \beta_0 + \beta_1 BadNews_{i,q} + \beta_2 SUEGoodNews_{i,q} + \beta_3 SUEGoodNews \times Coverage_{i,q} + \beta_4 SUEBadNews_{i,q} + \beta_5 SUEBadNews \times Coverage_{i,q} + \text{Control Variables} + IndustryandYear - QuartersFixedEffect + \varepsilon_{i,q} \quad (2)$$

where *Coverage* is our proxy for media attention, measured in the period preceding a firm's quarterly earnings announcement. Given the positive association between stock prices and earnings surprises (Ball and Brown, 1968), we expect that $\beta_2 > 0$ and $\beta_4 > 0$. Our variables of interest in this regression model are β_3 and β_5.

If greater media coverage increases investors' attention to corporate earnings news contained in earnings announcements, then we would expect β_3 and β_5 to be significant and positive (H1a). In contrast, if greater media coverage of negative news in the current period provides more incentive for managers to avoid reporting negative news in future periods, thereby reducing investors' concerns about the persistence of poor financial performance, we predict that firms with negative earnings news will experience less negative stock price reactions if they have higher media coverage, compared to firms with similar negative earnings surprises but less media coverage. In other words, we expect that $\beta_5 < 0$ (H1b).

All of the control variables in Eq. (1), but not the instrumental variable, are included in Eq. (2), with *IMR* as an additional control. Furthermore, we include industry and quarter fixed effects to control for time-invariant industry- and quarter-specific effects that may affect stock returns surrounding earnings announcements.[18]

4. Data and sample selection

We identify quarterly earnings announcement dates using data from the Compustat and I/B/E/S (Institutional Brokers' Estimate System) databases, following Dellavigna and Pollet (2009) and Mian and Sankaraguruswamy (2012). Our primary data source for firm press releases and media coverage is the RavenPack database, which provides comprehensive coverage of press articles for a large number of publicly traded U.S. firms. RavenPack offers access to all Dow Jones (DJ) news sources, including DJ Newswires and *The Wall Street Journal*. Given this data coverage, studies (e.g., Drake et al., 2014) suggest that RavenPack media data provide a valid approximation of public news for market participants. As a result, RavenPack data are widely used by researchers to examine the role of the media in capital markets (e.g., Dang et al., 2015). We require that all news articles obtained from RavenPack have a relevance score of 100 for (i.e., are highly relevant to)[19] a given firm to ensure that we only include news articles that are relevant to the firms in our sample.

For each quarterly earnings announcement, we define a 3-day event window centered on the quarterly earnings announcement date. Next, we calculate the total number of news articles published during each measurement window before a firm's quarterly earnings announcement date. Other data used in our study come from Compustat, CRSP (Center for Research in Security Prices), I/B/E/S, Thomson Reuters 13F and Securities Class Action Clearinghouse. Our final sample for the main analysis comprises 112,787 firm-quarter observations that are associated with 5,640 firms over the 2000–2014 period. All of the continuous variables are winsorized at the top and bottom 1 % to minimize the influence of outliers.

Table 1 presents the descriptive statistics. More than 77.2 % of the firms in our sample receive media coverage, with an average of 18.41 news articles published in the fiscal quarter preceding a firm's quarterly earnings announcement (i.e., the period from 1 day after a firm's earnings announcement in quarter q–1 to 1 day before its earnings announcement in quarter q). During the 3-day earnings announcement window, an average of 6.96 news articles are published (including both earnings- and non-earnings-related news articles).

[18] The results for Equation (2) are qualitatively similar whether the equation controls for firm fixed effects or industry fixed effects.

[19] RavenPack uses a relevance score ranging from 0 (not relevant) to 100 (highly relevant) to indicate the relevance of a news article to a particular firm. For example, news articles focused on a firm's industry in general (instead of focusing on the firm specifically) will have a low relevance score. However, even if a news article is not classified by the database as highly relevant, news articles with a relevance score below 100 can arguably play an important role in attracting investors' attention if this news is related to a particular firm. Thus, in a robustness test, we repeat our analyses using all news articles with a relevance score of 75 and above and find that our conclusion remains unchanged.

Table 1
Descriptive Statistics.

Variables	N	Mean	25 %	Median	75 %	Std. Dev.
CAR(−1,+1)	112,787	0.000	−0.045	−0.001	0.045	0.089
Num_Press_90day	112,787	18.408	2	11	25	23.140
Num_Press_60day	112,787	10.552	0	6	14	14.853
Num_Press_30day	112,787	4.861	0	2	6	7.447
Num_Press_3day	112,787	6.957	0	6	10	6.314
Abn_Num_Press	112,787	−0.026	−9.917	−1.581	7.322	17.731
Num_Press_Earnings	112,787	1.765	0	0	3	2.834
Num_Press_NonEarnings	112,787	16.609	1	9	22	21.867
Num_Press_Pos	112,787	5.688	0	3	7	9.490
Num_Press_Neg	112,787	3.800	0	1	4	7.192
Num_Press_Full	112,787	5.532	0	2	7	9.328
Num_Press_Flash	112,787	6.980	0	3	8	11.791
Num_Press_PR	112,787	2.990	0	2	4	3.357
Negative_News_Ratio	112,787	0.183	0.043	0.152	0.273	0.172
SUE	112,787	0.000	−0.005	0.001	0.006	0.033
BadNews	112,787	0.395	0	0	1	0.489
LnMVE	112,787	6.713	5.478	6.572	7.822	1.710
Leverage	112,787	0.194	0.007	0.164	0.322	0.186
MB	112,787	2.157	1.158	1.594	2.467	1.680
InstitutionHolding	112,787	0.614	0.409	0.660	0.832	0.274
NumInstitution	112,787	4.598	4.025	4.654	5.226	0.989
NumAnalyst	112,787	1.814	1.099	1.792	2.398	0.736
NumEmployee	112,787	11.801	11.782	11.794	11.820	0.020
SP1500	112,787	0.439	0	0	1	0.496
PriorReturn	112,787	0.000	−0.013	−0.001	0.012	0.029
PriorTurnover	112,787	0.009	0.004	0.007	0.012	0.008
NumLawsuit	112,787	6.150	0	1	7	17.326
Zscore	112,787	4.946	1.116	2.302	4.928	13.211
HighTech	112,787	0.287	0	0	1	0.452
Regulate	112,787	0.058	0	0	0	0.233

RavenPack also classifies news articles into (1) full articles, (2) news flashes and (3) press releases. Full articles may include editorial content generated by reporters or other information generated by firms. News flashes generally do not contain editorial content; instead, they simply rebroadcast information generated by firms or other information intermediaries such as analysts. Press releases mainly comprise news generated by firms. On average, 5.53 full news articles, 6.98 news flashes and 2.99 press releases are published in the fiscal quarter preceding a firm's quarterly earnings announcement.[20]

Table 2 presents the Pearson correlation matrix for the main variables. The significant and positive correlations among all of the media coverage variables suggest that these variables capture a similar construct. Consistent with Mian and Sankaraguruswamy (2012), *SUE* and *CAR(–1, +1)* are positively correlated. In addition, *LnMVE*, *MB*, *InstitutionHolding* and *NumAnalyst* are all positively associated with our media coverage variables. The results of Spearman's non-parametric correlation analysis are similar and are therefore not tabulated for the sake of brevity.

[20] Table 1 also shows a difference between the level of *Num_Press_Pos* (5.688) and *Num_Press_Neg* (3.800). Although this difference seems inconsistent with the view that the media tend to have greater incentives to cover negative news, it is intuitively reasonable because, overall, more firms report positive earnings surprises than negative earnings surprises. Our results below (reported in Table 3) suggest that when the absolute level of earnings surprises is kept constant, relative to positive earnings surprises, negative earnings surprises do indeed tend to attract greater media attention, consistent with prior studies (Tetlock et al., 2008; Kothari et al., 2008; Bushee et al., 2010).

Table 2
Pearson Correlation Matrix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) *CAR(−1,+1)*															
(2) *Dum_Press_90day*	***0.018***														
(3) *Num_Press_90day*	***0.008***	***0.443***													
(4) *Num_Press_Earnings*	***0.022***	***0.371***	***0.502***												
(5) *Num_Press_NonEarnings*	***0.006***	***0.422***	***0.993***	***0.402***											
(6) *Num_Press_Pos*	***0.008***	***0.346***	***0.755***	***0.421***	***0.744***										
(7) *Num_Press_Neg*	***0.006***	***0.290***	***0.783***	***0.367***	***0.782***	***0.516***									
(8) *Num_Press_Full*	***0.004***	***0.333***	***0.798***	***0.360***	***0.798***	***0.580***	***0.690***								
(9) *Num_Press_Flash*	***0.010***	***0.336***	***0.858***	***0.488***	***0.845***	***0.699***	***0.685***	***0.518***							
(10) *Num_Press_PR*	***0.005***	***0.492***	***0.715***	***0.502***	***0.691***	***0.651***	***0.484***	***0.462***	***0.624***						
(11) *BadNews*	***−0.140***	***−0.019***	***−0.035***	***−0.007***	***−0.036***	***−0.038***	***−0.013***	***−0.046***	***−0.013***	***−0.025***					
(12) *SUE*	***0.118***	***0.005***	0.001	***−0.004***	0.001	***0.003***	***−0.012***	***0.011***	***−0.012***	***0.006***	***−0.524***				
(13) *LnMVE*	***0.009***	***0.132***	***0.507***	***0.206***	***0.510***	***0.398***	***0.378***	***0.383***	***0.460***	***0.358***	***−0.094***	***0.014***			
(14) *MB*	***−0.040***	***0.017***	***0.039***	−0.001	***0.041***	***0.017***	***0.054***	***0.083***	***−0.005***	***0.016***	***−0.077***	***0.041***	***0.115***		
(15) *InstitutionHolding*	***0.029***	***0.245***	***0.321***	***0.174***	***0.317***	***0.196***	***0.219***	***0.244***	***0.232***	***0.285***	***−0.035***	***−0.006***	***0.448***	−0.002	
(16) *NumAnalyst*	***0.013***	***0.138***	***0.456***	***0.198***	***0.456***	***0.339***	***0.344***	***0.348***	***0.408***	***0.319***	***−0.018***	***−0.021***	***0.671***	***0.059***	***0.469***

Entries in ***Bold*** denotes a significance level of at least 0.05. Continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix.

5. Empirical results

5.1. Determinants of media coverage

As studies indicate that the business press is more likely to cover and/or tends to cover more negative corporate news than positive news (e.g., Niessner and So, 2017), our study does not retest this assumption. Nevertheless, we validate it as a first step in our study. The results of estimating Eq. (1) to test the plausibility of this assumption are reported in Table 3. We find significant and negative (positive) coefficients on *SUE* (*BadNews* × *SUE*) across all models with and without the instrumental variable, which is consistent with the findings of previous studies (e.g., Niessner and So, 2017). These results suggest that business-focused media are more likely to cover and/or tend to cover more negative earnings news than positive earnings news.

5.2. Media coverage and asymmetric stock price sensitivity to positive versus negative earnings surprises

Table 4 reports the results of estimating Eq. (2), which allow us to examine the effects of media coverage on the sensitivity of stock prices to positive versus negative earnings surprises. We use five proxies (i.e., *Num_Press_90day*, *Num_Press_60day*, *Num_Press_30day*, *Num_Press_3day* and *Abn_Num_Press*) for the level of pre-earnings announcement media coverage to examine whether and how the number of news articles published before a firm's earnings announcement date affects the intensity of stock price reactions to an earnings surprise, and whether and how this effect varies depending on the direction of the earnings surprise. Using our five proxies, consistent with Mian and Sankaragursuswamy (2012), we find significant and positive coefficients on *SUEGoodNews*, supporting the notion that earnings surprises are value relevant for investors.

Our main variables of interest are the coefficients on *SUEGoodNews* × *Coverage* and *SUEBadNews* × *Coverage*, which measure the effects of media coverage on the sensitivity of stock prices to positive and negative earnings news, respectively. We find a significant and positive coefficient on *SUEGoodNews* × *Coverage*, suggesting that greater media coverage of a firm strengthens positive stock price reactions to the firm's positive earnings surprises. More importantly, the significant and negative coefficient on *SUEBadNews* × *Coverage* across all columns of Table 4 strongly supports H1b that greater media coverage in the period before a firm's earnings announcement attenuates (i.e., weakens) investors' reactions to negative earnings surprises in the earnings announcement.

Table 3
Determinants of Media Coverage.

Dependent Variable	***Coverage = Dum_Press_90day***	***Coverage = Dum_Press_90day***
Model	***Logistic***	***Logistic***
	(1)	**(2)**
Dum_Press_Year(t-1)		6.322***
		(0.000)
BadNews	−0.048*	−0.208***
	(0.078)	(0.000)
SUE	**−3.903*** **	**−4.106*** **
	(0.000)	**(0.000)**
BadNews × SUE	**8.669*** **	**6.560*** **
	(0.000)	**(0.000)**
LnMVE	−0.413***	0.082*
	(0.000)	(0.060)
Leverage	−0.430**	−0.303
	(0.020)	(0.158)
MB	0.113***	0.041**
	(0.000)	(0.042)
InstitutionHolding	0.931***	−0.023
	(0.000)	(0.904)
NumInstitution	0.679***	−0.117
	(0.000)	(0.140)
NumAnalyst	0.216***	0.489***
	(0.000)	(0.000)
NumEmployee	−1.548	−3.731
	(0.231)	(0.123)
SP1500	0.196**	−0.393***
	(0.035)	(0.000)
PriorReturn	0.176	0.214
	(0.483)	(0.549)
PriorTurnover	–23.348***	−9.401**
	(0.000)	(0.019)
NumLawsuit	0.001	−0.004***
	(0.789)	(0.003)
Zscore	0.002	−0.002
	(0.462)	(0.130)
HighTech	0.108	0.112
	(0.448)	(0.462)
Regulate	0.397	0.318
	(0.294)	(0.271)
Constant	17.071	44.537
	(0.262)	(0.119)
Industry&Year-Quarters Fixed Effect	Yes	Yes
Firm Clustering	Yes	Yes
Observations	112,787	112,787
Pseudo R-squared	0.119	0.629

*, **, and *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively (two-tailed). Continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix.

By measuring the level of media coverage using different measurement windows (i.e., 90, 60 and 30 days before a firm's earnings announcements), we can also determine the relative magnitude of the estimated coefficients on $BadNews \times SUE \times Coverage$. We find statistically different magnitudes, with a larger magnitude when the measurement window is shorter and closer to a firm's earnings announcement date. This finding suggests that when media coverage is closer to the earnings announcement date, it tends to more strongly weaken stock price reactions to negative earnings surprises (–0.014 in column 4 and –0.005 in column 1). Similarly, using an additional measure of media coverage based on the abnormal number of news articles surrounding a firm's quarterly earnings announcement date (defined as the residual of the model regressing the total level of

Table 4
Media Coverage and Asymmetric Stock Price Reactions to Positive versus Negative Earnings Surprises.

Dependent variable	***CAR(−1,+1)***				
Coverage =	***Num_Press_90day***	***Num_Press_60day***	***Num_Press_30day***	***Num_Press_3day***	***Abn_Num_Press***
Model	***OLS***	***OLS***	***OLS***	***OLS***	***OLS***
	(1)	(2)	(3)	(4)	(5)
BadNews	−0.017***	−0.017***	−0.017***	−0.017***	−0.017***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SUEGoodNews	0.423***	0.426***	0.438***	0.415***	0.452***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SUEGoodNews × Coverage	**0.002****	**0.002****	**0.002**	**0.005***	**0.003*****
	(0.029)	**(0.028)**	**(0.300)**	**(0.060)**	**(0.004)**
SUEBadNews	0.348***	0.341***	0.336***	0.364***	0.285***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SUEBadNews × Coverage	**−0.005*****	**−0.007*****	**−0.013*****	**−0.014*****	**−0.004*****
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
NonlGood	−3.125***	−3.134***	−3.150***	−3.117***	−3.160***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
NonlBad	−1.217***	−1.206***	−1.203***	−1.240***	−1.182***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LnMVE	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Leverage	0.001	0.001	0.002	0.002	0.001
	(0.427)	(0.421)	(0.393)	(0.411)	(0.429)
MB	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
InstitutionHolding	0.014***	0.014***	0.014***	0.013***	0.014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
NumInstitution	−0.004***	−0.004***	−0.004***	−0.004***	−0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
NumAnalyst	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.002)	(0.002)	(0.002)	(0.004)	(0.002)
NumEmployee	−0.135**	−0.133**	−0.133**	−0.131**	−0.132**
	(0.012)	(0.013)	(0.013)	(0.014)	(0.014)
SP1500	0.004***	0.003***	0.004***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PriorReturn	−0.008	−0.008	−0.008	−0.008	−0.008
	(0.488)	(0.480)	(0.471)	(0.480)	(0.500)
PriorTurnover	−0.332***	−0.330***	−0.324***	−0.308***	−0.314***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
NumLawsuit	0.000	0.000	0.000	0.000	0.000
	(0.212)	(0.220)	(0.229)	(0.182)	(0.206)
Zscore	0.000**	0.000**	0.000**	0.000**	0.000**
	(0.030)	(0.029)	(0.028)	(0.030)	(0.026)
HighTech	0.002	0.002	0.002	0.002	0.002
	(0.186)	(0.182)	(0.180)	(0.196)	(0.184)
Regulate	−0.002	−0.002	−0.002	−0.002	−0.002
	(0.354)	(0.351)	(0.361)	(0.380)	(0.387)
Constant	1.598**	1.579**	1.576**	1.558**	1.559**
	(0.011)	(0.012)	(0.013)	(0.014)	(0.014)
Industry&Year-Quarters Fixed Effect	Yes	Yes	Yes	Yes	Yes
Firm Clustering	Yes	Yes	Yes	Yes	Yes
Observations	112,787	112,787	112,787	112,787	112,787
R-squared	0.029	0.029	0.029	0.029	0.029

Goodnews (*Badnews*) equals 1 if the unexpected earnings is positive (negative), and 0 otherwise. We then multiply unexpected earnings surprises (*SUE*) by these indicator variables to yield *SUEGoodNews* and *SUEBadNews* (i.e., our measures of good and bad earnings surprises), respectively. *, **, and *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively (two-tailed). Continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix.

Table 5
Media Coverage and Stock Price Reactions to Positive versus Negative Earnings Surprises.

Panel A. Media Coverage by Content—Earnings-Related versus *Non-Earnings-Related News Articles.*

Dependent variable		***CAR(−1, +1)***	
Coverage =	**Earnings-Related News**	**Non-Earnings-Related News**	**All News**
	Num_Press_Earnings	***Num_Press_NonEarnings***	
Model	***OLS***	***OLS***	***OLS***
	(1)	**(2)**	**(3)**
BadNews	−0.021***	−0.022***	−0.022***
	(0.000)	(0.000)	(0.000)
SUE	0.031*	0.039**	0.021
	(0.098)	(0.050)	(0.296)
BadNews × SUE	0.142***	0.147***	0.174***
	(0.000)	(0.000)	(0.000)
Num_Press_Earnings	0.001*		0.001***
	(0.065)		(0.002)
BadNews × Num_Press_Earnings	0.001		−0.000
	(0.489)		(0.845)
SUE × Num_Press_Earnings	**0.030*** **		**0.027*** **
	(0.000)		**(0.000)**
BadNews × SUE × Num_Press_Earnings	**−0.055*** **		**−0.042*** **
	(0.000)		**(0.000)**
Num_Press_NonEarnings		−0.001***	−0.001***
		(0.003)	(0.000)
BadNews × Num_Press_NonEarnings		0.001***	0.001**
		(0.008)	(0.010)
SUE × Num_Press_NonEarnings		**0.002*** **	**0.001**
		(0.008)	**(0.222)**
BadNews × SUE × Num_Press_NonEarnings		**−0.006*** **	**−0.004*** **
		(0.000)	**(0.000)**
All Other Controls	Yes	Yes	Yes
Industry&Year-Quarters Fixed Effect	Yes	Yes	Yes
Firm Clustering	Yes	Yes	Yes
Observations	112,787	112,787	112,787
R-squared	0.028	0.028	Yes

Panel B. Media Coverage by Type—Full News Articles, Flash News Articles, and Press Releases

Dependent variable	***CAR(−1,+1)***			
	Full News Articles	**Flash News Articles**	**Press Release News Articles**	**All Types**
Coverage =	***Num_Press_Full***	***Num_Press_Flash***	***Num_Press_PR***	
Model	**OLS**	**OLS**	**OLS**	**OLS**
	(1)	**(2)**	**(3)**	**(4)**
BadNews	−0.021***	−0.022***	−0.022***	−0.022***
	(0.000)	(0.000)	(0.000)	(0.000)
SUE	**0.050*** **	**0.047** **	**0.035***	**0.030**
	(0.009)	**(0.014)**	**(0.095)**	**(0.162)**
BadNews×SUE	**0.115*** **	**0.132*** **	**0.154*** **	**0.162*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
Num_Press_Full	−0.001**			−0.001
	(0.011)			(0.250)
BadNews× Num_Press_Full	0.001*			0.001
	(0.052)			(0.521)
SUE×Num_Press_Full	**0.004** **			**0.003**
	(0.027)			**(0.240)**
BadNews×SUE×Num_Press_Full	**−0.012*** **			**−0.003**
	(0.000)			**(0.391)**
Num_Press_Flash		−0.001**		−0.001
		(0.011)		(0.372)
BadNews×Num_Press_Flash		0.001***		0.001***

(*continued on next page*)

Table 5 (*continued*)

Panel B. Media Coverage by Type—Full News Articles, Flash News Articles, and Press Releases

Dependent variable	***CAR(−1,+1)***			
	Full News Articles	**Flash News Articles**	**Press Release News Articles**	**All Types**
Coverage =	***Num_Press_Full***	***Num_Press_Flash***	***Num_Press_PR***	
Model	**OLS**	**OLS**	**OLS**	**OLS**
	(1)	**(2)**	**(3)**	**(4)**
		(0.000)		(0.008)
SUE×Num_Press_Flash		**0.003****		**0.000**
		(0.026)		**(0.796)**
BadNews×SUE×Num_Press_Flash		**−0.010*****		**−0.006****
		(0.000)		**(0.040)**
Num_Press_PR			−0.001**	−0.001
			(0.019)	(0.464)
BadNews×Num_Press_PR			0.001**	−0.001
			(0.050)	(0.783)
SUE×Num_Press_PR			**0.012****	**0.009**
			(0.016)	**(0.177)**
BadNews×SUE×Num_Press_PR			**−0.034*****	**−0.018***
			(0.000)	**(0.069)**
All Other Controls	Yes	Yes	Yes	Yes
Industry&Year-Quarters Fixed Effect	Yes	Yes	Yes	Yes
Firm Clustering	Yes	Yes	Yes	Yes
Observations	112,787	112,787	112,787	112,787
Adjusted R-Squared	0.028	0.028	0.028	0.028

Panel C. Media Coverage by Tone—Positive/Negative News Articles

Dependent variable	***CAR(−1,+1)***		
	News with Positive Tone	**News with Negative Tone**	**News with All Tones**
Coverage =	***Num_Press_Pos***	***Num_Press_Neg***	
Model	**OLS**	**OLS**	**OLS**
	(1)	**(2)**	**(3)**
BadNews	−0.022***	−0.021***	−0.022***
	(0.000)	(0.000)	(0.000)
SUE	**0.037***	**0.043****	**0.030**
	(0.053)	**(0.022)**	**(0.124)**
BadNews×SUE	**0.123*****	**0.132*****	**0.147*****
	(0.000)	**(0.000)**	**(0.000)**
Num_Press_Pos	−0.001***		−0.001**
	(−0.004)		(−0.023)
BadNews×Num_Press_Pos	0.001***		0.001*
	(0.001)		(0.055)
SUE×Num_Press_Pos	**0.007*****		**0.005****
	(0.000)		**(0.012)**
BadNews×SUE×Num_Press_Pos	**−0.012*****		**−0.007****
	(0.000)		**(−0.046)**
Num_Press_Neg		−0.001	0.001
		(−0.338)	(0.937)
BadNews× Num_Press_Neg		0.001**	0.001
		(0.025)	(0.314)
SUE× Num_Press_Neg		**0.009*****	**0.005**
		(0.005)	**(0.136)**
BadNews×SUE×Num_Press_Neg		**−0.022*****	**−0.017*****
		(−0.000)	**(−0.001)**
All other controls	Yes	Yes	Yes
Industry&Year-Quarters Fixed Effect	Yes	Yes	Yes
Firm Clustering	Yes	Yes	Yes

Table 5 (*continued*)

Panel C. Media Coverage by Tone—Positive/Negative News Articles			
Dependent variable	***CAR(−1,+1)***		
	News with Positive Tone	**News with Negative Tone**	**News with All Tones**
***Coverage* =**	***Num_Press_Pos***	***Num_Press_Neg***	
Model	**OLS**	**OLS**	**OLS**
	(1)	**(2)**	**(3)**
Observations	112,787	112,787	112,787
Adjusted R-Squared	0.028	0.028	0.028

*, **, and *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively (two-tailed). Continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix.

media coverage (*Num_Press_90day*) on the control variables included in Eq. (1)), we again find a significant and negative coefficient on the interaction term *SUEBadNews* × *Coverage* (column 5). This result confirms our previous findings.

Information intermediaries such as institutional investors, financial analysts and news media shape firms' information environment and play a crucial role in disseminating firms' information to other capital market participants (e.g., Piotroski and Roulstone, 2004; Bushee et al., 2010). It is therefore important to control for the potential effects of these variables when examining the influence of media coverage on stock price reactions to positive and negative earnings news. Rather than simply controlling for the main effects of these variables in Model (2), in an additional test we include their interaction terms with *SUE* and *BadNews* × *SUE*. In untabulated results, after controlling for the potential effects of *LnMVE*, *NumAnalyst* and *InstitutionHolding* in the differential market response to positive versus negative news, we find that a firm's level of media coverage remains an incrementally important factor affecting stock price reactions to positive and negative earnings surprises.

In addition to using the Heckman (1979) two-stage selection model, we adopt the propensity score matching method to mitigate potential media self-selection issues. Specifically, we identify a sample of firms that do not receive media coverage but are otherwise similar (across all observable dimensions) to those that do receive media coverage. Each firm with media coverage is matched with the firm without media coverage that has the closest propensity score within a maximum distance of 1 % (in the same year). This procedure yields 24,205 firm-year observations in the sample with media coverage and 24,205 observations in the matched sample without media coverage (a total of 48,410 observations). We obtain results that corroborate our finding that stock price reactions to negative earnings surprises are attenuated for firms with greater media coverage.

5.3. Media coverage by content: Earnings-related versus non-earnings-related news articles

In this section, we investigate whether the effects of media coverage on stock price reactions to negative earnings surprises vary depending on the content of media coverage in the pre-earnings announcement period. Previous studies suggest that investors tend to have limited attention spans regarding firm-specific information (Peng and Xiong, 2006; Hirshleifer et al., 2009) and that the media play an important intermediary role in the dissemination of information released in earnings announcements (Fang and Peress, 2009; Bushee et al., 2010; Tetlock, 2010). Consistent with previous findings, we predict that investors' attention to earnings-related news articles will have a greater effect on stock price reactions to earnings surprises during the earnings announcement period.

Table 6
Media Coverage and Persistence of Negative Earnings.

Dependent variable	***BadNews$_{i,q+1}$***			
***Coverage* = Model**	***Num_Press_90day* Logistic (1)**	***Num_Press_60day* Logistic (2)**	***Num_Press_30day* Logistic (3)**	***Abn_Num_Press* Logistic (4)**
$BadNews_{i,q}$	**1.601*** **	**1.602*** **	**1.593*** **	**1.573*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
$BadNews_{i,q} \times Coverage_{i,q}$	**−0.002*** **	**−0.004*** **	**−0.008*** **	**−0.003*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.001)**
$Coverage_{i,q}$	0.001**	0.003***	0.008***	0.001**
	(0.013)	(0.000)	(0.000)	(0.022)
$LnMVE_{i,q}$	−0.237***	−0.239***	−0.240***	−0.250***
	(0.000)	(0.000)	(0.000)	(0.000)
$Leverage_{i,q}$	0.199***	0.202***	0.204***	0.245***
	(0.000)	(0.000)	(0.000)	(0.000)
$MB_{i,q}$	−0.116***	−0.115***	−0.115***	−0.126***
	(0.000)	(0.000)	(0.000)	(0.000)
$InstitutionHolding_{i,q}$	−0.374***	−0.365***	−0.359***	−0.407***
	(0.000)	(0.000)	(0.000)	(0.000)
$NumInstitution_{i,q}$	0.129***	0.122***	0.117***	0.154***
	(0.000)	(0.000)	(0.000)	(0.000)
$NumAnalyst_{i,q}$	0.257***	0.254***	0.252***	0.267***
	(0.000)	(0.000)	(0.000)	(0.000)
$NumEmployee_{i,q}$	3.748***	3.670***	3.669***	3.899***
	(0.000)	(0.000)	(0.000)	(0.000)
$SP1500_{i,q}$	0.024	0.024	0.025	0.022
	(0.209)	(0.198)	(0.179)	(0.254)
$PriorReturn_{i,q}$	−0.586**	−0.588**	−0.592**	−0.577**
	(0.014)	(0.014)	(0.013)	(0.019)
$PriorTurnover_{i,q}$	5.501***	5.539***	5.562***	5.419***
	(0.000)	(0.000)	(0.000)	(0.000)
$NumLawsuit_{i,q}$	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
$Zscore_{i,q}$	0.005***	0.005***	0.005***	0.006***
	(0.000)	(0.000)	(0.000)	(0.000)
$HighTech_{i,q}$	0.094***	0.093***	0.092***	0.102***
	(0.000)	(0.000)	(0.000)	(0.000)
$Regulate_{i,q}$	0.139***	0.139***	0.138***	0.156***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	−44.521***	−43.564***	−43.540***	−46.306***
	(0.000)	(0.000)	(0.000)	(0.000)
Industry&Year-Quarters Fixed Effect	Yes	Yes	Yes	Yes
Firm Clustering	Yes	Yes	Yes	Yes
Observations	112,553	112,553	112,553	112,553
Pseudo R-squared	0.123	0.124	0.124	0.127

*, **, and *** denote significance at the 0.1, 0.05, and 0.01 levels, respectively (two-tailed). Continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in the Appendix.

To examine whether the effects of media coverage on stock price sensitivity to bad news vary depending on the content of media coverage,[21] we separately examine whether the level of financial news items (*Num_Press_Earnings*) and that of non-financial news items (*Num_Press_NonEarnings*) affect stock market

[21] RavenPack classifies each news article based on its topic, which allows us to identify the content of each article. We treat an article as financial or earnings-related news if it falls into one of the following categories: mergers and acquisitions, analyst ratings, asset news, balance of payments, bankruptcy, credit, credit ratings, dividends, earnings, equity actions, insider trading, target prices, revenues, securities, stock prices or taxes. Any news article that does not belong to the financial news group is classified as non-financial or non-earnings-related news (e.g., news related to corporate social responsibility, regulations or products).

reactions to negative earnings news. As we focus on stock market reactions to bad news, we interact these two variables with *SUE* and *BadNews* and compare their estimated coefficients. The results are presented in Panel A of Table 5. We find that increasing levels of both financial and non-financial news coverage attenuate stock price reactions to negative earnings surprises. The coefficients on *BadNews* × *SUE* × *Coverage* are significant and negative whether *Coverage* is measured based on earnings-related or non-earnings-related news articles. However, the coefficient on *BadNews* × *SUE* × *Coverage* in column 1 (with *Coverage* measured by the total number of financial news items) is significantly larger than the coefficient in column 2 (with *Coverage* measured by the total number of non-financial news items). The coefficients are –0.055 and –0.006, respectively. Specifically, these results show that the coefficient on *BadNews* × *SUE* × *Num_Press_Earnings* is significantly larger than the coefficient on *BadNews* × *SUE* × *Num_Press_NonEarnings*. Similar patterns are observed for the effects of media coverage on stock price reactions to positive earnings news. Thus, the findings reported here support our prediction that relative to non-earnings-related news, earnings-related news coverage tends to play a more important role in attenuating stock market reactions to firms' bad news disclosures.

5.4. Media coverage by type: Full news articles, news flashes and press releases

In this section, we explore whether the effects of media coverage on stock price reactions to negative earnings surprises vary depending on the type of media coverage in the pre-earnings announcement period. Specifically, we investigate whether different types of news articles (i.e., full news articles, news flashes and press releases) have different effects on stock price reactions to earnings surprises. The results are presented in Panel B of Table 5. Across the three types of news articles, we find that the coefficients on *BadNews* × *SUE* × *Coverage* are all significant and negative. Overall, these findings align with our argument that investors are likely to be affected by media coverage in their reactions to bad news earnings announcements.

5.5. Media coverage by tone: News articles with a positive versus negative tone

Studies suggest that not only the level of media coverage but also the tone of media coverage can significantly affect the decision-making of capital market participants (e.g., Liu and McConnell, 2013; Cihan et al., 2017; Bradshaw et al., 2021). RavenPack assigns each news article a sentiment score ranging from 0 to 100, with a score of 50 indicating neutrality, a score below 50 indicating a more negative tone and a score above 50 indicating a more positive tone.[22] Thus, we further examine whether the effects of media coverage on stock price reactions to negative versus positive earnings surprises vary depending on the tone of media coverage in the pre-earnings announcement period. The results are presented in Panel C of Table 5. We find that regardless of tone, greater media coverage attenuates stock price reactions to negative earnings surprises during earnings announcements.

5.6. Additional test

News from unreliable sources can misinform capital market participants, leading them to form false beliefs. Thus, we classify a news source as reliable if its reliability is coded 1 by RavenPack and as less reliable otherwise.[23] The results (untabulated) show that the number of news articles from more reliable news providers (vs.

[22] The composite sentiment score created by RavenPack measures news sentiment in a given story by combining five sentiment analysis techniques. Composite sentiment scores are determined by assessing emotionally charged words and phrases embedded in news stories and are typically rated by experts as having short-term positive or negative effects on stock prices.

[23] RavenPack rates the influence and trustworthiness of each news provider on a scale of 1 to 10, with 1 indicating the most trusted sources. According to RavenPack's definition, a news source assigned a score of 1 is considered fully accountable, reputable and impartial. News providers with a score of 1 include highly reliable news media organizations and blogs. News media organizations in this category include *The Washington Times*, *The New York Times*, *The Financial Times*, *The Times*, The Heritage Foundation, *Barrons*, Marketwatch, Bloomberg News, Forbes.com and *The New York Daily News*. A "blog" is defined as "a discussion or informational website with discrete entries or posts." (Walker Rettberg, 2008, p.18). Blogs with a score of 1 include the Blog Herald, Green Technology, Drugs.com, Gig News, Mediapost and Media Creativity.

that from less reliable providers) does indeed tend to play a more important role in stock price reactions to negative earnings surprises.

A possible explanation for our main finding is that wider media dissemination of a firm's poor financial performance increases its CEO's career concerns, which, in turn, increases the firm's incentives to avoid reporting negative news in future periods. In this section, we directly test this potential explanation by examining whether and how media coverage affects the correlation between the likelihood of reporting negative news in the current period and the likelihood of reporting negative news in the future. Specifically, we regress *BadNews* in quarter $q+1$ on *BadNews* in quarter q and the interaction term between *BadNews* in quarter q and *Coverage*. The results are reported in Table 6. Consistent with our conjecture, we find that the coefficient on the interaction term *BadNews* × *Coverage* is significant and negative, indicating that greater media coverage weakens the persistence of negative news.

5.7. Additional robustness tests

In our study, we attempt to address the potential endogeneity of media coverage by using the Heckman (1979) two-stage selection model to explain the media's decisions to cover a firm. In this section, we conduct additional tests to better address the identification issue. Instead of comparing firms, we compare earnings announcements made by the same firm in the same year that generate the same (or similar) earnings surprises, when one announcement receives more media coverage than the other. We again find that relative to negative earnings announcements issued by a firm with less media coverage, negative earnings announcements issued by the same firm with greater media coverage tend to elicit a lesser stock market reaction. Finally, we conduct additional tests to ensure that our findings are robust to yearly earnings announcements. The findings of our study do not seem to be affected by this choice.

6. Conclusion

In this study, we use multiple variables to measure the level of media coverage in the period preceding firms' earnings announcements. We find consistent and robust evidence that although increased media coverage causes an increase in stock price sensitivity to positive earnings surprises, it causes a reduction in stock price sensitivity to negative earnings surprises. Our additional analyses reveal that these findings are robust to yearly earnings announcements, earnings- and non-earnings-related news, different types of media coverage (i.e., full articles, news flashes and press releases) and media coverage with varying emotional tones. Our findings are also robust after controlling for the potential effects of other major information intermediaries, namely institutional investors and financial analysts, on stock price sensitivity to earnings surprises. Overall, our findings suggest that media coverage plays an important but asymmetric role in investors' reactions to positive versus negative earnings news.

Further evidence indicates that negative earnings news is less persistent for firms with greater media coverage than for other firms. This finding supports the conjecture that greater media coverage increases managers' incentives to avoid future negative news, thereby reducing the persistence of poor financial performance and weakening price reactions to firms' negative earnings news.

We acknowledge that our results should be interpreted with caution. Indeed, the relationship between media coverage and asymmetric investor responses to good and bad news may be endogenously determined. For example, to the extent that firms reporting bad news are likely to provide more information across various channels (e.g., corporate websites or social media) to attenuate investors' strong reactions to bad news, our findings may be attributable to increased firm disclosures bundled with bad news. Such a conjecture is worthy of future investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix 1. Variable definitions

Variable	Definition	Data Source
CAR(–1,+1)	Cumulative abnormal returns over a 3-day window (from day –1 to day + 1, with day 0 being the quarterly earnings announcement date) surrounding a firm's quarterly earnings announcement date;	CRSP
CAR (–3, +3)	Cumulative abnormal returns over a 7-day window (from day –3 to day + 3) surrounding a firm's quarterly earnings announcement date;	CRSP
Num_Press_90day	The total number of news articles (***all articles***) specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date (the period from 1 day after the earnings announcement date in quarter *q*–1 to 1 day before the earnings announcement date in quarter *q*);	RavenPack
Num_Press_60day	The total number of news articles (***all articles***) specifically related to firm *i* published during the ***60-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_30day	The total number of news articles (***all articles***) specifically related to firm *i* published during the ***30-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_3day	The total number of news articles (***all articles***) specifically related to firm *i* published in the ***3-day window*** (from day –1 to day + 1, with day 0 being the firm's quarterly earnings announcement date) surrounding the firm's quarterly earnings announcement date;	RavenPack
Dum_Press_90day	An indicator variable equal to 1 if the total number of news articles (i.e., *Num_Press_90day*) published during the ***90-day*** window preceding the firm's quarterly earnings announcement date is greater than 0, and 0 otherwise;	RavenPack
Dum_Press_Year(t–1)	An indicator variable equal to 1 if the total number of news articles published in year *t*–1 is greater than 0, and 0 otherwise;	RavenPack
Abn_Num_Press	The level of ***abnormal*** media coverage measured during the ***90-day*** window preceding a firm's quarterly earnings announcement date. It is defined as the residual from regressing the level of media coverage (i.e., *Num_Press_90day*) on firm-level determinants identified by Engelberg and Parsons (2011) (i.e., all control variables included in Equation (1));	RavenPack
Num_Press_Earnings	The total number of news articles (particularly ***earnings-related news articles***) specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack

(*continued on next page*)

Appendix 1 (*continued*)

Variable	Definition	Data Source
Num_Press_NonEarnings	The total number of news articles (particularly ***non-earnings-related news articles***) specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_Pos	The total number of news articles with a sentiment score of 50 or above (i.e., positive tone) specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_Neg	The total number of news articles with a sentiment score below 50 (i.e., negative tone) specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_Full	The total number of ***full news articles*** specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_Flash	The total number of ***news flashes*** specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_PR	The total number of ***press releases*** specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date;	RavenPack
Num_Press_MoreReliable	The total number of ***news articles from reliable news sources*** specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date; the reliability of each article is defined using the reliability score provided by RavenPack's Web Edition database; news articles with a reliability score of 1 are defined as reliable;	RavenPack
Num_Press_LessReliable	The total number of ***news articles from less reliable news sources*** specifically related to firm *i* published during the ***90-day*** window preceding the firm's quarterly earnings announcement date; the reliability of each article is defined using the reliability score provided by RavenPack's Web Edition database; news articles with a reliability score of 2, 3, 4 or 5 are defined as less reliable;	RavenPack
Negative_News_Ratio	The ratio of the number of negative news articles to the total number of news articles, measured as the total number of ***negative news articles*** (news articles with a sentiment score < 50) divided by the total number of news articles issued during the ***90-day*** window preceding a firm's quarterly earnings announcement date;	RavenPack
SUE	A measure of earnings surprise, defined as actual earnings per share before extraordinary items in quarter q minus actual earnings per share before extraordinary items in quarter q–4 (i.e., the same quarter of the previous year), scaled by the stock price at the end of the quarter, following Livnat and Mendenhall (2006);	Compustat

Appendix 1 (*continued*)

Variable	Definition	Data Source
BadNews	An indicator variable equal to 1 if *SUE* defined above is less than 0 and 0 otherwise;	Compustat
LnMVE	The natural logarithm of the market value of equity at the end of the quarter (in millions);	Compustat
Leverage	The leverage ratio defined as long-term debt plus debt in current liabilities, divided by total assets;	Compustat
MB	The ratio of the market value of equity to the book value of equity;	Compustat/CRSP
InstitutionHolding	The percentage of institutional ownership at the end of the fiscal quarter;	Thomson Reuter 13f
NumInstitution	The natural logarithm of 1 plus the total number of institutional holders at the end of the fiscal quarter;	Thomson Reuter 13f
NumAnalyst	The natural logarithm of 1 plus the number of analysts who issue quarterly earnings forecasts for a specific firm during a given quarter, as captured in the I/B/E/S database;	Compustat
NumEmployee	The natural logarithm of 1 plus the total number of employees;	Compustat
SP1500	an indicator variable equal to 1 if a firm is part of the S&P 1500 Index in year *t* and 0 otherwise;	Compustat
PriorReturn	A firm's cumulative market-adjusted returns over 50 trading days ending on *t*–10;	CRSP
PriorTurnover	The mean ratio of daily trading volume to the total number of shares outstanding over 50 trading days ending on *t*–10;	CRSP
NumLawsuit	The number of class action lawsuits in an industry, following Field, Lowry and Shu (2005);	Securities Class Action Clearing House
Zscore	The Altman Z-score (which captures a firm's bankruptcy risk);	Self-measured
HighTech	A, variable for high-tech industries, classification of high-tech industries following Kothari, Shu and Wysocki (2008);	Compustat
Regulate	A variable for regulated industries, classification of regulated industries following Kothari, Shu and Wysocki (2008).	Compustat

References

Ahern, K.R., Sosyura, D., 2014. Who writes the news? Corporate press releases during merger negotiations. J. Financ. 69 (1), 241–291.
Baginski, S., Campbell, J., Hinson, L., Koo, D., 2018. Do career concerns affect the delay of bad news disclosure? Account. Rev. 93 (2), 61–95.
Ball, R., Brown, P., 1968. An empirical evaluation of accounting income numbers. J. Account. Res. 6, 159–177.
Bartov, E., Givoly, D., Hayn, C., 2002. The rewards to meeting or beating analyst expectations. J. Account. Econ. 33, 173–204.
Baumeister, R., Bratslavsky, E., Finkenauer, C., Vohs, K., 2001. Bad is stronger than good. Rev. Gen. Psychol. 5 (4), 323–370.
Blankespoor, E., deHaan, E., Zhu, C., 2018. Capital market effects of media synthesis and dissemination: evidence from robo-journalism. Rev. Acc. Stud. 23, 1–36.
Bonsall, S.B., Green, J., Muller, K.A., 2020. Market uncertainty and the importance of media coverage at earnings announcements. J. Account. Econ. 69 (1).

Bradshaw, M.T., Lock, B., Wang, X., Zhou, D., 2021. Soft information in the financial press and analyst revisions. Account. Rev. 96 (5), 107–132.
Bushee, B.J., Core, J.E., Guay, W., Hamm, S.J.W., 2010. The role of the business press as an information intermediary. J. Account. Res. 48 (1), 1–19.
Bushee, B.J., Miller, G.S., 2012. Investor relations, firm visibility, and investor following. Account. Rev. 87 (3), 867–897.
Cannella, A.A., Fraser, D.R., Lee, D.S., 1995. Firm failure and managerial labor markets: Evidence from Texas banking. J. Financ. Econ. 38 (2), 185–210.
Cao, Y., Keskek, S., Myers, L.A., Tsang, A., 2020. The effect of media competition on analyst forecasts properties: Cross-country evidence. J. Acc. Audit. Financ. 37 (2), 378–406.
Carroll, G.E., McCombs, M., 2003. Agenda-setting effects of business news on the public's images and on opinions about major corporations. Corp. Reput. Rev. 6, 36–46.
Chen, C., Pantzalis, C., Park, J.C., 2013. Media coverage and stock price deviation from fundamental value. J. Financ. Res. 36 (2), 175–214.
Cihan, M., Ghosh, C., Pinto- Gutiérrez, C., 2017. Media negativity and the market reaction to M&A announcement. University of Connecticut, Working paper.
Conrad, J., Cornell, B., Landsman, W.R., 2002. When is bad news really bad news? J. Financ. 57 (6), 2507–2532.
Dai, X., Gao, F., Lisic, L.L., Zhang, I., 2021. Corporate social performance and managerial labor market. Rev. Acc. Stud., forthcoming
Dai, L., Parwada, J.T., Zhang, B., 2015. The governance effect of the media's news dissemination role: Evidence from insider trading. J. Account. Res. 53 (2), 331–336.
Dang, T.L., Moshirian, F., Zhang, B., 2015. Commonality in news around the world. J. Financ. Econ. 116 (1), 82–110.
Degeorge, F., Patel, J., Zeckhauser, R., 1999. Earnings management to exceed thresholds. J. Bus. 72, 1–33.
deHaan, E., Shevlin, T., Thornock, J., 2015. Market (in)attention and strategic scheduling and timing of earnings announcements. J. Account. Econ. 60, 36–55.
Dellavigna, S., Pollet, J.M., 2009. Investor inattention and Friday earnings announcements. J. Financ. 64, 709–749.
Drake, M.S., Guest, N.M., Twedt, B.J., 2014. The media and mispricing: The role of the business press in the pricing of accounting information. Account. Rev. 89 (5), 1673–1701.
Dyck, A., and Zingales, L. 2002. The corporate governance role of the media. Chapter 7 of the Right to Tell—The Role of Mass Media in Economic Development. The International Bank for Reconstruction and Development by the World Bank, Washington, DC.
Dyck, A., Volchkova, N., Zingales, L., 2008. The corporate governance role of the media: Evidence from Russia. J. Financ. 63 (3), 1093–1135.
Engelberg, J.E., Parsons, C.A., 2011. The causal impact of media in financial markets. J. Financ. 66 (1), 67–97.
Fang, L., Peress, J., 2009. Media coverage and the cross-section of stock returns. J. Financ. 64 (5), 2023–2052.
Fiske, S., 1980. Attention and weight in person perception: The impact of negative and extreme behavior. J. Pers. Soc. Psychol. 38 (6), 889–906.
Francis, J., Schipper, K., Vincent, L., 2002. Expanded disclosures and the increased usefulness of earnings announcement. Account. Rev. 77 (3), 515–546.
Graham, J., Harvey, C., Rajgopal, S., 2005. The economic implications of corporate financial reporting. J. Account. Econ. 40, 3–73.
Griffin, J.M., Hirschey, N.H., Kelly, P.J., 2011. How important is the financial media in global markets? Rev. Financ. Stud. 24, 3941–3992.
Guest, N.M., 2021. The information role of the media in earnings news. J. Account. Res., forthcoming
Gurun, U.G., Butler, A.W., 2012. Don't believe the hype: Local media slant, local advertising, and firm value. J. Financ. 67 (2), 561–597.
Hamilton, J., 2004. All the News That's Fit to Sell: How the Market Transforms Information to News. Princeton University Press, New Jersey, USA.
Hayn, C., 1995. The information content of losses. J. Account. Econ. 20, 125–153.
Heckman, J., 1979. Sample selection bias as a specification error. Econometrica 47 (1), 153–162.
Hillert, A., Jacobs, H., Müller, S., 2014. Media makes momentum. Rev. Financ. Stud. 27 (12), 3467–3501.
Hirshleifer, D., Lim, S.S., Teoh, S.H., 2009. Driven to distraction: extraneous events and underreaction to earnings news. J. Financ. 64 (5), 2289–2325.
Holstein, W., 2008. Manage the Media. Harvard Business School Publishing, Boston, MA.
Huang, X., Nekrasov, A., Teoh, S.H., 2018. Headline salience, managerial opportunism, and over- and underreactions to earnings. Account. Rev. 93 (6), 231–255.
Huang, A.H., Zang, A.Y., Zheng, R., 2014. Evidence on the information content of text in analyst reports. Account. Rev. 89 (6), 2151–2180.
Huberman, G., Regev, T., 2001. Contagious speculation and a cure for cancer: A nonevent that make stock prices soar. J. Financ. 56 (1), 387–396.
Huson, M.R., Parrino, R., Starks, L.T., 2001. Internal monitoring mechanisms and CEO turnover: A long-term perspective. J. Financ. 56 (6), 2265–2297.
Hutton, A., Miller, G., Skinner, D., 2003. The role of supplementary statements with management earnings forecasts. J. Account. Res. 41, 867–890.
Jensen, M.C., 1979. Toward a theory of the press. In: Brunner, K. (Ed.), Economics and Social Institutions. Martinus Nijhoff, Boston, pp. 267–287.

Kim, P., Marchini, P.L., Siciliano, G., 2019. Information content of earnings announcements around IFRS adoption and a simultaneious change in press release disclosure in Italy. Int. J. Account. 54 (2) 195005.
Kiousis, S., Popescu, C., Mitrook, M., 2007. Understanding influence on corporate reputation: An examination of public relations efforts, media coverage, public opinion, and financial performance from an agenda-building and agenda-setting perspective. J. Public Relat. Res. 19, 147–165.
Klinger, E., Barta, S.G., Maxeiner, M.E., 1980. Motivational correlates of thought content frequency and commitment. J. Pers. Soc. Psychol. 39, 1222–1237.
Kong, X., Radhakrishnan, S., Tsang, A., 2017. Corporate lobbying, visibility and accounting conservatism. J. Bus. Financ. Acc. 44 (5–6), 527–557.
Kothari, S.P., Li, X., Short, J.E., 2009a. The effect of disclosures by management, analysts, and business press on cost of capital, return volatility, and analyst forecasts: A study using content analysis. Account. Rev. 84 (5), 1639–1670.
Kothari, S.P., Shu, S.S., Wysocki, P.D., 2009b. Do managers withhold bad news? J. Account. Res. 47 (1), 241–276.
Kuhnen, C.M., 2015. Asymmetric learning from financial information. J. Financ. 70 (5), 2029–2062.
Kyung, H., and Tsang, A. 2022. Media sentiment divergence and analyst earnings forecasts. Asia-Pacific Journal of Accounting and Economics, forthcoming.
Li, E.X., Ramesh, K., Shen, M., 2011. The role of newswires in screening and disseminating value-relevant information in periodic SEC reports. Account. Rev. 86 (2), 669–701.
Liu, B., McConnell, J.J., 2013. The role of the media in corporate governance: Do the media influence managers' capital allocation decisions? J. Financ. Econ. 110 (1), 1–17.
Liu, W., Ngo, P.T.H., Zhu, Q., 2017. Harnessing media attention: Strategic press releases around earnings announcements. Australian National University, Working paper.
Livnat, J., Mendenhall, R.R., 2006. Comparing the post-earnings announcement drift for surprises calculated from analyst and time series forecasts. J. Account. Res. 44 (1), 177–205.
Martins, O.S., Barros, L., 2021. Firm informativeness, information environment, and accounting quality in emerging countries. Int. J. Account. 56 (1) 215004.
Matsumoto, D.A., 2002. Management's incentives to avoid negative earnings surprises. Account. Rev. 77 (3), 483–514.
Mian, G.M., Sankaraguruswamy, S., 2012. Investor sentiment and stock price response to earnings news. Account. Rev. 87 (4), 1357–1384.
Michaely, R., Rubin, A., Vedrashko, A., 2016. Further evidence on the strategic timing of earnings news: Joint analysis of weekdays and times of day. J. Account. Econ. 62, 24–45.
Miller, G.S., 2006. The press as a watchdog for accounting fraud. J. Account. Res. 44 (5), 1001–1033.
Miller, G.S., Skinner, D.J., 2015. The evolving disclosure landscape: How changes in technology, the media, and capital markets are affecting disclosure. J. Account. Res. 53, 221–239.
Moon, S.J., Hyun, K.D., 2014. Online media relations as an information subsidy: Quality of fortune 500 companies' websites and relationships to media salience. Mass Commun. Soc. 17, 258–273.
Mullainathan, S., Shleifer, A., 2005. The market for news. Am. Econ. Rev. 95 (4), 1031–1053.
Niessner, M., So, E.C., 2017. Bad news bearers: The negative tilt of financial press. Yale University, Working paper.
Peng, L., Xiong, W., 2006. Investor attention, overconfidence and category learning. J. Financ. Econ. 80 (3), 563–602.
Peress, J., 2008. Media coverage and investors' attention to earnings announcement. INSEAD, Working paper.
Pinnuck, M., 2014. The New York Times and Wall Street Journal: Does their coverage of earnings announcements cause "stale" news to become "new" news? J. Behav. Financ. 15 (2), 120–132.
Piotroski, J.D., Roulstone, D.T., 2004. The Influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm-specific information into stock prices". Account. Rev. 79 (4), 1119–1151.
Radhakrishnan, S., Tsang, A., 2011. The valuation-relevance of the foreign translation adjustment: The effect of barriers to entry. Int. J. Account. 46, 431–458.
Reuter, J., Zitzewitz, E., 2006. Do ads influence editors? Advertising and bias in the financial media. Q. J. Econ. 121 (1), 197–227.
Rogers, J.L., Skinner, D.J., Zechman, S.L., 2016. The role of the media in disseminating insider trading news. Rev. Acc. Stud. 21 (3), 711–739.
Rozin, P., Royzman, E.B., 2001. Negativity bias, negativity dominance, and contagion. Pers. Soc. Psychol. Rev. 5 (4), 296–320.
Skinner, D.J., Sloan, R.G., 2002. Earnings surprises, growth expectations, and stock returns or don't let an earnings torpedo sink your portfolio. Rev. Acc. Stud. 7 (2–3), 289–312.
Skowronski, J.J., Carlston, D.E., 1989. Negativity and extremity biases in impression formation: A review of explanation. Psychol. Rev. 105, 131–142.
Soffer, L., Thiagarajan, R., Walther, B., 2000. Earnings preannouncement Strategies. Rev. Acc. Stud. 5, 5–26.
Solomon, D.H., Soltes, E.F., 2012. Managerial control of business media coverage. Harvard Business School, Working paper.
Solomon, D.H., Soltes, E.F., Sosyura, D., 2014. Winners in the spotlight: media coverage of fund holdings as a driver of flows. Journal of Financial Economic 113 (1), 53–72.
Soltes, E., 2010. Disseminating firm disclosures. Harvard University, Working paper.
Suk, I., Lee, S., Kross, W., 2021. CEO turnover and accounting earnings: the role of earnings persistence. Manag. Sci., forthcoming
Tetlock, P.C., 2007. Giving content to investor sentiment: The role of media in the stock market. J. Financ. 62 (3), 1139–1168.
Tetlock, P.C., 2010. Does public financial news resolve asymmetric information? Rev. Financ. Stud. 23 (9), 3520–3557.
Tetlock, P.C., 2011. All the news that's fit to reprint: Do investors react to stale information? Rev. Financ. Stud. 24, 1481–1512.

Tetlock, P.C., Saar-Tsechansky, M., Macskassy, S., 2008. More than words: Quantifying language to measure firms' fundamentals. J. Financ. 63 (3), 1437–1467.
Tsang, A., Wang, K.T., Zhu, N.Z., 2024. Foreign media slant, foreign investors, and informativeness of earnings. Rev. Acc. Stud., forthcoming
Twedt, B., 2016. Spreading the word: Price discovery and newswire dissemination of management earnings guidance. Account. Rev. 91 (1), 317–346.
Walker Rettberg, J., 2008. Blogging. Polity Press, Malden, MA.
Wartick, S.L., 1992. The relationship between intense media exposure and change in corporate reputation. Bus. Soc. 31 (1), 33–49.
Wentura, D., Rothermundm, K., Bak, P., 2000. Automatic vigilance: The attention-grabbing power of negative social information. J. Pers. Soc. Psychol. 78 (6), 1024–1037.
Williams, C.D., 2015. Asymmetric responses to earnings news: A case for ambiguity. Account. Rev. 90 (2), 785–817.