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Redrawing the line: Narrowly beating analyst forecasts and journalists' co-coverage choices in earnings-related news articles

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ABSTRACT

Do journalists use editorial tools to help investors clarify uncertain earnings performance? This study examines this question in the context of WSJ reporters' co-coverage choices. Using narrowly beating consensus analyst forecasts as a proxy for earnings evaluation uncertainty, I find that journalists tend to co-cover peers that are more economically related to the announcing firm when it reported earnings that narrowly beat consensus analyst forecasts ("beaters") than when discussing the earnings of non-beaters. Using intra-day data, I further find that stock investors appear to use the co-covered peers as a benchmark to evaluate the earnings of the beaters but not the earnings of the non-beaters. These findings highlight the usefulness of media's editorial content to investors.

1. Introduction

Recent theories of the financial media proposed a model where journalists' reporting objective involves balancing the investment value of covering a corporate announcement and minimizing the costs to readers from exposure to manipulated disclosures (Goldman et al., 2021). One of the model's central predictions is that journalists are more likely to cover negative news than positive news as the former is less likely to be manipulated, and this prediction is largely consistent with prior empirical findings on media's coverage decisions (e.g., Tetlock 2007; Garcia 2013; Niessner and So 2018). However, maximizing the *net* benefits of media coverage to the readers entails more than abstaining from reporting positive news altogether. Besides the initial coverage decision, there are likely to be additional means that journalists may employ to help readers clarify earnings performance that is difficult to evaluate. The purpose of this paper is to shed more light on this issue by examining journalists' use of editorial tools to help readers better evaluate earnings with ambiguous performance implications conditional on the decision to cover it. Specifically, I examine if journalists strategically co-cover closely related peers to the announcing firm in earnings-announcement-related articles when the announcing firm narrowly beats consensus analyst forecasts, and if stock investors use the co-covered peers as an alternative benchmark to evaluate the firm's earnings performance.

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Co-coverage refers to a common journalistic practice of mentioning related firms pertinent to the main story of a news article as background information and is prevalent in earnings-related articles from prominent financial media such as the *WSJ*.[1] In general, the co-covered firms include not only the announcing firm's competitors and supply-chain partners, but also any other types of firms that the journalist sees fit to contribute to the narrative. For example, in a *WSJ* article discussing Kellogg Co.'s third quarter earnings announcement in 2004, the journalist also mentioned the recent performance of its close competitors General Mills, Colgate-Palmolive Co. and Unilever (Adamy 2004), while in another article about the 2008 Q1 earnings of ConAgra Foods Inc., a maker of pasta, ketchup and peanut butter, the journalist chose to co-cover ethanol producer VeraSun Energy Corp. and United Airlines' parent UAL Corp. because all three firms have relied on commodity-hedging to manage production costs, despite that they are neither industry peers nor supply-chain partners (Jargon 2008).[2]

Although the choice of co-covered firms can be largely context-dependent, I propose that one factor that may affect journalists' co-coverage choices is the announcing firm's earnings evaluation uncertainty. In financial markets, earnings performance is commonly evaluated against certain benchmarks, such as the consensus analyst forecasts. Given its popularity and the reward for beating such benchmarks, firms are incentivized to manipulate earnings to achieve these targets (e.g., Bartov et al., 2002; Kasznik and McNichols 2002), leading to uncertainty about the favorableness of its performance even if it narrowly beats the consensus forecasts. I conjecture that journalists are more likely to co-cover closely related peers to the announcing firm when the earnings evaluation uncertainty is high. The reason is that journalists' incentive to provide informative content to the readers may motivate them to provide more contextual information in the article to help the audience better understand the firm's true performance and avoid the losses from being misled (Goldman et al. 2021). In addition, the readers' information demand about firms with higher earnings evaluation uncertainty is likely to be greater, leading journalists to supply more contextual information when discussing the earnings announcement.

One type of contextual information that may be useful to the readers is the announcing firm's closely related peers, which can serve as an alternative benchmark when consensus forecast yields ambiguous implications for those that marginally beat it (e.g., Bartov et al., 2002; Kasznik and McNichols 2002). First, economically related peers share similar business fundamentals with the announcing firm and therefore are likely to have comparable earnings (e.g., Healy and Palepu 2007; Lee et al., 2015; Jennings et al., 2020). Second, it is more difficult for managers to manipulate earnings to beat the co-covered firms than consensus forecast or other bright-line targets (e.g., Burgstahler and Dichev 1997), since the managers do not know beforehand the exact earnings target they are supposed to beat due to the uncertainty about whether the announcement will receive media coverage, which peer(s) will be co-covered given coverage, and the peers' earnings.[3] Thus, closely related peers can be a useful benchmark to evaluate the announcing firm's earnings performance when conventional benchmarks such as consensus forecasts fail to give clear indications of its future prospects (e.g., Matsumoto 2002; Matsunaga and Park 2001; Graham et al., 2005).

Next, I investigate the stock-market consequences of journalists' co-coverage choices by examining if investors use the co-covered firms as an earnings benchmark for the announcing firm when it narrowly beats consensus forecasts. To the extent that investors discount consensus forecast when it may fail to credibly evaluate firm performance (e.g., Keung et al., 2010), they may need to resort to other standards of evaluation. If journalists are able to select peers that are sufficiently comparable to the announcing firm to serve as earnings benchmarks and that the co-covered-firm-based benchmark is incrementally informative about the firm's performance beyond what's conveyed through its earnings disclosures, I expect the announcing firm's return surrounding the publication of the article to be positively related to a surprise measure calculated using average co-covered peers' earnings when the featured earnings announcement has high evaluation uncertainty.[4]

These conjectures are tested on a sample of 217 earnings-related articles published by the *WSJ* that mentioned at least one co-covered firm from 2006 to 2014. The sample period is limited by the availability of data necessary to conduct the analysis, which will be detailed in Section 3. I require the articles to have at least one co-covered firm to control for two other endogenous decisions that journalists need to make before choosing the co-covered peers—whether to report the earnings announcement and whether to mention co-covered firms. To be included in the sample, the announcing firm needs to have available information about the featured earnings announcement and intraday trading information in the databases used in this study (discussed in Section 3). I then identify the

[1] I collect *WSJ* articles from the RavenPack database (Dow Jones Edition). During the sample period of 2006–2014, the (unconditional) average number of co-covered firms in a *WSJ* article is 1.87, and approximately 80% of the articles contain at least one co-covered firm. As the full-edition of RavenPack (which includes non-Dow Jones-affiliated news outlets with various coverage starting dates, the earliest being the second quarter of 2007) is not available to me, I randomly collect a sample of 100 earnings-related articles from other major financial news outlets (e.g., Bloomberg, CNBC, CNN Money, Financial Times, Forbes, The New York Times, Reuters, and The Washington Post) using Factiva and find that the average number of co-covered firms per article (2.23) is similar to that in *WSJ*.

[2] Please refer to Appendix A for relevant excerpts from the two articles.

[3] In Fig. 1, I plot the distributions of the co-covered peers' earnings surprises based on analyst consensus forecasts, and the announcing firms' earnings surprises based on co-covered peers' earnings in the spirit of Burgstahler and Dichev (1997). Although the peers' consensus-forecast-based earnings surprises exhibit a spike around the "just-meet" line in the upper plot, suggesting earnings manipulation, there is no such spike in the lower plot for the announcing firms' peer-based earnings surprises. These findings imply that although individual co-covered peers' earnings may be manipulated, the average co-covered peers' earnings surprise can still be a valid benchmark to evaluate the announcing firm's earnings for reasons discussed above.

[4] I use current-quarter realized earnings for peers that reported earnings before the announcing firm and consensus forecast earnings for peers that have not reported earnings as of the publication of the article to calculate the peer-based benchmark. More details about the research design are discussed in Section 3.

co-covered firms in the article and require them to have non-missing information about earnings, analyst forecasts, and other accounting variables. I further require the announcing firm's earnings press release and conference call to be sufficiently distant from the publication of the *WSJ* article so that its returns over the earnings announcement window and the article publication window can be separately measured to provide causal evidence on the stock market reaction to the co-covered-peer-based benchmark.

Empirical results suggest that journalists are more likely to discuss co-covered peers in the article when the announcing firm narrowly beats consensus analyst forecast (i.e., the beaters). Conditional on the article including at least one co-covered firm, the journalist-selected co-covered peers are significantly more related to the beater announcing firm as measured by stock return synchronicity than non-co-covered peers randomly drawn from (1) the top 10 peers with highest analyst co-coverage (Kaustia and Rantala 2021); (2) the top 10 peers with highest Edgar co-search traffic (Lee et al., 2015); or (3) the Hoberg and Phillips (2010, 2016) TNIC3 industry (depending on the specification of the tests), all defined as of the most recent year. However, the co-covered peers in articles discussing non-beaters' earnings announcements are either less related to, or as related to the announcing firm as the alternatively-defined peers. These findings suggest that journalists are more inclined to co-cover closely related peers when it is more uncertain to assess the announcing firm's earnings performance, lending support to my hypothesis.

Furthermore, investors appear to use the earnings of the co-covered peers as an alternative benchmark to evaluate the announcing firm's earnings when earnings evaluation uncertainty is high. Specifically, the beater's intraday market-adjusted abnormal return over the article publication window has a significant positive relationship with the peer-based earnings surprise. This positive relationship is robust to a plethora of control variables capturing the information content of the earnings announcement, including the abnormal return of the beater over the earnings announcement window before the publication of the article, suggesting that the peer-based surprise is incrementally informative to the market above and beyond firm disclosures. However, the non-beater's article-publication-window return does not react to the peer-based earnings surprise measure, possibly because analyst forecast is still a credible performance benchmark for these firms (e.g., Keung et al., 2010).

One major alternative explanation to the positive reaction to co-covered-peer-based earnings surprise over the beaters' article-publication-window is that investors use peer-based surprise to gauge the beater's performance regardless of journalists' co-coverage decisions and the journalists' co-coverage choices simply reflect the list of comparable peers that investors have in mind. Thus, to the extent that the earnings of the co-covered peers have a positive correlation with the earnings of investors' own choice of peers, we may observe a positive earnings response coefficient (ERC) to the co-covered-peer-based surprise even if investors do not benchmark specifically on the co-covered peers but related peers in general. To address this possibility, I conduct two additional tests to validate that the market's positive reaction to the co-covered-peer-based earnings surprise is indeed attributable to journalists' co-coverage choices. First, I examine if the beaters' returns over the earnings announcement window before the publication of the article is also positively related to the co-covered-peer-based surprise. If the positive ERC to the co-covered-peer-based surprise is driven by investors benchmarking on related peers in general, we should expect to see a positive relationship between the beater's earnings-announcement-window return and the co-covered-peer-based surprise as well. Empirical results show that the beater's earnings-announcement-window return is not significantly associated with the co-covered-peer-based earnings surprise, suggesting that investors do not benchmark on the co-covered peers' earnings until the identities of those peers become publicly available.

Second, if the market reaction to co-covered-peer-based surprise is due to the co-covered-peers' earnings being positively correlated with the earnings of investors' private selection of peers, the reaction should become weaker after controlling for alternatively-defined surprise measures based on the earnings of investors' own choice of peers. Although investors' private peer choices are not publicly observable, they are likely to overlap with the peers that share similar economic fundamentals with the announcing firm. As prior research shows that peers identified using analyst co-coverage (Kaustia and Rantala 2021), Edgar co-search (Lee et al., 2015), and textual similarity between firms' business descriptions in 10-K filings Hoberg and Phillips (2010, 2016) are more comparable to a focal firm along a variety of dimensions such as accounting characteristics, valuable multiples, and stock return synchronicity than traditional industry classifications, I test if the positive relationship between the beater's article-publication-window return and the co-covered-peer-based surprise becomes muted after controlling for an earnings surprise measure using the average earnings of randomly selected firms from the top 10 analyst-co-coverage peers, the top 10 Edgar co-search peers, and the TNIC3 peers. Results show that the positive relationship between the beater's article-publication-window return and the co-covered-peer-based surprise remains significant in the presence of the alternative peer-based surprise controls. Collectively, these findings lend further support to the conjecture that investors use journalist-picked co-covered firms as an earnings benchmark when the announcing firm narrowly beats consensus forecast.

This paper contributes to several strands of literature. First, it adds to the emerging research on how journalists' incentive to provide informative content to the readers affect their reporting decisions. While prior research has mainly focused on the initial coverage decision (e.g., Niessner and So 2018; Goldman et al. 2021), this study extends the analysis to journalists' editorial choices in the context of co-coverage and shows that journalists are more likely to mention closely related peers to the announcing firm when it is more difficult to make a clear assessment of its performance using traditional benchmarks.

Second, this paper is related to the nascent literature on the informativeness of the media's editorial analysis to capital markets beyond information dissemination. For example, Guest (2021) finds that the overall level of editorial content in *WSJ* articles (as measured by the textual similarity between the article and the firm's earnings press release) has a positive effect on the announcing firm's price discovery around the earnings announcement. This paper adds to this research by examining how the informativeness of editorial content varies with the underlying announcement's evaluation uncertainty in the setting of journalists' choice of co-covered peers.

Third, this paper contributes to the literature on market participants' use of peers. Although extensive research has been conducted to examine the use of peer firms by managers (e.g., Lazear and Rosen 1981; Gibbons and Murphy 1990), analysts (e.g., Bhojraj and Lee

2002; De Franco et al., 2015), investors and financial statement users (e,g, Foster 1981; Lee et al., 2015), empirical evidence on the use of peers by the media—arguably one of the most important information intermediaries in capital markets—has been scant despite its prevalence in financial journalism. This paper fills this void by examining how financial media's peer selection is influenced by the evaluation uncertainty of firms' reported earnings performance.

Last but not least, this study is related to the vast literature on earnings benchmarking. While previous studies show that the market rewards managers for beating bright-line benchmarks of zero-profit, past earnings and consensus earnings forecast (e.g., Burgstahler and Dichev 1997; Degeorge et al. 1999; Kasznik and McNichols 2002), this paper finds that when such conventional benchmarks fail to give a clear-cut assessment of performance, investors may rely on journalist-picked comparable peers as an alternative benchmark to evaluate reported earnings.

The rest of the paper is organized as follows. Section 2 reviews the relevant literature and discusses hypothesis development. Section 3 describes the sample construction procedure. Section 4 explains the empirical design. Section 5 discusses descriptive statistics of the sample. Section 6 presents the main analysis and Section 7 reports findings from additional analysis to rule out alternative explanations. Section 8 concludes.

2. Literature review and hypotheses development

2.1. Journalists' co-coverage choices and earnings evaluation uncertainty

The financial media plays a crucial role in capital markets. Prior research shows that media coverage is associated with increased transparency (Fang and Peress 2009) and reduced information asymmetry (Tetlock 2010), and could improve liquidity and accelerate price discovery (e.g., Engelberg and Parsons 2011; Peress 2014; Huberman and Regev 2001; Peress 2008). Recent theoretical work on the economic role of the media develops a model where the primary objective of the journalists is to provide coverage that yields the greatest informational benefits to the readers (Goldman et al. 2021). This objective entails that journalists need to consider both the potential investment value of a corporate announcement and the probability that the announcement is manipulated by the managers to maximize the net benefits of covering the announcement. The model predicts that the probability that journalists will cover an announcement depends on the sign of the news. Specifically, positive news has a positive probability of receiving coverage and the probability decreases with the expected degree of manipulation, while negative news has a higher probability of being covered as negative news is less likely to be manipulated. Consistent with this prediction, Niessner and So (2018) find that the media tends to exhibit a "negative tilt" in its coverage decisions and firm earnings announcements with negative news are approximately 11%-19% more likely to be covered than those with positive news.

However, to reduce the readers' exposure to potentially manipulated announcements does not necessarily mean that the journalists should refrain from reporting positive news altogether. After all, window-dressing financial performance through either expectations management (e.g., Cotter et al., 2006; Kross et al., 2011) or real and accrual management (e.g., Dechow, Sloan and Sweeney 1995; Healy and Wahlen 1999; Roychowdhury 2006) is common in the corporate world (Graham et al., 2005) and even profitable multinational companies are not immune from these practices (Dyreng et al., 2012). Yet, empirical investigation on how journalists reduce the costs of reporting announcements with ambiguous performance implications beyond the initial coverage decisions has been scant.

This paper proposes an alternative way that journalists may use to help the readers clarify the announcing firm's true performance—editorial choices of co-covered peers. A large body of research shows that market participants use the performance of the economically related peers to gauge the prospects of the focal firm. For example, investors frequently rely on peers' earnings announcements and management forecasts to value the stocks of the focal firms (e.g., Foster 1981; Clinch and Sinclair 1987; Baginski 1987; Han and Wild 1990; Pyo and Lungarten 1990). They have also been shown to react positively to an improvement in a firm's profitability ranking within an industry as it is regarded as a signal of higher competitiveness (Jennings et al., 2020). Thus, closely related peers can be a useful benchmark to evaluate the earnings performance of the announcing firm, especially if it is difficult to do so using conventional benchmarks such as consensus analyst forecasts (e.g., Kasznik and Lev 1995; Burgstahler and Eames 2006; Bhojraj et al. 2009). The reason is that managers are unlikely to know the exact identities of the peers that journalists will co-cover in the article before the earnings announcement and as a result, it is more difficult for them to manage earnings to beat the earnings of the co-covered peers than targets that they have access to beforehand because doing so requires the managers to know the precise amount of earnings (i.e., EPS) that the peers made at cents-level accuracy. Therefore, peer earnings can be an informative benchmark if evaluation based on explicit targets such as consensus forecasts cannot give a clear indication of its performance. Following this reasoning, I make the following hypothesis:

H1. Ceteris paribus, the co-covered peers mentioned in earnings-related articles are more economically related to the announcing firm when the evaluation uncertainty of the earnings performance is high based on conventional bright-line target.

However, the view that journalists aim to provide informative content to the readers is not uncontested.[5] For example, a number of studies point out that the media can tend toward sensationalism (e.g., Jensen 1979; Miller 2006; Core et al. 2008; Ahern and Sosyura, 2014) and may even encourage financial bubbles (e.g., Dyck and Zingales 2003; Shiller 2005), and others argue that media news may not be linked to stock pricing or governance choices (e.g., Core et al. 2008; Bednar 2012). In this situation, journalists' co-coverage

[5] Please see Gong et al. (2018) for a summary of the literature.

decisions may be less based on the evaluation uncertainty of the announcing firm's earnings, and the choices of the co-covered peers may be less based on their relatedness with the announcing firm. Thus, H1 is a joint hypothesis that (1) the journalists are incentivized to be informative, and that (2) they choose to co-cover more related peers when the announcing firm's earnings have higher evaluation uncertainty.

2.2. The informativeness of co-coverage to stock investors

A long stream of research documents that investors use various benchmarks to evaluate a firm's earnings performance, including consensus analyst forecast, the firm's own past earnings, and the break-even point, and that firms are highly incentivized to beat these targets to avoid negative market and career consequences (e.g., Burgstahler and Dichev 1997; Degeorge et al. 1999; Kasznik and McNichols 2002; Graham et al., 2005). Given the high pressure to deliver positive earnings news, it is not uncommon for firm managers to adopt a variety of means to beat those earnings targets, including guiding down analyst forecasts (e.g., Cotter et al. 2006; Kross et al. 2011), accrual management (e.g., Dechow et al. 1995; Healy and Wahlen 1999), real earnings management (e.g., Roychowdhury 2006), and even fraudulent accounting (e.g., Amiram et al., 2018). As a result, the market rationally discounts the credibility of these bright-line targets since beating them is no longer a sure sign of good performance (e.g., Keung et al., 2010).

In this situation, it is likely that investors may seek alternative benchmarks to evaluate the reported earnings. To the extent that journalists choose to co-cover closely related peers when reporting earnings announcements with relatively high evaluation uncertainty, investors are likely to use the earnings of these peers as a benchmark if it can serve as an additional signal about the announcing firm's performance beyond the information disclosed from the firm's earnings press release and conference calls. However, it is also possible that investors do not benchmark on the co-covered peers if they have their own private benchmarks for these firms. Based on these arguments, I formulate the hypothesis in null form:

H2. Ceteris paribus, the announcing firm's abnormal returns are not related to its earnings surprise calculated using the average earnings of the co-covered peers when the evaluation uncertainty of the earnings performance is high based on conventional bright-line target.

3. Sample construction

The sample is constructed using the steps described in Table 1, Panel A. First, I collect *WSJ* articles about U.S. firms' earnings announcements from the RavenPack database between 2006 and 2014.[6] The sample starts in 2006 because this is the year when Wall Street Horizon data becomes available (detailed below); it ends in 2014 due to the availability of the monthly TAQ data. For each article, I identify the publication date t and the announcing firm k whose earnings announcement is the main story of the article.[7] This step results in 2,895 *WSJ* articles. Second, if multiple articles exist for the same firm k's earnings announcement of a given quarter, I keep the earliest article, which reduces the number of articles to 2,210.[8] Third, I merge each article with analysts' earnings forecast information from I/B/E/S to calculate earnings surprise and the remaining number of articles is 1,707. Fourth, I merge each article with the timestamps of the announcing firm's earnings press release and conference calls, which are obtained from *WSH*. I use *WSH* instead of I/B/E/S to collect the timestamps of firms' earnings announcements since the market reaction tests in this study (which will be detailed in Section 4) require highly accurate timestamps to isolate the reaction over narrow intraday windows surrounding the publication of the article, and prior research shows that *WSH* data is more accurate than I/B/E/S (e.g., Bradley et al., 2014; Michaely et al., 2014; deHaan et al. 2015; Li 2016). This step reduces the sample to 1,315 articles.

Fifth, for each article, I collect the intraday trading data from TAQ over two windows: the article publication window and the earnings announcement window. Following prior research (Patton and Verardo 2012; Bradley et al. 2014), the intraday article publication window is defined as either (1) a 30-minutes window centered on the article publication time if it is published during trading hours (i.e., starting 15 min before and ending 15 min after the article publication time) to balance the need of having sufficiently narrow event windows and avoiding noises introduced by market microstructure effects at higher sampling frequencies or (2)

[6] I use the Dow Jones edition of RavenPack for sample construction, which includes three publications targeting the general public—the *WSJ*, Barron's, and MarketWatch. Compared with *WSJ*, Barron's and MarketWatch have less coverage of company earnings announcements. For example, the number of earnings-announcement-related articles in Barron's over the sample period is only about 3% of those in *WSJ*. The number of earnings articles in MarketWatch is even smaller because articles with the earnings announcement tag only appeared in the RavenPack database from 2010. Furthermore, all the earnings announcements covered by Barron's and MarketWatch also received coverage by the *WSJ*. Given the limited coverage and lower readership of these two publications (Jones 2018a, 2018b, 2018c), I primarily use *WSJ* articles to construct the sample.

[7] For each article, RavenPack identifies all the companies mentioned in it and assigns a relevance score to each of the company. The relevance score ranges from 0 to 100 and indicates how strongly the company is related to the underlying earnings announcement, with higher values indicating greater relevance. I rely on the relevance scores to identify the announcing firms and the co-covered firms. Specifically, if a firm receives a relevance score of 100, I designate it as the announcing firm. If a firm receives a relevance score less than 100, I designate it as a co-covered firm. I manually checked a subsample of 50 randomly selected articles and found that the relevance score provides a reliable way of identifying announcing versus co-covered firms. In addition, for all the sample articles, there is only one firm with a relevance score of 100, indicating that all sample articles cover one single firm's earnings announcement as the main story.

[8] When there are multiple articles for the same earnings announcement, the subsequent articles are predominantly an updated version of the first article with minor revisions.

the overnight window from 4:00p.m. to 9:30 a.m. the following day if the article is published after market close or (3) the overnight window from 4:00p.m. the previous day to 9:30 a.m. if the article is published before market open.,[9][10]To control for any correlated omitted variables that underlie *WSJ* coverage of the earnings announcement, the journalists' co-coverage decisions and market reactions, I also define an earnings announcement window, which starts 15 min before the publication of the earnings press release and ends 120 min after the beginning of the earnings conference call, as prior research shows that firms' conference calls usually last for an hour and can be as long as two hours (Matsumoto, Pronk and Roelofsen 2011). To be included in the analyses, the article publication window needs to start after the end of the earnings announcement window. Separately measuring market reactions over these two windows allows me to distinguish market reactions to the article itself from the reactions to the earnings announcement. If market reactions are measured over a window that contains both the earnings announcement and the publication of the article, any relationship between the announcing firm's returns and the co-covered-peer-based surprise may simply be driven by correlated omitted variables that affect both the market reaction and journalists' co-coverage choices. Controlling for market reactions over the earnings announcement window also helps to address the concern that the market reaction over the article publication window may merely be a continuation of the reaction to the earnings announcement rather than to the content of the article per se. After this step, there are 475 articles remaining in the sample.

Sixth, I manually identify the names of the journalists that authored the articles, collect their biographical information from the *WSJ* website and other professional networking sites such as LinkedIn about their gender, education, working experience and award status, and verify that they were full-time *WSJ* journalists at the time of the article publication. This step is to ensure that the articles were written by journalists working at *WSJ* rather than Dow Jones Newswire, as newswires gives higher priority to speedy dissemination and broad coverage and therefore may have different reporting incentives than non-newswire financial press such as the *WSJ* (e.g., Blankespoor et al., 2018). This step reduces the sample to 258 articles.

Lastly, I keep articles with at least one co-covered firms, provided that it does not play a source role in the article, such as investment banks, publishing companies (e.g., Thomson Reuters) and research firms (e.g., FactSet Research Systems). The final sample include 217 articles.

It is worth noting that all articles included in the sample discuss actual, rather than forthcoming earnings announcements, and are published after the featured earnings announcement.[11] Although there is some anecdotal evidence that the journalists prepare the "b-matter" (e.g., history, backstory, background) for pre-scheduled events, they do update the articles with new facts that become available after the event happens. In financial journalism, while some outlets (e.g., DJ Newswire) may publish earnings articles within minutes of a press release, *WSJ* articles usually have a deadline of an hour or more (Ellison, 2010). Because of the longer deadline, *WSJ* earnings articles tend to be longer and emphasize analysis more than most other earnings articles (Guest 2021). In addition, *WSJ* journalists "often report outsider-generated information, such as analyst estimates" (Guest 2021), suggesting that they do know about the important facts (e.g., consensus forecasts) about the earnings announcement. Also, *WSJ* journalists are "often assigned to cover a specialized beat" such as firms in a particular "industry, or a geographic location" (Guest 2021). Thus, it is reasonable to expect that they know the announcing firms and the industries they are in well enough to identify the closely related peers.

4. Research design

4.1. Journalists' co-coverage choices in earnings articles

A long stream of research shows that consensus analyst forecast is one of the most common benchmarks that investors use to evaluate corporate earnings and that narrowly beating consensus forecast is regarded as a sign of potentially compromised earnings quality (e.g., Kasznik and Lev 1995; Degeorge et al. 1999; Matsumoto 2002; Abarbanell and Lehavy 2003; Burgstahler and Eames 2006; Roychowdhury 2006; Bhojraj et al., 2009; Gunny 2010). Thus, I use whether the firm has narrowly beaten consensus forecasts as a measure of its evaluation uncertainty.,[12][13]To test if journalists choose to co-cover more related peers when the announcing firm has high evaluation uncertainty (*H1*), I estimate the following regression:

[9] If the article is released within 15 min after market open, the window is from 9:30 a.m. to 10:00 a.m. If the article is release within 15 min before market close, the window is from 3:30p.m. to 4:00p.m.

[10] Although TAQ also covers trades in the pre- (from 4:00 a.m. to 9:30 a.m.) and after-market (4:00p.m. to 8:00p.m.), trading information outside regular trading hours is relatively scarce and is not available to all firms. Thus, if an article is published after market close on day t, the article publication window is 4:00p.m. on day t to 9:30 a.m. on day t+1, and the stock returns are calculated using the price at market close on day t and the price at market open on day t+1. If an article is published before market open on day t, the article publication window is 4:00p.m. on day/t to 9:30 a.m. on day t, and the stock returns are calculated using the price at market close on day/t and the price at market open on day t.

[11] I thank an anonymous referee for raising this point.

[12] Although previous studies suggest that managers are also incentivized to beat other benchmarks such as zero profit or the earnings of the same quarter from last year (e.g., Burgstahler and Dichev 1997), very few firms in my sample reported EPS that beat those two benchmarks within a narrow margin of two cents (0.5% and 2.3%, respectively), while approximately 17.3% of the firms beat the consensus analyst forecast by two cents. Thus, consensus analyst forecast is a more empirically viable measure of the earnings performance uncertainty in this sample.

[13] In the online appendix, I show that inferences are qualitatively similar if I use alternative measures of earnings evaluation uncertainty, such as whether the firm has positive discretionary CFO, negative discretionary expenses, negative abnormal analyst forecasts, or non-GAAP exclusions (Doyle et al. 2013).

$$DSIM_{t,k} = \beta_0 + \beta_1 * BEAT_{t,k} + CONTROL + \text{Hour fixed effects} + \text{Weekday fixed effects} + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_{t,k}, \quad (1)$$

where $DSIM_{t,k}$ measures the economic relatedness between the announcing firm k and the co-covered peers as compared with the relatedness between firm k and three randomly selected peers not co-covered in the article.[14] $DSIM_{t,k}$ can be one of the following three variables: $DSIM\_ACOCOV_{t,k}$, $DSIM\_EDGAR_{t,k}$, and $DSIM\_HP_{t,k}$. $DSIM\_ACOCOV_{t,k}$ (or $DSIM\_EDGAR_{t,k}$, $DSIM\_HP_{t,k}$) is the logarithm of the ratio of $RSJPEER_{t,k}$ to $RSACOCOV_{t,k}$ (or $RSEDGAR_{t,k}$, $RSHP_{t,k}$, respectively). $RSJPEER_{t,k}$ is the average return synchronicity between the announcing firm k and the co-covered peers. The return synchronicity between firm k and a particular peer is measured as the R-squared from regressing the firm k's daily market-adjusted excess return on the co-covered peer's contemporaneous market-adjusted returns over a one year period ending five days before the article publication day t (e.g., Bhojraj and Lee 2002; Hoberg and Phillips 2010, 2016; Lee et al. 2015; Kaustia and Rantala 2021).[15] $RSACOCOV_{t,k}$ (or $RSEDGAR_{t,k}$, $RSHP_{t,k}$) are similarly defined using three non-co-covered peers randomly selected from the top 10 peers with highest analyst co-coverage following Kaustia and Rantala (2021) (the top 10 peers with highest Edgar co-search traffic following Lee, Ma and Wang (2015), or the Hoberg and Phillips (2010, 2016) TNIC3 industry, respectively), all defined as of the most recent year before day t.[16] Effectively, $DSIM_{t,k}$ captures how much more (or less) related the journalist-selected peers are to firm k than the average relatedness between k and peers defined by alternative algorithms. As analyst co-coverage, Edgar co-search and the TNIC3 industry have been shown to be superior to conventional industry classifications in grouping economically related firms, comparing the relative relatedness of the co-covered peers with these alternative peers allows me to control for any endogeneity in the uniqueness of a firm's business and its propensity to beat consensus forecasts by a small margin.[17]

The independent variable of interest, $BEAT_{t,k}$, is an indicator variable that is equal to 1 if the announcing firm k's reported EPS is one (or two, three) cent(s) above the mean (or median) consensus analyst forecasts, and 0 otherwise. Consensus mean (median) analyst forecast is calculated as the mean (median) of the latest forecast issued by an analyst for firm k's current quarter earnings, provided that the forecast is issued within a 90-day window prior to the earnings announcement (e.g., Kasznik and Lev 1995; Degeorge et al. 1999; Matsumoto 2002; Abarbanell and Lehavy 2003; Burgstahler and Eames 2006; Roychowdhury 2006; Bhojraj et al. 2009; Gunny 2010). If *H1* holds, β_1 is expected to be significantly positive.

Control variables include the following. *CTR_EXRET* is firm k's market-adjusted return over the earnings announcement window, calculated as the difference between its raw return and the return of the Standard & Poor's Composite Index (SPY) return. Consistent with prior research (e.g., Bradley et al. 2004, Patton and Verardo 2012), I use continuously compounded returns computed using the nearest quoted price (midpoint of bid and ask prices) at the beginning and the end of the window, provided that the quote time of the prices is within the window. *LAG* is the logarithm of one plus the number of minutes between the end of the earnings announcement window and the start of the article publication window to control for the lapse of time between these two events. *SURP_ANN* is the difference between firm k's reported earnings and consensus analyst forecast, scaled by lagged total assets. Additional controls include analyst coverage (*ANLY*) and media coverage (*MEDIA*) over the past twelve months; the announcing firm's analyst forecast dispersion (*DISP_FEPS_ANN*); whether firm k's reported earnings has met its earnings in the same quarter from last year (*MEET_LAG4*); whether firm k has reported a loss (*LOSS*); firm market capitalization (*SIZE*) and book-to-market ratio (*BM*) as of the end of the previous quarter; institutional ownership (*LOG_NINST*) as of the end of the previous fiscal quarter; concurrent firm disclosures (*FILING*), which is an indicator variable that is equal to 1 if firm k submitted a 10-K, 10-Q, or 8-K filing to the SEC website during the article publication window, and 0 otherwise to control for the confounding effects of firm disclosures on market reactions over the article publication window; the total number of words in the article (*LOG_NWORDS*); and the total number of journalists authoring the article (*LOG_NJOURNALIST*) as it may be correlated with the informativeness of the article (e.g., Fang and Hope, 2021). Detailed variable

[14] I chose three randomly selected firms to match the average number of co-covered firms in the sample articles, which is 2.15.

[15] While some studies posit that stock return synchronicity is information-driven (e.g., Morck et al. 2000; Durnev et al. 2003; Jin and Myers 2006; Piotroski and Roulstone 2004; Ferreira and Laux 2007; Hutton, Marcus and Tehranian 2009; Gul et al. 2010; Bae et al. 2013; Dang et al., 2015), others argue that low return synchronicity is due to noise or limits to arbitrage (e.g., West 1988; Kelly, 2014). Despite the debate on whether return synchronicity reflets information or noise, it has been a commonly used measure for firms' economic relatedness in prior research (e.g., Lee et al. 2015; Hoberg and Phillips 2010, 2016; Kaustia and Rantala 2021). I use stock return synchronicity to measure relatedness in this paper for two main reasons. The first is to be consistent with the previous studies. The second is that the research design of this study requires me to calculate the relatedness measure for each article. In other words, the relatedness measure can only be calculated using time-series data, unlike prior research that often relies on cross-sectional regressions to calculate relatedness (e.g., Bhojraj and Lee 2002; Hoberg and Phillips 2010, 2016; Lee et al. 2015; Kaustia and Rantala 2021). Thus, relatedness measures based on accounting characteristics and valuation multiples cannot be easily calculated in this setting due to the relatively low frequency of financial reporting. Nevertheless, I show that inferences are qualitatively similar when I calculate economic relatedness using accounting-based information in the online appendix.

[16] I first exclude the co-covered firms from all analyst-, Edgar-, or TNIC3-based peers. In other words, the non-co-covered peers are randomly drawn from a pool that excludes the co-covered firms.

[17] Although economic relatedness is measured by stock return synchronicity in this paper, it does not necessarily imply that all the journalists in the sample actually select peers by estimating the stock return regressions. Rather, the assumption is that stock return synchronicity is a reasonable proxy for the journalists' unobservable peer definitions. This approach is adopted by several prior studies that infer peers from certain market participants' actions, such as Edgar users (Lee et al. 2015) and analysts (Kaustia and Rantala 2021). In addition, as discussed in Section 3, *WSJ* journalists often specialize in firms in a certain industry or geographic region. Thus, it is reasonable to expect that they know the firms they cover well enough to identify the closely related peers.

definitions are provided in Appendix B.

Hour-of-article-publication and weekday fixed effects are included to control for potential time-of-the-day and day-of-the-week effects on journalists' co-coverage choices. The hour of article publication is the hour of the publication time if the article is published between 9:30 a.m. and 4:00p.m., and 0 if the article is published outside regular trading hours. Year fixed effects are included to control for general trend in the journalists' job requirements and incentives (Guest 2021). Industry fixed effects are based on Fama-French 48 industries and are intended to control for time-invariant industry factors that may affect journalists' choice of peers. Standard errors are double-clustered by industry and year-quarter following Petersen (2009).

4.2. Stock market reaction to co-covered-peer-based earnings surprise

To test if investors benchmark on the co-covered peers when the announcing firm narrowly beats consensus forecasts (*H2*), I estimate the following regression:

$$EXRET_{t,k} = \beta_0 + \beta_1 * SURP\_JP_{t,k} * BEAT_{t,k} + \beta_2 * SURP\_JP_{t,k} * NBEAT_{t,k} + \beta_3 * BEAT_{t,k} + CONTROL + \text{Hour fixed effects} + \text{Weekday fixed effects} + \text{Year fixed effects} + \text{Industry fixed effects} + \varepsilon_{t,k}, \quad (2)$$

where $EXRET_{t,k}$ is announcing firm k's market-adjusted excess return over the article publication window. $SURP\_JP_{t,k}$ is firm k's earnings surprise based on the co-covered peer's earnings and it is calculated as the difference between firm k's total-asset-scaled earnings and the average of the co-covered peers' total-asset-scaled earnings. Following prior research, I use the peer's realized earnings if it has reported earnings before firm k or mean consensus analyst forecast if it has not yet reported earnings (e.g., Jennings, Seo and Soliman 2020).[18] $NBEAT_{t,k}$ is defined as 1 - $BEAT_{t,k}$. Thus, the two interaction variables $SURP\_JP_{t,k}$ * $BEAT_{t,k}$ and $SURP\_JP_{t,k}$ * $NBEAT_{t,k}$ separately estimate the market's reaction to the peer-based surprise for firms that narrowly beat consensus analyst forecast and for those that did not. A significantly positive β_1 indicates that the market reacts positively to the announcing firm reporting higher earnings than the co-covered peers.[19] Control variables and other regression specifications are the same as in regression (1).

5. Descriptive statistics

5.1. Summary statistics

Table 1, Panel B reports the frequencies of the articles by the hour of the earnings press release, conference call, and article publication. Due to the requirement that the article publication window does not overlap with the earnings announcement window, the sample mainly consists of before-market-open earnings announcements. Virtually all the earnings press releases are published between 6:00 a.m. and 8:00 a.m. before market open, while the conference calls are concentrated between 8:00 a.m. and 11:00 a.m. The article publication time is more spread-out over the day, with the highest frequencies between 6:00p.m. and 8:00p.m. (68%) followed by 11:00 a.m. to 1:00p.m. (19%).

Table 2 reports the descriptive statistics of the sample. Panel A tabulates the percentage of firms whose reported EPS is above or below the consensus forecast benchmark. Approximately 10% (9%) of the firms beat the mean (median) consensus forecast by one cent; 16% (18%) beat the mean (median) consensus by two cents; and 24% (24%) beat the mean (median) consensus by three cents. For firms that narrowly missed the consensus forecast, 8% (5%) missed mean (median) consensus by one cent; 12% (11%) missed mean (median) consensus by two cents; and 14% (12%) missed mean (median) consensus by three cents. These statistics are consistent with prior findings of a higher number of firms narrowly beating consensus forecast than those narrowly missing it (e.g., Bhoraj et al. 2009).

Panel B presents the summary statistics of various firm and announcement characteristics. The average number of co-covered firms of the sample articles is 2.15 with a standard deviation of 1.25. In general, approximately 53% of the co-covered firms have announced earnings before the announcing firm (*PCT_PHASANNOUNCED*), with a standard deviation of 0.45. The mean (median) article-publication-window excess return (*EXRET*) is 0.00 (0.00) while the mean (median) earnings-announcement-window excess return

[18] Prior research has calculated firm-specific earnings by subtracting the industry-mean from earnings to examine the pricing of various earnings components (e.g., Hui et al. 2016). Previous literature also finds that investors compare the earnings performance of the announcing firm with the earnings of its industry peers when reacting to its earnings announcement. For example, Jennings et al. (2020) show that investors react positively to the change in earnings-based performance rankings of a firm over short earnings announcement windows. The firm's earnings ranking is based on scaled EPS, and the authors specifically mention that scaled EPS "facilitates the comparison of the firm's ability to generate profits across firms of different sizes and allows us to capture aspects of the firm's operating efficiency, profits, and operating income within the industry." These findings suggest that scaled earnings of different firms are comparable and that investors are aware of and use the earnings of related firms when evaluating a firm's earnings performance.

[19] The assumption in this test is that investors become immediately aware of the co-covered peers' earnings surprises. A long stream of research shows that firms' earnings information is processed within minutes (e.g., Patell and Wolfson 1984). More recent research shows that firms' earnings news is also immediately processed by investors of its peers within an hour (Brochet et al. 2018), and that joint media mentions facilitate such information transfer. Patton and Verardo (2012) show that even the entire market moves immediately after S&P 500 firms' earnings announcements using intra-day data. Thus, to the extent that the co-covered peers are closely related to the announcing firm, and that the firms covered by the *WSJ* tend to be large and highly visible (e.g., Solomon and Soltes 2011; Frederickson and Zolotoy 2016), it is reasonable to expect that investors are aware of or at least can quickly retrieve the peers' earnings information when the *WSJ* article is published.

(*CTR_EXRET*) is −0.03 (-0.01). The mean (median) analyst-based earnings surprise (*SURP_ANN* multiplied by 100) is 0.04 (0.05) with a standard deviation of 0.46, while the mean (median) co-covered-peer-based earnings surprise (*SURP_JP* multiplied by 100) is −0.35 (-0.32) with a standard deviation of 1.76. This suggests that journalists tend to select firms with higher earnings as co-covered peers. On average, 49% of the firms reported earnings equal to or higher than earnings for the same quarter in the previous year (*MEET_LAG4*). Only 9% of the firms reported a loss.

5.2. Descriptive evidence on the determinants of co-coverage

Before discussing the main results, I first provide descriptive evidence on the determinants of whether an earnings article contains co-covered peers. Specifically, I estimate a logit model by regressing an indicator variable *HASCOCOV*, which is equal to one if the article has at least one co-covered firm and zero otherwise, on various journalist, firm and earnings announcement characteristics as well as if the announcing firm marginally beats the consensus forecasts (*BEAT*) to shed some light on the drivers of this decision. The regression is estimated using the 1,707 articles available after Step 3 in Table 1, Panel A, and the estimation results are reported in Table 3.

In Column (1), it appears that when the article is written by award-winning journalists (*MPULITZER*) or a larger team of journalists (*LOG_NJOURNALIST*), or when the announcing firm received greater media coverage (*MEDIA*), the journalists are more likely to include co-covered peers as background information. However, other journalist characteristics (e.g., gender, experience, education background and industry expertise) and firm or earnings announcement characteristics (e.g., size, institutional ownership, and forecast dispersion) do not seem to affect journalists' co-coverage decision. In Column (2) to (7), the *BEAT* variables are included in the model. Controlling for journalist, firm and earnings announcement characteristics, articles discussing firms that narrowly beat consensus analyst forecasts by one or two cents are more likely to contain co-covered peers. These results are consistent with journalists using co-coverage to provide more contextual information about firms with high earnings evaluation uncertainty.

6. Main results

6.1. Relatedness of co-covered peers and earnings evaluation uncertainty

6.1.1. Univariate analysis

I first provide evidence from univariate analysis on whether journalists co-cover more related peers in articles discussing earnings announcements with higher evaluation uncertainty. Table 4, Panel A reports descriptive statistics of the three relative relatedness measures using the full sample. The mean (median) *DSIM_ACOCOV* is −0.10 (-0.09) while the mean (median) of *DSIM_EDGAR* and *DSIM_HP* is 0.12 (0.09) and 0.40 (0.18), respectively.[20] As a negative (positive) log-transformed ratio indicates a raw ratio less (greater) than 1, these statistics suggest that on average, the journalist-selected peers are less related to the announcing firm than analyst-co-coverage-based peers, but are more related to the announcing firm than peers defined by Edgar co-search and TNIC3 industries.

Panel B presents statistics on the average *DSIM* measures for firms that beat (or miss) the mean consensus forecast and those that did not. Comparing the relatedness of the co-covered peers with that of the analyst-co-coverage-based peers (*DSIM_ACOCOV*), the co-covered peers have higher return synchronicity than analyst-based peers when the firm beat the consensus forecast by one cent (*BEAT_1C* equal to 1), with the difference (0.56) being significantly positive at the 10% level using a two-tailed test. On the contrary, the co-covered peers have lower return synchronicity than analyst-based peers for firms with *BEAT_1C* equal to 0, with the difference (-0.17) being significantly negative at the 10% level. The difference in *DSIM_ACOCOV* between those with *BEAT_1C* equal to 1 and those with *BEAT_1C* equal to 0 is 0.73, significant at the 5% level, suggesting that the co-covered peers are more related to the announcing firm when it beat the consensus by one cent than when it did not. The co-covered peers in articles discussing the earnings of firms that beat the mean consensus forecast by two cents (*BEAT_2C* equal to 1) also have higher return synchronicity with the announcing firm than the analyst-based peers, with the difference being 0.41 and significant at the 10% level. The co-covered peers for firms with *BEAT_2C* equal to 0 are less related to the announcing firm than the analyst-based peers, and the difference in *DSIM_ACOCOV* between observations with *BEAT_2C* equal to 1 and those with *BEAT_2C* equal to 0 is 0.74, significant at the 1% level. The co-covered peers for firms that beat mean consensus by three cents (*BEAT_3C* equal to 1) are as related to the announcing firm as the analyst-based peers, while for those that beat the consensus by more than three cents (*BEAT_GT3C* equal to 1), the co-covered peers are less related to the announcing firm than analyst-based peers. In general, the co-covered peers for firms that narrowly missed mean consensus forecast (i.e., those with *MISS_1C*, *MISS_2C* or *MISS_3C* equal to 1) have similar levels of return synchronicity with the announcing firm as the analyst-based peers, and the difference in *DSIM_ACOCOV* between those that narrowly missed consensus forecast and those that did not is not statistically different from 0.

Similar observations can be made when the Edgar co-search peers (*DSIM_EDGAR*) or TNIC3 peers (*DSIM_HP*) are used as the reference group. On average, the co-covered peers have higher return synchronicity with the announcing firm than Edgar or TNIC3 peers when the announcing firm beat the consensus forecast by one or two cents, but are as related to the announcing firm as the Edgar or TNIC3 peers when it beat the consensus forecast by three cents or more, or when it missed the consensus forecast. Inferences are

[20] The corresponding raw (before log-transformation) mean (median) ratio is 0.90 (0.91) for *DSIM_ACOCOV*, 1.13 (1.09) for *DSIM_EDGAR*, 1.49 (1.20) for *DSIM_HP*.

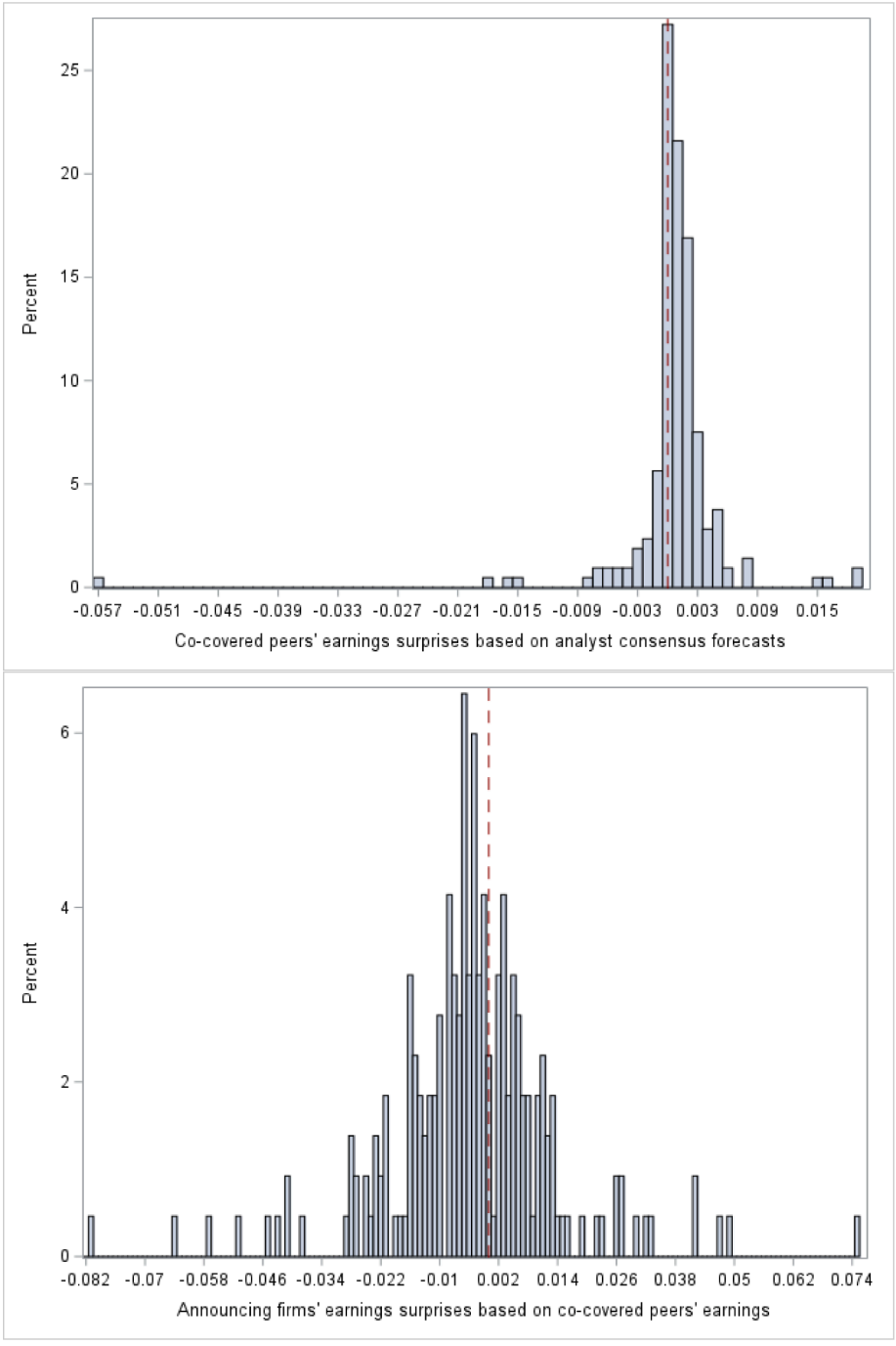

Fig. 1. Distribution of Earnings Surprises.

qualitatively similar when using median consensus analyst forecast as the benchmark (Table 4, Panel C). Overall, evidence from the univariate analysis is consistent with the conjecture that journalists co-cover firms that are more economically related to the announcing firm when it reported earnings that beat consensus analyst forecast by a small margin.

Table 1
Sample Selection.

Panel A. Sample selection procedure		
Steps		# of articles
1	Collect *WSJ* articles about U.S. firms' earnings announcements from the RavenPack database from 2006 to 2014.	2,895
2	Keep the earliest article if multiple articles exist for the same firm *k*'s earnings announcement of a given quarter.	2,210
3	Merge each article with analysts' earnings forecast information from I/B/E/S to calculate earnings surprise.	1,707
4	Merge each earnings announcement with the timestamps of the announcing firm's earnings press release and conference calls, which are obtained from Wall Street Horizon (*WSH*).	1,315
5	Require the announcing firm's article publication window to start after the end of its earnings announcement window, and to have available data in TAQ.	475
6	Manually identify the names of the journalists that authored the articles and verify their employment at the *WSJ*.	258
7	Require the article to have at least one co-covered firms, provided that it does not play a source role in the artic	217

Panel B. Distribution of the timing of earnings announcement and *WSJ* article			
Hour	Earnings press release	Conference Call	Article Publication
0			
1			
2			
3	1		
4			
5			
6	49		
7	104		
8	58	67	
9	3	55	
10		53	1
11		40	9
12			10
13			23
14			5
15			4
16	2	1	5
17		1	5
18			28
19			100
20			20
21			3
22			2
23			2
24			
Total	217	217	217

6.1.2. Multivariate analysis

I next perform multivariate analysis by regressing the *DSIM* measures on the *BEAT* or *MISS* variables and additional controls and fixed effects as specified in regression (1) to show the robustness of the univariate results.[21] For ease of presentation, Table 5 only tabulates the estimated coefficients on the *BEAT* or *MISS* variables while the coefficients on other variables are omitted. With mean consensus forecast as the benchmark, *DSIM_ACOCOV* is higher for firms that beat consensus by one, two, or three cents, with the coefficient being 0.85, 0.74 and 0.61, respectively, all statistically significant at conventional levels. *DSIM_EDGAR* is significantly higher for firms that beat the consensus forecast by one or two cents. *DSIM_HP* is significantly higher for firms that beat consensus forecast by two cents.

With median consensus forecast as the benchmark, *DSIM_ACOCOV* continues to be significantly higher for firms that beat the consensus by one or two cents. *DSIM_EDGAR* is higher for those that beat consensus forecast by one cent, and *DSIM_HP* is significantly higher for those that beat the consensus by two cents. Across the board, the relatedness of the co-covered peers is similar to the relatedness of the alternatively-defined peers when the announcing firm beat the consensus forecast by more than three cents or when it missed the consensus forecast. Taken together, findings in Table 4 and Table 5 lend support to the hypothesis that journalists tend to co-cover peers that are more related to the announcing firm when it has high earnings evaluation uncertainty.

[21] In the online appendix, I show the robustness of the results using alternative specifications of regression (1) (Table A1), the extended sample (Table A2), alternative measures of economic relatedness (Table A3), alternative measures of earnings evaluation uncertainty (Table A4), and additional rounds of random drawings (Table A5).

Table 2
Descriptive Statistics.

Panel A. Distribution of firms beating or missing consensus analyst forecast

	Mean consensus		Median consensus		N
	Mean	Std.	Mean	Std.	
BEAT_1C	0.10	0.30	0.09	0.28	217
BEAT_2C	0.16	0.37	0.18	0.39	217
BEAT_3C	0.24	0.42	0.24	0.43	217
BEAT_GT3C	0.46	0.50	0.47	0.50	217
MISS_1C	0.08	0.27	0.05	0.21	217
MISS_2C	0.12	0.32	0.11	0.31	217
MISS_3C	0.14	0.35	0.12	0.33	217
MISS_GT3C	0.17	0.37	0.17	0.37	217

Panel B. Descriptive statistics on announcing firm and earnings announcement variables

	Mean	Std.	P25	P50	P75	N
NCOCOV	2.15	1.25	1.00	2.00	3.00	217
PCT_PHASANNOUNCED	0.53	0.45	0.00	0.50	1.00	217
EXRET	0.00	0.04	−0.00	0.00	0.01	217
CTR_EXRET	−0.03	0.11	−0.05	−0.01	0.02	217
LAG	5.32	0.73	5.20	5.48	5.71	217
SURP_ANN (*100)	0.04	0.46	−0.03	0.05	0.17	217
SURP_JP (*100)	−0.35	1.76	−1.07	−0.32	0.47	217
ANLY	3.07	0.38	2.89	3.14	3.33	217
MEDIA	5.46	0.86	4.80	5.36	5.96	217
DISP_FEPS_ANN	0.11	0.64	0.02	0.03	0.07	217
MEET_LAG4	0.49	0.50	0.00	0.00	1.00	217
LOSS	0.09	0.28	0.00	0.00	0.00	217
SIZE	9.84	1.73	8.87	10.00	11.25	217
BM	−0.96	0.66	−1.33	−0.86	−0.54	217
LOG_NINST	6.28	0.77	5.74	6.41	6.88	217
FILING	0.10	0.30	0.00	0.00	0.00	217
LOG_NWORDS	6.19	0.30	6.00	6.19	6.43	217
LOG_NJOURNALIST	0.19	0.32	0.00	0.00	0.69	217

6.2. *Article-Publication-Window reaction to co-covered-peer-based earnings surprise*

Table 6 tabulates the estimation results on the stock market's reaction to the co-covered-peer-based earnings surprise when the firm narrowly beat the consensus analyst forecast.[22] In Column (1) to (4), the mean consensus forecast is used to define the *BEAT* variables. The coefficient on *SURP_JP * BEAT_1C* (Col. 1) is 0.54 but is statistically insignificant. The coefficient on *SURP_JP * BEAT_2C* (Col. 2) is 1.03 and is significant at the 1% level. The coefficients on *SURP_JP * BEAT_3C* (Col. 3) and *SURP_JP * BEAT_GT3C* (Col. 4) are all statistically insignificant. These results are consistent with investors using the co-covered peers as an earnings benchmark when the firm beat the mean consensus forecast by a small margin of two cents, but the positive reaction diminishes for firms that comfortably beat the consensus forecast.[23]

In Column (5) to (8), the *BEAT* variables are defined using median consensus forecast. The coefficient on *SURP_JP * BEAT_1C* (Col. 5) remains statistically insignificant, while the coefficients on *SURP_JP * BEAT_2C* (Col. 6) and *SURP_JP * BEAT_3C* (Col. 7) are significant at 1% (0.77) and 5% (0.65), respectively. The coefficient on *SURP_JP * BEAT_GT3C* (Col. 8) is insignificant. In all specifications, the coefficients on *SURP_JP * NBEAT* are statistically insignificant except for *NBEAT_GT3C* in Column (4) and (8), where observations with *NBEAT_GT3C* equal to 1 include those that narrowly beat consensus forecast. In addition, there is little evidence that investors continue to react to the information contained in the firm's earnings announcement over the article-publication-window, as suggested by the insignificant coefficient on the firm's earnings-announcement-window excess return (*CTR_EXRET*), the consensus-forecast-based earnings surprise (*SURP_ANN*) and other earnings announcement characteristics. This implies that there is little underreaction to earnings announcements covered by the *WSJ*. Overall, the evidence in Table 6 shows that investors react positively when the announcing firms' earnings are higher than those of its co-covered peers, but only when benchmarking against consensus forecasts does not lead to a clear-cut assessment.

[22] In the online appendix, I show the robustness of the results using alternative measures of earnings evaluation uncertainty (Table A4).
[23] In untabulated tests, I find no evidence that the market reacts to the co-covered-peer-based earnings surprise over the article publication window when the firm narrowly missed consensus analyst forecast.

Table 3
Descriptive Evidence on the Determinants of Co-coverage.

DV:	*HASCOCOV*						
BEAT based on		Mean consensus			Median consensus		
BEAT is		*BEAT_1c*	*BEAT_2c*	*BEAT_3c*	*BEAT_1c*	*BEAT_2c*	*BEAT_3c*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
BEAT		0.04*	0.05*	0.01	0.04*	0.04*	0.04
		[1.69]	[1.84]	[0.18]	[1.83]	[1.74]	[1.29]
MFEMALE	0.01	0.01	0.01	0.02	0.01	0.01	0.01
	[0.63]	[0.59]	[0.59]	[0.63]	[0.61]	[0.59]	[0.62]
MEXP_FJ	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00
	[-0.09]	[-0.11]	[-0.11]	[-0.11]	[-0.08]	[-0.09]	[-0.07]
MECON_MAJOR_COLLEGE	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	[0.35]	[0.35]	[0.44]	[0.38]	[0.37]	[0.40]	[0.38]
MIVY_COLLEGE	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01
	[-0.19]	[-0.18]	[-0.16]	[-0.14]	[-0.18]	[-0.18]	[-0.11]
MGRAD_DEGREE	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01
	[-0.40]	[-0.41]	[-0.42]	[-0.41]	[-0.38]	[-0.39]	[-0.42]
MPERC_IND	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	[0.48]	[0.48]	[0.51]	[0.54]	[0.46]	[0.50]	[0.45]
MPULITZER	0.09***	0.09**	0.09**	0.09**	0.09**	0.09**	0.09**
	[2.72]	[2.67]	[2.50]	[2.58]	[2.57]	[2.59]	[2.52]
LOG_NJOURNALIST	0.22***	0.22***	0.22***	0.22***	0.22***	0.22***	0.22***
	[5.45]	[5.37]	[5.21]	[5.10]	[5.34]	[5.17]	[5.17]
SIZE	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02	−0.02
	[-1.19]	[-1.27]	[-1.23]	[-1.21]	[-1.18]	[-1.24]	[-1.21]
BM	−0.00	−0.00	0.00	0.00	0.00	0.00	0.00
	[-0.03]	[-0.02]	[0.06]	[0.04]	[0.03]	[0.04]	[0.07]
LOG_NINST	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01
	[-0.52]	[-0.51]	[-0.60]	[-0.62]	[-0.51]	[-0.58]	[-0.62]
ANLY	0.03	0.03	0.02	0.02	0.02	0.02	0.02
	[0.83]	[0.82]	[0.75]	[0.77]	[0.73]	[0.70]	[0.73]
MEDIA	0.08***	0.08***	0.08***	0.08***	0.08***	0.08***	0.08***
	[3.58]	[3.59]	[3.56]	[3.61]	[3.61]	[3.61]	[3.61]
MEET	−0.00						
	[-0.04]						
LOSS	−0.09	−0.09	−0.09	−0.09	−0.09	−0.09	−0.09
	[-1.42]	[-1.54]	[-1.50]	[-1.47]	[-1.53]	[-1.52]	[-1.47]
DISP_FEPS_ANN	−0.11	−0.11	−0.10	−0.10	−0.11	−0.11	−0.10
	[-1.54]	[-1.50]	[-1.35]	[-1.38]	[-1.46]	[-1.40]	[-1.36]
FILING	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	[0.93]	[0.92]	[0.88]	[0.88]	[0.91]	[0.89]	[0.89]
Constant	−0.49	−0.49	−0.44	−0.45	−0.47	−0.45	−0.44
	[-0.51]	[-0.52]	[-0.46]	[-0.49]	[-0.49]	[-0.47]	[-0.47]
Pseudo R^2	0.069	0.069	0.071	0.070	0.070	0.070	0.070
N	1,707	1,707	1,707	1,707	1,707	1,707	1,707

7. Additional analysis

7.1. Earnings-announcement-window reaction to co-covered-peer-based earnings surprise

One of the major alternative explanations to the positive market reaction to co-covered-peer-based earnings surprise over the article publication window is that investors use close peers as earnings benchmarks for firms narrowly beating consensus forecast without being prompted by the media, and the co-covered peers simply overlap with investors' own selection of comparable firms. I conduct two tests to address this concern. First, under this explanation, the market should also show a positive ERC to the co-covered-peer-based surprise even before the publication of the *WSJ* article as long as the firm has reported earnings. To examine this possibility, I re-estimate regression (2) using the announcing firm's earnings-announcement-window excess return (*CTR_EXRET*) as the dependent variable and tabulate the results in Table 7. In all specifications, the coefficients on *SURP_JP * BEAT* and *SURP_JP * NBEAT* are statistically insignificant, suggesting that the market does not react to the co-covered-peer-based surprise during the earnings announcement window. The coefficient on the consensus-forecast-based earnings surprise (*SURP_ANN*) is significantly positive, indicating that analyst forecast is a valid measure of investor expectation when the firm releases earnings. Thus, it appears that investors only react to the co-covered-peer-based earnings surprise after the *WSJ* article is published, which is inconsistent with the alternative explanation.

Table 4
Univariate Analysis of the Relatedness of Co-covered Peers.

Panel A. Descriptive statistics using the full sample						
	Mean	Std.	P25	P50	P75	N
DSIM_ACOCOV	−0.10	1.43	−0.73	−0.09	0.45	217
DSIM_EDGAR	0.12	1.63	−0.57	0.09	0.79	217
DSIM_HP	0.40	1.83	−0.50	0.18	1.12	217

Panel B. Firms beating or missing mean consensus forecast									
BEAT is:	*DSIM_ACOCOV*			*DSIM_EDGAR*			*DSIM_HP*		
	1	0	Diff.	1	0	Diff.	1	0	Diff.
BEAT_1C	0.56*	−0.17*	0.73**	0.58*	0.07	0.51*	0.92***	0.35**	0.57
BEAT_2C	0.41*	−0.33*	0.74***	1.11***	0.53	0.58**	0.73**	0.26	0.47*
BEAT_3C	0.23	−0.38*	0.61*	0.55	0.34	0.21	0.52	0.40	0.12
BEAT_GT3C	−0.35	−0.24	−0.11	−0.11	0.07	−0.18	0.31	0.38*	−0.07
MISS is:									
MISS_1C	0.24	0.08	0.16	0.01	0.28	−0.27	0.26	0.47**	−0.21
MISS_2C	−0.17	−0.25	0.08	−0.06	0.16	−0.22	0.34	0.39	−0.05
MISS_3C	−0.20	−0.11	−0.09	−0.10	0.14	−0.24	0.38	0.42*	−0.04
MISS_GT3C	−0.23	−0.15	0.38	0.32	0.07	0.25	0.38	0.38	−0.00

Panel C. Firms beating or missing median consensus forecast									
BEAT is:	*DSIM_ACOCOV*			*DSIM_EDGAR*			*DSIM_HP*		
	1	0	Diff.	1	0	Diff.	1	0	Diff.
BEAT_1C	0.56*	−0.14*	0.70**	0.34*	0.04	0.30**	1.20***	0.59	0.61
BEAT_2C	0.55**	−0.08	0.63***	0.52***	0.15	0.37*	1.17***	0.41	0.76**
BEAT_3C	−0.12	−0.49*	0.37*	0.48*	0.36	0.12	0.71**	0.29	0.42*
BEAT_GT3C	0.05	0.09	−0.04	0.39	0.58	−0.19	0.14	0.39	−0.25
MISS is:									
MISS_1C	0.02	−0.16	0.18	0.12	0.07	0.05	0.44	0.35	0.09
MISS_2C	0.09	0.09	0.00	0.54*	0.37	0.17	0.64*	0.21	0.43
MISS_3C	0.04	0.14	−0.10	0.50	0.40	0.10	0.61	0.16	0.45
MISS_GT3C	−0.26	−0.19	−0.07	0.29	0.09	0.20	0.52	0.30	0.22

Table 5
Multivariate Analysis of the Relatedness of Co-covered Peers.

DSIM based on:	Mean consensus			Median consensus		
	ACOCOV	*EDGAR*	*HP*	*ACOCOV*	*EDGAR*	*HP*
BEAT is:						
BEAT_1C	0.85***	0.54**	0.50	0.65*	0.30*	0.54
	[2.65]	[1.81]	[1.16]	[1.86]	[1.73]	[1.18]
BEAT_2C	0.74***	0.57*	0.37*	0.57**	0.32	0.67**
	[2.79]	[1.81]	[1.75]	[2.26]	[1.05]	[2.01]
BEAT_3C	0.61***	0.17	0.01	0.28	0.05	0.32
	[2.67]	[0.63]	[0.03]	[1.20]	[0.17]	[1.05]
BEAT_GT3C	−0.18	−0.25	−0.05	−0.14	−0.26	−0.32
	[−1.07]	[−0.95]	[−0.18]	[−0.63]	[−0.99]	[−1.07]
MISS is:						
MISS_1C	−0.10	−0.39	−0.32	0.04	−0.11	−0.05
	[−0.26]	[−0.91]	[−0.66]	[0.09]	[−0.19]	[−0.08]
MISS_2C	−0.14	−0.35	−0.11	−0.10	0.10	0.45
	[−0.47]	[−0.96]	[−0.27]	[−0.31]	[0.26]	[1.07]
MISS_3C	−0.34	−0.38	−0.10	−0.15	0.13	0.20
	[−1.20]	[−1.14]	[−0.27]	[−0.50]	[0.38]	[0.52]
MISS_GT3C	0.03	0.37	0.23	−0.08	0.30	−0.23
	[0.09]	[1.48]	[0.53]	[−0.23]	[0.77]	[−0.52]

7.2. Earnings surprise based on alternatively-defined peers

Second, the above alternative explanation may imply that investors are not reacting to the co-covered-peer-based surprise per se but earnings surprises defined by their private selection of peers, which are positively correlated with the former. Although investors' peer choices are not publicly observable, it is reasonable to expect that they should overlap with peers that are economically related to the announcing firm. Thus, I use the earnings of three non-co-covered peers randomly selected from the top 10 analyst co-coverage peers (Kaustia and Rantala 2021), or the top 10 Edgar co-search peers (Lee, Ma and Wang 2015), or the TNIC3 peers (Hoberg and

Table 6
Article-Publication-Window Reaction to Co-covered-peer-based Earnings Surprise.

DV:	*EXRET*							
BEAT consensus by:	Mean consensus				Median consensus			
	1C	*2C*	*3C*	*GT3C*	*1C*	*2C*	*3C*	*GT3C*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURP_JP * BEAT	**0.54**	**1.03*** **	**0.61**	**0.05**	**0.18**	**0.77*** **	**0.65** **	**0.01**
	[1.21]	**[2.87]**	**[1.34]**	**[0.15]**	**[0.49]**	**[2.81]**	**[2.10]**	**[0.02]**
SURP_JP * NBEAT	**0.21**	**0.16**	**0.19**	**0.52** **	**0.26**	**0.11**	**0.17**	**0.56** **
	[0.87]	**[0.56]**	**[0.76]**	**[2.47]**	**[1.23]**	**[0.38]**	**[0.63]**	**[2.42]**
BEAT	−0.01	−0.01	−0.01	0.02	−0.02	−0.02	−0.01	0.01
	[-0.80]	[-1.31]	[-1.16]	[1.09]	[-1.34]	[-1.03]	[-1.01]	[1.52]
CTR_EXRET	−0.04	−0.04	−0.04	−0.04	−0.04	−0.04	−0.04	−0.04
	[-0.92]	[-0.95]	[-0.96]	[-0.78]	[-0.79]	[-0.87]	[-0.79]	[-0.75]
LAG	−0.00	−0.00	−0.00	−0.00	−0.00	−0.01	−0.00	−0.00
	[-0.57]	[-0.69]	[-0.55]	[-0.03]	[-0.67]	[-1.14]	[-0.82]	[-0.51]
SURP_ANN	0.40	0.47	0.46	−0.65	0.31	0.42	0.44	−0.31
	[0.34]	[0.41]	[0.40]	[-0.54]	[0.27]	[0.37]	[0.38]	[-0.29]
ANLY	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.02
	[0.74]	[0.60]	[0.59]	[0.59]	[0.61]	[0.63]	[0.65]	[0.69]
MEDIA	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01
	[-0.90]	[-0.92]	[-1.24]	[-1.16]	[-0.95]	[-1.03]	[-1.08]	[-0.88]
DISP_FEPS_ANN	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00
	[-0.46]	[-0.29]	[-0.41]	[-0.72]	[-0.59]	[-0.28]	[-0.45]	[-0.66]
MEET_LAG4	0.00	−0.00	−0.00	−0.00	0.00	−0.00	−0.00	0.00
	[0.03]	[-0.11]	[-0.04]	[-0.13]	[0.12]	[-0.15]	[-0.01]	[0.00]
LOSS	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01
	[0.35]	[0.42]	[0.37]	[0.63]	[0.43]	[0.20]	[0.38]	[0.68]
SIZE	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01
	[-0.50]	[-0.51]	[-0.53]	[-0.34]	[-0.57]	[-0.62]	[-0.59]	[-0.44]
BM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	[0.22]	[0.19]	[0.34]	[0.30]	[0.15]	[0.17]	[0.31]	[0.28]
LOG_NINST	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.01
	[0.40]	[0.49]	[0.46]	[0.16]	[0.45]	[0.52]	[0.46]	[0.22]
FILING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	[0.02]	[0.14]	[0.16]	[0.22]	[0.02]	[0.07]	[0.14]	[0.17]
LOG_NWORDS	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	[0.91]	[0.80]	[1.02]	[0.98]	[1.13]	[0.95]	[1.03]	[1.04]
LOG_NJOURNALIST	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01
	[-0.63]	[-0.71]	[-0.62]	[-0.48]	[-0.49]	[-0.76]	[-0.56]	[-0.43]
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hour FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weekday FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.026	0.058	0.056	0.064	0.027	0.066	0.046	0.047
N	217	217	217	217	217	217	217	217

Phillips 2010, 2016) to construct proxies for investors' private peer-based benchmarks, as prior research shows that these algorithms are able to identify peers that are highly comparable to a focal firm. To the extent that these proxies are positively correlated with investors' private benchmarks, and that investors primarily react to their privately constructed peer-based surprises rather than the co-covered-peer-based earnings surprise, the explanatory power of the latter should be subsumed when the former is included in regression (2) as controls.

Table 8 presents the estimation results.[24] In Panel A, the *BEAT* variables are defined by mean consensus forecast. In Column (1) to (3) where *BEAT* takes the value of *BEAT_1C*, the coefficients on *SURP_JP * BEAT_1C* are statistically insignificant, while the market appear to react positively to analyst-co-coverage-based earnings surprise regardless of whether the firm beat the consensus by one cent (Col. 1). Edgar-co-search-based earnings surprise does not solicit significant market reactions (Col. 2) while there is a positive ERC to the TNIC3-peer-based surprise, but only when *BEAT_1C* is equal to 0 (Col. 3). In Column (4) to (6) where *BEAT* is defined by *BEAT_2C*, the coefficients on *SURP_JP * BEAT_2C* are all significantly positive when the analyst-co-coverage-, Edgar co-search-, or TNIC3-peer-based earnings surprise is controlled for, suggesting that the co-covered-peer-based surprise is not subsumed by the surprise defined by alternative peers' earnings. The coefficients on *SURP_ALTP * NBEAT_2C* are all significantly positive in Column (4) to (6), suggesting that the earnings of these alternative peers are relevant benchmarks, but only for the non-beaters. The coefficients on *SURP_JP * BEAT* becomes insignificant in Column (7) to (12) where *BEAT* is defined by *BEAT_3C* or *BEAT_GT3C*, while the coefficients on *SURP_ALTP * NBEAT* remain significantly positive. The coefficients on *SURP_ALTP * BEAT* are also significantly positive when the alternative peer-

[24] In the online appendix, I show the robustness of the results using additional rounds of random drawings (Table A5).

Table 7
Earnings-Announcement-Window Reaction to Co-covered-peer-based Earnings Surprise.

DV:	*CTR_EXRET*							
BEAT consensus by:	Mean consensus				Median consensus			
	1C	*2C*	*3C*	*GT3C*	*1C*	*2C*	*3C*	*GT3C*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURP_JP * BEAT	**2.77**	**2.76**	**1.20**	**−1.66**	**1.24**	**1.62**	**1.70**	**−1.59**
	[0.94]	**[1.25]**	**[0.71]**	**[-1.45]**	**[0.66]**	**[1.29]**	**[1.47]**	**[-1.47]**
SURP_JP * NBEAT	**−1.19**	**−1.12**	**−1.07**	**0.47**	**−0.88**	**−1.12**	**−1.19**	**0.38**
	[-1.56]	**[-1.50]**	**[-1.37]**	**[0.68]**	**[-1.21]**	**[-1.49]**	**[-1.56]**	**[0.87]**
BEAT	−0.03	0.02	−0.00	−0.01	−0.01	0.02	0.03	−0.02
	[-0.62]	[0.55]	[-0.02]	[-0.46]	[-0.13]	[0.84]	[1.16]	[-0.95]
LAG	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00	−0.00
	[-0.01]	[-0.05]	[-0.04]	[-0.01]	[-0.09]	[-0.14]	[-0.14]	[-0.12]
SURP_ANN	2.91*	3.22**	3.05*	3.09*	2.78*	3.31**	3.17**	3.48*
	[1.91]	[2.21]	[2.01]	[1.77]	[1.76]	[2.24]	[2.20]	[2.03]
ANLY	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.05
	[1.24]	[1.29]	[1.27]	[1.19]	[1.21]	[1.39]	[1.44]	[1.23]
MEDIA	0.04*	0.03	0.03	0.03	0.03	0.03	0.04	0.03
	[1.94]	[1.55]	[1.48]	[1.41]	[1.52]	[1.62]	[1.66]	[1.45]
DISP_FEPS_ANN	−0.00	−0.00	−0.00	−0.00	−0.01	−0.01	−0.01	−0.00
	[-0.42]	[-0.77]	[-0.77]	[-0.44]	[-0.91]	[-1.01]	[-1.07]	[-0.44]
MEET_LAG4	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	[0.07]	[0.44]	[0.47]	[0.63]	[0.64]	[0.52]	[0.72]	[0.77]
LOSS	−0.03	−0.01	−0.01	0.01	−0.01	−0.01	−0.01	0.00
	[-0.63]	[-0.14]	[-0.28]	[0.24]	[-0.34]	[-0.25]	[-0.26]	[0.14]
SIZE	−0.05*	−0.05	−0.05	−0.05	−0.06	−0.05	−0.05	−0.05
	[-1.75]	[-1.44]	[-1.54]	[-1.52]	[-1.58]	[-1.44]	[-1.36]	[-1.55]
BM	−0.02	−0.01	−0.02	−0.02	−0.02	−0.01	−0.01	−0.01
	[-0.91]	[-0.47]	[-0.56]	[-0.56]	[-0.66]	[-0.33]	[-0.31]	[-0.48]
LOG_NINST	0.09	0.07	0.08	0.06	0.09	0.08	0.07	0.07
	[1.10]	[0.86]	[0.93]	[0.82]	[1.03]	[0.86]	[0.76]	[0.87]
FILING	−0.04	−0.04	−0.04	−0.03	−0.04	−0.04	−0.04	−0.03
	[-1.69]	[-1.55]	[-1.49]	[-1.34]	[-1.52]	[-1.46]	[-1.37]	[-1.37]
LOG_NWORDS	−0.01	−0.01	−0.00	0.00	0.01	−0.00	−0.01	0.01
	[-0.24]	[-0.25]	[-0.01]	[0.04]	[0.21]	[-0.11]	[-0.16]	[0.13]
LOG_NJOURNALIST	−0.02	−0.01	−0.01	−0.00	−0.01	−0.01	−0.01	−0.00
	[-0.62]	[-0.36]	[-0.41]	[-0.11]	[-0.37]	[-0.22]	[-0.30]	[-0.13]
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hour FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weekday FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.138	0.118	0.101	0.109	0.093	0.106	0.113	0.107
N	217	217	217	217	217	217	217	217

based surprise is based on analyst-co-coverage peers, similar to the result in Column (1). Inferences are qualitatively similar in Panel B where the *BEAT* variables are defined by median consensus forecast. Taken together, findings in Table 8 suggest that investors do benchmark on the earnings of alternatively-defined comparable peers, but the positive reaction to co-covered-peer-based earnings surprise for firms narrowly beating consensus forecast remains robust after controlling for surprises based on the alternative peers.

8. Conclusion

The financial media plays a pivotal role in promulgating corporate disclosures across market participants. Central to the journalists' reporting decisions is the balance between providing coverage on announcements that investors can profit from and protecting them from being misled. However, empirical research on how journalists achieve the optimal balance has been limited. This paper provides insights on this question by examining if journalists strategically choose co-covered peers that are more economically related to an announcing firm when it is difficult to evaluate its earnings performance using conventional benchmarks such as the consensus analyst forecast. I find that the co-covered peers in articles discussing earnings that narrowly beat consensus forecasts are more related to the announcing firm than when the reported earnings comfortably beat or miss the benchmark. Furthermore, the stock market appears to use the co-covered peers as a benchmark to evaluate the earnings of the beaters. These findings are robust to the inclusion of a plethora of control variables capturing various firm and earnings announcement characteristics and fixed effects, and are inconsistent with the alternative explanation that the market uses comparable peers as a benchmark in general rather than the co-covered peers in specific. Collectively, evidence in this paper highlights the importance of editorial tools such as co-coverage in financial journalism as a way to clarify earnings performance that is difficult to evaluate using traditional benchmarks.

Table 8
Market Reaction to Alternative Peer-based Earnings Surprise.

Panel A. Mean consensus forecast

DV:	*EXRET*											
BEAT consensus by:	*1C*			*2C*			*3C*			*GT3C*		
SURP_ALTP defined by:	*ACOCOV*	*EDGAR*	*HP*	*ACOCOV*	*EDGAR*	*HP*	*ACOCOV*	*EDGAR*	*HP*	*ACOCOV*	*EDGAR*	*HP*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
*SURP_JP**	0.79	0.21	0.57	1.24**	1.14***	1.12**	0.68	0.60	0.66	−0.05	0.04	0.17
BEAT	[1.58]	[0.41]	[1.20]	[2.33]	[3.12]	[2.63]	[1.31]	[1.24]	[1.35]	[-0.14]	[0.12]	[0.52]
SURP_JP	−0.01	0.11	0.23	−0.04	−0.01	0.17	−0.00	0.03	0.20	0.33	0.33	0.50
**NBEAT*	[-0.03]	[0.37]	[0.99]	[-0.12]	[-0.03]	[0.61]	[-0.01]	[0.11]	[0.84]	[1.06]	[1.03]	[1.27]
*SURP_ALTP *BEAT*	1.10**	1.01	0.06	1.35	−0.00	0.07	1.33*	0.32	0.13	0.71**	0.20	0.10
	[2.36]	[1.49]	[0.56]	[1.57]	[-0.00]	[0.64]	[1.73]	[1.13]	[0.88]	[2.05]	[0.80]	[1.26]
*SURP_ALTP *NBEAT*	1.02***	0.50	0.26***	1.00***	0.73***	0.28***	0.95***	0.68***	0.25***	1.01***	0.59**	0.26*
	[3.59]	[1.52]	[2.99]	[4.69]	[3.06]	[3.40]	[5.12]	[2.75]	[3.18]	[3.11]	[2.61]	[1.80]
BEAT	−0.01	−0.02	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	−0.01	0.02	0.02	0.02
	[-0.92]	[-1.48]	[-0.45]	[-1.17]	[-1.28]	[-0.80]	[-1.29]	[-1.23]	[-0.87]	[1.38]	[1.16]	[1.00]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hour FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weekday FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.048	0.030	0.051	0.087	0.072	0.085	0.085	0.062	0.073	0.088	0.071	0.077
N	217	217	217	217	217	217	217	217	217	217	217	217

Panel B. Median consensus forecast

DV:	*EXRET*											
BEAT consensus by:	*1C*			*2C*			*3C*			*GT3C*		
SURP_ALTP defined by:	*ACOCOV*	*EDGAR*	*HP*	*ACOCOV*	*EDGAR*	*HP*	*ACOCOV*	*EDGAR*	*HP*	*ACOCOV*	*EDGAR*	*HP*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
*SURP_JP**	−0.05	−0.66	0.36	0.72**	0.96***	0.85**	0.64*	0.75**	0.76*	−0.08	−0.02	0.11
BEAT	[-0.07]	[-0.68]	[0.73]	[2.13]	[3.69]	[2.67]	[1.81]	[2.23]	[1.92]	[-0.24]	[-0.04]	[0.31]
SURP_JP	0.11	0.17	0.28	−0.07	−0.04	0.13	−0.03	0.01	0.18	0.36	0.38	0.55
**NBEAT*	[0.50]	[0.75]	[1.32]	[-0.23]	[-0.12]	[0.45]	[-0.10]	[0.03]	[0.67]	[1.12]	[1.04]	[1.63]
*SURP_ALTP *BEAT*	1.44	1.65	0.07	1.56*	−0.09	0.10	1.32	−0.09	0.12	0.67**	0.32	0.13*
	[0.81]	[1.52]	[0.65]	[1.84]	[-0.69]	[0.90]	[1.52]	[-0.19]	[0.96]	[2.49]	[1.51]	[1.73]
*SURP_ALTP *NBEAT*	0.85***	0.48	0.28***	0.96***	0.66***	0.25**	0.97***	0.73***	0.26***	1.05***	0.53**	0.26*
	[5.10]	[1.61]	[3.73]	[5.11]	[2.97]	[2.72]	[5.25]	[3.53]	[2.78]	[3.38]	[2.27]	[1.91]
BEAT	−0.02	−0.03	−0.01	−0.02	−0.02	−0.01	−0.01	−0.01	−0.01	0.01	0.01	0.01
	[-1.62]	[-1.09]	[-0.66]	[-1.15]	[-1.03]	[-1.15]	[-1.14]	[-0.87]	[-0.59]	[1.35]	[1.49]	[1.21]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hour FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weekday FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.044	0.038	0.058	0.101	0.072	0.088	0.076	0.055	0.066	0.073	0.049	0.063
N	217	217	217	217	217	217	217	217	217	217	217	217

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.

Data availability

The data that has been used is confidential.

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Appendix A. Examples of co-coverage

"Kellogg 3Q net up; Raises forecast for 2004" (Wall Street Journal, 2004–10-25, by Janet Adamy)

> "*Kellogg Co.* (K) [emphasis added] said earnings grew nearly 7% in the third quarter, prompting the cereal giant to raise its earnings forecast for the remainder of the year…. Archrival *General Mills Inc.* (GIS) [emphasis added], maker of Cheerios and other cereals, has been spending heavily to grab a bigger piece of the cereal market. Last month, the Minneapolis company said fiscal first-quarter earnings fell 19% in part because of higher promotion expenses….. The company also said increased spending on brand building would hurt results during the fourth quarter, joining a group of consumer-products companies including *Colgate-Palmolive Co.* (CL) and *Unilever* (UN) [emphasis added] that have said recently higher marketing costs would eat into profits."

In this example, Kellogg is the announcing firm whose earnings announcement is the central story of the article. General Mills, Colgate-Palmolive and Unilever are co-covered firms chosen by the journalists as contextual information.

"UPDATE: ConAgra 1Q results reflect commodity-cost pressure" (Wall Street Journal, 2008–09-18, by Julie Jargon)

> "*ConAgra Foods Inc.* (CAG) [emphasis added] is the latest company to report that swings in commodity costs hurt profits. The Omaha maker of Chef Boyardee pasta, Hunt's ketchup and Peter Pan peanut butter Thursday reported a $33 million hedging loss in the fiscal 2008 first quarter ended Aug. 24. ConAgra said the loss was 'principally a result of decreases in commodity costs for certain inputs being hedged (primarily corn, soybean oil and natural gas).'… Also this week, ethanol producer *VeraSun Energy Corp.* (VSE) [emphasis added] of Brookings, S. D., said a wrong-way hedge on corn would result in a bigger third-quarter loss than analysts were expecting. And on Wednesday, United Airlines parent *UAL Corp.* (UAUA) [emphasis added], warned investors that it could rack up to $544 million in mostly noncash fuel-hedging losses in the third quarter due to declining fuel prices."

In this example, ConAgra is the announcing firm while VeraSun Energy and UAL are the co-covered peers.

Appendix B. Variable definitions

Variable	Definition
$DSIM_{t,k}$	The economic relatedness between the announcing firm k and the co-covered peers as compared with the relatedness between firm k and three randomly selected peers not co-covered in the article. $DSIM_{t,k}$ can be one of the following three variables: $DSIM\_ACOCOV_{t,k}$, $DSIM\_EDGAR_{t,k}$, and $DSIM\_HP_{t,k}$. $DSIM\_ACOCOV_{t,k}$ (or $DSIM\_EDGAR_{t,k}$, $DSIM\_HP_{t,k}$) is the natural logarithm of the ratio of $RSJPEER_{t,k}$ to $RSACOCOV_{t,k}$ (or $RSEDGAR_{t,k}$, $RSHP_{t,k}$, respectively). $RSJPEER_{t,k}$ is the average return synchronicity between the announcing firm k and the co-covered peers. The return synchronicity between firm k and a particular peer is measured as the R-squared from regressing the firm k's daily market-adjusted excess return on the co-covered peer's contemporaneous market-adjusted returns over a one year period ending five days before the article publication day t. $RSACOCOV_{t,k}$ (or $RSEDGAR_{t,k}$, $RSHP_{t,k}$) are similarly defined using three non-co-covered peers randomly selected from the top 10 peers with highest analyst co-coverage following Kaustia and Rantala (2021) (the top 10 peers with highest Edgar co-search traffic following Lee, Ma and Wang (2015), or the Hoberg and Phillips (2010, 2016) TNIC3 industry, respectively), all defined as of the most recent year before day t.
$BEAT_{t,k}$ and $NBEAT_{t,k}$	$BEAT_{t,k}$ can be one of the following variables: $BEAT\_1C_{t,k}$, $BEAT\_2C_{t,k}$, $BEAT\_3C_{t,k}$, and $BEAT\_GT3C_{t,k}$. It is an indicator variable that is equal to 1 if the announcing firm k's reported EPS is one (or two, three, greater than three) cent(s) above the mean (or median) consensus analyst forecasts, and 0 otherwise. Consensus mean (median) analyst forecast is calculated as

(*continued on next page*)

(*continued*)

Variable	Definition
	the mean (median) of the latest forecast issued by an analyst for firm *k*'s current quarter earnings, provided that the forecast is issued within a 90-day window prior to the earnings announcement. $NBEAT_{t,k}$ is defined as 1 - $BEAT_{t,k}$.
$MISS_{t,k}$	$MISS_{t,k}$ can be one of the following variables: $MISS\_1C_{t,k}$, $MISS\_2C_{t,k}$, $MISS\_3C_{t,k}$, and $MISS\_GT3C_{t,k}$. It is an indicator variable that is equal to 1 if the announcing firm *k*'s reported EPS is one (or two, three, greater than three) cent(s) below the mean (or median) consensus analyst forecasts, and 0 otherwise.
$HASCOCOV_{t,k}$	An indicator variable that is equal to 1 if the article about firm *k*'s earnings announcement contains at least one co-covered firm, and 0 otherwise.
$MFEMALE_{t,k}$	The percentage of female journalists that authored the article covering firm *k*'s earnings announcement that is published on day *t*.
$MEXP\_FJ_{t,k}$	The average experience of all journalists that authored a particular article. A journalist's experience as a financial journalist is the number of months between the year-month when the article is published and the year-month when the journalist started covering financial or business news.
$MECON\_MAJOR\_ALL_{t,k}$	The percentage of journalists that authored a particular article with a degree in business or economics in undergraduate or postgraduate studies.
$MIVY\_COLLEGE_{t,k}$	The percentage of journalists that authored a particular article that attended an Ivy League school in undergraduate studies.
$MGRAD\_DEGREE_{t,k}$	The percentage of journalists that authored a particular article with postgraduate degrees.
$MPERC\_IND_{t,k}$	The percentage of earnings-announcement articles written by a journalist over the past five years that cover firms in the same Fama-French 48 industry as firm *k*, averaged across all journalists that authored the article.
$MPULITZER_{t,k}$	The percentage of journalists that authored a particular article that are Pulitzer winners.
$EXRET_{t,k}$ ($CTR\_EXRET_{t,k}$)	The market-adjusted return over the article publication window (earnings announcement window), calculated as firm *k*'s continuously compounded return over the window minus the return of the Standard & Poor's Composite Index (SPY) return.
$LAG_{t,k}$	The logarithm of one plus the number of minutes between the end of the earnings announcement window and the start of the article publication window.
$SURP\_JP_{t,k}$	Firm *k*'s earnings surprise based on the co-covered peer's earnings and it is calculated as the difference between firm *k*'s total-asset-scaled earnings and the average of the co-covered peers' total-asset-scaled earnings. Following prior research, I use the peer's realized earnings if it has reported earnings before firm *k* or consensus mean analyst forecast if it has not yet reported earnings (e.g., Jennings et al. 2020).
$SURP\_ALTP_{t,k}$	Firm *k*'s earnings surprise based on alternatively-defined peers, calculated as the difference between firm *k*'s total-asset-scaled earnings and the average of the alternative peers' total-asset-scaled earnings. I use the peer's realized earnings if it has reported earnings before firm *k* or consensus mean analyst forecast if it has not yet reported earnings. The alternative peers are three non-co-covered peers randomly selected from the top 10 analyst co-coverage peers (Kaustia and Rantala 2021), or the top 10 Edgar co-search peers (Lee, Ma and Wang 2015), or the TNIC3 peers (Hoberg and Phillips 2010, 2016), all defined as of the most recent year.
$SURP\_ANN_{t,k}$	The difference between the firm's actual earnings and analysts' consensus forecasts, scaled by lagged total assets. The consensus forecast can be either mean or median consensus forecast depending on the specification.
$ANLY_{t,k}$	Analyst coverage, calculated as the logarithm of one plus the number of analysts providing forecasts for firm *k* over [*t*–369, *t*–5], where *t* is the article publication day.
$MEDIA_{t,k}$	Media coverage, calculated as the logarithm of one plus the number of non-press-release news articles mentioning firm *k* over [*t*–369, *t*–5].
$DISP\_FEPS\_ANN_{t,k}$	Analyst forecast dispersion of the announcing firm *k*'s earnings announcement that's covered by the *WSJ* article published on day *t*.
$MEET\_LAG4_{t,k}$	An indicator variable that is equal to 1 if the firm's earnings are equal to or greater than its reporting earnings in the same quarter from last year, and 0 otherwise.
$LOSS_{t,k}$	An indicator variable that is equal to 1 if firm *k*'s reported earnings are below 0, and 0 otherwise.
$SIZE_{t,k}$	The logarithm of firm *k*'s market capitalization as of the end of the previous fiscal quarter
$BM_{t,k}$	The log of book to market ratio as of the end of the previous fiscal quarter.
$LOG\_NINST_{t,k}$	The logarithm of one plus the number of institutional owners as of the end of the previous fiscal quarter.
$FILING_{t,k}$	An indicator variable that is equal to 1 if firm *k* submitted a 10-K, 10-Q, or 8-K filing to the SEC website during the article publication window (when the dependent variable is *EXRET*) or the earnings announcement window (when the dependent variable is *CTR_EXRET*), and 0 otherwise.
$LOG\_NWORDS_{t,k}$	The logarithm of the total number of words in the article.
$LOG\_NJOURNALIST_{t,k}$	The logarithm of the total number of journalists that contributed to the article.
$NCOCOV_{t,k}$	The number of co-covered firms in the article.
$PCT\_PHASANNOUNCED_{t,k}$	The percentage of co-covered firms in an article that have announced earnings before the announcing firm *k*.
EPS_HOUR (*CC_HOUR*) [*ARTICLE_HOUR*]	The hour of the earnings press release (conference call) [article] publication time.

Fig. 1 plots the earnings surprise distributions in the spirit of Burgstahler and Dichev (1997). The upper figure plots the co-covered peers' earnings surprises based on analyst consensus forecasts, scaled by lagged total assets. The second figure plots the announcing firms' earnings surprise based on co-covered peers' earnings (i.e., *SURP_JP*). In both plots, the interval widths are 0.001 and the location of zero on the horizontal axis is marked by the dashed line. The vertical axis represents the percentage of observations in each earnings surprise interval.

Table 1 describes the sample selection process. Panel A reports the number of *WSJ* articles remaining after each step. Panel B tabulates the frequencies of the earnings press release, conference call, and article publication time by hour.

Table 2 provides descriptive statistics for the sample. Panel A provides the distribution of the firms that beat (miss) the consensus analyst forecast by one, two, three, or greater than three cents as indicated by "*1C*", "*2C*", "*3C*", or "*GT3C*" in the variable names. Panel B reports the summary statistics of various announcing firm and earnings announcement variables. Detailed variable definitions are available in Appendix B.

Table 3 provides descriptive evidence on the factors that affect journalists' decisions to include co-covered firms in an article. Specifically, I regress whether an article has at least one co-covered firm (*HASCOCOV*) on if the announcing firm marginally beats the consensus forecasts (*BEAT*), and various journalist, firm and earnings announcement characteristics using a logit model. The regression is estimated using the 1,707 articles available after Step 3 in Table 1, Panel A. t-statistics are reported in brackets. *, **, and *** represent significance levels at 10%, 5%, and 1%, respectively. Standard errors are double-clustered by Fama-French 48 industry and year-quarter. Detailed variable definitions are available in Appendix B.

Table 4 tabulates the results from univariate analysis on the relatedness between the co-covered peers and the announcing firm. Panel A provides the descriptive statistics for the three relative relatedness measures (*DSIM_ACOCOV*, *DSIM_EDGAR* and *DSIM_HP*) using the full sample. Panel B (Panel C) reports the mean relatedness measures for firms that beat or miss mean (median) consensus analyst forecast. *, **, and *** represent significance levels at 10%, 5%, and 1%, respectively, based on t-statistics from two-tailed tests. Standard errors are doubled clustered by industry and year-quarter. Detailed variable definitions are available in Appendix B.

Table 5 tabulates the estimated coefficients on the *BEAT* and *MISS* variables from regressing *DSIM* measures on *BEAT* (or *MISS*) and various control variables and fixed effects as specified in regression (2). For example, the cell defined by *BEAT_1C* and *ACOCOV* under "Mean consensus" reports the coefficient from regressing *DSIM_ACOCOV* on *BEAT_1C* when consensus is calculated using mean analyst forecasts, along with controls and fixed effects. The coefficients on the control variables are omitted for ease of presentation. Fixed effects include industry (Fama-French 48), hour, weekday and year. Standard errors are double-clustered by industry and year-quarter. t-statistics are reported in brackets. *, **, and *** represent significance levels at 10%, 5%, and 1%, respectively. Detailed variable definitions are available in Appendix B.

Table 6 presents estimation results from regressing the announcing firm's article-publication-window excess return on the co-covered-peer-based earnings surprise, separately for those that beat consensus analyst forecast and those did not, and control variables. Industry (Fama-French 48) and time fixed effects (hour, weekday and year) are included to control for industry- and time-specific factors that affect the announcing firm's intraday returns. Standard errors are double-clustered by industry and year-quarter. t-statistics are reported in brackets. *, **, and *** represent significance levels at 10%, 5%, and 1%, respectively. Detailed variable definitions are available in Appendix B.

Table 7 presents estimation results from regressing the announcing firm's earnings-announcement-window excess return on the co-covered-peer-based earnings surprise, separately for those that beat consensus analyst forecast and those did not, and control variables. Industry (Fama-French 48) and time fixed effects (hour, weekday and year) are included to control for industry- and time-specific factors that affect the announcing firm's intraday returns. Standard errors are double-clustered by industry and year-quarter. t-statistics are reported in brackets. *, **, and *** represent significance levels at 10%, 5%, and 1%, respectively. Detailed variable definitions are available in Appendix B.

Table 8 presents estimation results from regressing the announcing firm's article-publication-window excess return on the co-covered-peer-based earnings surprise and alternative-peer-based earnings surprise, separately for those that beat consensus analyst forecast and those did not, and control variables. Industry (Fama-French 48) and time fixed effects (hour, weekday and year) are included to control for industry- and time-specific factors that affect the announcing firm's intraday returns. Standard errors are double-clustered by industry and year-quarter. t-statistics are reported in brackets. *, **, and *** represent significance levels at 10%, 5%, and 1%, respectively. Detailed variable definitions are available in Appendix B.

Appendix C. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jcae.2023.100376.

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