

**No News is Bad News:
Local News Intensity and Firms' Information Environments**

Kristian D. Allee
Sam M. Walton College of Business
University of Arkansas
kdallee@uark.edu

Ryan Cating
College of Business
University of Central Arkansas
rcating@uca.edu

Caleb Rawson
Sam M. Walton College of Business
University of Arkansas
ctrawson@uark.edu

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No News is Bad News: Local News Intensity and Firms' Information Environments

Abstract: We examine the effects of local newspapers on firms' information environments. With newspaper employment dropping precipitously in the last few decades, we posit that these changes will have a detrimental effect on local firms' information environments. Consistent with local news improving information environments, we find that local newspaper intensity is negatively associated with volatility, spreads, and illiquidity, and that this is affected by firms' importance in their local economy. We further find that for firms that are more important in their community, or have busy analysts, newspaper intensity is associated with significantly greater analyst accuracy and lower forecast dispersion, consistent with local news intensity improving information environments, even for sophisticated, but likely remote, information intermediaries. We also investigate how stakeholders respond to declines in local news and find that managers increase the amount of forward-looking disclosures while financial analysts increase coverage. These results provide insights into the methods by which stakeholders attempt to improve firms' information environments when local news coverage is scarce.

Keywords: local news, information environment, analyst coverage, volatility, employment decline

JEL Classifications: G12, G14, L82, M41

Data availability: The data used in this paper is publicly available from the sources indicated in the text.

“There is no substitute for a local newspaper that is doing its job.”

-Warren Buffett¹

I. INTRODUCTION

Local newspapers are lauded for their monitoring of local events and organizations, providing constituents with current information and interpretation on local political, commercial, and social issues. Despite the documented political and social importance of local news (Martin & McCrain 2019), employment by newspapers is declining (Abernathy 2020; Walker 2021), having dropped 75% from 2000 to 2021, with most of these losses coming at the local news level.² This decline in local newspapers likely has significant political, social, and economic implications for not just the local community, but also for the broader community at large that depends on local newspaper journalists as a source of information (Radcliffe & Wallace 2021). In this study, we ask whether the intensity of local newspapers relative to the local economy (i.e., local news intensity) influences the information available about local publicly traded firms in the capital markets. Specifically, we use information about local newspaper employment to examine the association between the intensity of local newspapers and local firms’ information environments.

There are several reasons to expect an association between local newspapers and local firms’ information environments. First, prior research finds that national media coverage of a firm affects the firm’s trading volume, liquidity, and returns by reducing investors’ disclosure processing costs, uncovering private information, and directing investor attention (e.g., Bushee et al. 2010; Peress 2014; Blankespoor et al. 2018; Lawrence et al. 2018). If local media performs a similar, yet incremental, role to national media outlets, we would expect similar changes in investors’ information sets. Indeed, extant research finds that most information originates with

¹ <https://www.berkshirehathaway.com/letters/2012ltr.pdf>

² Specifically, according to the Bureau of Labor Statistics Quarterly Census of Employment and Wages, there were 415,405 employees at newspapers in January 2020 and 105,138 employees in December of 2021.

local newspapers and is subsequently picked up by the national news media, suggesting that the absence of local newspapers would result in informational gaps in firm coverage (Waldman 2011; Cagé et al. 2020). This pattern of news sourcing and distribution could result in a decline in news coverage relating to local firms as lower local news may lead to fewer stories about local firms getting picked up by national media and less local dissemination of stories generated by the national media. Thus, there would be a decline in total news coverage about the local firm. Second, monitoring corporate actions is a fundamental responsibility of news media (e.g., Miller 2006; Call et al. 2022), and local newspapers are often the primary source of “accountability” journalism in a community (Waldman 2011). Local reporters are more likely to have detailed information about, and access to, local firms, due to their geographic proximity and the demand from local stakeholders for this information (Heese et al. 2022).

However, local monitoring may not significantly affect firms’ information environments for several reasons. First, local news might be perceived as less credible due to incentives to bias firm coverage to cater to local firms that purchase advertising from local news outlets and to subscribers employed by local firms (Gurun & Butler 2012).³ Second, national news outlets could provide sufficient information for capital markets, rendering local news irrelevant for investors. Finally, the percentage of people who read newspapers has also declined substantially while the percentage of Americans who obtain their news primarily from television has risen (Pew 2006; Shearer 2021). With the decline in newspaper circulation potentially being offset by local and network television news coverage, there may not be an overall impact on firms’ information environments due to lower local newspaper intensity.

³ For example, late night TV host John Oliver has discussed the growing trend of sponsored content in local TV news and how it can result in lower overall trust of local media (Oliver 2021).

Using data from the Bureau of Labor Statistics (BLS), we measure the level of local news intensity in each city (MSA) as the percent of local jobs in the newspaper publishing industry. Our measurement approach provides several advantages over alternative methods of capturing local newspaper coverage. First, scaling by all local employment reduces the risk that changes in the local economy (and thus local firms' own profitability or performance) drive any observed association with information environments. Second, BLS data is available on a quarterly basis, allowing us to observe timely changes in local news presence over our entire sample period. This methodology contrasts with recent finance and accounting research that uses infrequent events such as newspaper closures to capture changes in local newspaper coverage (e.g., Gao et al. 2020; Kim et al. 2021).⁴ The BLS data that we employ has been extensively used in the economics and social science literatures (e.g., Belasen & Polachek 2008; Duqi et al. 2021; Prager & Schmitt 2021) to capture regional trends and differences in employment, yet remains underutilized in finance research.

Using the level and change in local news intensity, we document a relatively small average local news intensity and a striking decline over time. Specifically, local newspaper jobs account for 0.14 percent of total local jobs and over 90 percent of our sample has newspaper employment growing slower (or shrinking faster) than the local economy as a whole. In addition, many of these losses appear gradually over time, with rounds of layoffs in specific papers or departments slowly reducing the newspaper staff until a paper closure is simply the inevitable closing of the final door of an already empty newsroom (or merging with a regional newspaper). To understand the

⁴ While newspaper closures reduce newspaper employment, we find that there is a consistent decrease in newspaper employment well before the actual closure of a newspaper (untabulated). This is due to closures often being preceded by multiple rounds of layoffs and consolidations before the newspaper ultimately closes. The decrease in newspaper intensity for cities with a newspaper closure is ~38 percent from three years pre-closure to three years post-closure. This compares to a ~40 percent decrease in newspaper intensity for a control group of cities matched on size and year.

association between local news presence and firms' information environment, we focus on the volatility of stock returns, number of volatile days, bid-ask spreads, and liquidity. Consistent with local news improving the firm's information environment, we find that local newspaper intensity is negatively associated with volatility, spreads, and illiquidity. This relation holds after controlling for national news coverage, changes in total local employment, firm characteristics, and industry and time fixed effects.

To capture variation in treatment intensity, we next partition the sample based on the relative importance of the firm in their local economy and their litigation risk. If local newspapers face limited resources, they are likely to focus reporting efforts on the firms with the most importance to their economic area or firms most likely to have "newsworthy events." Thus, a change in local news intensity would most likely affect the information environments of firms currently receiving local news attention. Classifying important firms as those with a market value greater than 10 percent of the total market value of firms in their MSA, we find that the negative relation between local news intensity and volatility (i.e., the volatility of returns and number of volatile days) is significantly more negative for firms that are more important in their local economy. We also find that the negative relation between local newspaper intensity, spreads, and illiquidity is driven by firms with greater relative importance in their local area. Additionally, we find that that local news intensity is *positively* associated with the volatility of firms with high litigation risk while being simultaneously *negatively* associated with spreads and illiquidity. This is consistent with local news both uncovering significant stories for these firms and investors perceiving local news as a monitor of firm behavior, lowering information asymmetry. Taken together, these results are consistent with local newspapers focusing their efforts more on firms where their efforts are more likely to be meaningful.

We next examine whether local news intensity is associated with information intermediaries, focusing specifically on analysts. If analysts benefit from the higher quality information environment created by local news (i.e., act as beneficiaries of local news coverage) then analyst forecast accuracy (dispersion) should be higher (lower) for firms with more local news. However, analyst forecast characteristics could remain unchanged if analysts increase effort in response to the information vacuum arising from lower local news. We find that firms that are relatively important in areas with lower local news intensity are associated with significantly greater analyst forecast dispersion and less accurate forecasts, consistent with local news intensity improving firm information environments, even for sophisticated information intermediaries. However, the relation is insignificant for smaller firms in the local area. We also examine how the effect of local newspaper intensity on analyst forecasting outcomes varies with the busyness of analysts and find that while firms with busy analysts have lower accuracy and increased dispersion, higher newspaper intensity partially alleviates these negative effects and is associated with more accurate forecasts with less dispersion. Conversely, firms with analysts who are less busy are not affected by the weakened information environment.

Finally, we examine the ramifications of changes in newspaper intensity and find an immediate negative impact on firms' information environment. However, this impact gradually deteriorates over the following 24 months. To investigate why there is a short-term and not long-term impact, we look at the behavior of information intermediaries and the extent to which investors access other information. Consistent with information intermediaries attempting to fill the information void left behind by newspapers, we find that analysts are more likely to increase coverage of firms with decreases in local newspaper intensity and that managers are more likely to increase their forecasts and other forward-looking disclosures after a decrease in newspaper

intensity. Additionally, we document an increase in Bloomberg Terminal attention after decreases in local newspaper intensity, consistent with investors seeking out information from alternative sources after local newspaper monitoring decreases.

Our paper has several contributions. First, we contribute to the media literature by expanding our nascent understanding of local media presence, thus answering the call in Miller & Skinner (2015) for research examining broader types of media outlets. Our evidence of the information environment benefits of local news provides a counterbalance to recent evidence that “slant,” or emphasis on positive information, reduces the quality of local news coverage (Gurun & Butler 2012). Research also documents that firms increase dividend payouts following local newspaper closures, consistent with firms attempting to alleviate concerns about agency problems exacerbated by the loss of a local watchdog (Kim et al. 2021). Using unique proxies for local news intensity, we document that issuing guidance and providing other forward-looking information is another way managers can respond to the loss of local news and the related benefits for their information environment.

Second, we contribute to the literature by providing evidence for practitioners’ concern about the widespread decline in *local* news. While prior studies document increased fraud and related costs to the loss of local news (e.g., Gao et al. 2020), the evidence on capital market implications is sparse. Given the importance of the business press for firms’ information environments and broad stakeholders’ invested wealth, information loss in local news coverage could be mitigated by national or global media and intermediary efforts. Our evidence suggests there is an effect on capital market information, highlighting the importance of local media for financial information as well.

Third, Blankespoor et al. (2020) discusses the “news costs” associated with a firm’s information environment. Specifically, Blankespoor et al. (2020) suggest that these costs include: (i) awareness costs; (ii) acquisition costs; and (iii) integration costs. We document that local news is instrumental in producing value relevant information on local firms, especially when the firm is more important in their local economy. Thus, they reduce the awareness and acquisition costs to investors, and could also help with the integration costs as well. That is, local news provides “mosaic like” information that helps these interested parties put the pieces together with other factors affecting the company.

II. LOCAL NEWSPAPERS AND RELATED RESEARCH

Prior literature has found evidence of national media coverage improving firms’ information environments. Using large national news outlets, studies find that more media coverage is associated with lower information asymmetry, greater liquidity, faster incorporation of information into price, and lower insider trading profits (e.g., Soltes 2009; Bushee et al. 2010; Drake et al. 2014; Rogers et al. 2016; Twedt 2016; Blankespoor et al. 2018; Guest 2021). Consistent with the media playing a monitoring role, the press acts as a “watchdog” for accounting fraud by disseminating information from other information intermediaries (such as managers, analysts, auditors, and lawyers) and by undertaking original investigation and analysis (e.g., Miller 2006; Dyck et al. 2010; Cowle et al. 2022). Other studies document the media’s skepticism in their decision to cover a firm or event and their style of coverage, with media being more likely to cover firms with deteriorating performance or to take contrarian perspectives (e.g., Niessner & So 2018; Jacobs 2020).

However, there is also evidence that media coverage can be biased for several reasons. First, news outlets must satisfy their readers, often choosing to cover firms that are of interest to their readers or slanting the type or tone of news towards the preferences of their readers (e.g., Miller 2006; Gentzkow & Shapiro 2010; Ahern & Sosyura 2015; Rees & Twedt 2022). Second, news outlets must also satisfy firms that provide them with advertising revenue, leading to more positive coverage of firms that spend more in advertising (Gurun & Butler 2012). Third, news outlets are susceptible to influence from firms and their investor relations departments, perhaps to preserve relations with management or because low-cost firm-provided information is attractive to resource constrained news outlets (e.g., Solomon 2012; Blankespoor & deHaan 2020; Ru et al. 2020).

Nearly all prior evidence of media coverage influencing firms' information environments is based on large national news outlets. However, local news has unique characteristics that may influence their relation with firm's information environments. Compared to national news outlets, local news could have better access to information about local firms as their geographic proximity makes visiting firm sites or observing operational activities less cumbersome. Formal interactions between reporters and firm management could be more likely due to investments in long-term relationships, and informal interactions could be facilitated by social interactions due to living in the same area. In addition, local firms are likely to have outsized effects on the local economy and local politics. For example, they have a local workforce, contract with local businesses, sponsor local youth sports teams, influence local government decisions and have more potential to help or harm the local environment. Because of these potential employment, economic, political, and social effects, readers are more likely to demand information about these firms from local news

outlets which, in turn, provides incentives for local news to allocate a greater amount of their resources to following information about these firms than national news outlets would.

However, there are several reasons local news might not be able to substantively improve firms' information environments. First, while local news is likely to focus more resources on local firms, local news outlets still have far fewer resources than national news outlets. Having fewer resources suggests less ability to hire news reporters with business-specific training and experience.⁵ In addition, the resource constraints that local news outlets face can create incentives to bias local firm coverage in order to maintain advertising revenue (Gurun & Butler 2012) or the goodwill of local news readers who benefit from the presence of these firms, which could reduce the informativeness of local news coverage. Finally, if the information is sufficiently important to influence stock price movements, then national news outlets likely have incentives to obtain and disseminate the information to their readers as well, reducing the need for local news outlets.

Despite these unique features of local news outlets, few studies have focused specifically on them, leading to calls for more research into a broader set of outlets beyond the national media (Miller & Skinner 2015). The limited research examining local newspapers has found evidence of decreased stock trading when weather prevents newspaper delivery in a pre-internet period (Engelberg & Parsons 2011) or during newspaper strikes (Peress 2014) and that abnormally positive coverage is associated with greater future market-wide returns (Gurun & Butler 2012). Additionally, several recent papers find evidence suggesting that a loss of local newspapers reduces the monitoring of local governments (Ga et al. 2020) and is associated with increased local facility violations issued by regulatory agencies (Heese et al. 2022) and increased dividend payouts (Kim et al. 2021).

⁵ This is likely compounded by few journalists wanting to cover businesses as, like one retired business reporter we interviewed described it, "nobody dreams of being a business journalist, they just end up there."

Our study builds on this literature by (1) focusing on overall local news intensity rather than individual articles or newspaper closures, using a measure that allows us to capture more gradual changes in local news than the extreme outcome of closure, (2) examining how local news intensity is associated with the flow of firms' information and their broader information environment, and (3) examining more recent years when investors have easy access to online news and TV from many locations, potentially reducing the influence of local news intensity for capital markets.

III. DATA AND DESCRIPTIVES

Data and Sample Selection

Our sample consists of all quarterly observations of public companies between 2006 and 2019. We begin our sample in 2006 because we require prior year employment information for cities where firms are headquartered, and the Office of Management and Budget (OMB) implemented major revisions to their standards for defining the boundaries of metropolitan and micropolitan statistical areas (MSAs) during 2003 and 2004 (OMB 2000). This revision resulted in notable changes in data availability and consistency from other government agencies who rely on the OMB to report data on an MSA-level basis.

Data on firm characteristics come from Compustat, CRSP, IBES, and Ravenpack. Information on newspaper employment comes from the Bureau of Labor Statistics Quarterly Census of Employment and Wages (BLS-QCEW). The BLS-QCEW collects information on employment in different industries from state unemployment insurance programs covering over 95 percent of all jobs available in the U.S. and publishes information quarterly on a county and MSA-level basis (BLS 2022). BLS data has been widely used in the finance and economics literatures as a primary source of employment data (e.g., Cascino et al. 2021; Duqi et al. 2021; Gao

et al. 2019; Prager & Schmitt 2021; Rouen 2020). Since the BLS publishes data confidentially, data is withheld for a given county when the publication of the data would potentially reveal the identity of employers (mostly due to only one or two employers of a type being present). Thus, we exclude observations with missing BLS data (~11 percent of sample observations).

Intensity of Local Newspapers

Our proxy for the extent of local newspapers is the intensity of employment by newspaper publishers in the MSA of firms' headquarters.⁶ Specifically, we compute *Newspaper_Intensity* as the number of full or part time employees working at newspapers⁷ divided by the number of employees working for all employers. We compute *Newspaper_Intensity* on an MSA level where we collapse all counties in an MSA with data from the BLS to identify aggregate MSA employment.

To highlight how *Newspaper_Intensity* is associated with changes in newspaper employment, Figure 1 graphs the percent of employees in Pittsburgh and the US as a whole that are employed by a newspaper publisher during our sample period. Consistent with a broad decline in newspaper employment, the solid line shows that the percent of employees working for newspapers in the US declined over 70 percent from 0.29 percent of all employees in 2005 (1 in 345 employees) to 0.08 percent of all employees in 2019 (1 in 1,250 employees).⁸ Pittsburgh largely experienced a similar trend over the same 15-year period. However, the dashed line shows that there were years where Pittsburgh experienced greater decreases compared to national trends as well as years of relatively stable newspaper employment. These relative differences drive cross-

⁶ Throughout the paper we use the term MSA and city interchangeable. We match the address of each firms' headquarters to a county and MSA based on zip codes.

⁷ Specifically, "Newspaper Publishing Establishments" (NAICS code 51111 during our sample period).

⁸ In 2005 there were 370,380 newspaper employees and approximately 130 million jobs in the US. By the end of 2019, there were only 126,692 newspaper employees despite overall national employment increasing to over 150 million jobs.

sectional variation in *Newspaper_Intensity*. Importantly, the events discussed in the Figure 1 also highlight that most declines in newspaper employment are driven by layoffs, reductions in coverage, or frequency of publications and not due to closures as prior literature has argued (e.g., Gao et al. 2020; Kim et al. 2021).

Descriptive Statistics

Table 1 provides descriptive statistics for the variables used in our primary analysis. Variable definitions are provided in Appendix A. Firms in our sample are headquartered in MSAs with an average 0.14 percent of employees working for newspapers. We observe significant cross-sectional variation with an interquartile range of 0.08 percent to 0.19 percent. Notably, the interquartile range in 2006 was 0.17 to 0.31 percent while the interquartile range in 2019 was 0.05 to 0.10 percent (untabulated). Other descriptive statistics reported in Table 1 are largely consistent with prior literature, for example, we find that our volatility and illiquidity measures are right skewed (Bonaime & Ryngaert 2013; Brookman & Thistle 2013; Tang & Zhang 2020) with the mean (median) number of days per firm-quarter with an absolute return greater than 5 percent being 5.1 (2).

IV. RESEARCH DESIGN AND RESULTS

Local Newspapers and Firms' Information Environment

We expect that local newspaper intensity will be associated with firms' information environment as local journalists investigate and report on the activities of local firms. To examine this, we use four proxies for firms' information environment.

If local newspapers improve firms' overall information environment, we should observe lower stock volatility as more information about the firm is getting reported on. Thus, our first two

proxies capture different aspects of volatility. First, we examine the standard deviation of daily returns over the following quarter to capture overarching stock volatility (*Future_Ret_Volatility*). Second, because local newspapers may be associated with more consistent news coverage of the firm, and thus fewer extreme information shocks, we look at the number of trading days in the following quarter with an absolute return of at least 5 percent (*#Volatile_Days*). We predict that the flow of information will be more consistent for firms in areas with stronger local news intensity, manifesting as more consistent information search (i.e., smaller dispersion in investor search patterns) and more consistent trading interest (i.e., smaller stock volatility) over a given time period. More frequent but smaller updates to firm price would generate smaller stock volatility than deserts of information followed by more extreme news events.⁹ Thus, we use stock volatility to capture the frequency with which information reaches investors (Kothari et al. 2009).

Third, we predict that with more local news intensity there will be less information asymmetry reflected in the capital markets about firm value. Following prior research (e.g., Soltes 2009; Bushee et al. 2010) we examine average daily bid-ask spreads over the following quarter (*Spreads*) to capture the level of information asymmetry. If information is flowing more frequently, and faster, then we should observe less on average information asymmetry (i.e., lower spreads).

Finally, following Amihud (2002) and Fong et al. (2017), we examine stock illiquidity which is computed as the daily average of the absolute returns divided by the dollar volume traded over the following quarter (*Illiquidity*). We examine illiquidity as greater information available

⁹ For example, in an interview with a local business reporter, he noted that after cuts in business reporters in an area, the stock price of a local pharmaceutical company increased dramatically upon the announcement that one of their drugs had received FDA approval. He opined that if the prior local (business) news reporting had been maintained, the approval would not have surprised the market as much because more regular coverage of the company would have encouraged more gradual incorporation of the information before the final announcement.

about a firm should be associated with lower illiquidity (i.e., high liquidity) as there is less uncertainty about activities at the firm.

For each measure of firms' information environment, we use the following OLS regression where *Information_Environment* is equal to one of the above four proxies:¹⁰

$$Information_Environment = \beta_1 Newspaper_Intensity + \beta_{2-k} Controls + \varepsilon \quad (1)$$

The vector of control variables includes firm characteristics associated with a firm's information environment including size, leverage, book-to-market, ROA, turnover, earnings and returns volatility, institutional ownership, analyst coverage, and the number of press releases that a firm provides. To control for changes in the local economy, we also control for the percent change in total employment for the MSA where the firm is headquartered. Further, we include year, quarter, and industry fixed effects in all models and cluster standard errors by firm.

Table 2 presents the results from equation (1). Consistent with local newspapers improving firms' information environments, Columns 1 and 2 indicate that the intensity of local newspapers is associated with lower return volatility and fewer volatile days over the subsequent quarter. Columns 3 and 4 indicate that local newspaper intensity is also negatively associated with bid-ask spreads and illiquidity. Taken together, these results are consistent with local newspapers providing a valuable role in firms' information environments by reducing volatility and information asymmetry.

Local Journalist Attention

Next, we examine whether local newspapers play a more significant role in the information environments of firms that are more likely to receive attention from their local journalists. Specifically, given that local newspaper journalists are constrained with both their time and the

¹⁰ As the number of volatile trading days is a count variable we also run this utilizing a Poisson regression (untabulated) and find consistent results.

amount of publication space, we expect that when there are multiple public firms in the area journalists will focus on firms that are more important or worthwhile of their scarce resources. However, while research documents that media serves as a governance mechanism to monitor firms and their behavior (Kölbel et al. 2017), there is also evidence that media is biased and they produce information that can paint firms in a positive light, especially at the local news level, in order to generate revenue from subscribers and advertisers (Bednar 2012; Gurun & Butler 2012). Large firms, or firms that are more exposed to receiving potentially negative news coverage, may be more likely to influence local news coverage through advertising or other forms of soft influence.

To examine the impact of journalist attention, we use two different proxies. First, firms that are relatively more important in their area may be more likely to receive more newspaper attention and coverage as their decisions and operations have a bigger impact on the local economy (e.g., greater local employment or charitable activity). To examine this, we define *High_Rel_Importance* as an indicator equal to one if the firm's market value is more than 10 percent of the total market value in the MSA. This process identifies approximately 10 percent of all firms as having high relative importance.

Second, two key aspects of local journalism are investigative journalism and covering ongoing legal proceedings. For example, in 2003, the Rocky Mountain News uncovered fraudulent behavior at local public company Qwest Communications that was related to them boosting reported earning numbers (Accola et al. 2003). This coverage in turn led to subsequent lawsuits and SEC enforcement.¹¹ To examine whether local newspapers focus more on firms that are more likely to have issues that could be uncovered via investigative journalism, we define

¹¹ <https://www.sec.gov/news/press/2004-148.htm>

High_Litigation_Risk as an indicator equal to one if the firm has above median litigation risk as computed by Kim & Skinner (2012).

We use a model similar to that in Table 2, but interact *Newspaper_Intensity* with either *High_Rel_Importance* or *High_Litigation_Risk*. We use the same vector of control variables from equation (1) as the dependent variables are the same. The interaction between *Newspaper_Intensity* and *High_Rel_Importance* or *High_Litigation_Risk* captures whether local newspaper journalists spend incrementally more time focusing on firms that are more significant in their MSA or face higher litigation risk.

The results examining relative importance are presented in Table 3. In Columns 1 and 2 there continues to be a significantly negative coefficient on *Newspaper_Intensity* when examining volatility. Consistent with newspapers having an incrementally more significant impact on firms' information environments when they are more significant to their city, we find that across all four models the interaction between *Newspaper_Intensity* and *High_Rel_Importance* is significantly negative. The association between *Newspaper_Intensity* and return volatility and the number of volatile days is almost double for firms with high relative importance compared to smaller firms in the same MSA. Further, average spreads and illiquidity in the following quarter are significantly negatively associated with *Newspaper_Intensity* when the firm has high relative importance in their city.

Table 4 reports results examining firms with ex ante high litigation risk. Consistent with firms with high litigation risk having more uncertainty, we find that *High_Litigation_Risk* is positively associated with volatility, spreads, and information uncertainty. Consistent with local news engaging in investigative journalism and uncovering potentially significant stories, we find that *Newspaper_Intensity* is associated with *higher* volatility for firms with greater litigation risk.

Additionally, consistent with investors viewing local news as a monitor of firm behavior, we find that *Newspaper_Intensity* is associated with *lower* spreads and illiquidity for firms with greater litigation risk, although it does not fully offset the higher spreads and illiquidity they experience compared to low litigation risk firms.

Taken together, the results in this section are consistent with local newspapers focusing their efforts more on firms that are more likely to be meaningful to their local communities and on firms that would benefit more from additional monitoring and are more likely to have underlying news or events to be uncovered.

Newspaper Intensity and Analyst Forecasts

While our previous results speak to the implications that newspaper intensity has on stockholders, the presence of local newspapers may also directly impact other information intermediaries such as analysts. Prior research finds that more frequent news coverage in the largest newspapers in the country are associated with stronger market reactions to analyst revisions (Bradshaw et al. 2020) and that news coverage of analyst revisions in turn increases the initial market reaction to the revision (Ahn et al. 2019) suggesting that the media and analysts can function as complements. Therefore, to the extent that analysts rely on local news coverage for information influencing their forecasts, analysts' forecasts may suffer (i.e., be more disperse and less accurate) when there is not sufficient local news coverage.

To examine this further, we examine how local newspaper coverage is associated with analyst coverage and forecast characteristics. Local newspaper coverage could help analysts by providing an additional information source making it easier for analysts to cover local firms and be more accurate and precise with their estimates. Alternatively, robust local newspaper coverage could make the incremental value provided by covering a firm less due to the analyst providing

less additional non-public information about the firm leading to lower coverage. Additionally, if local newspapers are not providing useful information to analysts while making forecasts, we would expect to not see an association between newspaper intensity and the accuracy or dispersion of analyst forecasts. To examine this, we rerun Equation (1) but with analyst coverage, accuracy, and dispersion as the dependent variables.

Table 5 presents the results. Consistent with local news and analysts acting as information intermediary substitutes, Column 1 indicates a robust negative association between *Newspaper_Intensity* and the number of analysts covering a firm. Columns 2 and 3 indicate that *Newspaper_Intensity* is not associated with analyst forecast accuracy or dispersion by itself. Columns 4 through 6 report the results examining the role of firms' importance to their city. The base effects of *Newspaper_Intensity* are unchanged from Columns 1 through 3. However, the interaction term indicates that as *Newspaper_Intensity* increases for firms with high importance, analyst forecasts are more accurate and have lower dispersion. These results are consistent with local newspapers providing information about the largest firms in their area that analysts find useful when making forecasts, leading in turn to better analyst forecasts.

Prior literature documents that due to resource constraints, analysts who are busy (i.e., follow more firms than their peers) have lower quality outcomes (e.g., Clement 1999; Clement & Tse 2003; Driskill et al. 2020). To the extent that local news helps analysts be more efficient with their constraints, we would expect to see the impact of local news to be the greatest for busy analysts. To investigate this, we first create a firm-quarter level measure of analyst busyness by computing the average of the number of firms an analyst follows across all analysts following the firm. We then define *Busy_Analysts* equal to one if the firm quarter is in the top tercile of average analyst busyness during the year. We then rerun Equation (1) looking at analyst accuracy, and

dispersion and interact *Busy_Analysts* with *Newspaper_Intensity*. Table 6 presents the results of these analyses. We find that there is no association between newspaper intensity and forecast characteristics for firms with non-busy analysts. Consistent with prior literature, we find a negative association between *Busy_Analysts* and the quality of their outputs (i.e., less accurate and more disperse forecasts) indicating that busy analysts perform, on average, worse than non-busy analysts (Demmer et al. 2019; Driskill et al. 2020). However, we also find that local news is associated with better forecasts (i.e., more accurate and less disperse) only for firms with busy analysts. This is consistent with local news significantly improving forecasting outcomes for resource constrained analysts who may not be able to otherwise obtain the information provided by local news.

V. ADDITIONAL ANALYSIS

Declines in Local Newspapers

An important motivation for examining implications of local news presence is the widely discussed decline in local news, a growing problem that has been exacerbated by conditions during the COVID pandemic (LeDuc 2020). While our main analysis looks at the association between *current* levels of newspaper employment and firms' immediate information environment, *changes* in newspaper intensity may also influence information environments. Specifically, given the broad declines in newspaper employment over the past two decades, information environments as a whole may have either gotten worse or remain unchanged as other information intermediaries and investors have been forced to change how and where they source firm information. Thus, in further analyses, we assess whether the documented associations exist specifically for declines in local news presence. To perform this analysis, we examine the change in newspaper employment over

the prior 12 months minus the change in all employment in the MSA over the prior 12 months (*Relative_Chg_News*).¹²

In Table 7, we run similar models as Equation (1) but examine the association between *Relative_Chg_News* and firms' information environment. Similar to the main results, we find that decreases in newspaper intensity are associated with increased return volatility, the number of volatile days, bid-ask spreads, and illiquidity in the following quarter.¹³ These findings further confirm the main results and suggest that changes in newspaper employment have an immediate impact on local firms' information environments.

While Table 7 examines the immediate ramifications of changes in newspaper employment for firms' information environment, the long-term impacts are more unclear as other information intermediaries may step in and fill the information gap left by lower local newspaper employment. To examine this, we continue to use a similar model, but instead look at the association between changes in newspaper employment and information environments over longer windows. Specifically, in Table 8 Panel A (B) [C] we compute our information environment proxies over the following 6 (12) [24] months instead of 3 months. Consistent with local newspapers improving firms' information environments, we continue to find in Panel A that declines in local newspaper employment are associated with worse information environments over 6 months. However, consistent with other information intermediaries stepping in to fill the information void left behind

¹² We subtract the change in overall employment to capture changes in the local economy as a whole. For example, if the number of jobs in a city increased by three percent in the prior year but the number of newspaper jobs increased by only one percent, we want to capture the relatively slower growth in employment as a decrease in the intensity of newspaper employment.

¹³ In untabulated analysis we interact the relative change in newspaper employment with *High Importance* and find that relative declines in newspaper intensity continue to be associated with increased volatility and the number of volatile days for all firms. Additionally, similar to Table 3, the association with spreads and illiquidity is isolated exclusively in firms that are more important to their city.

by local newspapers, we find substantially weaker (or no) association between declines in newspaper employment and firms' information environments in the following 12 and 24 months.

Responses to Weakened Firm Information Environments

To better understand the ramifications of decreased local newspaper presence, and the response of other information intermediaries, we next examine other information sources. When firms have significant changes in their levels of local news intensity, other information intermediaries may respond to remediate the volatility and information asymmetry effects we document in our primary analyses. To more directly examine this, we next examine how changes in local news intensity are associated with four alternative information sources.

First, we investigate analyst coverage of firms following declines in local newspaper intensity as Healy & Palepu (2001) posit that financial intermediaries such as analysts will engage in private information production to uncover managers' superior information. Managers' superior information is likely increased following a decline local news coverage which would typically hold them accountable or disseminate information to the capital markets. Accordingly, we expect that financial analysts will increase their coverage of local firms following a decline in local newspaper intensity.

Second, managers may take steps themselves to allay investor concerns following a decrease in independent monitoring by local newspapers by improving the firms' information environment. To investigate this, we look at the number of management forecasts that managers provide in the following quarter and the amount of forward-looking statements in the manager-prepared narrative (MPN) section of the conference call.¹⁴ These measures capture two alternative

¹⁴ Specifically, we classify each sentence of the MPN as being forward looking or non-forward looking following Bozniac et al. (2018) and compute the percent of all sentences that are forward looking.

disclosure mechanisms that managers use to provide additional information about the current and future activities of the firm.

Finally, we examine how changes in local news intensity are associated with changes in how institutional investors acquire information about a firm by looking at the amount of attention a firm receives on the Bloomberg terminal. Specifically, we follow Ben-Rephael et al. (2017) and use data from Bloomberg which captures how many users deliberate search for and read news articles about a firm. These data are standardized into hourly counts and compared to averages in attention over the prior month before Bloomberg creates an hourly attention score by firm. Since we are interested in how stakeholders change their information acquisition behavior, we compute the number of days in the following quarter with abnormal Bloomberg attention. If stakeholders fill the information gap left behind when local newspaper intensity decreases by turning to articles in the Bloomberg terminals (which are more national and industry sources), we should observe an increase in Bloomberg attention when newspaper intensity decreases.

For all four dependent variables, we use the following model:

$$Information\ Intermediaries = \beta_1 Relative_Chg_Newspapers + \beta_{2-k} Controls + \varepsilon \quad (4)$$

Where *Information Intermediaries* is equal to either the natural log of analysts following the firm, the natural log of the number of management forecasts provided over the following three months, the percentage of forward-looking disclosures in the MPN section of a conference call, or the natural log of the number of days with Bloomberg attention scores in the following three months. We continue to control for firm characteristics and changes in the local economy as these are likely to be associated with the extent of information available via alternative information intermediaries.

Table 9 presents the results of our analyses of how other stakeholders react to the weakened information environment brought about by a decrease in newspaper intensity. Consistent with analysts helping to fill the void left when other information sources decreases, Column 1 indicates that there is an increase in the number of analysts covering firms when local newspaper employment decreases. Columns 2 and 3 indicate that managers also respond to the change local news by increasing the number of forecasts they provide and by providing more forward-looking information in the MPN portion of conference calls. Finally, Column 4 indicates that stakeholders change their information acquisition behavior by increasing their news acquisition about the firm from the Bloomberg terminal when local news becomes less available. Taken together, these results help explain the decreased association between changes in newspaper intensity and firms' information environments in the long term. Specifically, the results in Tables 7 through 9 are consistent with firms' information environments immediately deteriorating when local news decreases, upon which other information intermediaries step in to help fill the information vacuum limiting the long-term impacts of decreased local news.

Manufacturing Intensity

An alternative explanation for our main results is that firms' information environments suffer when there is any systematic change in the local economy that in turn changes the employment distribution of a city. If this is the case, our results may not be due to newspapers influencing firms' information environments specifically, but instead are due to *Newspaper_Intensity* capturing changes (i.e., deterioration) in the local economy. To investigate this, we rerun our main analysis looking at the employment intensity of manufacturing instead of newspaper publishers.¹⁵ We choose manufacturing specifically for this test for two reasons. First,

¹⁵ Specifically, we examine employment in NAICS industries 31-33 which captures all forms of manufacturing.

similar to newspapers, manufacturing has experienced a systematic decrease in employment over the past several decades (Harris 2020). During our sample period, we observe manufacturing employment decreasing from 8.7% of all jobs to 6.8%. Second, also similar to newspaper employment, manufacturing employment intensity has significant cross-sectional variation between cities allowing for sufficient power to test for any impact on information environments.

Our results from this analysis (untabulated) indicate that there is no consistent association between levels of (or relative changes in) manufacturing intensity and firms' information environments. Additionally, we find no association between relative changes in manufacturing intensity and analyst coverage, management forecasts, or forward-looking disclosures. This is consistent with our main results being driven by newspaper employment specifically and not overarching trends or changes in the local economy.

VI. CONCLUSION

Newspapers and their journalists play an important role in gathering and disseminating information to the public. However, in the past two decades, local newspapers have suffered from systematic layoffs and closures that have reduced the number of newspaper employees by over 65 percent. We examine what effect this trend has on the information environment of firms by **developing a continuous measure of local newspaper intensity**. Consistent with reduced monitoring by local newspapers having detrimental effects on a firm's information environment, we find that lower newspaper intensity is associated with higher return volatility, more frequent volatile return days, higher bid-ask spreads, and more illiquidity of a firm's stock. We also document that each of these effects are exacerbated when a firm is more important to the local economy. Furthermore, firms and their shareholders are not the only stakeholders who suffer from

reduced monitoring by lower newspapers. Financial analysts covering the firm are also adversely affected as evidenced by increased forecast dispersion and lowered accuracy for economically important firms.

Finally, we find that the negative effects on a firm's information environment are short lived as other stakeholders' step in to repair the weakened information environment. Specifically, we find that analysts, management, and investors increase their information production and data gathering activities following a decrease in newspaper employment which at least partially offsets the negative impact on firms' information environment.

The results of this study inform financial market participants such as financial analysts, current and potential shareholders, and managers, about the importance of local newspapers and the implications of the continued decline in the newspaper industry. Additionally, this paper is focused on the ramifications of, and initial response to, decreases in newspaper intensity. Future research could consider whether stakeholders are opportunistically taking advantage of the decline in the newspaper industry and how different types of investors are affected by levels and changes to newspaper intensity. Finally, we outline one way to utilize BLS-QCEW data to capture one aspect of the local economy surrounding a firm's HQ. Future research can use similar methodologies to investigate the ramifications of other types of employment and how changes in the regional economy may impact firms' operations or stock performance.

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APPENDIX A. Variable Definitions

<i>Newspaper_Intensity</i>	=	Percent of all employees in an MSA working for a newspaper publisher (NAICS code 51111).
<i>Relative_Chg_News</i>	=	Percent change in newspaper employment in prior 12 months – percent change in all employment in prior 12 months.
<i>High_Rel_Importance</i>	=	Indicator equal to one if the firm's market value is more than 10 percent of the total market value in the MSA.
<i>High_Lit_Risk</i>	=	Indicator equal to one if the firm has above median litigation risk. Litigation risk is calculated per model 2 in Table 7 of Kim and Skinner (2012).
<i>Busy_Analysts</i>	=	Indicator equal to one if the average number of firms that the firm's analyst follows is in the top tercile by year.
<i>Accuracy</i>	=	Negative 100 times the absolute value of mean analyst surprise divided by lagged stock price.
<i>Dispersion</i>	=	100 times the standard deviation of analyst forecasts divided by stock price.
<i>Fut_Ret_Volatility</i>	=	Standard deviation of daily returns over the following 3 months.
<i>#Volatile_Days</i>	=	Number of trading dates with absolute returns greater than 5 percent over the following 3 months.
<i>Spreads</i>	=	Average of 100 * daily bid-ask spread over the following 3 months. Bid-ask spreads are computed as the ask minus bid divided by the midpoint.
<i>Illiquidity</i>	=	Average of the Amihud (2002) illiquidity measure over the following 3 months.
<i>Size</i>	=	Natural log of market value.
<i>Leverage</i>	=	Total liabilities divided by total assets.
<i>Book-to-Market</i>	=	Book value of equity divided by market value.
<i>ROA</i>	=	Income before extraordinary items divided by total assets.
<i>Turnover</i>	=	Share volume in the prior 12 months divided by shares outstanding.
<i>Earnings_Volatility</i>	=	Standard deviation of earnings in the prior 16 quarters.
<i>Ret_Volatility</i>	=	Standard deviation of monthly returns in the prior 48 months.
<i>Institutional_Own</i>	=	Percent of stock owned by institutions.
<i>Coverage</i>	=	Natural log of 1 plus the number of analysts making annual EPS estimates.
<i>#PRs</i>	=	Natural log of 1 plus the number of press releases provided in the prior 3 months.
<i>Chg_All_Employment</i>	=	Percent change in the number of all employees in an MSA over the prior 12 months.

FIGURE 1. Pittsburgh Newspaper Intensity

This figure graphs the percent of employees working for a newspaper (*Newspaper_Intensity*) for both Pittsburgh and the US as a whole from 2005 to 2019.

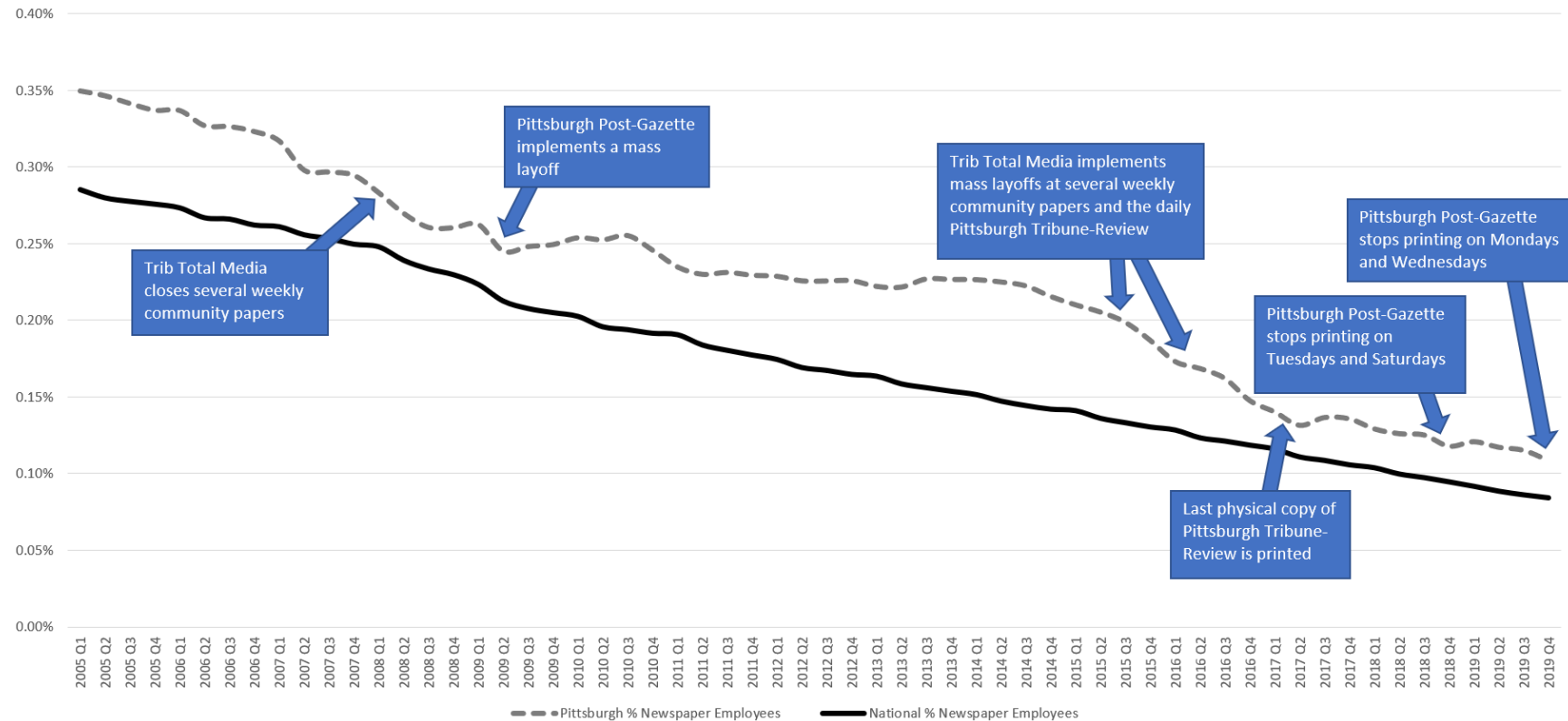


TABLE 1. Descriptive Statistics

This table presents descriptive statistics for our full sample. Variables definitions are in Appendix A and all continuous variables are winsorized at the 1st and 99th percentiles.

	N	Mean	SD	P25	Median	P75
<i>Newspaper_Intensity</i>	109,535	0.139	0.073	0.080	0.129	0.186
<i>Relative_Chg_News</i>	109,535	-0.092	0.079	-0.126	-0.087	-0.051
<i>Fut_Ret_Volatility</i>	109,535	2.843	1.908	1.555	2.286	3.522
<i>#Volatile_Days</i>	109,535	5.148	6.999	0.000	2.000	7.000
<i>Spreads</i>	109,535	0.389	0.807	0.045	0.105	0.306
<i>Illiquidity</i>	109,535	0.246	1.745	0.000	0.002	0.018
<i>Size</i>	109,535	6.990	1.937	5.594	6.970	8.281
<i>Leverage</i>	109,535	0.251	0.230	0.046	0.210	0.389
<i>Book-to-Market</i>	109,535	0.547	0.526	0.235	0.451	0.758
<i>ROA</i>	109,535	-0.007	0.059	-0.004	0.006	0.018
<i>Turnover</i>	109,535	2.221	1.908	1.023	1.711	2.753
<i>Earnings_Volatility</i>	109,535	0.874	4.477	0.080	0.164	0.361
<i>Ret_Volatility</i>	109,535	0.124	0.070	0.073	0.105	0.155
<i>Institutional_Own</i>	109,535	0.652	0.297	0.440	0.739	0.896
<i>Coverage</i>	109,535	1.852	0.859	1.386	1.946	2.485
<i>#PRs</i>	109,535	4.449	1.353	3.664	4.543	5.263
<i>Chg_All_Employment</i>	109,535	1.127	2.088	0.578	1.504	2.266

TABLE 2. Newspaper Intensity

This table reports the results from equation (1) examining the implications of local newspaper intensity. *Newspaper_Intensity* is equal to the percent of all employees in the firm's MSA that are working for newspapers. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Dependent Variable:	<i>Fut_Ret_Volatility</i>	<i>#Volatile_Days</i>	<i>Spreads</i>	<i>Illiquidity</i>
	(1)	(2)	(3)	(4)
<i>Newspaper_Intensity</i>	-0.859*** (-6.190)	-3.172*** (-6.080)	-0.256** (-2.059)	-0.842*** (-2.650)
<i>Size</i>	-0.305*** (-30.148)	-0.889*** (-24.009)	-0.182*** (-25.745)	-0.133*** (-9.412)
<i>Leverage</i>	0.622*** (14.414)	2.336*** (14.829)	0.180*** (5.811)	0.341*** (5.642)
<i>Book-to-Market</i>	0.309*** (11.592)	1.295*** (14.281)	0.135*** (7.926)	0.353*** (7.396)
<i>ROA</i>	-5.193*** (-30.941)	-19.008*** (-31.032)	-1.043*** (-8.897)	-0.551** (-2.241)
<i>Turnover</i>	0.061*** (11.951)	0.190*** (9.574)	-0.058*** (-18.137)	-0.074*** (-11.636)
<i>Earnings_Volatility</i>	0.012*** (4.000)	0.029** (2.577)	0.007*** (3.000)	0.001 (0.284)
<i>Ret_Volatility</i>	6.763*** (32.620)	25.562*** (33.268)	-0.092 (-0.723)	-1.044*** (-3.680)
<i>Institutional_Own</i>	-0.252*** (-8.567)	-1.218*** (-10.993)	-0.454*** (-18.935)	-0.411*** (-7.939)
<i>Coverage</i>	0.070*** (4.792)	0.227*** (4.229)	-0.092*** (-8.449)	-0.151*** (-6.724)
<i>#PRs</i>	0.137*** (12.044)	0.431*** (10.949)	0.088*** (11.696)	0.064*** (3.674)
<i>Chg_All_Employment</i>	-0.047*** (-9.064)	-0.268*** (-13.204)	-0.020*** (-5.035)	-0.035*** (-3.506)
<i>Constant</i>	3.391*** (31.794)	6.165*** (12.482)	1.834*** (10.591)	1.166*** (8.427)
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	53.2%	53.1%	44.3%	11.0%
<i>Observations</i>	109,535	109,535	109,535	109,535

TABLE 3. Newspaper Intensity and High Relative Importance

This table reports the results from equation (1) examining the implications of local newspaper intensity and firms' relative importance in their MSA. *Newspaper_Intensity* is equal to the percent of all employees in the firm's MSA that are working for newspapers. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Dependent Variable:	<i>Fut_Ret_Volatility</i>	<i>#Volatile_Days</i>	<i>Spreads</i>	<i>Illiquidity</i>
	(1)	(2)	(3)	(4)
<i>Newspaper_Intensity</i>	-0.778*** (-5.189)	-2.623*** (-4.636)	-0.142 (-1.047)	-0.669* (-1.921)
<i>High_Rel_Importance</i>	0.138*** (3.381)	0.707*** (4.710)	0.246*** (7.814)	0.301*** (5.197)
<i>High_Rel_Importance</i> <i>* Newspaper_Intensity</i>	-0.637** (-2.543)	-3.778*** (-4.114)	-1.010*** (-5.842)	-1.368*** (-3.619)
<i>Size</i>	-0.307*** (-30.128)	-0.898*** (-23.993)	-0.187*** (-26.087)	-0.138*** (-9.669)
<i>Leverage</i>	0.623*** (14.430)	2.342*** (14.855)	0.181*** (5.865)	0.343*** (5.674)
<i>Book-to-Market</i>	0.308*** (11.584)	1.293*** (14.277)	0.134*** (7.888)	0.352*** (7.376)
<i>ROA</i>	-5.195*** (-30.939)	-19.020*** (-31.032)	-1.045*** (-8.940)	-0.554** (-2.256)
<i>Turnover</i>	0.062*** (12.052)	0.192*** (9.692)	-0.058*** (-17.945)	-0.073*** (-11.506)
<i>Earnings_Volatility</i>	0.012*** (3.975)	0.028** (2.546)	0.007*** (2.957)	0.001 (0.249)
<i>Ret_Volatility</i>	6.760*** (32.607)	25.542*** (33.230)	-0.097 (-0.765)	-1.051*** (-3.707)
<i>Institutional_Own</i>	-0.248*** (-8.441)	-1.202*** (-10.840)	-0.446*** (-18.691)	-0.402*** (-7.776)
<i>Coverage</i>	0.071*** (4.841)	0.230*** (4.284)	-0.090*** (-8.331)	-0.149*** (-6.662)
<i>#PRs</i>	0.136*** (11.921)	0.426*** (10.805)	0.085*** (11.445)	0.061*** (3.504)
<i>Chg_All_Employment</i>	-0.047*** (-8.946)	-0.266*** (-13.079)	-0.019*** (-4.745)	-0.034*** (-3.375)
<i>Constant</i>	3.367*** (34.134)	6.028*** (13.724)	1.797*** (11.846)	1.116*** (7.833)
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	53.2%	53.1%	44.5%	11.1%
<i>Observations</i>	109,535	109,535	109,535	109,535

TABLE 4. Newspaper Intensity and High Litigation Risk

This table reports the results from equation (1) examining the implications of local newspaper intensity and firms' litigation risk. *Newspaper_Intensity* is equal to the percent of all employees in the firm's MSA that are working for newspapers. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Dependent Variable:	<i>Fut_Ret_Volatility</i>	<i>#Volatile_Days</i>	<i>Spreads</i>	<i>Illiquidity</i>
	(1)	(2)	(3)	(4)
<i>Newspaper_Intensity</i>	-0.943*** (-6.043)	-4.002*** (-6.854)	-0.064 (-0.423)	-0.122 (-0.299)
<i>High_Lit_Risk</i>	0.194*** (7.144)	0.490*** (4.878)	0.150*** (8.065)	0.297*** (6.737)
<i>High_Lit_Risk</i> <i>* Newspaper_Intensity</i>	0.259* (1.688)	1.980*** (3.059)	-0.350*** (-2.797)	-1.419*** (-4.433)
<i>Size</i>	-0.331*** (-32.443)	-0.976*** (-26.062)	-0.194*** (-27.238)	-0.146*** (-10.363)
<i>Leverage</i>	0.540*** (12.633)	2.065*** (13.198)	0.143*** (4.609)	0.303*** (4.945)
<i>Book-to-Market</i>	0.264*** (9.705)	1.146*** (12.379)	0.116*** (6.726)	0.337*** (7.010)
<i>ROA</i>	-5.061*** (-30.707)	-18.559*** (-30.787)	-0.988*** (-8.488)	-0.506** (-2.075)
<i>Turnover</i>	0.054*** (10.591)	0.166*** (8.393)	-0.062*** (-18.745)	-0.077*** (-11.907)
<i>Earnings_Volatility</i>	0.011*** (3.972)	0.027** (2.531)	0.007*** (3.006)	0.001 (0.324)
<i>Ret_Volatility</i>	6.294*** (30.173)	24.008*** (30.917)	-0.300** (-2.386)	-1.252*** (-4.492)
<i>Institutional_Own</i>	-0.242*** (-8.405)	-1.189*** (-10.891)	-0.448*** (-18.812)	-0.402*** (-7.795)
<i>Coverage</i>	0.065*** (4.532)	0.211*** (3.991)	-0.094*** (-8.701)	-0.154*** (-6.840)
<i>#PRs</i>	0.128*** (11.389)	0.397*** (10.220)	0.085*** (11.362)	0.065*** (3.704)
<i>Chg_All_Employment</i>	-0.045*** (-8.725)	-0.261*** (-12.939)	-0.019*** (-4.736)	-0.033*** (-3.319)
<i>Constant</i>	3.620*** (34.309)	7.015*** (14.119)	1.899*** (10.834)	1.145*** (7.847)
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	53.5%	53.3%	44.6%	1.1%
<i>Observations</i>	109,535	109,535	109,535	109,535

TABLE 5. Newspaper Intensity and Analysts

This table reports the results from regressing *Newspaper_Intensity* on analyst coverage and forecast characteristics. *Newspaper_Intensity* is equal to the percent of all employees in the firm's MSA that are working for newspapers. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Dependent Variable:	<i>Coverage</i>	<i>Accuracy</i>	<i>Dispersion</i>	<i>Coverage</i>	<i>Accuracy</i>	<i>Dispersion</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Newspaper_Intensity</i>	-0.436*** (-3.562)	6.053 (1.641)	-1.908 (-1.274)	-0.445*** (-3.426)	2.804 (0.691)	-1.032 (-1.414)
<i>High_Rel_Importance</i>				-0.076** (-2.169)	-2.772** (-2.004)	0.844*** (3.623)
<i>High_Rel_Importance</i> * <i>Newspaper_Intensity</i>				0.213 (1.042)	18.487* (1.741)	-5.015*** (-2.760)
<i>Size</i>	0.273*** (48.276)	1.692*** (5.484)	-0.991*** (-7.574)	0.275*** (47.746)	1.701*** (5.523)	-0.999*** (-16.408)
<i>Leverage</i>	0.118*** (3.551)	-3.713*** (-3.122)	2.026*** (3.906)	0.118*** (3.546)	-3.746*** (-3.143)	2.035*** (8.443)
<i>Book-to-Market</i>	0.043*** (3.297)	-0.307 (-0.333)	0.827** (2.012)	0.043*** (3.326)	-0.299 (-0.324)	0.825*** (3.096)
<i>ROA</i>	-0.942*** (-10.394)	43.019*** (6.330)	-13.929*** (-5.049)	-0.942*** (-10.396)	43.088*** (6.336)	-13.947*** (-7.402)
<i>Turnover</i>	0.077*** (22.024)	0.228 (1.356)	-0.093* (-1.724)	0.077*** (21.947)	0.220 (1.299)	-0.090*** (-2.765)
<i>Earnings_Volatility</i>	-0.006*** (-4.307)	-6.188*** (-16.046)	2.473*** (14.646)	-0.006*** (-4.272)	-6.186*** (-16.049)	2.472*** (25.785)
<i>Ret_Volatility</i>	-0.532*** (-4.672)	8.334 (1.057)	-5.522* (-1.739)	-0.531*** (-4.660)	8.434 (1.071)	-5.543*** (-4.324)
<i>Institutional_Own</i>	0.305*** (12.350)	2.695*** (3.644)	-1.433*** (-4.511)	0.302*** (12.208)	2.657*** (3.580)	-1.418*** (-9.673)
<i>Coverage</i>		-0.397 (-0.789)	1.108*** (4.312)		-0.391 (-0.786)	1.106*** (9.825)

<i>#PRs</i>	0.081*** (9.299)	-1.333*** (-5.007)	0.568*** (5.285)	0.082*** (9.407)	-1.319*** (-4.916)	0.563*** (8.333)
<i>Chg_All_Employment</i>	0.003 (0.713)	0.386** (2.545)	-0.122** (-2.201)	0.002 (0.559)	0.382** (2.518)	-0.120*** (-3.454)
<i>Constant</i>	-1.247*** (-6.166)	-11.704*** (-4.227)	4.208*** (3.989)	-1.238*** (-6.020)	-11.071*** (-4.104)	4.018*** (6.980)
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>R-Squared</i>	65.9%	52.4%	51.0%	66.0%	52.4%	51.0%
<i>Observations</i>	109,535	102,536	92,684	109,535	102,536	92,684

TABLE 6. Newspaper Intensity and Busy Analysts

This table reports the results from equation (1) examining the implications of local newspaper intensity and firms' with busy analysts. *Newspaper_Intensity* is equal to the percent of all employees in the firm's MSA that are working for newspapers. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Dependent Variable:	<i>Accuracy</i>	<i>Dispersion</i>
	(1)	(2)
<i>Newspaper_Intensity</i>	-0.109 (-0.026)	-0.649 (-0.691)
<i>Busy_Analysts</i>	-1.269*** (-2.690)	0.313** (2.447)
<i>Busy_Analysts</i> * <i>Newspaper_Intensity</i>	12.886*** (3.367)	-2.509** (-2.185)
<i>Size</i>	1.682*** (5.460)	-0.991*** (-16.425)
<i>Leverage</i>	-3.795*** (-3.197)	2.035*** (8.467)
<i>Book-to-Market</i>	-0.309 (-0.336)	0.825*** (3.094)
<i>ROA</i>	43.344*** (6.360)	-13.973*** (-7.426)
<i>Turnover</i>	0.228 (1.353)	-0.092*** (-2.848)
<i>Earnings_Volatility</i>	-6.190*** (-16.052)	2.473*** (25.789)
<i>Ret_Volatility</i>	8.470 (1.074)	-5.564*** (-4.333)
<i>Institutional_Own</i>	2.709*** (3.665)	-1.438*** (-9.812)
<i>Coverage</i>	-0.459 (-0.911)	1.113*** (9.875)
<i>#PRs</i>	-1.319*** (-4.936)	0.567*** (8.395)
<i>Chg_All_Employment</i>	0.387** (2.551)	-0.122*** (-3.517)
<i>Constant</i>	-10.915*** (-4.026)	4.051*** (7.196)
<i>Qtr & Year FE</i>	Yes	Yes
<i>Industry FE</i>	Yes	Yes
<i>R-Squared</i>	52.4%	51.0
<i>Observations</i>	102,536	92,684

TABLE 7. Relative Change in Newspaper Intensity

This table reports the results from examining the implications of changes in local newspaper intensity and firms' information environments. *Relative_Chg_News* is equal to the percent change in newspaper employment in the prior 12 months minus the percent change in all employment in the prior 12 months in the firm's MSA. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Dependent Variable:	<i>Fut_Ret_Volatility</i>	<i>#Volatile_Days</i>	<i>Spreads</i>	<i>Illiquidity</i>
	(1)	(2)	(3)	(4)
<i>Relative_Chg_News</i>	-0.259*** (-4.421)	-1.227*** (-5.608)	-0.094** (-2.535)	-0.164** (-2.007)
<i>Size</i>	-0.306*** (-30.104)	-0.891*** (-23.998)	-0.182*** (-25.681)	-0.133*** (-9.360)
<i>Leverage</i>	0.610*** (14.185)	2.293*** (14.612)	0.176*** (5.708)	0.329*** (5.479)
<i>Book-to-Market</i>	0.305*** (11.525)	1.283*** (14.208)	0.134*** (7.882)	0.350*** (7.363)
<i>ROA</i>	-5.208*** (-31.041)	-19.062*** (-31.162)	-1.047*** (-8.925)	-0.564** (-2.297)
<i>Turnover</i>	0.061*** (11.915)	0.189*** (9.551)	-0.059*** (-18.124)	-0.074*** (-11.620)
<i>Earnings_Volatility</i>	0.011*** (3.899)	0.027** (2.476)	0.007*** (2.955)	0.001 (0.213)
<i>Ret_Volatility</i>	6.816*** (32.792)	25.754*** (33.480)	-0.076 (-0.602)	-0.991*** (-3.521)
<i>Institutional_Own</i>	-0.252*** (-8.492)	-1.216*** (-10.921)	-0.454*** (-18.934)	-0.410*** (-7.926)
<i>Coverage</i>	0.074*** (5.017)	0.240*** (4.456)	-0.091*** (-8.333)	-0.147*** (-6.526)
<i>#PRs</i>	0.137*** (11.980)	0.430*** (10.893)	0.088*** (11.640)	0.064*** (3.631)
<i>Chg_All_Employment</i>	-0.041*** (-8.088)	-0.246*** (-12.419)	-0.018*** (-4.771)	-0.029*** (-3.093)
<i>Constant</i>	3.169*** (28.862)	5.325*** (10.710)	1.766*** (10.411)	0.956*** (8.830)
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	53.2%	53.1%	44.3%	10.9%
<i>Observations</i>	109,535	109,535	109,535	109,535

TABLE 8. Relative Change in Newspaper Intensity – Long Term Effects

Panel A (B) [C] reports the results from examining the implications of changes in local newspaper intensity and firms' information environments over the following 6 (12) [24] months. *Relative_Chg_News* is equal to the percent change in newspaper employment in the prior 12 months minus the percent change in all employment in the prior 12 months in the firm's MSA. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Panel A: Dependent variable measurement window = 6 months				
Dependent Variable:	<i>Fut_Ret_Volatility</i>	<i>#Volatile_Days</i>	<i>Spreads</i>	<i>Illiquidity</i>
	(1)	(2)	(3)	(4)
<i>Relative_Chg_News</i>	-0.141** (-2.227)	-1.174*** (-2.751)	-0.094** (-2.457)	-0.249** (-2.123)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	59.6%	60.6%	44.4%	9.4%
<i>Observations</i>	109,535	109,535	109,535	109,535

Panel B: Dependent variable measurement window = 12 months				
Dependent Variable:	<i>Fut_Ret_Volatility</i>	<i>#Volatile_Days</i>	<i>Spreads</i>	<i>Illiquidity</i>
	(1)	(2)	(3)	(4)
<i>Relative_Chg_News</i>	0.006 (0.076)	1.118 (1.321)	-0.078** (-2.007)	-0.296* (-1.775)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	63.3%	65.8%	44.3%	8.7%
<i>Observations</i>	109,535	109,535	109,535	109,535

Panel C: Dependent variable measurement window = 24 months				
Dependent Variable:	<i>Fut_Ret_Volatility</i>	<i>#Volatile_Days</i>	<i>Spreads</i>	<i>Illiquidity</i>
	(1)	(2)	(3)	(4)
<i>Relative_Chg_News</i>	-0.000 (-0.116)	0.610 (0.367)	-0.078** (-1.992)	-0.240 (-1.049)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	62.3%	64.8%	44.4%	8.1%
<i>Observations</i>	109,535	109,535	109,535	109,535

TABLE 9. Relative Change in Newspaper Intensity and Alternative Information

This table reports the results from examining the implications of changes in local newspaper intensity for alternative information sources. *Relative_Chg_News* is equal to the percent change in newspaper employment in the prior 12 months minus the percent change in all employment in the prior 12 months in the firm's MSA. Variable definitions are in Appendix A. Significance levels of 10%, 5%, and 1%, are represented by *, **, and ***, respectively. *t*-statistics are reported in parentheses and standard errors are clustered by firm.

Dependent Variable:	Coverage	# Mgmt Forecasts	% MPN Forward Looking	Bloomberg Attention
	(1)	(2)	(3)	(4)
<i>Relative_Chg_News</i>	-0.081*** (-4.272)	-0.071*** (-2.972)	-0.008*** (-2.858)	-0.070* (-1.935)
<i>Size</i>	0.273*** (169.305)	0.038*** (17.759)	-0.004*** (-12.797)	0.353*** (95.427)
<i>Leverage</i>	0.112*** (13.612)	0.231*** (23.396)	0.004*** (3.532)	0.501*** (29.696)
<i>Book-to-Market</i>	0.041*** (10.602)	-0.027*** (-6.738)	0.019*** (18.963)	0.019** (2.125)
<i>ROA</i>	-0.956*** (-26.537)	1.250*** (33.635)	0.001 (1.272)	-1.066*** (-14.090)
<i>Turnover</i>	0.078*** (64.538)	0.011*** (9.016)	-0.102*** (-18.382)	0.101*** (43.800)
<i>Earnings_Volatility</i>	-0.006*** (-13.278)	-0.002*** (-4.490)	0.002*** (11.102)	0.005*** (4.409)
<i>Ret_Volatility</i>	-0.507*** (-14.098)	-0.801*** (-20.920)	-0.000* (-1.923)	1.951*** (25.818)
<i>Institutional_Own</i>	0.306*** (45.381)	0.384*** (47.669)	0.048*** (9.114)	0.066*** (4.662)
<i>Coverage</i>		0.151*** (40.463)	0.013*** (25.230)	0.317*** (47.983)
<i>#PRs</i>	0.081*** (33.233)	0.026*** (9.174)	-0.001 (-1.493)	0.168*** (31.897)
<i>Chg_All_Employment</i>	0.006*** (4.575)	-0.002 (-1.192)	0.001*** (6.020)	-0.007** (-2.421)
<i>Constant</i>	-1.347*** (-19.972)	-0.360*** (-9.836)	0.112*** (13.470)	-2.823*** (-34.427)
<i>Qtr & Year FE</i>	Yes	Yes	Yes	Yes
<i>Industry FE</i>	Yes	Yes	Yes	Yes
<i>R-Squared</i>	65.9%	37.3%	10.6%	62.4%
<i>Observations</i>	109,535	109,535	109,535	109,535