

Common Business Group Affiliation and Media Bias

Finance Working Paper N° 691/2020

July 2020

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Abstract

We find that newspapers connected to firms through common business group affiliation display a more positive reporting tone than unconnected newspapers. This result is robust to both a DiD approach and controlling for newspaper-firm pair fixed effects. Further, the association between connected newspapers' reporting tone and firm stock returns is weaker. The reporting bias is more pronounced when business groups have greater incentives and power to influence the newspapers and when firms can benefit more from positive media coverage. Finally, we show that connected newspapers play a weaker information intermediary role and firms with connected newspapers have poorer information environments. Overall, our evidence suggests that media-firm connections via common business group affiliation undermine the media's independence and objectivity.

Keywords: Business Group Affiliation, Media Ownership, Media Objectivity, Media Bias

JEL Classifications: G32, G34, L82, M41

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1. Introduction

On August 5, 2013, it was announced that Jeff Bezos, founder and CEO of Amazon.com, Inc., planned to purchase *The Washington Post* through a holding company he controls. This transaction immediately generated concerns of conflicts of interest, calling into question the newspaper's objectivity in its future coverage of news related to Amazon or other entities owned by or affiliated with Jeff Bezos.¹ Similar concerns were voiced two years later when Alibaba Group purchased the *South China Morning Post*, Hong Kong's leading English newspaper, in December 2015. These two instances exemplify a recent phenomenon in the media industry where struggling print media firms are acquired by businesses or individuals from outside the industry. As traditional media continues to face strong headwinds competing against digital media, more transactions like these are likely to happen.² Therefore, it is important to understand if and how these transactions affect the quality of media coverage, given their potential to create connections between media outlets and covered firms. However, there has been no prior research on this issue.

We aim to fill this gap by analyzing a unique setting in which firms and media are connected through their affiliation with the same business group via equity ownership. Such connections can affect the media's coverage of firms in two possible ways. On the one hand, common business group affiliation can create incentives for the media to alter its coverage of connected firms. Prior research shows that media reporting can affect firms' stock price, liquidity, and costs of capital by shaping the public perception and information environment of firms (see, e.g., Tetlock, 2007; Peress, 2014; Gao et al., 2020). To the extent that firms benefit from favorable media coverage, the connected media may face pressure from the ultimate owners of the business group to cast the connected firms in a more positive light in its reporting. We term this possibility the *biased media hypothesis*. This conjecture is based on the premise that the business group can influence the media's editorial decisions. Therefore,

¹ 'Washington Post' May Find Conflicts In Amazon Coverage, August 6, 2013, National Public Radio. The President of the United States, Donald Trump, also expressed similar concerns (Why Trump went after Bezos: Two billionaires across a cultural divide, April 5, 2018, The Washington Post).

² For instance, in September 2018, Marc Benioff, co-founder of the software company Salesforce, and his wife, Lynne purchased the Time Magazine. In 2017, Laurene Powell Jobs, the widow of Apple's co-founder Steve Jobs, agreed to acquire a majority stake in The Atlantic magazine through her organization, Emerson Collective.

a corollary of the conjecture is that any bias in the media's coverage of connected firms increases with the extent to which the business group can influence the media's reporting.

On the other hand, common business group affiliation can enhance the media's ability to gather and verify information about the firms. Journalists rely heavily on contacts with corporate management and media relations departments when developing news stories about a company (Call, Emett, Maksymov, and Sharp, 2018). By being part of the same business group, connected media can enjoy more access to firm insiders as direct sources of information. Given the potential for media to twist or sensationalize news stories about firms (Core, Guay, and Larcker, 2008, Ahern and Sosyura, 2015, and Clarke, Chen, Du, and Hu, 2018), firm insiders may consider members of an affiliated media organization more trustworthy and thus prefer to interact and share information with them. The proprietary costs of disclosure may also be lower when firms share subtle and sensitive information with their affiliated media. Lastly, common business group affiliation can create a "grapevine" effect, where newspapers can obtain information about connected firms through informal social networks within the business group. These advantages can help the connected media provide more in-depth and informative coverage of firms. We term this possibility the *informed media hypothesis*.

Finally, it is possible that common business group affiliation has no impact on the media coverage of connected firms. In particular, editors and journalists have reputational incentives to uphold their professional ethics and standards (Dyck, Morse, and Zingales, 2010). Media organizations may be concerned about losing credibility in the eyes of the public due to biased reporting. Moreover, organizational firewalls may be in place to insulate journalistic operations from potential outside influence. Together, these factors can help maintain media independence and objectivity. We term this possibility as the *independent media hypothesis*.³

³ There is some support for this hypothesis. For example, Dellavigna and Hermle (2017) do not find that media outlets owned by News Corporation are biased in their reviews of movies produced by News Corporation. Similarly, Luo, Manconi, and Massa (2020) do not find that the Dow Jones Newswires biases its coverage of republican-leaning firms relative to democratic-leaning ones following the acquisition of Dow Jones & Co by News Corporation.

We examine these alternative hypotheses using a hand-collected dataset where newspapers and publicly listed firms in China are connected through common business group affiliations. The Chinese media market is the second largest (after the U.S.) in the world based on advertising revenue and the largest based on the number of newspapers (Qin, Strömberg, and Wu, 2018). In recent years, the Chinese capital market has become more accessible to foreign investors as a result of the country's program that allows qualified foreign institutional investors (QFII) to invest directly in domestic Chinese companies. The addition of China's A shares to the MSCI All World Index in 2018 further increased foreign investors' exposure to Chinese stocks. As a result, the media coverage and information environment of Chinese listed companies have taken on greater importance for investors on a global scale. In addition, from an experiment design perspective, the Chinese setting represents a particularly good testing ground, because business groups, while virtually non-existent in the U.S. (Kandel, Kosenko, Morck, and Yafeh, 2019), are quite prevalent in emerging market economies (Masulis, Pham, and Zein, 2011), of which China is a preeminent member. Therefore, our setting allows us to construct a large dataset where we observe linkages between media organizations and publicly listed firms through common business group affiliation.⁴

While it is a legitimate concern that government control and censorship can affect the overall media objectivity, Chinese media tends to enjoy considerably more freedom in reporting business news than political news (Piotroski, Wong, and Zhang, 2015 and 2017). In addition, our focus is on the cross-sectional variations in media reporting bias among Chinese newspapers rather than the average objectivity of Chinese media as a whole.

Chinese newspapers have an organizational structure designed to safeguard editorial independence against outside influence. Typically, a newspaper's editorial department and business operations (including publishing, printing, and advertising) are organized as separate subsidiaries under the control of a parent newspaper group. The parent newspaper group relies on the revenue and cash flows

⁴ Business groups tend to be actively involved in the management and operation of the businesses in which they invest. In contrast, while institutional investors can also create connections between firms and media through their investments, their ability and incentives to affect corporate policies are ambiguous (Gilje, Gormley, and Levit, 2019).

generated by the business operation subsidiaries to support the editorial side of the newspaper. To preserve its independence and objectivity, the editorial department is wholly owned by the newspaper group, but the subsidiaries housing the business operations can have outside investors. Figure 1 depicts the relationship among a newspaper group, its editorial and business subsidiaries, and an outside business group that has an equity ownership in the business subsidiary. The outside business group may also have ownership interest in a publicly traded firm. We consider the publicly traded firm and the newspaper as connected through common business group affiliation. Even though the outside business group does not have direct control over the newspaper's editorial decisions, the reality is that its injection of equity capital amid the traditional print media's financial struggles gives it an influential voice in how the newspaper covers its publicly traded corporate affiliates.

We analyze a large sample of newspaper articles on publicly traded firms from 2005 to 2016 and uncover evidence consistent with the *biased media hypothesis*. Specifically, we examine how the tone of a newspaper's reporting on a firm is related to the connection between the newspaper and the firm through common business group affiliation. To enhance comparability, we match each connected newspaper with unconnected newspapers of the same type and from the same city. Controlling for an array of firm and newspaper characteristics, we find that newspapers exhibit significantly more positive tone in their coverage of connected firms. To increase the probability that the underlying corporate events covered by connected and unconnected newspapers are the same, we also construct a subsample by requiring that each matched pair of connected and unconnected newspapers both cover the same firm during a one-week period. Our baseline results continue to hold in this subsample. We obtain similar results when we alternatively match each connected firm with an unconnected firm based on propensity score matching, or based on size, performance, and industry.⁵

⁵ There is anecdotal support for these results. For example, in a notable case, *Tomorrow Group*, which invested in the business subsidiary of the newspaper group that owns *Security Daily*, a major financial newspaper in China, asked the newspaper to report favorably on a list of publicly traded firms in which it has ownership (Source: <https://www.caixinglobal.com/2017-02-12/beijing-newspaper-investigated-for-links-to-tycoon-101054329.html>). In another well-known case, the former president of the newspaper group that owns the newspaper, *21st Century Business Herald*, instructed the newspaper's editor-in-chief to stop reporting negative news on *the State Grid Corporation*, which was planning to invest in the newspaper group's financial news website (Source: <https://www.scmp.com/news/china/article/1604253/detained-21st-century-media-boss-shen-hao-admits-news-extortion>).

For identification, we first implement a difference-in-differences (DiD) approach. We show that the matched sample satisfies the parallel trend assumption and that a newspaper's reporting on a firm becomes significantly more positive after they become connected through common business group affiliation.

To further enhance our identification, we subject our analysis to a specification that controls for newspaper-firm pair fixed effects. This is an especially powerful approach because it isolates the time-series variation in the connection status within each newspaper-firm pair and allows us to identify any change in the *same* newspaper's coverage of the *same* firm from before to after the formation of common business group affiliation. In this specification, we also account for how the newspaper-firm connections are established to rule out a potential alternative explanation. For example, the connections may form when a business group with pre-existing ownership in a newspaper's business-operation unit acquires an equity stake in a publicly traded firm. To the extent that this investment is driven by the business group's positive private information about the firm, the connected newspaper's reporting on the firm may subsequently become more optimistic to reflect this private information. To address this concern, we require that the business group's investment in the firm precede its investment in the newspaper's business operation subsidiary, because it is unlikely for the business group's private information about a particular firm to drive a major investment in a newspaper. Our results remain robust after we impose this restriction.

While the significantly positive tone displayed by newspapers toward connected firms supports the *biased media* view, it can also be consistent with the *informed media* explanation. Specifically, due to legal liability concerns, firm management may be reluctant to disclose positive news to unaffiliated media organizations. A newspaper connected to the firm may be able to find out the true extent of the positive news through its connection with the firm. Therefore, the connected newspaper's reporting on the firm may have a more positive tone than that of unconnected newspapers. To help differentiate the *biased media* and *informed media* hypotheses, we examine how the relation between concurrent stock returns and newspaper reporting tone varies with the connection status between a newspaper and a firm. We find that there is a weaker association between stock returns and the tone of connected newspapers'

reporting. This evidence is consistent with the *biased media hypothesis* but not the *informed media hypothesis*, as it suggests that the tone of connected newspapers' reporting on affiliated firms is less reflective of the information impounded into stock prices.

We next explore cross-sectional variations in the relation between newspaper reporting tone and the newspaper-firm connection. We expect to observe greater bias in newspaper reporting of connected firms when business groups have greater incentives or power to exert influence over a newspaper's reporting decisions, or when the connected firms can benefit more from positive reporting. Consistent with our conjectures, we find that the optimism bias exhibited by connected newspapers is more pronounced when the business group has a larger stake in the connected firm as measured by the market value of its equity ownership in the firm, and when it has potentially greater influence over the newspaper's reporting as measured by its percentage ownership in the newspaper's business operation unit. We also find that the optimism bias is stronger when connected firms experience poor performance or have a higher leverage.

In further analysis, we focus on the tone of news articles immediately following corporate earnings announcements. This setting helps ensure that the articles cover the same underlying corporate news, whose interpretation is more clear-cut than most other corporate events. We find that when firms report disappointing earnings, connected newspapers tend to put a more positive spin in their coverage of the earnings news than unconnected newspapers.

In addition to the tone of news articles, common business group affiliation can affect the amount and type of news coverage that newspapers choose to pursue or to avoid. Specifically, we find that connected newspapers provide more coverage on affiliated firms than unconnected newspapers. This can be beneficial to firms as more media coverage can improve stock liquidity and perhaps even increase stock price by attracting the attention of retail investors, especially in stock markets with short-sale constraints like China's. When we distinguish between positive and negative news coverage, we find that connected newspapers are significantly more likely to seek out positive news to report for affiliated firms than unconnected newspapers. While the two types of newspapers display a similar

tendency to report negative news about affiliated firms, our earlier results do suggest that connected newspapers tend to put a more positive spin on the negative news.

Finally, we examine how a newspaper's information intermediary role is related to common business group connections. We find that the reporting tone of unconnected newspapers is positively related to future firm performance and negatively related to future CEO forced turnover and regulatory sanctions. In contrast, no such relations exist for the reporting tone of connected newspapers. In addition, we find that firms with connected newspapers exhibit higher stock price synchronicity, indicative of a less transparent corporate information environment (Morck, Yeung, and Yu, 2000; Jin and Myers, 2006; Gul, Kim, and Qiu, 2010). These results suggest that common business group affiliation undermines the information intermediary role of newspapers by compromising the independence and objectivity of their reporting on connected firms.

Our study makes three main contributions to the literature. First, we shed light on the question of whether media-firm connections via common business group affiliation affect media reporting of firms. The evidence from our analysis is timely in light of the recent spate of takeovers of traditional print media by individuals or entities from outside the media industry around the world. Our findings show that these transactions can have major ramifications for the independence and objectivity of media reporting, and suggest that concerns about conflicts of interest regarding these transactions are not unwarranted. As such, our results have major policy implications. Given the key information intermediary and corporate governance roles of media (Bushee, Core, Guay, and Hamm, 2010; Engelberg and Parsons, 2011; Peress, 2014; Dyck, Volchkova, and Zingales, 2008; Liu and McConnell, 2013; Dai, Parwada, and Zhang, 2015), regulators should heed any proliferation of such deals because they have the potential to undermine the information environments of firms and impede the price discovery and resource allocation by capital markets. In addition, it may be important to enhance the transparency regarding the ultimate owners of media organizations as well as the businesses affiliated with the ultimate owners. Such disclosure can help capital market participants better understand media's incentives in reporting on certain events or firms.

While our analysis is based on Chinese newspapers, we believe our results can inform on whether common business group affiliation affects media reporting in other countries. Even with the large presence of government control that can potentially blunt the influence of other factors and the newspaper group structure that aims to limit outside influence, we still find significant and robust evidence on the effect of common business group affiliation. This speaks to the power of the incentives arising from such connections.

Second, we contribute to a better understanding of the forces shaping media coverage of firms and the potential bias in media reporting. Prior research has documented a variety of factors, including advertising revenue (Reuter and Zitzewitz, 2006; Gurun and Butler, 2012), media organizational structure (Piotroski, Wong, and Zhang, 2017; Wu, 2017), media sensationalism and journalist experience (Miller, 2006; Ahern and Sosyura, 2015), political considerations and influence (Piotroski, Wong, and Zhang, 2015, 2017; You, Zhang, and Zhang, 2018), and social ties (Ru, Xue, Zhang, and Zhou, 2020; Xu, 2020). We differ from and extend this body of research by focusing on common business group affiliation between newspapers and firms, and we show that such affiliation also plays an important part in generating reporting bias.

Finally, our research contributes to the literature on business groups. Prior studies in this literature identify various costs and benefits associated with the internal capital market within the business group or the divergence between ultimate owners' control rights and cash flows rights in business group subsidiaries (e.g., Almeida and Wolfenzon, 2006; Masulis, Pham, and Zein, 2011; Morck, Yavuz, and Yeung, 2011; Almeida, Kim, and Kim, 2015). We are the first study to show that business groups' investment in media organizations can create the potential to bias media coverage of firms affiliated with the same business groups. From the business group's standpoint, their investments in publicly traded subsidiaries may benefit from optimistically biased news coverage and appreciate in value, at least in the short run. However, from a societal standpoint, the biased media coverage can result in poor information environment of connected firms and negatively affect the capital market's price discovery and resource allocation functions. Our results echo the findings by Lim and Jung (2012) and Song, Mantecon, and Altintig (2012) that analysts issue more optimistic forecasts for firms belonging to the

same business group as the analyst's brokerage, and Kedia, Rajgopal, and Zhou (2017) that Moody's issues more favorable bond ratings to important investee firms of its two large shareholders.

In a contemporaneous study with ours, He, Xia, and Zhao (2020) find that cross-blockholders of media firms and industrial firms engage in a "pump and dump" strategy, in which the media firms display a more positive tone in their coverage of litigations involving the industrial firms before the cross-blockholders reduce their positions in these firms. We differ from their study in several important aspects. First, we examine media-firm connections created by common business groups rather than common institutional investors. This focus allows us to speak directly to the effect on media objectivity of increasingly popular acquisitions of media organizations by firms from outside the industry. Second, by examining all firm related news articles, we provide comprehensive evidence on the general reporting behavior of connected media, while they focus on media reporting related to corporate litigations. Third, in addition to reporting tone, we further investigate how common business group affiliation affects the media's information intermediary role and firms' information environment.

2. An overview of Chinese newspaper industry and organizational structure

In China, nearly all newspapers are owned and supervised by the Chinese Communist Party Committees (Djankov, McLiesh, Nenova, and Shleifer, 2003; Qin, Strömberg, and Wu, 2018). Historically, these newspapers were mainly used as political tools. Starting from 1996, newspaper groups such as Guangzhou Daily Group were founded by grouping the newspapers in the same locale. Such an arrangement allows the local governments to retain strong political control over the press while letting it pursue market objectives (Piotroski, Wong, and Zhang, 2017).

For many years, Chinese newspapers had their editorial department and business department operating within a single entity. A major drawback of this organizational structure is that the news production process was highly vulnerable to interference and the operational efficiency of the business department was extremely low. To address these problems, China's central government implemented a reform of the media industry in 2003 requiring that a newspaper's business operations be separated from the editorial department as separate units under one newspaper group. The business operation side

of the newspaper is usually further divided into several media companies that are responsible for advertising, publication, printing, etc. In general, the editorial department and the media companies are all under the newspaper group's direct control. The parent newspaper group and its editorial and business operation subsidiaries form a symbiotic relationship. On the one hand, the media companies rely heavily on the business opportunities brought by the newspaper, with the loyalty of their customers closely tied to the quality of the newspaper's reporting. On the other hand, the revenue and cash flows generated by the media companies provide funding to support the newspaper's journalistic and editorial operations.

In recent years, as in many other countries around the world, newspapers in China have suffered large declines in both circulation and advertising revenue due to competition from online media. For example, the total newspaper circulation fell by 9.3% from 2015 to 2016. In the first half of 2016, the total operating revenue and net profits of six listed newspaper groups dropped by 12.01% and 35.05%, respectively, compared to the same period a year ago.⁶ Faced with stiff competition and severe operating pressure, newspapers have struggled with funding shortage and resorted to various outside sources for much needed capital injection. In particular, the past two decades have witnessed many business groups taking an equity stake in the business subsidiaries of newspaper groups. These investments can create potential connections between newspapers and the business groups' other holdings. The impact of such connections on newspaper reporting is the focus of our study.

3. Sample construction

Our sample of newspaper articles on publicly traded firms are from the Chinese News Analytics Database (CNAD), which has been used in prior studies of Chinese media reporting (e.g., Piotroski, Wong, and Zhang, 2017; Wu and Ye, 2020). The sample period is from 2005 to 2016, because the coverage of CNAD is spotty before 2005. The database excludes contents not generated by newspapers, such as advertisements, company announcements and market reports. It uses a machine learning-based

⁶ Source: The National Bureau of Statistics of China (<http://www.gapp.gov.cn/govpublic/60.shtml>).

approach to classify each sentence in a news article as positive, neutral, or negative, and then calculates a score indicating the overall tone of each news article based on the sentence-level analysis. The machine learning approach takes into account the combinations of words and phrases when determining the tone, which can reduce classification errors.

The key explanatory variable in our study is whether a newspaper and a firm are connected through common business group affiliation. We use a multi-step approach to identify such connections.

Step 1 - Identify the business groups, if any, that are affiliated with the newspaper through equity investments in the newspaper group's media companies: Specifically, for each newspaper included in CNAD, we search its name in the National Enterprise Credit Information Publicity System (NECIPS) to find all entities potentially related to the newspaper.⁷ We then manually search in NECIPS to identify the media companies that are indeed related to the newspaper, such as those providing publishing, distribution, and advertising services for the newspaper.⁸ Next we search the names of these media companies in NECIPS and use the information disclosed in the "Shareholder information" column to trace the ultimate controllers of all these companies' direct shareholders.⁹ In general, the ultimate controller can be traced to a specific business group, such as Alibaba, Fosun International, State Grid, etc., unless it is an individual, in which case we would further identify the business group where the individual acts as the legal person or chairman. If the ultimate controller is a government agency or a public institution, we consider the business groups under its supervision as affiliated with the media companies. Shareholders that exit within a year of the initial investment are excluded from the sample because they may not have sufficient opportunities and time to have any impact on the newspaper's reporting.

Step 2 - Identify entities and individuals acting in concert with the business group: In this step, we search the information in NECIPS of each business group affiliated with a newspaper. We focus on the

⁷ For all companies registered with the State Administration for Industry and Commerce (SAIC) in China, NECIPS (<http://www.gsxt.gov.cn/index.html>) provides such information as the establishment date, business scope, shareholders' names, and the date, amount and ownership percentage of all the investments, etc.

⁸ To improve the accuracy of our search, we also use another enterprise information database (www.qichacha.com) which has the same basic data as NECIPS but can return more accurate and comprehensive search results.

⁹ For the few cases in which the media companies are publicly listed, we search their annual reports to conduct a secondary check on their shareholder information.

“Outward investment” column disclosed in NECIPS and identify all the subsidiaries under direct or indirect control of the business group, i.e., the business group is the largest shareholder of the subsidiary. We consider these subsidiaries as entities acting in concert with the business group. In addition, for privately-owned business groups, we identify their legal persons or chairmen, whose names can be found in the “Top executive name” column, as the individuals acting in concert with the business group.

Step 3 - Identify the stock holdings of business groups: In this step, we match the names of the business groups and, if applicable, entities or individuals acting in concert as identified in Step 2, with those of the top ten shareholders of all publicly listed companies to determine the business groups’ stock holdings. For instance, we recognize Jack Ma (founder of Alibaba) and Taobao (a subsidiary of Alibaba) as acting in concert with Alibaba Group Holdings Co., Ltd., and conduct the above matching procedure using Alibaba, Jack Ma and Taobao as keywords. The information on major shareholders and their ownership percentage is obtained from the RESSET Database, which extracts shareholder information from documents including quarterly reports, annual reports and announcements of changes in equity ownership. We then use the latest information disclosed in these documents to update the shareholder status in our dataset. We exclude from our sample business groups without any equity ownership in publicly listed firms.

This multi-step procedure allows us to identify a total of 13 newspaper groups affiliated with at least one outside business group, 19 business groups affiliated with at least one of the newspapers, and 474 publicly listed firms in which these business groups have equity ownership. See Appendix A for more detailed information on the newspapers and their affiliated business groups.

Table 1 presents a description of the 474 listed firms in our sample categorized by year and industry, respectively. Columns (1) and (3) of Panel A indicate that both the number of publicly traded firms affiliated with business groups and the number of firms covered by an connected newspaper have been increasing steadily over time, suggesting that business groups in China have been making more investments in listed firms and traditional print media in recent years.¹⁰ Column (2) of Panel A shows

¹⁰ The figures in Panel A are based on firm-year observations, and a firm can appear in multiple years.

that the average equity ownership of business groups in these listed firms is consistently above 10%, suggesting that business groups have major ownership stakes in these firms. In terms of industry distribution of our sample firms, about half of them are from the manufacturing industry (see Panel B), which is consistent with the importance of the manufacturing industry in the economy. Business groups tend to own relatively larger ownership stakes in firms in industries such as information technology, utilities, and manufacturing.

4. Research design and empirical results

4.1. Main variables

The main dependent variable in our analysis is the tone of each news article (*Tone*). Following Piotroski, Wong, and Zhang (2017), we measure the tone of a news article (*Tone*) as the number of positive sentences minus the number of negative sentences in the article, scaled by 1 plus the sum of the number of positive and negative sentences. Our results are robust to alternative tone measures (see Section 5.4.9.2). The key independent variable, *Affiliated*, is an indicator variable that is equal to one if a newspaper is connected with a listed firm through common business group affiliation in a given month, and zero otherwise. We control for an array of variables that prior literature shows affect the tone of media reporting (e.g., Gurun and Butler, 2012; Piotroski, Wong, and Zhang, 2017; You, Zhang, and Zhang, 2018). These variables include: firm size (*Size*), financial leverage (*Leverage*), return on assets (*ROA*), annual stock return (*Return*), the market-to-book ratio (*MB*), the percentage ownership of the largest shareholder (*Top1*), whether the firm is a state-owned enterprise (*SOE*), whether the firm and the newspaper are located in the same city (*Local*), and whether the firm advertises with the media in the current year (*Advertising*). Appendix B contains more detailed definitions of these variables. To reduce the influence of extreme values, all continuous variables are winsorized at the 1st and 99th percentiles.

4.2. Research design

Given that an overwhelmingly majority of news articles in CNAD are by newspapers unconnected with firms reported in the articles and that there can be many differences between newspapers connected and unconnected with reported firms, we create a sample of news articles by newspapers matched on several dimensions to ensure comparability. Specifically, for each news article in which the firm covered in the article and the newspaper publishing it are connected, we identify news articles on the same firm but by newspapers unconnected to the firm. We then require that the unconnected newspapers be of the same type (i.e., financial vs. non-financial, central vs. regional) and from the same city as the connected newspaper. This matching procedure generates a sample of 117,784 news articles, which we call the full sample.

In addition, to ensure that the news articles published by connected and unconnected newspapers are about the same underlying corporate event or news, we further require that the news articles by the matched, unconnected newspapers be published within a 1-week [-3, 3] window as the article in the connected newspaper. This additional restriction results in a smaller subsample of 55,443 news articles.

In our baseline analysis, we estimate the following regression model in the samples created above.

$$Tone_{i,j,k,t} = \alpha + \beta_1 Affiliated_{i,j,t} + \beta_2 Z_{i,t} + \beta_3 other\ controls + \varepsilon_{i,j,k,t} \quad (1)$$

$Tone_{i,j,k,t}$ denotes the tone of news article k on firm i published by newspaper j on date t . $Affiliated_{i,j,t}$ equals to 1 when newspaper j is connected with firm i in that month, and 0 otherwise. Z represents a vector of firm i 's characteristics. We also control for firm, newspaper, and year fixed effects. Following You, Zhang, and Zhang (2018), we adjust standard errors for heteroscedasticity and clustered by firm and article date. For identification, we perform a difference-in-differences (DiD) analysis. We also augment the model in equation (1) by controlling for newspaper-firm pair fixed effects, which has the advantage of isolating the change in the connection status within each firm and newspaper pair over time.

4.3. Descriptive statistics

Panel A of Table 2 reports the yearly distribution of news articles in the full sample and the subsample, both in total and by affiliated vs. unaffiliated newspapers separately. News articles

published by newspapers on connected firms account for 6.7% of the full sample and 11.4% of the subsample. The percentage of news articles by connected newspapers generally has been rising over our sample period, reaching its peak in 2014.

We present summary statistics of main variables for the full sample in Panel B of Table 2. *Tone* has a mean of 0.331 and a median of 0.444, indicating that the news articles in our sample are relatively positive on average. The mean of *Affiliated* is 0.067, consistent with newspapers and firms being connected in 6.7% of articles in the full sample. Unreported t-test results show that the mean value of *Tone* when a newspaper and a firm are connected is significantly higher than when a newspaper and a firm are unconnected. The mean value of *SOE* is 0.629, indicating that 62.9% of the news reports in the sample are related to state-owned listed companies. In the full sample, 21.2% of articles are written by local newspapers and 26.9% by those with advertising business relationships with the firms in that year. The summary statistics of main variables for the subsample are similar and thus not reported for brevity.

4.4. Empirical results

4.4.1. Baseline analysis of the relation between firm-newspaper connection and reporting tone

We estimate equation (1) and present the results in Table 3. In column (1), which is based on the full sample, we find that the coefficient of our key explanatory variable, *Affiliated*, is significantly positive with a *p*-value of less than 1%. This result suggests that newspapers exhibit significantly more positive tone in coverage of firms with which they are connected through common business group affiliation. Relative to the mean value of 0.333 for *Tone* in the full sample, the coefficient of *Affiliated* implies that all else being equal, the tone of news articles on a firm published by connected newspapers is about 14.4% more positive than the tone of articles on the same firm but published by unconnected newspapers. To ensure that the presence of control variables does not create multicollinearity that drives our results, in an unreported model, we only include *Affiliated* and the firm, newspaper and year fixed effects, and find that the coefficient on *Affiliated* is still significantly positive.

We reestimate the regression in the subsample in which news articles on firms by connected and unconnected newspapers are matched so that they are more likely to cover the same underlying

corporate event or news. Column (2) present the results, which are very similar to those for the full sample.¹¹ As for the control variables, their coefficients all have the expected signs and are consistent with prior studies (You, Zhang, and Zhang, 2018; Piotroski, Wong, and Zhang, 2017). For example, the tone of news articles is more positive for firms with better accounting and stock market performance, larger size, lower financial leverage, lower market to book, less stock price volatility, and more analysts following, and less positive for SOEs.¹²

4.4.2. Identification

4.4.2.1. A difference-in-differences (DiD) approach

In this section, we employ a difference-in-differences methodology that exploits changes in firm-newspaper connection during our sample period. For the DiD test, we require that the connected newspapers and their matched unconnected counterparts have published articles on the firm both before and after the formation of the newspaper-firm connection during our sample period.¹³ This requirement leaves us with a much smaller sample. Nevertheless, we continue to find that the coefficient on *Affiliated* is significantly positive (see column (1) of Table 4).

We also perform a test to assess the validity of the parallel trend assumption underlying the DiD approach. We replace *Affiliated* with a series of indicator variables to track the tone of newspaper reporting from before to after the formation of the newspaper-firm connection. Specifically, we define *Affiliated*₀ as the year when the firm-newspaper connection is initiated. We then add three variables, *Affiliated*₋₁, *Affiliated*₋₂, and *Affiliated*_{≤-3}, to represent one year, two years, and more than two years prior to the connection formation and another three variables, *Affiliated*₊₁, *Affiliated*₊₂ and *Affiliated*_{≥+3}, for one year, two years, and more than two years after the connection formation. We estimate equation (1) with these time-trend dummies and report the results in column (2) of Table 4. We find that the

¹¹ For robustness, we take the arithmetic mean of *Tone* of the news articles about the same firm published by the same newspaper each day (or month), cluster standard errors by firm (or month), or control for the month fixed effects. Our results continue to hold.

¹² Some firms' status changes from SOE to non-SOE or vice versa during our sample period. Therefore, firm fixed effects do not entirely subsume the SOE dummy.

¹³ If the affiliated business group exits its investment in the listed company at some point after the initial formation of the newspaper-firm connection, we delete the observations after that point.

coefficients on $Affiliated_{\leq-3}$, $Affiliated_{-2}$, $Affiliated_{-1}$, and $Affiliated_0$ are statistically insignificant, while the coefficients on $Affiliated_{+1}$, $Affiliated_{+2}$, and $Affiliated_{\geq+3}$ are significantly positive.¹⁴ These results support the parallel trend assumption. They also indicate that the more positive tone in a newspaper's reporting on a connected firm occurs only in years *after* the firm-newspaper connection is initiated.

4.4.2.2. Controlling for newspaper-firm pair fixed effects

To the extent that the matching between connected and unconnected newspapers is imperfect, the results based on the matched samples in our preceding analyses could be driven by differences between the two types of newspapers that are unaccounted for in our matching process. To address this concern, we focus on variations within the same newspaper-firm pair over time and examine the change, if any, in the same newspaper's reporting on the same firm from before to after the newspaper-firm pair become connected. Toward that end, we augment equation (1) by controlling for newspaper-firm pair fixed effects in lieu of the separate firm and newspaper fixed effects. This model specification ensures that our results can only be driven by the time-series changes in the connected status within each firm and newspaper pair rather than by any differences between connected and unconnected newspapers.

Table 5 presents the regression results (see columns (1) and (4)). We find that even with the more stringent pair fixed-effects controls, we continue to find that the coefficient on $Affiliated$ is positive and statistically significant. This result bolsters our confidence in a causal interpretation and suggests that a newspaper becomes more positive in its coverage of a firm after the firm and the newspaper become connected through common business group affiliation, compared to the same newspaper's reporting on the same firm before the connection is formed.

We further refine the pair fixed-effects regressions by taking into account the relative timing of the affiliated business group's investment in the newspaper's business subsidiary and in the firm. This consideration is important because if the business group's affiliation with the newspaper precedes its

¹⁴ The reason for the insignificant coefficient on $Affiliated_0$ could be that the formation of a newspaper-firm connection typically happens somewhere in the middle of a year rather than at the beginning of a year, and it may take some time for the influence of the affiliated business group to manifest in the newspaper's reporting.

investment in the firm, one alternative explanation for our results could be that the business group's investment in the firm is driven by its positive private information about the firm, which is reflected in the affiliated newspaper's subsequent reporting on the firm. To rule out this possibility, we additionally require that for each connected newspaper-firm pair, the business group's investment in the firm precedes the onset of its affiliation with the newspaper. This restriction reduces our sample size by about half. We re-estimate equation (1) with newspaper-firm pair fixed effects in this smaller subsample. Our results continue to hold (see columns (2) and (5) of Table 5).

Even though the above test requires that the business group's initial investment in the firm precedes its affiliation with the newspaper, it remains possible that the business group obtains additional positive information about the firm's future and make follow-up investments in the firm after the formation of firm-newspaper connection. The positive information is then obtained by the connected newspaper and manifests in its reporting tone. To address this concern, we impose the following restriction that the business group's percentage ownership in the publicly traded firm remains roughly constant from the month immediately before the business group's affiliation with the newspaper to the end of our sample period. We compute the change of ownership as follows:

$Change = \max [\text{absolute value (the percentage ownership in each month after the business group's affiliation with the newspaper minus the percentage ownership in the month immediately prior to the affiliation)}]$

We require that *Change* is equal to or less than 0.01 and reestimate equation (1) with pair fixed effects. The results in column (3) and (6) of Table 5 show that the coefficient on *Affiliated* continues to be positive and statistically significant. Overall, the evidence from the pair fixed-effects specifications presented in this section lends strong support to the *biased media hypothesis*.

4.4.3. The relation between news article tone and firm stock returns

While consistent with the *biased media hypothesis*, the more optimistic reporting tone of connected newspapers can also be explained by the *informed media hypothesis*. For example, the connected newspapers may be able to obtain more information about the firm that happens to be positive, or

corporate executives may be more willing to share positive information with journalists of connected newspapers.

We aim to differentiate between these two hypotheses by examining the relation between the tone of news articles and firm stock returns. To the extent that on average, stock returns capture information about firm fundamentals in an unbiased fashion, the *informed media hypothesis* would predict a stronger association between the reporting tone of connected newspapers and firm stock returns, whereas the *biased media hypothesis* would have the opposite prediction. To test these competing predictions, we estimate the following regression model.

$$CAR_{i,t} = \alpha + \beta_1 Affiliated_{i,j,t} + \beta_2 Tone_{i,j,k,t} + \beta_3 Tone_{i,j,t} \times Affiliated_{i,j,t} + \beta_4 Z_{i,t} + \beta_5 Other\ controls + \varepsilon_{i,j,t} \quad (2)$$

The dependent variable, $CAR_{i,t}$, is the cumulative abnormal returns (CAR) over either a 2-day or 3-day event window, $[0,1]$ or $[-1,1]$, with day 0 being the publication date t of a news article on firm i . CAR is computed as the firm's cumulative daily stock returns minus the value-weighted market returns. As before, $Tone_{i,j,k,t}$ denotes the tone of news article k on firm i published by newspaper j on date t , whereas $Affiliated_{i,j,t}$ denotes whether newspaper j is connected with firm i in the article's publication month. Our key independent variable is the interaction term between $Tone$ and $Affiliated$. The *informed media hypothesis* predicts a positive coefficient on $Tone \times Affiliated$, while the *biased media hypothesis* predicts a negative coefficient. Z represents a vector of individual characteristics of firm i , and other controls include the firm, newspaper, and year fixed effects. We cluster the standard errors by firm and date.

Table 6 reports the regression results for the full sample and the subsample. In columns (1) and (2), which are based on the full sample but use different event windows, we find that the coefficient on $Tone$ is significantly positive, suggesting that on average the tone of news articles is consistent with the information captured by stock returns. More importantly, we find that the interaction term, $Tone \times Affiliated$, has a significantly negative coefficient, suggesting that there is a weaker relation between the tone of newspaper reporting on connected firms and stock returns. Results are similar when we estimate the regression in the subsample (see columns (3) and (4)). Overall, our findings are

consistent with the *biased media hypothesis* in that the tone of the connected newspaper's reporting is less reflective of the information impounded into stock prices.

4.4.4. Cross-sectional variations in the effect of newspaper-firm connections

In this section, we investigate whether the relation between newspaper-firm connections and media reporting bias displays any cross-sectional variations that can provide further support for the *biased media hypothesis*. We focus on the characteristics of business groups, firms, and newspapers, respectively, in the next three subsections.

4.4.4.1. The business group's incentive and power to exert influence

We conjecture that the relationship between newspaper-firm connections and media reporting tone depends on the business group's incentive and power to exert influence over the affiliated newspaper. Because firms in which the business group has a larger investment tend to be more vital to the business group's core interests, they are likely to have stronger incentives to influence how affiliated newspapers cover these firms. To proxy for the business group's incentives to exert influence, we follow Fich, Harford, and Tran (2015) and construct a variable *Stake* by multiplying the number of shares held by the business group in a firm with the closing price of the firm at the end of the prior month. We then construct a variable *Affiliated_SH* that takes the value of 1 if a newspaper shares the same business group affiliation as a firm and the value of *Stake* is higher than the sample median. Similarly, we construct a variable *Affiliated_SL* if a newspaper shares the same business group affiliation as a firm but the value of *Stake* is lower than the sample median.

We re-estimate equation (1) in both the full sample and the subsample while replacing *Affiliated* with these two new variables. Columns (1) and (3) of Table 7 report the results. We find that the coefficients on *Affiliated_SH* are 0.077 and 0.054, both significantly positive at the 1% level. In contrast, both the magnitude and the statistical significance of the coefficient on *Affiliated_SL* are much lower (coefficient: 0.015, insignificant in either column (1) or column (3)). We perform F-tests for coefficient differences and find that the coefficient on *Affiliated_SH* is significantly greater than that on

Affiliated_SL both in the full sample and subsample. These results are consistent with our conjecture that the optimistic bias of connected newspapers' reporting is more pronounced when the affiliated business groups have stronger financial incentives to influence the newspapers' reporting.

We next examine whether the connected newspaper's optimistic bias is related to how much power the affiliated business group has to influence the newspaper. We measure the business group's power (*Power*) by its percentage ownership in the newspaper's business subsidiary. The greater the percentage ownership, the more power the business group has to exert influence. We construct a variable, *Affiliated_PH*, that is equal to one if a newspaper is connected with a firm through common business group affiliation and the business group's percentage ownership in the newspaper's media company is higher than the sample median. Similarly, we construct another variable, *Affiliated_PL*, that is equal to one if a newspaper is connected with a firm through common business group affiliation and the business group's percentage ownership in the newspaper's media company is lower than the sample median.

We replace *Affiliated* with these two new variables and reestimate equation (1). Columns (2) and (4) of Table 7 report the results for the full sample and the subsample, respectively. We find that in both columns, the coefficient on *Affiliated_PH* is significantly positive while that on *Affiliated_PL* is insignificant. In addition, based on F-tests, the coefficient on *Affiliated_PH* is significantly larger than that on *Affiliated_PL* both in the full sample and subsample. These findings suggest that the connected newspaper's reporting bias on related firms is stronger when the business group has more power to influence the reporting of affiliated newspapers.

4.4.4.2. Which firms benefit more from positive reporting bias?

We further explore whether the characteristics of firms are related to the reporting bias of connected newspapers. Our conjecture is that everything else being equal, the business group is more likely to try to influence the reporting behavior of the affiliated newspaper when the firm is in greater need for positive media coverage, e.g., when firms experience poor performance or when firms have higher leverage, which may require refinancing. To test this prediction, we create two indicator variables, *LowROA* and *HighLev*. The former is equal to one if a firm's ROA is lower than the sample median,

and zero otherwise. The latter is equal to one if a firm's leverage is higher than the sample median, and zero otherwise. We then interact these two variables with *Affiliated* and include the two interaction terms as the key explanatory variables in equation (1). We estimate the augmented model of news article tone and report the results in Table 8. We find that in both the full sample and the subsample, the coefficients on *Affiliated*×*LowROA* and *Affiliated*×*HighLev* are both significantly positive. These results are consistent with our prediction and indicate that the connected newspaper's reporting bias is more pronounced for poorly performing firm and more levered firms, i.e., firms that can potentially benefit more from positive media coverage.

4.4.4.3. Characteristics of newspapers

Even though all Chinese newspapers are, by requirement, state-owned (Djankov, McIlesh, Nenova, and Shleifer, 2003; Qin, Strömberg, and Wu, 2018), there are non-official newspapers as well as official newspapers (Piotroski, Wong, and Zhang, 2017). Compared with official newspapers, nonofficial newspapers are unable to obtain financial support from the government (Piotroski, Wong, and Zhang, 2017), leaving them more dependent on outside capital. Therefore, we expect affiliated business groups to be able to exert more influence over non-official newspapers' reporting. To test this conjecture, we create a dummy variable *Non-Official* that is equal to one for non-official newspapers and interact it with *Affiliated*. We re-estimate the article tone regression (equation (1)) by including the interaction term as an additional explanatory variable. Results in columns (1) and (3) of Table 9 show that the interaction term has a significantly positive coefficient, indicating that non-official newspapers exhibit more positive bias in covering connected firms than official newspapers.

Newspapers in our sample are also different in terms of their focus, with some of them being general-interests newspapers and others being financial newspapers. To the extent that financial newspapers have a greater impact on investor perception and stock prices of firms, business groups are likely to view financial newspapers as a more valuable tool to shape outside opinion about affiliated firms. Therefore, we expect them to try to influence these newspapers more. To test this conjecture, we create an interaction term between *Affiliated* and an indicator variable (*Financial*) for whether a

newspaper is a financial newspaper. We re-estimate equation (1) while adding the interaction terms as a new explanatory variable and report the results in columns (2) and (4) of Table 9. We find that the coefficient on *Affiliated* is insignificant while that on the interaction term, *Affiliated*×*Financial*, is significantly positive, suggesting that financial newspapers are more likely to produce optimistic news on connected firms.

4.4.5. News articles around corporate earnings announcements

In this section, we focus on newspapers' coverage of firms around a specific and important corporate event, earnings announcements, which tend to generate a lot of media attention. The business groups, therefore, have strong incentives to influence the newspaper's reporting and interpretation of the financial performance of their affiliated firms. In addition, news articles published immediately following the earnings announcements usually deal with the same underlying topic while reflecting the different preferences and incentives of different newspapers (Piotroski, Wong, and Zhang, 2017), thus rendering more power to our tests.

Our conjecture is that under the influence of affiliated business groups, newspapers tend to provide more positive coverage on connected firms' earnings news. This tendency can manifest in two possible ways: when the earnings news is good, connected newspapers may paint an even rosier picture about these firms' performance; when the earnings news is bad, they may put a positive spin on the disappointing performance.

We measure the nature of the earnings news by whether the current period's earnings exceed or fall below the earnings during the same period a year ago. In China, firms and investors focus on the year-on-year comparison rather than on whether reported earnings exceed analyst forecasts (Lu, Shin, and Zhang, 2019). We only retain news reports published during a 7-day event window [1, 7] with day 0 being the earnings announcement date. We study the tone of these articles using the following model specification.

$$Tone_{i,j,k,t} = \alpha + \beta_1 Affiliated_{i,j,t} + \beta_2 UE_{i,j,t} + \beta_3 UE_{i,j,t} \times Affiliated_{i,j,t} + \beta_4 Z_{i,t} + \beta_5 Other\ controls + \varepsilon_{i,j,t} \quad (3)$$

$Tone_{i,j,k,t}$ denotes the tone of news article k on firm i published by newspaper j on date t . $Affiliated_{i,j,t}$ is an indicator of the ownership connection between newspaper j and firm i . UE is an indicator variable that is equal to one if the quarterly EPS is larger than or equal to the EPS of the same quarter in the prior year, and 0 otherwise. We also construct an interaction term between $Affiliated$ and UE to test whether, compared to unconnected newspapers, connected newspapers are more likely to report positive news when the affiliated firms go through tough times. Z represents the individual characteristics of firm i , and other controls include the firm, newspaper and year fixed effects. The standard errors are clustered at the firm and date level. We only keep the observations in which a firm is covered by both a connected newspaper and a matched unconnected newspaper during the one-week window.

Table 10 presents the regression results. In column (1), the coefficient on UE is significantly positive, suggesting that on average the newspaper's reporting tone is consistent with firm earnings news. However, in column (2), the coefficient on $Affiliated \times UE$ is significantly negative, suggesting that the tone of reporting by connected newspapers is less reflective of the nature of the underlying earnings news. To examine whether there is any differential response by connected newspapers to positive vs. negative earnings news, we create two subsamples based on whether the earnings news is positive or negative and regress $Tone$ against $Affiliated$ in the two subsamples. Columns (3) and (4) report the results. We find that the coefficient of $Affiliated$ is insignificant in the subsample of positive earnings news (when $UE \geq 0$), while its coefficient is positive and significant in the subsample of negative earnings news (when $UE < 0$). These findings suggest that connected newspapers are more likely to put a positive spin on affiliated firms' negative earnings news, which echoes our earlier evidence that the optimistic bias of connected newspapers is stronger when firms can benefit more from positive media coverage.

4.4.6. The amount and type of news coverage by newspapers

The influence of common business group affiliation can also manifest in the amount and type of coverage newspapers pursue or avoid. For example, do newspapers report more frequently on connected

firms, to the extent that more media coverage can attract more investor attention and create more demand for these firms' shares, thereby increasing their stock liquidity and reducing their costs of capital? In addition, are newspapers more likely to actively pursue positive news coverage about connected firms, or shy away from negative news coverage about them, or both? To shed some light on these questions, we construct three variables, *Coverage*, *Coverage_Pos*, and *Coverage_Neg*, that are equal to log (1 + the number of all, positive, or negative news articles about a firm published by a newspaper in a given month). A positive news report is defined as an article with a positive *Tone*, while a negative news report is defined as one with a negative *Tone*. We estimate regressions of *Coverage*, *Coverage_Pos*, and *Coverage_Neg* against *Affiliated*. The detailed specification is given in equation (4) below.

$$Coverage\ (Coverage_Pos\ or\ Coverage_Neg)_{i,j,t} = \alpha + \beta_1 Affiliated_{i,j,t} + \beta_2 Z_{i,t} + \beta_3 other\ controls + \varepsilon_{i,j,t} \quad (4)$$

The dependent variable is the frequency at which newspaper *j* releases any (positive, negative) news about firm *i* in a given month *t*. The key independent variable (*Affiliated*_{*i,j,t*}) denotes whether newspaper *j* is connected with firm *i* in that month. *Z* represents the individual characteristics of firm *i*. Other controls include the firm, newspaper, and year fixed effects. We cluster the standard errors at the firm level.

If newspapers are more likely to provide any or positive coverage about connected firms, we would expect β_1 to be positive when the dependent variable is *Coverage* or *Coverage_Pos*. If newspapers are more likely to avoid negative coverage about connected firms, we would expect β_1 to be negative when the dependent variable is *Coverage_Neg*. Table 11 presents the regression results. In column (1), where the dependent variable is *Coverage*, we find that *Affiliated* has a significantly positive coefficient, indicating that newspapers tend to provide more coverage on connected firms. In column (2), where *Coverage_Pos* is the dependent variable, we find that the coefficient on *Affiliated* is significantly positive, suggesting that newspapers are more likely to report positive news about their connected firms. In column (3), where the dependent variable is *Coverage_Neg*, the coefficient on *Affiliated* is

insignificant. Taken together, these results suggest that compared to non-connected newspapers, connected newspaper show a greater tendency to report positive news on affiliated firms.¹⁵

4.4.7. The effect of common business group affiliation on the role of media

So far, we have provided evidence that newspaper-firm connections through common business group affiliation lead to an optimistic bias in newspaper reporting. A natural follow-up question is how such connections affect the role of media as information intermediary. We investigate this issue by examining the relation between the tone of newspaper reporting and future firm performance, CEO turnovers and regulatory sanctions. Prior research shows that negative words in firm-specific news stories can predict future earnings and return (Tetlock, Saar-Tsechansky, and Macskassy, 2008). Our objective is to examine whether the tone of news articles by connected and unconnected newspapers exhibit differential predictive power with respect to future firm performance and major adverse events such as forced CEO turnovers and regulatory sanctions.

Following You, Zhang, and Zhang (2018), we require that a firm receive coverage from both connected and unconnected newspapers in a given year. We construct two new variables, *Tone_Affiliated* and *Tone_NonAffiliated*, that are the mean values of the tone of articles published by each type of newspapers in the year. We then estimate the following regression.

$$Loss_{i,t+1} \text{ (or } Forceturnover_{i,t+1}, Punishment_{i,t+1}) = \alpha + \beta_1 Tone_Affiliated_{i,t} + \beta_2 Tone_Nonaffiliated_{i,t} + \beta_3 Z_{i,t} + \beta_4 Other\ controls_{i,t} + \varepsilon_{i,t} \quad (5)$$

The dependent variables are indicator variables for whether a firm reports negative earnings (*Loss*), experiences a forced CEO turnover (*Forceturnover*), and is penalized by regulators for securities law violations (*Punishment*) in the coming year.¹⁶ The set of firm characteristics controls is the same as before. We also include industry and year fixed effects and cluster the standard errors at the firm level.

¹⁵ Our results are robust to estimating the regressions using firm-newspaper-year observations rather than firm-newspaper-month observations.

¹⁶ Specifically, *Loss* is equal to one if a firm reports negative earnings in a year or zero otherwise. We define forced turnover as the termination of employment for reasons other than ill health, consistent with the definition in prior research (e.g., Parrino, 1997). *Punishment* is equal to one if a firm is found to have committed securities law violations such as financial misreporting, tunneling, and insider trading, and sanctioned by regulatory agencies.

The information intermediary role of newspapers predicts that the tone of newspaper reporting is negatively related to these adverse future corporate events. If common business group affiliation leads to biased reporting by connected newspapers and thus weakens their information intermediary role, we expect β_1 to be of smaller magnitude than β_2 . We estimate the regressions as a linear probability model to accommodate the large number of fixed effects.

Table 12 reports the results. In all three columns, we find that the coefficients on *Tone_Affiliated* are insignificant, but the coefficients on *Tone_NonAffiliated* are significantly negative, indicating that only the reporting by unconnected newspapers conveys information about future firm performance and adverse events. Overall, the evidence in this section supports the conjecture that the common business group affiliation undermines the information intermediary role of connected newspapers.

4.4.8. The effect of common business group affiliation on stock price synchronicity

Given the media's important function of gathering and disseminating information about firms, a direct implication of the weakened information intermediary role of media is less firm-specific information impounded into stock prices, resulting in a deterioration of firms' information environment. To test this conjecture, we follow the prior literature, e.g., Morck, Yeung, and Yu (2000), Jin and Myers (2006), and Gul, Kim, and Qiu (2010), and measure the information content in stock prices by stock price synchronicity. The idea is that the more synchronously a firm's stock price moves with the overall market and industry, the less firm-specific information there is in the firm's stock price. We examine how firm-media connections through common business group affiliation affect firms' stock price synchronicity by estimating the regression below.

$$SYCH_{it} = \alpha + \beta_1 Affiliated_Any_{i,t} + \beta_2 Z_{i,t} + \beta_3 Other\ controls_{i,t} + \varepsilon_{i,t} \quad (6)$$

SYCH is a firm's stock price synchronicity in each year. *Affiliated_Any* is equal to one if a firm is connected with at least one newspaper due to common business group affiliation in a given year, and zero otherwise. We include the same set of controls as in equation (1) as well as firm and year fixed effects. The standard errors are clustered at the firm level. Considering the potential systematic difference between connected and unconnected firms, we implement a propensity score matching

procedure to enhance the sample comparability. Specifically, we estimate the propensity score from a probit regression where the dependent variable is whether a firm is connected with any newspaper and the explanatory variables include all the firm characteristics in equation (1) as well as year and industry fixed effects. We conduct the matching procedure at the firm-year level using only the information from the year when any firm-newspaper connection is initially established. We match each connected firm to a control firm with the closest propensity score but never connected with any newspaper over our sample period. Once a matching firm is identified, this firm stays in our sample for the entire sample period.

To construct the synchronicity measure, we first estimate the following regression of a firm's daily stock returns against contemporaneous and prior-day market returns and industry returns for each firm and year.

$$RET_{it} = \alpha + \beta_1 MKTRET_t + \beta_2 MKTRET_{t-1} + \beta_3 INDRET_t + \beta_4 INDRET_{t-1} + \varepsilon_t \quad (7)$$

RET denotes the daily return on a firm's A-share traded on either the Shanghai or Shenzhen exchange; and $MKTRET$ and $INDRET$ denote the daily value-weighted A-share market return and industry return, respectively. The A-share market return is based on the composite (value-weighted) A-share index, which includes all A-shares traded on the Shanghai and Shenzhen exchanges. The industry return is the value-weighted daily returns of all the other firms in the focal firm's industry. Industries are defined based on the two-digit industry codes (e.g. A01, B21, F52) from the China Securities Regulatory Commission (CSRC). We remove firm-years during which firm-media connections are established.

The R^2 from the regression captures the extent to which market and industry returns can explain a firm's stock returns in each year. The higher the R^2 , the lower the firm-specific information content in the firm's stock price. To circumvent the bounded nature of R^2 between 0 and 1, we define $SYNCH$ as the logistic transformation of R^2 :

$$SYNCH_{i,t} = \log\left(\frac{R_{i,t}^2}{1-R_{i,t}^2}\right) \quad (8)$$

Table 13 presents the results of the regression of stock price synchronicity against firm-newspaper connection (equation (6)). We find that the coefficient on *Affiliated_Any* is significantly positive. This

evidence is consistent with our conjecture and suggests that firm-media connections through common business group affiliation are associated with higher stock price synchronicity and lower information contents in the connected firm's stock price. The coefficients on the control variables are largely in line with those documented in the prior literature (Morck, Yeung, and Yu, 2000, Jin and Myers, 2006, and Gul, Kim, and Qiu, 2010).

4.4.9. Robustness tests

4.4.9.1. Matching by firms rather than newspapers

As an alternative to newspaper matching, we also try to construct our sample of news articles by firm matching. Specifically, each firm connected with a newspaper through common business group affiliation is matched with another firm with the closest propensity score but never connected with the same newspaper over the sample period. The explanatory variables used to estimate the propensity score include all the firm characteristics in equation (1) as well as the year and industry fixed effects. We also require that both the connected firm and its matching firm are covered by the same newspaper during the sample period. We conduct the matching using only the information from the year when the firm-newspaper connection is initially established. Once a matching firm has been identified, this firm stays in our sample for the entire sample period. Alternatively, we adopt a simpler method of sample matching, where each connected firm is matched with another firm with the closest firm size or *ROA* in the same industry but never connected with the same newspaper during the sample period. We re-estimate equation (1) using the samples created from these alternative matching procedures. We continue to find (unreported) significantly positive coefficients on *Affiliated*, affirming the robustness of our earlier findings.

4.4.9.2. Alternative measures of news article tone

In untabulated analyses, we find that our results are robust to the following alternative measures of news article tone. Specifically, based on the importance of the location of each sentence, we construct the variable *Tone_weighted*, computed as: (weighted number of positive sentences - weighted number

of negative sentences) / (weighted number of positive sentences + weighted number of negative sentences + 1). Specifically, the weighted number of positive (negative) sentences is defined as: total number of positive (negative) sentences + number of positive (negative) sentences at the beginning or end of each paragraph + number of positive (negative) sentences in the first or last paragraph. Based on the above weighted algorithm, sentences at the beginning or end of the first or last paragraph are assigned a weight of 3, the other sentences in the first or last paragraph and sentences at the beginning or the end of the other paragraphs are assigned a weight of 2, and the remaining sentences are assigned a weight of 1. We also construct *Tone_pos* (*Tone_neg*), which is defined as the proportion of positive (negative) sentences in all the sentences in a given article.

5. Conclusion

Recent years have witnessed an increasing trend of traditional print media organizations being acquired by individuals or corporations from outside the media industry that are also affiliated with other business entities. We examine the implications of these transactions for media reporting objectivity, its role as information intermediary, and firm information environment. We manually construct a dataset in which we identify connections between newspapers and publicly listed firms through common business group affiliation. We find that connected newspapers are more positive in their coverage of affiliated firms, and the tone of connected newspapers' reporting is less in line with the stock returns that firms experience. These results are consistent with the *biased media hypothesis* that argues that common business group affiliation undermines a newspaper's objectivity and leads to an optimistic bias in its reporting. Further analysis shows that the connected newspaper's optimistic bias is more pronounced when the affiliated business group has stronger incentive and more power to exert influence over the newspaper's reporting, and when the affiliated firm can benefit more from positive media coverage, such as when the firm is highly levered, experiences poor performance, or announces disappointing earnings news. We also find evidence that connected newspapers differ from unconnected newspapers in the type of news they choose to cover. Specifically, the former exhibit a greater proclivity to provide positive new coverage of affiliated firms. Finally, our analysis indicates

that connected newspaper's reporting has weak predictive power regarding future firm performance and adverse corporate events and that firms with connected newspapers display higher stock return synchronicity, suggesting that common business group affiliations undermines the connected newspapers' information intermediary role and firms' information environments.

Our study represents the first investigation of the impact of media-firm connections through common business group affiliation. As such, we contribute to the literature on the determinants and consequences of media bias. Moreover, in light of the recent development that traditional print media is acquired by individuals or corporations from outside the media industry, our research offers timely policy implications regarding the impact of potential proliferation of these transactions and the importance of transparency related to the owners of media and businesses affiliated with them.

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Figure 1. The relationship between newspapers, firms, and business groups

The figure shows the relationships between newspaper groups (their editorial departments and business subsidiaries), outside business groups, and publicly listed firms.

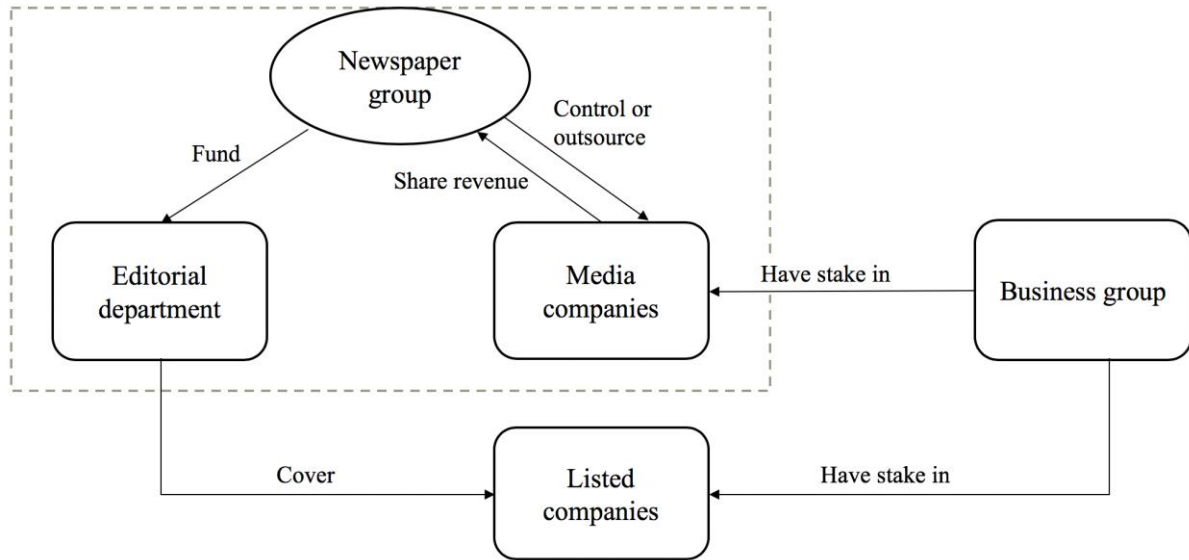


Table 1. The distribution of sample firms

This table presents the sample distribution of firms by year and industry.

Panel A: By year

Year	(1) No. of firms affiliated with business groups	(2) Equity ownership by business groups (mean)	(3) No. of firms covered by connected newspapers
2005	81	0.191	17
2006	93	0.177	13
2007	101	0.170	14
2008	97	0.158	22
2009	106	0.160	37
2010	141	0.156	46
2011	140	0.158	85
2012	139	0.150	77
2013	150	0.147	70
2014	168	0.150	92
2015	210	0.141	105
2016	223	0.135	98

Panel B: By industry

Industry	(1) No. of firms affiliated with business groups	(2) Equity ownership by business groups (mean)	(3) No. of firms covered by connected newspapers
Agriculture	5	0.016	1
Mining	12	0.079	5
Manufacturing	265	0.174	132
Utilities	28	0.174	16
Construction	14	0.042	7
Wholesale and retail trade	23	0.143	8
Transportation	15	0.033	6
Information technology	31	0.161	17
Finance	19	0.097	16
Real estate	25	0.164	13
Social services	20	0.085	11
Communication	9	0.109	7
Comprehensive	8	0.183	5

Table 2. The yearly distribution and summary statistics of sample news articles

This table presents the yearly distribution of our news article samples and the summary statistics of main variables in Panel A and Panel B respectively. Appendix B contains all variable definitions.

Panel A: Yearly distribution of our news article samples

Year	Full sample				Subsample			
	Total	Affiliated	Unaffiliated	Affiliated%	Total	Affiliated	Unaffiliated	Affiliated%
2005	8,021	156	7,865	0.019	3,059	97	2,962	0.032
2006	6,836	59	6,777	0.009	1,637	23	1,614	0.014
2007	6,639	45	6,594	0.007	1,783	34	1,749	0.019
2008	12,579	143	12,436	0.011	6,509	106	6,403	0.016
2009	9,911	311	9,600	0.031	3,379	239	3,140	0.071
2010	8,682	309	8,373	0.036	3,589	251	3,338	0.070
2011	10,419	715	9,704	0.069	5,943	571	5,372	0.096
2012	11,207	1,057	10,150	0.094	6,834	878	5,956	0.128
2013	10,311	1,310	9,001	0.127	6,221	1,117	5,104	0.180
2014	7,487	1,230	6,257	0.164	3,875	1,023	2,852	0.264
2015	6,679	947	5,732	0.142	3,078	708	2,370	0.230
2016	5,760	768	4,992	0.133	2,578	503	2,075	0.195
Total	104,531	7,050	97,481	0.067	48,485	5,550	42,935	0.114

Panel B: Summary statistics

	Full sample (n=104,531)			Subsample (n=48,485)		
	mean	median	St.dev	mean	median	St.dev
<i>Tone</i>	0.331	0.444	0.537	0.319	0.417	0.531
<i>Affiliated</i>	0.067	0.000	0.251	0.114	0.000	0.318
<i>ROA</i>	0.027	0.016	0.057	0.026	0.014	0.050
<i>Return</i>	0.325	0.035	0.931	0.238	-0.013	0.886
<i>Size</i>	24.860	23.990	3.217	26.250	25.520	3.192
<i>Leverage</i>	0.679	0.700	0.231	0.755	0.803	0.210
<i>MB</i>	3.489	2.192	3.631	3.331	1.788	3.875
<i>TV</i>	3.717	2.643	3.858	2.755	1.371	3.656
<i>STD</i>	0.029	0.028	0.011	0.026	0.025	0.011
<i>Analyst</i>	2.528	2.944	1.247	3.001	3.332	0.951
<i>SOE</i>	0.629	1.000	0.483	0.594	1.000	0.491
<i>Top1</i>	0.351	0.297	0.153	0.356	0.297	0.150
<i>Local</i>	0.212	0.000	0.408	0.209	0.000	0.407
<i>Advertising</i>	0.269	0.000	0.443	0.333	0.000	0.471

Table 3. The effect of common business group affiliation on newspaper reporting tone

This table presents regression results of the news article tone model as specified in equation (1). The dependent variable is the tone of a news article (*Tone*). The key independent variable is an indicator variable for whether a firm and a newspaper is connected through common business group affiliation (*Affiliated*). See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	Full sample	Subsample
	(1) <i>Tone</i>	(2) <i>Tone</i>
<i>Affiliated</i>	0.048*** (5.772)	0.035*** (3.512)
<i>ROA</i>	0.305*** (5.142)	0.089 (0.734)
<i>Return</i>	0.011*** (2.691)	-0.009 (-1.193)
<i>Size</i>	0.057*** (8.605)	0.024** (2.002)
<i>Leverage</i>	-0.237*** (-8.418)	-0.399*** (-6.807)
<i>MB</i>	-0.002** (-2.260)	-0.001 (-0.672)
<i>TV</i>	-0.000 (-0.139)	0.000 (0.066)
<i>STD</i>	-2.320*** (-4.090)	-2.393** (-2.245)
<i>Analyst</i>	0.046*** (10.686)	0.044*** (4.880)
<i>SOE</i>	-0.058*** (-5.861)	-0.065*** (-4.114)
<i>Top1</i>	0.094** (2.180)	-0.125 (-1.446)
<i>Local</i>	0.024** (2.475)	-0.001 (-0.102)
<i>Advertising</i>	0.020*** (4.334)	0.010 (1.580)
<i>Constant</i>	-1.147*** (-7.633)	-0.248 (-0.871)
Firm FE	Yes	Yes
Media FE	Yes	Yes
Year FE	Yes	Yes
# of Observations	104,531	48,485
Adjusted R ²	0.108	0.104

Table 4. DiD research design

This table presents the results of difference-in-differences (DiD) analyses of the effect of common business group affiliation on newspaper reporting tone. To construct the sample used for this table, we require that both the connected papers and their matched unconnected newspapers have published news articles both before and after the starting point of common business group affiliation. In column (2), we test the parallel trend assumption. See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	(1) <i>Tone</i>	(2) <i>Tone</i>
<i>Affiliated</i>	0.054*** (5.402)	
<i>Affiliated</i> _{≤3}		0.003 (0.226)
<i>Affiliated</i> ₋₂		0.024 (1.222)
<i>Affiliated</i> ₋₁		0.026 (1.302)
<i>Affiliated</i> ₀		-0.000 (-0.013)
<i>Affiliated</i> ₊₁		0.093*** (5.008)
<i>Affiliated</i> ₊₂		0.140*** (7.033)
<i>Affiliated</i> _{≥+3}		0.039** (2.113)
<i>ROA</i>	0.206*** (3.460)	0.341*** (4.319)
<i>Return</i>	0.009** (2.085)	-0.008 (-1.533)
<i>Size</i>	0.055*** (8.120)	0.075*** (8.779)
<i>Leverage</i>	-0.199*** (-7.050)	-0.264*** (-6.975)
<i>MB</i>	-0.003** (-2.453)	-0.002* (-1.739)
<i>TV</i>	0.000 (0.513)	0.000 (0.013)
<i>STD</i>	-1.577*** (-2.818)	-0.412 (-0.553)
<i>Analyst</i>	0.037*** (8.449)	0.023*** (3.777)
<i>SOE</i>	-0.035*** (-3.411)	-0.068*** (-5.132)
<i>Top1</i>	0.042 (0.923)	0.041 (0.703)
<i>Local</i>	-0.007 (-0.667)	-0.039*** (-2.919)
<i>Advertising</i>	0.005 (1.133)	0.000 (0.073)
Constant	-1.237*** (-7.960)	-1.633*** (-8.210)
Firm FE	Yes	Yes
Media FE	Yes	Yes
Year FE	Yes	Yes
# of Observations	64,747	64,747
Adjusted R ²	0.104	0.104

Table 5. Controlling for firm-media paired fixed effects

This table presents regression results of the news article tone model as specified in equation (1), while controlling for newspaper-firm paired fixed effects. The dependent variable is the tone of a news article (*Tone*). The key independent variable is an indicator variable for whether a firm and a newspaper is connected through common business group affiliation (*Affiliated*). See Appendix B for the definitions of all variables. In columns (2) and (5), in addition to controlling for firm-media paired fixed effects, we require that the business group's investment in the newspaper's business subsidiary follows its investment in the publicly listed firm. In columns (3) and (6), we further require that the business group's percentage ownership in the publicly traded firm remains roughly constant from immediately before the formation of the newspaper-firm connection to the end of our sample period. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	Full sample			Subsample		
	(1) <i>Tone</i>	(2) <i>Tone</i>	(3) <i>Tone</i>	(4) <i>Tone</i>	(5) <i>Tone</i>	(6) <i>Tone</i>
<i>Affiliated</i>	0.044*** (4.041)	0.055*** (4.354)	0.053*** (3.488)	0.057*** (4.472)	0.081*** (5.652)	0.081*** (4.868)
<i>ROA</i>	0.304*** (5.014)	0.535*** (4.340)	1.043*** (6.092)	0.071 (0.572)	1.088*** (3.384)	0.784 (1.635)
<i>Return</i>	0.005 (1.198)	0.005 (0.618)	-0.002 (-0.208)	-0.015* (-1.900)	-0.012 (-0.825)	-0.013 (-0.566)
<i>Size</i>	0.046*** (6.830)	0.008 (0.681)	0.003 (0.171)	0.024** (2.026)	0.001 (0.037)	0.063 (1.479)
<i>Leverage</i>	-0.226*** (-7.826)	-0.117** (-2.186)	0.028 (0.339)	-0.445*** (-7.506)	-0.165 (-1.581)	-0.136 (-0.599)
<i>MB</i>	-0.002 (-1.420)	-0.001 (-0.396)	-0.010** (-2.285)	0.000 (0.108)	0.004 (0.993)	-0.016 (-1.607)
<i>TV</i>	-0.000 (-0.395)	-0.002 (-1.595)	-0.001 (-0.437)	-0.000 (-0.076)	-0.006** (-2.410)	-0.006 (-1.226)
<i>STD</i>	-1.777*** (-3.080)	-3.433*** (-3.376)	-4.923*** (-3.233)	-2.089* (-1.924)	-5.188*** (-2.810)	-5.311* (-1.802)
<i>Analyst</i>	0.046*** (10.264)	0.035*** (4.657)	0.062*** (4.560)	0.049*** (5.331)	-0.000 (-0.019)	-0.035 (-1.114)
<i>SOE</i>	-0.048*** (-4.751)	-0.006 (-0.347)	0.003 (0.155)	-0.059*** (-3.711)	-0.019 (-0.784)	0.003 (0.106)
<i>Top1</i>	0.086* (1.931)	-0.114 (-1.613)	0.032 (0.265)	-0.096 (-1.098)	-0.495*** (-3.673)	0.066 (0.302)
<i>Advertising</i>	0.007 (1.281)	-0.001 (-0.153)	-0.016** (-1.963)	0.002 (0.251)	-0.014 (-1.616)	-0.022** (-2.263)
<i>Constant</i>	-0.722*** (-4.744)	0.143 (0.499)	0.060 (0.118)	-0.026 (-0.089)	0.624 (1.189)	-1.197 (-1.074)
Firm-Media FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	104,531	49,157	33,437	48,485	27,578	20,755
Adjusted R ²	0.129	0.077	0.063	0.116	0.050	0.043

Table 6. Stock returns and the tone of news articles by connected and unconnected newspapers

This table examines the relation between a firm's stock returns and the tone of news articles published by newspapers connected or unconnected to the firm. The dependent variable is the firm's abnormal stock returns over either a two-day or a three-day event window, [0,1] in columns (1) and (3) and [-1,1] in columns (2) and (4), where day 0 is the news article's publication date. See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	Full sample		Subsample	
	(1) CAR [0,1]	(2) CAR [-1,1]	(3) CAR [0,1]	(4) CAR [-1,1]
<i>Affiliated</i>	0.001 (0.906)	0.001 (1.284)	-0.000 (-0.015)	-0.001 (-0.528)
<i>Tone</i>	0.004*** (11.513)	0.007*** (16.165)	0.003*** (6.109)	0.005*** (8.237)
<i>Affiliated</i> × <i>Tone</i>	-0.002** (-2.113)	-0.004*** (-3.281)	-0.002** (-2.016)	-0.003** (-2.107)
<i>ROA</i>	0.009 (1.149)	0.012 (1.199)	-0.003 (-0.206)	-0.015 (-0.720)
<i>Return</i>	0.006*** (9.578)	0.009*** (11.740)	0.005*** (4.331)	0.008*** (5.314)
<i>Size</i>	-0.001 (-1.382)	-0.002* (-1.915)	-0.004*** (-2.592)	-0.006*** (-3.517)
<i>Leverage</i>	0.001 (0.343)	0.002 (0.402)	0.002 (0.340)	-0.003 (-0.300)
<i>MB</i>	0.000 (0.009)	-0.000 (-0.430)	0.000* (1.738)	0.001* (1.726)
<i>TV</i>	-0.000 (-0.503)	0.000 (0.873)	0.001** (2.335)	0.001*** (2.808)
<i>STD</i>	0.353*** (4.627)	0.650*** (6.831)	0.014 (0.094)	0.121 (0.667)
<i>Analyst</i>	-0.000 (-0.922)	-0.001** (-2.257)	0.000 (0.413)	0.001 (0.507)
<i>SOE</i>	0.001 (0.696)	0.001 (0.659)	0.001 (0.588)	0.002 (1.299)
<i>Top1</i>	0.001 (0.247)	0.001 (0.156)	0.008 (0.743)	0.007 (0.520)
<i>Local</i>	-0.001 (-1.044)	-0.002** (-2.094)	-0.002** (-2.235)	-0.002 (-1.523)
<i>Advertising</i>	-0.000 (-0.191)	-0.001 (-0.936)	0.001* (1.695)	0.001* (1.877)
<i>Constant</i>	0.019 (1.010)	0.032 (1.426)	0.081** (2.370)	0.146*** (3.418)
Firm FE	Yes	Yes	Yes	Yes
Media FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
# of Observations	101,454	101,454	47,110	47,110
Adjusted R ²	0.030	0.057	0.064	0.095

Table 7. Cross-sectional variations: Incentives and power of affiliated business groups

The analyses presented in this table examine how the effect of common business group affiliation on newspaper reporting tone varies with the business group's incentives and power to exert influence over newspaper reporting. The dependent variable is the tone of a news article (*Tone*). We use *Stake* to measure the business group's incentives, which is defined as the market value of its ownership stake in the firm computed as the firm's closing price at the end of prior month multiplied by the number of firm shares held by the business group. We use *Power* to proxy the extent to which the business group can influence the newspaper, defined as its percentage of ownership in the newspaper group's business subsidiary. We separate *Affiliated* into two variables according to the incentive or power of the affiliated business group. *Affiliated_SH* (*Affiliated_SL*) takes the value of 1 if the newspaper is affiliated with the firm and *Stake* is greater than or equal to (smaller than) the median, and 0. *Affiliated_PH* (*Affiliated_PL*) equals to 1 if the newspaper is affiliated with the firm and *Power* is greater than or equal to (smaller than) the median, and 0 otherwise. See Appendix B for the definitions of other variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	Full sample		Subsample	
	(1) Stake <i>Tone</i>	(2) Power <i>Tone</i>	(3) Stake <i>Tone</i>	(4) Power <i>Tone</i>
<i>Affiliated_SH</i>	0.077*** (7.552)		0.054*** (4.394)	
<i>Affiliated_SL</i>	0.015 (1.373)		0.015 (1.213)	
<i>Affiliated_PH</i>		0.070*** (6.946)		0.066*** (5.519)
<i>Affiliated_PL</i>		0.008 (0.573)		-0.021 (-1.256)
<i>ROA</i>	0.308*** (5.192)	0.303*** (5.110)	0.091 (0.751)	0.076 (0.624)
<i>Return</i>	0.011*** (2.608)	0.011*** (2.746)	-0.010 (-1.228)	-0.008 (-1.019)
<i>Size</i>	0.056*** (8.530)	0.056*** (8.592)	0.024** (1.996)	0.024** (2.005)
<i>Leverage</i>	-0.238*** (-8.466)	-0.239*** (-8.487)	-0.402*** (-6.866)	-0.407*** (-6.946)
<i>MB</i>	-0.002** (-2.248)	-0.002** (-2.241)	-0.001 (-0.669)	-0.001 (-0.691)
<i>TV</i>	-0.000 (-0.087)	-0.000 (-0.168)	0.000 (0.104)	-0.000 (-0.025)
<i>STD</i>	-2.264*** (-3.989)	-2.322*** (-4.093)	-2.360** (-2.213)	-2.440** (-2.289)
<i>Analyst</i>	0.046*** (10.711)	0.047*** (10.810)	0.044*** (4.878)	0.047*** (5.171)
<i>SOE</i>	-0.059*** (-5.985)	-0.058*** (-5.827)	-0.067*** (-4.206)	-0.065*** (-4.090)
<i>Top1</i>	0.090** (2.070)	0.087** (1.999)	-0.135 (-1.566)	-0.152* (-1.757)
<i>Local</i>	0.023** (2.412)	0.024** (2.497)	-0.001 (-0.050)	0.001 (0.047)
<i>Advertising</i>	0.021*** (4.388)	0.020*** (4.290)	0.010 (1.523)	0.009 (1.486)
<i>Constant</i>	-1.134***	-1.144***	-0.238	-0.237

	(-7.541)	(-7.612)	(-0.835)	(-0.831)
Firm FE	Yes	Yes	Yes	Yes
Media FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
# of Observations	104,531	104,531	48,485	48,485
Adjusted R ²	0.108	0.108	0.105	0.105
<i>F-Test</i>				
$H_0: SH - SL = 0$	0.062*** (0.000)		0.039*** (0.010)	
$H_0: VH - VL = 0$		0.062*** (0.000)		0.087*** (0.000)

Table 8. Cross-sectional variations: Firm characteristics

The analyses presented in this table examine how the effect of common business group affiliation on newspaper reporting tone varies with firm characteristics. The dependent variable is the tone of a news article (*Tone*). We add the interaction terms, *Affiliated*×*LowROA* and *Affiliated*×*HighLev*, separately, in the regression, where *LowROA* is an indicator for firms whose ROA is lower than the sample median and *HighLev* is an indicator for firms whose leverage is higher than the sample median. See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	Full sample		Subsample	
	(1) <i>Tone</i>	(2) <i>Tone</i>	(3) <i>Tone</i>	(4) <i>Tone</i>
<i>Affiliated</i>	-0.009 (-0.726)	0.011 (0.919)	0.009 (0.705)	-0.004 (-0.261)
<i>Affiliated</i> × <i>LowROA</i>	0.094*** (6.480)		0.052*** (3.276)	
<i>Affiliated</i> × <i>HighLev</i>		0.060*** (3.967)		0.065*** (3.444)
<i>ROA</i>	0.315*** (5.306)	0.299*** (5.053)	0.096 (0.790)	0.071 (0.583)
<i>Return</i>	0.011*** (2.663)	0.011*** (2.668)	-0.009 (-1.188)	-0.009 (-1.138)
<i>Size</i>	0.058*** (8.763)	0.057*** (8.659)	0.024** (2.023)	0.026** (2.195)
<i>Leverage</i>	-0.239*** (-8.488)	-0.244*** (-8.648)	-0.399*** (-6.815)	-0.407*** (-6.941)
<i>MB</i>	-0.002** (-2.245)	-0.002** (-2.189)	-0.001 (-0.676)	-0.001 (-0.584)
<i>TV</i>	-0.000 (-0.256)	-0.000 (-0.209)	0.000 (0.061)	0.000 (0.035)
<i>STD</i>	-2.303*** (-4.060)	-2.304*** (-4.062)	-2.361** (-2.216)	-2.420** (-2.272)
<i>Analyst</i>	0.047*** (10.791)	0.047*** (10.765)	0.045*** (5.006)	0.045*** (4.951)
<i>SOE</i>	-0.057*** (-5.758)	-0.058*** (-5.866)	-0.065*** (-4.087)	-0.067*** (-4.198)
<i>Top1</i>	0.081* (1.876)	0.087** (1.999)	-0.137 (-1.584)	-0.152* (-1.742)
<i>Local</i>	0.023** (2.394)	0.024** (2.431)	-0.006 (-0.430)	-0.002 (-0.123)
<i>Advertising</i>	0.020*** (4.315)	0.021*** (4.393)	0.012* (1.862)	0.010 (1.507)
<i>Constant</i>	-1.169*** (-7.783)	-1.151*** (-7.654)	-0.255 (-0.895)	-0.290 (-1.017)
Firm FE	Yes	Yes	Yes	Yes
Media FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
# of Observations	104,531	104,531	48,485	48,485
Adjusted R ²	0.108	0.108	0.105	0.105

Table 9. Cross-sectional variations: Newspaper characteristics

The analyses presented in this table examine how the effect of common business group affiliation on newspaper reporting tone varies with newspaper characteristics. The dependent variable is the tone of a news article (*Tone*). We add the interaction terms, *Affiliated*×*Non-Official* and *Affiliated*×*Financial*, separately, in the regression. *Non-Official* is equal to 1 for non-official newspapers, and 0 otherwise. *Financial* is equal to 1 for financial newspapers, and 0 otherwise. See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	Full sample		Subsample	
	(1) <i>Tone</i>	(2) <i>Tone</i>	(3) <i>Tone</i>	(4) <i>Tone</i>
<i>Affiliated</i>	0.010 (0.516)	0.010 (0.564)	-0.023 (-1.023)	-0.011 (-0.557)
<i>Affiliated</i> × <i>Non-Official</i>	0.048** (2.216)		0.075*** (3.001)	
<i>Affiliated</i> × <i>Financial</i>		0.051*** (2.622)		0.064*** (2.798)
<i>ROA</i>	0.306*** (5.159)	0.306*** (5.159)	0.092 (0.760)	0.092 (0.761)
<i>Return</i>	0.011*** (2.726)	0.011*** (2.692)	-0.009 (-1.092)	-0.009 (-1.166)
<i>Size</i>	0.057*** (8.650)	0.057*** (8.719)	0.025** (2.105)	0.026** (2.194)
<i>Leverage</i>	-0.237*** (-8.419)	-0.237*** (-8.440)	-0.396*** (-6.766)	-0.397*** (-6.785)
<i>MB</i>	-0.002** (-2.220)	-0.002** (-2.198)	-0.001 (-0.660)	-0.001 (-0.642)
<i>TV</i>	-0.000 (-0.073)	-0.000 (-0.037)	0.000 (0.172)	0.000 (0.213)
<i>STD</i>	-2.363*** (-4.165)	-2.370*** (-4.176)	-2.526** (-2.370)	-2.510** (-2.354)
<i>Analyst</i>	0.046*** (10.707)	0.046*** (10.677)	0.045*** (4.935)	0.044*** (4.891)
<i>SOE</i>	-0.058*** (-5.803)	-0.057*** (-5.794)	-0.064*** (-4.038)	-0.065*** (-4.056)
<i>Top1</i>	0.091** (2.091)	0.089** (2.054)	-0.141 (-1.627)	-0.142 (-1.638)
<i>Local</i>	0.024** (2.507)	0.024** (2.495)	-0.000 (-0.020)	-0.001 (-0.045)
<i>Advertising</i>	0.020*** (4.345)	0.020*** (4.332)	0.010 (1.569)	0.010 (1.533)
<i>Constant</i>	-1.154*** (-7.669)	-1.167*** (-7.741)	-0.272 (-0.953)	-0.300 (-1.048)
Firm FE	Yes	Yes	Yes	Yes
Media FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
# of Observations	104,531	104,531	48,485	48,485
Adjusted R ²	0.108	0.108	0.105	0.105

Table 10. An analysis of the tone of news articles immediately following firm earnings announcements

This table examines how common business group affiliation affects the tone of newspaper reporting on firms immediately following earnings announcements. We only keep the news reports published in the 7-day window [0,7) after a firm's quarterly earnings announcement, with day 0 being the announcement date. The dependent variable is the tone of a news article (*Tone*). *UE* is equal to 1 if a firm's quarterly EPS is larger than or equals to the EPS for the same quarter in the prior year, and 0 otherwise. See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and two-way clustering by firm and date. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	All		<i>UE</i> ≥ 0	<i>UE</i> < 0
	(1) <i>Tone</i>	(2) <i>Tone</i>	(3) <i>Tone</i>	(4) <i>Tone</i>
<i>Affiliated</i>	0.050* (1.953)	0.121*** (3.262)	-0.011 (-0.333)	0.163*** (3.752)
<i>UE</i>	0.032** (2.294)	0.040*** (2.832)		
<i>Affiliated</i> × <i>UE</i>		-0.117*** (-2.742)		
<i>ROA</i>	0.796*** (4.442)	0.785*** (4.382)	1.337*** (4.837)	0.904*** (3.306)
<i>Return</i>	0.006 (0.480)	0.005 (0.458)	-0.004 (-0.283)	-0.027 (-1.057)
<i>Size</i>	0.087*** (4.343)	0.085*** (4.256)	0.122*** (3.890)	0.068** (2.234)
<i>Leverage</i>	-0.173** (-2.014)	-0.176** (-2.049)	-0.233** (-1.982)	0.011 (0.075)
<i>MB</i>	0.002 (0.559)	0.002 (0.484)	0.001 (0.119)	0.004 (0.609)
<i>TV</i>	-0.002 (-0.831)	-0.002 (-0.819)	-0.007* (-1.791)	-0.002 (-0.344)
<i>STD</i>	-1.681 (-1.036)	-1.608 (-0.991)	2.362 (1.102)	-0.749 (-0.223)
<i>Analyst</i>	0.035*** (2.676)	0.036*** (2.705)	0.042** (2.281)	0.020 (0.869)
<i>SOE</i>	-0.069** (-2.431)	-0.070** (-2.460)	-0.041 (-1.110)	-0.057 (-1.080)
<i>Top1</i>	0.230* (1.776)	0.241* (1.867)	0.048 (0.284)	0.391* (1.760)
<i>Local</i>	0.014 (0.477)	0.013 (0.417)	-0.008 (-0.235)	-0.011 (-0.195)
<i>Advertising</i>	0.015 (1.063)	0.015 (1.085)	-0.006 (-0.379)	0.035 (1.485)
Constant	-1.988*** (-4.395)	-1.952*** (-4.314)	-2.896*** (-3.956)	-1.627*** (-2.458)
Firm FE	Yes	Yes	Yes	Yes
Media FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
# of Observations	10,932	10,932	6,474	4,458
Adjusted R ²	0.138	0.139	0.142	0.175

Table 11. The amount and type of news coverage by newspapers

This table presents the results from the analyses of whether common business group affiliation affects the amount and type of news coverage that newspapers pursue or avoid. In column (1), the dependent variable is *Coverage*, which is equal to log (1+the number of news articles published by a newspaper on a firm in a given month). In column (2), the dependent variable is *Coverage_pos*, which is equal to log (1+the number of positive news articles published by a newspaper on a firm in a given month). In column (3), the dependent variable is *Coverage_neg*, which is equal to log (1+the number of negative news articles published by a newspaper on a firm in a given month). A positive (negative) news article is defined as an article with a positive (negative) *Tone*. See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and clustering by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	(1) <i>Coverage</i>	(2) <i>Coverage_pos</i>	(3) <i>Coverage_neg</i>
<i>Affiliated</i>	0.034*** (3.169)	0.031*** (3.301)	0.003 (0.652)
<i>ROA</i>	0.045 (0.739)	0.062 (1.490)	-0.030 (-0.749)
<i>Return</i>	-0.013** (-2.012)	-0.007 (-1.381)	-0.008* (-1.928)
<i>Size</i>	0.025** (2.210)	0.023*** (2.649)	0.006 (0.971)
<i>Leverage</i>	-0.006 (-0.318)	-0.024* (-1.938)	0.016 (1.364)
<i>MB</i>	0.006*** (3.982)	0.005*** (4.250)	0.003*** (3.203)
<i>TV</i>	0.004** (2.358)	0.002** (2.203)	0.002 (1.531)
<i>STD</i>	2.032*** (3.035)	1.402*** (2.910)	0.928** (2.318)
<i>Analyst</i>	0.021*** (4.096)	0.019*** (4.777)	0.004 (1.572)
<i>SOE</i>	0.003 (0.122)	0.002 (0.090)	0.008 (0.581)
<i>Top1</i>	-0.056 (-0.680)	-0.021 (-0.347)	-0.039 (-0.930)
<i>Local</i>	0.046 (1.475)	0.042 (1.446)	0.012 (1.386)
<i>Advertising</i>	0.232*** (6.390)	0.198*** (6.126)	0.062*** (4.088)
<i>Constant</i>	-0.429** (-1.997)	-0.398** (-2.452)	-0.091 (-0.769)
Firm FE	Yes	Yes	Yes
Media FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
# of Observations	225,824	225,824	225,824
Adjusted R ²	0.470	0.443	0.311

Table 12. Common business group affiliation and the media's information intermediary role

This table examines whether common business group affiliation affects the newspaper's information intermediary role. The dependent variables in columns (1)-(3) are, respectively, $Loss_{t+1}$, $Forcedturnover_{t+1}$ and $Punishment_{t+1}$. The key independent variables are the average tone of news articles published by connected or unconnected newspapers in year t ($Tone_Affiliated$ and $Tone_Nonaffiliated$). See Appendix B for the definitions of all variables. In parentheses are robust t -statistics based on standard errors adjusted for heteroscedasticity and clustering by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	(1)	(2)	(3)
	$Loss_{t+1}$	$Forcedturnover_{t+1}$	$Punishment_{t+1}$
<i>Tone_Affiliated</i>	-0.005 (-0.181)	0.013 (0.249)	-0.023 (-0.558)
<i>Tone_Nonaffiliated</i>	-0.096* (-1.907)	-0.168** (-2.486)	-0.121* (-1.665)
<i>ROA</i>	-1.224*** (-3.074)	0.027 (0.061)	-0.540 (-1.018)
<i>Return</i>	-0.058* (-1.887)	-0.086** (-2.071)	-0.021 (-0.477)
<i>Size</i>	0.022 (1.403)	0.011 (0.395)	0.029 (1.158)
<i>Leverage</i>	-0.013 (-0.125)	0.108 (0.714)	-0.150 (-0.937)
<i>MB</i>	0.014** (2.533)	-0.002 (-0.220)	0.010* (1.786)
<i>TV</i>	0.001 (0.079)	0.006 (0.700)	-0.005 (-0.583)
<i>STD</i>	6.840* (1.722)	3.418 (0.592)	10.393** (2.115)
<i>Analyst</i>	-0.011 (-0.671)	-0.074*** (-3.067)	-0.016 (-0.600)
<i>SOE</i>	-0.040 (-1.473)	0.157*** (3.761)	-0.047 (-1.038)
<i>Top1</i>	-0.065 (-0.757)	0.136 (0.998)	0.158 (1.156)
<i>Constant</i>	-0.458 (-1.197)	-0.324 (-0.520)	-0.727 (-1.395)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
# of Observations	556	556	556
Adjusted R ²	0.147	0.074	0.176
<i>F-test</i>			
$H_0: Tone_Affiliated-$ $Tone_Nonaffiliated=0$ (<i>p</i> value)	0.091 (0.155)	0.181* (0.052)	0.098 (0.259)

Table 13. Common business group affiliation and firm stock price synchronicity

This table examines whether common business group affiliation affects the firm's stock price synchronicity. The dependent variable is *SYCH* defined as the logistic transformation of return R^2 . The key independent variable *Affiliated_Any* is equal to one if a firm is connected with at least one newspaper due to common business group affiliation in a given year, and zero otherwise. See Appendix B for the definitions of all variables. In parentheses are robust *t*-statistics based on standard errors adjusted for heteroscedasticity and clustering by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level.

	(1) <i>SYCH</i>
<i>Affiliated_Any</i>	0.020** (2.374)
<i>ROA</i>	0.030 (0.719)
<i>Return</i>	-0.047*** (-12.133)
<i>Size</i>	0.044*** (7.837)
<i>Leverage</i>	-0.089*** (-4.642)
<i>MB</i>	-0.001** (-2.097)
<i>TV</i>	-1.057*** (-2.596)
<i>STD</i>	0.000 (0.505)
<i>Analyst</i>	-0.002 (-0.440)
<i>SOE</i>	0.023** (2.115)
<i>Top1</i>	-0.024 (-0.632)
<i>Constant</i>	-0.451*** (-3.885)
Firm FE	Yes
Year FE	Yes
# of Observations	4,470
Adjusted R ²	0.591

Appendix A: Sample newspapers and their affiliated business groups

Newspaper	Media company	Abbreviated name of affiliated business group	Full name of affiliated business group
21st Century Business Herald	Guangdong Twenty-first Century Publication Co., Ltd.	Fosun	Shanghai Fosun High Technology (Group) Co., Ltd.
		Zhangjiang	Shanghai Zhangjiang (Group) Co., Ltd.
	Guangzhou Twenty-first Century Caizhi Network Technology Co., Ltd.	State Grid	State Grid Corporation of China
Beijing Youth Daily	Beijing Media Co., Ltd.	CASC	China Aerospace Science and Technology Corporation
		BeijingETDA	Beijing Yizhuang Investment Holding Ltd.
		Yongjin	Yongjin Industry (Group) Co., Ltd.
		PekingU	Beijing Peking University Asset Management Co., Ltd.
		Letv	TV Plus Holdings (Beijing) Limited
Chengdu Business Daily	Chengdu B-Ray Media Co., Ltd.	Xu Neng	Shenzhen Xu' neng Investment Co., Ltd.
China Business News	China Business Network Co., Ltd.	Alibaba	Alibaba Group
		State Grid	State Grid Corporation of China
Guangzhou Daily	Guangdong Guangzhou Daily Media Co., Ltd.	FujianID	Fujian Investment & Development Group Co., Ltd
China Times	Beijing Huaxia Shibao Media Ad Co., Ltd.	Wanda	Dalian Wanda Group Co., Ltd.
Beijing Times	Jinghua Culture Transmission Co., Ltd.	Alibaba	Alibaba Group
Economic Observer	Beijing Jingtuan Cultural Media Co., Ltd.	Oceanwide	Fanhai Group Co., Ltd.
	Shandong Economic Observer Newspaper Co., Ltd.	Sanlian	Shandong Sanlian Group
Shanghai Youth Daily	Shanghai Qingnian Media Co., Ltd.	PekingU	Beijing Peking University Asset Management Co., Ltd.
Securities Daily	Securities Daily Media Co., Ltd.	Tomorrow	Tomorrow Holding Limited Company
		TsinghuaU	Tsinghua Holdings Co., Ltd.
		WuxiID	Wuxi Industry Development Group Co., Ltd.
China Enterprise News	China Enterprise News Co., Ltd.	CNBM	China National Building Material Group Co., Ltd.
China Youth News	China Youth News Media Co., Ltd.	PekingU	Beijing Peking University Asset Management Co., Ltd.
China Business Times	China Business Times Media Co., Ltd.	Sanpower	Sanpower Group Co., Ltd.

Appendix B: Variable definitions

Variables	Definitions
News characteristics	
<i>Tone</i>	The number of positive sentences minus the number of negative sentences in the article, scaled by 1 plus the sum of the number of positive and negative sentences
<i>Coverage</i>	$\log(1 + \text{the number of news articles released by a newspaper on a company in the current month})$
<i>Coverage_pos</i>	$\log(1 + \text{the number of positive news articles released by a newspaper on a company in the current month})$
<i>Coverage_neg</i>	$\log(1 + \text{the number of negative news articles released by a newspaper on a company in the current month})$
Characteristics of newspapers and the affiliated business groups	
<i>Affiliated</i>	If a newspaper is affiliated with a listed company through certain business group in a month, the value is 1, otherwise 0
<i>Stake</i>	The closing price of a firm at the end of prior month multiplied by the amount of stock holdings by affiliated business group
<i>Power</i>	Shareholding percentage of the affiliated business group in the media company
<i>Affiliated_SH</i>	If a newspaper is affiliated with a firm, and <i>Stake</i> is greater than or equal that the median in this case, the value is 1, otherwise 0
<i>Affiliated_SL</i>	If a newspaper is affiliated with a firm, and <i>Stake</i> is smaller than the median in this case, the value 1, otherwise 0
<i>Affiliated_PH</i>	If a newspaper is affiliated with a firm, and <i>Power</i> is greater than or equal that the median in this case, the value is 1, otherwise 0
<i>Affiliated_PL</i>	If a newspaper is affiliated with a firm, and <i>Power</i> is smaller than the median in this case, the value is 1, otherwise 0
<i>Non-Official</i>	If a newspaper is a non-official newspaper, the value is 1, otherwise 0
<i>Financial</i>	If a newspaper is a financial newspaper, the value is 1, otherwise 0
Characteristics of firms	
<i>Size</i>	Log of firm total assets
<i>Leverage</i>	Total liabilities / total assets
<i>ROA</i>	Net income / total assets
<i>Return</i>	Annual stock market return
<i>MB</i>	Market value / Book value of equity
<i>TV</i>	Total trading volume divided by the total number of shares outstanding
<i>STD</i>	Standard deviation of daily stock return over the year

<i>Analyst</i>	Log of (number of individual analysts or teams+1)
<i>Top1</i>	The percentage of shares held by the largest shareholder
<i>SOE</i>	Equals to 1 if the firm is state-owned, and 0 otherwise
<i>Local</i>	Equals to 1 if the media and the firm are headquartered in the same city, and 0 otherwise
<i>Advertising</i>	Equals to 1 if the firm advertises with the media outlet in the year, and 0 otherwise
<i>CAR</i>	The cumulative abnormal return
<i>LowROA</i>	Equals to one if a firm's ROA is lower than the sample median, and 0 otherwise
<i>HighLev</i>	Equals to one if a firm's Leverage is higher than the sample median, and 0 otherwise
<i>UE</i>	Equals to 1 if quarterly EPS is larger than or equals to the EPS of the same quarter in the prior year, and 0 otherwise
<i>Loss</i>	Equals to 1 if a firm has negative earnings in a given year, and 0 otherwise
<i>Forcedturnover</i>	Equals to 1 if a forced CEO turnover has taken place in a given year, and 0 otherwise
<i>Punishment</i>	Equals to 1 if a fraud is detected and punished in a given year, and 0 otherwise
<i>SYCH</i>	The logistic transformation of return R^2
<i>Affiliated_Any</i>	Equals to 1 if a firm is connected with any newspaper due to common business group affiliation in a given year, and 0 otherwise

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