

# Political Bias in Corporate News: The Role of Conglomeration Reform in China

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## Abstract

Using textual analyses of 1.77 million articles, we find that, through the Chinese government's conglomeration reform that reorganizes official and nonofficial newspapers from the same locale into a news group under state control, there is an increase (decrease) in positive tone and political content in official (non-official) newspaper articles. The evidence is consistent with official newspapers becoming more concentrated on political goals and nonofficial newspapers becoming more focused on commercial objectives, thus better enabling the newspaper industry to pursue a dual role as the government's mouthpiece and an information institution supporting the market economy. Our results are robust to using a matched firm-month research design that examines the content of articles written about the same firm in the same month, a matched firm-event approach that examines concurrent newspaper articles published immediately following corporate earnings announcements, and a difference-in-differences approach to test for conglomeration effects.

## 1. Introduction

Politics biases news reporting. That bias is much stronger when the press is controlled and owned by an authoritarian government, because of the lack of competition from independent, nonstate sources and the autocrats' incentive to demonstrate supremacy (Tullock 1987). These autocratic governments, when at-

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tempting to develop market economies, face the challenge of supplying independent news in a media marketplace that is dominated by politics and frequently devoid of market-based incentives. Thus, they face the trade-off between controlling the media to protect their autocratic rule and freeing state-owned media outlets to meet market demands for credible, informative news and support their market development activities.

Although state-controlled media is prevalent around the world (Djankov et al. 2003), prior research focuses mainly on the reporting biases of nonstate media operating in democratic countries (Besley and Prat 2006; Gentzkow and Shapiro 2006, 2008, 2010; Gurun and Butler 2012). Moreover, whether media controlled by an authoritarian government can successfully fulfill its dual mission of serving as the government's mouthpiece and as a market-oriented information institution and how these frequently conflicting roles affect reporting biases remain open empirical issues. Our goal is to fill a void in the literature by providing a large-scale empirical analysis of how market and political forces interact to shape news coverage in a state-controlled media market under an authoritarian government.

We focus on corporate news reporting in China and examine whether the government's recent media conglomeration reform has systematically altered political biases embedded in corporate news articles. We focus on corporate news because recent economic reforms in China and the reopening and subsequent growth of the country's stock markets have significantly increased the demand for market information. However, the government has a continued desire to control the press and, more recently, has used reforms to reorganize its newspaper holdings to address political and commercial considerations arising from the proliferation of stand-alone, market-oriented newspapers. These recent changes create a natural setting for examining how political and economic forces interact to shape state-controlled media markets and whether one type of media reform, conglomeration, can improve state-owned newspapers' ability to pursue their dual political and market-development roles.

China has two types of newspapers: official and nonofficial. Both types of newspapers are ultimately controlled by the state but differ with respect to function, funding, and ownership. Official newspapers were the only newspapers that existed prior to the economic reforms starting after 1979. These newspapers serve as the mouthpiece of the government; receive financial support, such as guaranteed subscriptions and subsidies, from the government; and are directly under the supervision of the Chinese Communist Party (CCP) at the national and local levels (party newspapers) or of a government institution (political-organ newspapers).<sup>1</sup> Nonofficial newspapers were introduced into the media marketplace through the government's liberalization and commercialization of the newspaper industry after 1979. Unlike official newspapers, nonofficial papers are created to respond to

<sup>1</sup> For example, *People's Daily* is a national party newspaper, *Beijing Daily* is a local party newspaper, and *China Youth Daily* is a political-organ newspaper under the supervision of the Communist Youth League of China.

a demand for particular news content (for example, business or entertainment news) rather than serve as the mouthpiece of the government; do not depend on receiving financial support from the government, instead depending entirely on advertising and subscription revenues; and are typically not under the direct supervision of the CCP but instead are under the control of commerce-related ministries or some low-ranking government units, and some even have nonstate investors as minority owners.<sup>2,3</sup> Nonofficial newspapers can be further divided into three subcategories: business, evening, and metro newspapers. Business newspapers focus on reporting business and economic news, while metro and evening newspapers, which are less market oriented, focus primarily on providing general news and entertainment to their readers and are still partially responsible for spreading propaganda (Hu 2011). Because the focus of this study is on corporate news, we examine business newspapers as our only nonofficial newspapers and compare their corporate news articles with those in official newspapers.

The conglomeration reform we examine involves transferring control of selected stand-alone official and nonofficial newspapers in the same locale, usually a province or major city, to create a single news group having the same editorial board and supervised by the same state control unit. This new organizational structure allows the government to increase its political control of official and nonofficial papers, improve coordination between individual newspapers, enable the cross subsidization in a newspaper group, and facilitate further commercialization activities by nonofficial newspapers. If effective, conglomeration is expected to lead to greater specialization of newspapers and to increase the diversity of news published by a group's newspapers. Following conglomeration, official newspapers are expected to concentrate more on their political role when reporting corporate news, while nonofficial newspapers are expected to cater more strongly to commercial demands for depoliticized corporate news. That is, we expect the political content and positive bias of the official (nonofficial) papers' corporate news to increase (decrease) after the reform.

However, it is unclear whether conglomeration actually increases the relative diversity of corporate news published by state-owned media. By grouping local newspapers together, conglomeration likely reduces competition, which potentially causes an increase in political bias for both types of newspapers (Besley and Prat 2006; Gentzkow and Shapiro 2008; Germano and Meier 2013). In addition, the conflicting demands of the Chinese government render the reform's outcome uncertain. On the one hand, an independent media helps establish and maintain

<sup>2</sup> An example of a commerce-related ministry is the People's Bank of China, which owns *Financial News*, while an example of a nonstate owner is Shangdong Sanlian Group Ltd., which owns *Economic Observers*. Unlike the Chinese Communist Party (CCP) or a government owner, nonstate owners as a group cannot control more than 49 percent of the total ownership of each newspaper.

<sup>3</sup> Ten nonofficial newspapers in our sample, despite their business news orientation and lack of government funding, are directly controlled by the CCP. Our main specifications treat these newspapers as nonofficial newspapers. In Section 6.2.1, we discuss estimations in which we separately identify these nonofficial party newspapers and compare them with the remaining sample of nonofficial newspapers.

well-functioning markets and promotes economic development.<sup>4</sup> On the other hand, the state-controlled media can play a central role in shaping public opinion, which leads to opaque and biased reporting practices, especially with respect to the revelation of bad news.<sup>5</sup> As such, politically controlled newspapers frequently bias their coverage of politicians, political events, and government policy (Enikolopov, Petrova, and Zhuravskaya 2011; on China, see Stockmann 2013).<sup>6</sup> It remains an open empirical question whether the demand-side effect from the member newspapers' improved ability to serve commercial objectives under a group structure offsets the political influence arising from the increase in control and the decrease in competition of the member newspapers after the conglomeration.

We test these arguments on a sample of approximately 1.77 million domestic Chinese newspaper articles published about China's listed firms over the period 2000–2010. To capture the political bias of the articles, we use textual analysis techniques to measure the articles' tone and the extent to which they contain political slogans that are commonly used by the CCP. Consistent with our predictions, we find that the conglomeration of Chinese newspapers into state-sanctioned media groups has successfully magnified the differences in articles' tone and political content between official and nonofficial newspapers: we observe an increase (decrease) in positive reporting biases and the political content of articles published by official (nonofficial) news outlets that are conglomerated. These conglomeration effects exist (on average) in the broad cross section of newspaper articles, after matching official and nonofficial newspaper articles by publication month for the same listed firm, after focusing on a subset of newspapers that are conglomerated during our sample period (using a difference-in-differences research design), and after examining concurrent articles published by competing newspapers immediately following corporate earnings announcements. Although the net effect of these changes on the information environment of Chinese listed firms is unclear from our analysis, the documented divergence in the tone and political slant of these conglomerated newspaper articles is consistent with an underlying objective of China's media reforms—to increase the credibility of nonofficial newspapers while simultaneously strengthening official newspapers' role of mouthpiece.

To further understand the effects of conglomeration, we examine the impact of the reforms conditional on various partitions: the strength of a province's political and market institutions, whether the newspaper is controlled by central

<sup>4</sup> Media outlets create and disseminate financial information (Zingales 2000; Bushman, Piotroski, and Smith 2004; Bushee et al. 2010; Soltes 2010), serve as watchdogs in the market (Dyck and Zingales 2002; Miller 2006; Dyck, Volchkova, and Zingales 2008; Liu and McConnell 2013), and even help autocrats monitor their bureaucrats (Egorov, Guriev, and Sonin 2009; Lorentzen 2014).

<sup>5</sup> In China, negative corporate news will diminish politicians' career prospects (Chen, Li, and Zhou 2005; Li and Zhou 2005) and, more broadly, increase public dissent that threatens political stability.

<sup>6</sup> Even a democratic government can capture the media and bias electoral outcomes (Besley and Prat 2006), which significantly weakens the media's role in political accountability.

government or local government entities, whether the firm covered in the article (hereafter, the covered firm) is owned by the state, and the firm's locality. These analyses reveal an asymmetry in the effects of conglomeration, with the reform yielding wide-ranging political benefits for the government (as reflected by a broad increase in the political bias of official newspapers across almost all partitions) and much narrower commercial benefits (as reflected by a reduction in the political bias of nonofficial newspapers in only a subset of partitions). Thus, although the credibility of the average nonofficial newspaper article improved following conglomeration, the reform was not nearly as successful at generating these improvements across the broad population of nonofficial newspapers or at limiting political rhetoric embedded in many articles.

Investigating these partitions more closely, we find that the conglomeration effects for official newspapers are generally greater when the incentives for bias are stronger (namely, in provinces with strong political institutions, when the newspaper is owned by the local government, and when the newspaper is covering local firms). Similarly, we find that conglomeration has a stronger effect of reducing nonofficial newspapers' political bias in contexts where the incentives for bias are weaker, although the results are limited to a smaller subset of partitions (namely, in provinces with strong market institutions for positive-tone bias and when the newspaper is writing about nonlocal firms for political content bias). Putting these two sets of results (for official and nonofficial newspapers) together, we find that the conglomeration effect of the increase (decrease) in positive-tone bias on official (nonofficial) newspapers is weaker (stronger) in market-oriented provinces. This is suggestive that conglomeration has a stronger net effect of reducing the overall positive-tone bias—in terms of having a stronger decrease in nonofficial newspapers and a weaker increase in official newspapers—in provinces with strong market institutions than in those with weak market institutions.

This study makes several contributions. First, we extend existing research on how political and economic incentives affect media bias. Recent studies examine how market incentives and competition impact reporting biases (Ellman and Germano 2009; Gentzkow and Shapiro 2006, 2008, 2010; Green, Hand, and Penn 2012; Gurun and Butler 2012), but these studies focus on democratic societies using mainly privately controlled newspapers rather than state-owned newspapers under autocratic governments. Compared with prior research on political incentives, which focuses mainly on political news and electoral outcomes (Besley and Prat 2006; Enikolopov, Petrova, and Zhuravskaya 2011; Stockmann 2013), we focus on how politics affects corporate news. Qin, Strömberg, and Wu (2016) examine political biases in the selection of articles among Chinese newspapers and document that advertising revenues are predictive of a newspaper's coverage decisions and orientation, yet they find no evidence that shifts in market incentives impact the biases of established newspapers. In contrast, our evidence that the formation of news groups shelters nonofficial newspapers from political intervention and allows them to pursue more commercial interests is new in the literature. To our knowledge, ours is the first study to examine the interplay between

the political incentives of state-controlled newspapers and economic incentives introduced by media reforms on the reporting bias of corporate news.

Second, we provide large-sample evidence on how state-controlled media balances the trade-off between market and political pressures, as captured by the conglomeration of newspapers, with respect to the content of corporate news. Our results suggest that the creation of state-controlled news groups can simultaneously enhance the mouthpiece and (to a lesser degree) market roles of the official and nonofficial media, respectively. We extend Stockmann (2013), which focuses on the difference in reporting bias of official and nonofficial papers, by examining how the conglomeration reform affects the differential political bias of the two types of newspapers.<sup>7</sup> We also complement Qin, Strömberg, and Wu (2017), which examines the government's use of social media in China. By allowing sensitive content on these platforms, the government balances concerns about social unrest against the benefits of using social media as a surveillance system (to monitor politicians and public opinion) and propaganda tool in China.

Third, we extend Djankov et al. (2003), which finds that prevalent state-controlled media is detrimental to the development of financial markets. A big challenge for emerging-market governments is to develop financial markets while maintaining political control over the media. We document one example in which, through the conglomeration of state-owned newspapers, the government can increase the diversity of corporate news articles by increasing (reducing) the political bias of official (nonofficial) newspapers without relinquishing control of the press. Although we cannot make an inference about how conglomeration has impacted Chinese listed firms' overall information environment, we document suggestive evidence that there is a stronger net effect on the reduction in the positive bias of corporate news articles in more market-oriented than less market-oriented provinces. Future research can investigate how well these state-owned newspapers and media groups fulfill their information role and what constraints should be eliminated to further improve the corporate news environment.

Finally, we contribute to an understanding of the information environment supporting China's capital markets (see Piotroski and Wong 2012). And, because China is the largest economy practicing state capitalization, our paper serves as an important first step toward understanding whether, and under what contextual conditions, China's state-controlled information institutions will be able to fulfill their market development roles within the country's broader institutional, political, and economic framework.

<sup>7</sup> Compared with the general news articles examined in Stockmann (2013), the use of corporate news articles also enables us to better measure bias in each article by controlling for the financial performance and fundamental characteristics of the listed firms.

## 2. Conglomeration Reform and Main Hypothesis

### 2.1. Creation of Nonofficial Newspapers

Shortly after the founding of the People's Republic of China in 1949, all published news articles were disseminated through China's state-owned and state-supported official newspapers. These official newspapers receive financial support from the government and serve the primary goal of conveying the government's political narrative to its constituents. Following the introduction of economic reforms after 1979, the government commercialized the press by creating a new category of newspapers—nonofficial newspapers—that operate like stand-alone commercial units. These nonofficial newspapers receive no financial support from the government and target a specific audience to fill a particular market demand for information. As a result of these differences, nonofficial newspapers have greater freedom and financial incentives to respond to market demands for news in order to maximize advertising and subscription revenues. This commercialization initiative, coinciding with a liberal newspaper-licensing policy, created newspapers that supported the economic reforms and development and increased the number of newspapers in the country by more than 10-fold, from 186 to 1,943, between 1978 and 2009 (Stockmann 2013).

During this period of reform, the need for a market-oriented, independent business media was reinforced by the Asian financial crisis, during which the collapse of Asian stock markets led to calls for greater transparency in the markets. These views were ultimately supported and endorsed by the Chinese government, and as a result a number of high-profile, nonofficial newspapers emerged in the late 1990s and early 2000s.<sup>8</sup> These publications are characterized by their focus on corporate and financial news and almost propaganda-free reporting. In a few cases, these new ventures even served as watchdogs against fraudulent activities of the listed firms.<sup>9</sup>

Despite these new policies, the government maintained, if not strengthened, its control of the country's newspapers. First, both official and nonofficial newspapers remain state owned, and each newspaper must be sponsored by a government unit to obtain an operating license. These formal arrangements subject the newspapers to bureaucratic and political pressures arising from China's hierarchical structure.<sup>10</sup> Second, the government continues to control the country's

<sup>8</sup> Examples include *Caijing*, *21st Century Business Herald*, *Economic Observer*, *New Fortune Magazine*, and *Business Watch*.

<sup>9</sup> A prominent example is *Caijing*, a financial magazine established in April 1998. Serving as a watchdog of the financial market, it exposed the fraud cases of listed firms such as Qiong Ming Yuan in 1998 and Yin Guang Xia in 2001. It also exposed irregularities and corruption of the mutual fund industry in 2000.

<sup>10</sup> The Chinese state is organized into geographical divisions that range from the central government to province, city, county, township, and village levels. The CCP and government units, such as commissions, ministries, bureaus, and departments, exert control vertically from units at the central government level to corresponding units at the lower levels of government. As a result, government units have to report to their corresponding supervisory unit of the CCP or government agencies through the vertical chain of command and horizontally to the leadership of the local government

newspapers through the appointment and dismissal of senior editorial staff by the sponsoring organization.<sup>11</sup> This mechanism ensures that the editorial policies and reporting practices of newspapers remain aligned with the government's preferences. Third, the propaganda departments (PDs) of the CCP committees (at every level of government) also strongly influence the reporting behavior of newspapers through their guidance and planning of China's ideological development. The power of the PDs and relevant regulatory agencies is further strengthened by the absence of laws that protect the freedom of press, which allows politicians to capture the press when deemed necessary. Finally, during this period of newspaper liberalization, the government concurrently elevated the news media's regulatory and licensing agency, formerly the Publication Bureau under the Ministry of Culture, to an administrative unit under the direct control of the State Council, renamed the State Press and Publication Administration (SPPA). In 2001, the SPPA was further elevated to ministerial-level status and was renamed the General Administration of Press and Publication. These elevations serve the purpose of strengthening the political clout and legitimacy of media regulators while signaling the government's commitment to monitoring, and if necessary controlling, China's news media.

Despite the Chinese government's continued desire to control the narrative in the news media, there is also a strong demand for domestic and international information that fosters economic development and reforms. These two forces create a tension whereby the domestic, state-owned media industry is required to fulfill two sometimes conflicting roles: an information institution capable of supporting a well-functioning market economy and a government mouthpiece. The conglomeration reform discussed below was designed to ease this tension.

## 2.2. *Conglomeration Reform and Reporting Bias*

Conglomeration is a media reform that orchestrates the organization of existing official and nonofficial newspapers from the same locality into a single commercialized news group. Although foreign competition (as a result of China joining the World Trade Organization) is often cited as a reason for forming news groups (Lee, He, and Huang 2006), the government's real intention behind conglomeration is to retain strong political control over the press while allowing it to pursue market objectives. The rapidly growing and fragmented nature of the commercialized media market created a big challenge for the government's control over the press, which threatened the regime's autocratic rule. The first such conglomeration was the formation of the Guangzhou Daily News Group in 1996; by 2004, up to 38 news groups were formed across China, with conglomeration

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where they are located. Newspapers are integrated into this broader political structure at their level of government. Thus, obtaining a license requires finding a sponsor within the relevant government framework, with the attendant bureaucratic and political pressures.

<sup>11</sup> Each editorial appointment requires the approval of the relevant CCP organization committee, while officials from the propaganda department of the corresponding local government and media regulators occasionally become involved in appointment decisions.



decisions driven by a combination of political and commercial interests (Zhao 2000).<sup>12</sup>

The group structure enables member newspapers to fulfill their political and market missions. First, an official paper that belongs to the same group can give political protection and legitimacy, and even assurance of reporting boundaries, to affiliated nonofficial newspapers, which allows them to cater more freely to market demands for reliable information.<sup>13</sup> Second, by having only one management team and one editorial board, the group can coordinate the activities of member newspapers and manage the overall political risks. This also enables the government to have a stronger chain of command in controlling all of the member newspapers, especially the nonofficial newspapers. Third, nonofficial newspapers can subsidize official papers, which reduces the impact of commercial and budget considerations on the official newspapers' reporting activities. This significantly strengthens the official newspapers' ability to serve as mouthpieces of the government.

Thus, instead of having each member newspaper take on dual roles in pursuit of the government's political and commercial objectives, which can be excessively costly, the conglomeration structure allows for specialization among member newspapers. This structure enables official newspapers to strengthen their political role and nonofficial newspapers to strictly cater to consumers' preferences for less positively biased, less politicized, and more informative corporate news. That is, the bias in terms of positive tone and political slant of official newspapers is expected to increase, while the bias of nonofficial newspapers is likely to decrease after conglomeration. This is analogous to family-controlled business groups in emerging economies in which member firms can, by affiliating with the influencing families, secure government connections and protection and access capital and labor markets that are otherwise difficult for them to obtain on their own (Khanna and Palepu 2000).

From the government's perspective, allowing newspapers to pursue more commercial objectives enables them to capture more advertising revenues (thus easing budgetary concerns) by catering to consumers' preferences. The independent news generated by these newspapers also enhances the government's ability to monitor bureaucrats (Egorov, Guriev, and Sonin 2009; Lorentzen 2014). Moreover, as long as conglomeration can enable the government to better prevent the media from spurring mobilization and collective actions (King, Pan, and Roberts 2013), it will not restrain newspapers from publishing articles criticizing corporate behaviors.

However, conglomeration may reduce competition and increase reporting bias. Competition results in a greater diversity of news suppliers and hence a greater likelihood of having a supplier that operates more independently from

<sup>12</sup> On the formation of the Shenzhen Press Group, see Lee, He, and Huang (2006).

<sup>13</sup> An example of an official paper taking the leadership position after conglomeration is found in the Shenzhen Press Group, in which Songying Wu, the former director of the official newspaper *Special Zone Daily*, served as the head of the news group.

the government. Thus, by grouping the newspapers in the same locale, conglomeration reduces the likelihood that any of the newspapers will act diversely and independently, which causes an increase in political bias for both types of newspapers. Reduction in competition can further increase bias because, as Besley and Prat (2006) argue, the cost of (or the total bribe for) influencing news suppliers decreases as their number decreases. Although conglomeration does not necessarily reduce the total number of newspapers in a locale, a unified editorial board could exert more direct control over newspapers after conglomeration, which would reduce the editorial freedom enjoyed previously by nonofficial newspapers and thus constrain their market-oriented reported practices and increase reporting bias. This prediction is consistent with the argument that the government wanted to use the conglomeration reform to tighten control over nonofficial newspapers. Many official newspapers were losing to nonofficial newspapers in this competitive landscape, especially in terms of circulation and advertising revenue. The resultant decision to form news groups is consistent with the theoretical predictions of Gehlbach and Sonin (2014) that a large advertising market increases the incentive of the government to nationalize private media.

Thus, whether the conglomeration of China's newspapers improves the ability of both affiliated official and nonofficial newspapers to specialize and leads to a divergence in their positive tone and political bias is an empirical question. Our main hypothesis is as follows: the positive tone and political slant of the corporate news of official (nonofficial) newspapers increase (decrease) after conglomeration, *ceteris paribus*.

The preceding arguments and anecdotal evidence, however, also suggest that the effects of conglomeration may be subject to different political and market forces that influence the newspapers' reporting incentives. We therefore examine our main hypothesis across various partitions that capture the level of market orientation of the province where the newspaper is located, whether the newspaper is controlled by the central or local government, and whether the covered firm is a state-owned versus a private firm or is domiciled in the same locality versus a different locality as the newspaper. By performing tests across the partitions with various levels of political and market forces, we explore whether the conglomeration effects are asymmetric and whether the effect of the increase (decrease) in political bias of official (nonofficial) papers is stronger when the newspapers have greater political (market) incentives for reporting. In addition, we investigate whether the stronger market incentives in certain partitions led to a greater net conglomeration effect in reducing political bias, in terms of a larger decrease in political bias for nonofficial papers and a smaller increase for official papers.

### 3. Research Design, Sample Construction, and Descriptive Statistics

#### 3.1. Data Sources

To perform our analyses, we utilize data from two commercial databases of domestic Chinese-language newspaper and magazine articles: Newswise and the

China Financial Newspaper Searching System. Newswise, established in 1998, archives all varieties of newspaper and magazine articles, including corporate news articles published by China's official and nonofficial newspapers. The China Financial Newspaper Searching System archives articles published by China's business newspapers. Using these two archives allows us to gather the most comprehensive set of financial news articles available about China's listed firms. Because of database limitations before 2000 and data-collection constraints after 2010, we use only domestic newspaper articles published about China's listed firms between 2000 and 2010 that are included in these databases.

We employed the following procedures to construct our sample of company-specific newspaper articles. First, taking the trading name of each listed company, we used an automated article-crawling robot to search the archives of each database to identify all Chinese-language articles featuring the listed company. This process was performed for each firm listed on the Shanghai and Shenzhen stock exchanges during our sample period. Second, we attribute individual articles to a listed firm on the basis of the corporate name that appears most frequently in the article. Articles in which multiple firms appear with the same frequency are considered to cover all firms. To ensure that our sample consists of press-generated news articles, we exclude articles identified as summary lists (for example, firms with the largest price change or trading activity) and articles that relate to regulation-mandated announcements or press releases made by the company (for example, quarterly earnings reports, annual reports, and ad hoc filings). After eliminating articles not published in official or nonofficial newspapers, these procedures yield a final sample of 1,776,002 corporate news articles about 1,757 domestic listed companies drawn from 110 newspapers (55 official and 55 nonofficial). A total of 59 of the 110 newspapers in our sample belonged to 48 news groups at some point during our sample period. (Tables A1 and A2 present summary statistics for the listed firms appearing in the sample of news articles; the online appendix presents the list of newspapers in the sample.)

### *3.2. Measurement of Tone and Political Slant*

We measure the tone and political slant of domestic news articles about China's listed firms at the article level. The next two sections outline our measurement of these characteristics.

#### *3.2.1. Measurement of Tone*

We measured the tone of a financial news article using a machine-learning approach to implement linguistic content analysis. Prior research, such as Antweiler and Frank (2004), Das and Chen (2007), and Li (2010), uses a similar machine-learning approach for measuring tone; this approach is in contrast to the word-list approach also used in prior research (see Henry and Leone [2016] for a discussion of the two approaches). Our approach involves an initial step of manually

coding a subsample of 30,000 news articles sentence by sentence.<sup>14</sup> Each sentence in an article is classified as having a positive, neutral, or negative tone, and the key words used to make that assessment are recorded. The manually coded data were then input into a LIBSVM classifier algorithm for support vector machines to classify each sentence in the sample of 1.77 million articles as positive, negative, or neutral in tone. We use the Institute of Computing Technology Chinese Lexical Analysis System to implement the word segmentation and part-of-speech tagging for the textual analysis of the articles. Following Tetlock, Saar-Tsechansky, and Macskassy (2008) and Stockmann (2013), we measure the tone of each article ( $\text{Tone}_{ijkt}$ ) 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. We logarithmically transform this ratio to control for right skewness in the data (see Table A3 for definitions of the variables).

Our measurement Tone was selected given the characteristics of our research setting. First, there is no predefined word list because this is the first large-sample textual analysis of the tone of financial news articles about China's listed firms.<sup>15</sup> Second, the classifier algorithm in the machine-learning approach takes into account the combinations of words and phrases when determining the tone, while textual analysis based on a word list simply counts the number of positive and negative words. Although the classifier algorithm does not analyze the detailed structure and context of sentences in an article, making use of the correlations of words and phrases with the manually coded results can reduce classification errors associated with the word-list method. Third, the initial steps of manually coding sample articles and applying machine-learning algorithms allow us to adapt the measurement of tone to the contextual nature of the Chinese language and its capital markets, which minimizes the methodological shortcomings highlighted in Loughran and McDonald (2016), such as an underrepresentation of negative (versus positive) words in other popular dictionaries, borrowing words created in a different discipline, and difficulties translating English terms into Chinese. Given that the release of negative information is costly to China's politicians, we assume that a positive tone reflects the government's preference to either suppress negative information (that is, only good news events are covered) or inject a positive bias in the news industry's coverage of listed firms.

<sup>14</sup> Our manual coding used the following procedures. We randomly assigned nine research assistants to three groups. Each group was assigned 10,000 news articles randomly sampled from our full sample of 1.77 million corporate news articles. For each group, the sampled news articles were uploaded to a specially designed website on which the research assistants were required to read each article sentence by sentence and independently record a judgment about the tone of every sentence. We applied a majority principle to determine the sentiment of each sentence according to the judgments of the three research assistants in the group, and the recorded key words were labeled with the same sentiment as the sentence.

<sup>15</sup> Language differences aside, because we expect a positive bias in financial news articles in our setting, we did not employ other commonly used definitions of tone that focus strictly on the number of negative words in an article (Gurun and Butler 2012; Liu and McConnell 2013; Jin, Xu, and Zhang 2016).

### 3.2.2. Measurement of Political Slant

We measure the political slant of a newspaper article on the basis of the relative frequency with which Chinese political key words are included in the story. The political slant of an article (Political Tags<sub>ijkt</sub>) is measured as the term frequency-inverse document frequency (tf-idf) realization of the article. Essentially, tf-idf is a numerical statistic that captures the relative frequency with which a given set of words appears in a document, adjusted for the relative frequency of the word in the corpus, and is frequently employed by search engines to identify a web page's relevance for a given search term.<sup>16</sup> We logarithmically transform the tf-idf score to control for right skewness in these data.

Our list of Chinese political key words is based on the *Dictionary of Scientific Development* (Xi 2007). This dictionary of Chinese political phrases represents the comprehensive list of political slogans included in official CCP economic policy documents between 1978 and 2008 and was created by the government to celebrate 30 years of economic reforms. By focusing on the presence, absence, and frequency of these political slogans in corporate news reports, we are able to directly link the content of an article to political aspects of the Chinese business environment. In addition, because we are searching for well-defined, context-specific political phrases (in Chinese) that are essentially reproduced and/or reiterated in the news article, we are able to overcome many of the dictionary-related methodological limitations associated with prior research and our Tone measure.

We assume that the use of political slogans in an article reflects the presence of pro-government political content (or political slant) in the news outlet's reporting of the listed firm, with greater usage of political slogans reducing the credibility of the news article. We expect to observe a positive relation between an article's tone and political tags if both attributes are designed to help the media convey a positive (and politically congruent) message to the reader about the covered firm, the local economy, and/or the performance of the local government.

## 3.3. Descriptive Evidence

### 3.3.1. Sample of Newspapers and Newspaper Articles

Tables 1 and 2 provide descriptive statistics for our sample of newspapers and corporate news articles and highlight several key characteristics of China's newspapers. First, as would be expected given the growth in China's capital markets during the 2000s, we document a steady increase in the number of news articles dedicated to China's listed firms during our sample period. Interestingly, this growth appears to be driven by newspapers' coverage decisions, not an overall expansion in the number of newspapers providing financial news coverage. Second, the vast majority of the financial news articles are published in commercially oriented nonofficial newspapers; in our sample, 83.3 percent (16.7 percent) of

<sup>16</sup> For robustness, we also measured Political Tags using the number of political phrases in a news article. All reported results are robust to this alternative measure.

**Table 1**  
**Distribution of Newspaper Outlets and Corporate News Articles over Time**

	Official Newspapers						Nonofficial Newspapers		
	All	All	Conglomerated	Nonconglomerated	All	Nonconglomerated	All	Conglomerated	Nonconglomerated
<b>Domestic Chinese newspaper outlets:</b>									
2000	74	44	11	33	30	3	30	3	27
2001	81	45	15	30	36	7	36	7	29
2002	74	41	18	23	33	8	33	8	25
2003	94	50	27	23	44	15	44	15	29
2004	91	47	30	17	44	17	44	17	27
2005	90	47	29	18	43	17	43	17	26
2006	78	39	25	14	39	17	39	17	22
2007	79	37	25	12	42	18	42	18	24
2008	96	51	34	17	45	19	45	19	26
2009	77	39	27	12	38	16	38	16	22
2010	54	24	20	4	30	14	30	14	16
<b>Total</b>	<b>888</b>	<b>464</b>	<b>261</b>	<b>203</b>	<b>424</b>	<b>151</b>	<b>424</b>	<b>151</b>	<b>273</b>
<b>Corporate news articles:</b>									
2000	67,729	15,609	5,997	9,612	52,120	1,324	52,120	1,324	50,796
2001	106,881	21,901	7,948	13,953	84,980	13,623	84,980	13,623	71,357
2002	109,949	25,056	12,576	12,480	84,893	13,414	84,893	13,414	71,479
2003	117,762	24,623	15,331	9,292	93,139	18,836	93,139	18,836	74,303
2004	122,403	22,385	15,315	7,070	100,018	18,562	100,018	18,562	81,456
2005	183,470	27,255	18,371	8,884	156,215	31,411	156,215	31,411	124,804
2006	160,600	21,561	14,473	7,088	139,039	26,726	139,039	26,726	112,313
2007	196,303	27,462	19,925	7,537	168,841	47,302	168,841	47,302	121,539
2008	251,429	39,994	29,741	10,253	211,435	75,884	211,435	75,884	135,551
2009	239,166	38,099	31,834	6,265	201,067	82,176	201,067	82,176	118,891
2010	220,310	32,621	27,982	4,639	187,689	81,318	187,689	81,318	106,371
<b>Total</b>	<b>1,776,002</b>	<b>296,566</b>	<b>199,493</b>	<b>97,073</b>	<b>1,479,436</b>	<b>410,576</b>	<b>1,479,436</b>	<b>410,576</b>	<b>1,068,860</b>

**Note.** Newspaper articles are from two commercial databases of domestic Chinese-language newspaper and magazine articles, Newswise and the China Financial Newspaper Searching System.

Table 2  
Distribution of Newspaper Outlets and Corporate News Articles across Localities

	Newspaper Outlets			All Newspapers			Articles in Official Newspapers			Articles in Nonofficial Newspapers			
	All	Official	Nonofficial	Newspapers	Conglomerated	Nonconglomerated	Total	Conglomerated	Nonconglomerated	Total	Conglomerated	Nonconglomerated	Total
National	42	9	33	1,272,471	34,033	23,197	57,230	162,187	1,053,054	1,215,241			
Beijing	5	2	3	62,100	4,785	24,115	28,900	33,200		33,200			
Tianjin	1	1		6,076	3,316	2,760	6,076						
Shanghai	7	3	4	109,345	19,694	13,307	33,001	76,264	80	76,344			
Chongqing	1		1	3,105				2,424	681	3,105			
Hebei	1	1		318		318	318						
Shanxi	1	1		1,299	967	332	1,299						
Liaoning	4	3	1	4,913	4,054	477	4,531						
Heilongjiang	1	1		728	728		728						
Jiangsu	3	2	1	11,870	4,846	1,013	5,859	6,011		6,011			
Zhejiang	1	1		4,259	4,230	29	4,259						
Anhui	3	2	1	6,968	650	3,542	4,192	2,319		2,319			
Fujian	1	1		5,695	2,969	2,726	5,695						
Jiangxi	2	2		4,008	1,774	2,234	4,008						
Shandong	3	3		3,965	3,914	51	3,965						
Henan	5	2	3	13,728	2,760	1,861	2,760	10,773	195	10,968			
Hubei	3	2	1	13,487	8,937	74	10,798	1,694	995	2,689			
Hunan	1	1		10,805	10,731		10,805						
Guangdong	8	4	4	203,137	75,802	10,723	86,525	109,504	7,108	116,612			
Guangxi	1	1		3,617	533	3,084	3,617						
Hainan	2	1	1	6,984	1,383	1,699	3,082	2,535	1,367	3,902			
Sichuan	5	4	1	14,933	9,028	1,690	10,718						
Yunnan	2	2		3,069	2,303	766	3,069						
Shaanxi	1	1		679		679	679						
Gansu	3	2	1	7,550	1,834	1,725	3,559	3,665	326	3,991			
Qinghai	1	1		400		400	400						
Ningxia Hui	2	2		493	222	271	493						
Total	110	55	55	1,776,002	199,493	97,073	296,566	410,576	1,068,860	1,479,436			

Note. Newspaper articles are from two commercial databases of domestic Chinese-language newspaper and magazine articles, Newswise and the China Financial Newspaper Searching System, for the period 2000–2010.

corporate news articles were published in nonofficial (official) newspapers. Third, with respect to conglomeration, we observe a general shift in the control structure of both official and nonofficial newspapers; this shift is most pronounced during the early years of our sample.

Fourth, Table 2 highlights the locality of our newspapers. As noted earlier, our sample of financial news articles is drawn from 55 official newspapers and 55 nonofficial newspapers. These papers are split between 42 national (central-government-controlled) newspapers (nine official and 33 nonofficial) and 68 local (local-government-controlled) newspapers (46 official and 22 nonofficial) across four province-level municipalities and 22 provinces. Interestingly, as reflected by the distribution of articles across the papers, most national newspapers are not controlled within a news-group structure, while local governments strongly favor the use of the news-group arrangement to allow their newspapers to achieve the party's joint political and market objectives. Finally, this panel highlights potential selection issues with respect to coverage in the two newspaper-article databases. Five provinces (Inner Mongolia, Jilin, Guizhou, Xinjiang, and Tibet) are not represented in the sample; one province-level municipality, Chongqing, is not associated with an official newspaper; and 14 provinces lack nonofficial newspapers in our study. Given these database-coverage limitations, we are cautious and examine our main hypothesis using several alternative research methodologies to help mitigate concerns about potential selection biases in our sample.

### 3.3.2. Tone and Political Tags

Table 3 presents descriptive evidence on the tone and political slant of Chinese newspaper articles about the country's listed firms. Table 3 documents that the average tone is positive over our sample period, and the political slogan content of an average financial news article is .168.<sup>17</sup> Consistent with prior findings on the impact of commercialization (Stockmann 2013), we observe that articles published by nonofficial newspapers exhibit less positive tone and contain fewer political slogans than articles published in official newspapers.<sup>18</sup> We also observe that the conglomeration of newspapers into news groups significantly impacts both the tone of the articles and the frequency of political tagging, with official newspapers exhibiting an increase in both attributes and nonofficial newspapers exhibiting a reduction in political slogans.<sup>19</sup> Although these descriptive data are consistent with prior research and generally support our predictions, we caution that these univariate relations do not control for omitted firm, provincial, time period, or article attributes that induce differences across newspapers and articles.

<sup>17</sup> The distribution of Political Tags is extremely skewed. The median Political Tags realization is 0, and only 10.64 percent of articles contain one or more political slogans.

<sup>18</sup> Untabulated results using a multivariate regression with the same control variables as in equation (1) also show that nonofficial newspapers are significantly less politically biased.

<sup>19</sup> Untabulated analyses document that the Pearson correlation between Tone and Political Tags is .16.



Table 3  
Average Tone and Political Slant of Corporate Newspaper Articles

	Tone			Political Tags		
	All	Official	Nonofficial	All	Official	Nonofficial
Unconditional	.413	.473	.401	.168	.321	.137
Conglomerated	.430	.488	.402	.206	.351	.135
Nonconglomerated	.404	.443	.401	.148	.258	.138
Conglomerated – Nonconglomerated	.026** (59.16)	.045** (45.88)	.001* (2.22)	.058** (74.30)	.093** (36.38)	-.003** (-3.83)

Note. Values in parentheses are *t*-statistics. *N* = 1,776,002 newspaper articles.

\* *p* < .05.

\*\* *p* < .01.

#### 4. Empirical Analyses

In this section, we present the empirical analysis of the impact imposed by conglomeration on political bias in corporate news. Section 4.1 presents our main empirical analysis and provides the first evidence for the influence of newspaper conglomeration on the relative tone and political slant of articles published by official and nonofficial newspapers. Section 4.2 presents additional evidence on the effect of the conglomeration reform using an alternative specification that exploits differences across articles matched on a firm-month basis.

##### 4.1. Influence of Conglomeration on Tone and Political Slant

Our primary empirical analyses examine whether newspaper conglomeration influences the relative tone and political slant of corporate news articles in China. We estimate the following cross-sectional model using newspaper-article-level data for official and nonofficial newspapers separately:

$$\begin{aligned}
 \text{Tone}_{ijkt} \text{ (or Political Tags}_{ijkt}) &= \alpha + \text{Province-Year-Month} + \text{Industry} \\
 &+ \beta_1 \text{Conglomerated}_{kt} + \beta_2 \text{National Newspaper}_k \\
 &+ \beta_3 \text{Outside Province}_{ijkt} + \beta_4 \text{SOE}_{jt} + \beta_5 \text{Firm Size}_{jt} \quad (1) \\
 &+ \beta_6 \text{ROA}_{jt} + \beta_7 \text{Market to Book}_{jt} + \beta_8 \text{Leverage}_{jt} \\
 &+ \beta_9 \text{Return}_{jt} + \beta_{10} \text{Article Length}_{ijkt} + \varepsilon_{ijkt}.
 \end{aligned}$$

In these estimations, the dependent variable  $\text{Tone}_{ijkt}$  ( $\text{Political Tags}_{ijkt}$ ) captures the relative tone of article *i* about firm *j* in newspaper *k* in month *t* (relative frequency of political rhetoric in article *i* about firm *j* in newspaper *k* in month *t*). Our variable of interest,  $\text{Conglomerated}_{kt}$ , is an indicator variable equal to one if the article was published in a newspaper that is controlled by a news group in month *t* and zero otherwise. To the extent that the formation of commercial news groups enables affected newspapers to better pursue the state’s dual commercial and political objectives, we expect a positive coefficient on  $\text{Conglomerated}$  ( $\beta_1 > 0$ ) for official newspapers and a negative coefficient on  $\text{Conglomerated}$  ( $\beta_1$

$< 0$ ) for nonofficial newspapers. Our estimations of equation (1) are effectively unbalanced panel regressions with the coefficient on Conglomerated capturing both the effects of newspapers switching control structures during our sample period and the baseline effects of being a conglomerated newspaper throughout our sample.

The estimation models include a set of indicator variables to capture effects arising from the locality of the newspaper. The first variable captures which level of government controls the newspaper (namely, central government versus local government). The term National Newspaper<sub>*k*</sub> is an indicator variable equal to one if the newspaper is controlled by either a central government entity or national party organization and zero otherwise. The second variable captures reporting biases arising from the locality of the covered firm. Local newspapers are expected to report more (less) favorably on local (nonlocal) firms. Local newspapers are less critical of local firms because of strong incentives to please local government officials, but reporting negatively on firms domiciled outside the locality is condoned or even encouraged. The term Outside Province<sub>*ijkt*</sub> is an indicator variable equal to one if the listed firm is located outside the local newspaper's province and zero otherwise.

We also include firm-level control variables (Firm Size, ROA, Market to Book, Leverage, and Return) to capture fundamental characteristics expected to influence the tone or political slant of media coverage over the reporting period. The indicator variable SOE is included to capture a positive political bias introduced because the covered firm is state owned. Because longer articles afford reporters greater opportunity to soften a negative news story, wax poetic about good news, or include economic policy issues, we include the log number of sentences in the article (Article Length<sub>*ijkt*</sub>) to control for any systematic differences in the measurement of our dependent variables arising from the length of the article. We include province-year-month indicator variables to capture systematic news shocks and economic trends that are expected to vary across provinces. The provincial fixed effects are based on the locality of the newspaper and designed to control for differences in underlying institutions, macroeconomic conditions, and transparency incentives across these regions.<sup>20</sup> We include industry fixed effects to control for differences in fundamentals and coverage biases across sectors. All other variables are as defined in Table A3.

Table 4 presents selected coefficients (and *t*-statistics) from estimations of these models.<sup>21</sup> Consistent with our main hypothesis, we find that the influence of conglomeration on tone and political content is dependent on the objectives of the underlying newspapers.<sup>22</sup> The results indicate that articles published in conglom-

<sup>20</sup> We control for year-months because information about Chinese listed firms is expected to vary over time on the basis of prevailing economic conditions and political incentives (Piotroski, Wong, and Zhang 2015). By interacting year-month effects with our provincial indicators, our fixed-effect structure can capture average time-varying effects on Tone and Political Tags by province.

<sup>21</sup> The *t*-statistics from multivariate estimations reported in the paper are based on standard errors clustered by firm.

<sup>22</sup> These estimations reveal several other interesting attributes of financial news coverage in China. First, the tone and political slant of local newspapers are influenced by whether the covered firm is

Table 4  
Influence of Conglomeration on Tone and Political Slant

	Tone		Political Tags	
	Official	Nonofficial	Official	Nonofficial
Conglomerated	.035** (17.950)	-.005** (-2.769)	.043** (5.941)	-.010** (-4.204)
National Newspaper	.096** (20.430)	-.000 (-.132)	.321** (23.704)	-.006+ (-1.835)
Outside Province	-.040** (-12.397)	-.018** (-6.612)	-.079** (-8.144)	-.020** (-6.010)
SOE	.011* (2.220)	.006 (1.433)	.040** (3.211)	.011* (2.285)
Firm Size	.007** (3.226)	.012** (6.532)	-.007 (-1.272)	.004+ (1.685)
ROA	.235** (8.320)	.249** (10.722)	.010 (.206)	.059** (3.302)
Market to Book	-.004** (-3.654)	-.003** (-4.385)	-.005* (-2.454)	-.001 (-1.206)
Leverage	-.033 (-1.541)	-.019+ (-1.671)	-.003 (-.135)	.031** (3.199)
Return	.003+ (1.688)	.001+ (1.672)	-.012** (-5.123)	-.007** (-5.391)
Article Length	.046** (31.255)	.021** (22.753)	.232** (29.401)	.100** (29.330)
Adjusted R <sup>2</sup>	.148	.066	.238	.063
N	296,566	1,479,436	296,566	1,479,436

Note. Values are selected coefficients and *t*-statistics (in parentheses) from estimations of equation (1). All estimations include fixed effects.

+ *p* < .10.

\* *p* < .05.

\*\* *p* < .01.

erated nonofficial newspapers have a less positive tone and contain fewer political slogans than those in nonconglomerated nonofficial newspapers. To the extent that reductions in positive tone and political slogans reduce political biases in news reporting, the evidence is consistent with nonofficial newspapers being more credible than official newspapers and, more important, with conglomeration serving as an effective mechanism to reduce the political bias of corporate news published in nonofficial newspapers. In contrast, the results for conglomerated official newspapers indicate that they generate articles that are incrementally more positively biased and have a greater frequency of political slogans than articles published by official newspapers not included in a news group. To the extent that the greater political bias captures the official newspapers' stronger focus

domiciled in the same province as the newspaper, with local firms receiving more favorable coverage. Second, articles about large firms are more positive, while articles about state-owned entities tend to contain more political content than articles about non-state-owned entities. Finally, longer articles are more positive in tone and contain more political rhetoric. We explore the impact of these differences on the effect of conglomeration in Section 5.

and ability to pursue political goals, our result is consistent with conglomerated official newspapers being better able than nonconglomerated official newspapers to serve as mouthpieces of the government.

Together, the combined evidence suggests that conglomeration has enabled the government to tighten its control over the media by increasing the political bias of official newspapers while liberalizing and enhancing the credibility of corporate news coverage by reducing the political bias of nonofficial newspapers.<sup>23,24</sup> Section 4.2 addresses limitations to this conglomeration analysis and sheds further light on the impact of conglomeration on newspapers' behavior.

#### 4.2. Matched Firm-Month Analyses

The preceding analyses exploit the available Chinese-language newspaper articles about domestic listed firms, and the evidence is consistent with conglomerated newspapers more effectively utilizing their resources to achieve the dual mission of the state-controlled media. However, several empirical concerns exist with that analysis. First, archived coverage seems to be incomplete. As documented in Table 1, not all provinces and not all newspapers in a province (official or nonofficial) are included in the archives. To the extent that this selection bias is nonrandom, our results may be driven by unobservable selection biases for official and nonofficial newspapers. Second, articles are endogenously produced by the media, so our results could simply reflect selection biases with respect to the decision to publish an article. For example, official and nonofficial newspapers may choose to cover different types of firms or to cover firms at different points in time (for example, conditional on the sign and magnitude of the news being conveyed). Finally, the average positive tone in our sample may not reflect a bias, per se, but instead may reflect systematic measurement error or newspapers' coverage decisions (for example, to write only about good news).

To address these concerns, we employ an alternative methodology that captures the differences in the average article's tone and political content between official and nonofficial newspapers for a given listed firm in a calendar month. We measure

$$\text{Diff\_Tone}_{jt} = \text{Average Tone}_{jt}^{\text{Official}} - \text{Average Tone}_{jt}^{\text{Nonofficial}}$$

and

$$\text{Diff\_Political Tags}_{jt} = \text{Average Political Tags}_{jt}^{\text{Official}} - \text{Average Political Tags}_{jt}^{\text{Nonofficial}},$$

where Average Tone<sub>jt</sub> (Average Political Tags<sub>jt</sub>) is the arithmetic average of Tone<sub>ijkt</sub> (Political Tags<sub>ijkt</sub>) for all articles published about firm *j* in calendar month *t* in

<sup>23</sup> With respect to economic significance, the estimated coefficients in Table 3 suggest that conglomeration magnified the average difference in positive tone (political content) between official and nonofficial newspaper articles by approximately 55 percent (29 percent).

<sup>24</sup> Clustering standard errors by province-year or newspaper-year yields similar inferences about the effects of conglomeration on official newspapers. However, the statistical significance of the effect of conglomeration on nonofficial newspapers is attenuated downward using these alternative procedures.

either official or nonofficial newspapers. The advantage of this methodology is that we are capturing sets of articles published about the same firms over the same time window, which thus increases the likelihood that the newspapers are writing about the same economic performance and events and minimizes selection biases arising at the newspaper level. This methodology is similar to Engelberg and Parsons (2011). The downside is that we restrict our sample to firm-months with sufficiently broad newspaper coverage in which to measure differences in the tone and political content across official and nonofficial newspapers.

Table 5 presents descriptive statistics for these average differences. Consistent with results using the full data, articles published in official newspapers exhibit a more positive tone and greater political content than articles published in non-official newspapers (namely, both average Diff\_Tone and Diff\_Political Tags are greater than 0).

To test the effects of conglomeration on reporting behavior using these matched data, Table 5 also presents selected coefficients from various estimations of the following cross-sectional model:

$$\begin{aligned}
 \text{Diff\_Tone}_{jt} \text{ (or Diff\_Political Tags}_{jt}) &= \alpha + \text{Year-Month} + \text{Industry} \\
 &+ \text{Province} + \beta_1 \% \text{ Conglomerated}_{jt} \\
 &+ \beta_2 \% \text{ National Newspaper}_{jt} \\
 &+ \beta_3 \% \text{ Outside Province}_{jt} \\
 &+ \beta_4 \text{SOE}_{jt} + \beta_5 \text{Firm Size}_{jt} + \beta_6 \text{ROA}_{jt} \\
 &+ \beta_7 \text{Market to Book}_{jt} + \beta_8 \text{Leverage}_{jt} \\
 &+ \beta_9 \text{Return}_{jt} + \beta_{10} \text{Relative Article Length}_{jt} \\
 &+ \beta_{11} \text{Relative Article Timing}_{jt} + \varepsilon_t.
 \end{aligned} \tag{2}$$

In these estimations, % Conglomerated is the percentage of articles about firm  $j$  published in newspapers controlled in a news-group structure in month  $t$ , % National Newspaper is the percentage of articles published in national newspapers, and % Outside Province is the percentage of articles published in newspapers outside the firm's province. The explanatory variable Relative Article Length measures differences in the average length of official and nonofficial newspaper articles, while Relative Article Timing measures the absolute average number of calendar days between the publication of the articles in official and nonofficial newspapers in month  $t$ . To the extent that conglomeration leads to official and nonofficial newspapers achieving their separate objectives (in other words, increases the divergence in the tone and political content of news articles, as documented in Table 3), we expect Diff\_Tone and Diff\_Political Tags to be increasing in % Conglomerated ( $\beta_1 > 0$ ). To the extent that official newspapers are incrementally more critical of nonlocal firms than nonofficial newspapers, we expect Diff\_Tone and Diff\_Political Tags to be decreasing in % Outside Province. Similarly, to the extent that national newspapers have greater latitude to criticize firms

Table 5  
Matched Firm-Month Newspaper Analysis

	Diff_Tone		Diff_Political Tags	
	(1)	(2)	(1)	(2)
% Conglomerated	.033** (6.746)	.048** (7.850)	.095** (8.249)	.138** (10.045)
% National Newspaper		.040** (6.216)		.140** (9.968)
% Outside Province		-.070** (-9.690)		-.358** (-16.217)
SOE	-.002 (-.766)	-.002 (-.754)	.017* (2.520)	.017* (2.551)
Firm Size	-.005** (-4.573)	-.006** (-5.057)	.010** (2.983)	.008* (2.360)
ROA	.037* (2.128)	.032* (1.845)	.069* (2.259)	.046 (1.516)
Market to Book	-.001+ (-1.839)	-.001 (-1.603)	-.007** (-5.166)	-.006** (-4.734)
Leverage	-.003 (-.585)	-.003 (-.541)	-.001 (-.064)	.001 (.115)
Return	-.002 (-1.587)	-.002 (-1.473)	-.010** (-3.373)	-.010** (-3.182)
Relative Article Length	.037** (31.553)	.036** (31.091)	.153** (47.400)	.152** (47.324)
Relative Article Timing	-.003+ (-1.952)	-.003+ (-1.943)	.002 (.631)	.002 (.629)
Adjusted R <sup>2</sup>	.061	.063	.098	.109
Mean	.067** (76.38)		.121** (68.27)	

Note. Values are selected coefficients and *t*-statistics (in parentheses) from various estimations of equation (2). All specifications include fixed effects.  $N = 76,129$ .

+  $p < .10$ .

\*  $p < .05$ .

\*\*  $p < .01$ .

and serve a greater role in communicating party messages, we expect Diff\_Tone and Diff\_Political Tags to be increasing in % National Newspapers.

These firm-month estimations confirm the basic inference found in Table 4 and provide additional support for our main prediction, namely, that conglomerated firms increase the difference in relative tone and political content observed between official and nonofficial newspapers. These tests also reveal that the divergence between official and nonofficial newspapers is significantly larger (smaller) when the covered firm is domiciled in (outside) the reporting newspaper's province and when the articles are written by national (local) newspapers.

## 5. Cross-Sectional Variation in the Influence of Newspaper-Conglomeration Reforms

In this section, we examine the impact of conglomeration conditional on province-, newspaper-, and firm-level attributes that shape corporate-news-reporting incentives. Section 5.1 examines the strength of provincial political and market-level institutions, Section 5.2 examines the effect of central versus local government ownership of the conglomerated newspapers, and Sections 5.3 and 5.4 examine the impact of the covered firm’s ownership and residency characteristics, respectively.

### 5.1. Province-Level Political versus Market-Based Incentives

Economic development creates a demand for credible, market-oriented information; however, the underlying consumer preferences for it, and the ability of newspapers to deliver it for political reasons, is expected to vary across locations. The market-demand side effects of commercialization should be stronger in commercial centers (such as Guangdong and Shanghai) and weaker in political centers (such as Beijing and Shaanxi). Similarly, the political role of official newspapers should be stronger in highly politicized regions and weaker in settings with strong market institutions. We expect the impact of conglomeration to reflect differences in the relative strength of these local incentives.

To examine conglomeration effects conditional on these local incentives, we estimate variations of the following model conditional on both newspaper orientation and the prevailing political and market incentives in the newspaper’s province:

$$\begin{aligned}
 \text{Tone}_{ijkt} \text{ (or Political Tags}_{ijkt}\text{)} &= \alpha + \text{Province-Year-Month} + \text{Industry} \\
 &+ \beta_1 \text{Conglomerated}_{kt} + \beta_2 \text{Outside Province}_{ijkt} \\
 &+ \beta_3 \text{SOE}_{jt} + \beta_4 \text{Firm Size}_{jt} + \beta_5 \text{ROA}_{jt} \\
 &+ \beta_6 \text{Market to Book}_{jt} + \beta_7 \text{Leverage}_{jt} \\
 &+ \beta_8 \text{Return}_{jt} + \beta_9 \text{Article Length}_{ijkt} + \varepsilon_{ijkt}.
 \end{aligned} \tag{3}$$

Using the full sample of newspaper articles, we classify provinces and province-level municipalities as having high or low market orientation using the Fan and Wang (2003) marketization index. Because of potential province-level selection biases in our newspaper databases (namely, not all regions are represented in the sample), we also perform an analysis that examines only newspapers domiciled in Beijing and Guangdong, two key locations that capture China’s political versus market orientation continuum. Beijing, as the seat of government, is a highly political region; in contrast, Guangdong is a large, market-oriented province (anchored by the long-standing special economic zone of Shenzhen). Tables 6 and 7 present selected coefficients from these sets of estimations.<sup>25</sup>

<sup>25</sup>The estimations for Beijing and Guangdong in Table 7 use year-month fixed effects.

Table 6  
Influence of Conglomeration Conditional on Marketization Index

	Official			Nonofficial		
	High	Low	Difference	High	Low	Difference
Tone:						
Conglomerated	.050** (17.427)	.070** (21.072)	-.020** [21.71]	-.056** (-6.741)	-.023* (-2.301)	-.033* (6.19)
Adjusted R <sup>2</sup>	.110	.147		.100	.131	
N	139,304	100,032		198,967	65,228	
Political Tags:						
Conglomerated	.044** (6.632)	.236** (20.282)	-.192** [240.84]	.011 (.820)	.004 (.332)	.007 (.16)
Adjusted R <sup>2</sup>	.137	.283		.058	.102	
N	139,304	100,032		198,967	65,228	

**Note.** Values are selected coefficients and *t*-statistics (in parentheses) from estimations of equation (3). Tests of difference ( $\chi^2$ ) are in brackets. High and low refer to rank on the Fan and Wang (2003) marketization index.

\*  $p < .05$ .

\*\*  $p < .01$ .

Results using these two approaches yield very similar inferences, namely, that the commercial (political) effects of conglomeration on local nonofficial (official) newspapers are, generally, more pronounced in provinces with stronger levels of market-oriented (politically oriented) institutions. The incremental positive bias and political content introduced into official newspaper articles following conglomeration is amplified in politically oriented provinces and attenuated in settings where readership is more likely to demand and reward credible journalism. In contrast, the incremental reduction in positive tone in nonofficial newspapers' articles following conglomeration is generally found only in market-oriented regions; in highly politicized regions, conglomeration seems to have only a minimal impact on the credibility of articles in nonofficial newspapers.

### 5.2. Local versus Central Government Ownership

Our earlier analyses document that the differences in tone and political content of articles published by official versus nonofficial newspapers (Diff\_Tone and Diff\_Tags) are significantly larger for central-government-controlled newspapers than local-government-owned newspapers. One possible explanation is that, being under the control of the central government, national official newspapers have stronger political incentives to serve as government mouthpieces, while nonofficial newspapers have more confidence in specializing in producing market information, and this was the case even prior to the conglomeration reform. In contrast, both official and nonofficial local newspapers might face stronger countervailing commercial and political incentives than national newspapers.<sup>26</sup>

<sup>26</sup> For example, local newspapers have a greater reliance on revenue (because of local government budget constraints), while local nonofficial newspapers might receive weaker political protection than national newspapers.



Table 7  
Influence of Conglomeration in Guangdong versus Beijing

	Official			Nonofficial		
	Guangdong	Beijing	Difference	Guangdong	Beijing	Difference
Tone:						
Conglomerated	.018** (4.481)	.023** (8.260)	-.005 [.97]	-.041** (-7.524)	-.008** (-3.228)	-.033** [32.35]
Adjusted R <sup>2</sup>	.103	.126		.064	.071	
N	86,525	86,130		342,357	607,690	
Political Tags:						
Conglomerated	-.066** (-7.613)	.075** (6.876)	-.141** [91.72]	.002 (.263)	-.001 (-.260)	.03 [.011]
Adjusted R <sup>2</sup>	.084	.194		.049	.060	
N	86,525	86,130		342,357	607,690	

Note. Values are selected coefficients and *t*-statistics (in parentheses) from estimations of equation (3). Tests of difference ( $\chi^2$ ) are in brackets.

\*\*  $p < .01$ .

Under these conditions, we would expect conglomeration to have a greater impact among local-government-owned newspapers.

Table 8 presents reestimations of equation (3) after partitioning the sample by central versus local government ownership. Consistent with the preceding prediction, we find that the effects of conglomeration, especially as it relates to an increase in the positive bias in official newspaper articles, is significantly stronger among locally owned newspapers.

### 5.3. State Ownership of the Covered Firm

State-controlled newspapers have a strong political incentive to positively bias articles written about state-controlled firms vis-à-vis non-state-owned firms. We predict that conglomeration serves as a means to potentially exacerbate (attenuate) the positive bias afforded state-owned entities in official (nonofficial) newspapers, as official (nonofficial) newspapers are no longer constrained by market forces (no longer influenced by political considerations) in writing positive stories about the state-owned enterprise. Table 9 presents reestimations of equation (3) after partitioning the sample by whether the covered firm is state controlled. Consistent with the preceding prediction, we find that the decrease in the positive bias in nonofficial newspapers following conglomeration is primarily found in articles about state-owned firms. Thus, the media-conglomeration reform seems to have enabled more critical reporting about state-owned firms by the nonofficial press. In contrast, the increase in positive bias in official newspapers following conglomeration is similar for articles written about both state-owned and non-state-owned listed firms.

Table 8  
Influence of Conglomeration Conditional on Government Ownership

	Official			Nonofficial		
	National	Local	Difference	National	Local	Difference
Tone:						
Conglomerated	-.003 (- .996)	.060** (21.901)	-.063** [253.68]	-.007** (-4.233)	-.049** (-5.804)	.041** [33.91]
Adjusted R <sup>2</sup>	.114	.153		.0645	.131	
N	57,230	239,336		1,215,241	264,195	
Political Tags:						
Conglomerated	-.011 (-1.202)	.082** (9.599)	-.093** [93.19]	-.010** (-4.632)	.011 (.798)	-.021+ [2.97]
Adjusted R <sup>2</sup>	.214	.240		.0612	.0822	
N	57,230	239,336		1,215,241	264,195	

**Note.** Values are selected coefficients and *t*-statistics (in parentheses) from estimations of equation (3). Tests of difference ( $\chi^2$ ) are in brackets.

\*\*  $p < .01$ .

#### 5.4. Locality of the Covered Firm

Table 4 documents that articles published about firms domiciled outside the newspaper's province are more critical than articles about local firms, with this locality effect stronger among official newspapers. Given these differences in reporting incentives, Table 10 presents reestimations of equation (3) after partitioning the sample by whether the covered firm is located in versus outside the newspaper's province. This evidence suggests that conglomeration allows official newspapers to pursue their political agenda, with articles written about local firms exhibiting an incrementally larger increase in political bias. One possible reason is that local politicians tend to protect the local (nonlocal) firms that are (not) under their control more (less). In contrast, the reduction in political bias in nonofficial newspapers as a result of conglomeration is statistically similar in articles written about local and nonlocal firms.

The results in Tables 6–10 demonstrate that the impact of newspaper conglomeration on reporting behavior is influenced by variation in local market and political forces arising from the newspapers' local institutional arrangements and the characteristics of the covered firm. Official newspapers experience a broad increase in positive political bias following conglomeration, with the effect strongest in those contexts where the incentives for bias are strongest. In contrast, the reduction in political bias observed in nonofficial newspapers following conglomeration is less robust, with the effects strongest in market-oriented regions and primarily limited to a reduction in positive tone but not in political slogans. Putting the results together, we see that conglomeration yields a net reduction of positive-tone bias only in settings with strong market institutions. Absent these strong market forces, the net conglomeration effect is an increase in positive-tone bias driven by the shift in the behavior of official newspapers and limited response by nonofficial newspapers.

Table 9  
Influence of Conglomeration Conditional on Firm Ownership

	Official			Nonofficial		
	State	Nonstate	Difference	State	Nonstate	Difference
Tone:						
Conglomerated	.035** (16.358)	.036** (8.622)	-.01 [.01]	-.008** (-4.297)	.007** (2.617)	-.015** [21.49]
Adjusted R <sup>2</sup>	.141	.172		.0624	.0836	
N	223,716	72,850		1,093,407	386,029	
Political Tags:						
Conglomerated	.045** (5.364)	.036** (3.254)	.09 [.47]	-.013** (-4.809)	.002 (.588)	-.015** [12.26]
Adjusted R <sup>2</sup>	.248	.216		.0660	.0575	
N	223,716	72,850		1,093,407	386,029	

Note. Values are selected coefficients and *t*-statistics (in parentheses) from estimations of equation (3). Tests of difference ( $\chi^2$ ) are in brackets.

\*\*  $p < .01$ .

## 6. Additional Analyses and Robustness Tests

### 6.1. Alternative Research Designs

This section presents additional evidence for the effect of conglomeration reform using two alternative research designs: one that exploits a small sample of conglomeration events (when local newspapers are combined into a news group) during our sample period and one that examines news articles published following corporate earnings announcements.

#### 6.1.1. Difference-in-Differences Approach

To isolate the incremental effects of newspaper-conglomeration activities, we employ a difference-in-differences methodology that exploits changes in the newspapers' control structure during our sample period. To do this, we reestimate variants of equation (1) using only articles published in local newspapers that were conglomerated into a media business group between 2001 and 2010. The advantage of this methodology is our ability to attribute shifts in articles' characteristics to incentives created by the newspaper conglomeration. The downside is that our analysis is limited to a subsample of 15 local newspapers controlled by seven news groups. The reduction in sample size is due to limited conglomeration activity after 2000 and because the research design requires at least one official and one nonofficial newspaper to have been conglomerated into the same news group in the year of formation.<sup>27</sup>

<sup>27</sup> In addition, the conglomeration activity we observe in this analysis occurred during the later stages of China's media reforms. Because the timing of province-level reforms is self-selected, local governments engaging in this activity after 2000 are inherently different from local governments engaging in similar media reforms prior to 2000. Finally, our sample is heavily influenced by observations drawn from the politically liberal, market-oriented city of Shenzhen. *Shenzhen Economic Daily*

Table 10  
Influence of Conglomeration Conditional on Firm Locality

	Official			Nonofficial		
	In Province	Outside Province	Difference	In Province	Outside Province	Difference
Tone:						
Conglomerated	.052** (10.314)	.029** (12.795)	.023** [16.84]	-.007 (-1.455)	-.004* (-2.314)	-.003 [.41]
Adjusted R <sup>2</sup>	.109	.160		.0486	.0694	
N	75,874	220,692		233,342	1,246,094	
Political Tags:						
Conglomerated	.108** (6.914)	.020* (2.341)	.088** [22.10]	-.014 (-1.577)	-.009** (-3.430)	-.005 [.27]
Adjusted R <sup>2</sup>	.215	.254		.0711	.0618	
N	75,874	220,692		233,342	1,246,094	

Note. Values are selected coefficients and *t*-statistics (in parentheses) from estimations of equation (3). Tests of difference ( $\chi^2$ ) are in brackets.

\*  $p < .05$ .

\*\*  $p < .01$ .

In untabulated analyses, we continue to find evidence supporting our main hypothesis using this difference-in-differences specification. After performing separate estimations by the newspaper's orientation, we observe that the effect of conglomeration activity is to attenuate the positive tone and political content found in nonofficial newspapers; in contrast, local official newspapers maintained their heightened level of political content and increased their positive reporting bias following conglomeration.

### 6.1.2. Newspaper Coverage of Corporate Earnings Announcements

We employ a secondary research design that examines the attributes of financial news articles written immediately following corporate earnings announcements. Earnings announcements have two features that make for a powerful setting to study media bias. First, earnings announcements are well-defined, value-relevant events during which newspapers have salient market-based incentives to report and interpret the financial performance of the listed firm. Second, because multiple newspapers have economic and political incentives to report on the performance of the announcing firm, earnings announcements provide a setting in which newspaper professionals (journalists and editors) across China are concurrently performing the same task (publishing an article) in response to the same underlying economic event and using similar inputs (for example, the earnings-announcement press release and related financial disclosures). Thus, articles written immediately following the earnings announcement should relate to the same underlying topic but individually reflect the preferences and editorial di-

(a nonofficial newspaper) and *Shenzhen Special Zone Daily* (an official newspaper) account for 39.96 percent and 24.12 percent of this sample, respectively.

rection of the publishing newspaper. Homogeneity in underlying content should mitigate research-design concerns imbedded in our main analyses; however, if the media outlets have less discretion or weaker incentives for bias or inject political rhetoric into their coverage of earnings-related news, this research-design choice may hinder our ability to detect conglomeration effects.

We perform this analysis using samples that require that both conglomerated and nonconglomerated official and nonofficial newspapers publish articles about a specific earnings-announcement event.<sup>28</sup> The advantage of these restricted earnings-announcement samples is that we can test our primary hypothesis using an identification strategy that mimics a traditional difference-in-differences research design. In these specifications, we include fixed effects for each firm-specific earnings-announcement event, year-week fixed effects to control for time-varying factors affecting Tone and Political Tags arising from differences in the timing of the articles' publication, and attributes of the newspaper (National Newspaper or Outside Province) and article (Article Length) that are correlated with Tone and Political Tagging but are not absorbed by the fixed-effects structure.

Untabulated estimations reveal that both the tone and political content of contemporaneously published articles are affected by a newspaper's orientation and conglomeration status. For both samples, we observe that articles of official (nonofficial) newspapers display more (less) positive tone and more (less) political content, with these differences—especially among first articles published—magnified for conglomerated newspapers. Together, our earnings-announcement tests, which are designed to control for differences in coverage and topic selection that could confound our primary tests in Section 4, yield compelling evidence that the political bias in corporate news coverage in China is affected by whether the reporting newspaper belongs to a conglomerated media group.

## 6.2. Robustness Tests

### 6.2.1. Nonofficial Party Newspapers

Ten nonofficial newspapers in our sample are controlled by specific party organizations. However, because of their focus on business news, commercial orientation, and lack of state funding, we classify these newspapers as nonofficial

<sup>28</sup> We identified earnings-announcement dates for all Chinese listed firms over the time period 2000–2010 through the China Stock Market and Accounting Research database, matched our full sample of newspaper articles to these event dates, and retained all news articles published on or within 7 days of the listed firm's earnings-announcement date (days 0 to 7). Next, we retained those earnings-announcement events only when each type of newspaper published at least one article about the announcing firm during the 7-day (0, 7) earnings-announcement window. This restricted sample consists of 56,346 articles published by 108 newspapers, covering 1,988 earnings-announcement events by 619 firms. To ensure that we capture a newspaper's first impression of the listed firm's financial performance, and thus create better comparability of content across articles, we also further restricted the sample to include only the first article published by each newspaper during the earnings-announcement window. This yields a final restricted sample of 23,749 articles for 1,988 earnings-announcement events.

newspapers. As a robustness check, we separately identify these 10 newspapers as nonofficial party newspapers and compare them with the remaining sample of nonofficial nonparty newspapers. In terms of newspaper conglomeration, only one of these nonofficial party newspapers (*Market Guide News*, from Hubei province) is affiliated with a conglomerated news group. Reestimating equation (1) after partitioning our nonofficial newspapers into party- and non-party-controlled newspapers reveals two untabulated findings. First, although nonofficial party and nonparty newspapers are less politically biased than official newspapers, nonofficial nonparty newspapers are the least biased. This suggests that the party affiliation of nonofficial newspapers has attenuated the commercialization effect in reducing political bias. Second, the conglomeration effect for nonofficial party newspapers is incrementally stronger than that for nonofficial nonparty newspapers. These results suggest that conglomeration can play an important role in mitigating the political forces that currently offset the commercial incentives of nonofficial party newspapers. However, we caution that these inferences are based on a very limited sample of observations.

### 6.2.2. Newspapers in Tier-One Cities

Our descriptive evidence suggests that our newspaper databases are not comprehensive across all provinces. The systematic absence of local official and/or nonofficial newspapers in these databases has the potential to induce selection bias into our analysis if these database-coverage decisions are nonrandom. To validate that our results are not driven by such a coverage bias, we reestimate our main analysis using only newspapers domiciled in China's four tier-one cities (Beijing, Guangzhou, Shanghai, and Shenzhen). We focus on tier-one cities for two reasons. First, these cities represent China's leading political and business centers. Second, our primary data sources, Newswise and the China Financial Newspaper Searching System, provide comprehensive coverage of leading local newspapers in these four cities. Untabulated estimations of equation (1) using this restricted, comprehensive sample of local newspapers confirm our main conglomeration results.

### 6.3. *Analysis of the Number of Articles Published*

In untabulated analyses, we also examined whether conglomeration affects the number of corporate news articles published by official and nonofficial newspapers. If conglomeration mitigates incentives to censor negative news (for nonofficial newspapers) and creates incentives to politicize corporate news (for official newspapers), we would expect to see an increase in the average number of articles being published following conglomeration for both types of papers. In contrast, if conglomeration primarily affects how events are reported, or changes the mix of corporate events covered (given that newspapers are frequently constrained by a set number of pages), we would observe no change in the number of articles published. After controlling for province and year fixed effects, we fail to

document a significant change in the number of articles published by either non-official or official newspapers after conglomeration.

## 7. Conclusion

This paper provides large-sample evidence that the formation of commercial news groups can increase the diversity of corporate news reported by state-controlled newspapers. We find that the conglomeration of local newspapers into a single media group magnified these differences in the tone and political content of corporate news articles published by official and nonofficial newspapers. These results are robust to alternative research designs that attempt to address selection biases and potential endogeneity concerns in the sample. To the extent that the increase (decrease) in political bias for the official (nonofficial) newspapers is an indication that they are more focused on their role as mouthpiece (market-information provider), these results are consistent with each type of newspaper specializing in its own separate objective, thereby enabling the Chinese press to pursue its dual missions.

The evidence in this paper suggests that carefully structured media reform can enable the state media under an authoritarian government to balance its political and market-development roles. These results have important implications for other emerging economies in which governments are autocratic and a large portion, if not all, of the press is under state control. Future research should focus on whether the observed reduction in political bias significantly enhances the overall information environment of China's capital markets. For example, do observed decreases in positive tone and political content reflect more objective reporting of the same events (that is, less bias) or less censorship (that is, more negative stories being published)? Do these newspaper articles convey as much information as those published outside China? Did these reforms reduce information asymmetry of the listed firms and/or improve the stock-price-formation process? Are there other institutional constraints that hamper the press's role in serving as an information intermediary in China?

Another future extension is to understand the types of information being conveyed in these various kinds of news articles. Although the official newspapers are found to have more positive bias or political slant, does the political content of official news articles convey any information to the market, and under what conditions do these political messages have value? Do the articles convey government policy news that impacts not only the firm mentioned in the article but also the industry in which the firm operates? Compared with official newspapers, do nonofficial newspapers focus more on firm-specific information and convey less policy or macroeconomic news? To what extent do differences in tone and political content reflect asymmetries in the types of stories covered by official and nonofficial newspapers' articles? Answering these questions will further enhance our understanding of how political and market forces shape the reporting incentives of newspapers and their role as an information intermediary in an emerging market.

**Appendix**  
**Additional Information**

**Table A1**  
**Listed Firms in Newspaper Articles**

Year	Firms	% of Sample
2000	922	6.44
2001	1,056	7.38
2002	1,127	7.88
2003	1,196	8.36
2004	1,250	8.74
2005	1,328	9.28
2006	1,337	9.35
2007	1,378	9.63
2008	1,491	10.42
2009	1,567	10.95
2010	1,655	11.57
Total	14,307	100

**Table A2**  
**Descriptive Statistics for Listed Firms in Newspaper Articles**

	Mean	Median	SD	25th Percentile	75th Percentile
SOE	.674	1.000	.469	.000	1.000
Firm Size	14.815	14.706	1.046	14.105	15.391
ROA	.022	.030	.084	.009	.056
Market to Book	1.969	1.259	2.220	.696	2.462
Leverage	.525	.507	.271	.362	.642
Return	.028	-.060	.662	-.224	.152

**Note.**  $N = 14,307$ .



Table A3  
Definitions of Variables

Variable	Definition
$Tone_{jkt}$	Natural logarithm of 1 plus the ratio of the number of positive sentences minus the number of negative sentences about a listed firm in a financial news article, scaled by 1 plus the sum of positive and negative sentences
Political Tags $_{jkt}$	Natural logarithm of 1 plus the frequency of political key words (from Xi 2007) in the article; the frequency, measured as the article's term frequency-inverse document frequency (tf-idf) reflects how important a word is to a document; the tf-idf value increases proportionally to the number of times a word appears in the document but is offset by the frequency of the word in the corpus
Diff_Tone $_j$	Difference in the average Tone value between official and nonofficial newspapers in a firm-month; measured as the average article's Tone value for firm $j$ in month $t$ in official newspapers minus the average article's Tone value in nonofficial newspapers over the same month
Diff_Political Tags $_j$	Difference in the average Political Tags value between official and nonofficial newspapers in a firm-month; measured as the average article's Political Tags value for firm $j$ in month $t$ in official newspapers minus the average article's Political Tags value in nonofficial newspapers over the same month
Conglomerated $_t$	Indicator variable equal to one if the newspaper is part of a commercial news group at the end of year $t$ and zero otherwise
National Newspaper $_k$	Indicator variable equal to one if the newspaper is owned by the central government or national party organization and zero otherwise
Outside Province $_{jkt}$	Indicator variable equal to one if the firm covered in the news article is outside the province of the local newspaper and zero otherwise; firms and local newspapers are assumed to be domiciled in the provinces where their headquarters are located
SOE $_j$	Indicator variable equal to one if the company is ultimately controlled by either the central or local government; a firm is considered state controlled if the state owns more than 20 percent of its equity in year $t$
Firm Size $_j$	Log of the firm's total market value of equity at the end of fiscal year $t$
ROA $_t$	Firm's return on assets, measured as net income in year $t$ scaled by total assets at the end of fiscal year $t$
Market to Book $_t$	Ratio of the firm's market value of equity to book value of equity at the end of year $t$
Leverage $_j$	Ratio of the firm's long-term debt to shareholders' equity at the end of year $t$
Return $_j$	Annual market-adjusted stock return for the firm in year $t$
Article Length $_{jkt}$	Log of the number of sentences in financial news article $i$ about firm $j$ in newspaper $k$ in time period $t$
% Conglomerated $_j$	Percentage of firm-month articles published about firm $j$ in month $t$ in conglomerated newspapers
% National Newspaper $_j$	Percentage of firm-month articles published about firm $j$ in month $t$ in national newspapers
% Outside Province $_j$	Percentage of firm-month articles published about firm $j$ in month $t$ in local newspapers outside the province of the listed firm
Relative Article Length $_j$	Difference in the length of articles published in official and nonofficial newspapers about firm $j$ in month $t$
Relative Article Timing $_t$	Absolute difference in the average number of days between the publication of official and nonofficial newspaper articles about firm $j$ in month $t$

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