# **Protecting the Giant Pandas:**

## **Newspaper Censorship of Negative News**

#### **Abstract**

We investigate newspaper censorship of firm-level negative news using a rare setting in which many companies were involved in similar tunneling scandals. We find that the Chinese censorship authorities restrict the dissemination of tunneling news on state-owned enterprises, firms with greater numbers of employees, and large taxpayers. An examination of the difference in censorship behaviors between the central and provincial authorities reveal three incentives that direct the censorship practices: strong local protectionism, cross-provincial competition, and the concern for the relative positions in the political power system. Finally, we show that the tunneling news that is reported leads to negative market reactions and greater trading volumes, indicating that the news that survives the censorship has information content.

**Key words:** Censorship, Media, Newspapers, China, Social and Economic Incentives, Local Protection, Information Environment, Market Reactions

## Protecting the Giant Pandas: Newspaper Censorship of Negative News

#### 1. Introduction

The impact of the government on firms' operations and information environment has been a subject of long-standing interest to researchers (e.g., Johnson and Mitton 2003; Leuz and Oberholzer-Gee 2006; Faccio, Masulis, and McConnell 2006; Fan, Wong, and Zhang 2007; Claessens, Feijen, and Laeven 2008; Calomiris, Fisman, and Wang 2010; Faccio and Hsu 2017). In particular, government protection of firms through censorship can reveal governments' interests, intentions, and goals (King, Pan, and Roberts 2013). Although it is widely believed that censorship exists in many countries around the world and that it could potentially have a significant impact on market participants, little evidence exists regarding how censorship is conducted. Our study employs an interesting Chinese setting to attempt to open the black box of censorship and addresses three research questions. First, is censorship implemented for all negative news or is more focus given to news that involves specific types of firms? Second, is the censorship practice identical nationwide or is it affected by the power structures and incentives of different levels of governments? Third, concerning the economic consequences of censorship, does censorship block important news? We test this by examining whether negative news that *survives* the censorship (i.e., that is reported) has information content.

Censorship is difficult to study because the censored news is *unobservable*. To address this issue, we make use of a rare setting in which many companies were involved in a similar type of scandal. Our premise is that, in theory, firms should get a similar level of news coverage for their scandals in the absence of censorship, after controlling for the extent of the problems and other firm-level characteristics that are expected to affect negative-news coverage. We attribute the

systematic difference in press coverage of the scandals to censorship. Jiang, Lee, and Yue (2010) show that large Chinese shareholders tunnel the listed companies using inter-corporate loans, and that such tunneling leads to serious economic consequences. <sup>1</sup> In 2006, the Chinese government declared such tunneling to be a crime that hampers the normal function of the capital markets and thus increases the financial risk. <sup>2</sup> Government entities have motives to censor tunneling-related news because such tunneling severely affects firms' operating and stock performance and reveals the controlling shareholders' lack of credit and negligence of the interest of minority shareholders. Hence, media coverage of tunneling news can adversely affect the reputation of the tunneling firms and the central- and provincial-level governments if state-owned controlling shareholders are involved.

The advantages of our setting are that the tunneling mechanism is similar across firms and that the extent of tunneling is observable and measureable, making it possible for both the media to observe and report the news, and for us to control for the tunneling problems.<sup>3</sup> China also provides a useful setting to study censorship given its political system.

We follow Jiang et al.'s (2010) approach in identifying tunneling firms for 2001 to 2006. We *read all the news articles* related to these firms that were published from 2001 to 2009 in

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<sup>&</sup>lt;sup>1</sup> Jiang et al. (2010) show that controlling shareholders use listed companies as cash machines: they borrow from listed companies and typically never pay back the principal and the interest. Such tunneling leads to significant economic consequences. For example, they show that the firms in the top other receivables deciles are significantly more likely to incur large losses and become candidates for delisting within two years compared to other firms.

<sup>&</sup>lt;sup>2</sup> China's State Council explicitly stated that inter-corporate-loan tunneling is criminal. For example, in its 2006 (No. 128) announcement, China's State Council stated that "The prevalence of large-shareholder occupying funds of listed firms seriously hampers firm development, affects the development of capital markets, and leads to losses and delisting of public companies. It is a crime that seriously damages the rights of companies and medium and small shareholders." According to an anonymous government official at the Shenzhen Security Exchange, the presence of inter-corporate tunneling reduces the incentives for medium and small market participants to invest, and damages the capital market's financing function.

<sup>&</sup>lt;sup>3</sup> We also consider other settings such as the food-quality scandals (e.g., the poisonous-formula scandal in 2008). However, it is difficult to study those settings as the number of affected companies is small and the extent of the problem is not measurable. Also, in some scandals, the government bans all news dissemination if the news is extremely sensitive. It is also difficult to study cross-sectional differences for scandals of this type as all news is banned.

439 newspapers, and we classify the news based on its content into tunneling-related, non-tunneling negative, and non-negative news. We also classify the news into national-level and local-level news based on the readership of the newspapers. National-level refers to news published in national-level newspapers. For local-level news, which refers to articles published in local-level newspapers, we further classify them into in-province and out-of-province news: in-province (out-of-province) refers to news reported by *local* newspapers on firms located in the same (different) provinces as (from) the newspapers' locations.<sup>4</sup>

Our first set of tests show that censorship is *not* conducted equally for *all* tunneling firms. Instead, stronger protection is given to firms that are essential for the governments' economic and social incentives: state-owned enterprises (SOEs), firms with large numbers of employees, and large taxpayers. Tunneling by state blockholders represents a crime committed by government entities and thus severely harms government reputation, creating strong censoring incentives for news involving SOEs. Firms with large numbers of employees are important since protecting employment and enhancing social stability is a crucial objective of the Chinese Communist Party (CCP). One important aspect of such protection is through censorship of negative news related to these firms. Large taxpayers are essential for government fiscal income and their performance plays a crucial role in the promotion of local officials. To meaningfully compare firms with large numbers of employees or large taxpayers to their counterparts, we use propensity-score matching to identify otherwise-similar firms (including firm size and profitability) that differ significantly in the number of employees or the total income taxes paid.

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<sup>&</sup>lt;sup>4</sup> Censorship can also be conducted at a level lower than the provincial level. We refer to the provincial or lower levels as provincial level for brevity.

We show that for the national-level newspapers, tunneling firms that are state-owned, with large numbers of employees, or paying more taxes, receive significantly fewer items of tunneling news than tunneling non-SOEs, smaller employers, or smaller taxpayers after controlling for the extent of tunneling and other factors that may affect coverage. Importantly, these firms also get a significantly smaller amount of other negative news, but do *not* differ from their counterparts in the likelihood of non-negative (either neutral or positive) news. Furthermore, we find that the protection of SOEs covers both central- and provincial-level SOEs, but mainly concentrates on large SOEs.

In our second set of tests, we demonstrate that the censorship practice is not identical nationwide but differs systematically across different authorities in line with their political structures, and that these differences can be explained by local protectionism, cross-province competition, and the CCP power system. Perhaps most interestingly, unlike their national-level counterparts that give more protection to certain types of firms, provincial governments suppress all tunneling news on in-province public firms. The results highlight the strong impact of local protectionism: For a provincial government, all listed firms need to be protected given their significant influence on the local economy.

In contrast, when local newspapers are reporting on firms headquartered in provinces outside of the newspaper's province, we find that the protection only exists for central-level SOEs. The provincial censoring authorities do not protect firms located in other provinces (even if they are provincial-level SOEs) due cross-province competition. The fact that central-level SOEs are

<sup>5</sup> The systematic differences in coverage could either be due to newspaper censorship by governments or to the newspapers' reduced incentives to report protected firms in anticipation of censorship. We do not distinguish the two because they are both related to censorship.

protected reveals the concern for the relative position in CCP power system. Provincial-level governments need to be concerned about the significant positions of central SOEs in the CCP power structures (discussed in detail in Section 2.1); thus, out-of-province central SOEs are protected.

Our third set of tests reveals significant capital-market impact of the tunneling news that survives the censorship. We find that reporting on tunneling leads to negative abnormal returns, greater abnormal trading volumes, and larger abnormal market depths. These results suggest that the protected firms benefit from the censorship through avoiding negative coverage that likely would have led to negative returns.<sup>6</sup>

As explained, in our primary analyses we focus on tunneling news because our research design allows us to better capture the likelihood of a firm receiving coverage of tunneling problems. However, in additional analyses, we also descriptively investigate how the government selectively censors *other* types of negative news. We find evidence of censorship of negative news articles reporting on firms' violations of laws and regulations, general corporate conditions, and shareholders' disposals of equity. We do not find evidence of censorship related to bankruptcy and restructuring of financially distressed firms. Overall, these results imply that the censoring authorities focus on news related to firm reputation and future prospects, while they pay little attention to the news reporting on firms' distress conditions as such issues tend to be relatively well-known.

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<sup>&</sup>lt;sup>6</sup> Although we find (indirect evidence) that some firms benefit from the censorship, this does *not* imply that censorship is "good." The protected firms avoid negative market reactions (at least temporarily), but this affects the fairness of the system for uninformed (small) investors and other firms.

Finally, we find that the official newspapers, often viewed as the CCP's mouthpieces, have fewer incentives to follow tunneling events. However, they are also to some extent granted more rights to report on the protected companies. In contrast, commercial newspapers have higher incentives to report tunneling news, but they are restricted by the censorship and mostly follow the less-protected companies.

Our paper offers several contributions. First, we add to the literature on government control over flow of information. Because of the difficulty to observe information control, prior literature employs various approaches, such as experimental (King, Pan, and Roberts 2014), analytical (Lorentzen 2014), using indirect evidence (Piotroski, Wong, and Zhang 2015), and descriptive (Qin, Stromberg, and Wu 2017). We provide direct evidence of newspaper censorship by employing a research design that allows us to partially "open up the black box" of government censorship. We provide rich evidence to enhance our understanding of the question of "how," such as the selection of firms to be protected, the varied practices by different levels of authorities, the impact of the censorship, and the role of newspaper types.

Second, by being the first to explore the different incentives of central- and provincial-level governments and their impact on censorship preferences, we contribute to the literature on how government structure and incentives affect the government's role in the economy (e.g., Jones, Sanguinetti, and Tommasi 2000; Zhuravskaya 2000; Jin, Qian, and Weingast 2005; Li and Zhou 2005). Our study highlights the important incentives that directs the censorship practices: (1) strong local protectionism - local governments protect their in-province "giant pandas;" (2) cross-provincial competition - they do not protect firms located in other provinces; (3) the

concern for power structures in CCP's system – they need to censor the negative coverage of central-level SOEs.

Third, we add to the literature on the media's effect on firms and their information environment (Joe 2003; Miller 2006; Core, Guay, and Larcker 2008; Dyck, Volchkova, and Zingales 2008; Joe, Louis, and Robinson 2009; Kothari, Li, and Short 2009; Bushee et al. 2010; Liu and McConnell 2013; Drake, Guest, and Twedt 2014; Dai, Parwada, and Zhang 2015), and to the interesting recent studies on governments' impact on the media (Piotroski, Wong, and Zhang 2016; You, Zhang, and Zhang 2017). Specifically, we document that the surviving tunneling news leads to negative abnormal returns, and increases trading volumes and market depths, thus showing the information content of a restricted category of news that is expected to be subject to the strictest censorship.

Finally, our study extends extant research on the value of political connections (Roberts 1990; Fisman 2001; Faccio 2006; Faccio and Parsley 2009; Chaney, Faccio, and Pasley 2010; Fisman and Wang 2015; Hope, Yue, and Zhong 2017). Though connections are not the focus of this paper per se, the protected firms in our study can be viewed as firms with government connections. We show that these firms benefit from censorship through avoiding negative coverage of large shareholders' tunneling scandals and the associated turmoil in the stock market, highlighting an additional benefit of political connections not discussed in prior literature.

#### 2. Institutional Background and Hypotheses Development

#### 2.1 Institutional Background

The CCP has employed media censorship since the establishment of the People's Republic

of China in 1949.<sup>7</sup> Censorship is considered to be an important policy to enhance the party's control and is conducted at both national and local levels. National-level newspapers, such as People's Daily, are directly monitored by the CCP's Publicity Ministry. Local newspapers are censored by the publicity departments at the provincial (or lower) levels. The censorship of newspapers has evolved with the rapid development of China's economy. In the late 1990s and early 2000s, many new business newspapers were created, accompanied by a conglomeration wave that re-organized a number of national- and local-level newspapers, such as Guang Ming Daily and Guangzhou Daily, into large newspaper groups.

Accompanied by the commercialization of newspapers, the CCP has also loosened the control of business news to some extent. For example, according to three anonymous interviewees, the publicity authorities normally do not control the dissemination of some day-to-day business news, such as news related to negative stock returns of publicly traded firms, because such information could easily be acquired from the stock market. However, for news that could lead to social turbulence and economic instability and that could harm government reputation, the publicity authorities will "provide guidance" through telephone calls, letters, or face-to-face communication. For example, in the scandal of "Yunnan Fanya Non-Ferrous Metal Exchange" in 2015 (also known as "China's Ponzi scheme"), all newspapers were advised not to cover related news. For other negative news, it is up to the different levels of publicity authorities and newspaper editors to decide whether they can be reported. Responsible persons

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<sup>&</sup>lt;sup>7</sup> See for example: The Press Publicity since the 18<sup>th</sup> CCP National Congress: Enhancing the Principle of "the Party Taking Charge of the Media." <a href="http://news.cntv.cn/2014/02/20/ARTI1392842585460468.shtml">http://news.cntv.cn/2014/02/20/ARTI1392842585460468.shtml</a>

<sup>&</sup>lt;sup>8</sup> We interviewed one government official in a city-level publicity department, one vice-chief editor in a provincial-level newspaper, and an experienced journalist in a national-level newspaper. We obtain the information provided in this section from these interviewes and the information was confirmed by all three anonymous interviewees. Importantly, all three interviewees confirm that governments have incentives to closely monitor news related to corporate scandals such as tunneling, especially when SOEs are involved.

of these authorities and newspapers may be punished if the published news leads to a negative impact in the society. Thus, publicity authorities are cautious when censoring news.

The incentives of censorship include both social and economic dimensions. It is an essential objective of the CCP to enhance stability in the society. Thus, the censorship authorities want to minimize news that could bring instability and harm the reputation of the government. In addition, the CCP may want to protect firms with large numbers of employees because such firms are more influential in the local community. To maintain the state's control over the economy, SOEs are an important group that the CCP often prioritizes. The CCP requires that large SOEs (including both central- and provincial-level SOEs) should establish modern governance and act as "good examples." Also, large firms that are crucial for GDP growth and taxation are an important group for the censorship authorities.

Different censorship authorities likely vary in their incentives. The national-level censorship is conducted by the publicity ministry and the key considerations are the national-level social and economic incentives. In contrast, the provincial-level publicity departments are more concerned about the social and economic objectives of their own provinces and their in-province firms. It is worth mentioning that these objectives are often key criteria of the promotion of provincial government officials, adding an additional political incentive that is less present at the national level.

Although local newspapers mostly cover their own local companies, they sometimes report on major events in companies located in other provinces. When censoring news related to companies in other provinces, the provincial-level publicity departments are less affected by the

<sup>&</sup>lt;sup>9</sup> This is stated in the CCP's *The Regulations of Establishing Modern Enterprise Systems and Enhancing Governance in State-owned Large- and Medium-Size Enterprises*, published in 2000.

in-province incentives stated above. Moreover, there is fierce competition in economic development and government official promotions among different provinces, leading to even weaker incentives to protect out-of-province firms. Therefore, the key consideration of the provincial-level authorities concerning out-of-province news is to protect central-level SOEs. Importantly, although the provincial-level censorship is conducted by the provincial authorities and is normally not affected by the authorities in other provinces, it could be affected by central-level SOEs as the administrative level of central SOEs (i.e., at the ministry level) is often higher than that of the provincial-publicity departments (i.e., at the department level).

Tunneling by large shareholders and related parties through inter-corporate loans was considered a serious issue. Large shareholders extracted cash from listed companies without paying back the funds obtained. Jiang et al. (2010) present statistics showing that such loans account for 8.1% of the total assets and 15.9% of the shareholders' equity in listed companies in the period of 1996-2004. They report significant consequences of these loans, including large losses, financial distress, delisting, and bankruptcy of listed companies. The tunneling problem persisted until declared illegal by the Chinese government in 2006. In 2006, China's State Council made it clear that inter-corporate-loan tunneling was criminal because it damaged the normal functioning of the capital market and discouraged medium and small investors. Because of the severe consequences of inter-corporate-loan tunneling, the reputation of the listed firms is seriously harmed if their tunneling is covered by the media. Many of the tunneling large shareholders are SOEs, which adversely affects the image of the government as a regulator that

<sup>&</sup>lt;sup>10</sup> It is worth noting the fact that the reason government did not intervene until 2006 is not because they could not observe the tunneling. In fact, they made efforts to reduce tunneling as early as 2001 (Jiang et al. 2010). The main issue is that many state-controlling shareholders were involved, which made the problem so profound that government intervention had to be implemented with caution.

protects investor rights and creates strong incentives for press control.

The tunneling setting provides a major advantage for our research design. The involved firms all use inter-corporate-loans as the tunneling channel and the same accounting procedure to recognize these loans (Jiang et al. 2010). Specifically, these loans are recorded as other receivables (*OREC*) on the balance sheet. Jiang et al. (2010) provide evidence that a firm's level of other receivables captures the extent of its large-shareholder-tunneling. As the account of other receivables is easily accessible through firms' financial reports, it significantly reduces the cost of newspaper journalists to identify tunneling firms, making it a plausible assumption that journalists are able to identify the tunneling activities by large shareholders.<sup>11</sup>

## 2.2 Hypotheses

Our first research question studies how the censorship authorities give priority to certain groups of firms. Our first hypothesis is related to firms that are essential for economic and social incentives, including SOEs, firms with large numbers of employees, and large taxpayers. SOEs have significant positions in many industries and tunneling through inter-corporate loans is an important issue in SOEs. Our descriptive statistics show that among the companies that have the most serious tunneling problems, 59% are SOEs. Firms with large numbers of employees and large taxpayers are important in the social and economic dimensions and could attract more attention from the government. Given the government's incentives to protect economic growth,

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<sup>&</sup>lt;sup>11</sup> During the reading of the tunneling news, we collect a large amount of evidence confirming that newspaper journalists are able to identify tunneling activities in both SOEs and non-SOEs through other receivables numbers disclosed in the financial statements. For example, in the article titled "SST Guangming's Occupation of 389 Million Fund: Half Uncertain and Half Unclear" and published in *China Business News* on October 25, 2006, the author clearly identifies the loans given to the controlling shareholder and its related parties.

social stability, and government reputation, we hypothesize (in the alternative form) that:

H1: Ceteris paribus, firms that are essential for economic and social incentives (SOEs, firms with large numbers of employees, and large taxpayers) are less likely to have their tunneling news reported in national-level newspapers.

Next, we explore whether the censorship practice is identical across the country or is affected by political structures. Section 2.1 discusses the strong economic and political incentives for provincial governments to suppress negative news of their in-province companies, either SOEs or non-SOEs. We expect stronger censorship of in-province negative news related to both SOEs and non-SOEs.

Regarding local newspapers' reporting of out-of-province firms, the fierce competition in economic development and government official promotions among different provinces reduce the incentives of provincial-level governments to implement tighter control of news related to firms in other provinces. The exceptions are central-level SOEs that locate in other provinces, as they have higher administrative level than provincial publicity departments. In sum, we hypothesize (in the alternative form) that:

## H2: The censorship practices are affected by government levels and power structures.

Finally, we examine economic consequences of the censorship system and the capitalmarket impact of the tunneling news that *survives* the censorship. To the extent that the tunneling news has incremental information content, we expect negative investor reactions and related capital-market consequences such as abnormal trading volumes. However, as the news is subject to close censorship, informative news could have been blocked in the process. It is thus possible that when it involves sensitive negative information, the news that survives loses its information content. Our final hypothesis is (in the alternative form):

## H3: Tunneling news that survives after the censorship has information content.

## 3. Research Design, Data, and Descriptive Statistics

## 3.1 Research Design

Our most important research-design choice is to focus on a sample of tunneling companies for our primary analyses. Censorship is difficult to study as the news that is censored is unobservable, thus prior research on government information control mainly uses an indirect approach to infer censorship. For example, Piotroski et al. (2015) infer information control (not censorship *per se*, but temporarily delaying firm disclosures and media coverage) in the period of sensitive political events by documenting a reduction in stock-crash risk in that period. We study a direct channel of censorship - through newspapers. To examine whether governments suppress negative press of a particular group over another, we need to make the assumption that the likelihood of negative coverage for the two groups is otherwise similar without the censorship. After a careful examination of our news database, we identify numerous factors that could lead to negative coverage, and it is difficult to control for all factors. One way to alleviate the concern is to focus on a specific problem that could lead to negative coverage (e.g., tunneling, fraud, etc.).

As long as we are able to control for the *extent* of the specific problem that affects coverage, we have reasonable confidence to believe that firms should receive a similar level of coverage on that specific issue without the censorship.

We choose to focus on inter-corporate tunneling as the research setting for several reasons. First, the extent to which firms are involved in inter-corporate tunneling is measurable using the proxy provided by Jiang et al. (2010). Large shareholders use similar methods to tunnel, making it possible to measure it with a standard proxy. It is also not difficult for journalists to discover the problem, as evidenced by the numerous tunneling-related news that we collect. Second, as stated above, we learn from three in-depth interviews that the publicity authorities are highly sensitive to tunneling news. If SOEs are involved, it becomes a crime committed by government entities and thus harms government reputation. Third, compared to other problems, such as food-quality scandals and accounting fraud, the number of firms involved in tunneling is greater, making the sample size large enough for the study.

Following Jiang et al. (2010), we identify the firms with other receivables above the 80th percentile as the firms that have tunneling problems.<sup>12</sup> Our access to the newspaper database starts from 2001, and tunneling through inter-corporate loans is greatly reduced through government intervention in 2006 (Jiang et al. 2010). Therefore, we use 2001 to 2006 as the period to identify the tunneling firms (514 firms). As we *read all the news* related to firms, due to resource constraints we restrict the tunneling sample to the firms that have other receivables above the 80th percentile at least three times during the six years (269 firms). These are the firms that have the most serious tunneling problems, and *ex ante* we expect them to attract more media

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<sup>&</sup>lt;sup>12</sup> In untabulated analyses, we find that requiring the level of other receivables to be above the 90<sup>th</sup> percentile does not affect our inferences (but reduces the sample size).

attention in absence of censorship.<sup>13</sup> For these firms, we read the articles related to them in our database from 2001 to 2009 and identify the tunneling-related news. The news coverage sample extends to 2009 as we find that newspapers still report some tunneling behaviors (conducted before 2006) even after the government intervention in 2006; that is, some tunneling news was delayed.<sup>14</sup> After 2009, articles related to inter-corporate-loan tunneling became rare, which indicates that firms are less likely to use this tunneling method after the government intervention. They might shift to other tunneling methods that are less observable.

We use the following model for our main model to examine the censorship preferences, with some variations in different analyses:

$$\begin{aligned} \textit{TunnelingNegative\_National}_{i,t} &= \beta_0 + \beta_1 SOE_{i,t} + \beta_2 SIZE_{i,t-1} + \beta_3 BTM_{i,t} + \beta_4 ROA_{i,t-1} \\ &+ \beta_5 \ LOSS_{i,t-1} + \beta_6 STD\_RET_{i,t-1} + \beta_7 OREC_{i,t-1} + \beta_8 LEVERAGE_{i,t-1} \\ &+ \beta_9 NonNegative_{i,t} + \beta_{10} Growth_{i,t-1} + \beta_{11} \text{Audit}Opinion_{i,t-1} \end{aligned} \tag{1} \\ &+ \beta_{12} BIG4_{i,t-1} + \beta_{13} AGE_{i,t-1} + \beta_{14} Promotion_{i,t} \\ &+ Year_t + Industry_i + \varepsilon_{i,t} \end{aligned}$$

Where TunnelingNegative\_National (TunnelingNegative\_inProv/TunnelingNegative\_outProv) is the natural logarithm of one plus the number of tunneling-related news articles published by national (in-province-local / out-of-province-local) newspapers and related to firm i in year t. 15 SOE is an indicator for state-owned enterprises. Importantly, we control for the amount of other receivables (OREC) and the number of total non-negative news items related to the firm (NonNegative) to take into account the extent of the tunneling problem and the likelihood that

<sup>&</sup>lt;sup>13</sup> Our inferences are unaffected if we restrict our sample to firms that have ranked above the 80th percentile at least four times during the six years.

<sup>&</sup>lt;sup>14</sup> Our inferences remain the same if we use the sample period of 2001-2006.

<sup>&</sup>lt;sup>15</sup> All our inferences stay unchanged if we replace the new-coverage variables (logarithm of number of news items) with indicator variables that equal one if a firm receives coverage of tunneling-related news.

the firm is covered by newspapers.

Additionally, we control for other potential factors that could affect the likelihood of the firm receiving tunneling-related news, including total assets (SIZE), book-to-market ratio (BTM), profitability (ROA), volatility (STD\_RET), leverage (LEVERAGE), growth (Growth), modified audit opinions (AuditOpinion), loss (LOSS), Big-4 auditors (BIG4), and number of years since IPO (AGE). Importantly, we control for provincial promotion events (Promotion) to make sure that our results are not driven by special event periods (i.e., a province-year variable). We also control for the potentially important impact of the CCP's National Congress as we include year fixed effects in all regressions. Finally, we include industry fixed effects. Appendix A provides descriptions of the variables.

Although our primary focus is on tunneling news, we also examine *other* negative news to further understand how the government selects the news topics to be censored. We divide the non-tunneling negative news into nine types: (1) violation of laws and regulations; (2) corporate governance; (3) earnings performance; (4) general corporate conditions; (5) stock-return performance; (6) disposal of equity; (7) bankruptcy; (8) restructuring; and (9) setbacks in the implementation of the Split-Share-Structure Reform (SSSR). We then examine the presence of censorship in each category.

## **3.2 Data and Descriptive Statistics**

We obtain accounting data and other company information from China Stock Market

<sup>&</sup>lt;sup>16</sup> BTM, ROA, STD RET, LEVERAGE, and Growth are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentiles.

We follow prior China studies in using the 22-industry classification (e.g., Jian and Wong 2010).

<sup>&</sup>lt;sup>18</sup> As discussed, unlike for tunneling news, we do not have a strong design when it comes to capturing the likelihood of other negative news; thus this analysis is primarily descriptive.

Accounting Research (CSMAR). We access newspaper articles from China National Knowledge Infrastructure (CNKI)'s Database of China's Major Newspapers. The database includes news articles published by about 500 newspapers.

We conduct the news search through the following procedures: First, we identify the target tunneling companies, as selected using the procedure described in Section 3.1. Second, we search for the full name, the abbreviation, the stock code, and other possible names in both the title and the content of the articles included in the database. We use a Java program to extract all the selected news items. Third, we identify non-negative and non-related news based on the title; if we cannot identify based on the title, we read the entire article. Finally, we read the rest of the articles to decide whether they are tunneling-related news, non-tunneling negative news, or non-negative news.

For the news related to our tunneling-sample firms, we identify the tunneling-related news. Three types of tunneling activities are most prevalent among the sample firms: (1) inter-corporate loans, (2) related-party transactions, and (3) loan guarantees provided for related parties. We define news reporting on these tunneling behaviors and their consequences as tunneling-related negative news. We consider other negative news as non-tunneling negative news. We describe the classification in Appendix B using an example.

The news is further classified into three categories based on the newspapers' readership and circulation. For newspapers that have nation-wide (local) circulation, we consider them as national-level (local-level) newspapers. For local newspapers, based on the headquarters of the listed firms, we classify them into newspapers located in the same provinces as the firms'

<sup>&</sup>lt;sup>19</sup> See http://epub.cnki.net/kns/brief/result.aspx?dbprefix=CCND.

headquarters (in-province) and those located in other provinces (out-of-province). After excluding the non-related news, we obtain 26,806 articles from 439 newspapers in the period of 2001 to 2009 for our 269 tunneling firms.

Table 1 presents the sample-selection process and its distribution by year and industry. In total, we have 2,100 firm-year observations. The number of observations is well distributed over our sample period. We observe a concentration of firms in the manufacturing industry (52.83%), followed by information technology (9.06%) and distribution and retail (6.73%). Panel A of Table 2 provides descriptive statistics of the sample. As the sample firms have severe problems of inter-corporate-loan tunneling, on average they have negative ROA (-0.020), high other receivables as a percentage of total assets (0.173), high leverage ratio (0.633), and high book-to-market ratio (0.890). Panel A also shows the mean number of news articles reported in each category. In Panel B, we provide the statistics of tunneling-news coverage at the firm level. We show that the mean (median) firm is reported 7 (5) times regarding their tunneling issue and 17 (11) times on other negative news during the sample period. Panel C of Table 2 presents the distribution of the tunneling, other negative, and non-negative news among the three levels (i.e., national, in-province, and out-of-province).

In Figure 1, we show the changes in press coverage of tunneling news over the sample period. The number of tunneling articles increases by 50% per year from 2001 to 2003. It also increases steadily in the period of 2003 to 2006 when it peaks. Tunneling news drops significantly after 2006, and reaches the 2001-level in 2009. Jiang et al. (2010) describe three phases of regulatory reform to curb inter-corporate tunneling and classify 2001-2003 as the "Opening Round," 2004-

2005 as the "Middle Game," and 2006 as the "End Game." The changes in the number of tunneling news articles as shown in Figure 1 perfectly matches the timeline as the new rules came out, suggesting that the media cares about the tunneling issues and increases the coverage as the new rules put more pressures on the tunneling shareholders.

#### 4. Results

## 4.1 Censorship of Tunneling News Related to Firm Characteristics

We start our analyses by testing the censorship of tunneling news related to firms that are essential for social and economic incentives. First, we examine the potential protection for SOEs. In Column 1 of Table 3, we find that, for national-level newspapers, tunneling SOEs are significantly less likely to have tunneling-related news coverage than tunneling non-SOEs (significant at the one-percent level using a two-sided test), after controlling for the extent of tunneling and other factors that may affect coverage.<sup>21</sup> In Column 2, we separate the SOEs into central- and provincial-level SOEs, and find that both types of SOEs receive significantly greater protection than non-SOEs for tunneling news. Column 3 indicates that tunneling SOEs are also less likely to get coverage of other negative news. Importantly, Column 4 serves as a placebo test and shows that tunneling SOEs do not differ from tunneling non-SOEs in the likelihood of receiving non-negative news, suggesting that our results are not driven by firm characteristics

<sup>&</sup>lt;sup>20</sup> The "Opening Round" is when the Chinese Securities Regulatory Commission (CSRC) started to issue requests (in 2001) and explicit instructions to listed companies to stop the practice of lending to controlling shareholders. The "Middle Game" is when the State Council issued directives to support the CSRC and the CSRC spelled out explicit non-compliance penalties The "End Game" is when eight government ministries announced inter-corporateloan tunneling to be criminal and the government started to arrest top managers of the controlling shareholders who failed to resolve the issue.

<sup>&</sup>lt;sup>21</sup> The coefficient on *SOE* transforms to -0.37 if the dependent variable is the raw number instead of the natural logarithm, indicating that the tunneling news related to SOEs is 0.37 items fewer than that related to non-SOEs.

that affect general news coverage.

In Columns 5-6, we partition our sample into large versus small firms based of the median of *SIZE*. The coefficient on *SOE* is significant at the one-percent level for the large companies, while insignificant for the smaller ones. The difference between the two coefficients is statistically significant at the one-percent level. The results indicate that the protection of SOEs concentrates on large SOEs, consistent with the expectation that governments do not want negative news of large SOEs to be disseminated.

Next, we examine the protection of firms with large numbers of employees given these firms' important social function. We first divide the sample firms into terciles based on the number of employees, in which the bottom-tercile firms have the lowest numbers. We then use propensity-score matching (PSM) to identify comparable pairs in the two groups. In particular, the matched pairs are required to be similar in terms of *SOE*, *SIZE*, *BTM*, *LEVERAGE*, and *OREC*. We require a strict caliper distance of 0.001 and implement PSM without replacement. Panel A of Table 4 demonstrates that all significant differences in the matching dimensions are removed by the PSM procedure.

In the PSM sample, we predict and find (Panel B of Table 4) that less censorship is implemented for both tunneling and other negative press related to firms with fewer employees, although these firms are not different from others in other dimensions, including firm size. Again, no difference is found for non-negative news. These results provide additional confidence for the interpretation of the previous findings, and highlight the importance of the incentive to protect employment.

We implement a similar matching process for the test of large taxpayers. We divide the

sample firms into terciles based on the total income taxes paid, in which the top-tercile firms have the highest total taxes paid. To meaningfully compare the large and small taxpayers, the most important matching dimensions are firm size (SIZE) and profitability (ROA). In addition, we add SOE, BTM, LEVERAGE, and OREC to our PSM procedure. Panel A of Table 5 shows that the PSM process erases all significant differences in the matching dimensions. In Panel B of Table 5, we find that large taxpayers are exposed to significantly lower coverage of tunneling news, but do not differ from small taxpayers in terms of non-negative news. Overall, the first set of results provide evidence of censorship of tunneling news related to firms that are essential for economic and social incentives, thus supporting H1.

#### 4.2 Censors' Incentives at the Local Level: In-Province versus Out-of-Province

Table 6 shows the results of the investigation of the local censorship of SOE-related news: in-province versus out-of-province. As discussed in Section 2, provincial publicity authorities have different incentives in the censorship of firms headquartered in the same versus in other provinces. In particular, provincial governments have strong economic and political incentives to protect their in-province firms, but these incentives of local protectionism are not present when reviewing stories related to firms in other provinces.

In Columns 1-3 of Table 6, we observe that for out-of-province news, only the central SOEs receive significantly less coverage of tunneling and other negative news, whereas the coefficients on  $SOE\_Provincial$  are insignificant. These results are in line with our previous discussion that provincial-level governments are still concerned about central SOEs located in other provinces because central SOEs tend to have higher administrative level than provincial publicity

departments. Thus, provincial governments control negative news related to central SOEs. In contrast, they give little protection to provincial-level SOEs located in other provinces given the lack of economic incentives and the concern for cross-provincial competition.

Interestingly, the coefficients associated with SOEs are insignificant in the tests of inprovince news (Columns 4-6). A plausible explanation is local protectionism. Public companies, both SOEs and non-SOEs, are scarce resources for the provincial governments. They are typically the largest firms in the provinces and have a significant impact on the local economy and employment. The results suggest that the provincial governments' protection does not differ between in-province SOEs and non-SOEs.

Further scrutiny indicates that the provincial publicity authorities in fact suppress *most* of the negative news related to in-province tunneling firms. As shown in Figure 2, while tunneling news comprises 7.4% of the total amount of the national-level news and 7.6% of the out-of-province local news, it accounts for only 1.4% of the in-province local news. Similarly, although other negative news represents 17.6% of the total amount of national-level news and 20.3% of the out-of-province local news, it comprises only 5.1% of the in-province local news. Interestingly, it is *not* because these local newspapers do not have the tradition or ability to report negative news. When reporting on firms in other provinces, the proportion of tunneling and negative news is even greater than that of the national-level newspapers (7.6% versus 7.4% for tunneling news, and 20.3% versus 17.6% for other negative news).

In addition, Figure 3 shows that provincial governments *delay* the dissemination of tunneling news, potentially in an attempt to reduce the timeliness of such stories. Year 0 represents the year that the firms' other receivables is at the highest level over the sample period, and Year1– Year3

(Year -3 – Year -1) represent the three years following (prior to) Year 0. We find that for national-level news and out-of-province local news, the amount of tunneling news peaks around Year 0. This is consistent with the expectation that most news should come at the time when the problem is the most serious. In contrast, for in-province local news, the amount of tunneling news peaks in Year 1 and Year 3, showing a significant delay. The t-statistics below Figure 3 support the notion that tunneling news from national and out-of-province-local newspapers concentrate on Year -1 and Year 0. The amount of news in these two years is significantly greater than other years, while the same pattern is *not* present for in-province-local tunneling news.

## 4.3 Economic Consequences of the Censorship

The above sections investigate how the censorship is conducted. In this section, we study the economic consequences of the censorship. In particular, we raise the following questions. First, do the protected firms benefit from the censorship? Second, does the news that *survives* after the censorship have any information content?

We begin by investigating whether the tunneling news leads to negative capital-market effects, and thus whether the protected firms benefit from avoiding these negative impacts. We first examine whether the publication of tunneling news leads to abnormal returns. For each item of all our tunneling news, including both national and local news, we calculate abnormal returns using the market-adjusted model for the date of publication (i.e., the event date), and the ten trading days before and after the event.<sup>22,23</sup> We also calculate abnormal trading volumes and

<sup>&</sup>lt;sup>22</sup> In the cases where the date of publication is not a trading day, we use the next available trading day as the event date while requiring that the date of publication is less than three calendar days ahead of the next available trading day. We implement this requirement as it is unrealistic to expect investor reactions to the information in old newspapers.

<sup>&</sup>lt;sup>23</sup> We also conduct our analyses using the market model and the inferences are not affected. We present the market-

abnormal market depths following Bushee et al. (2010), using the medians of the daily volume and depth in the (-40, -11) window to represent the firms' normal values.<sup>24</sup>

We present the abnormal returns, trading volumes, and market depths for each day in the (-10, +10) window in Panels A-B of Table 7. In Panels A-C of Figure 4, we present the medians of the daily abnormal returns, trading volumes, and depths in the (-10, +10) window. Altogether, we have 1,362 event dates that have non-missing observations.

We find negative and significant abnormal returns on day 0 (i.e.,  $AR_0 = -0.0057$ ), indicating that the reported companies underperform on the event date.<sup>25</sup> We also find negative abnormal returns for some of the other trading days in the window, indicating that these tunneling companies on average experience negative returns around the reporting period. This makes sense as the newspaper coverage could be driven by recent tunneling problems and poor stock performance. Most importantly, we find that the abnormal returns on the event date is the largest among all trading days in the window. We also find in t-tests that the abnormal return on the event date is significantly more negative than on any other day in the window.

We further find that Day 0 has the highest abnormal trading volumes and highest market depths in the window. The abnormal trading volume on Day 0 is significantly greater than 13 of the other 20 days. The abnormal market depth on Day 0 is significantly greater than all the other days in the window. Overall, the results suggest that the tunneling news leads to negative market reactions and more frequent trading. The abnormal market depths further suggest that the news

<sup>24</sup> Daily depth is the daily average of each quote's depth, calculated as the sum of the dollar offer size and the dollar bid size.

adjusted model as it preserves more observations.

In our event study, we primarily use  $AR_0$  as the event window because we expect newspapers are most likely to have an effect on the date of publication given the characteristics of this media. However, negative and significant returns are also found if we use cumulative abnormal returns in other windows such as (-1, 0), (0, +1), and (0, +2).

has information content.<sup>26,27</sup>

Our primary explanation for capital-market effects on the event date is the effect of news dissemination by newspapers (i.e., the dissemination effect). An alternative explanation is that it is the tunneling issues covered by the news that are driving the abnormal returns, volumes, and depths (i.e., the tunneling effect). We consider both explanations plausible and meaningful. The first explanation is consistent with the role of the press as an information intermediary, and suggests that the media still fulfills this role (at least to some extent) even subjected to strict censorship. The second explanation indicates that the newspapers' reporting is timely in spite of the censorship as it quickly captures the tunneling behavior.

Taking into account newspapers' publication practices, we consider the dissemination effect relatively more likely. Normally newspapers are printed in the previous evening (morning newspapers) or the same-day morning (evening newspapers). If a firm disclosure indicates a tunneling issue, it will most likely be reported by newspapers the next day. We observe the strongest capital-market effect on the day of publication, consistent with the dissemination effect. If the capital-market effect is driven by the reported tunneling issues, we would have observed

<sup>&</sup>lt;sup>26</sup> Importantly, Jiang et al. (2010) find that the market discounts the tunneling firms but does not fully price the negative implications despite the fact that the extent of tunneling should be easily observable. They surmise that the lack of complete pricing effect could be due to the prevalence of individual investors in China. We show that the market reacts to media coverage of tunneling news, which is consistent with the results in Jiang et al. (2010). While individual investors may have difficulty in understanding the numbers in financial reports, they should be in a position to realize the negative outcomes of tunneling when covered by newspapers.

Why does the market react to the news stories given the fact that tunneling is already disclosed through financial reports? A reasonable explanation is that the Chinese capital market, especially in our sample period of 2001-2009, is highly dominated by unsophisticated individual investors. It is plausible that broader dissemination of tunneling news could attract attention of individual investors and lead to abnormal trading volumes and returns. Even in a more efficient market such as the U.S. market, Bushee, Core, Guay, and Hamm (2010) show that dissemination of news (instead of creation of information) by the business press leads abnormal market reactions.

the strongest effect at least one day ahead of the event date (the date of newspaper publication)

To further disentangle the two explanations, we examine the frequency of firm disclosures coinciding with the event dates. If there are no disclosures on the event dates, it is less likely that the capital-market effects are driven by sources other than newspaper dissemination. We collect the dates with firm disclosures from the WIND database. After that, we redo the analyses in this section focusing on the dates *without firm disclosures*. Among the 1,362 event dates, only 271 of them are dates with firm disclosures, and 1,091 of them are without any firm disclosures. We find that all the inferences remain the same after excluding the dates that coincide with firm disclosures. Panels A-C of Figure 5 present the medians of daily abnormal returns, trading volumes, and market depths. This provides further evidence suggesting that the documented capital-market effects are a result of newspaper dissemination.

In addition to the above-mentioned alternative explanation (i.e., the tunneling effect), another interpretation of our results is a signaling effect, that is, the tunneling news may make investors believe that the firm has less government support than previously expected, and thus react negatively. To rule out this possibility, we remove the event dates for the first time that tunneling is covered for a firm and only examine any subsequent coverage of tunneling.

Insofar as the "signaling interpretation" holds, the market reactions to the first time that tunneling is covered should be significantly more negative than on any subsequent coverage. To the extent that tunneling already has been covered before, investors might already think that the firm has little government protection. Hence, any subsequent disclosures of tunneling might not have a strong impact on returns – the "signaling channel" is weak. To the extent that the dissemination mechanism works, negative abnormal returns should be similar regardless of

whether any tunneling has been disclosed before. Untabulated results show that all our inferences hold when we remove the event dates for the first time that a firm is covered regarding a tunneling issue, thus suggesting that the market reactions are unlikely to be due to the signaling of lack of government protection.

## 5. Supplementary Analyses

## 5.1 Censorship of *Other* Negative News

The above results provide evidence related to censorship of tunneling news. Although our research design is tailored to identify censorship of tunneling news, we conduct a further study of the censorship of negative news to obtain a better understanding of *how* the censorship is implemented.<sup>28</sup> In Table 8, we examine the censorship of nine categories of other negative news at the national level. We find that the SOEs receive significantly less coverage of three news categories: violations of laws and regulations, general corporate conditions, and large shareholders' disposals of equity. We do not find any evidence of censorship of negative news related to stock-return performance, bankruptcy, restructuring, and setbacks in SSSR implementation. These results are based on an implicit assumption that these firms would have otherwise similar level of *other* types of negative news without censorship. Given the difficulty in controlling for the extent of the problems that lead to the negative news (unlike our tests of tunneling news), we consider this analysis primarily descriptive.

The results echo the government's strong focus on firm reputation and future prospects.

<sup>2</sup> 

<sup>&</sup>lt;sup>28</sup> Compared to the tests of tunneling news, the disadvantage of this test is we cannot accurately measure the extent of the "problems" (the topic subject to censorship). Thus, we focus primarily on the tunneling tests because of a stronger research design. Still, examining other negative news allows us to gain more insight into the censorship process.

News related to law violations harms firms' reputations. News reporting on general corporate conditions and disposals of equity bring negative concerns toward future performance.

The findings also indicate some areas that the government *does not* give its attention to. Consistent with the insight provided by our three anonymous interviewees, the government does not appear to censor news related to daily stock returns, possibly because such information could easily be accessed through other channels. We also do not find evidence of censorship of news describing financially struggling firms (e.g., bankruptcy and restructuring). A likely explanation is that the difficulties of these firms are well known so there is no need to conceal information.

## **5.2** The Incentives of Newspapers

In this section, we provide a brief examination of the incentives for the newspapers that are monitored. A central question is: To the extent that tunneling news is subject to strict censorship, do the newspapers still have sufficient incentives to report tunneling issues?

To explore variations in newspapers' incentives, we divide the newspapers into two groups: official versus commercial newspapers. The CCP has a list of official newspapers that are highly acknowledged by the party. As the party's mouthpieces, these newspapers are considered more authoritative. For example, news published in official newspapers can be reprinted in other newspapers or online news providers without additional censorship. Official newspapers have guaranteed subscriptions from different levels of governments and SOEs and receive funding from the state.

In contrast, commercial newspapers receive limited financial support from the state and rely heavily on advertising and circulation as the major revenue sources, which increases their incentives to follow readers' interest and report on negative news. However, reporting of negative news is subject to censorship and newspapers editors are held responsible if the reported news leads to negative social impacts unwelcomed by the CCP. Thus, commercial newspapers face a trade-off between attracting readers and following the rules of the game.

In Panel A of Table 9, we find that both the official and commercial newspapers are subject to censorship. In both types of newspapers, tunneling SOEs (including central- and provincial-level) receive significantly lower tunneling and other negative press coverage (Columns 1-2). Also, in the PSM samples (as described in Section 4.3) for firms with large numbers of employees and large taxpayers, the ones with more employees and paying more tax are significantly less likely to be covered by tunneling and other negative news than their counterparts (Columns 3-6).

We next investigate the newspapers' incentives to follow tunneling news. In Column 1 of Panel B, we find that the newspapers are significantly more likely to report tunneling news of companies that have experienced negative abnormal returns during the year (*Annual\_ABN\_RET*). The annual abnormal returns are defined as raw returns minus the mean returns of China's listed firms in the same size and book-to-market decile. This provides evidence that the newspapers attempt to follow these more problematic companies (i.e., those with lower returns) in spite of the strict censorship. We confirm this finding for both commercial (Column 2) and official newspapers (Column 4) when they report the tunneling scandals of non-SOEs. We find that the coefficient on *Annual\_ABN\_RET* is larger in magnitude for commercial newspapers compared to official newspapers, but the difference is not statistically significant.

However, when reporting tunneling scandals relate to SOEs, the commercial newspapers do not increase the reporting of the more problematic companies with lower returns (Column 3) (i.e., the coefficient on *Annual\_ABN\_RET* is insignificant). The coefficient on *Annual\_ABN\_RET* in Column 2 is also significantly more negative than that in Column 3 at the one-percent level. Although the official newspapers are still significantly more likely to follow the tunneling SOEs with lower returns, the magnitude is significantly smaller than that for non-SOEs (i.e., the coefficient on *Annual\_ABN\_RET* in Column 5 is significantly less negative than that in Column 4 at the ten-percent level).

To summarize, negative returns of non-SOEs stimulate more reporting of tunneling news for both commercial and official newspapers, with the magnitude larger in the commercial ones. These results are consistent with commercial newspapers having stronger incentives to report on problematic companies. In contrast, negative returns of SOEs do not trigger more reporting of tunneling news for commercial newspapers. This finding indicates that, despite the readers' interest, commercial newspapers cannot (or dare not) touch the protected companies due to the presence of censorship. In comparison, negative returns of SOEs lead to more reporting by official newspapers, suggesting that, as the CCP's mouthpieces, official newspapers are granted more permission to report the tunneling news of protected companies such as SOEs.

#### 6. Conclusion

This paper studies how the Chinese government conducts press control over news related to tunneling of listed firms. Our results indicate that the government implements stricter control over tunneling news related to SOEs (especially large SOEs), firms that employ more people,

and large taxpayers. We do not find such difference in non-negative news among different groups, consistent with the censorship explanation.

The provincial-level publicity departments, driven by local economic and social incentives, implement different censorship policies toward news related to firms located in their own versus other provinces. Tunneling news related to firms located in the same provinces is mostly suppressed and delayed, while only moderate control is implemented related to firms in other provinces. Central-level SOEs are the major concern of provincial governments when the news involves firms in other provinces, which is likely explained by the relative positions of provincial governments and central-level SOEs in China's power system.

Analyses of the economic consequences of the censorship reveal that the censorship has potentially blocked some news with information content. Our results show that the news that survives the censorship has information content. Specifically, the market reacts negatively to the dissemination of the tunneling news. The dissemination of the news also increases trading volumes and market depths, implying that it has real effects on investors' trading behaviors and firms' information environment. The protected companies thus benefit from the censorship as they avoid the tunneling coverage that could have led to negative market reactions.

#### **REFERENCES**

- Bushee, B., J. Core, W. Guay, and S. Hamm. 2010. The Role of the Business Press as an Information Intermediary. *Journal of Accounting Research*, 48(1): 1–19.
- Calomiris, C. W., R. Fisman, and Y. Wang. 2010. Profiting from Government Stakes in a Command Economy: Evidence from Chinese Asset Sales. *Journal of Financial Economics*, 96(3): 399-412.
- Chahine, S., S. Mansi, and M. Mazboudi. 2015. Media News and Earnings Management Prior to Equity Offerings. *Journal of Corporate Finance*, 35: 177–195.
- Chaney, P, M. Faccio, and D. Parsley. 2010. The Quality of Accounting Information in Politically Connected Firms. *Journal of Accounting and Economics*, 51(1): 58–76.
- Claessens, S., E. Feijen, and L. Laeven. 2008. Political connections and preferential access to finance: The role of campaign contributions. *Journal of Financial Economics*, 88: 554-580.
- Core, J., W. Guay, and D. Larcker. 2008. The Power of the Pen and Executive Compensation. *Journal of Financial Economics*, 88: 1–25.
- Dai, L., J. T. Parwada, and B. Zhang. 2015. The Governance Effect of the Media's News Dissemination Role: Evidence Insider Trading. *Journal of Accounting Research*, 53(2): 331–366.
- Drake, M., N. Guest, and B. Twedt. 2014. The Media and Mispricing: The Role of the Business Press in the Pricing of Accounting Information. *The Accounting Review*, 89(5): 1673–1701.
- Dyck, A., N. Volchkova, and L. Zingales. 2008. The Corporate Governance Role of the Media: Evidence from Russia. *Journal of Finance*, 63(3): 1093–1135.
- Faccio, M. 2006. Politically Connected Firms. American Economic Review, 96(1): 369–386.
- Faccio, M., R. W. Masulis, and J. McConnell. 2006. Political Connections and Corporate Bailouts. *The Journal of Finance*, 61(6): 2597-2635.
- Faccio, M, and D. Parsley. 2009. Sudden Deaths: Taking stock of geographic ties. *Journal of Financial and Quantitative Analysis*, 44(03): 683-718.
- Faccio, M, and H. HSU. 2017. Politically connected private equity and employment. *The Journal of Finance* 72: 539-574.
- Fan, J. P., T. J. Wong, and T. Zhang. 2007. Politically Connected CEOs, Corporate Governance, and Post-IPO Performance of China's Newly Partially Privatized Firms. *Journal of Financial Economics*, 84(2): 330-357.
- Fisman, R. 2001. Estimating the Value of Political Connections. *American Economic Review*, 91(4): 1095–1102.
- Fisman, R., and Y. Wang. 2015. The Mortality Cost of Political Connections. *Review of Economic Studies*, 82(4): 1346–1382.
- Hope, O.-K., H. Yue, and Q. Zhong. 2017. Do Politically Connected Directors Affect Accounting Quality? Evidence from China's Anti-Corruption Campaign (Rule 18). Working paper, University of Toronto, Singapore Management University, and Peking University.
- Jiang, G, C. Lee, and H. Yue. 2010. Tunneling Through Intercorporate Loans: The China Experience. *Journal of Financial Economics*, 98(1): 1–20.
- Jin, H., Y. Qian, and B. R. Weingast. 2005. Regional Decentralization and Fiscal Incentives:

- Federalism, Chinese Style. *Journal of Public Economics*, 89(9): 1719-1742.
- Joe, J. 2003. Why Press Coverage of a Client Influences the Audit Opinion. *Journal of Accounting Research*, 41(1):109–133.
- Joe, J., H. Louis, and D. Robinson. 2009. Managers' and Investors' Responses to Media Exposure of Board Ineffectiveness. *Journal of Financial and Quantitative Analysis*, 44: 579–605.
- Johnson, S., and T. Mitton. 2003. Cronyism and Capital Controls: Evidence from Malaysia. *Journal of Financial Economics*, 67(2): 351-382.
- Jones, M. P., P. Sanguinetti, and M. Tommasi. 2000. Politics, Institutions, and Fiscal Performance in a Federal System: An Analysis of the Argentine Provinces. *Journal of Development Economics*, 61(2): 305-333.
- King, G, J. Pan, and M. Roberts. 2014. Political Science, Reverse-Engineering Censorship in China: Randomized Experimentation and Participant Observation. *Science*, 345(6199).
- King, G., J. Pan, and M. Roberts, M. 2013. How Censorship in China Allows Government Criticism but Silences Collective Expression. *American Political Science Review*, 107(02): 326-343.
- Kothari, S. P., X. Li, and J. Short. 2009. The Effect of Disclosures by Management, Analysts, and Business Press on Cost of Capital, Return Volatility, and Analyst Forecasts: A Study Using Content Analysis. *The Accounting Review*, 84(5): 1639–1670.
- Leuz, C., and F. Oberholzer-Gee. 2006. Political Relationships, Global Financing, and Corporate Transparency: Evidence from Indonesia. *Journal of Financial Economics*, 81(2): 411-439.
- Li, H., and L. A. Zhou. 2005. Political Turnover and Economic Performance: The Incentive Role of Personnel Control in China. *Journal of Public Economics*, 89(9): 1743-1762.
- Liu, B., and J. McConnell. 2013. The Role of the Media in Corporate Governance: Do the Media Influence Managers' Capital Allocation Decisions? *Journal of Financial Economics*, 110(1): 1–17.
- Lorentzen, P. 2014. China's Strategic Censorship. *American Journal of Political Science*, 58(2): 402–414.
- Miller, G. 2006. The Press as a Watchdog for Accounting Fraud. *Journal of Accounting Research*, 44(5):1001–1033.
- Piotroski, J., T. J. Wong, and T. Zhang. 2015. Political Incentives to Suppress Negative Information: Evidence from Chinese Listed Firms. *Journal of Accounting Research*, 53(2): 405–459.
- Piotroski, J., T. J. Wong, and T. Zhang. 2016. Political Bias of Corporate News in China: Role of Commercialization and Conglomeration Reforms. Working Paper. Stanford University, University of Southern California, and The Chinese University of Hong Kong.
- Qin, B., D. Stromberg, and Y. Wu. 2017. Why Does China Allow Freer Social Media? Protests versus Surveillance and Propaganda. *Journal of Economic Perspectives*, 31 (1): 117-140.
- Roberts, B. 1990. A Dead Senator Tells No Lies: Seniority and Distribution of Federal Benefits. *American Journal of Political Science*, 34(1): 31-31.
- Tetlock, P. 2007. Giving Content to Investor Sentiment: The Role of Media in the Stock Market. *Journal of Finance*, 62(3): 1139-1168.
- You, J, B. Zhang, and L. Zhang. Who Captures the Power of the Pen? Review of Financial

Studies, Forthcoming.

# Appendix A

# **Variable Definitions**

| Variables                | Definitions   |
|--------------------------|---|
| TunnelingNegative        | Natural logarithm of one plus the number of tunneling-related       |
| _National                | negative news in the national-level newspapers for firm i in a      |
|                          | given year.   |
| <i>TunnelingNegative</i> | Natural logarithm of one plus the number of tunneling-related       |
| _inProv                  | negative news in local-level newspapers located in the same         |
|                          | province with firm i in a given year.                               |
| TunnelingNegative        | Natural logarithm of one plus the number of tunneling-related       |
| _outProv                 | negative news in local-level newspapers located in a different      |
|                          | province compared to firm i in a given year.                        |
| TunnelingNegative        | Natural logarithm of one plus the number of tunneling-related       |
| _Commercial              | negative news in commercial newspapers for firm i in a given year.  |
| TunnelingNegative        | Natural logarithm of one plus the number of tunneling-related       |
| _Official                | negative news in official newspapers for firm i in a given year.    |
| OtherNegative_National   | Natural logarithm of one plus the number of other negative news     |
| -                        | in the national-level newspapers for firm i in a given year.        |
| OtherNegative_inProv     | Natural logarithm of one plus the number of other negative news     |
|                          | in local-level newspapers located in the same province with firm i  |
|                          | in a given year.  |
| OtherNegative_outProv    | Natural logarithm of one plus the number of other negative news     |
|                          | in local-level newspapers located in a different province compared  |
|                          | to firm i in a given year.  |
| NonNegative              | Natural logarithm of one plus the number of non-negative news       |
|                          | related to firm i in a given year.                                  |
| NonNegative_National     | Natural logarithm of one plus the number of non-negative news in    |
|                          | the national-level newspapers for firm i in a given year.           |
| NonNegative_inProv       | Natural logarithm of one plus the number of non-negative news in    |
|                          | local-level newspapers located in the same province with firm i in  |
|                          | a given year.   |
| NonNegative_outProv      | Natural logarithm of one plus the number of non-negative news in    |
|                          | local-level newspapers located in a different province compared     |
|                          | to firm i in a given year.  |
| Violation_National       | Natural logarithm of one plus the number of negative news related   |
|                          | to violations of laws and regulations in the national-level         |
|                          | newspapers for firm i in a given year.                              |
| Governance_National      | Natural logarithm of one plus the number of negative news related   |
|                          | to governance issues in the national-level newspapers for firm i in |
|                          | a given year.   |
| Earnings_National        | Natural logarithm of one plus the number of negative news related   |
| 0                        | to earnings performance in the national-level newspapers for firm   |

i in a given year.

General\_National Natural logarithm of one plus the number of negative news related

to general firm conditions in the national-level newspapers for

firm i in a given year.

Return\_National Natural logarithm of one plus the number of negative news related

to stock return performance in the national-level newspapers for

firm i in a given year.

Equity\_National Natural logarithm of one plus the number of negative news related

to disposals of equity by large shareholders in the national-level

newspapers for firm i in a given year.

Bankruptcy\_National Natural logarithm of one plus the number of negative news related

to bankruptcy and financial distress in the national-level

newspapers for firm i in a given year.

Restructuring\_National Natural logarithm of one plus the number of negative news related

to restructuring of distress firms in the national-level newspapers

for firm i in a given year.

SSSR\_National Natural logarithm of one plus the number of negative news related

to setbacks in the implementation of SSSR in the national-level

newspapers for firm i in a given year.

SOE Indicator variable that equals one if a firm's controlling

shareholder is a government entity, and zero otherwise.

SOE\_Central Indicator variable that equals one if a firm's controlling

shareholder is a central-government entity, and zero otherwise.

SOE\_Provincial Indicator variable that equals one if a firm's controlling

shareholder is a provincial- or lower-level government entity, and

zero otherwise.

SIZE Lagged natural logarithm of total assets.

BTM Book value of total assets divided by market capitalization.

ROA Lagged return on total assets.

LOSS Indicator variable that equals one if the firm reports a loss in the

previous year, and zero otherwise.

STD\_RET Lagged standard deviation of the residuals from the market model.

OREC Lagged other receivables as a percentage of total assets.

LEVERAGE Lagged financial leverage measured as total liabilities divided by

total assets.

Growth Lagged sales growth.

AuditOpinion Indicator variable that equals one if the firm receives an unclean

audit opinion in the previous year, and zero otherwise.

BIG4 Indicator variable that equals one if the firm hires a Big-4 auditor

in the previous year, and zero otherwise.

AGE Number of years since IPO = natural logarithm of one plus the

number of years since being listed in the previous year.

Promotion Indicator variable that equals one if the year precedes or

|                 | corresponds to a provincial-level political promotion event, and               |
|-----------------|--|
|                 | zero otherwise (i.e., a province-year variable).                               |
| NumEmployees    | Number of the employees in firm i in a given year.                             |
| Small_Employer  | Indicator variable that equals one if the number of employees of               |
|                 | the firm belongs to the bottom tercile of the sample, and zero                 |
|                 | otherwise.   |
| Large_Taxpayers | Indicator variable that equals one if the firms' total income taxes            |
|                 | paid belongs to the top tercile of the sample, and zero otherwise.             |
| ABN_RET         | Abnormal return of the (-10, +10) window. The difference                       |
|                 | between a firm's return and the equal-weighted market return in                |
|                 | the (-10, +10) window.   |
| $ABN\_VOL$      | Natural logarithm of volume in the (-10, +10) window minus                     |
|                 | natural logarithm of median volume in the (-40, -11) window.                   |
| ABN_DEPTH       | Natural logarithm of depth in the (-10, +10) window minus natural              |
|                 | logarithm of median depth in the (-40, -11) window, where depth                |
|                 | is the period average of daily depths, where the daily depth is the            |
|                 | daily average of each quote's depth. Each quote's depth is                     |
|                 | calculated as (offer size $\times$ offer price + bid size $\times$ bid price). |
| Annual_ABN_RET  | Raw annual returns minus the equal-weighted return of a portfolio              |
|                 | consisting all firms in the same size and book-to-market decile.               |

## Appendix B Classification of Tunneling-Related Negative News

We classify the news related to our sample companies into tunneling-related, other negative news, and non-negative news. In this section, we describe the classification process.

For each company included in our tunneling-company sample (the firms that have ranked above the 80th percentile at least three times during the six years (269 firms)), we search in the CNKI database of China's major newspapers using the stock code and company name. We then extract all the selected news articles through a Java program.

The initially-selected news contains non-related news, tunneling-related negative news, other negative news, and non-negative news. Some of the non-negative and non-related news can be identified through their titles. Thus, we first read the titles of all the news and classify a group of non-negative and non-related news based on their titles. We then read the rest of the articles and classify them based on the content of the articles.

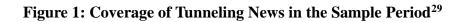
Three types of tunneling activities are most prevalent among the sample firms: (1) intercorporate loans, (2) related-party transactions, and (3) loan guarantees provided for related parties. We define news reporting on these tunneling behaviors and their consequences as tunneling-related negative news. Below we provide examples for the classification of tunneling news.

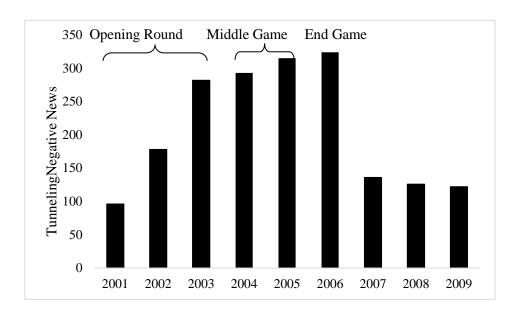
On January 28, 2003, Securities Daily published an article titled Macat Group's Controlling Shareholders Occupying Capitals. On March 23, 2004, China Securities Journal had a story titled ST Macat's Large Shareholders Only Admitted Part of Their Capital-Occupying Behaviors. Both articles report that the large shareholders of Macat Group (stock code: 000150) occupied funds of listed companies through inter-corporate loans. Thus, they

are classified as tunneling-related news.

On January 15, 2009, *China Economic Times* published an article titled *Delayed Disclosure of Related-Party Transaction: Shanghai Met CO., Ltd condemned by CSRC.* On November 28, 2007, *Shanghai Securities News* had news titled *Asset Black Hole of Shanghai Met CO., Ltd.* We read the two articles and they both reported that controlling shareholders tunneled Shanghai Met CO., Ltd (stock code: 600645) through related-party transactions. They are thus classified as tunneling-related news.

On August 6, 2004 and May 29, 2007, China Securities Journal reported Shenzhen Capstone Industrial Co., Ltd Provided Loan Guarantees of More Than 200 Million and S\*ST Shenzhen Capstone Industrial Co., Ltd Sued for Illegal Loan Guarantees. Both articles suggested that the large shareholders of Shenzhen Capstone Industrial Co., Ltd (stock code: 000038) provided loan guarantees for related parties. We thus classify them as tunneling-related news.





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<sup>&</sup>lt;sup>29</sup> The "Opening Round," "Middle Game," and "End Game" are three phases defined by Jiang et al. (2010) regarding China's regulatory reform to curb inter-corporate tunneling.

Figure 2: Proportion of Tunneling-Related and Other-Negative News among All News

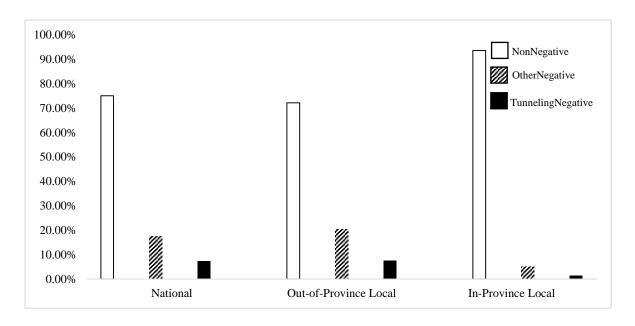
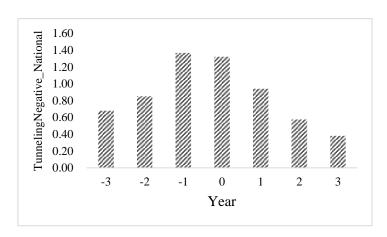
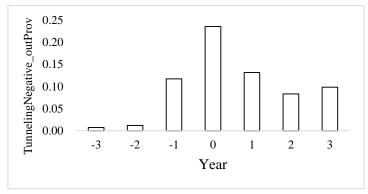


Figure 3: Year Distribution of Tunneling News

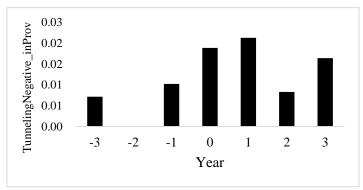
**Panel A: National Level** 



**Panel B: Out-of-Province Local** 



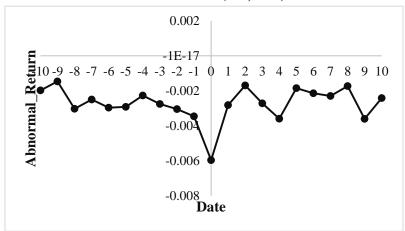
**Panel C: In-Province Local** 



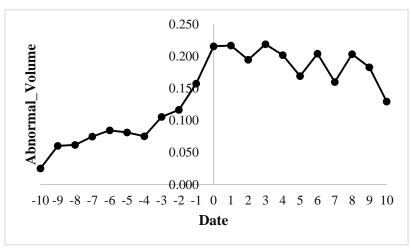
| Supplementary T-tests      |               |             |          |         |  |  |
|----------------------------|---------------|-------------|----------|---------|--|--|
|                            | Years (-1, 0) | Other Years | Diff     | T-Value |  |  |
| TunnelingNegative_National | 1.343         | 0.547       | 0.796*** | 8.775   |  |  |
|                            | (0.126)       | (0.032)     | 0.790    | 8.773   |  |  |
| T 1 N                      | 0.179         | 0.095       | 0.004*** | 2 176   |  |  |
| TunnelingNegative_outProv  | (0.034)       | (0.010)     | 0.084*** | 3.176   |  |  |
| T 1: N4: : D               | 0.015         | 0.010       | 0.005    | 0.792   |  |  |
| TunnelingNegative_inProv   | (0.006)       | (0.003)     | 0.005    | 0.782   |  |  |

Figure 4: Abnormal Returns, Volumes, and Market Depths in the (-10, +10) Window

Panel A: Median Abnormal Returns in the (-10, +10) Window



Panel B: Median Abnormal Volumes in the (-10, +10) Window



Panel C: Median Abnormal Market Depths in the (-10, +10) Window

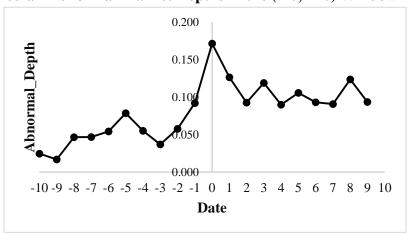
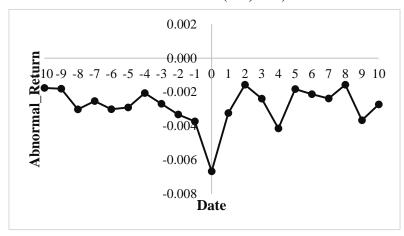
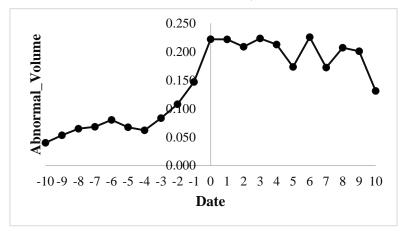


Figure 5: Abnormal Returns, Volumes, and Market Depths in the (-10, +10) Window (Removing the Dates with Firm Disclosures)

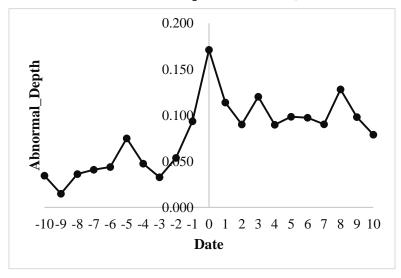
Panel A: Median Abnormal Returns in the (-10, +10) Window



Panel B: Median Abnormal Volumes in the (-10, +10) Window



Panel C: Median Abnormal Market Depths in the (-10, +10) Window



**Table 1: Sample Selection and Distribution** 

**Panel A: Sample Selection** 

|   |         | # Obs. |
|---|---------|--------|
| Number of A-share firm-year observations during 2001–2009 in  |         | 12,798 |
| CSMAR   |         |        |
| Less: Firms that have never ranked above the 80 <sup>th</sup> percentile of the other receivables level | (8,445) |        |
| Less: Firms that have ranked above the 80th percentile of the   | (2.026) |        |
| other receivables level only once or twice during 2001-2006   | (2,036) |        |
| Final sample  |         | 2,317  |
| Less: Observations that have missing values in the main tests   |         | 217    |
| Sample size in the main tests   |         | 2,100  |

Panel B: Year Distribution of the Sample

| Year  | # Obs. | Percent |
|-------|--------|---------|
| 2001  | 263    | 11.35%  |
| 2002  | 268    | 11.57%  |
| 2003  | 269    | 11.61%  |
| 2004  | 264    | 11.39%  |
| 2005  | 254    | 10.96%  |
| 2006  | 253    | 10.92%  |
| 2007  | 249    | 10.75%  |
| 2008  | 249    | 10.75%  |
| 2009  | 248    | 10.70%  |
| Total | 2,317  | 100.00% |

Panel C: Industry Distribution of the Sample

| Industry                          | # Obs. | Percent |
|-----------------------------------|--------|---------|
| Agriculture, forestry and fishing | 78     | 3.37%   |
| Mining                            | 9      | 0.39%   |
| Manufacturing                     | 1,224  | 52.83%  |
| Utilities                         | 44     | 1.90%   |
| Construction                      | 52     | 2.24%   |
| Transportation and warehousing    | 76     | 3.28%   |
| Information technology            | 210    | 9.06%   |
| Distribution and retail           | 156    | 6.73%   |
| Financial                         | 9      | 0.39%   |
| Real estate                       | 90     | 3.88%   |
| Service                           | 63     | 2.72%   |
| Communication and mass media      | 31     | 1.34%   |
| Other Industries                  | 275    | 11.87%  |
| Total                             | 2,317  | 100.00% |

**Table 2: Descriptive Statistics** 

Panel A: Descriptive Statistics of Main Variables

| Variables                      | # Obs. | Mean      | Median    | Std       | $25^{th}$ | $75^{th}$ |
|--------------------------------|--------|-----------|-----------|-----------|-----------|-----------|
| TunnelingNegative_National     | 2,317  | 0.309     | 0.000     | 0.553     | 0.000     | 0.693     |
| TunnelingNegative _inProv      | 2,317  | 0.007     | 0.000     | 0.073     | 0.000     | 0.000     |
| TunnelingNegative _outProv     | 2,317  | 0.063     | 0.000     | 0.239     | 0.000     | 0.000     |
| TunnelingNegative _ Commercial | 2,317  | 0.218     | 0.000     | 0.458     | 0.000     | 0.000     |
| $Tunneling Negative\_Official$ | 2,317  | 0.187     | 0.000     | 0.417     | 0.000     | 0.000     |
| OtherNegative_National         | 2,317  | 0.573     | 0.000     | 0.754     | 0.000     | 1.099     |
| OtherNegative_inProv           | 2,317  | 0.023     | 0.000     | 0.148     | 0.000     | 0.000     |
| OtherNegative_outProv          | 2,317  | 0.143     | 0.000     | 0.379     | 0.000     | 0.000     |
| NonNegative                    | 2,317  | 1.593     | 1.609     | 1.046     | 0.693     | 2.303     |
| NonNegative_National           | 2,317  | 1.432     | 1.386     | 1.000     | 0.693     | 2.079     |
| NonNegative_inProv             | 2,317  | 0.211     | 0.000     | 0.558     | 0.000     | 0.000     |
| NonNegative_outProv            | 2,317  | 0.427     | 0.000     | 0.643     | 0.000     | 0.693     |
| SOE                            | 2,305  | 0.586     | 1.000     | 0.493     | 0.000     | 1.000     |
| SIZE                           | 2,303  | 20.605    | 20.666    | 1.025     | 20.108    | 21.183    |
| BTM                            | 2,270  | 0.890     | 0.693     | 0.734     | 0.390     | 1.178     |
| ROA                            | 2,303  | -0.020    | 0.012     | 0.107     | -0.036    | 0.034     |
| LOSS                           | 2,306  | 0.292     | 0.000     | 0.455     | 0.000     | 1.000     |
| STD_RET                        | 2,142  | 0.047     | 0.043     | 0.020     | 0.032     | 0.059     |
| OREC                           | 2,301  | 0.173     | 0.137     | 0.133     | 0.068     | 0.245     |
| LEVERAGE                       | 2,303  | 0.633     | 0.587     | 0.317     | 0.432     | 0.749     |
| Growth                         | 2,248  | 0.199     | 0.064     | 0.811     | -0.165    | 0.304     |
| AuditOpinion                   | 2,303  | 0.288     | 0.000     | 0.453     | 0.000     | 1.000     |
| BIG4                           | 2,303  | 0.017     | 0.000     | 0.131     | 0.000     | 0.000     |
| AGE                            | 2,302  | 2.080     | 2.197     | 0.513     | 1.792     | 2.398     |
| Promotion                      | 2,317  | 0.597     | 1.000     | 0.491     | 0.000     | 1.000     |
| NumEmployees                   | 2,297  | 1,897.072 | 1,049.000 | 3,273.155 | 386.000   | 2,147.000 |

Panel B: Firm-Level Descriptive Statistics of News Coverage

|                   | # Obs. | Mean   | Median | Std     | $25^{th}$ | 75 <sup>th</sup> |
|-------------------|--------|--------|--------|---------|-----------|------------------|
| TunnelingNegative | 269    | 6.959  | 5.000  | 7.847   | 2.000     | 9.000            |
| OtherNegative     | 269    | 17.004 | 11.000 | 24.556  | 5.000     | 21.000           |
| NonNegative       | 269    | 75.695 | 39.000 | 201.075 | 24.000    | 68.000           |

**Panel C: Distribution of Newspaper Articles** 

|                          | National | In-Province Local | Out-of-Province Local | Total  |
|--------------------------|----------|-------------------|-----------------------|--------|
| <i>TunnelingNegative</i> | 1,593    | 25                | 254                   | 1,872  |
| OtherNegative            | 3,799    | 94                | 681                   | 4,574  |
| NonNegative              | 16,215   | 1,725             | 2,420                 | 20,360 |
| Total                    | 21,607   | 1,844             | 3,355                 | 26,806 |

**Table 3: Censorship of SOE-Related News at the National Level** 

|                     | (1)           | (2)               | (3)       | (4)       | (5)         | (6)         |
|---------------------|---------------|-------------------|-----------|-----------|-------------|-------------|
|                     |               |                   |           |           | Size above  | Size below  |
|                     |               | FullS             | ample     |           | Median      | Median      |
|                     | Tunneling     | Tunneling         | Other     | Non       | Tunneling   | Tunneling   |
|                     | Negative_     | Negative _        | Negative_ | Negative_ | Negative_   | Negative_   |
|                     | National      | National          | National  | National  | National    | National    |
| SOE                 | -0.105***     |                   | -0.085**  | -0.010    | -0.204***   | -0.029      |
|                     | (-3.491)      |                   | (-2.056)  | (-0.150)  | (-4.378)    | (-0.816)    |
| SOE_                |               | -0.125***         |           |           |             |             |
| Central             |               | (-2.956)          |           |           |             |             |
| $SOE\_$             |               | -0.092***         |           |           |             |             |
| Provincial          |               | (-2.955)          |           |           |             |             |
| SIZE                | 0.042**       | 0.041**           | -0.025    | 0.363***  | 0.106**     | 0.086***    |
|                     | (2.028)       | (1.982)           | (-0.921)  | (6.269)   | (2.044)     | (2.651)     |
| BTM                 | 0.091**       | 0.091**           | 0.041     | -0.142**  | 0.107***    | 0.036       |
|                     | (2.509)       | (2.494)           | (1.052)   | (-2.455)  | (2.633)     | (0.572)     |
| ROA                 | -0.783***     | -0.773***         | -1.285*** | 0.557     | -0.668*     | -0.967***   |
|                     | (-3.499)      | (-3.446)          | (-4.465)  | (1.338)   | (-1.798)    | (-3.468)    |
| LOSS                | 0.050         | 0.051             | 0.196***  | 0.062     | $0.119^{*}$ | -0.015      |
|                     | (1.230)       | (1.254)           | (3.761)   | (0.860)   | (1.954)     | (-0.272)    |
| STD_RET             | 0.555         | 0.566             | 3.225***  | 2.973     | 1.580       | -0.937      |
|                     | (0.620)       | (0.629)           | (2.793)   | (1.515)   | (1.318)     | (-0.703)    |
| OREC                | 0.576***      | 0.582***          | 0.051     | 0.178     | 0.668**     | 0.533***    |
|                     | (3.929)       | (3.976)           | (0.296)   | (0.559)   | (2.574)     | (3.433)     |
| LEVERAGE            | -0.090*       | -0.091*           | -0.003    | 0.295**   | -0.097      | -0.052      |
|                     | (-1.713)      | (-1.712)          | (-0.030)  | (2.124)   | (-0.978)    | (-0.803)    |
| NonNegative         | 0.082***      | 0.082***          | 0.241***  |           | 0.071***    | 0.096***    |
| .,                  | (5.173)       | (5.136)           | (10.066)  |           | (2.704)     | (4.856)     |
| Growth              | 0.027*        | 0.027*            | -0.004    | 0.028     | 0.039       | 0.026       |
|                     | (1.829)       | (1.814)           | (-0.242)  | (1.054)   | (1.499)     | (1.447)     |
| AuditOpinion        | 0.187***      | 0.187***          | 0.249***  | 0.110     | 0.149**     | 0.187***    |
| •                   | (4.747)       | (4.703)           | (4.694)   | (1.446)   | (2.426)     | (3.918)     |
| BIG4                | -0.103        | -0.106            | -0.157    | 0.133     | -0.080      | -0.264*     |
|                     | (-1.201)      | (-1.230)          | (-0.986)  | (0.570)   | (-0.761)    | (-1.782)    |
| AGE                 | -0.039        | -0.040            | -0.065    | -0.262**  | -0.106      | -0.024      |
|                     | (-1.065)      | (-1.111)          | (-1.123)  | (-2.406)  | (-1.549)    | (-0.571)    |
| Promotion           | -0.039        | 0.002             | -0.065    | -0.262**  | -0.106      | -0.024      |
|                     | (-1.065)      | (0.076)           | (-1.123)  | (-2.406)  | (-1.549)    | (-0.571)    |
| Year F.E            | Included      | Included          | Included  | Included  | Included    | Included    |
| Industry F.E        | Included      | Included          | Included  | Included  | Included    | Included    |
| Constant            | 0.003         | -0.870**          | 0.029     | -0.011    | -0.042      | $0.056^{*}$ |
|                     | (0.113)       | (-1.982)          | (0.894)   | (-0.267)  | (-1.043)    | (1.702)     |
| # Obs.              | 2,100         | 2,100             | 2,100     | 2,100     | 1,050       | 1,050       |
| Adj. R <sup>2</sup> | 0.174         | 0.174             | 0.275     | 0.210     | 0.192       | 0.172       |
|                     | Size above Me | dian Vs. Size be  |           |           | Diff        | Z-Value     |
|                     |               | fficient Differen |           |           | -0.175***   | -2.963      |

See Appendix A for variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*,\* denote significance at the 0.01, 0.05, and 0.10 level using a two-tailed t-test.

Table 4: Censorship of News related to Firms with Large Numbers of Employees

Panel A: Firm Characteristics with and without PSM

|           | Pre-PSM |          |               | Post-PSM |          |               |
|-----------|---------|----------|---------------|----------|----------|---------------|
|           | Less    | More     | Difference    | Less     | More     | Difference    |
| Number    | 289.100 | 5416.772 | -5,127.672*** | 260.614  | 2010.341 | -1,749.727*** |
| Employees | 289.100 | 3410.772 | (-13.273)     | 200.014  | 2010.341 | (-19.037)     |
| SOE       | 0.603   | 0.731    | -0.128***     | 0.640    | 0.672    | -0.032        |
| SOE       | 0.003   | 0.731    | (-10.869)     | 0.040    | 0.672    | (-0.623)      |
| SIZE      | 20.547  | 21 407   | 0.860***      | 20.510   | 20.516   | 0.003         |
| SIZE      | 20.547  | 21.407   | (33.696)      | 20.519   | 20.516   | (0.073)       |
| DTM       | 0.707   | 1.064    | -0.277***     | 0.007    | 0.010    | -0.012        |
| BTM       | 0.787   | 1.064    | (-15.142)     | 0.807    | 0.819    | (-0.281)      |
| LEVEDACE  | 0.520   | 0.400    | 0.039***      | 0.506    | 0.606    | -0.016        |
| LEVERAGE  | 0.538   | 0.499    | (7.409)       | 0.596    | 0.606    | (-0.480)      |
| OPEC      | 0.005   | 0.052    | 0.043***      | 0.177    | 0.170    | -0.001        |
| OREC      | 0.095   | 0.052    | (21.039)      | 0.177    | 0.178    | (-0.125)      |

Panel B: Regressions using the PSM Sample

|                   | (1)                      |               | (2)         |
|-------------------|--------------------------|---------------|-------------|
|                   | <b>TunnelingNegative</b> | OtherNegative | NonNegative |
|                   | _National                | _National     | _National   |
| Small_Employer    | 0.122***                 | 0.137***      | 0.018       |
|                   | (3.239)                  | (2.881)       | (0.210)     |
| Control Variables | Included                 | Included      | Included    |
| Year F.E          | Included                 | Included      | Included    |
| Industry F.E      | Included                 | Included      | Included    |
| Constant          | -2.166***                | -1.095        | -4.108**    |
|                   | (-2.725)                 | (-1.328)      | (-2.214)    |
| # Obs.            | 875                      | 875           | 875         |
| $Adj. R^2$        | 0.196                    | 0.343         | 0.144       |

See Appendix A for variable definitions. Standard errors are clustered by firm. \*\*\*, \*\*,\* denote significance at the 0.01, 0.05, and 0.10 level using a two-tailed t-test.

Table 5: Censorship of News related to Firms with Large Taxpayers

Panel A: Firm Characteristics with and without PSM

|          |                       | Pre-PSM               |                          |                       | Post-PSM              |                          |
|----------|-----------------------|-----------------------|--------------------------|-----------------------|-----------------------|--------------------------|
| _        | More                  | Less                  | Difference               | More                  | Less                  | Difference               |
| Tax      | 3.996×10 <sup>8</sup> | $4.528 \times 10^{6}$ | 3.951×10 <sup>8***</sup> | 5.166×10 <sup>7</sup> | $5.091 \times 10^{6}$ | 4.657×10 <sup>7***</sup> |
|          |                       |                       | (6.393)                  |                       |                       | (14.852)                 |
| SOE      | 0.737                 | 0.654                 | 0.083***                 | 0.651                 | 0.699                 | -0.048                   |
|          |                       |                       | (8.408)                  |                       |                       | (-1.264)                 |
| SIZE     | 21.622                | 20.620                | 1.002***                 | 20.648                | 20.638                | 0.010                    |
|          |                       |                       | (49.326)                 |                       |                       | (0.216)                  |
| ROA      | 0.034                 | 0.007                 | 0.027***                 | -0.026                | -0.030                | 0.004                    |
|          |                       |                       | (19.151)                 |                       |                       | (0.764)                  |
| BTM      | 1.107                 | 0.851                 | 0.256***                 | 0.860                 | 0.908                 | -0.048                   |
|          |                       |                       | (16.814)                 |                       |                       | (-1.314)                 |
| LEVERAGE | 0.510                 | 0.503                 | 0.007                    | 0.628                 | 0.639                 | -0.011                   |
|          |                       |                       | (1.621)                  |                       |                       | (-0.673)                 |
| OREC     | 0.049                 | 0.079                 | -0.030***                | 0.176                 | 0.174                 | 0.002                    |
|          |                       |                       | (-17.749)                |                       |                       | (0.293)                  |

Panel B: Regressions using the PSM Sample

|                   | (1)               | (2)           | (3)         |
|-------------------|-------------------|---------------|-------------|
|                   | TunnelingNegative | OtherNegative | NonNegative |
|                   | _National         | _National     | _National   |
| Large_Taxpayer    | -0.085***         | -0.002        | 0.058       |
|                   | (-2.829)          | (-0.052)      | (0.972)     |
| Control Variables | Included          | Included      | Included    |
| Year F.E          | Included          | Included      | Included    |
| Industry F.E      | Included          | Included      | Included    |
| Constant          | -1.376***         | 0.077         | -5.627***   |
|                   | (-2.678)          | (0.099)       | (-4.838)    |
| #Obs              | 1335              | 1335          | 1335        |
| $Adj R^2$         | 0.187             | 0.276         | 0.175       |

See Appendix A for variable definitions. Standard errors are clustered by firm. The control variables are included but not tabulated for brevity. \*\*\*, \*\*,\* denote significance at the 0.01, 0.05, and 0.10 level using a two-tailed t-test.

Table 6: Censorship of News at the Local Level (Out-of-Province versus In-Province)

|                   | (1)       | (2)         | (3)       | (4)               | (5)             | (6)       |  |
|-------------------|-----------|-------------|-----------|-------------------|-----------------|-----------|--|
|                   | Out-c     | of-Province | Local     | In-Province Local |                 |           |  |
|                   | Tunneling | Other       | Non       | Tunneling         | Tunneling Other | Non       |  |
|                   | Negative  | Negative    | Negative  | Negative          | Negative        | Negative  |  |
|                   | _outProv  | _outProv    | _outProv  | _inProv           | _inProv         | _inProv   |  |
| SOE_Central       | -0.043*** | -0.047*     | -0.040    | -0.007            | -0.009          | -0.019    |  |
|                   | (-2.671)  | (-1.799)    | (-0.614)  | (-1.417)          | (-0.722)        | (-0.244)  |  |
| SOE_Provincial    | -0.019    | -0.019      | -0.039    | -0.001            | -0.010          | 0.042     |  |
|                   | (-1.461)  | (-0.873)    | (-0.891)  | (-0.308)          | (-1.155)        | (1.141)   |  |
| Control Variables | Included  | Included    | Included  | Included          | Included        | Included  |  |
| Year F.E          | Included  | Included    | Included  | Included          | Included        | Included  |  |
| Industry F.E      | Included  | Included    | Included  | Included          | Included        | Included  |  |
| Constant          | -0.310    | $0.435^{*}$ | -2.655*** | -0.005            | 0.116           | -3.191*** |  |
|                   | (-1.526)  | (1.789)     | (-4.096)  | (-0.097)          | (0.487)         | (-3.304)  |  |
| # Obs.            | 2,100     | 2,100       | 2,100     | 2,100             | 2,100           | 2,100     |  |
| $Adj. R^2$        | 0.090     | 0.114       | 0.269     | 0.023             | 0.053           | 0.225     |  |

See Appendix A for variable definitions. Standard errors are clustered by firm. The control variables are included but not tabulated for brevity. \*\*\*, \*\*,\* denote significance at the 0.01, 0.05, and 0.10 level using a two-tailed t-test.

**Table 7: Capital-Market Effects of Tunneling News** 

**Panel A: Abnormal Returns** 

|                           | ABN_RET    |       |         |                                  |         |  |  |  |
|---------------------------|------------|-------|---------|----------------------------------|---------|--|--|--|
|                           | Mean       | Std   | T-Value | Difference from Day <sub>0</sub> | T-Value |  |  |  |
| Day-10                    | 0.0005     | 0.082 | 0.217   | 0.006***                         | 2.638   |  |  |  |
| Day -9                    | -0.0003    | 0.026 | -0.373  | $0.005^{***}$                    | 4.895   |  |  |  |
| Day -8                    | -0.0018**  | 0.027 | -2.424  | $0.004^{***}$                    | 3.570   |  |  |  |
| Day -7                    | -0.0019*** | 0.026 | -2.757  | 0.004***                         | 3.334   |  |  |  |
| Day -6                    | -0.0018**  | 0.028 | -2.367  | $0.004^{***}$                    | 3.328   |  |  |  |
| Day -5                    | -0.0019**  | 0.027 | -2.511  | $0.004^{***}$                    | 3.354   |  |  |  |
| Day -4                    | -0.0014*   | 0.029 | -1.834  | $0.004^{***}$                    | 3.608   |  |  |  |
| Day -3                    | -0.0027*** | 0.03  | -3.377  | $0.003^{**}$                     | 2.472   |  |  |  |
| Day -2                    | -0.0016    | 0.039 | -1.511  | 0.004***                         | 2.865   |  |  |  |
| Day -1                    | 0.0011     | 0.112 | 0.352   | $0.007^{**}$                     | 2.135   |  |  |  |
| $Day_0$                   | -0.0057*** | 0.033 | -6.338  |                                  |         |  |  |  |
| $Day_{+1}$                | -0.0016**  | 0.03  | -2.026  | $0.004^{***}$                    | 3.526   |  |  |  |
| $Day_{+2}$                | -0.0011    | 0.028 | -1.412  | $0.005^{***}$                    | 4.059   |  |  |  |
| $Day_{+3}$                | -0.0026*** | 0.028 | -3.495  | $0.003^{***}$                    | 2.714   |  |  |  |
| Day +4                    | -0.0024*** | 0.028 | -3.055  | $0.003^{***}$                    | 2.848   |  |  |  |
| <i>Day</i> +5             | -0.0010    | 0.027 | -1.372  | $0.004^{***}$                    | 4.108   |  |  |  |
| <i>Day</i> +6             | -0.0007    | 0.028 | -0.874  | $0.005^{***}$                    | 4.476   |  |  |  |
| Day +7                    | -0.0013*   | 0.027 | -1.758  | $0.004^{***}$                    | 3.902   |  |  |  |
| Day +8                    | 0.0005     | 0.028 | 0.586   | $0.006^{***}$                    | 5.210   |  |  |  |
| <i>Day</i> +9             | -0.0022*** | 0.027 | -2.935  | $0.004^{***}$                    | 3.050   |  |  |  |
| <i>Day</i> <sub>+10</sub> | -0.0006    | 0.027 | -0.812  | $0.005^{***}$                    | 4.539   |  |  |  |

**Panel B: Abnormal Trading Volumes and Market Depths** 

| -                        | ABN_VOL     |       |         |                                  |         |          | ABN_DEPTH |         |                                  |         |  |
|--------------------------|-------------|-------|---------|----------------------------------|---------|----------|-----------|---------|----------------------------------|---------|--|
|                          | Mean        | Std   | T-Value | Difference from Day <sub>0</sub> | T-Value | Mean     | Std       | T-Value | Difference from Day <sub>0</sub> | T-Value |  |
| <i>Day-10</i>            | 0.119***    | 0.798 | 5.489   | -0.164***                        | -5.514  | 0.192*** | 0.973     | 7.223   | -0.298***                        | -6.683  |  |
| <i>Day -9</i>            | 0.125***    | 0.817 | 5.627   | -0.158***                        | -5.351  | 0.186*** | 1.022     | 6.677   | -0.304***                        | -6.866  |  |
| Day -8                   | 0.147***    | 0.871 | 6.188   | -0.136***                        | -4.540  | 0.210*** | 1.007     | 7.662   | -0.280***                        | -6.479  |  |
| Day -7                   | 0.142***    | 0.865 | 6.005   | -0.141***                        | -4.826  | 0.193*** | 0.983     | 7.207   | -0.297***                        | -6.910  |  |
| Day -6                   | 0.152***    | 0.89  | 6.257   | -0.131***                        | -4.586  | 0.254*** | 1.143     | 8.148   | -0.236***                        | -5.320  |  |
| Day -5                   | 0.175***    | 0.913 | 7.035   | -0.108***                        | -3.924  | 0.237*** | 1.125     | 7.725   | -0.253***                        | -5.670  |  |
| Day -4                   | 0.186***    | 0.95  | 7.184   | -0.097***                        | -3.606  | 0.263*** | 1.148     | 8.417   | -0.227***                        | -5.235  |  |
| <i>Day -3</i>            | 0.184***    | 0.985 | 6.832   | -0.099***                        | -3.881  | 0.254*** | 1.161     | 8.015   | -0.236***                        | -5.620  |  |
| Day -2                   | 0.199***    | 1.002 | 7.267   | -0.084***                        | -3.471  | 0.295*** | 1.196     | 9.03    | -0.195***                        | -4.555  |  |
| Day -1                   | 0.235***    | 1.029 | 8.39    | -0.048**                         | -2.170  | 0.361*** | 1.245     | 10.624  | -0.129***                        | -3.440  |  |
| $Day_0$                  | 0.283***    | 1.072 | 9.693   |                                  |         | 0.490*** | 1.425     | 12.621  |                                  |         |  |
| $Day_{+1}$               | 0.264***    | 1.095 | 8.838   | -0.019                           | -1.027  | 0.393*** | 1.319     | 10.919  | -0.097***                        | -3.030  |  |
| $Day_{+2}$               | 0.260***    | 1.037 | 9.191   | -0.023                           | -0.971  | 0.321*** | 1.272     | 9.235   | -0.169***                        | -4.394  |  |
| $Day_{+3}$               | 0.249***    | 1.011 | 9.035   | -0.034                           | -1.321  | 0.328*** | 1.213     | 9.915   | -0.162***                        | -4.113  |  |
| $Day_{+4}$               | 0.262***    | 1.044 | 9.177   | -0.021                           | -0.866  | 0.270*** | 1.137     | 8.694   | -0.220***                        | -5.546  |  |
| <i>Day</i> +5            | 0.235***    | 1.032 | 8.342   | -0.048*                          | -1.833  | 0.296*** | 1.183     | 9.165   | -0.196***                        | -4.679  |  |
| <i>Day</i> +6            | 0.250***    | 1.012 | 9.055   | -0.033                           | -1.269  | 0.243*** | 1.125     | 7.922   | -0.247***                        | -5.966  |  |
| <i>Day</i> <sub>+7</sub> | 0.229***    | 1.055 | 7.939   | $-0.054^*$                       | -1.959  | 0.213*** | 1.105     | 7.05    | -0.280***                        | -6.529  |  |
| $Day_{+8}$               | 0.271***    | 1.034 | 9.587   | -0.012                           | -0.470  | 0.298*** | 1.108     | 9.862   | -0.192***                        | -4.316  |  |
| <i>Day</i> +9            | 0.246***    | 1.063 | 8.493   | -0.037                           | -1.262  | 0.246*** | 1.134     | 7.95    | -0.244***                        | -5.461  |  |
| <i>Day</i> +10           | ata ata ata | 1.045 | 7.204   | -0.078**                         | -2.553  | 0.232*** | 1.06      | 8.003   | -0.258***                        | -5.930  |  |

**Table 8: Selection of News Topics for Censorship** 

|                      | (1)               | (2)              | (3)         | (4)                          | (5)            | (6)       | (7)          | (8)        | (9)           | (10)      |
|----------------------|-------------------|------------------|-------------|------------------------------|----------------|-----------|--------------|------------|---------------|-----------|
|                      | TunnelingNegative | (2)<br>Violation | Governance  | ( <del>+</del> )<br>Earnings | (3)<br>General | Return    | Equity       | Bankruptcy | Restructuring | SSSR      |
|                      | _National         | _National        | _National   | _National                    | _National      | _National | _National    | _National  | _National     | _National |
| SOE                  | -0.105***         | -0.056**         | -0.022      | -0.028                       | -0.049*        | -0.007    | -0.035*      | 0.009      | 0.003         | 0.008     |
|                      | (-3.491)          | (-2.332)         | (-1.484)    | (-1.412)                     | (-1.920)       | (-0.554)  | (-1.785)     | (0.709)    | (0.480)       | (1.447)   |
| Control<br>Variables | Included          | Included         | Included    | Included                     | Included       | Included  | Included     | Included   | Included      | Included  |
| Year F.E             | Included          | Included         | Included    | Included                     | Included       | Included  | Included     | Included   | Included      | Included  |
| Industry F.E         | Included          | Included         | Included    | Included                     | Included       | Included  | Included     | Included   | Included      | Included  |
| Constant             | -0.889**          | -0.252           | $0.463^{*}$ | 0.207                        | -0.407         | 0.009     | $0.750^{**}$ | -0.213     | 0.018         | 0.007     |
|                      | (-2.034)          | (-0.784)         | (1.883)     | (0.849)                      | (-1.181)       | (0.058)   | (2.593)      | (-1.268)   | (0.351)       | (0.085)   |
| #Obs                 | 2,100             | 2,100            | 2,100       | 2,100                        | 2,100          | 2,100     | 2,100        | 2,100      | 2,100         | 2,100     |
| $Adj. R^2$           | 0.174             | 0.112            | 0.046       | 0.157                        | 0.167          | 0.034     | 0.091        | 0.048      | 0.013         | 0.018     |

See Appendix A for variable definitions. Standard errors are clustered by firm. The control variables are included but not tabulated for brevity. \*\*\*, \*\*,\* denote significance at the 0.01, 0.05, and 0.10 level using a two-tailed t-test.

Table 9: Incentives and Censorship of Official versus Commercial Newspapers

Panel A: Censorship of Official versus Commercial Newspapers

|                | (1)                | (2)       | (3)         | (4)           | (5)         | (6)       |
|----------------|--------------------|-----------|-------------|---------------|-------------|-----------|
|                | Protection of SOEs |           | Protecti    | Protection of |             | of Large  |
|                |                    |           | Large Em    | ployers       | Taxpayers   |           |
|                | Tunneling          | Tunneling | Tunneling   | Tunneling     | Tunneling   | Tunneling |
|                | Negative           | Negative  | Negative    | Negative      | Negative    | Negative  |
|                | _Commercial        | _Official | _Commercial | _Official     | _Commercial | _Official |
| SOE_Central    | -0.109***          | -0.070**  |             |               |             |           |
|                | (-3.236)           | (-2.211)  |             |               |             |           |
| SOE_Provincial | -0.073***          | -0.044*   |             |               |             |           |
|                | (-2.810)           | (-1.877)  |             |               |             |           |
| Small_Employer |                    |           | 0.101***    | 0.075***      |             |           |
|                |                    |           | (2.676)     | (2.939)       |             |           |
| Large_Taxpayer |                    |           |             |               | -0.072***   | -0.062*** |
|                |                    |           |             |               | (-2.663)    | (-2.692)  |
| Control        | Included           | Included  | Included    | Included      | Included    | Included  |
| Variables      |                    |           |             |               |             |           |
| Year F.E       | Included           | Included  | Included    | Included      | Included    | Included  |
| Industry F.E   | Included           | Included  | Included    | Included      | Included    | Included  |
| Constant       | -0.664*            | -0.623**  | -1.690**    | -1.757***     | -0.920**    | -1.126*** |
|                | (-1.675)           | (-2.025)  | (-2.033)    | (-3.274)      | (-1.971)    | (-2.845)  |
| # Obs          | 2,100              | 2,100     | 875         | 875           | 1335        | 1335      |
| $Adj. R^2$     | 0.138              | 0.153     | 0.180       | 0.159         | 0.131       | 0.167     |

Panel B: Reporting of Tunneling News Driven by Abnormal Returns

|                                | (1)                 | (2)               | (3)         | (4)               | (5)      |
|--------------------------------|---------------------|-------------------|-------------|-------------------|----------|
|                                | TunnelingNegative   | TunnelingNegative |             | TunnelingNegative |          |
|                                |                     | _Comn             | _Commercial |                   | icial    |
|                                | Full Sample Non-SOE |                   | SOE         | Non-SOE           | SOE      |
| Annual_ABN_RET                 | -0.074***           | -0.117***         | -0.007      | -0.087***         | -0.036** |
|                                | (-3.159)            | (-3.025)          | (-0.325)    | (-3.306)          | (-2.209) |
| SOE                            | -0.104***           |                   |             |                   |          |
|                                | (-3.194)            |                   |             |                   |          |
| Control Variables              | Included            | Included          | Included    | Included          | Included |
| Year F.E                       | Included            | Included          | Included    | Included          | Included |
| Industry F.E                   | Included            | Included          | Included    | Included          | Included |
| Constant                       | -1.032**            | -1.957***         | -0.150      | -1.161*           | -0.263   |
|                                | (-2.046)            | (-3.052)          | (-0.317)    | (-1.925)          | (-0.595) |
| # Obs                          | 1,919               | 760               | 1,159       | 760               | 1,159    |
| $Adj. R^2$                     | 0.166               | 0.157             | 0.131       | 0.147             | 0.160    |
| Test of Coefficient Difference |                     | Diff              | Z-Value     | Diff              | Z-Value  |
|                                |                     | -0.110**          | -2.479      | -0.051*           | -1.647   |

See Appendix A for variable definitions. In this regression, we use the same control variables as the other regressions, except for *STD\_RET* (standard deviation of stock returns) because abnormal returns are our test variable. Standard errors are clustered by firm. \*\*\*, \*\*,\* denote significance at the 0.01, 0.05, and 0.10 level using a two-tailed t-test.