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The Effects of a U.S. Approach to Enforcement: Evidence from China

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Abstract

We examine the effects of implementing a U.S. approach to the enforcement of mandatory disclosure in China. Using a hand-collected sample of comment letters (CLs) issued by the Shanghai Stock Exchange over the period of 2013 to 2018, we show that stock price reactions to CL receipts and replies are negative and significant. Using textual analysis to match issues raised by regulators to targeted firms' changes in disclosure, we show that these firms do address CL issues point by point, but do not experience significant improvements in their information environments. Our article highlights the importance of incentives rather than regulation/enforcement in reducing information asymmetry.

I. Introduction

Stock markets are crucial to advancing a nation's economy (Rajan and Zingales (1998)). Not surprisingly, less developed markets replicate regulation from their counterparts in more developed countries, in efforts to expedite a move toward well-functioning markets. In a seminal paper, Ball, Robin, and Wu (2003) point

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out that the focus on regulation is "substantially and misleadingly incomplete," because a financial reporting practice under a given set of regulations is sensitive to the incentives of firms that prepare financial statements (see, e.g., Ball, Robin, and Wu (2000), DeFond, Wong, and Li (2000), Chaney, Faccio, and Parsley (2011), and Piotroski, Wong, and Zhang (2015)). With enforcement playing a role even more important than that of regulation (Bhattacharya and Daouk (2002), Christensen, Hail, and Leuz (2013), (2016)), regulators in developing countries have attempted to adopt enforcement measures from developed countries, but the outcomes of such strategies have received scant attention in the literature. In this article, we fill this void by using the comment letter (CL) review process as an example of a U.S. approach to the enforcement of mandatory disclosure (first introduced in China in 2013) to shed light on the roles of firms' reporting incentives and regulators' enforcement incentives in achieving market-oriented financial reporting practices in China.

The U.S. CL process has two regulatory objectives: i) to make investors aware of inquiries related to issuers' disclosure deficiencies, and ii) to enhance issuers' compliance with disclosure requirements (Securities and Exchange Commission (SEC) (2018)). The process unfolds as follows: Regulators review the financial statements of publicly listed firms to ensure the statements are in compliance with applicable financial reporting requirements; if there are any questions or concerns, a CL is issued and firm replies are required. Prior studies find that the U.S. CL review process is effective in improving targeted firms' disclosures and their information environments (e.g., Johnston and Petacchi (2017), Lowry, Michaely, and Volkova (2020)). However, whether similar outcomes can be achieved in developing countries is unclear.

First and foremost, replicating regulation and/or enforcement from advanced economies gives rise to the risk of implementing a regulation that could be incongruent with the local contracting environment. One major difference between developing economies, such as China's, and developed economies/capital markets is that the contracting environment in the former is relationship-based rather than

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market-based. In China, business operations are often carried out within firms' social and political networks, which affects the benefits and costs of corporate transparency, and also the relevance and usefulness of accounting information for investment and financing decisions (Piotroski and Wong (2012), Wong (2014)). In such an environment, targeted firms will have strong incentives to minimize the effects of the CL process as opposed to focusing on improving disclosures. Therefore, when CLs expose targeted firms' deficiencies (i.e., when investors realize CL-triggered new disclosures are incomplete, there will be widening information asymmetry).

Furthermore, social stability is paramount in China. Any major disruption/volatility in the stock market will pose serious threat to the control of the Chinese government (Ball et al. (2000), Piotroski et al. (2015)). Therefore, despite the fact that regulators and investors in China share the same preference for more disclosure from listed firms, enforcement is restrained by not causing any major disruptions to targeted firms' operations or the stability of the stock market.

Under the incongruency hypothesis, we expect negative stock price reactions to CLs (CL replies) and significant increases in targeted firms' CL-related disclosures suggesting enforcement in form, but no significant improvements in targeted firms' information environments suggesting no enforcement in substance.

To better understand the mechanisms through which the CL process in China fails to achieve its efficacy, we explore the roles of firms' reporting incentives and regulators' enforcement incentives in the outcomes of the review process. We expect that as a firm's share of relationship-based transactions increases and/or as regulators become more worried about stock market volatility and maintaining social stability, the negative outcomes due to the incongruency of such enforcement in China will be exacerbated.

Using a hand-collected data set on CLs and replies in China over the period of 2013 to 2018, we first examine the determinants of Chinese firms receiving CLs. Based on a sample of 973 CLs on annual reports issued by the Shanghai Stock Exchange to 590 listed firms, we find that firms with weak internal control, a small positive earnings per share (EPS) increase, a modified audit opinion, and auditor turnover are more likely to receive CLs, as are firms that are older, loss-making, doing large acquisition deals, engaged in related party transactions, and providing loan guarantees to related parties. In contrast, firms hiring a Big 4 auditor, firms with high management ownership, state-owned enterprises (SOEs), and firms headquartered in provinces with better institutional development are less likely to receive them. These findings suggest that CLs in China are employed by regulators to identify firms unlikely to meet disclosure standards.

To examine CLs' effects, we take a multi-pronged approach. We show that the average five-day announcement period returns around CL receipts and CL replies are -2.5% and -0.7%, respectively, and are statistically different from zero. In terms of economic significance, given that the average market capitalization of firms receiving CLs is CNY9.4 billion ($1.5 billion), the average drop in market capitalization upon CL receipts (replying CLs) is CNY234.7 million ($38.5 million) (CNY65.9 million ($10.8 million)), which is economically significant. These findings affirm significant investor attention to enforcement actions as well as the market's expectation of no material improvements in future disclosures.

To further explore the outcome on corporate disclosure, we employ a set of textual analysis techniques based on machine learning to identify issues raised by regulators. Our analysis uncovers nine distinct issues raised by the SSE, largely overlapping with those in a similar U.S. process (e.g., Cassell, Dreher, and Myers (2013)), suggesting that Chinese regulators are asking relevant questions. We then use KL-divergence (Kullback and Leibler (1951)) to match the issues raised by regulators with those in annual reports to help identify CL-triggered changes in subsequent disclosures. We find positive and significant associations between six out of the nine issues on which the SSE has expressed concerns and targeted firms' increased disclosures in amended annual reports. We further find positive and significant associations between three out of the nine issues on which the SSE has expressed concerns and targeted firms' increased disclosures in next year's annual reports. Collectively, these findings provide suggestive evidence that targeted firms provide CL-specific new disclosures.

We next investigate whether targeted firms' new disclosures translate into greater liquidity, which is the ultimate objective of securities law and enforcement (e.g., Christensen et al. (2013), (2016)). We find no significant improvement in the bid–ask spread for a sample of targeted firms that made major changes in disclosures after receiving a CL. In contrast, we find a significant increase in the bid–ask spread for a sample of targeted firms that made small changes in disclosures, compared to a sample of non-CL firm-year observations. We further examine whether there are any differential effects across CL recipients with different levels of relational contracting and/or when regulators face different levels of political incentives. We find that ceteris paribus, stock price reactions to CLs (CL replies) are more negative, changes in targeted firms' disclosure are smaller, and their bid–ask spreads widen when relational contracting is more dominant for targeted firms and/or the political incentive not to cause further disruptions to targeted firms' operations or the stability of the stock market is stronger for regulators. We conclude that the incentives of both firms and regulators are important in achieving market-oriented disclosure practices in developing economies.

Our article makes a number of contributions to the literature. First, our key finding of the lack of significant improvements in firms' information environments of securities law enforcement in developing economies questions the regulatory objectives in those economies. As a result, our article and its novel finding complement and extend the prior literature highlighting the role of the incentives of firms that prepare financial statements in achieving transparency (Ball et al. (2000), (2003), DeFond et al. (2000), and He, Wong, and Young (2012)). We point out that the incentives of both firms and regulators are important in helping to achieve market-oriented disclosure practices in developing economies.

Second, our article is the first in the literature to examine the determinants and consequences of the CL review process using textual data from countries other than the U.S. (Lowry et al. (2020), Ryans (2021)). The combination of Latent Dirichlet Allocation (LDA) analysis (Blei, Ng, and Jordan (2003)) and KL-divergence allows us to clearly delineate the disclosure outcome by linking changes in amended and next year's annual reports to issues raised by regulators in the CL process. We also offer a cautionary tale about textual analysis in China, where relational contracting and political incentives are prevalent: the textual analysis as adopted in the U.S. fails

to differentiate superficial responses from informative disclosures (whereas the capital market outcomes in terms of targeted firms' stock price reactions and bid–ask spreads do).

Third and finally, by using China as a setting for gaining insights into the effects of implementing a U.S. approach to the enforcement of mandatory disclosure in developing economies, our article contributes to the extensive literature examining the efficacy of public enforcement (Stigler (1964), (1971), Becker and Stigler (1974), Landes and Posner (1975), and Shleifer (2005)). Our finding on the negative stock price reactions to CL receipts and replies highlights the value of Chinese regulators' information production relative to investors. Our key finding of the lack of improvements in targeted firms' information environments is new to the literature and contributes to the ongoing debate on the efficacy of public versus private enforcement (e.g., La Porta, Lopez-de-Silanes, and Shleifer (2006), Jackson and Roe (2009), and Del Guercio, Odders-White, and Ready (2017)).

Our findings on the lack of effectiveness of the CL review process implemented in China should be of interest to other countries using or considering the adoption of a regulatory filing review process. We show that replicating regulation and/or enforcement from advanced economies is not enough to improve listed firms' information environments in developing economies, which are often relationship-based. The full efficacy of regulation and its enforcement requires better alignment with local contracting environments.[1]

II. Institutional Backgrounds

A. CLs in the U.S.

The CL review process, as currently practiced, was introduced by the SEC as part of the Sarbanes-Oxley Act of 2002 (SOX), which was itself the agency's response to investors' demands for more enforcement. Section 408 of the Act requires that the SEC review, at least once every 3 years, disclosures of all companies reporting under the Securities Exchange Act of 1934.

The process starts with the SEC issuing a CL when it deems a filing to be materially deficient or when a filing requires further clarification. The issuer's response is required within 10 days, and can potentially generate one or more follow-up letters from the SEC. Typical responses from the issuer include providing supplemental information requested by the CL, making amendments to current filings, making additional disclosures in future filings, and, in rare cases only, making a restatement of the reviewed filings (Cassell et al. (2013)).

B. CLs in China

The regulatory framework in China largely replicates that of the U.S., with the same goals of maintaining a transparent, fair, and equitable market, strengthening

[1]It is worth pointing out that on Feb. 9, 2021, the CSRC announced disclosure rule change that requires better disclosure of ownership structure prior to listing, and imposes a longer lock-up period for large shareholders than what were required before, consistent with our paper's findings and policy recommendation of more disclosure on relational contracting.

the protection of investors, small investors in particular, and facilitating the sound development of the capital market.[2] The securities regulators, including the China Securities Regulatory Commission (CSRC) and two domestic stock exchanges – the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE) – have played a direct and prominent role in developing China's stock markets. In early 2014, China launched a U.S.-style CL process as a key component of its reform of regulatory oversight with a focus on disclosure quality and standards; the process was first applied to annual reports in the fiscal year 2013. Appendix A provides a comparison of key institutional features of the CL review process in China versus that in the U.S. It is clear that regulators in the U.S. and China follow a very similar enforcement process.

III. Literature Review and Hypothesis Development

A. Prior Literature on Adopting Anglo-American Accounting Standards in Developing Economies

In a seminal paper, Ball et al. (2003) examine the interaction between accounting standards and firms' incentives on financial reporting quality in Hong Kong, Malaysia, Singapore, and Thailand whose respective accounting standards all derive from common law sources (from the U.K. and the U.S.) widely viewed as higher in quality than code law standards. They find that the financial reporting quality in those four East Asian regions is not higher than under code law, as measured by the timely recognition of economic income (particularly losses). They further show that the prevalence of family control and relational contracting (instead of arm's length contracting) results in opacity. They conclude that firms' reporting incentives are more important than standards to achieve transparency.

In a move to improve both auditing and accounting quality in the Chinese equity markets, the CSRC adopted the international Generally Accepted Auditing Standards (GAAS) in 1995. DeFond et al. (2000) find that the immediate effect of such adoption is that the modified audit opinions go up by ninefold, but firms start to hire non-Big 10 auditors who are less stringent. The authors conclude that relying on social and political networks rather than arm's length contracts weakens the contracting role of accounting and listed firms' demand for high-quality auditing, especially for SOEs.

He et al. (2012) study the unintended consequence of China's 2007 adoption of the International Financial Reporting Standards-based (IFRS-based) new China Accounting Standards (CAS). The authors find that listed firms use fair value accounting to manipulate earnings to meet the CSRC's regulatory thresholds. They conclude that regulators' use of bright-line rules of accounting targets creates strong incentives for firms to manage earnings to maintain their listing status, as opposed to creating incentives to provide investors with transparent information.

Piotroski et al. (2015) highlight the fact that political incentives shape the Chinese listed firms' information environments. They examine the stock price

[2]See the mission statement at the China Securities Regulatory Commission's website: http://www.csrc.gov.cn/pub/csrc_en/ (accessed July 6, 2021).

behavior of listed firms around major political events, and find that those events temporarily restricted the flow of negative information about affiliated firms. They conclude that both politicians and their affiliated firms respond to political incentives by suppressing negative information in a country with government control over its capital markets.

It is worth noting that there is little evidence on the outcome of adopting U.S.-style enforcement in China, or on Chinese regulators' incentives behind enforcement actions. Our article fills this void by examining the roles of both regulators' enforcement incentives and firms' reporting incentives in the enforcement outcomes.

B. Hypothesis Development

Our null hypothesis, the market efficiency hypothesis, is based on the conjecture that the CL process in China will reach similar outcomes as in the U.S. Therefore, its predictions are largely motivated by the documented evidence of the CL process in the U.S. (see, e.g., Johnston and Petacchi (2017), Lowry et al. (2020)). The reasoning for expecting similar outcomes in China is based on the following observations. The review process is a key component of the 2014 reform of the regulatory oversight of mandatory disclosure; this reform focused on disclosure quality and standards far more explicit than previous regulatory efforts. Moreover, in the absence of a culture of class action lawsuits or other market mechanisms in China (e.g., Layton (2008)), the CSRC and two stock exchanges are the last line of defense in policing mandatory disclosure, and have the potential to compensate for the lack of market discipline. Prior work concludes that the CSRC is not a toothless tiger in China's legal and institutional environments (Chen, Firth, Gao, and Rui (2005), Hung, Wong, and Zhang (2015)). Therefore, we expect the CL process to be implemented with full efficacy in China.

The stock price reaction to CL announcements captures two effects: the identification and severity of possible disclosure deficiencies, and the potential for improvements in future disclosures. Dechow, Lawrence, and Ryans (2016) document that in the U.S., the stock price response to CL conversations (reviews together with resolutions) relating to annual reports is, on average, slightly positive, whereas Ryans (2021), using a longer time period, reports no market reaction to CL conversations. In China, even though CLs are released before their replies, under the market efficiency hypothesis, we expect that investors will anticipate full resolution of disclosure deficiencies, similar to the U.S. experience, and that stock prices will incorporate improvements in future disclosures.

In line with the above reasoning, prior literature has documented that the U.S. CL process leads to improvements in disclosures, and a subsequent drop in bid–ask spreads (see, e.g., Johnston and Petacchi (2017), Lowry et al. (2020)). Given that the CL process in China is implemented much as it is in the U.S., we expect the additional information generated from the CL process will help improve targeted firms' information environments. Our null market efficiency hypothesis has the following set of predictions:

Hypothesis 1a. There is a nonnegative stock price reaction to Chinese CLs (CL replies).

Hypothesis 1b. There is a significant increase in targeted firms' CL-related disclosures.

Hypothesis 1c. There is a significant improvement in targeted firms' information environments.

That said, replicating regulation and/or enforcement from advanced economies gives rise to the risk of implementing a regulation that could be incongruent with the local contracting environment. In this article, we propose an alternative hypothesis to the null: the incongruency hypothesis based on the following arguments.

One major difference between developing economies, such as China, and developed economies/capital markets is that the contracting environment in the former is relationship-based rather than market-based. In China, business operations are often carried out within firms' social and political networks, which affects the benefits and costs of corporate transparency, and also the relevance and usefulness of accounting information for investment and financing decisions (Piotroski and Wong (2012), Wong (2014)). Given that information asymmetry in China is resolved largely by private communications among contracting parties, not via public disclosures (Ball et al. (2000)), targeted firms will have strong incentives to minimize the effects of the CL process as opposed to focusing on improving disclosures.[3] In some sense, the CL process in China can be compared to bright line rules adopted by the CSRC (He et al. (2012), Piotroski and Wong (2012)) whereby due to the lack of manpower and high information costs, Chinese regulators make heavy use of (explicit) accounting targets when approving listed firms' investment and financing decisions. Prior work shows that such rules lead to acute earnings manipulations among listed firms in China (Piotroski and Wong (2012), Wong (2014)). Similarly, to satisfy the regulator, targeted firms could incur relatively low information costs when addressing those comments point-by-point without providing proprietary, largely soft information in its entirety.[4] As a result, the Chinese

[3]Our conversations with a number of directors on the boards of listed firms in China suggest that targeted firms share one main goal – in the words of one director, "making the comment letter go away" – as opposed to working on improving their firms' disclosures to capital market participants. In contrast, in the U.S. the SEC describes the CL process as a conversation with targeted firms intended to help such firms improve disclosures (and/or comply with standards) (Cassell et al. (2013)).

[4]In addition to Chinese firms' very different contracting environments compared to those of U.S. firms, there is one implementation difference between the Chinese CL process and its U.S. counterpart that may further prevent the former from achieving its full potential: the Chinese CL process is restricted to one round (i.e., the regulator sends only one letter, and a targeted firm provides only one response). This implementation difference is consistent with Chinese regulators being aware of, and sympathetic to, firms' incentives to partially withhold strategic information. This difference suggests that Chinese regulators balance the benefits of fostering the informational role of accounting disclosures against the costs associated with causing disruption to firms' business operations due to revealing proprietary information in the CL process.

CL process may lead to partial disclosure of soft, nonverifiable information that alarms investors about the lack of transparency, exacerbating information asymmetry about targeted firms.

Another major difference between China and other developed economies is that social stability is paramount in China. Authoritarian governments like that in China need to demonstrate strengths to stay in power (Tullock (1987), Ball et al. (2000), and Piotroski et al. (2015)). Any major disruption/volatility in the stock market will pose serious threat to the control of the Chinese government. Therefore, despite the fact that regulators and investors share the same preference for more disclosure from listed firms, enforcement is restrained by not causing any major disruptions to targeted firms' operations or the stability of the stock market.

We next discuss the implications of the incongruency between the CL process and the local contracting environment for each of our predictions.

The stock price reactions to CLs and CL replies depend on the issues identified by the regulator and on the expected resolution. If Chinese regulators identify disclosure deficiencies that had eluded investors (Chen et al. (2005), Jackson and Roe (2009)), and the resolution is expected to be partial, then a negative stock price reaction will follow the announcement of CLs. Moreover, given that targeted firms' incentives are to withhold soft, nonverifiable information and that the review process does not require the regulator to attest the resolution of the deficiency, we expect a significantly negative stock price reaction to CL replies.

With respect to changes in corporate disclosure, as discussed above, we expect targeted firms to provide some additional disclosure relating to CL topics. However, the CL-triggered disclosures could be only a partial resolution of the deficiencies, which gives rise to worsening information asymmetry about targeted firms as investors learn that some important information is missing from disclosures. Furthermore, processing the incomplete disclosure of relationship-based transactions requires a deep understanding of the contracting environment, which just a fraction of market participants possess (Li, Wong, and Yu (2020)). As a result, CL-triggered disclosure may increase investors information-processing costs and accentuate their degrees of information asymmetry about targeted firms.

Based on the above discussions, our incongruency hypothesis has the following set of predictions:

Hypothesis 2a. There is a significantly negative stock price reaction to Chinese CLs (CL replies).

Hypothesis 2b. There is a significant increase in targeted firms' CL-related disclosures.

Hypothesis 2c. There is significant deterioration in targeted firms' information environments with incomplete disclosure.

We next zoom in on the roles of firms' and regulators' incentives in the outcomes of the CL process in China under the incongruency hypothesis. We argue that as the share of relationship-based transactions increases, the detrimental effect

of mandated disclosures aggravates, because of the increase in information asymmetry about targeted firms.

Moreover, there are strong political incentives to suppress bad news in the Chinese economy (see, e.g., Piotroski et al. (2015)), and political costs associated with reporting/uncovering embarrassingly large profits or losses (Ball et al. (2000), Piotroski and Wong (2012)). We therefore expect that during volatile market periods when social stability becomes paramount, regulators will avoid causing further disruptions from the CL process by being more lenient with disclosure enforcement, and targeted firms, more reluctant to release additional information. The combination of regulators' political incentives in enforcement and targeted firms' incentives to provide minimal responses may accentuate information asymmetry during volatile periods.

Based on the above discussions, we have the following predictions under the incongruency hypothesis when varying targeted firms' levels of relational contracting and regulators' political incentives:

Hypothesis 3a. The negative stock price reaction to Chinese CLs (CL replies) is increasing in measures of targeted firms' relational contracting and/or regulators' political incentives.

Hypothesis 3b. The increase in targeted firms' CL-related disclosures is decreasing in measures of targeted firms' relational contracting and/or regulators' political incentives.

Hypothesis 3c. The deterioration in targeted firms' information environments with incomplete disclosure is increasing in targeted firms' relational contracting and/or regulators' political incentives.

IV. Sample Formation and Overview

Disclosure of CLs and their replies has improved over time. In 2015, the SSE required listed firms to disclose the content of CLs related to annual reports for the fiscal year 2014 (all Chinese firms' fiscal years end on Dec. 31). Since 2016, the SSE has disclosed a subset of CLs on its website.

We take a two-pronged approach to form our sample: i) we download CLs covering the fiscal years 2015 to 2018 from the SSE's website, and supplement them with further search on the websites of Shanghai Securities News (www.cnstock.com) and Securities Times (www.stcn.com) – the official sources of corporate news; and ii) we download all corporate announcements over the period from Jan. 1, 2014, to July 19, 2019, from the above two websites, and conduct keyword searches for CLs and/or their replies covering the fiscal years 2013 to 2018.[5]

[5]There are 779,593 announcements over the period. We first impose the filter that the title of an announcement must contain the word "annual report" (年报 or 年度报告), resulting in 31,990 announcements. We then read each title of an announcement to determine whether a CL or a reply was issued. In some cases where we cannot locate the actual CL, we can still determine that a CL was issued based on the announcement of a reply. In those cases, we can often capture the content of a CL from its reply, as firms typically list the SSE's questions from the letter before responding. Finally, we

TABLE 1

Sample Overview

Table 1 provides an overview of our sample. The sample consists of firms listed on the SSE over the period of 2013 to 2018. Panel A describes our data collection process and sources. Our primary data source is the SSE's website. Only when we do not find any information about CLs on the SSE's website, do we move to alternative data sources. Column 1 gives the number of firms that receive CLs identified from the SSE's website. Columns 2–4 give the number of firms that receive CLs identifies from CLs, CL replies, and supplemental announcements, respectively, from the websites of Shanghai Securities News (www.cnstock.com) and Securities Times (www.stcn.com). Columns 5–7 give the number of firms in receipt of CLs, the number of firms listed on the SSE, and the fraction of SSE firms in receipt of CLs, respectively. Panel B provides the summary statistics of CL characteristics. Variable definitions are provided in Appendix B.

Panel A. CLs Over Time and from Different Sources

Year	SSE	Corporate Announcements			CLs (Yes or No)	No. of SSE Firms	% of SSE Firms Receiving CLs
	CLs	CLs	CL Replies	Supplemental Announcements			
	1	2	3	4	5	6	7
2013	0	2	75	25	102	948	10.76
2014	0	1	120	13	134	1,005	13.33
2015	75	49	9	3	136	1,076	12.64
2016	124	31	0	3	158	1,217	12.98
2017	126	72	0	0	198	1,404	14.10
2018	155	90	0	0	245	1,456	19.83
No. of obs.	480	245	204	44	973	7,106	13.69

Panel B. Summary Statistics of CL Characteristics

Variable	*N*	Mean	Median	Std. Dev.	Min	Max
#CL_PAGES	725	5.023	5.000	1.865	2.000	11.000
#CL_QUESTIONS	929	11.085	10.000	4.876	2.000	26.000

Panel A of Table 1 provides an overview of CLs used in our analysis together with different data sources.[6] The last row of Panel A of Table 1 shows that the average frequency of firms receiving CLs each year is about 14%. Overall, our sample consists of 973 CLs issued to 590 unique firms: 343 firms receive only one CL, 150 firms receive two CLs in different fiscal years, and 97 firms receive three or more CLs in different fiscal years.[7] Panel B presents the summary statistics of key characteristics of Chinese CLs. We show that the mean (median) number of pages of CLs is 5 (5). The mean (median) number of questions is 11 (10).[8]

also read the opening paragraph of the "supplemental announcement related to a firm's annual report" (年报补充公告) to determine that a CL was issued if the beginning of the announcement says, "This supplemental announcement is made in response of [sic] receiving a comment letter…."

[6]To ensure that we capture most of the CLs issued by the SSE, we read press releases by the CSRC and the SSE upon the completion of annual report reviews, and note that the numbers reported in those releases are fairly comparable to those reported in column 5 in Panel A of Table 1. When we repeat the same process to construct a sample of CLs for firms listed on the SZSE, and cross-check our numbers with the exchange's press releases, we realize that we are unable to capture most of the CLs issued by the SZSE, which is the main reason for us choosing to study CLs issued by the SSE in this article.

[7]In contrast to CLs and replies from the U.S., rarely do we see multiple iterations of letters and replies. Over our sample period of 2013 to 2018 (in fiscal years), only nine firms receive follow-up letters: two firms in 2013, none in 2014, two firms in 2015, two firms in 2016, three firms in 2017, and five firms in 2018.

[8]The difference in sample size between these two variables in Panel B is due to the fact that for 204 observations, we have only replies from which we can ascertain the questions raised in the letter, but not its length in number of pages. The difference in sample size between 973 observations with information on CL receipts in Panel A and 929 observations with information on number of questions

For firm characteristics, we obtain data from various sources including the GuoTaiAn's (GTA) China Stock Market & Accounting Research (CSMAR) database, the Thomson One Banker SDC database, the WIND database, and the DiBo (DIB) database, as well as our own data collection from firms' annual reports. Detailed variable definitions and data sources are provided in Appendix B.

Panel A of Table 2 presents summary statistics for the sample used to examine the determinants of CL receipts and CL characteristics. Panel B presents the correlation matrix of the variables. The correlation matrix suggests little concern about multicollinearity. Given that the omitted variable bias in univariate correlations can mask the true relations between the variables, we employ multiple regressions to examine the factors associated with firms receiving CLs.

V. Determinants of CL Receipts and Characteristics

To examine the determinants of CL receipts and CL characteristics, we estimate the following model:

$$\begin{aligned}(1)\quad \text{CL/CL\_CHARACTERISTICS}_{it} = {} & \beta_0 + \beta_1 \text{SECTION\_408\_CRITERIA}_{it} \\ & + \beta_2 \text{FIRM\_CHARACTERISTICS}_{it} \\ & + \beta_3 \text{MARKETIZATION\_INDEX}_{it} \\ & + \text{INDUSTRY\_FE} + \text{YEAR\_FE} + \varepsilon_{it},\end{aligned}$$

where the dependent variables are: CL, an indicator variable that takes the value of 1 if a firm receives an annual report CL in fiscal year t, and 0 otherwise, and the number of pages of each CL and the number of questions raised in each. Table 3 presents the results.

Column 1 employs the logistic regression specification when the dependent variable is the indicator variable CL. In terms of Section 408 Criteria (in the U.S.), we show that INTERNAL_CONTROL_WEAKNESS is positively and significantly associated with the likelihood of a firm receiving a CL. Using small positive changes in EPS (Burgstahler and Dichev (1997)) as a proxy for earnings management, we find a positive association between earnings management and the likelihood of a firm receiving a CL. In terms of auditor characteristics, we show that the presence of a modified audit opinion and auditor turnover are positively and significantly associated with, whereas the presence of a Big 4 auditor is negatively and significantly associated with, the likelihood of a firm receiving a CL. Chen et al. (2016) show that modified audit opinions impose significant regulatory costs on Chinese companies receiving such opinions, such as an end to seasoned equity offerings and delistings. Our findings are consistent with the idea that regulators would be seriously concerned and follow up with a CL if they saw a modified audit opinion.

in a letter in Panel B is due to the fact that for 44 observations, the receipt of a letter is identified from supplemental announcements without the actual letter nor its reply.

TABLE 2

Summary Statistics

Table 2 provides sample summary statistics. The sample consists of firms listed on the SSE over the period of 2013 to 2018. Panel A provides descriptive statistics of the determinants of a firm in receipt of a CL and CL characteristics. The last two columns present tests of differences in means and medians between the two subsamples of firm-years in receipt of a CL and firm-years not. Panel B presents the correlation matrix. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are provided in Appendix B.

Panel A. Descriptive Statistics of Determinants of CLs and CL Characteristics

	CL = 1				CL = 0				Test of Differences	
Variable	*N*	Mean	Median	Std. Dev.	*N*	Mean	Median	Std. Dev.	*t*-Test	Wilcoxon Test
Section 408 criteria										
INTERNAL_CONTROL_WEAKNESS	973	0.548	1.000	0.498	6,133	0.487	0.000	0.500	0.061***	1.000***
HIGH_VOLATILITY	953	0.308	0.000	0.462	5,946	0.239	0.000	0.427	0.069***	0.000***
PRIOR_YEAR_STOCK_RETURN	961	0.039	−0.134	0.612	6,036	0.111	−0.042	0.581	−0.072***	−0.092***
MARKET_CAPITALIZATION	961	94.074	56.928	107.480	6,038	190.947	72.989	388.619	−96.873***	−16.061***
ln(MARKET_CAP)	961	22.570	22.462	0.841	6,038	22.876	22.711	1.105	−0.306***	−0.2490***
Other firm characteristics										
SMALL_CHANGE_IN_EPS	973	0.042	0.000	0.201	6,133	0.027	0.000	0.161	0.016***	0.000***
MODIFIED_AUDIT_OPINION	973	0.141	0.000	0.348	6,133	0.030	0.000	0.170	0.111***	0.000***
BIG4	973	0.053	0.000	0.225	6,133	0.120	0.000	0.325	−0.067***	0.000***
AUDITOR_TENURE	973	7.561	5.000	6.338	6,133	7.199	5.000	6.364	0.362*	0.000*
AUDITOR_TURNOVER	973	0.111	0.000	0.314	6,133	0.074	0.000	0.261	0.037***	0.000***
CEO/COB_DUALITY	973	0.234	0.000	0.424	6,133	0.199	0.000	0.399	0.035**	0.000**
BOARD_INDEPENDENCE	973	0.377	0.364	0.054	6,133	0.373	0.357	0.052	0.004**	−0.007**
BOARD_SIZE	973	8.631	9.000	1.843	6,133	9.013	9.000	1.989	−0.382***	0.000***
INSTITUTIONAL_OWNERSHIP	973	0.042	0.020	0.062	6,133	0.054	0.026	0.078	−0.012***	−0.006***
MANAGEMENT_OWNERSHIP	973	0.037	0.000	0.109	6,133	0.049	0.000	0.130	−0.011***	0.000
SOE	973	0.418	0.000	0.494	6,133	0.555	1.000	0.497	−0.137***	−1.000***
FIRM_AGE	973	19.616	20.000	4.837	6,133	18.018	18.000	5.190	1.598***	2.000***
LOSS	973	0.249	0.000	0.432	6,133	0.069	0.000	0.254	0.179***	0.000***
SPECIAL_TREATMENT	964	0.063	0.000	0.244	6,053	0.023	0.000	0.151	0.040***	0.000***
SALES_GROWTH	973	0.122	0.031	0.497	6,133	0.120	0.082	0.341	0.002	−0.051***
M&A	973	0.076	0.000	0.265	6,133	0.055	0.000	0.229	0.021**	0.000**
RELATED_PARTY_TRANSACTION	973	0.028	0.013	0.039	6,133	0.016	0.007	0.025	0.012***	0.006***
LOAN_GUARANTEE	973	0.221	0.032	0.405	6,133	0.118	0.000	0.290	0.102***	0.032***
FOREIGN_LISTING	973	0.066	0.000	0.248	6,133	0.106	0.000	0.308	−0.041***	0.000***
MARKETIZATION_INDEX	973	7.618	7.470	2.057	6,133	8.207	9.140	1.808	−0.589***	−1.670***
M/B	961	5.653	2.631	10.609	6,038	3.942	2.471	6.350	1.711***	0.160***
LEVERAGE	973	0.539	0.558	0.226	6,133	0.483	0.475	0.218	0.056***	0.083***
OPERATING_CF	973	0.017	0.022	0.091	6,133	0.054	0.053	0.089	−0.037***	−0.031***

(continued on next page)

TABLE 2 (continued)

Summary Statistics

Panel B. Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	CL	1.00																			
2	INTERNAL_CONTROL_WEAKNESS	0.04***	1.00																		
3	HIGH_VOLATILITY	0.06***	−0.07***	1.00																	
4	PRIOR_YEAR_STOCK_RETURN	−0.04***	−0.12***	0.25***	1.00																
5	ln(MARKET_CAP)	−0.10***	0.11***	−0.10***	0.18***	1.00															
6	SMALL_CHANGE_IN_EPS	0.03***	0.02	0.01	−0.03**	−0.06***	1.00														
7	MODIFIED_AUDIT_OPINION	0.18***	0.04***	0.09***	−0.02	−0.13***	0.02*	1.00													
8	BIG4	−0.08***	0.04***	−0.09***	0.00	0.47***	−0.00	−0.06***	1.00												
9	AUDITOR_TENURE	0.02	0.05***	−0.11***	0.00	−0.04***	0.02*	−0.01	−0.10***	1.00											
10	AUDITOR_TURNOVER	0.05***	0.01	0.00	−0.00	0.03**	−0.00	0.07***	0.06***	−0.30***	1.00										
11	CEO/COB_DUALITY	0.03***	−0.05***	0.07***	−0.01	−0.10***	0.01	0.02*	−0.06***	−0.09***	−0.02	1.00									
12	BOARD_INDEPENDENCE	0.03**	0.03***	0.03***	−0.01	0.06***	0.02**	0.01	0.07***	−0.02**	0.01	0.08***	1.00								
13	BOARD_SIZE	−0.07***	0.04***	−0.11***	−0.00	0.33***	−0.03***	−0.05***	0.21***	−0.02**	0.02	−0.16***	−0.39***	1.00							
14	INSTITUTIONAL_OWNERSHIP	−0.06***	0.00	−0.08***	0.12***	0.23***	−0.04***	−0.08***	0.17***	0.11***	−0.02*	−0.04***	−0.04***	0.10***	1.00						
15	MANAGEMENT_OWNERSHIP	−0.03**	−0.09***	0.15***	−0.08***	−0.18***	−0.02*	−0.05***	−0.10***	−0.24***	−0.05***	0.34***	0.05***	−0.15***	−0.11***	1.00					
16	SOE	−0.10***	0.12***	−0.16***	0.01	0.19***	0.01	−0.05***	0.15***	0.11***	0.06***	−0.28***	−0.03**	0.25***	0.08***	−0.37***	1.00				
17	FIRM_AGE	0.11***	0.09***	−0.04***	−0.09***	−0.10***	0.01	0.07***	−0.07***	0.30***	0.01	−0.05***	−0.07***	−0.01	0.07***	−0.16***	0.05***	1.00			
18	LOSS	0.21***	0.05***	0.06***	−0.01	−0.17***	−0.06***	0.33***	−0.08***	0.03**	0.04***	−0.02	0.01	−0.03**	−0.10***	−0.07***	0.02*	0.08***	1.00		
19	SPECIAL_TREATMENT	0.08***	0.02*	0.08***	−0.02**	−0.14***	0.02	0.30***	−0.06***	−0.03***	0.09***	−0.00	0.02	−0.05***	−0.08***	−0.04***	−0.01	0.07***	0.13***	1.00	
20	SALES_GROWTH	0.00	−0.03***	0.05***	0.00	0.04***	−0.01	−0.05***	−0.00	−0.05***	0.00	0.04***	0.01	−0.04***	0.03***	0.07***	−0.12***	0.01	−0.16***	0.03***	1.00
21	M&A	0.03**	−0.01	0.03***	0.05***	0.05***	0.00	−0.02	−0.02*	−0.03**	0.08***	−0.02	0.01	−0.02	−0.02*	−0.01	−0.02*	0.03**	−0.05***	0.03**	0.08***
22	RELATED_PARTY_TRANSACTION	0.15***	−0.00	0.02**	0.00	−0.06***	−0.01	0.15***	−0.02**	0.04***	0.03**	0.01	0.07***	−0.05***	−0.04***	−0.07***	−0.03**	0.07***	0.10***	0.09***	−0.02
23	LOAN_GUARANTEE	0.11***	0.03**	0.02	−0.01	−0.05***	−0.03***	0.12***	−0.05***	0.04***	−0.00	−0.01	0.00	0.01	−0.05***	−0.06***	−0.06***	0.10***	0.10***	0.06***	0.03***
24	FOREIGN_LISTING	−0.05***	0.06***	−0.06***	0.01	0.33***	−0.00	−0.03***	0.50***	−0.01	0.04***	−0.08***	0.05***	0.17***	0.09***	−0.12***	0.20***	0.05***	−0.03**	−0.02	−0.02
25	MARKETIZATION_INDEX	−0.11***	0.02	0.02**	−0.01	0.11***	−0.02*	−0.08***	0.13***	0.04***	−0.06***	0.07***	−0.02*	−0.03**	0.02	0.16***	−0.09***	0.03***	−0.12***	−0.08***	0.03**
26	M/B	0.08***	−0.04***	0.17***	0.20***	−0.14***	0.05***	0.33***	−0.11***	−0.03**	0.03**	0.05***	0.05***	−0.13***	−0.04***	0.01	−0.14***	0.06***	0.18***	0.20***	0.03**
27	LEVERAGE	0.09***	0.11***	−0.05***	0.04***	0.20***	−0.01	0.18***	0.18***	0.03**	0.06***	−0.15***	0.03**	0.22***	0.04***	−0.25***	0.25***	0.12***	0.18***	0.11***	0.00
28	OPERATING_CF	−0.14***	−0.04***	−0.02	0.04***	0.13***	−0.05***	−0.12***	0.06***	−0.04***	−0.03**	0.02*	−0.01	0.01	0.09***	0.10***	−0.05***	−0.09***	−0.19***	−0.07***	0.03***

		21	22	23	24	25	26	27	28
21	M&A	1.00							
22	RELATED_PARTY_TRANSACTION	0.00	1.00						
23	LOAN_GUARANTEE	0.01	0.16***	1.00					
24	FOREIGN_LISTING	−0.01	−0.03**	−0.04***	1.00				
25	MARKETIZATION_INDEX	0.00	−0.05***	−0.03**	0.15***	1.00			
26	M/B	−0.02	0.09***	0.07***	−0.10***	−0.05***	1.00		
27	LEVERAGE	0.02*	0.15***	0.34***	0.15***	−0.08***	0.12***	1.00	
28	OPERATING_CF	0.01	−0.15***	−0.11***	−0.00	0.04***	−0.05***	−0.19***	1.00

TABLE 3

Determinants of CL Receipts and Characteristics

Table 3 examines the determinants of a firm in receipt of a CL and CL characteristics. The sample consists of firms listed on the SSE over the period of 2013 to 2018. Column 1 presents logistic regression results when the dependent variable is the indicator variable CL. Columns 2 and 3 present Poisson regression results when the dependent variables are CL characteristics: #CL_PAGES and #CL_QUESTIONS, respectively. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable	CL 1	#CL_PAGES 2	#CL_QUESTIONS 3
INTERNAL_CONTROL_WEAKNESS	0.167** (0.084)	0.189** (0.078)	0.153** (0.071)
HIGH_VOLATILITY	0.153* (0.089)	0.079 (0.078)	0.090 (0.073)
PRIOR_YEAR_STOCK_RETURN	−0.121 (0.094)	−0.127 (0.100)	−0.090 (0.087)
ln(MARKET_CAP)	−0.049 (0.053)	0.054 (0.047)	0.037 (0.045)
SMALL_CHANGE_IN_EPS	0.554*** (0.209)	0.421** (0.199)	0.444** (0.175)
MODIFIED_AUDIT_OPINION	0.650*** (0.164)	0.409*** (0.129)	0.409*** (0.123)
BIG4	−0.400** (0.200)	−0.557*** (0.203)	−0.408** (0.186)
AUDITOR_TENURE	0.005 (0.007)	0.008 (0.007)	0.003 (0.007)
AUDITOR_TURNOVER	0.322** (0.143)	0.327*** (0.118)	0.270** (0.110)
CEO/COB_DUALITY	0.134 (0.103)	0.144 (0.088)	0.093 (0.085)
BOARD_INDEPENDENCE	−0.297 (0.967)	−0.541 (0.841)	−0.393 (0.776)
BOARD_SIZE	−0.053* (0.028)	−0.025 (0.028)	−0.031 (0.026)
INSTITUTIONAL_OWNERSHIP	−0.710 (0.676)	−0.484 (0.660)	−0.391 (0.620)
MANAGEMENT_OWNERSHIP	−1.111** (0.437)	−0.921*** (0.337)	−1.001*** (0.332)
SOE	−0.523*** (0.092)	−0.536*** (0.091)	−0.457*** (0.085)
FIRM_AGE	0.041*** (0.010)	0.034*** (0.010)	0.033*** (0.009)
LOSS	1.092*** (0.116)	0.963*** (0.104)	0.927*** (0.094)
SPECIAL_TREATMENT	−0.174 (0.214)	−0.403** (0.162)	−0.330** (0.162)
SALES_GROWTH	0.144 (0.103)	0.120 (0.083)	0.149* (0.083)
M&A	0.422*** (0.146)	0.407*** (0.124)	0.404*** (0.120)
RELATED_PARTY_TRANSACTION	7.441*** (1.153)	4.867*** (0.822)	4.932*** (0.751)
LOAN_GUARANTEE	0.420*** (0.121)	0.341*** (0.088)	0.378*** (0.080)
FOREIGN_LISTING	0.058 (0.171)	−0.104 (0.188)	−0.095 (0.155)
MARKETIZATION_INDEX	−0.134*** (0.021)	−0.129*** (0.020)	−0.117*** (0.018)
Constant	−1.135 (1.217)	−6.356*** (1.305)	−1.152 (1.071)
Industry fixed effects Year-fixed effects	Yes Yes	Yes Yes	Yes Yes
Pseudo R^2 No. of obs.	0.120 6,881	0.263 6,656	0.176 6,856

In terms of corporate governance characteristics, we first show that firms with higher management ownership are negatively and significantly associated with the likelihood of those firms receiving CLs. We note that institutional ownership is not significantly associated with the likelihood of a firm receiving a CL. Prior work finds that institutional ownership in China, in general, is quite low compared to that in the U.S. (also see Panel A of Table 2) and most institutional investors are compromised with the exceptions of qualified foreign institutional investors (QFII) (Li, Wang, Cheung, and Jiang (2011), Huang and Zhu (2015)).[9] Our finding on institutional ownership is consistent with this observation. We further show that SOEs, known to have different reporting incentives from non-SOEs (Wang, Wong, and Xia (2008), Jian and Wong (2010)), are less likely to receive CLs.

In terms of other firm controls, older firms proxying for the complexity of a firm's operations and loss-making firms are more likely to receive CLs. We further show that firms doing major M&As and firms engaged in related party transactions and/or providing loan guarantees to related parties are more likely to receive CLs, whereas being under the supervision of another regulator as captured by foreign listings does not impact the odds of receiving CLs (Naughton, Rogo, Sunder, and Zhang (2018)). Finally, we show that firms headquartered in provinces with well-developed market-oriented institutions are less likely to receive CLs.[10]

Columns 2 and 3 present the Poisson regression results when the dependent variables are two measures of CL severity. We show that most variables that explain the likelihood of receiving a CL also explain the severity of the content in such letters.

In summary, the evidence in Table 3 suggests that Chinese regulators are targeting a set of firms in the CL review process similar to those investigated by their U.S. counterpart.

VI. Stock Price Reactions to CL Receipts and Replies

The regulatory objective of the CL process is twofold: i) to alert investors about issuers' disclosure deficiencies; and ii) to improve disclosure going forward. In this section, we examine stock price reactions to announcements of firms receiving CLs and issuing replies as direct measures of investor attention (to disclosure deficiencies) and the market's expected improvements in targeted firms' disclosures.

CAR(−2,+2)_ANN (CAR(−2,+2)_REPLY) is the five-day cumulative abnormal return from 2 days before to 2 days after the CL announcement (reply) day (day 0). Daily abnormal return is the difference between daily return and the

[9]In Table IA1 in the Supplementary Material, we find a negative and significant association between QFII/mutual fund (MF) ownership and the likelihood of a firm being in receipt of a CL (the severity of a CL). Given that the mean (median) QFII/MF ownership is 0.026 (0.010) in our sample, it is not surprising that it has no significant effect on any other outcomes examined later in the article (untabulated).

[10]The marketization index compiled by Wang, Fan, and Hu (2019) captures the differences in institutional development across provinces based on a number of metrics, such as the relationship between the government and the market, the development of the private sector, and the quality of the legal environment.

TABLE 4

Stock Price Reactions to CL Receipts and Replies

Table 4 examines stock price reactions to CL receipts and replies. Panel A presents descriptive statistics of the five-day CAR (−2,+2)_ANN and CAR(−2,+2)_REPLY. The sample for CAR(−2,+2)_ANN consists of 579 CLs received by 428 SSE-listed firms over the period of 2015 to 2018. We manually check whether the announcement of a CL coincides with the announcement of other major corporate events including earnings announcements, management turnover, acquisitions, restructurings, dividends, and stock repurchases, in the event window examined, and drop those with contemporaneous major event announcements. The sample for CAR(−2,+2)_REPLY consists of 389 CL replies, which is a subsample of the CL receipt sample due to data availability or our removal of cases with overlapping event windows for CAR(−2,+2)_ANN and CAR(−2,+2)_REPLY. We also manually check to make sure there is no other major corporate event in the event window examined. Panel B presents OLS regression results when the dependent variables are CAR(−2,+2)_ANN and CAR(−2,+2)_REPLY. Variable definitions are provided in Appendix B. Standard errors clustered at the CL announcement date level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Descriptive Statistics

	N	Mean	Median	Std. Dev.
CAR(−2,+2)_ANN	579	−0.025***	−0.020	0.069
CAR(−2,+2)_REPLY	389	−0.007**	−0.008	0.057

Panel B. Explaining CAR(−2,+2)_ANN and CAR(−2,+2)_REPLY

	CAR(−2,+2)_ANN		CAR(−2,+2)_REPLY
Variable	1	2	3
#CL_PAGES	−0.005***		
	(0.002)		
#CL_QUESTIONS		−0.001**	
		(0.001)	
LENGTH_OF_CL_REPLY			−0.013**
			(0.006)
ln(MARKET_CAP)	0.001	0.001	−0.002
	(0.004)	(0.004)	(0.005)
M/B	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
LEVERAGE	−0.039**	−0.040**	−0.003
	(0.017)	(0.017)	(0.014)
OPERATING_CF	−0.002	0.001	0.033
	(0.033)	(0.033)	(0.035)
INSTITUTIONAL_OWNERSHIP	−0.020	−0.026	0.062
	(0.048)	(0.049)	(0.046)
SOE	0.012	0.013*	0.005
	(0.007)	(0.007)	(0.008)
LOSS	0.002	0.001	0.012*
	(0.008)	(0.008)	(0.006)
BIG4	0.004	0.007	−0.007
	(0.013)	(0.014)	(0.011)
FOREIGN_LISTING	−0.010	−0.011	0.011
	(0.010)	(0.009)	(0.015)
MARKETIZATION_INDEX	−0.001	−0.001	−0.002
	(0.002)	(0.001)	(0.001)
Constant	−0.038	−0.034	0.065
	(0.099)	(0.100)	(0.113)
Industry-fixed effects	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes
R^2	0.080	0.074	0.070
No. of obs.	573	573	385

value-weighted market return on the SSE.[11] Panel A of Table 4 presents the basic statistics. We show that the average stock price reaction to CL receipts is −2.5%, and is statistically different from zero, supporting Hypothesis 2a, the

[11]In Table IA2 in the Supplementary Material, we employ the market model, estimated over 122 trading days ending prior to the event window, to compute daily abnormal returns over the 5-day event window. Our main findings remain.

incongruency hypothesis.[12,13] In terms of economic significance, given that the average market capitalization of firms receiving CLs is CNY9.4 billion ($1.5 billion), the average drop in market capitalization is CNY234.7 million ($38.5 million), which is economically significant. We also show that the average stock price reaction to CL replies is −0.7%, and is statistically different from zero.[14] In terms of economic significance, the average drop in market capitalization is CNY65.9 million ($10.8 million), which is economically significant. Clearly, there is significant investor attention to the CL process as an enforcement action, and the significantly negative stock price reactions are consistent with regulators' ability to identify relevant deficiencies, and the market's expectation of no material improvements in targeted firms' future disclosure.

Panel B of Table 4 presents the OLS regression results relating different measures of CL (CL reply) severity to CAR(−2,+2)_ANN (CAR(−2,+2)_REPLY). We show that both measures of CL severity, the number of pages and the number of questions, are negatively and significantly associated with CAR(−2,+2)_ANN, suggesting that investors perceive more severe letters as significantly more negative news (i.e., more deficient disclosures combined with no expectations of future improvements). We further show that the length of a CL reply is negatively and significantly associated with CAR(−2,+2)_REPLY, suggesting that longer replies are associated with investors being aware of more deficient disclosures as well as insufficient improvements in disclosure from the CL process.

In summary, Table 4 provides evidence consistent with Hypothesis 2a, the incongruency hypothesis, that although investors pay attention to enforcement actions in which regulators are asking relevant questions, they expect no material improvement in targeted firms' future disclosures.

VII. Changes in Targeted Firms' Information Environments

A. Changes in CL-Related Disclosures: Amended and Next Year's Annual Reports

CLs identify parts of an annual report that would benefit from further clarification; targeted firms are then required to provide a reply addressing each point raised. When issues raised by regulators are material and could potentially impact capital allocation, targeted firms may amend the original annual report with some new content, and/or adopt better disclosure practices in future reporting. In this

[12]In Panel A of Table IA3 in the Supplementary Material, we further show no further stock price drop beyond 2 days after a firm's receipt of a CL, and more importantly, we show that CLs are largely unexpected, with a significant negative stock price drop starting only 2 days before their receipt. In private conversations with SSE officials, we learned that the SSE sometimes asks targeted firms clarifying questions before issuing a CL, which explains the negative stock price drop preceding its receipt.

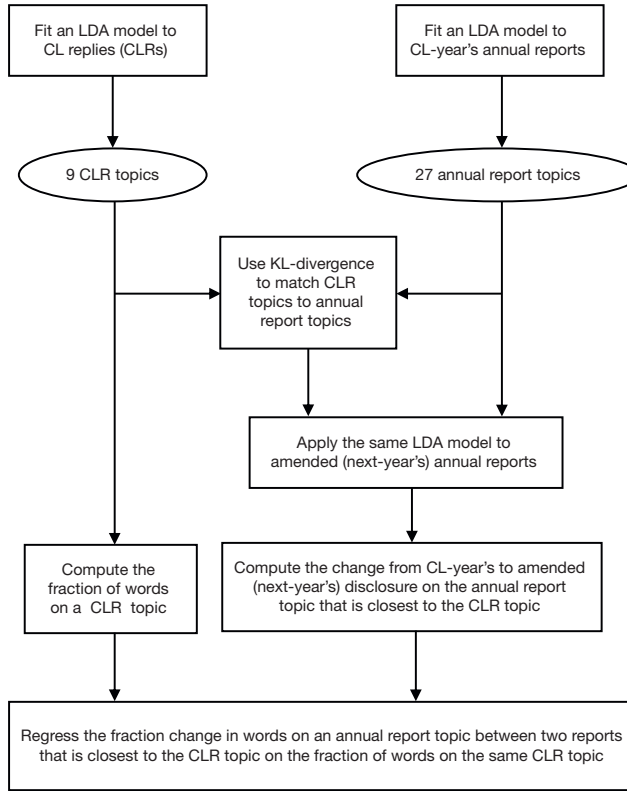
[13]In Panel B of Table IA3 in the Supplementary Material, we find a significant difference between the stock price reaction to the first letter and that to subsequent letter(s) (p-value for the t-test of difference is 0.001, and for the Wilcoxon test is 0.006).

[14]CAR(−2,+2)_REPLY combines the market reaction to the reply and to CL-triggered amendments (if called for), as the median (mean) number of trading days between amended annual reports and CL replies is 0 (0.53 days).

FIGURE 1

Our Textual Analysis Approach

Figure 1 provides the flow chart of our textual analysis approach step by step. More detailed discussion can be found in the Supplementary Material.



section, we examine the regulatory outcome on corporate disclosure by relating CL receipts to content in amended and next year's annual reports using textual analysis.

1. Textual Analysis of Issues Raised by the SSE

To determine the number and content of issues raised by the SSE, we employ LDA analysis following Lowry et al. (2020) and Ryans (2021), one of the most popular topic modeling techniques.[15] Figure 1 presents the flow chart of our textual analysis approach and Appendix IA1 of the Supplementary Material provides a detailed description.

Panel A of Table 5 presents the mean/median fraction/number of words for each CL reply (CLR) topic. Figure 2 depicts the word clouds for the nine topics. We note that eight of those nine topics (with the exception of CLR topic 5 – risk factors

[15]We apply LDA analysis to CL replies (instead of CLs) because these replies always contain regulators' questions in CLs and hence capture issues raised by regulators. By doing so, it increases the amount of textual data being analyzed, which is important for the performance of topic models.

TABLE 5

Changes in Disclosure in Amended and Next Year's Annual Reports

Table 5 examines changes in disclosure in amended and next year's annual reports. Using LDA analysis, nine topics are extracted from the set of 929 CL replies, and 27 topics are extracted from the set of 929 CL-year's annual reports. Our CL reply sample of 929 observations differs from our CL sample of 973 observations in Table 1 because we exclude 44 observations for which the receipt of a CL is identified from supplemental announcements without the actual CL nor its reply. To find the topic in CL-year's annual reports that most closely matches each of the nine CLR topics, we employ KL-divergence. Panel A presents the mean and median fraction (in percentage points) and number of words for each CL reply (CLR) topic. Panel B examines changes in disclosure in amended annual reports on the one topic that matches most closely to the CLR topic. Each column presents the OLS regression results where the dependent variable is the change in disclosures from CL-year's annual report to amended annual report on one of the nine CLR topics, and the key explanatory variable is the fraction of words in the same CLR topic. Panel C examines changes in disclosure in next year's annual reports on the one topic that matches most closely to the CLR topic. Each column presents the OLS regression results where the dependent variable is the change in disclosures from CL-year's annual report to next year's annual report on one of the nine CLR topics, and the key explanatory variable is the fraction of words in the same CLR topic. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

	Liquidity Issues	Results of Operations	Pro-Forma Financial Information Reporting Issues	Contingencies, Commitment, and Legal Accounting Issues	Risk Factors – Competition and Competitors	Inventory, Vendor, and/or Cost of Sales Issues	Accounts Receivable and Cash Reporting Issues	Business Overview Issues	PPE Fixed Assets Issues
CLR Topic Number	1	2	3	4	5	6	7	8	9
Panel A. Nine Topics from LDA Analysis of CL Replies									
CLR_TOPIC (mean)	25.345	7.788	5.574	5.835	12.943	6.623	14.954	12.677	8.262
CLR_TOPIC (median)	19.058	0.661	0.542	0.933	7.852	0.000	10.115	3.245	2.458
#WORDS_FOR_CLR_TOPIC (mean)	319.005	114.888	136.238	108.066	212.324	102.301	246.899	158.039	124.843
#WORDS_FOR_CLR_TOPIC (median)	222.000	7.000	5.000	10.000	107.000	0.000	115.000	38.000	33.000
Panel B. Changes in Disclosures in Amended Annual Reports (Top One Matched Topic)									
CLR_TOPIC	0.010***	0.015**	−0.009**	0.013*	0.031***	0.024***	0.005	0.013***	0.003
	(0.004)	(0.006)	(0.004)	(0.007)	(0.007)	(0.009)	(0.009)	(0.004)	(0.003)
ln(MARKET_CAP)	−0.053	−0.003	0.130*	−0.032	0.006	−0.021	−0.031	−0.039	−0.017
	(0.039)	(0.039)	(0.075)	(0.043)	(0.088)	(0.069)	(0.179)	(0.030)	(0.031)
M/B	0.001	0.003	0.001	0.003	0.008	0.012	−0.025	0.001	0.001
	(0.007)	(0.003)	(0.004)	(0.007)	(0.011)	(0.009)	(0.017)	(0.002)	(0.001)
LEVERAGE	0.178	−0.276	0.457	0.077	−0.020	−0.104	0.846	−0.125	0.077
	(0.168)	(0.193)	(0.295)	(0.185)	(0.368)	(0.183)	(0.945)	(0.148)	(0.082)
OPERATING_CF	0.298	0.857**	0.009	0.237	0.182	0.217	−0.264	0.059	−0.473*
	(0.554)	(0.337)	(0.682)	(0.553)	(0.804)	(0.824)	(1.913)	(0.202)	(0.274)
INSTITUTIONAL_OWNERSHIP	−0.162	0.195	−0.534	−0.257	−0.148	−2.005	−0.469	0.734*	0.056
	(0.550)	(0.351)	(0.803)	(0.473)	(1.164)	(1.299)	(2.919)	(0.432)	(0.195)
SOE	−0.069	−0.009	−0.292**	−0.022	−0.218	−0.132	0.259	0.046	0.030
	(0.071)	(0.085)	(0.121)	(0.069)	(0.146)	(0.099)	(0.292)	(0.073)	(0.038)
LOSS	0.099	−0.058	0.119	0.095	−0.145	−0.084	0.540	−0.021	−0.091**
	(0.098)	(0.055)	(0.157)	(0.104)	(0.147)	(0.088)	(0.348)	(0.077)	(0.040)
BIG4	0.074	−0.087	−0.458	0.052	−0.239	−0.289*	0.784	0.075	−0.053
	(0.096)	(0.088)	(0.304)	(0.079)	(0.406)	(0.170)	(0.483)	(0.062)	(0.186)
FOREIGN_LISTING	−0.039	−0.007	−0.278	−0.030	0.699*	−0.115	−0.275	−0.077	0.160
	(0.106)	(0.091)	(0.226)	(0.111)	(0.376)	(0.158)	(0.560)	(0.093)	(0.180)
MARKETIZATION_INDEX	−0.016	0.011	−0.013	−0.022	−0.082**	−0.037	−0.055	0.021	0.004
	(0.020)	(0.013)	(0.028)	(0.022)	(0.036)	(0.024)	(0.077)	(0.014)	(0.009)
#CL_QUESTIONS	0.004	−0.006	0.012	0.001	0.009	0.019	0.013	−0.003	−0.001
	(0.008)	(0.007)	(0.014)	(0.008)	(0.016)	(0.014)	(0.043)	(0.007)	(0.003)
LENGTH_OF_CL_REPLY	0.111	−0.007	0.192*	0.060	0.230*	0.013	−0.485	0.049	0.038
	(0.106)	(0.036)	(0.111)	(0.094)	(0.134)	(0.081)	(0.310)	(0.087)	(0.036)
Constant	0.867	0.169	−3.338*	0.746	0.013	0.584	0.499	0.656	0.247
	(0.871)	(0.889)	(1.714)	(0.976)	(1.931)	(1.658)	(4.215)	(0.690)	(0.730)
Industry-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.146	0.181	0.132	0.131	0.288	0.296	0.110	0.198	0.115
No. of obs.	351	351	351	351	351	351	351	351	351

(continued on next page)

TABLE 5 (continued)

Changes in Disclosure in Amended and Next Year's Annual Reports

	Liquidity Issues	Results of Operations	Pro-Forma Financial Information Reporting Issues	Contingencies, Commitment, and Legal Accounting Issues	Risk Factors – Competition and Competitors	Inventory, Vendor, and/or Cost of Sales Issues	Accounts Receivable and Cash Reporting Issues	Business Overview Issues	PPE Fixed Assets Issues
CLR Topic Number	1	2	3	4	5	6	7	8	9
Panel C. Changes in Disclosures in Next-Year's Annual Reports (Top One Matched Topic)									
CLR_TOPIC	0.010**	−0.005	−0.000	0.031**	0.006	0.014*	−0.015	−0.003	−0.001
	(0.005)	(0.005)	(0.008)	(0.014)	(0.007)	(0.008)	(0.011)	(0.004)	(0.003)
ln(MARKET_CAP)	0.152	−0.010	0.081	0.170*	0.143	−0.078	0.068	−0.044	0.036
	(0.101)	(0.044)	(0.087)	(0.101)	(0.106)	(0.074)	(0.209)	(0.056)	(0.045)
M/B	−0.038***	0.001	0.002	−0.039***	−0.002	−0.001	−0.025	−0.010	0.010
	(0.013)	(0.002)	(0.007)	(0.013)	(0.008)	(0.003)	(0.017)	(0.006)	(0.007)
LEVERAGE	1.355***	−0.123	−0.994***	1.228***	−0.801**	0.103	0.020	−0.107	0.054
	(0.389)	(0.146)	(0.315)	(0.387)	(0.389)	(0.177)	(0.744)	(0.167)	(0.111)
OPERATING_CF	−1.579	0.099	0.224	−1.563	1.502	0.486	−0.667	−0.491	−0.355
	(1.158)	(0.268)	(0.811)	(1.114)	(0.997)	(0.470)	(1.792)	(0.316)	(0.373)
INSTITUTIONAL_ OWNERSHIP	1.324	0.308	0.378	1.238	−3.825***	−1.199	−0.904	−0.573	−0.608**
	(1.136)	(0.442)	(1.016)	(1.152)	(1.205)	(0.946)	(2.541)	(0.563)	(0.309)
SOE	−0.484***	0.156**	0.306**	−0.461***	0.344**	−0.158	1.015***	0.033	0.075
	(0.179)	(0.067)	(0.140)	(0.172)	(0.173)	(0.098)	(0.311)	(0.083)	(0.061)
LOSS	0.472*	0.009	0.002	0.427*	−0.341	−0.157*	0.188	0.044	−0.051
	(0.246)	(0.070)	(0.186)	(0.242)	(0.210)	(0.086)	(0.386)	(0.113)	(0.085)
BIG4	−0.545**	−0.175	0.626*	−0.470*	−0.213	0.050	0.643	−0.091	−0.529***
	(0.242)	(0.156)	(0.320)	(0.240)	(0.447)	(0.156)	(0.788)	(0.163)	(0.176)
FOREIGN_LISTING	−0.042	0.105	−0.439	−0.087	0.627*	0.096	0.331	0.067	−0.413*
	(0.330)	(0.107)	(0.282)	(0.291)	(0.327)	(0.159)	(0.671)	(0.121)	(0.212)
MARKETIZATION_ INDEX	−0.011	−0.025**	−0.019	−0.019	−0.119***	0.005	−0.164**	0.009	−0.014
	(0.039)	(0.011)	(0.033)	(0.039)	(0.040)	(0.027)	(0.077)	(0.017)	(0.014)
#CL_QUESTIONS	0.047**	0.009	−0.033**	0.040*	0.004	0.030*	−0.003	0.000	−0.014*
	(0.021)	(0.007)	(0.016)	(0.021)	(0.018)	(0.018)	(0.040)	(0.009)	(0.008)
LENGTH_OF_ CL_REPLY	−0.128	−0.055	0.074	−0.229	0.225	−0.071	−0.999***	−0.005	−0.021
	(0.165)	(0.056)	(0.153)	(0.155)	(0.184)	(0.087)	(0.332)	(0.086)	(0.091)
Constant	−3.759*	0.380	1.372	−3.699*	−2.480	1.621	1.259	1.111	−0.461
	(2.255)	(0.964)	(1.918)	(2.242)	(2.401)	(1.651)	(4.656)	(1.213)	(0.955)
Industry-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.096	0.049	0.454	0.108	0.132	0.101	0.512	0.044	0.088
No. of obs.	912	912	912	912	912	912	912	912	912

– competition and competitors) overlap with those listed as the top 25 most frequent topics of U.S. CLs (e.g., Cassell et al. (2013)), suggesting that disclosure issues raised by the SEC are also deemed important by the SSE.

2. Textual Analysis of Changes in Disclosure: Amended Annual Reports

To examine the disclosure outcome of the CL process, we regress the fraction change in words on an annual report topic between the original and amended reports that is closest to the CLR topic on the fraction of words on the same CLR topic. Panel B of Table 5 presents the OLS regression results.

We show that for six out of the nine CLR topics, the extent of the issue raised by the SSE is positively and significantly associated with targeted firms' new disclosures in amended annual reports.[16] Column 1 in Panel B of Table 5 shows

[16]For two out of the nine CLR topics (accounts receivable and cash reporting issues, and PPE fixed assets issues), the extent of the topic on which the SSE had expressed concerns is positively, albeit not significantly, associated with the change in targeted firms' disclosures in amended annual reports. The

FIGURE 2

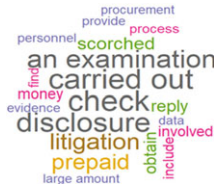
CLR Topic Word Clouds

Figure 2 provides CLR topic word clouds. The sample consists of 929 CL replies made by firms listed on the SSE over the period of 2013 to 2018. We employ topic modeling analysis (LDA) across this set of replies to identify nine topics. The word clouds illustrate the top 20 words in each topic. The size of the word corresponds to its frequency within the topic.

Topic 1 Liquidity Issues (MD&A)

Topic 2 Results of Operations (MD&A)

Topic 3 Pro-Forma Financial Information Reporting Issues



Topic 4 Contingencies, Commitment, and Legal Accounting Issues

Topic 5 Risk Factors - Competition and Competitors

Topic 6 Inventory, Vendor, and/or Cost of Sales Issues

Topic 7 Accounts Receivable and Cash Reporting Issues

Topic 8 Business Overview Issues (MD&A)

Topic 9 Property, Plant, and Equipment Fixed Assets Issues

that a 1-percentage-point increase in the SSE's attention to liquidity issues is associated with a 1-percentage-point increase in the targeted firm's disclosure on this topic in its amended annual report. Economic magnitudes are similarly meaningful across most of the other five topics.[17]

only negative and significant association occurs with respect to CLR topic 3 – pro forma financial information reporting issues, which is not surprising to us for the following reason. Pro-forma earnings are a "beyond-GAAP" (Generally Accepted Accounting Principles) number based on estimates and the exclusion of items that management believes to be more informative than GAAP earnings. If regulators find pro-forma earnings misleading, targeted firms will be asked to remove them and related discussion and focus on GAAP earnings instead.

[17]Panel A of Table IA4 in the Supplementary Material shows that the results are similar when we compare the SSE's attention to a CLR topic to targeted firms' changed disclosures in amended annual reports on the three most closely matched annual report topics. To validate our analysis, we employ a falsification test following Lowry et al. (2020). We relate the SSE's attention to a CLR topic to targeted firms' changed disclosures in amended annual reports on the three least closely matched annual report

We next examine whether the CL process is associated with targeted firms' disclosure practices going forward.

3. Textual Analysis of Changes in Disclosure: Next Year's Annual Reports

To further examine the disclosure outcome of the CL process, we regress the fraction change in words on an annual report topic between the original and next year's reports that is closest to the CLR topic on the fraction of words on the same CLR topic. Panel C of Table 5 presents the OLS regression results.

We show that for three out of the nine CLR topics, the extent of the issue raised by the SSE is positively and significantly associated with targeted firms' new disclosures in next year's annual reports.[18]

In summary, Table 5 provides supporting evidence for both Hypotheses 1b and 2b. We next examine the effect of the CL process on liquidity, which will help us differentiate between the market efficiency hypothesis that predicts targeted firms' new disclosures translate into improvements in information environments and the incongruency hypothesis that predicts otherwise, given that CL-related disclosures are in form, but not in substance.

B. Changes in Bid–Ask Spreads

The ultimate objective of the enforcement of disclosure standards is that compliant firms with better disclosures will be rewarded with stock price efficiency and greater liquidity. In this section, we examine whether the CL review process results in any improvement in targeted firms' information environments as proxied by BID_ASK_SPREAD.

We run the following OLS regression:

$$\begin{aligned}(2)\quad \text{BID\_ASK\_SPREAD}_{it} = {} & \beta_0 \\ & + \beta_1 \text{CL}_{it-1} \times \text{MAJOR\_CHANGE\_IN\_DISCLOSURE}_{it} \\ & + \beta_2 \text{CL}_{it-1} \times (1 - \text{MAJOR\_CHANGE\_IN\_DISCLOSURE}_{it}) \\ & + \beta_3 \text{FIRM\_CHARACTERISTICS}_{it-1} \\ & + \beta_3 \text{MARKETIZATION\_INDEX}_{it-1} + \text{FIRM\_FE} \\ & + \text{YEAR\_FE} + \varepsilon_{it}.\end{aligned}$$

Our variables of interest are the two interaction terms CL × MAJOR_CHANGE_IN_DISCLOSURE, and CL × (1 − MAJOR_CHANGE_IN_DISCLOSURE). The indicator variable, MAJOR_CHANGE_IN_DISCLOSURE, takes the value of 1 if a targeted firm's changes in disclosure in next year's annual report are in the top quartile across all targeted firms in the same year, and

topics. Panel B of Table IA4 in the Supplementary Material presents the results. We find little evidence of a significant relation in this falsification test.

[18]Panel C of Table IA4 in the Supplementary Material shows that the results are weaker when we compare the SSE's attention to a CLR topic to targeted firms' changed disclosures in next year's annual reports on the three most closely matched annual report topics. Panel D presents the results from the same falsification test as those in Panel B. We find little evidence of a significant relation between the SSE's attention to a CLR topic to targeted firms' changed disclosures in next year's annual reports on the three least closely matched annual report topics.

0 otherwise. The coefficient β_1 (β_2) captures the differential bid–ask spread of targeted firms that makes major (nonmajor) changes in disclosures in response to CLs, relative to a sample of non-CL firm-year observations. Following Bertrand and Mullainathan (2003), we include firm and year-fixed effects, the former controlling for time-invariant differences between CL (treated) firms and non-CL (control) firm-year observations.

Table 6 presents the regression results. Across all specifications, the coefficient estimates suggest that in China, major changes in disclosures in response to CLs are associated with no change in targeted firms' information environments, whereas minor changes in disclosures are associated with worsening information environments, compared to a sample of non-CL firm-year observations. As a comparison, in the U.S. where the CL process works well, the resolution of the process leads to a significant drop in the bid–ask spread of targeted firms (Johnston and Petacchi (2017)). In China, although the CL process seems to identify firms with characteristics associated with potential poor information quality, it is limited in enforcing responses, given the incentives from drastically different contracting environments in which Chinese firms operate compared to those in the U.S. In fact, our findings suggest that the CL process does not fit well with the institutional environment in China because it requires firms to disclose soft information about relationship-based operations, which is costly to disclosing firms, and therefore lead them to disclose (just) enough to satisfy regulators' oversight, but not enough to resolve the deficiency in their disclosure. As a result, when CLs expose targeted firms' deficiencies, that is, when targeted firms reveal partial information, as captured by (1 − MAJOR_CHANGE_IN_DISCLOSURE), these firms actually suffer from revealing incomplete soft information, which may lead market participants to ascribe less credibility to the financial reports of these firms. Even when CL-related disclosure changes are more comprehensive, as captured by the indicator variable MAJOR_CHANGE_IN_DISCLOSURE, because only some market participants with firm-specific knowledge are capable of processing such information, the overall effect on information asymmetry is neutral (Piotroski and Wong (2012), Li et al. (2020)).

Appendix IA2 of the Supplementary Material provides a typical example of Chinese CLs and replies. In the example, under question #3, the SSE asked the targeted firm, Henan Oriental Silver Star Investment Co., to provide information regarding its top five customers. As shown, the targeted firm only listed the names and transaction values associated with those five customers. While one could argue that the targeted firm fulfilled the SSE's request, even though the latter also requested "contracts and other supporting documents," the former's response certainly did not provide enough information for investors to assess the extent of any relationship-based transactions. To interpret such information in a relational economy, investors may need proprietary information about those relationships such as their scope and duration, the significance of those top five customers compared to the rest of the targeted firm's customer base, and some discussion of the potential risks of it relying on those top five customers, and/or measures to mitigate those risks (if applicable).

This is a good example of targeted firms providing the bare minimum amount of information to comply with the SSE's request in the CL process. Moreover, the example illustrates the potential challenge of applying the content analysis (as adopted in the U.S.) in China, where relational contracting and political incentives

TABLE 6

Changes in Disclosure and Firms' Information Environments

Table 6 examines whether the CL review process results in any improvement in targeted firms' information environments. The sample consists of firms listed on the SSE over the period of 2013 to 2018. The full sample of 929 CL recipients are the same as used in Table 5 Panels A and C. The dependent variable is BID_ASK_SPREAD and the key explanatory variables are the two interaction terms CL × MAJOR_CHANGE_IN_DISCLOSURE and CL × (1 – MAJOR_CHANGE_IN_DISCLOSURE). Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

	BID_ASK_SPREAD									
Variable	Liquidity Issues	Results of Operations	Pro-Forma Financial Information Reporting Issues	Contingencies, Commitment, and Legal Accounting Issues	Risk Factors – Competition and Competitors	Inventory, Vendor, and/or Cost of Sales Issues	Accounts Receivable and Cash Reporting Issues	Business Overview Issues	PPE Fixed Assets Issues	All Topics
	1	2	3	4	5	6	7	8	9	10
CL × MAJOR_CHANGE_IN_DISCLOSURE	0.030	0.013	0.008	0.030	0.026	−0.007	0.017	0.011	0.004	0.019
	(0.021)	(0.021)	(0.018)	(0.021)	(0.020)	(0.021)	(0.020)	(0.021)	(0.020)	(0.022)
CL × (1 – MAJOR_CHANGE_IN_DISCLOSURE)	0.024*	0.030**	0.032**	0.024*	0.025**	0.037***	0.029**	0.030**	0.033**	0.028**
	(0.013)	(0.013)	(0.013)	(0.013)	(0.012)	(0.012)	(0.013)	(0.013)	(0.013)	(0.012)
ln(MARKET_CAP)	−0.058***	−0.058***	−0.058***	−0.058***	−0.058***	−0.059***	−0.058***	−0.058***	−0.058***	−0.058***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
M/B	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEVERAGE	0.020	0.020	0.019	0.020	0.020	0.021	0.020	0.021	0.020	0.020
	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)	(0.042)
OPERATING_CF	−0.152***	−0.152***	−0.152***	−0.152***	−0.152***	−0.152***	−0.152***	−0.152***	−0.151***	−0.152***
	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)	(0.054)
INSTITUTIONAL_OWNERSHIP	0.008	0.009	0.008	0.008	0.008	0.010	0.009	0.010	0.006	0.009
	(0.089)	(0.088)	(0.088)	(0.089)	(0.088)	(0.088)	(0.088)	(0.088)	(0.088)	(0.088)
SOE	−0.017	−0.017	−0.017	−0.017	−0.017	−0.020	−0.017	−0.016	−0.017	−0.017
	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)
BIG4	0.021	0.021	0.022	0.021	0.021	0.021	0.020	0.021	0.020	0.021
	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)	(0.038)
FOREIGN_LISTING	−0.054	−0.054	−0.054	−0.054	−0.054	−0.054	−0.054	−0.054	−0.054	−0.054
	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)	(0.058)
MARKETIZATION_INDEX	−0.005	−0.005	−0.005	−0.005	−0.005	−0.005	−0.005	−0.005	−0.005	−0.005
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Constant	2.247***	2.250***	2.250***	2.247***	2.246***	2.256***	2.253***	2.246***	2.245***	2.248***
	(0.275)	(0.275)	(0.275)	(0.275)	(0.275)	(0.275)	(0.275)	(0.275)	(0.275)	(0.275)
Firm-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.544	0.544	0.544	0.544	0.544	0.545	0.544	0.544	0.544	0.544
No. of obs.	6,740	6,740	6,740	6,740	6,740	6,740	6,740	6,740	6,740	6,740

are prevalent; superficial responses to vague questions may be identified as compliant by textual analysis-based measures, even though no relevant information is transferred to the stock market.

Collectively, our findings in Tables 5 and 6 are consistent with the incongruency hypothesis, and do not support the market efficiency hypothesis.

VIII. The Roles of Firms' Reporting Incentives and Regulators' Enforcement Incentives[19]

To better understand the mechanisms through which the CL process in China fails to achieve its efficacy, we explore the roles of firms' reporting incentives and regulators' enforcement incentives in the outcomes of the review process.

Following Li et al. (2020), we introduce an indicator variable, HIGH_RELATIONAL_CONTRACTING, that takes the value of 1 if a firm's related-party transactions are more than 30% of its sales, and 0 otherwise. Motivated by Piotroski et al. (2015), who highlight social stability as paramount to the Chinese government, we introduce an indicator variable, HIGH_POLITICAL_INCENTIVE, that takes the value of 1 in years when the stock market experiences major volatilities and hence the regulators are incentivized to avoid causing further disruptions during volatile periods, and 0 otherwise. Table 7 presents the results.

Panels A and B of Table 7 examine the role of firms' reporting incentives in the outcomes of the CL process. We sort sample firms into high versus low relational contracting subsamples and find that stock price reactions to CLs are significantly more negative in the high relational contracting subsample than those in the low relational contracting. Moreover, firms in the high relational contracting subsample experience a significant increase in bid–ask spreads when disclosure is incomplete, whereas their counterparts in low relational contracting subsample do not.

Panels C and D of Table 7 examine the role of regulators' enforcement incentives in the outcomes of the CL process. We sort sample firms into high versus low political incentive subsamples and find that stock price reactions to CLs are significantly more negative in the high political incentive subsample than those in the low political incentive, suggesting that the market anticipates weaker enforcements during volatile stock market periods. Moreover, we show that changes in CL-related disclosures by targeted firms in the high political incentive subsample are significantly smaller than those by targeted firms in the low political incentive subsample, echoing the earlier stock price reaction result. Finally, we show that targeted firms in the high political incentive subsample experience a significant increase in bid–ask spreads when disclosure is incomplete, whereas their counterparts in the low relational contracting subsample do not; however, the difference is not statistically significant.

Table IA5 in the Supplementary Material further shows that both the likelihood of CL-triggered amendments and the likelihood of receiving another CL are significantly lower during periods in which regulators' political incentives are heightened compared to those in which they are not (Panel B). We further show that CL replies are significantly shorter and the likelihood of CL-triggered amendments

[19]We thank an anonymous referee for suggesting this analysis.

TABLE 7

The Roles of Firms' Reporting Incentives and Regulators' Enforcement Incentives

Table 7 examines whether there are any differences in targeted firms' stock price reactions, changes in disclosure, and information environments when we vary the level of firms' relational contracting or the level of regulators' political incentive. Panel A compares targeted firms' stock price reactions and changes in disclosure between firm-years with high relational contracting and firm-years with low relational contracting. Panel B examines whether the CL review process results in any improvement in targeted firms' information environments comparing firm-years with high relational contracting and firm-years with low relational contracting. The dependent variable is BID_ASK_SPREAD. Panel C compares targeted firms' stock price reactions and changes in disclosure between firm-years with high regulators' political incentive and firm-years with low regulators' political incentive. Panel D examines whether the CL review process results in any improvement in targeted firms' information environments comparing firm-years with high regulators' political incentive and firm-years with low regulators' political incentive. The dependent variable is BID_ASK_SPREAD. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Firms' Relational Contracting, Stock Price Reactions, and Changes in Disclosure

	HIGH_RELATIONAL_CONTRACTING				LOW_RELATIONAL_CONTRACTING				Test of Differences
	N	Mean	Median	Std. Dev.	*N*	Mean	Median	Std. Dev.	*t*-Test
CAR(−2,+2)_ANN	85	−0.036***	−0.032	0.062	494	−0.022***	−0.019	0.070	−0.014*
CAR(−2,+2)_REPLY	66	−0.013*	−0.009	0.059	319	−0.006*	−0.007	0.056	−0.007
CHANGE_IN_DISCLOSURE (All topics)	154	0.034***	0.026	0.063	758	0.027***	0.021	0.069	0.007

Panel B. Firms' Relational Contracting and Information Environments

	Dependent Variable: BID_ASK_SPREAD	
	HIGH_RELATIONAL_CONTRACTING	LOW_RELATIONAL_CONTRACTING
	1	2
CL × MAJOR_CHANGE_IN_DISCLOSURE	−0.051	0.025
	(0.053)	(0.024)
CL × (1 − MAJOR_CHANGE_IN_DISCLOSURE)	0.090***	0.017
	(0.030)	(0.014)
ln(MARKET_CAP)	−0.039	−0.059***
	(0.035)	(0.013)
M/B	0.000	−0.001
	(0.002)	(0.001)
LEVERAGE	−0.122	0.051
	(0.096)	(0.052)
OPERATING_CF	−0.132	−0.181***
	(0.135)	(0.060)
INSTITUTIONAL_OWNERSHIP	0.049	−0.023
	(0.339)	(0.095)
SOE	−0.051	−0.028
	(0.055)	(0.047)
BIG4	0.021	0.033
	(0.052)	(0.048)
FOREIGN_LISTING	−0.062**	−0.018
	(0.031)	(0.092)
MARKETIZATION_INDEX	0.001	−0.013
	(0.027)	(0.015)
Constant	1.825**	2.328***
	(0.800)	(0.316)
Firm-fixed effects	Yes	Yes
Year-fixed effects	Yes	Yes
R^2	0.585	0.557
No. of obs.	872	5,868
F test for CL × (1 − MAJOR_CHANGE_IN_DISCLOSURE)	0.027	

(continued on next page)

TABLE 7 (continued)

The Roles of Firms' Reporting Incentives and Regulators' Enforcement Incentives

Panel C. Regulators' Political Incentive, Targeted Firms' Stock Price Reactions, and Changes in Disclosure

	HIGH_POLITICAL_INCENTIVE				LOW_POLITICAL_INCENTIVE				Test of Differences
	N	Mean	Median	Std. Dev.	*N*	Mean	Median	Std. Dev.	*t*-Test
CAR(−2,+2)_ANN	431	−0.027***	−0.021	0.071	148	−0.015*	−0.016	0.062	−0.013**
CAR(−2,+2)_REPLY	296	−0.007*	−0.008	0.057	89	−0.009	−0.012	0.054	0.002
CHANGE_IN_ DISCLOSURE (All topics)	643	0.022***	0.023	0.060	269	0.043***	0.023	0.082	−0.021***

Panel D. Regulators' Political Incentive and Targeted Firms' Information Environments

	Dependent Variable: BID_ASK_SPREAD	
	HIGH_POLITICAL_INCENTIVE	LOW_POLITICAL_INCENTIVE
	1	2
CL × MAJOR_CHANGE_IN_DISCLOSURE	0.023	0.127*
	(0.026)	(0.065)
CL × (1 − MAJOR_CHANGE_IN_DISCLOSURE)	0.036**	0.004
	(0.015)	(0.036)
ln(MARKET_CAP)	−0.068***	−0.041*
	(0.013)	(0.023)
M/B	0.001	−0.002
	(0.001)	(0.002)
LEVERAGE	−0.001	0.124
	(0.052)	(0.085)
OPERATING_CF	−0.080	−0.220
	(0.061)	(0.146)
INSTITUTIONAL_OWNERSHIP	0.012	−0.087
	(0.113)	(0.182)
SOE	−0.037	−0.058
	(0.047)	(0.062)
BIG4	−0.027	0.118
	(0.038)	(0.087)
FOREIGN_LISTING	−0.085	−0.035
	(0.055)	(0.088)
MARKETIZATION_INDEX	−0.021	0.013
	(0.018)	(0.022)
Constant	2.531***	1.867***
	(0.323)	(0.562)
Firm-fixed effects	Yes	Yes
Year-fixed effects	Yes	Yes
R^2	0.488	0.661
No. of obs.	4,497	2,243
F test for CL × (1 − MAJOR_CHANGE_IN_DISCLOSURE)	0.409	

is significantly lower in firm-years with high relational contracting compared to firm-years with low relational contracting (Panel A).[20]

[20]To help explore whether our findings regarding relational contracting are driven by political considerations, we introduce two measures of firms' connection to the government. HIGH_GOVERNMENT_SUBSIDY is an indicator variable that takes the value of 1 if a firm receives government subsidy that is more than 5% of its book assets, and 0 otherwise (Li et al. (2020)). HAVING_GOVERNMENT_SUBSIDY is an indicator variable that takes the value of 1 if a firm receives any government subsidy, and 0 otherwise. In unreported analysis, we replicate our analysis in Panels A and B of Table 7 and Panel A of Table IA5 in the Supplementary Material, and find that for the majority of firms receiving some government subsidies, we do not see them treated more leniently in the CL process than those without receiving any government subsidies. The size of the subsample of firms receiving significant government support is too small to draw any definitive conclusion.

Overall, the evidence in Table 7 provides support for our incongruency hypothesis that both firms' reporting incentives and regulators' enforcement incentives play significant roles in the outcomes of the CL process in China.[21]

IX. Conclusions

Well-developed stock markets are crucial to advancing a nation's economy (Rajan and Zingales (1998)). In this article, we fill a void in the literature by using the CL review process—an example of a U.S. approach to the enforcement of mandatory disclosure—to shed light on the roles of firms' reporting incentives and regulators' enforcement incentives in achieving market-oriented financial reporting practices in China.

Using a hand-collected sample of CLs on annual reports issued by the Shanghai Stock Exchange (our measure of enforcement) over the period of 2013 to 2018, we first show that both the determinants of Chinese firms receiving a CL and the issues raised by Chinese regulators largely mirror those in the U.S. These findings suggest that the implementation of the Chinese CL process follows that of its U.S. counterpart. We then show that stock price reactions to CL receipts and replies are negative and significant, indicative of the value of regulators' information production relative to investors and the market's expectation of incomplete disclosure going forward.

Using textual analysis, we further show that for six out of the nine CLR topics, the extent of the issue raised by the SSE is positively associated with targeted firms' increased disclosures in amended annual reports from the CL year; for three, the extent of the issue raised by the SSE is positively associated with targeted firms' increased disclosures in next year's annual reports, suggesting that targeted firms improve their CL-related disclosures. However, we show that CL receipts are not associated with any significant improvements in targeted firms' information environments, supporting the incongruency hypothesis that in a relationship-based economy, CL-triggered new information disclosure is incomplete.

We conclude that public enforcement of mandatory disclosure in China appears to alert investors regarding targeted firms' disclosure deficiencies; however, targeted firms do not benefit from incomplete CL-triggered disclosures in a relationship-based economy such as China's. Our novel evidence on enforcement in form but not in substance highlights that the incentives of both firms and regulators are important in achieving market-oriented disclosure practices in developing economies.

[21] Another possible explanation for our findings is that the Chinese regulators may not have the same objectives as the SEC when implementing the CL process given the institutional constraints in China: i) soft information in the relational contracts is proprietary and nonverifiable, and ii) too much disclosure may lead to instability. As such, the Chinese regulators may want listed firms to provide a minimum level of disclosure and not expecting them to report too much proprietary information. This is similar to the bright line rules discussed by He et al. (2012) and Piotroski and Wong (2012). The regulators are happy with those rules because they help single out really bad firms (a minimum bar), but the regulators are aware that those rules will not improve firms' information environment.

Appendix A. The Institutional Background for CLs in China Versus in the U.S.

	China	U.S.
Regulatory body	China Securities Regulatory Commission (CSRC), Shanghai Stock Exchange (SSE), Shenzhen Stock Exchange (SZSE)	U.S. Securities and Exchange Commission (SEC)
Regulatory mandate	To maintain a transparent, fair, and equitable market, strengthen the protection of investors, small investors in particular, and facilitate the sound development of the capital market	To protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation
Regulatory mandate specific to CLs	To strengthening the protection of minority shareholders	To enhance compliance with "the applicable disclosure and accounting requirements" On its website, the SEC (2018) describes the objective of CL reviews as follows: "Much of the Division's review involves evaluating the disclosure from a potential investor's perspective and asking questions that an investor might ask when reading the document. When the staff identifies instances when it believes a company can improve its disclosure or enhance its compliance with the applicable disclosure requirements, it provides the company with comments"
Staffing	The SSE assigns the review process to seven different industry groups. Each group has about 10 professionals and each staff member is responsible to review about 25 companies. In addition, there is the annual report review support team that assist the industry groups to review the annual filings of public companies.	The DCF performs its primary review responsibilities through 11 offices/industry groups. The members of these 11 offices have specialized industry, accounting, and disclosure expertise. Generally, the Division has staffed the offices with 25 to 35 professionals, primarily accountants and lawyers.
Frequency of CLs	Yearly, done by the two exchanges (SSE, SZSE); response is typically required within 7 days	Section 408 of the SOX requires the DCF to review U.S. listed-firm filings at least once every 3 years; response is typically required within 10 days
Factors affecting scrutiny	Not applicable	i) issuers that have issued material restatements of financial results; ii) issuers that experience significant volatility in their stock price as compared to other issuers; iii) issuers with the largest market capitalization; iv) emerging companies with disparities in price-to-earnings ratios; v) issuers whose operations significantly affect any material sector of the economy; and vi) any other factors that the Commission may consider relevant
First CL	2000	1998
Major regulatory changes	On Jan. 21, 2014 at the Annual Futures Market Conference, the CSRC Chairman Xiao Gang delivered a speech that launched a major reform of regulatory oversight (people.cn, assessed on June 8, 2018). In his speech, Mr. Xiao emphasized that regulatory oversight is not just about conducting administrative review prior to a corporate event when an issuer is not incentivized to provide disclosures that are closely tied to firm value, but is also a new system of supervision and enforcement during and following a corporate event when the issuer is benchmarked with its industry peers and discloses both industry- and firm-specific risk factors that inform investor decision making. In a nutshell, the principle of regulatory oversight was shifted from ex ante approval to ex post oversight	On June 24, 2004, the SEC announced the public release of comment and replies related to 10-Ks filed after Aug. 1, 2004. The SEC began to publish CLs on EDGAR on May 12, 2005 with a delay between the end of a review and dissemination of 20 business days

Appendix B. Variable Definitions and Data Sources

All continuous variables are winsorized at the 1% and 99% levels. All dollar values are in 2013 dollars.

Comment-Letter-Related Variables

CL: An indicator variable that takes the value of 1 if a firm receives a CL on its annual report in fiscal year *t*, and 0 otherwise. Source: Hand-collected.

#CL_PAGES: The number of pages of a CL. Source: Hand-collected.

#CL_QUESTIONS: The number of questions in a CL. Source: Hand-collected.

LENGTH_OF_CL_REPLY: The natural logarithm of (1 + number of words in a CL reply) – the natural logarithm of (1 + number of words in a CL), given that all CL replies repeat questions in CLs before responding. Source: Hand-collected.

CLR_TOPIC: The number of words on a specific CLR topic scaled by the total number of words spanning nine CLR topics (in percentage points). Source: LDA analysis.

CHANGE_IN_DISCLOSURE (All topics): The sum of changes in disclosures from CL-year's annual report to next year's annual report on each of the nine topics that matches most closely to the corresponding topic in CL replies. To find the topic in CL-year's annual reports that most closely matches each of the nine CLR topics, we employ KL-divergence. Source: LDA analysis.

MAJOR_CHANGE_IN_DISCLOSURE: An indicator variable that takes the value of 1 if a targeted firm's changes in disclosure on a CLR topic in the next year's annual report are in the top quartile across all targeted firms in the same year, and 0 otherwise. Source: LDA analysis.

Regulatory Effect Variables

CAR(−2,+2)_ANN: The five-day cumulative abnormal return from 2 days before to 2 days after the CL announcement day (day 0) where daily abnormal return is the difference between daily return and the value-weighted market return on the SSE. Source: CSMAR.

CAR(−2,+2)_REPLY: The five-day cumulative abnormal return from 2 days before to 2 days after the CL reply day (day 0) where daily abnormal return is the difference between daily return and the value-weighted market return on the SSE. Source: CSMAR.

BID_ASK_SPREAD: The three-month average of daily bid–ask spreads (adjusted by multiplying 100) after the release of next year's annual report following Corwin and Schultz (2012).

Daily bid–ask spread $= \frac{2(e^{\alpha}-1)}{1+e^{\alpha}}$
where

$$\alpha = \frac{\sqrt{2\beta}-\sqrt{\beta}}{3-2\sqrt{2}} - \sqrt{\frac{\gamma}{3-2\sqrt{2}}},$$

$$\beta = E\left\{\sum_{j=0}^{1}\left[\ln\left(\frac{H_{t+j}}{L_{t+j}}\right)\right]^2\right\},$$

$$\gamma = \left[\ln\left(\frac{H_{t,t+1}}{L_{t,t+1}}\right)\right]^2,$$

H_t is the high stock price on day t; L_t is the low stock price on day t; $H_{t,t+1}$ is the high stock price over the 2 days t and $t+1$; and $L_{t,t+1}$ is the low stock price over the 2 days t and $t+1$. Source: CSMAR.

Section 408 Criteria

INTERNAL_CONTROL_WEAKNESS: An indicator variable that takes the value of 1 if the internal control audit opinion is qualified for a material weakness, and 0 otherwise. Source: CSMAR.

HIGH_VOLATILITY: An indicator variable that takes the value of 1 if the volatility of abnormal monthly stock returns (i.e., the monthly return minus the value-weighted market return) is in the highest quartile, and 0 otherwise. Return volatility is calculated as the standard deviation of abnormal monthly stock returns in a fiscal year. Source: CSMAR.

PRIOR_YEAR_STOCK_RETURN: The annualized compounded monthly stock return in a year. Source: CSMAR.

MARKET_CAPITALIZATION: Share price at the fiscal year-end times the total number of shares outstanding at the fiscal year-end, in 100 million CNY. The base year is 2013 using the fiscal-year end CPI. Source: CSMAR.

ln(MARKET_CAP): The natural logarithm of market capitalization. Source: CSMAR.

Other Firm Characteristics

SMALL_CHANGE_IN_EPS: An indicator variable that takes the value of 1 if the change in earnings per share (ΔEPS) falls in the interval of [0, 0.01], and 0 otherwise, following Burgstahler and Dichev (1997). Source: CSMAR.

MODIFIED_AUDIT_OPINION: An indicator variable that takes the value of 1 if a firm is issued a modified opinion by its auditor, and 0 otherwise. An audit opinion is considered modified if it is classified as unqualified with explanatory notes, qualified, disclaimer, or adverse, following Wang et al. (2008). Source: CSMAR.

BIG4: An indicator variable that takes the value of 1 if a firm is client of one of the Big 4 auditors, and 0 otherwise. Source: CSMAR.

AUDITOR_TENURE: The number of consecutive years during which the same auditor has audited a firm. Source: He, Kothari, Xiao, and Zuo (2018) and hand-collected.

AUDITOR_TURNOVER: An indicator variable that takes the value of 1 if there is an auditor turnover in a year, and 0 otherwise. Source: He et al. (2018) and hand-collected.

CEO/COB_DUALITY: An indicator variable that takes the value of 1 if the CEO is also Chairman of the Board (COB), and 0 otherwise. Source: CSMAR.

BOARD_INDEPENDENCE: The fraction of independent directors on a board. Source: CSMAR.

BOARD_SIZE: The number of directors on a board. Source: CSMAR.

INSTITUTIONAL_OWNERSHIP: The number of shares held by qualified foreign institutional investors (QFII), mutual funds, insurance firms, financial firms, securities companies, social securities funds, supplementary pension (additional funds set up by some firms for their employees; incidentally, regular pension funds are not allowed to own stocks in China), trust companies, financial products of securities companies, private funds managed by trust companies, banks, nonfinancial listed firms, scaled by the total number of shares outstanding. Source: WIND.

MANAGEMENT_OWNERSHIP: The number of shares held by top management team scaled by the total number of shares outstanding. Source: CSMAR.

SOE: An indicator variable that takes the value of 1 if the controlling shareholder is the government or government affiliated entity, and 0 otherwise. The term "controlling shareholder" shall refer to a person that satisfies any of the following conditions: i) the person, acting alone or in concert with others, has the power to elect more than half of the directors; ii) the person, acting alone or in concert with others, has the power to exercise or control the exercise of 30% or more of the company's voting rights; iii) the person, acting alone or in concert with others, holds 30% or more of the shares of the company; or iv) the person, acting alone or in concert with others, actually controls the company in any other manner (CSMAR User Guideline 2018). Source: CSMAR.

FIRM_AGE: The number of years since a firm's founding. Source: CSMAR.

LOSS: An indicator variable that takes the value of 1 if basic EPS is negative, and 0 otherwise. Source: CSMAR.

SPECIAL_TREATMENT: An indicator variable that takes the value of 1 if a listed firm reports two consecutive years of losses, and 0 otherwise. Source: CSMAR.

SALES_GROWTH: The change in sales from the beginning of a year to the end of the same year. Source: CSMAR.

M&A: An indicator variable that takes the value of 1 if a firm has completed a merger or an acquisition in a year, and 0 otherwise. Source: SDC.

RELATED_PARTY_TRANSACTION: Net value of other accounts receivables scaled by total assets, following Jiang, Wan, and Zhao (2015). Source: CSMAR.

LOAN_GUARANTEE: The amount of loan guarantees a firm provides for its subsidiaries and affiliates during a year scaled by equity, following Jiang et al. (2015). Source: CSMAR.

FOREIGN_LISTING: An indicator variable that takes the value of 1 if a firm also issues shares traded on U.S. stock exchange, or issues B-shares (shares traded on Chinese stock exchanges for foreign accounts) or H-shares (shares traded on the Hong Kong Stock Exchange), and 0 otherwise. Source: CSMAR.

MARKETIZATION_INDEX: The institutional development of the province where a firm's headquarters are located. The index is comprised of five sub-indices: i) the

relationship between the government and the market, ii) the development of non-government economic sectors, iii) the developmental level of the product market, iv) the developmental level of the factor market, and v) the development of the intermediary market organization and the legal environment. The index ranges from 0 to 10, and its base year is 2008. Source: Wang et al. (2019).

M/B: Market capitalization scaled by book value of equity. Source: CSMAR.

LEVERAGE: Total liabilities scaled by total assets. Source: CSMAR.

OPERATING_CF: Operating cash flow scaled by lagged total assets. Source: CSMAR.

HIGH_RELATIONAL_CONTRACTING: An indicator variable that takes the value of 1 if a firm's related-party transactions are more than 30% of its sales, and 0 otherwise, following Li et al. (2020). Source: CSMAR.

LOW_RELATIONAL_CONTRACTING: An indicator variable that takes the value of 1 if a firm's related-party transactions are less than 30% of its sales, and 0 otherwise, following Li et al. (2020). Source: CSMAR.

HIGH_POLITICAL_INCENTIVE: An indicator variable that takes the value of 1 in years when the stock market experiences major volatilities and hence regulators are incentivized not to cause further disruptions, and 0 otherwise. Source: CSMAR.

LOW_POLITICAL_INCENTIVE: An indicator variable that takes the value of 1 in years when the stock market experiences minor volatilities and hence regulators are not incentivized not to cause further disruptions, and 0 otherwise. Source: CSMAR.

Supplementary Material

To view supplementary material for this article, please visit http://doi.org/10.1017/S0022109023000352.

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