

Cao, Shijiao; Wang, Jiangqiong

**Article**

## Waiting and following: Within-industry herding behavior in annual report disclosure

China Journal of Accounting Research

**Provided in Cooperation with:**

Sun Yat-sen University

*Suggested Citation:* Cao, Shijiao; Wang, Jiangqiong (2021) : Waiting and following: Within-industry herding behavior in annual report disclosure, China Journal of Accounting Research, ISSN 1755-3091, Elsevier, Amsterdam, Vol. 14, Iss. 3, pp. 295-314, <https://doi.org/10.1016/j.cjar.2021.05.004>

This Version is available at:

<https://hdl.handle.net/10419/241841>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by-nc-nd/4.0/>

HOSTED BY



ELSEVIER

Contents lists available at ScienceDirect

## China Journal of Accounting Research

journal homepage: [www.elsevier.com/locate/cjar](http://www.elsevier.com/locate/cjar)

# Waiting and following: Within-industry herding behavior in annual report disclosure



Shijiao Cao\*, Jianqiong Wang

School of Economics and Management, Southwest Jiaotong University, Chengdu, Sichuan 610031, China

## ARTICLE INFO

*Article history:*

Received 14 October 2020

Accepted 24 May 2021

Available online 10 June 2021

*Keywords:*

Financial disclosure

Annual report

Disclosure timing

Herding behavior

Informational pressure

Scheduled disclosure system

## ABSTRACT

Using the unique scheduled disclosure system for annual reports in China's stock market, we examine within-industry herding behavior in annual report timing. The results reveal the waiting and following behavior strategies used in the annual reporting process within industry. Firms that originally schedule an early (late) disclosure date within their industry are more likely to reschedule to a later (earlier) date. Informational pressure is the dominant mechanism underlying herding in annual reporting, and capital market reputation incentives mainly induce the herding of bad news. Further analysis shows that delaying disclosure via the waiting strategy reduces the future occurrence of restatements, whereas bringing forward disclosure does not change the propensity of future restatements. Overall, we enrich the limited empirical studies on sequential mandatory disclosure decisions within industry.

© 2021 Sun Yat-sen University. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

As an enhancing qualitative characteristic of financial information, timeliness is conducive to the use of relevant and faithfully represented information (FASB, 2010). The disclosure of earnings and financial reports leads to stock price fluctuations. Thus, to achieve better market performance, managers with information advantages generally time disclosure by trading off between its costs and benefits (Verrecchia, 1983; Gennotte and Trueman, 1996; Graham et al., 2005).

A growing body of literature has found that a firm's behaviors may be influenced by the behaviors of its industry peers (Lieberman and Asaba, 2006; Bird et al., 2018; Lin et al., 2018; Tuo et al., 2020). In turn,

\* Corresponding author.

E-mail address: [caosj@my.swjtu.edu.cn](mailto:caosj@my.swjtu.edu.cn) (S. Cao).

we argue that a firm's disclosure behavior may also be influenced by that of its industry peers. Firms sequentially make financial disclosure decisions so that managers can observe and consider peer firms' behaviors when making their own disclosure decisions (Tse and Tucker, 2010). Despite being considered in some theoretical studies (Foster, 1981; Dye and Sridhar, 1995; Heinle and Verrecchia, 2015), this fact has long been ignored in empirical research (Tse and Tucker, 2010; Seo, 2021). In the literature, studies on financial disclosure timing have been infrequent, especially those on the timing of mandatory disclosure (Sengupta, 2004; Son and Crabtree, 2011). Studies on the within-industry timing of financial disclosure have been even less frequent. Only Tse and Tucker (2010) study the within-industry timing of voluntary financial disclosure. They find that managers herd in timing bad earnings warnings by releasing them soon after those of industry peers. This allows managers to ascribe earnings shortfalls to external factors and minimize their apparent responsibility. Voluntary disclosure may be substituted by mandatory disclosure (Noh et al., 2019) and the latter is the main information channel for potential and current investors, particularly in emerging markets (Leventis and Weetman, 2004; Ma et al., 2018). Thus, we aim to investigate whether firms herd in mandatory disclosure timing.

The scheduled disclosure system for annual reports, which only exists in China's stock market, provides a unique opportunity to conduct such research. As the system stipulates, at the end of each fiscal year, listed firms must apply to the Shanghai or Shenzhen Stock Exchange to schedule a disclosure date for annual reporting. The scheduled disclosure dates of all firms are published on the website of the exchanges after all firms complete their schedule. This allows each firm to see the scheduled disclosure dates of its industry peers and to infer the position of its own date within its industry. We deem that firms that originally schedule an early date within their industry have a high propensity to delay their disclosure date, whereas firms that originally schedule a late date have a high propensity to bring their disclosure date forward (i.e., to an earlier date). As each firm is given one chance to reschedule, we expect firms with a high propensity to delay (bring forward) to be more likely to delay (bring forward) their disclosure date. The contingent adjustment of the disclosure date depicts the dynamic process of within-industry herding in disclosure timing.

To conduct our empirical study, we use a sample of annual report disclosure cases of A-share listed firms in China from 2001 to 2018. The findings are consistent with our hypothesis. We reveal two strategies used in the annual within-industry reporting process: waiting and following. Firms that originally schedule an early disclosure date within the industry are more likely to reschedule to a later date (i.e., the waiting strategy), whereas firms that originally schedule a late date are more likely to reschedule to an earlier date (i.e., the following strategy). Both of these strategies are significant at the economic level. Specifically, a one-standard-deviation forward move of the scheduled disclosure date within an industry results in a 4.78% increase in the probability of delaying disclosure. Furthermore, a one-standard-deviation backward move of the scheduled disclosure date within an industry leads to a 4.99% increase in the probability of bringing forward disclosure.

We propose three mechanisms that may cause herding: informational pressure, market reputation incentives, and competitiveness. The empirical results provide evidence that informational pressure is the dominant mechanism that causes herding in annual reporting. Firms tend to interpret the dates scheduled by industry peers as better dates, giving them an incentive to reschedule their date to one closer to those of their peers. The probability of rescheduling is much higher when the scheduled disclosure dates of industry peers are more concentrated. Market reputation incentives underlie the herding of bad news. The tests show that a bad-news annual report that is originally scheduled on an early date within industry is more likely to be rescheduled to a later date to be inconspicuous. This finding aligns with previous findings that bad news is released later than expected (Johnson and So, 2018) and tends to cluster (Tse and Tucker, 2010). However, our results do not support the competitiveness mechanism. Herding in annual reporting is thus not a strategy used to maintain competitive advantage or market status.

Additionally, we examine the impact of disclosure herding on the quality of annual reports. The results show that although delayed annual reports generally have a higher probability of being restated, the restatement probability significantly decreases if the reports are delayed via the waiting strategy. It is reasonable to argue that firms that delay disclosure using the waiting strategy have much more time to carefully prepare their reports and have them audited. Nevertheless, no significant difference in quality is observed if a report is brought forward using the following strategy. That is, bringing forward the disclosure date does not damage

the quality of an annual report. This also implies that A-share listed firms are accustomed to withholding their annual reports even if they have already been prepared.

We contribute to the literature in two ways. First, we are among the first to examine the within-industry herding behavior in mandatory disclosure timing by using the unique scheduled disclosure system for annual reports in China's stock market. We reveal the waiting and following strategies used in the annual report disclosure process within industry and explore the underlying mechanisms. In previous leading work, [Tse and Tucker \(2010\)](#) discover that firms herd in timing voluntary warnings, but they do not depict the dynamic process by which this occurs. By considering this process, we contribute to and enrich the scarce body of empirical work on sequential mandatory disclosure decisions within industry, thereby improving the understanding of why and how firms time their disclosures.

Second, we investigate the economic consequences of herding in annual reporting. Previous studies regard clustered disclosure as a means for firms to use investors' limited attention and are primarily interested in the market reaction toward clustered disclosure. Few studies pay attention to the quality of reports. We show that annual report quality is not damaged by herding disclosure. This finding means that clustered annual reports are almost as credible as others, despite the fact that investors need more time to be well informed.

The remainder of this paper proceeds as follows. [Section 2](#) reviews the studies on financial disclosure timing. [Section 3](#) briefly discusses the scheduled disclosure system and develops the hypothesis. [Section 4](#) introduces our sample, data, and empirical model. [Section 5](#) presents the descriptive statistics and the empirical results. [Section 6](#) concludes the paper.

## 2. Financial disclosure timing

We categorize the studies on financial disclosure timing into two streams: intraday timing and lag timing.

The intraday timing stream concerns the day and time of day that are considered better for information disclosure. As the market reaction upon disclosure largely depends on investors' attention and capabilities to process the information that a disclosure contains, firms tend to disclose good news on trading days and during trading hours but disclose bad news after trading hours, on weekends, or on a busy day of clustered disclosures ([Patell and Wolfson, 1982](#); [Dellavigna and Pollet, 2009](#); [deHaan et al., 2015](#); [Brockbank and Hennes, 2018](#)). Two hypotheses underlie intraday timing. One is the opportunism hypothesis, which holds that firms manage their value by timing bad news to a noteless time to avoid intense market reactions ([Hirshleifer et al., 2009](#); [Brown et al., 2012](#)). The other is the altruism hypothesis, arguing that the disclosure of bad news is timed to provide less-informed investors time to interpret and evaluate the information ([Patell and Wolfson, 1982](#); [Gennotte and Trueman, 1996](#); [Graham et al., 2005](#)).

The literature on lag timing has focused on how long firms take to disclose an event or report, namely, the timeliness of disclosure. The timeliness of information is essential to the stock market ([Bartov and Konchitchki, 2017](#)), especially to emerging markets with weak disclosure systems ([Ma et al., 2018](#)). Stock markets generally set mandatory rules to ensure the timeliness of financial disclosure, but managers with better information have discretion over when to disclose. As a result, annual reports and earnings announcements tend to be late ([Aubert, 2009](#)). Why do firms delay their financial disclosures? Intuitively, it may be due to the extensive work involved in preparing and auditing the reports. Some evidence has shown that firms with multiple segments and greater accounting complexity generally take much more time to disclose earnings ([Sengupta, 2004](#)) and that accounting firms need enough time to maintain auditing quality ([Lambert et al., 2017](#)). However, [Krishnan and Yang \(2009\)](#) argue that the accelerated filing requirements for 10-K and 10-Q filings in 2003 do not cause a decrease in reporting quality. Some studies have documented that good news and bad news are timed in different manners based on different market reactions. Good news is generally disclosed early, whereas bad news tends to be disclosed late ([Givoly and Palmon, 1982](#); [Kross and Schroeder, 1984](#); [Johnson and So, 2018](#)). Another stream of literature has documented that firms time their disclosures to cater to the information demand of stakeholders and that disclosures are accelerated under high demand ([Sengupta, 2004](#); [Son and Crabtree, 2011](#)). When focusing on the factors within industry, proprietary costs may be one of the reasons for delaying disclosure. Proprietary costs refer to the costs of preparing and disseminating information and, most importantly, the costs associated with disclosing information that may be proprietary and therefore potentially damaging ([Jovanovic, 1982](#); [Verrecchia, 1983](#)). Empirical studies have

found evidence that firms with high proprietary costs tend to delay their financial reports (Wagenhofer, 1990; Sengupta, 2004). Studying the herding effect among industry peers in disclosing negative earnings warnings, Tse and Tucker (2010) find that firms accelerate their warnings in response to those of peer firms and that warnings cluster as a result. It is the only empirical study to explore within-industry disclosure timing.

### 3. Institutional background and hypothesis development

#### 3.1. Scheduled disclosure system

In the U.S., the annual report and the 10-K report coexist. However, unlike U.S. firms, Chinese listed firms do not need to file a 10-K report. Thus, in China, the annual report serves as the main channel through which potential investors and current shareholders can remain informed about a firm's performance across various dimensions. Note that the annual report contains plenty of detailed information and must be submitted to the exchange and released on the firm's website before a given deadline. Distinct from the situation in many developed stock markets, the fiscal year of Chinese listed firms must agree with the calendar year and annual reports should be disclosed before the end of April.<sup>1</sup> Consequently, many annual reports used to be released during the last 2 weeks of April. To dilute the risks due to clustered disclosure, the China Securities Regulatory Commission (CSRC) issued a pronouncement on December 16, 1997, providing stock exchanges guidance for solving annual report clustering. Soon afterwards, the Shanghai and Shenzhen Stock Exchanges enacted the scheduled disclosure system. The system requires listed firms to apply to schedule a disclosure date before the deadline specified by the exchange. The exchange designates a day for firms that fail to schedule before the deadline. To even out the annual report distribution over the disclosure period, the exchange sets a maximum number of annual reports to be disclosed per day.<sup>2</sup>

As the scheduled disclosure system stipulates, firms that need to change their scheduled disclosure dates shall apply to the exchange with valid reasons and a new date in advance. Each firm can only reschedule its disclosure date once.<sup>3</sup> From the annual reports of 2001 onwards, all of the scheduled disclosure dates are published on the websites of the exchanges after all of the firms complete scheduling. Although the scheduled disclosure system reduces reporting delays and clustering to some extent (Haw et al., 2006), annual reports continue to be delayed and clustered in China's stock market.

#### 3.2. Hypothesis development

Studies on herding behavior or peer effects in financial disclosure have suggested possible underlying mechanisms, such as informational influence and reputational concern (Brown et al., 2006), reduced uncertainty and reputational concerns (Seo, 2021), informational reasons and rivalry reasons (Cano-Rodríguez et al., 2017), and signaling theory and litigation risk (Tuo et al., 2020). We propose three mechanisms that may underlie herding in annual report timing, namely, informational pressure, market reputation incentives, and competitiveness.

The concept of informational pressure originates from the informational social influence discussed by Deutsch and Gerard (1955). Specifically, individuals in a group tend to rely on the information from and interpretations of other group members over their own and are more likely to make decisions similar to those of their peers when they are more uncertain about the correctness of their own judgments. When decisions are made based on the information obtained by observing others' behaviors, herding behavior occurs (Banerjee, 1992). Although the market reaction to disclosure is difficult to predict, a proper disclosure time is believed to better manage the stock price. Firms not only care about the performance comparison among industry peers (Foster, 1981; Lee et al., 2015), but they also monitor when their peers release annual reports (Sinha and Fried,

<sup>1</sup> For example, firms in the U.S. have discretion over the reporting period and only approximately 60% of them choose a December year-end (Li et al., 2014).

<sup>2</sup> The maximum number of annual reports per day was originally 10, but this has since been increased to 25 for the Shenzhen Stock Exchange and 35 for the Shanghai Stock Exchange.

<sup>3</sup> We find that some firms actually change their scheduled disclosure dates more than once.



2008; Li et al., 2014). Informational pressure suggests that when the scheduled disclosure date of a firm deviates from those of its peers, the firm may reconsider it and interpret the scheduled disclosure dates of its industry peers as better choices that incorporate more information. A firm that is more uncertain about the appropriateness of its own scheduled disclosure date has a higher propensity to change the date to one that is closer to those of its peers. We deem that firms that originally schedule an early disclosure date within their industry have a high propensity to reschedule to a later date, whereas firms that originally schedule a late disclosure date within their industry have a high propensity to reschedule to an earlier date.

Market reputation incentives refer to firms' intention to manage their reputation in the stock market by adjusting their disclosure dates. Many studies have documented that bad news is generally delayed (Givoly and Palmon, 1982; Kross and Schroeder, 1984; Johnson and So, 2018), but rational investors have learned to interpret delayed disclosure as a negative signal (Brown et al., 2012; Guttman et al., 2014). Johnson and So (2018) find that earlier-than-expected announcements usually contain better news than later-than-expected announcements. Thus, we predict that firms that schedule a late disclosure date within their industry but report good news have a strong incentive to bring forward their disclosure date to avoid being mistaken for bad firms. Furthermore, we predict that firms that schedule an early disclosure date within their industry but report bad news have a strong incentive to delay their disclosure and issue it alongside others to be inconspicuous. In short, market reputation incentives suggest that firms that intend to report good (bad) news but originally schedule a late (early) disclosure date within their industry have a high propensity to bring forward (delay) disclosure.

In terms of competitiveness, herding in annual report timing may be a strategy for firms to maintain their competitive advantage and market status. One important reason stems from proprietary costs, which refer mainly to the costs associated with disclosing information that may be proprietary and thus potentially damaging (Jovanovic, 1982; Verrecchia, 1983). Due to proprietary costs, firms tend to withhold proprietary information (Verrecchia, 1983; Wagenhofer, 1990; Sengupta, 2004; Graham et al., 2005) to maintain their competitive advantages. Therefore, we argue that proprietary costs cause firms that originally schedule an early disclosure date within their industry to delay disclosure. In addition, when the industry is highly competitive, not following the actions of rival peers may have significant negative consequences for firms' status quo (Cano-Rodríguez et al., 2017). According to some studies, firms that face strong industry competition may have greater incentives to mimic the prior disclosure behavior of rival peers (Brown et al., 2006; Cano-Rodríguez et al., 2017). As such, we predict that firms that originally schedule a late disclosure date within their industry tend to bring disclosure forward.

The above analysis gives rise to the idea that firms that originally schedule an early (late) disclosure date within their industry have a high propensity to delay (bring forward) disclosure. As each firm is only given one chance to reschedule its disclosure date, we expect firms with a high propensity to delay (bring forward) disclosure to be likely to delay (bring forward) their disclosure dates. This kind of contingent disclosure date adjustment depicts the dynamic process of herding in disclosure timing. We state our hypothesis as follows:

H: Firms that originally schedule an early (late) disclosure date within their industry are more likely to reschedule to a later (earlier) disclosure date.

## 4. Research design

### 4.1. Data and sample

The scheduled disclosure system was enacted in 1997, but the exchanges only started publicly announcing scheduled disclosure dates in 2001. Hence, we select the disclosure cases of A-share firms listed on the Shanghai and Shenzhen Stock Exchanges from 2001 to 2018 as our initial sample. The research data are collected from the China Stock Market and Accounting Research database, and some missing data are supplemented from the RESSET database.

In this study, we classify firms based on the Industry Classification Guidelines for Listed Companies compiled by the CSRC in 2012. The guidelines use English letters from A to S to represent each of the 19 industrial

categories and, subsequently, a two-digit number to specify 90 industries. For example, the letter C indicates manufacturing and the code C14 indicates food manufacturing. The literature generally uses the first letter to classify firms (Hung et al., 2015; Wang et al., 2017; Chen et al., 2018). Given the considerable number of manufacturing firms (class C), we use the two-digit number following the letter C to classify the firms into specific industries. As a robustness check, we also use the two-digit numbers of all industry categories as a more specific form of classification and reconduct our analysis.

We exclude disclosure cases in which the actual disclosure date is after April 30, observations from industries with fewer than three firms or in which firms schedule the same disclosure date, and observations with missing data. Our final sample consists of 33,968 firm-year observations. All continuous variables are winsorized at the 1% and 99% levels to control for the potential influence of outliers.

## 4.2. Key variables

### 4.2.1. Dependent variables

We construct two dependent variables, *DELAY* and *ADVAN*. *DELAY* takes the value of 1 if the actual disclosure date is later than the originally scheduled disclosure date, and 0 otherwise. In contrast, *ADVAN* equals 1 if the actual disclosure date is earlier than the originally scheduled disclosure date and 0 otherwise.

### 4.2.2. Independent variables

According to the analysis above, a firm's propensity to delay (bring forward) its disclosure date is a function of the within-industry position of its scheduled disclosure date. A much earlier scheduled disclosure date is associated with a higher propensity to delay and a lower propensity to bring forward disclosure, whereas a much later date is associated with a higher propensity to bring forward and a lower propensity to delay disclosure. Corresponding to the two dependent variables, we design two independent variables, *FIRST* and *LAST*, to reflect the within-industry position of each firm's originally scheduled disclosure date. *FIRST* and *LAST* are calculated as follows:

$$FIRST_{i,t} = \frac{n - m_{i,t}}{n - 1} \quad (1)$$

$$LAST_{i,t} = \frac{m_{i,t} - 1}{n - 1} \quad (2)$$

where  $n$  is the distinct count of the scheduled disclosure dates of all of the firms in an industry. If an industry has 10 firms and each firm schedules a different disclosure date, then  $n$  equals 10. If two of them schedule the same date, then  $n$  equals 9.  $m_{i,t}$  is the ordinal of firm  $i$ 's scheduled disclosure date in the distinct disclosure dates of the industry.  $FIRST_{i,t}$  and  $LAST_{i,t}$  are both between 0 and 1. A  $FIRST_{i,t}$  close to 1 means that a firm's scheduled disclosure date is in a very early position within its industry. In contrast, a  $LAST_{i,t}$  close to 1 means that the firm's scheduled disclosure date is in a very late position within its industry. One may notice from  $FIRST_{i,t} + LAST_{i,t} = 1$  that  $FIRST_{i,t}$  and  $LAST_{i,t}$  are mutually substitutable and cannot be included in the regression model simultaneously. However, as shown in the following subsection, setting two independent variables simplifies the interpretation of the empirical results.

### 4.2.3. Control variables

As shown in Table 1, we control for a set of variables that may affect firms' decisions to change their disclosure date. Among all of the control variables, *LAG* may be the most indispensable one. One may argue that firms that originally schedule an early (late) disclosure date within their industry are probably firms that have a relatively short (long) time to prepare their annual reports and thus are more likely to delay (bring forward) disclosure. Including *LAG* into the regression models may allow the coefficients on *FIRST* and *LAST* to more accurately capture individual firms' response to the choices of their industry peers.

### 4.2.4. Empirical model

To conduct our empirical research, we construct two logit models as follows:

Table 1  
Variable definitions.

	Variables	Definitions and measurements
Dependent variables	<i>DELAY</i>	equals 1 if the actual disclosure date is later than the originally scheduled disclosure date and 0 otherwise
	<i>ADVAN</i>	equals 1 if the actual disclosure date is earlier than the originally scheduled disclosure date and 0 otherwise
Independent variables	<i>FIRST</i>	indicates how early a firm's originally scheduled disclosure date is within its industry, as calculated by formula (1)
	<i>LAST</i>	indicates how late a firm's originally scheduled disclosure date is within its industry, as calculated by formula (2)
Control variables	<i>LAG</i>	the logarithm of 1 plus the number of days between the fiscal year-end and the originally scheduled disclosure date
	<i>BEFORE</i>	equals 1 if the originally scheduled disclosure date is before the actual disclosure date of the previous year and 0 otherwise
	<i>SIZE</i>	the logarithm of a firm's total assets
	<i>LEV</i>	financial leverage, the ratio of liabilities to assets
	<i>LOSS</i>	equals 1 if earnings are negative and 0 otherwise
	<i>GROWTH</i>	the growth rate of revenues
	<i>UE</i>	unexpected earnings, measured as the earnings in this year less the previous earnings and divided by the absolute value of the previous earnings
	<i>INDEP</i>	board independence, measured as the percentage of independent directors on the board
	<i>FSR</i>	the percentage of shares held by the largest shareholder
	<i>MHR</i>	the percentage of shares held by the top management team
	<i>ROE</i>	return on equity
	<i>OPINION</i>	equals 1 if a firm obtains an unqualified opinion and 0 otherwise
	<i>BIG4</i>	equals 1 if a firm's auditor is a "big four" public accounting firm and 0 otherwise
	<i>CHANGE</i>	equals 1 if a firm hires a new accounting firm this year and 0 otherwise
	<i>ANALYST</i>	the logarithm of 1 plus the number of analysts following the firm
<i>INDUSTRY</i>	dummy variables of industry	
<i>YEAR</i>	dummy variables of year	

$$\text{Logit}(\text{DELAY}_{i,t} = 1) = c + \alpha \text{FIRST}_{i,t} + \beta \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$\text{Logit}(\text{ADVAN}_{i,t} = 1) = c + \alpha \text{LAST}_{i,t} + \beta \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (4)$$

Model (3) is designed to examine the impact of an early scheduled disclosure date within industry on the probability of delaying disclosure. Model (4) examines the impact of a late scheduled disclosure date within industry on the probability of bringing forward disclosure.  $\text{Controls}_{i,t}$  represents the control variables shown in Table 1. For the convenience of comparing the impacts of different factors, we standardize the non-dummy variables before adding them to the regression models and report the mean marginal coefficients on all of the independent variables. We predict the coefficient  $\alpha$  to be significantly positive, which means that the within-industry position of a firm's originally scheduled disclosure date significantly affects the decision to delay or bring forward its disclosure date. This approach allows us to detect the within-industry herding behavior in annual reporting.

## 5. Empirical results

### 5.1. Summary statistics

The summary statistics for the major variables used in this study are shown in Table 2. The sample distribution by year is presented in Panel A. The number of observations increases steadily from 943 to 3,461 during the 18 years covered, which coincides with the growth trend of A-share listed firms.

The descriptive statistics for the major variables are presented in Panel B of Table 2. The mean of *DELAY* and the mean of *ADVAN* show that approximately 12.80% of the sample firms delay their disclosure dates and



Table 2  
Summary statistics.

Panel A: Sample distribution by year					
Year	Freq.	Percent (%)	Year	Freq.	Percent (%)
2001	943	2.78	2010	1,687	4.97
2002	1,015	2.99	2011	2,049	6.03
2003	1,094	3.22	2012	2,301	6.77
2004	1,161	3.42	2013	2,430	7.15
2005	1,264	3.72	2014	2,478	7.3
2006	1,275	3.75	2015	2,597	7.65
2007	1,336	3.93	2016	2,794	8.23
2008	1,449	4.27	2017	3,095	9.11
2009	1,539	4.53	2018	3,461	10.19
			Total	33,968	100

  

Panel B: Summary statistics of major variables								
Variable	Obs.	Mean	SD	Min.	P25	Median	P75	Max.
<i>DELAY</i>	33,968	0.1280	0.3341	0.0000	0.0000	0.0000	0.0000	1.0000
<i>ADVAN</i>	33,968	0.0917	0.2886	0.0000	0.0000	0.0000	0.0000	1.0000
<i>DIFF</i>	7,464	15.5430	14.7341	1.0000	5.0000	11.0000	22.0000	105.0000
<i>FIRST</i>	33,968	0.4240	0.2874	0.0000	0.1591	0.4211	0.6429	1.0000
<i>LAST</i>	33,968	0.5760	0.2874	0.0000	0.3571	0.5789	0.8409	1.0000
<i>LAG</i>	33,968	4.5088	0.2843	2.3979	4.4067	4.5326	4.7274	4.8040
<i>BEFORE</i>	33,968	0.4726	0.4993	0.0000	0.0000	0.0000	1.0000	1.0000
<i>SIZE</i>	33,968	21.8834	1.3912	19.0327	20.9245	21.6964	22.6100	26.7505
<i>LEV</i>	33,968	0.4703	0.2256	0.0560	0.3008	0.4649	0.6232	1.2113
<i>LOSS</i>	33,968	0.1121	0.3155	0.0000	0.0000	0.0000	0.0000	1.0000
<i>GROWTH</i>	33,968	0.2179	0.5751	-0.6808	-0.0204	0.1229	0.3032	4.0798
<i>UE</i>	33,968	-0.2793	4.4086	-29.0293	-0.3066	0.1057	0.5421	13.8219
<i>INDEP</i>	33,968	0.3554	0.0799	0.0000	0.3333	0.3333	0.4000	0.8000
<i>FSR</i>	33,968	0.3600	0.1559	0.0858	0.2371	0.3361	0.4721	0.7498
<i>MHR</i>	33,968	0.0863	0.1728	0.0000	0.0000	0.0002	0.0487	0.6720
<i>ROE</i>	33,968	0.0513	0.1796	-1.1140	0.0255	0.0656	0.1127	0.5430
<i>OPINION</i>	33,968	0.9415	0.2346	0.0000	1.0000	1.0000	1.0000	1.0000
<i>BIG4</i>	33,968	0.0641	0.2449	0.0000	0.0000	0.0000	0.0000	1.0000
<i>CHANGE</i>	33,968	0.1477	0.3548	0.0000	0.0000	0.0000	0.0000	1.0000
<i>ANALYST</i>	33,968	1.2648	1.1733	0.0000	0.0000	1.0986	2.3026	4.3944

  

Panel C: Means of <i>DELAY</i> and <i>ADVAN</i> when <i>FIRST</i> is above (below) 0.5					
	<i>FIRST</i> ≥ 0.5	<i>FIRST</i> < 0.5	Mean-diff.	<i>t</i> -statistic	<i>p</i> -value
N	14,119	19,849			
<i>DELAY</i>	0.1565	0.1077	0.0488	13.2902	0.0000
<i>ADVAN</i>	0.0586	0.1153	-0.0567	-17.9275	0.0000

Note. The variables are as defined in Table 1.

that 9.17% of them bring forward their disclosure dates. That is, approximately 21.97% of the sample firms reschedule their disclosure dates, suggesting that failing to disclose on the originally scheduled disclosure date is a common phenomenon. *DIFF* measures the number of days by which the firms move their disclosure dates, averaging 15.5430 days. This indicates that for the firms that reschedule, the difference between the originally scheduled date and the actual disclosure date is approximately 15 days. Considering that Johnson and So (2018) set a threshold of only 2 days to screen informative moves of announcement dates, we believe that an average 15-day move of disclosure dates should be economically significant.

The means of *FIRST* and *LAST* are 0.4240 and 0.5760, respectively. Theoretically, if the disclosure dates are randomly scheduled by firms, *FIRST* and *LAST* should average 0.5. The deviation from 0.5 implies that firms tend to schedule late disclosure dates within their industry. *BEFORE* shows that 47.26% of the firms originally schedule a disclosure date that is earlier than their actual disclosure date in the previous year. In

addition, 11.21% of the observations report a loss, 94.15% obtain an unqualified opinion, 6.41% hire a “big four” accounting firm, and 14.77% hire a new accounting firm.

We divide the sample into two groups based on whether the variable *FIRST* is no less than 0.5 and report the means of *DELAY* and *ADVAN* for the two subsamples in Panel C of Table 2.  $FIRST \geq 0.5$  means that a firm’s originally scheduled disclosure date falls in the first half (including the median point) of all of the dates scheduled by the firms in the same industry. In contrast,  $FIRST < 0.5$  means that the firm’s scheduled disclosure date is in the latter half of all scheduled dates. As shown in Panel C of Table 2, *DELAY* averages 0.1565 when  $FIRST \geq 0.5$  and 0.1077 when  $FIRST < 0.5$ , with a significant difference of 0.0488 ( $t = 13.2902$ ). *ADVAN* averages 0.0586 when  $FIRST \geq 0.5$  and 0.1153 when  $FIRST < 0.5$ , with a significant difference of  $-0.0567$  ( $t = -17.9275$ ). In summary, the firms that originally schedule an early disclosure date within their industry are more likely to delay their disclosure, whereas the firms that originally schedule a late date within their industry are more likely to move their disclosure up. This interpretation is similar to our main hypothesis.

If firms do herd in annual report timing, the actual disclosure dates should be more concentrated than the originally scheduled disclosure dates. In an untabulated test, we compare the industry-year standard deviation of the actual disclosure dates with that of the originally scheduled disclosure dates. We find that 8.73% of the industry-year observations show no change in the standard deviation, 33.15% of them show an increase in the standard deviation, and 58.12% of them demonstrate a decrease in the standard deviation. In other words, the actual disclosure dates of most of the industry-year groups are more clustered than the originally scheduled disclosure dates. This serves as another piece of primary evidence of firms’ herding in annual report timing.

## 5.2. Correlation analysis

The pairwise correlation coefficients among the variables are tabulated in Table 3. *FIRST* is significantly positively correlated with *DELAY* and *LAST* is significantly positively correlated with *ADVAN*, consistent with our hypothesis.

Unsurprisingly, *LAG* is highly correlated with *FIRST* and *LAST*, because a very late scheduled disclosure date within industry is generally a date far from the fiscal year-end. To ensure that the regression results are robust, all of the following regression results are checked and no evidence of severe multicollinearity is found.

## 5.3. Baseline regression

We conduct multivariate regression analyses to examine the herding behavior in annual reporting, with *DELAY* and *ADVAN* as the dependent variables and *FIRST* and *LAST* as the main independent variables. The baseline regression results are reported in Table 4. The regression results of using *DELAY* as the dependent variable are reported in column (1). The coefficient on *FIRST* is significantly positive ( $\beta = 0.0478$ ,  $z = 10.1599$ ), suggesting that the firms that originally schedule an early disclosure date within their industry are more likely to delay their disclosure. On average, a one-standard-deviation forward move of the originally scheduled disclosure date within industry results in a 4.78% increase in delaying disclosure probability. The regression results of using *ADVAN* as the dependent variable are reported in column (2). The coefficient on *LAST* is also positive and statistically significant ( $\beta = 0.0499$ ,  $z = 9.9925$ ), suggesting that firms that originally schedule a late disclosure date within their industry are more likely to bring forward their disclosure. On average, a one-standard-deviation backward move of the originally scheduled disclosure date within an industry increases the probability of bringing forward disclosure by 4.99%. As shown in Panel B of Table 2, the standard deviations of *FIRST* and *LAST* are equal. Thus, when the within-industry position of the originally scheduled disclosure date moves, the changes in the firms’ propensities to delay and bring forward disclosure are almost equal.

In summary, the impact of the within-industry position of the originally scheduled disclosure date on delaying disclosure is only slightly weaker than audit *OPINION* and *LOSS*. Furthermore, its impact on bringing forward disclosure is the largest among all of our independent variables. That is, a firm’s timing of mandatory financial disclosure is largely influenced by industry peers. The empirical results reveal the waiting and following strategies in the annual reporting process within industry, which cause the reports to cluster in the time

sequence. This kind of contingent adjustment of the disclosure date reflects the within-industry herding behavior in mandatory financial disclosure.

#### 5.4. Mechanism tests

##### 5.4.1. Informational pressure

To examine whether informational pressure is one of the mechanisms underlying herding behavior in annual report timing, we must measure the informational pressure faced by firms. Informational pressure implies that an individual who is more uncertain about the correctness of his/her judgment and more certain about the correctness of the judgments of others is more likely to be susceptible to informational pressure and to make decisions with the information obtained via observing the behaviors of group members (Deutsch and Gerard, 1955). Therefore, we consider measuring the consistency, or concentration, of the disclosure dates scheduled by industry peers as a proxy for informational pressure. When the scheduled disclosure dates of industry peers are more consistent or concentrated, an individual firm may be more certain about the correctness of peers' choices and suspicious of its own if it is an outlier. We use a variable  $DAY$  to denote the number of days between the fiscal year-end and the scheduled disclosure date. For example, if firm  $i$  schedules its annual report for year  $t$  on February 1 in year  $t + 1$ , then  $DAY_{i,t}$  is 32. Based on  $DAY$ , we measure the concentration of the scheduled disclosure dates of firm  $i$ 's industry peers using the following two methods:

Method 1. Calculate the standard deviation ( $STD_{-i,t}$ ) of  $DAY$  of all of the firms in the industry except for firm  $i$ :

$$STD_{-i,t} = \sqrt{\frac{1}{n-1} \sum_{j=1}^n (DAY_{j,t} - AVEDAY_{-i,t})^2} \quad (j \neq i) \quad (5)$$

where  $n$  is the number of firms in the industry.  $AVEDAY_{-i,t}$  is the average  $DAY$  of all of the firms in the industry except for firm  $i$ .  $STD_{-i,t}$  reflects the dispersion of the scheduled disclosure dates of all of the firms in the industry except for firm  $i$ . The smaller  $STD_{-i,t}$  is, the higher the informational pressure firm  $i$  faces.

Method 2. Calculate the average gap ( $DIV_{-i,t}$ ) between each firm's scheduled disclosure date and the median scheduled disclosure date in the industry except for firm  $i$ :

$$DIV_{-i,t} = \frac{\sum_{j=1}^n |DAY_{j,t} - MEDDAY_{-i,t}|}{n-1} \quad (j \neq i) \quad (6)$$

where  $n$  is the number of firms in the industry.  $MEDDAY_{-i,t}$  is the median of  $DAY$  of all of the firms in the industry except for firm  $i$ .  $DIV_{-i,t}$  also reflects the dispersion of the scheduled disclosure dates of all of the firms in the industry except for firm  $i$ . The smaller  $DIV_{-i,t}$  is, the higher the informational pressure firm  $i$  faces.

We split the firms by the year-industry median of  $STD_{-i,t}$  and  $DIV_{-i,t}$ , and denote those below (above) the median as high (low) informational pressure firms. The cross-sectional regression results are reported in Table 5. In columns (1) to (4), informational pressure is proxied by  $STD$ . When informational pressure is high, a one-standard-deviation forward move of the scheduled disclosure date within industry induces a 7.06% increase in the probability of delaying disclosure, which exceeds the probability of 4.78% in the baseline regression. However, when informational pressure is low, a one-standard-deviation forward move of the scheduled disclosure date within industry results in only a 0.65% increase in the probability of delaying disclosure, which is insignificant. In columns (3) and (4), when informational pressure is high, a one-standard-deviation forward move of the scheduled disclosure date within industry causes a 7.71% increase in the probability of bringing forward disclosure, which exceeds the probability of 4.99% in the baseline regression. However, when informational pressure is low, a one-standard-deviation forward move of the scheduled disclosure date results in only a 0.59% increase in the probability of bringing forward disclosure, which is insignificant. In columns (5) to (8),  $DIV$  is used as the proxy for the informational pressure faced by firm  $i$ . Similar results are obtained. Altogether, the results indicate that a firm is more likely to reschedule its disclosure date by referring to the choices of industry peers when they are more concentrated. Thus, informational pressure is identified as an underlying mechanism that causes herding behavior in annual report timing.

Table 3  
Correlation coefficient matrix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. DELAY		-0.1218***	0.1090***	-0.1090***	-0.1064***	0.1070***	-0.0151***	0.0878***	0.1213***	-0.0285***	-0.0470***	0.0072	-0.0319***	-0.0397***	-0.0815***	-0.1557***	-0.0074	0.0518***	-0.0616***
2. ADVAN	-0.1218***		-0.1337***	0.1337***	0.1270***	-0.0987***	-0.0085	0.0225***	-0.0072	0.0142***	0.0201***	-0.0372***	0.0069	-0.0169***	0.0210***	0.0035	0.0031	0.0278***	-0.0156***
3. FIRST	0.1090***	-0.1284***		-1.0000	-0.9649***	0.3669***	-0.0128**	-0.0365***	-0.1570***	0.0912***	0.1242***	-0.0467***	0.0952***	-0.0672***	0.1665***	0.1399***	0.0565***	-0.0092*	0.0806***
4. LAST	-0.1090***	0.1284***	-1.0000		0.9649***	-0.3669***	0.0128**	0.0365***	0.1570***	-0.0912***	-0.1242***	0.0467***	-0.0952***	0.0672***	-0.1665***	-0.1399***	-0.0565***	0.0092*	-0.0806***
5. LAG	-0.0979***	0.0952***	-0.8642***	0.8642***		-0.3712***	0.0493***	0.0355***	0.1605***	-0.1069***	-0.1290***	0.0811***	-0.1062***	0.0835***	-0.1718***	-0.1355***	-0.0502***	-0.0029	-0.0544***
6. BEFORE	0.1070***	-0.0987***	0.3673***	-0.3673***	-0.3440***		-0.0236***	0.0264***	-0.0270***	0.0131**	0.0950***	0.0043	-0.0053	-0.0446***	0.0168***	-0.0089	0.0134**	-0.0029	-0.0444***
7. SIZE	-0.0221***	-0.0006	-0.0094*	0.0094*	0.0803	-0.0209***		0.3318***	-0.1322***	0.0815***	0.0705***	0.0972***	0.1285***	-0.0622***	0.1829***	0.1761***	0.2878***	-0.0495***	0.4711***
8. LEV	0.0934***	0.0242***	-0.0445***	0.0445***	0.0217***	0.0298***	0.3027***		0.0009	-0.0067	-0.0230***	0.0038	-0.2861***	-0.0340***	-0.1989***	0.1048***	0.0457***	-0.0739***	-0.2333***
9. LOSS	0.1213***	-0.0072	-0.1502***	0.1502***	0.1176***	-0.0270***	-0.1336***	0.2328***		-0.2632***	-0.4559***	0.0021	-0.0901***	-0.0964***	-0.4644***	-0.3381***	-0.0514***	0.0398***	-0.2333***
10. GROWTH	0.0086	0.0217***	0.0551***	-0.0551***	-0.0773***	0.0054	0.0392***	0.0302***	-0.1611***		0.4149***	-0.0091*	0.0320***	0.0954***	0.3243***	0.1425***	0.0106**	-0.0128***	0.1930***
11. UE	-0.0545***	0.0101*	0.1057***	-0.1057***	-0.0947***	0.0424***	0.0628***	-0.1100***	-0.5845***	0.2519***		0.0155***	0.0018	0.0125**	0.4386***	0.1040***	0.0141**	0.0184***	0.1367***
12. INDEP	-0.0073	-0.0908***	-0.0469***	0.0469***	0.0769***	0.0136**	0.1315***	-0.0111**	-0.0100*	0.0050	0.0194***		-0.0518***	0.0831***	0.0104*	0.0286***	0.0157***	-0.0241**	0.1405***
13. FSR	-0.0305***	0.0083	0.0911***	-0.0911***	-0.0846***	-0.0049	0.1479***	-0.0109**	-0.0870***	0.0207***	0.0374***	-0.0760***		-0.2114***	0.1172***	0.1000***	0.1002***	-0.0001	0.0408***
14. MHR	-0.0411***	-0.0242***	-0.0529***	0.0529***	0.0662***	-0.0334***	-0.1580***	-0.3153***	-0.0854***	0.0267***	0.0344***	0.1509***	-0.1194***		0.0798***	0.1080***	-0.1180***	-0.0629***	0.2106***
15. ROE	-0.0833***	0.0146***	0.1326***	-0.1326***	-0.1109***	0.0186**	0.1250***	-0.1279***	-0.5556***	0.1605***	0.4574***	0.0241**	0.0893***	0.0556***		0.1496***	0.1132***	-0.0139**	0.4262***
16. OPINION	-0.1557***	0.0035	0.1294***	-0.1294***	-0.0817***	-0.0089	0.1828***	-0.2748***	-0.3381***	0.0600**	0.1760***	0.0484***	0.0945***	0.0818***	0.2523***		0.0411***	-0.0642***	0.2082***
17. BIG4	-0.0074	0.0031	0.0496***	-0.0496***	-0.0066	0.0134**	0.3947***	0.1056**	-0.0514**	-0.0106*	0.0187***	0.0280**	0.1065***	-0.1034***	0.0645***	0.0411***		-0.0086	0.1836***
18. CHANGE	0.0518***	0.0278***	-0.0084	0.0084	-0.0026	-0.0029	-0.0490***	0.0489***	0.0398***	0.0467***	0.0183**	-0.0431***	0.0013	-0.0456***	-0.0180**	-0.0642***	-0.0086		-0.0389***
19. ANALYST	-0.0600***	-0.0135**	0.0742***	-0.0742***	-0.0071	-0.0440***	0.4871***	-0.0842***	-0.2291***	0.0615***	0.1191***	0.1924***	0.0337***	0.1779***	0.2646***	0.1991***	0.1955***	-0.0391***	

Note. This table reports the pairwise correlation coefficients among the main variables. The Pearson correlation coefficients are shown in the lower triangle and the Spearman's correlation coefficients are shown in the upper triangle. The variables are as defined in Table 1. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 4  
Baseline regression results of herding behavior in annual report disclosures.

	(1) <i>DELAY</i>	(2) <i>ADVAN</i>
<i>FIRST</i>	0.0478*** (10.1599)	
<i>LAST</i>		0.0499*** (9.9925)
<i>LAG</i>	0.0091* (1.8312)	-0.0114*** (-3.2120)
<i>BEFORE</i>	0.0411*** (12.2307)	-0.0300*** (-6.2738)
<i>SIZE</i>	0.0107** (2.4274)	-0.0074** (-1.9950)
<i>LEV</i>	0.0095*** (3.8934)	0.0079*** (3.0912)
<i>LOSS</i>	0.0709*** (6.9946)	-0.0110 (-1.3884)
<i>GROWTH</i>	0.0057*** (2.9352)	0.0050*** (3.4892)
<i>UE</i>	0.0018 (0.9932)	0.0023 (1.3025)
<i>INDEP</i>	0.0020 (0.9860)	0.0038* (1.8764)
<i>FSR</i>	-0.0069*** (-2.8740)	0.0006 (0.3197)
<i>MHR</i>	-0.0001 (-0.0608)	-0.0050*** (-3.3244)
<i>ROE</i>	-0.0034*** (-3.8331)	0.0056** (2.0400)
<i>OPINION</i>	-0.1165*** (-11.3284)	0.0387*** (2.9804)
<i>BIG4</i>	-0.0093 (-0.7633)	0.0097 (0.9398)
<i>CHANGE</i>	0.0348*** (5.1777)	0.0083* (1.9525)
<i>ANALYST</i>	-0.0073* (-1.7941)	0.0053** (2.3290)
Industry-fixed effects	yes	yes
Year-fixed effects	yes	yes
N	33,968	33,968
Pseudo-R <sup>2</sup>	0.0963	0.0896
Wald chi <sup>2</sup>	2,174.05	1,673.76

Note. This table reports the regression results of herding behavior in annual report disclosures. The dependent variable *DELAY* (*ADVAN*) is a dummy that equals 1 if the actual disclosure date is later (earlier) than the scheduled disclosure date and 0 otherwise. The key independent variable *FIRST* (*LAST*) is between 0 and 1 and reaches 1 if a firm's scheduled disclosure date is the first (last) one within its industry. The control variables are as defined in Table 1. All of the non-dummy independent variables are standardized and the reported coefficients are mean marginal coefficients. The reported *z*-statistics (in parentheses) are based on standard errors clustered by industry and year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

#### 5.4.2. Market reputation incentives

If firms have incentives to manage their market reputations by herding in annual reporting, we expect to observe differences in herding behavior. Such differences would stem from different kinds of news contained in the reports, considering that good news and bad news are timed in different ways (Givoly and Palmon, 1982; Patell and Wolfson, 1982; deHaan et al., 2015; Johnson and So, 2018). Following the random-walk earnings assumption (Brooks and Buckmaster, 1976; Foster et al., 1984), we use the earnings in the previous year as the prediction for the current year and measure the firms' unexpected earnings (*UE*) as the earnings of current year less the previous earnings and divided by the absolute value of the previous earnings. Based on *UE*,

the observations are split into good-news firms and bad-news firms. The regression results are reported in Table 6. In columns (1) to (4), we distinguish good news by whether *UE* is above 0. The impact of *FIRST* on *DELAY* is heterogeneous with respect to different kinds of news. As shown in columns (1) and (2), for good news, a one-standard-deviation increase in *FIRST* results in a 3.54% increase in the probability of delaying. For bad news, the probability of delaying increases sharply to 6.96%, exceeding the former by 3.42%. That is, bad news is more likely to be delayed if it is originally scheduled in a very early position within industry. However, in columns (3) and (4), a one-standard-deviation increase in *LAST* causes an increase of approximately 5% in the probability of bringing forward the disclosure regardless of whether it is good or bad news. In other words, a very late scheduled disclosure date within industry has an almost equal impact on bringing forward good news and bad news. In columns (5) to (8), we distinguish good news by whether *UE* is above the year-industry median and obtain results that are very similar to those in columns (1) to (4).

The results indicate that bad news that is originally scheduled on a very early date within an industry has a higher probability of being delayed to be disclosed with others. This implies that market reputation incentives play a role mainly in the herding behavior of bad news timing. Additionally, our results complement the findings by Tse and Tucker (2010). They document that negative earnings warnings tend to occur soon after the warnings of industry peers. We show that good news also has a propensity to cluster, whereas bad news is indeed more likely to wait for its peers.

#### 5.4.3. Competitiveness

Using the ratio of the market value of equity to the book value of equity and industrial concentration as proxies for proprietary costs, Bamber and Cheon (1998) and Sengupta (2004) find weak evidence to support the hypothesis that proprietary costs lengthen the reporting lag. In addition, industrial concentration is not only a proxy for proprietary costs but is also a measure of the intensity of industry competition (Cano-Rodríguez et al., 2017). In this study, we use the ratio of the market value of equity to the book value of equity (*MKBK*) as the proxy for proprietary costs and the Herfindahl-Hirschman Index (*HHI*) of sales, which reflects the industrial concentration, as the proxy for competition intensity (it is actually an alternative measure of proprietary costs). *HHI* is computed as follows:

$$HHI_{k,t} = \sum_{i=1}^n \left( \frac{SALE_{i,k,t}}{TOTALSALE_{k,t}} \right)^2 \quad (7)$$

Table 5  
Herding in annual reporting: Informational pressure mechanism.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Informational pressure proxied by <i>STD</i>				Informational pressure proxied by <i>DIV</i>			
	High <i>DELAY</i>	Low <i>DELAY</i>	High <i>ADVAN</i>	Low <i>ADVAN</i>	High <i>DELAY</i>	Low <i>DELAY</i>	High <i>ADVAN</i>	Low <i>ADVAN</i>
<i>FIRST</i>	0.0706*** (10.4908)	0.0065 (0.8200)			0.0711*** (10.3271)	0.0140 (1.4888)		
<i>LAST</i>			0.0771*** (9.4306)	0.0059 (1.1232)			0.0693*** (8.6968)	0.0158** (2.3801)
<i>Controls</i>	yes	yes	yes	yes	yes	yes	yes	yes
N	16,920	17,045	16,920	16,999	17,088	16,869	17,085	16,853
Pseudo-R <sup>2</sup>	0.1185	0.0911	0.1031	0.0775	0.1095	0.0985	0.1094	0.0734
Wald chi <sup>2</sup>	1,368.30	1,096.13	1,019.63	1,112.69	1,336.71	1,227.10	1,060.61	1,118.01

*Note.* This table reports the regression results of the informational pressure mechanism in the herding of annual reporting. In columns (1) to (4), the sample is split into high (low) informational pressure firms based on whether a firm's *STD* is below (above) the year-industry median. In columns (5) to (8), the sample is split based on whether a firm's *DIV* is below (above) the year-industry median. The dependent variable *DELAY* (*ADVAN*) is a dummy that equals 1 if the actual disclosure date is later (earlier) than the scheduled disclosure date and 0 otherwise. The key independent variable *FIRST* (*LAST*) is between 0 and 1 and reaches 1 if a firm's scheduled disclosure date is the first (last) one within its industry. The control variables are as defined in Table 1. The reported *z*-statistics (in parentheses) are based on standard errors clustered by industry and year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.



where  $SALE_{i,k,t}$  is the sales of firm  $i$  in industry  $k$  in year  $t$  and  $TOTALSALES_{k,t}$  is the total sales of industry  $k$  in year  $t$ . A higher  $HHI$  means that the market share is concentrated among a few firms in the industry, suggesting lower industry competition. In contrast, a lower  $HHI$  indicates that market share is more evenly held by firms in the industry, suggesting higher industry competition.

We denote the firms whose  $MKBK$  is above (below) the year-industry median as firms with high (low) proprietary costs and denote the firms in an industry with an  $HHI$  below (above) the year median as firms with high (low) competition intensity. We report the cross-sectional regression results in Table 7. The mean marginal coefficients on  $FIRST$  and  $LAST$  show no significant variance among all of the subsamples. This means that the influence of the within-industry position of the originally scheduled disclosure date on the decision to delay or bring forward the disclosure date is not moderated by proprietary costs or industry competition. In other words, competitiveness is not an underlying mechanism that causes herding in annual report timing and herding is not a strategy used to maintain competitive advantage or market status.

## 5.5. Robustness and sensitivity analyses

### 5.5.1. Excluding firms that originally schedule in January or April

Given the intuition that if a firm that originally schedules to disclose at a very early (late) date decides to reschedule, most likely the firm can only reschedule to a later (earlier) date, but not to an earlier (later) date. To rule out this alternative explanation for our findings, we construct two new subsamples to test our hypothesis. The first subsample excludes firms that originally schedule in January. The second subsample excludes firms that originally schedule in April. This allows us to remove firms that can reschedule only to later or earlier dates. The regression results are tabulated in columns (1) and (2) of Table 8. After excluding the firms that can only reschedule to later or earlier dates, we still find that firms herd in the annual reporting process.

### 5.5.2. Focusing on firms that originally schedule a date similar to the previous year

When firms apply to schedule, it is possible for those with knowledge about their peer firms' scheduled dates to consequently schedule a date corresponding to the dates of their peers, whereas firms without such knowledge may naively schedule the same disclosure date as in the previous year. If our basic hypothesis is true, then we should observe these naïve firms herding after seeing other firms' schedules. To test this possibility, we use a subsample of firms that originally schedule within 2 days of their past year's disclosure dates and check whether they reschedule to herd with peer firms in the industry. The new regression results are

Table 6  
Herding in annual reporting: Market reputation incentives mechanism.

	(1) (2) (3) (4)				(5) (6) (7) (8)			
	Whether $UE$ is above 0				Whether $UE$ is above the year-industry median			
	Good news $DELAY$	Bad news $DELAY$	Good news $ADVAN$	Bad news $ADVAN$	Good news $DELAY$	Bad news $DELAY$	Good news $ADVAN$	Bad news $ADVAN$
$FIRST$	0.0354*** (5.7269)	0.0696*** (11.4183)			0.0354*** (5.7549)	0.0629*** (12.2046)		
$LAST$			0.0520*** (10.0615)	0.0491*** (5.8660)			0.0538*** (8.2570)	0.0490*** (7.2896)
Controls	yes	yes	yes	yes	yes	yes	yes	yes
N	20,242	13,702	20,227	13,270	16,994	16,945	16,974	16,403
Pseudo- $R^2$	0.0823	0.1211	0.0859	0.1027	0.0836	0.1157	0.0925	0.0890
Wald $\chi^2$	1,214.07	1,368.75	960.59	983.23	1,052.60	1,567.72	998.59	943.99

Note. This table reports the regression results of the market reputation incentives mechanism in the herding of annual reporting. In columns (1) to (4), the sample is split into firms with good news ( $UE > 0$ ) and firms with bad news ( $UE < 0$ ). In columns (5) to (8), the sample is split based on whether a firm's  $UE$  is above (below) the year-industry median of  $UE$ . The dependent variable  $DELAY$  ( $ADVAN$ ) is a dummy that equals 1 if the actual disclosure date is later (earlier) than the scheduled disclosure date and 0 otherwise. The key independent variable  $FIRST$  ( $LAST$ ) is between 0 and 1 and reaches 1 if a firm's scheduled disclosure date is the first (last) one within its industry. The control variables are as defined in Table 1. The reported  $z$ -statistics (in parentheses) are based on standard errors clustered by industry and year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 7  
Herding in annual reporting: Competitiveness mechanism.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Proprietary costs				Industry competition			
	High <i>DELAY</i>	Low <i>DELAY</i>	High <i>ADVAN</i>	Low <i>ADVAN</i>	High <i>DELAY</i>	Low <i>DELAY</i>	High <i>ADVAN</i>	Low <i>ADVAN</i>
<i>FIRST</i>	0.0491*** (9.8435)	0.0469*** (6.8588)			0.0529*** (9.1387)	0.0454*** (6.9887)		
<i>LAST</i>			0.0503*** (9.6148)	0.0477*** (6.7742)			0.0554*** (8.2371)	0.0473*** (8.1801)
<i>Controls</i>	yes	yes	yes	yes	yes	yes	yes	yes
N	16,950	16,994	16,974	16,970	17,231	16,653	17,231	16,737
Pseudo-R <sup>2</sup>	0.0990	0.1039	0.0901	0.1018	0.1046	0.0900	0.0941	0.0907
Wald chi <sup>2</sup>	1,419.94	1,120.00	1,159.52	912.82	1,208.41	1,041.69	829.00	830.81

*Note.* This table reports the regression results of the competitiveness mechanism in the herding of annual reporting. In columns (1) to (4), the sample is split into firms with high (low) proprietary costs based on whether a firm's *MKBK* is above (below) the year-industry median. In columns (5) to (8) the sample is split into firms amid high (low) competition intensity based on whether the *HHI* of the industry is below (above) the year median. The dependent variable *DELAY* (*ADVAN*) is a dummy that equals 1 if the actual disclosure date is later (earlier) than the scheduled disclosure date and 0 otherwise. The key independent variable *FIRST* (*LAST*) is between 0 and 1 and reaches 1 if a firm's scheduled disclosure date is the first (last) one within its industry. The control variables are as defined in Table 1. The reported *z*-statistics (in parentheses) are based on standard errors clustered by industry and year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

reported in columns (3) and (4) of Table 8. We find that the naïve firms do herd in annual report disclosure, which consolidates our main conclusions above.

Additionally, we split the sample of naïve firms into two groups: herding firms and non-herding firms. A herding firm is a firm that originally schedules a disclosure date that falls in the first (last) 25% of all of the scheduled dates in the industry and reschedules to a later (earlier) date. In contrast, a non-herding firm is a firm that originally schedules a disclosure date that falls in the first (last) 25% of all of the scheduled dates in the industry but does not reschedule to a later (earlier) date. Using the two groups, we test the differences in informational pressure, market reputation incentives, and competitiveness between herding firms and non-herding firms. The T-test results reported in Table 9 show that the herding firms have a significantly higher informational pressure than the non-herding firms.<sup>4</sup> Furthermore, competitiveness exhibits no significant difference between the herding firms and the non-herding firms, which is consistent with the findings of the mechanism tests.<sup>5</sup>

### 5.5.3. Differences between herding firms and bold firms

To develop a better understanding of why firms reschedule, we select and partition the firms into four groups: early bold firms, early herding firms, late bold firms, and late herding firms. Early bold (herding) firms are the firms that originally schedule a disclosure date that falls in the first 25% of all of the scheduled dates in the industry and do not reschedule (but reschedule to a later date), whereas late bold (herding) firms are the firms that originally schedule a disclosure date that falls in the last 25% of all of the scheduled dates in the industry and do not reschedule (but reschedule to an earlier date). By comparing the differences in informational pressure, market reputation incentives, and competitiveness between the early bold firms and the early herding firms, we can determine what makes an early firm reschedule to a later date. Similarly, conducting the same analyses with late bold firms and late herding firms can help us determine what causes a late firm to reschedule to an earlier date. The results are reported in Table 10. In Panel A, we compare the early bold firms

<sup>4</sup> A small *STD* or *DIV* value means that the originally scheduled disclosure dates of industry peers are more concentrated, suggesting high informational pressure.

<sup>5</sup> The T-test results offer weak evidence that herding firms have better unexpected earnings, which does not coincide with the results in Section 5.4.2. Considering that firms with different signs of unexpected earnings probably reschedule their disclosure dates in opposite directions, we expect the results reported in Section 5.5.3 to be more robust for reputation incentives.

Table 8  
Robustness test results.

	(1) <i>DELAY</i>	(2) <i>ADVAN</i>	(3) <i>DELAY</i>	(4) <i>ADVAN</i>
<i>FIRST</i>	0.0528*** (10.3067)		0.0270*** (4.2631)	
<i>LAST</i>		0.0117*** (3.9156)		0.0457*** (7.1935)
<i>Controls</i>	yes	yes	yes	yes
N	33,468	16,588	9,057	8,973
Pseudo-R <sup>2</sup>	0.0946	0.0832	0.0810	0.0925
Wald chi <sup>2</sup>	2,120.80	939.11	576.02	495.03

*Note.* This table reports the results of the robustness tests using different subsamples. In column (1), firms that originally schedule in January are excluded. In column (2), firms that originally schedule in April are excluded. In columns (3) and (4), the sample consists of firms that originally schedule within 2 days of their previous year's disclosure date. The dependent variable *DELAY* (*ADVAN*) is a dummy that equals 1 if the actual disclosure date is later (earlier) than the scheduled disclosure date and 0 otherwise. The key independent variable *FIRST* (*LAST*) is between 0 and 1 and reaches 1 if a firm's scheduled disclosure date is the first (last) one within its industry. The control variables are as defined in Table 1. The reported z-statistics (in parentheses) are based on standard errors clustered by industry and year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

with the early herding firms. The early herding firms have a significantly greater informational pressure than do the early bold firms, and the early firms with unfavorable earnings tend to reschedule to a later date. Again, early bold firms and early herding firms have no significantly divergent competitiveness. In Panel B, we compare the late bold firms with the late herding firms. Informational pressure continues to play an important role in the herding of late firms. The results also suggest that the late firms with relatively unfavorable earnings are less likely to bring disclosure forward to an earlier date, which is a new finding adding to those in Section 5.4.2. However, we find no evidence supporting the mechanism of competitiveness. *MKBK* and *HHI* show no consistent and significant differences between the herding firms and the bold firms. Altogether, informational pressure is the dominant mechanism that underlies herding in annual report timing and market reputation incentives also play a role in shaping the herding of bad news. No robust evidence is found to support the role of competitiveness.

#### 5.5.4. Other robustness checks

Other robustness checks we conduct include using the first letter and the two-digit numbers specified in the Industry Classification Guidelines for Listed Companies by the CSRC in 2012 to denote the firms' industries, excluding industries with fewer than 5 or 10 firms. Inspired by Johnson and So (2018), we also expect the cases in which the gap between the scheduled and actual disclosure dates is no less than 2 days to be more informative. Hence, we let *DELAY* and *ADVAN* equal 1 only when the actual disclosure date differs from the scheduled disclosure date by at least 2 days. The new regression results are very similar to those tabulated above.

#### 5.6. Further analysis

We find that individual firms tend to wait or follow the disclosures of their industry peers when timing their own disclosure. In this section, we investigate whether the contingent adjustment of disclosure dates induced by waiting or following strategy influences the annual report quality. Intuitively, the firms that delay their annual report using the waiting strategy have more time than expected to prepare the report and have it audited. As a result, the report should be of good quality and less likely to be restated in the future. In contrast, the firms that bring forward their annual report using the following strategy have less time than expected to prepare it. Thus, the report is predicted to be of low quality and more likely to be restated. To examine this hypothesis, we build the following logit models:

$$\text{Logit}(\text{RES}_{i,t} = 1) = c + \alpha_1 \text{DELAY}_{i,t} + \alpha_2 \text{WAIT}_{i,t} + \alpha_3 \text{DELAY}_{i,t} * \text{WAIT}_{i,t} + \beta \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (8)$$

$$\text{Logit}(\text{RES}_{i,t} = 1) = c + \alpha_1 \text{ADVAN}_{i,t} + \alpha_2 \text{FOLLOW}_{i,t} + \alpha_3 \text{ADVAN}_{i,t} * \text{FOLLOW}_{i,t} + \beta \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (9)$$

Table 9  
Examining potential mechanisms using naïve firms.

	Non-herding firms	Herding firms	Mean-diff.
N	4,019	488	
<i>STD</i>	-0.1481	-0.3307	0.1826***
<i>DIV</i>	-0.1948	-0.4365	0.2417***
<i>UE</i>	-0.7412	-0.3052	-0.4360*
<i>UE_Ind_Adj</i>	-0.0953	-0.0284	-0.0669
<i>MKBK</i>	0.0071	0.0796	-0.0725
<i>HHI</i>	0.0179	0.0717	-0.0538

*Note.* This table reports the results of the T-test between the non-herding firms and the herding firms selected from the naïve firms. *STD* and *DIV* are defined as in formulas (5) and (6), respectively, measuring the informational pressure faced by individual firms. *UE* is unexpected earnings and *UE\_Ind\_Adj* is *UE* standardized by industry and year. *MKBK* is the ratio of the market value of equity to the book value of equity, a proxy for proprietary costs. *HHI* is defined as in formula (7), a proxy for competition intensity. For the convenience of comparison across industry and year, *STD*, *DIV*, and *MABK* are standardized by industry and year and *HHI* is standardized by year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

where  $RES_{i,t}$  indicates whether the annual report of firm  $i$  in year  $t$  is restated in the subsequent periods; it equals 1 if it is.  $WAIT_{i,t}$  is designed to reflect the waiting strategy of firm  $i$  in year  $t$ ; it equals 1 if  $FIRST_{i,t} > 0.75$ . The interaction term  $DELAY_{i,t} * WAIT_{i,t} = 1$  means that the annual report is delayed via the waiting strategy. Similarly,  $FOLLOW_{i,t}$  reflects the following strategy of firm  $i$  in year  $t$ ; it equals 1 if  $LAST_{i,t} > 0.75$ . The interaction term  $ADVAN_{i,t} * FOLLOW_{i,t} = 1$  means the annual report is brought forward via the following strategy.<sup>6</sup> The control variables are the same as those in model (1). The financial restatement cases cover the period of 2004 to 2017, with 27,455 observations in total.

The regression results are reported in Table 11. In column (2), the coefficient on *DELAY* is 0.0402. This means that the probability of a delayed annual report being restated is 4.02% higher than that of the non-delayed reports. However, the coefficient on *DELAY\*WAIT* suggests that if the report is delayed with the waiting strategy, the probability of it being restated is 3.38% lower than that of ordinary delayed reports. It is rational to argue that the better quality of the reports delayed via the waiting strategy is the result of the extra time received to prepare them well and have them audited. In column (4), the coefficients on *ADVAN* and *ADVAN\*FOLLOW* are both statistically insignificant, suggesting that annual report quality is not damaged by bringing forward the disclosure, regardless of whether the annual reports are brought forward using the following strategy. This is inconsistent with our prediction. This finding may imply that firms actually do not need that much time to prepare their annual report, as a shortened period is not necessarily related to a low-quality report. It also implies that A-share listed firms are accustomed to withholding annual reports even if they are already prepared.

## 6. Conclusion

China's stock market has a unique scheduled disclosure system for annual reports, wherein each firm is required to schedule a disclosure date for its annual report before it is disclosed. Using this unique scheduled disclosure system, we examine the within-industry herding behavior in annual report timing. The results show that firms that originally schedule an early disclosure date within their industry are more likely to delay disclosure, whereas firms that schedule a late date are more likely to bring forward disclosure. The results reveal the waiting and following strategies in the annual reporting process within industry. This kind of contingent adjustment of the disclosure date reflects herding in disclosure timing among industry peers.

<sup>6</sup>  $FIRST_{i,t} (LAST_{i,t}) > 0.75$  means that the originally scheduled disclosure date of firm  $i$  is very early (late) in the industry and that such a firm should have a very high propensity to delay (bring forward) disclosure. Thus, a change in its disclosure date is more likely to be driven by the waiting (following) strategy. As a robustness check, we adjust the threshold from 0.75 to 0.5 and obtain similar results.

Table 10  
Examining potential mechanisms using bold firms and herding firms.

Panel A: Early bold firms vs. early herding firms			
	Early bold firms	Early herding firms	Mean-diff.
N	4,096	1,061	
<i>STD</i>	−1.4269	−1.6124	0.1855***
<i>DIV</i>	−1.4347	−1.5790	0.1443***
<i>UE</i>	0.3901	−0.1660	0.5561***
<i>UE_Ind_Adj</i>	0.1531	0.0367	0.1164***
<i>MKBK</i>	0.1741	0.1468	0.0273
<i>HHI</i>	0.1024	0.1367	−0.0343
Panel B: Late bold firms vs. late herding firms			
	Late bold firms	Late herding firms	Mean-diff.
N	9,031	1,630	
<i>STD</i>	−0.0409	−0.1366	0.0957***
<i>DIV</i>	−0.0933	−0.2460	0.1527***
<i>UE</i>	−0.7835	−0.4658	−0.3177**
<i>UE_Ind_Adj</i>	−0.1142	−0.0447	−0.0695**
<i>MKBK</i>	−0.0174	0.1286	−0.1460***
<i>HHI</i>	−0.0493	−0.0171	−0.0322

*Note.* This table reports the results of the T-test between the bold firms and the herding firms selected from the early firms and the late firms, respectively. *STD* and *DIV* are defined as in formulas (5) and (6), respectively, measuring the informational pressure faced by individual firms. *UE* is unexpected earnings and *UE\_Ind\_Adj* is *UE* standardized by industry and year. *MKBK* is the ratio of the market value of equity to the book value of equity, a proxy for proprietary costs. *HHI* is defined as in formula (7), a proxy for competition intensity. For the convenience of comparison across industry and year, *STD*, *DIV*, and *MABK* are standardized by industry and year and *HHI* is standardized by year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

The mechanism tests indicate that informational pressure is the dominant reason for the observed timing herding. Individual firms are inclined to interpret the disclosure dates scheduled by their peers as better dates, giving them an incentive to adjust their own dates to be closer to those of their peers. The probability of rescheduling the disclosure date is much higher when the scheduled disclosure dates of industry peers are more concentrated. Market reputation incentives mainly underlie the herding of bad news. Bad news that is scheduled on a very early date within industry has a higher probability of being delayed. This aligns with findings that bad news is released later than expected (Johnson and So, 2018) and tends to cluster (Tse and Tucker, 2010).

We further find that although the delayed annual reports generally have a higher probability of being restated, the restatement probability decreases significantly if the reports are delayed via the waiting strategy. We attribute this improvement to the extra time that results for the reports to be prepared well and audited. However, the reports that are brought forward via the following strategy do not demonstrate lower quality than other reports. This suggests that bringing forward the disclosure date does not damage annual report quality, implying that firms do not actually need that much time to prepare their annual reports.

We document herding behavior among industry peers in annual reporting, enrich the scarce empirical studies on sequential mandatory disclosure decisions within industry, and offer a better understanding of why and how listed firms time their disclosures. Although our study is based on the scheduled disclosure system for annual reports in China's stock market, it could be expanded to other markets and voluntary disclosures. In markets without this system, the unobservability of each firm's original disclosure plan makes it hard to depict the dynamic process of herding disclosure. Nonetheless, it is also reasonable to expect that firms are, in the same manner as Chinese listed firms, delaying and bringing forward their disclosures to wait or follow their industry peers. As for voluntary disclosures, the non-mandatory characteristics may imply a more evident herding effect in disclosure timing.

Table 11  
Testing the impact of herding in annual reporting on report quality.

	(1) <i>RES</i>	(2) <i>RES</i>	(3) <i>RES</i>	(4) <i>RES</i>
<i>DELAY</i>	0.0322*** (5.6058)	0.0402*** (6.9132)		
<i>WAIT</i>		0.0138* (1.7434)		
<i>DELAY*WAIT</i>		-0.0338*** (-2.6037)		
<i>ADVAN</i>			0.0089 (1.0413)	0.0085 (1.1165)
<i>FOLLOW</i>				0.0072 (1.3779)
<i>ADVAN*FOLLOW</i>				-0.0008 (-0.0512)
<i>Controls</i>	yes	yes	yes	yes
N	27,455	27,455	27,455	27,455
Pseudo-R <sup>2</sup>	0.0392	0.0396	0.0378	0.0379
Wald chi <sup>2</sup>	851.59	869.93	843.76	847.80

*Note.* This table reports the regression results of the impact of herding in annual reporting on report quality. The dependent variable *RES* is a dummy that equals 1 if the report is restated in the future and 0 otherwise. The independent variable *DELAY* (*ADVAN*) is a dummy that equals 1 if the actual disclosure date is later (earlier) than the scheduled disclosure date and 0 otherwise. *WAIT* is designed to reflect the waiting strategy and equals 1 if *FIRST* > 0.75. The interaction term *DELAY\*WAIT* = 1 means that the annual report is delayed via the waiting strategy. *FOLLOW* reflects the following strategy and equals 1 if *LAST* > 0.75. The interaction term *ADVAN\*FOLLOW* = 1 means that the annual report is brought forward via the following strategy. The control variables are as defined in Table 1. The reported z-statistics (in parentheses) are based on standard errors clustered by industry and year. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgements

We acknowledge financial support from the National Social Science Foundation of China (16BGL004). We also appreciate the editor and the anonymous reviewer for their constructive comments.

## References

- Aubert, F., 2009. Determinants of Corporate Financial Disclosure Timing: The French Empirical Evidence Working paper. Université d'Auvergne (Clermont-Ferrand I).
- Bamber, L.S., Cheon, Y.S., 1998. Discretionary management earnings forecast disclosures: Antecedents and outcomes associated with forecast venue and forecast specificity choices. *J. Account. Res.* 36 (2), 167–190.
- Banerjee, A., 1992. A simple model of herd behavior. *Quart. J. Econ.* 107 (3), 797–817.
- Bartov, E., Konchitchki, Y., 2017. SEC filings, regulatory deadlines, and capital market consequences. *Account. Horizons* 31 (4), 109–131.
- Bird, A., Edwards, A., Ruchti, T.G., 2018. Taxes and peer effects. *Account. Rev.* 93 (5), 97–117.
- Brockbank, B.G., Hennes, K.M., 2018. Strategic timing of 8-K filings by privately owned firms. *Account. Horizons* 32 (2), 163–182.
- Brooks, L.D., Buckmaster, D., 1976. Further evidence of the time series properties of accounting income. *J. Financ.* 31 (5), 1359–1373.
- Brown, N.C., Christensen, T.E., Elliott, W.B., 2012. The timing of quarterly 'pro forma' earnings announcements. *J. Bus. Financ. Account.* 39 (3–4), 315–359.
- Brown, N.C., Gordon, L.A., Wermers, R.R., 2006. Herd Behavior in Voluntary Disclosure Decisions: An Examination of Capital Expenditure Forecasts Working paper. University of Southern California.
- Cano-Rodríguez, M., Márquez-Illescas, G., Núñez-Níckel, M., 2017. Experts or rivals: Mimicry and voluntary disclosure. *J. Bus. Res.* 73, 46–54.



- Chen, Y.-C., Hung, M., Wang, Y., 2018. The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *J. Account. Econ.* 65 (1), 169–190.
- deHaan, E., Shevlin, T., Thornock, J., 2015. Market (in)attention and the strategic scheduling and timing of earnings announcements. *J. Account. Econ.* 60 (1), 36–55.
- Dellavigna, S., Pollet, J.M., 2009. Investor inattention and Friday earnings announcements. *J. Financ.* 64 (2), 709–749.
- Deutsch, M., Gerard, H.B., 1955. A study of normative and informational social influences upon individual judgment. *J. Abnormal Soc. Psychol.* 51 (3), 629–636.
- Dye, R.A., Sridhar, S.S., 1995. Industry-wide disclosure dynamics. *J. Account. Res.* 33 (1), 157–174.
- Financial Accounting Standards Board, 2010. Conceptual framework for financial reporting—Chapter 1, The objective of general purpose financial reporting, and Chapter 3, Qualitative characteristics of useful financial information (a replacement of FASB concepts statements No. 1 and No. 2). In: Statement of Financial Accounting Concepts No. 8. Financial Accounting Standards Board, Norwalk, CT.
- Foster, G., 1981. Intra-industry information transfers associated with earnings releases. *J. Account. Econ.* 3 (3), 201–232.
- Foster, G., Olsen, C., Shevlin, T., 1984. Earnings releases, anomalies, and the behavior of security returns. *Account. Rev.* 59 (4), 574–603.
- Gennotte, G., Trueman, B., 1996. The strategic timing of corporate disclosures. *Rev. Financ. Stud.* 9 (2), 665–690.
- Givoly, D., Palmon, D., 1982. Timeliness of annual earnings announcements: Some empirical evidence. *Account. Rev.* 57 (3), 486–508.
- Graham, J.R., Harvey, C.R., Rajgopal, S., 2005. The economic implications of corporate financial reporting. *J. Account. Econ.* 40 (1–3), 3–73.
- Guttman, I., Kremer, I., Skrzypacz, A., 2014. Not only what but also when: A theory of dynamic voluntary disclosure. *Am. Econ. Rev.* 104 (8), 2400–2420.
- Haw, I.-M., Park, K.J., Qi, D., Wu, W., 2006. Securities regulation, the timing of annual report release, and market implications: Evidence from China. *J. Int. Financ. Manage. Account.* 17 (2), 110–139.
- Heinle, M.S., Verrecchia, R.E., 2015. Bias and the commitment to disclosure. *Manage. Sci.* 62 (10), 2859–2870.
- Hirshleifer, D.A., Lim, S.S., Teoh, S.H., 2009. Driven to distraction: Extraneous events and underreaction to earnings news. *J. Financ.* 64 (5), 2289–2325.
- Hung, M., Wong, T.J., Zhang, F., 2015. The value of political ties versus market credibility: Evidence from corporate scandals in China. *Contemp. Account. Res.* 32 (4), 1641–1675.
- Johnson, T.L., So, E.C., 2018. Time will tell: Information in the timing of scheduled earnings news. *J. Financ. Quantit. Anal.* 53 (6), 2431–2464.
- Jovanovic, B., 1982. Truthful disclosure of information. *Bell J. Econ.* 13 (1), 36–44.
- Krishnan, J., Yang, J.S., 2009. Recent trends in audit report and earnings announcement lags. *Account. Horizons* 23 (3), 265–288.
- Kross, W., Schroeder, D.A., 1984. An empirical investigation of the effect of quarterly earnings announcement timing on stock returns. *J. Account. Res.* 22 (1), 153–176.
- Lambert, T.A., Jones, K.L., Brazel, J.F., Showalter, D.S., 2017. Audit time pressure and earnings quality: An examination of accelerated filings. *Acc. Organ. Soc.* 58, 50–66.
- Lee, H.-Y., Mande, V., Son, M., Cahan, S., 2015. Are earnings announced early of higher quality? *Account. Financ.* 55 (1), 187–212.
- Leventis, S., Weetman, P., 2004. Timeliness of financial reporting: Applicability of disclosure theories in an emerging capital market. *Account. Bus. Res.* 34 (1), 43–56.
- Li, L., Winkelman, K.A., D'Amico, J.R., 2014. Peer pressure on tax avoidance: A special perspective from firms' fiscal year-ends. *J. Account. Financ.* 14 (6), 171–188.
- Lieberman, M.B., Asaba, S., 2006. Why do firms imitate each other? *Acad. Manag. Rev.* 31 (2), 366–385.
- Lin, Y., Mao, Y., Wang, Z., 2018. Institutional ownership, peer pressure, and voluntary disclosures. *Account. Rev.* 93 (4), 283–308.
- Ma, C., Du, H., Zhang, J., 2018. Chinese accounting restatement and the timeliness of annual report. *Appl. Econ.* 50 (50), 5436–5453.
- Noh, S., So, E.C., Weber, J.P., 2019. Voluntary and mandatory disclosures: Do managers view them as substitutes? *J. Account. Econ.* 68 (1) 101243.
- Patell, J.M., Wolfson, M.A., 1982. Good news, bad news, and the intraday timing of corporate disclosures. *Account. Rev.* 57 (3), 509–527.
- Sengupta, P., 2004. Disclosure timing: Determinants of quarterly earnings release dates. *J. Account. Public Policy* 23 (6), 457–482.
- Seo, H., 2021. Peer effects in corporate disclosure decisions. *J. Account. Econ.* 71 (1) 101364.
- Sinha, N., Fried, D., 2008. Clustered disclosures by competing firms: The choice of fiscal year-ends. *J. Account., Auditing Finance* 23 (4), 493–516.
- Son, M., Crabtree, A.D., 2011. Earnings announcement timing and analyst following. *J. Account., Auditing Finance* 26 (2), 443–468.
- Tse, S., Tucker, J.W., 2010. Within-industry timing of earnings warnings: Do managers herd? *Rev. Acc. Stud.* 15 (4), 879–914.
- Tuo, L., Yu, J., Zhang, Y., 2020. How do industry peers influence individual firms' voluntary disclosure strategies? *Rev. Quant. Financ. Acc.* 54 (3), 911–956.
- Verrecchia, R.E., 1983. Discretionary disclosure. *J. Account. Econ.* 5 (1), 179–194.
- Wagenhofer, A., 1990. Voluntary disclosure with a strategic opponent. *J. Account. Econ.* 12 (4), 341–363.
- Wang, Z., Chen, M.-H., Chin, C.L., Zheng, Q., 2017. Managerial ability, political connections, and fraudulent financial reporting in China. *J. Account. Public Policy* 36 (2), 141–162.