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journal homepage: www.journals.elsevier.com/journal-of-accounting-and-economicsCalling for transparency: Evidence from a field experiment[☆]T.J. Wong^a, Gwen Yu^{b,*}, Shubo Zhang^c, Tianyu Zhang^d^a University of Southern California, CA, USA^b University of Michigan, MI, USA^c Shanghai Jiao Tong University, China^d Shenzhen Finance Institute, The Chinese University of Hong Kong, Shenzhen, China

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ABSTRACT

We examine how firms respond to requests for enhanced disclosure that we make on an online investor platform. Exploiting variation in firms' customer and supplier disclosures, we ask a randomized set of non-disclosing firms to provide information on their customers' and suppliers' identities. We find that the firms' probability of disclosure depends on the basis we give for the demand—requests appealing to disclosure's usefulness to investors lead to more frequent disclosure, while those appealing to regulators' preference for disclosure lead to less frequent disclosure. The requests we make on the platform lead to more frequent customer- and supplier-related inquiries from other platform users. We also find that the treatment firms' disclosure of customer and supplier information improves in the next period's regulatory filings. The findings suggest that investor platforms can enhance corporate transparency by increasing retail investors' ability to demand information.

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1. Introduction

Disclosure is shaped by an interactive process that involves both managers and external parties (Healy and Palepu, 2001). Prior research has documented how managers' disclosure incentives are affected by established stakeholders such as institutional investors, regulators, and financial analysts (Beyer et al., 2010; Bushee et al., 2003; Lang and Lundholm, 1993). Recently, online investor platforms that allow a broader set of investors to call for disclosure have emerged (Antweiler and Frank, 2004; Blankespoor, 2018). In this paper, we use a field experiment to examine whether and how retail investors can enhance disclosure by exerting pressure on firms through an online investor platform.

We run our experiment on EasyIR (HudongYi), a major interactive investor platform (IIP) in China. Established by the Shenzhen Stock Exchange in 2010, the EasyIR platform allows any investor to pose questions of corporate managers.

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Managers respond to the individual questions, and these interactions become visible to the public. Before the platform existed, retail investors in China lacked channels through which to directly interact with firms. The EasyIR platform established a way for retail investors to easily access and publicly interact with firm managers.

We argue that EasyIR and other IIPs allow retail investors to exert pressure on firms by allowing them to coalesce as a group and coordinate their requests. Through IIPs, retail investors can observe other investors' demands, discover topics of common interest, and work collectively on common requests (e.g., by asking similar or follow-up questions on the platform). We posit that IIPs allow these investors, who otherwise have widely disparate interests, to develop a common identity based on their shared interest in understanding the value of the firms they follow.

However, it is not *ex ante* obvious that IIPs allow retail investors to develop a collective identity that is strong enough to make firms respond to their disclosure requests. Even if IIPs increase retail investors' attention to disclosure deficiencies and thereby facilitate collective action, the resulting pressure may not be sufficient to change firms' disclosure behavior. If firms perceive investors' requests as noise or believe that the platform disseminates irrelevant information created by unverified individuals (Jia et al., 2020), they may see no reason to provide better disclosure. Thus, the increased demand for disclosure on these platforms might not outweigh the supply-side resistance from the firms providing (or not providing) the information.

We pick the EasyIR platform as our setting for several reasons. First, EasyIR is an open platform where all investors have equal access to management. When the stock exchange, in conjunction with the China Securities Regulatory Commission (CSRC), first developed the platform, one of the key objectives was to give retail investors a low-cost channel through which to access corporate representatives. Any investor can interact with a firm by directly posting on the public forum designed for that firm. In line with the regulators' objective, the platform users are predominantly retail investors (Wang et al., 2021; Chau et al., 2019; Lee and Zhong, 2022) who otherwise lack direct and timely access to firm management.

Second, all posts and responses on the EasyIR platform are publicly visible. While many firms maintain investor relations (IR) hotlines as ways for investors to submit inquiries, the communication on the hotlines is often limited to one-on-one interactions. In contrast, the EasyIR platform is an open forum where both the questions and responses are visible to the public. The public nature of online investment platforms (and other social media platforms) has been identified as a key feature that can amplify the public's voice (Enikolopov et al., 2020). We argue that the public nature of the EasyIR platform shapes user behaviour in meaningful ways. For example, our posts' being made public may change the behavior of *other* platform users and allow the initial posts to have persistent effects on firms.

It is important to note, however, that the EasyIR platform has features that make it distinct from other social media platforms. The most distinguishing feature is that the exchange requires firms to participate in the platform and to read and respond to *all* posts.¹ These requirements allow us to draw cleaner inferences, as all firms—not just those that voluntarily choose to engage with retail investors—are included in the experiment. Because firms are required to read all questions, we know they are aware of the requests we post on the platform. In other words, any nondisclosure is a firm's deliberate choice and does not occur because the firm is unaware of our request. However, the regulated nature of the platform also makes it challenging for us to generalize our findings to other setting where similar requirements do not exist. In settings with no regulatory oversight, it is possible that posts from retail investors may not yield enough power to change firms' disclosure behavior.²

In our experiment, we post, on the EasyIR platform, inquiries in which we ask treatment firms to provide more disclosure. Specifically, we request, from a randomized set of 750 non-disclosing firms, the identities of their major customers and suppliers. We follow the subsequent posts and examine (i) whether firms respond by providing the requested information, and (ii) whether our posts change the types of questions asked by other users on the platform. Our experimental setting addresses the well-known problem, in archival settings, that the choice to exert pressure on target firms is not random and can therefore affect the efficacy of the observed association (Bloomfield et al., 2016). By randomizing our treatment over a set of non-disclosing firms, we address this concern about selection effects driving our results.

Another element of the treatment condition is that we vary the framing of the information requests we post for firms. Specifically, we use four different bases for the disclosure requests: request from an investor for decision making, request from a social influencer, regulatory preference, or industry peer pressures. This is analogous to asking questions in conference calls but varying how the questions are phrased. By varying the wording, we test whether a particular type of framing will lead to more responsiveness.

For our construct of firms' disclosure transparency, we use variation in the disclosure of the identities of major customers and suppliers across firms. Information about a company's customers and suppliers is key for investors in emerging markets. In these markets, economic transactions are based on relationships, and knowing the identities of each party allows investors

¹ The stock exchange actively monitors the questions and responses on the platform. Firms that fail to respond to posts can receive warning letters from the exchange or suffer in their IR rankings. See <https://www.szse.cn/certificate/maind/mainrules/P020180328465749555003.pdf>.

² The lack of regulatory requirement does not necessarily mean that social media platforms face no oversight. Other social media platforms may be monitored by other mechanisms such as oversight by its users. Conversely, the existence of such regulatory requirements on the EasyIR platform may not immediately suggest strong regulatory oversight. The enforcement of the requirement may be weak. We observe that although the response rate of firms is close to 100%, the quality of the responses is often poor, suggesting weak oversight over firm's responses.

to evaluate the quality of these relationships. However, because disclosure of customer and supplier identity information is largely voluntary, firms vary greatly in the extent to which they provide it. The voluntary disclosure regime yields a large sample of non-disclosing firms for our experiment.³

We find that the percentage of firms that respond to our posts by providing identity information on the platform is low: 5%. However, the likelihood of firms disclosing this information varies systematically with the basis we give for our request. Firms have a higher disclosure rate when our requests reference disclosure's usefulness to investors. Requests that refer to the regulator's preference do not increase disclosure likelihood and, in fact, lead to more nonresponses. Similarly, appeals based on one's social influence or on industry peer pressure do not enhance the response rate.

We also test whether our posts affect the monitoring behavior of *other users* on the platform. In particular, we ask whether our posts lead other users to post similar disclosure-related questions. We find that after our treatment conditions are implemented, treatment firms experience a 6.15% increase (from 7.36% to 13.51%) in customer- and supplier-related inquiries from other platform users. The increase in questioning from other users is even higher when (i) the basis for our request is disclosure's usefulness to investors, and (ii) the firm failed to provide the requested information in response to our original request.

We examine effects beyond the platform by testing the firms' disclosure in their subsequent annual reports. We find that the likelihood of non-disclosing firms starting to disclose identity information in their next period's filings is higher for the treatment firms than for the control firms (which faced no inquiries). The findings suggest that the effects of public pressure from IIPs can persist beyond the one-off interactions on the platform.

When we examine cross-sectional differences in the types of firms that provide information, we find that firms that act more favorably towards retail investors (i.e., that give more timely and longer responses to questions posted in the year prior to our experiment) are more likely to disclose the information we requested. In contrast, we find that firms that face more user demand (i.e., those that are asked more customer- and supplier-related questions by other platform users) are less likely to respond to our requests. The high number of inquiries directed to the latter group could reflect retail investors' pushback against the firms' reticence with information (although other factors could be in play). Thus, it is not surprising that these firms are less likely to disclose information to us. In sum, the findings suggest there is cross-sectional variation in the types of firms that are likely to supply information to retail investors.

We contribute to several strands of literature. First, we add to the literature that documents the growing importance of online platforms in corporate disclosure. Some of the prior studies in this literature focus on how *firms* use platforms to disseminate information, at times strategically, to their investor base (Blankespoor et al., 2014; Jung et al., 2018). Other studies have shown that *investors'* participation in online platforms is meaningful and can resolve information asymmetry in the capital market (Lee and Zhong, 2022). We contribute to this literature by asking whether investors can use online platforms to monitor firms, whether firms respond meaningfully to investors on these platforms, and how investors can elicit more meaningful responses.

Second, we contribute to the literature on how external monitoring can shape firm disclosure. Prior studies in this literature focus on various external parties, including institutional investors (Bushee et al., 2003), financial analysts (Lang and Lundholm, 1993), external auditors (Ball et al., 2012), peer firms (Badertscher et al., 2013; Shroff et al., 2013), and nongovernmental organizations (NGOs) (Belnap, 2020), and find that each has a role in monitoring corporate disclosure. The study most closely related to ours, Belnap (2023), shows how NGOs can exert pressure on firms' tax reporting through social media platforms such as Twitter. Our setting differs from Belnap (2023) in that we focus on monitoring by retail investors and not NGOs. Unlike NGOs, which may have incentives to increase the visibility of their monitoring activities, retail investors are more likely to simply be seeking information. Thus, it is possible that firms will consider retail investors' questions to be less pressing than questions from NGOs. To our knowledge, our study is the first to examine how public pressure from retail investors through online investor platforms can shape reporting transparency.

Third, our study contributes to the literature on emerging markets and determinants of disclosure. In addition to our overall focus on retail investors' role in promoting transparency, we test how various types of requests affect firms' responsiveness. We find that appealing to disclosure's usefulness to investors has a stronger effect than appealing to a regulator's preference for transparency. Appealing to the regulator's preference may be effective in making firms meet the regulator's disclosure requirement, but it also gives firms a perverse rationale for satisfying only the minimum requirement. Our findings suggest that when the appeals instead focus on obligations to investors, firms are more likely to commit to transparency that goes beyond the regulatory threshold.

2. Institutional background

2.1. Online interactive investor platforms

Investors in emerging markets have limited channels through which to demand information from firms. Although the emergence of channels such as open conference calls, roadshows, and site visits has allowed investors better access, most of

³ Disclosing identity information is recommended, but not required, for firms listed on the Main board, the Growth Enterprise Market (GEM) board, and the Small Medium Entity (SME) board with concentration less than 30%. The only exception is firms on the Small Medium Entity (SME) board with a concentration greater than 30%, which are required to disclose identity information. We exclude these firms from our main analysis and present them in an additional analysis (Section 6.1). See Section 2 and APPENDIX C for detailed wording of the regulations for all listed firms and firms on the SME board.

these channels are available only to institutional investors that hold significant stakes in the firm. Retail investors generally lack these direct channels. Their lack of direct access to firms is a particularly important challenge in China, where 85% of the daily trading volume comes from retail investors and only 15% comes from institutional investors (Jones et al., 2021). The fact that retail investors predominate in China and are only weakly protected by the nation's investor protection laws (Bushman et al., 2004) makes it easy for firms to engage in opacity, which they justify based on their need to preserve trade secrets or proprietary information.

To facilitate investors' access to public firms, the stock exchanges in China, in conjunction with the China Securities Regulatory Commission (CSRC), created online platforms where investors can interact with company representatives. On these platforms, any investor can post questions, provide feedback, or make suggestions on issues such as corporate governance, financial reporting, and corporate policies. As intended, the users are predominantly retail investors (Wang et al., 2021; Chau et al. 2019; Lee and Zhong 2022) who lack alternative channels to access firm management.

We use the EasyIR platform, established by the Shenzhen Stock Exchange (<http://irm.cninfo.com.cn/>), for the experiment. The platform went live on November 12, 2010, as a part of the exchange's special program to protect investor rights, and is the largest investor platform operated by the exchanges in China.⁴ The platform is actively used, with an average web traffic that exceeds 1.5 million visits per day. By the end of 2017, more than 2.4 million posts had been made by 170,746 unique users on the platform (see APPENDIX A, Panel A).

EasyIR is a public platform that allows its users to post questions. As on most other social media platforms, the questions—and the responses they generate—are publicly observable. However, EasyIR differs from other investment platforms in that all firms on the platform are required to read and respond to all questions.⁵ A frequent problem in studying investor demand is that the researcher does not know whether a lack of responsiveness results from firms' (i) being unaware of demands, or (ii) being aware of them but choosing not to respond. In our setting, we know that firms are aware of the requests on the platform and that the observed outcome is their deliberate response. Empirically, we confirm that the percentage of questions answered on the platform is high at 95.8% (see APPENDIX A, Panel B).

In Panel C of APPENDIX A, we show the distribution of the types of questions posted on the EasyIR platform. To classify the questions into topics, we start by identifying 11 topics after reading through a large sample ($N = 100,000$) of randomly selected posts. We then use natural language processing technique (bidirectional encoder representations from transformers (BERT)) to train a sample ($N = 80,000$). We test the accuracy of the training model using a holdout sample ($N = 20,000$) and compare the results using classifications based on actual readings of the questions. The accuracy rate of the holdout sample classification is 89%.⁶

We find that the inquiries cover a wide range of topics. The most frequently raised topic is the companies' operations (17.63%), followed by disclosure (13.68%) and capital markets (14.24%). There are also frequent posts about firms' relationships with the government (9.38%) and other stakeholders (9.38%). In APPENDIX B, we provide a few examples (translated) of dialogues, on the platform, about the topics that are most relevant to our experiment: disclosure, business relationships, and government relationships. We note that 32.44% of the dialogues on the platform belong to these three topics. The examples show that users are not only seeking clarification of disclosed information but also asking for new information from companies.⁷ In Example 1, which is a typical dialogue about a company's disclosure, the company clarifies the change in impairment loss for the year. In examples 2 and 3—dialogues about a company's business relationships and government relationships, respectively—investors ask for, and receive, specific information about the relationships.

Within the disclosure category, we examine whether there are posts related to customer and supplier disclosure from other users on the platform. In addition to asking the firm to provide the identity of its top five customers and top five suppliers (example 6), users also request information about whether a specific company is a major customer (example 4), about specific changes in sales to and purchases by the top customers and suppliers (example 5), and about the identities of, or specific relationships with, top suppliers or customers (examples 7 and 8). We also provide the companies' answers to the users' questions in the above examples. Companies sometimes provide the requested information through the platform (example 8). Other times, they decline to answer (example 4), redirect the question (examples 5 and 6), or provide a rationalization for not answering (example 7), which is consistent with the response categories we find in our experiment. While posts about customer and supplier identities account for only a small portion of the disclosure-related inquiries, we were able to confirm that a demand for such information exists among investors.

⁴ The Shanghai Stock Exchange launched a similar platform, eIR ("eHudong"), on July 5, 2013. We focus on the EasyIR platform because it covers a broader set of firms and is more active, with more posts and web traffic. See APPENDIX A, Panel A for a detailed distribution of the user activities on the three major IIPs in China.

⁵ The cost of failing to respond is nontrivial. The stock exchange routinely monitors firms' response rates and issues warning letters when firms are not responsive. In 2019, Dabeinong (SME code: 002385), a crop seed manufacturer, received a warning letter from the exchange after failing to respond to nearly half of the questions posted on its EasyIR platform (SME warning letter No 254). The exchange requested that Dabeinong internally investigate and take corrective actions. The firm immediately implemented a wide range of remedial actions. In addition to replying to all unanswered questions, the firm increased its internal resources in its IR function by hiring more staff (Announcement ID: 2019-053).

⁶ The testing was done with the help of three master's students in accounting and finance from the Chinese University of Hong Kong, Shenzhen.

⁷ Lee and Zhong (2022) argue that the EasyIR platform prevents investors from receiving any *new* information. We clarify that firms are only prevented from disclosing new information on the platform if they are required to initially release the information elsewhere. If firms first disclose such information through the EasyIR platform, they indeed violate the rules. However, information that is considered voluntary, such as customer and supplier identity disclosures, can be released first on EasyIR.

2.2. Building retail investors' collective identity and ability to demand information

Retail investors suffer from a classic free-rider problem when they demand more disclosure from firms: because their individual stakes in firms are small, they lack strong incentives to collect information about the firms. Even when retail investors as a group hold a large percentage of a firm's stocks, they may not know what kind of information is important in decision making. And if they do identify the needed information, they may still face challenges in coordinating as a group and finding an appropriate channel for making their voice heard. For these reasons, studies find that retail investors' influence on firms is often limited (Fisch, 2017; Gulinello, 2010).

The challenges that retail investors face in demanding information are particularly acute in China. Although retail investors dominate the capital market there, the level of investor protection is weak. Retail investors have limited means to access firms, and the few opportunities they do have are generally less intimate than those for other financial intermediaries (e.g., institutional investors). We expect that IIPs in general, and EasyIR in particular, can serve as a low-cost information platform for retail investors in China. Two key features of EasyIR should enable it to fulfill this role: (i) it serves as a platform on which retail investors can make direct inquiries to firms; and (ii) it potentiates a broader information flow through the public release of all communication between retail investors and firms.

In designating a platform specifically for retail investors, the exchange recognized the importance of these investors and firms' duty to respond to them. EasyIR empowers retail investors to seek information through their own information channel, an option that had previously been made available only to institutional investors and financial analysts. The involvement of the exchange and the securities regulator in managing this platform further legitimizes the retail investors' right to demand information.

The fact that EasyIR makes retail investors' communication with firms publicly visible gives these investors additional leverage. It enables them to learn about each other's requests and to identify shared questions and information needs.⁸ This, in turn, allows them to align their monitoring efforts and make more informed inquiries.

These two features together should strengthen the collective identity of retail investors, who would otherwise be unable to pressure firms as a group. Prior research in sociology (e.g., Melucci, 1995; Polletta and Jasper, 2001) argues that an increase in a social group's collective identity enhances the group's ability to engage in collective action.⁹ By learning about each other's questions, focusing on common concerns, and asking similar questions or follow-up questions on the platform, retail investors may pressure firms more strongly for information. As a result, firms may come to view retail investors as a powerful collective rather than as individuals who hold only small shares. Also, the firms' incentives to respond to retail investors could increase. Firms may learn that a failure to adequately address retail investors' requests will lead to increased attention, more follow-up questions, and, in more extreme circumstances, sales of shares and excessive price movements that draw attention from regulators. Although these collective actions are not the same as those in traditional shareholder activism (e.g., proxy fights), the IIP users' increased attention could spur retail investors to divest, which may drive down share prices.

However, there are reasons why the EasyIR platform might fail to create a collective identity for retail investors. Despite having a dedicated platform, investors may continue to act independently and fail to converge on a common set of issues. Even if they do engage in some level of collective action by making common disclosure requests, they may not generate enough pressure to change firms' disclosure strategies. Firms may fail to respond meaningfully because they view the investors' requests as noise, or because they view not responding as a lower-cost strategy than disclosing proprietary information (which could perturb their relationships with key stakeholders) (Li et al., 2020). Therefore, it remains an empirical question whether EasyIR can foster collective action that is strong enough to overcome firms' resistance.

2.3. Disclosure of major customer and supplier information in China

We use the quality of firms' customer and supplier information to measure the transparency of their disclosures. Detailed information about the composition and concentration of a company's customers and suppliers is critical for investors who hope to better understand company operations and firm fundamentals. For example, a high customer concentration can result in lower margins for firms if key customers demand better trade terms (Dhaliwal et al., 2016; Hui et al., 2019), or it can benefit firms by allowing stable, collaborative relationships with major players in the supply chain (Patatoukas, 2011). To understand how a firm's major customers and suppliers affect firm fundamentals, one must know their identities so that the nature of the relationships can be judged.

We observe large variation in the disclosure of customer and supplier identities across firms. Firms may have economic reasons for withholding this information. For example, concerns about proprietary costs can lead to nondisclosure, as disclosure may reveal business secrets to competitors (Ellis et al., 2012). In emerging markets, the costs of revealing customer and supplier identities may extend beyond merely inviting more competition. For example, some business relationships may lack legitimacy, and exposing them may undermine trust in firms. And if a firm's key customer or supplier is the government,

⁸ Studies find that the public nature of social media platforms helps advance social movements by augmenting social groups' collective identity and collective action (Milan, 2015; Enikolopov, Makarin, and Petrova, 2020).

⁹ Social media platforms have promoted the creation of collective identity among social groups. For example, "We are the 99 Percent," "Me Too," and "GameStop retail investors" (Milan, 2015) became large social movements. For GameStop, a short squeeze that was triggered by social media drove its share price to USD 33.7 billion, temporarily making it the highest-valued company on the Russell 2000 Index.

disclosing the relationship could reveal information about government policies, which could cost the firm its political connections.

To promote transparent disclosure, the China Security Regulatory Commission (CSRC) requires companies to provide at least some information on their activities involving major customers and suppliers. Since January 1, 2012, companies have been required to provide the aggregate purchase amounts from their top five suppliers and the aggregate sales amounts to their top five customers. Disclosure of the *identities* of the top suppliers and customers, though encouraged, is not required for the vast majority of firms; it instead falls into a voluntary disclosure regime. The exception is firms listed on the Small and Medium Enterprise (SME) board whose purchases from a single supplier (sales to single customer) exceed 30% of total purchases (sales). The disclosure requirement for these firms is closer to a mandatory regime, with bright-line reporting thresholds (see APPENDIX C for the disclosure rules). In order to focus on the voluntary regime, we exclude firms on the SME board that exceed the 30% reporting threshold from our main experiment. We run a separate experiment for the SME firms that fall under the mandatory regime and present the findings in additional tests.

3. Sample selection

Our sample starts with all firms listed on the Shenzhen Stock Exchange by the end of 2018. We collect firms' disclosure of major suppliers and customers from the companies' 2018 annual reports using the China Stock Market & Accounting Research (CSMAR) database. We limit our sample to firms for which disclosure of customer and supplier identity information is considered voluntary. This includes firms on the Main board, the Growth Enterprise Market (GEM) board, and the SME board with concentration less than 30%. We exclude the firms for which disclosure of identity information is required—that is, the 94 firms on the SME board with concentration greater than 30% in 2018. We also exclude 27 firms that provide only aggregate sales and purchase figures or no information. We present the findings of the mandatory regime in additional tests.¹⁰

We identify non-disclosing firms based on whether they provide the identities of their top five suppliers and top five customers in the 2018 annual reports. Table 1, Panel A shows the distribution of the firms' disclosure behavior. Of the 2023 firms in our sample, 402 (19.87%) disclose the identities of their top five customers and top five suppliers. We classify the remaining 1621 firms (80.13%) in our non-disclosing sample. The non-disclosing firms reveal varying levels of information about their suppliers and customers. A small portion, ten firms (0.49% of the total), disclose only aggregate sales and purchase

Table 1
Deficiencies in Customer and supplier disclosure.

| Panel A: Frequency of deficient customer and supplier disclosure | | | | | |
|---|-----------|------------|------------------------------|------------|--------------------|
| | Suppliers | Percentage | Customers | Percentage | |
| Deficient disclosure firms | | | | | |
| - No information | 17 | 0.84% | 17 | 0.84% | |
| - Only providing aggregate sales/purchases | 10 | 0.49% | 13 | 0.64% | |
| - Providing individual sales/purchases without supplier/customer identity | 1594 | 78.79% | 1588 | 78.50% | |
| All deficient disclosure firms | 1621 | 80.13% | 1618 | 79.98% | |
| Full disclosure firms | 402 | 19.87% | 405 | 20.02% | |
| All firms | 2023 | 100% | 2023 | 100% | |
| Panel B: Firm characteristics of deficient disclosure firms | | | | | |
| | Obs. | Mean Size | Mean Market Concentration(%) | Mean M-B | Mean SOE Indicator |
| Deficient disclosure firms | | | | | |
| - No information | 17 | 24.23 | N/A | 3.29 | 0.53 |
| - Only providing aggregate sales/purchases | 10 | 23.29 | 27.35 | 2.76 | 0.30 |
| - Providing individual sales/purchases without supplier/customer identity | 1594 | 22.02 | 32.39 | 2.76 | 0.17 |
| All deficient disclosure firms | 1621 | 22.05 | N/A | 2.76 | 0.17 |
| Full disclosure firms | 402 | 22.20 | 36.48 | 3.85 | 0.37 |
| All firms | 2023 | 22.08 | 33.19 | 2.98 | 0.21 |

We collect the disclosure of customer and supplier information from the 2018 annual reports of all firms. Panel A presents the distribution of deficient disclosure behavior across firms. We define deficient firms based on whether a firm provides the identities of its top five suppliers and top five customers in 2018. Panel B presents the firm characteristics by firms' disclosure behavior. Size is measured as the natural log of the ending total assets in 2018. Market concentration is the purchases from top five suppliers as a percentage of total purchases in 2018. The SOE indicator takes a value of one if the firm's ultimate shareholder is the government, and zero otherwise. Market-to-book (M-B) ratio is the total market value of equity divided by the ending book value of equity at the end of the year 2018.

¹⁰ Twenty-one firms in our voluntary sample are SME firms that were initially in the voluntary regime but fell within the mandatory region in 2019 after exceeding the reporting threshold. The disclosure motive for these firms may be the exchange's requirements rather than our call for transparency. In additional tests (untabulated), we find similar results after dropping these 21 firms (i.e., after requiring that all firms belong to the voluntary regime in both 2018 and 2019).

figures, which is what the regulation requires. The vast majority, 1594 firms (78.79%), voluntarily provide individual sales and purchase information but not identity information. Finally, 17 firms (0.84%) provide no information.

In Panel B, we present firm characteristics by disclosure behavior. Size is measured as the natural log of the ending total assets in 2018. Non-disclosing firms are more likely to be larger.¹¹ The average of the log of assets is 24.23 (USD 4.75 billion) for firms in the “No information” group¹² and 23.29 (USD 1.86 billion) for firms that provide only aggregate purchase/sales figures, compared with 22.02 (USD 520 million) for firms that provide full disclosure. A significant portion of the sample (21%) is state-owned enterprises (SOEs). The percentage of SOEs varies by disclosure behavior. SOEs account for 53% of firms in the “No information” group but only 17% of firms that provide individual sales/purchase information only. Interestingly, SOEs also account for a nontrivial portion (37%) of the “Full disclosure” category. Together, these results suggest that competing disclosure incentives may result in U-shaped outcomes for these firms (Kim et al., 2021).

4. Experiment design

4.1. Assignment of treatment and control firms

We start with the 1594 non-disclosing firms (i.e., firms that fail to provide identities of their top five customers and top five suppliers) (see Table 1) and, after a matching process, randomly assign them into equal-sized treatment and control groups. To ensure balanced covariates, we construct pairs of treatment and control firms by matching on size, supplier concentration, and industry membership. We match on size because it is strongly correlated with disclosure behavior, as shown in Panel B in Table 1. We match on market concentration and industry membership because these variables are likely to affect disclosure incentives by directly affecting proprietary costs. Market concentration is based on purchases from the top five suppliers as a percentage of total purchases in 2018. Industry membership is based on two-digit CSRC industry codes for manufacturing industries and one-digit CSRC industry codes for all other industries.

The matching process is conducted as follows. We divide all firms into equal-sized groups based on size (three groups) and market concentration (three groups). The different combinations of size and market concentration result in nine groups. Within the same industry membership and each size–market concentration group, we randomly assign firms into treatment and control groups. We lose 88 firms for which we cannot find a matching firm within the same industry and the same size–market concentration group. We also drop six firms from groups with uneven numbers of observations. Our final sample consists of 750 firm-pairs, each comprising a treatment firm and a control firm. The sample selection process is detailed in Table 2, Panel A.

After identifying the pairs, we randomly assign each into one of five subgroups. The subgroups allow us to vary the types of questions asked. The first subgroup is the baseline case, where we insert no basis for the information demand. The remaining four groups each give different bases for demanding enhanced disclosure: (i) regulatory preference, (ii) usefulness to investors, (iii) peer effects, or (iv) social influence. We postpone a more detailed discussion about the different bases to Section 4.3. Table 2, Panel B presents covariate balances for the treatment and control groups within each question type. The statistics indicate that observable covariates are balanced across the treatment and control groups. There are no significant differences in *Size* or *Market concentration* in each treatment and control sample.

4.2. Calling for disclosure on the EasyIR platform

We administer the experiment with input from the Shenzhen Stock Exchange.¹³ We post questions on the EasyIR platform for our treatment firms. The posts are anonymized to firms; the firms see only the six-digit registration number of the individual making the inquiry.¹⁴ All submitted inquiries become publicly available once approved by the stock exchange.¹⁵

We sequence the posts based on firms' annual report release calendars. All public firms register their annual report release dates with the exchange, and the exchange makes the calendar of release dates available on January 1 of each year. We post the questions exactly 30 days before the scheduled release date for the firm's annual report. Our first inquiry on the EasyIR platform, posted on January 9, 2020, is for Focus Technology (SME code: 00215), which was scheduled to release its 2019 annual report on February 9, 2020. We finish posting questions for all treatment firms by April 21, 2020. Fig. 1 presents the

¹¹ Because we require that firms be non-disclosing, our sample may be biased towards larger firms. Also, because the firms that are likely to benefit from disclosure may be more inclined to provide it voluntarily, our sample may include a disproportionate number of firms that have higher costs of disclosure. This could bias against our being able to elicit disclosure during our experiment.

¹² We use USD throughout the paper after applying a 1:7 exchange rate (1 USD = 7 RMB).

¹³ Personnel at various levels at the stock exchange were aware of the experiment and provided feedback.

¹⁴ We use 30 different registration IDs to post our inquiries.

¹⁵ The Shenzhen Stock Exchange withholds a small number of inquiries that it deems inappropriate. Firms do not observe inquiries withheld by the exchange. While the exact criteria for withholding posts is unknown, a senior person at the stock exchange commented that withholding takes place for (i) posts with inappropriate language, and (ii) repetitive posts. In our experiment, approximately 3.3% (23 out of 750) of our inquiries were withheld by the exchange. The withheld inquiries came from the following groups: three from baseline, three from regulatory preference, four from usefulness to investors, four from peer effect, and 11 from social influence. There were no systematic relations between the timing of the inquiries being posted and the withholding decision.

Table 2
Treatment and control firms.

| Panel A: Sample selection | | | | | | | |
|--|--------------|-----------------------|-------------------------|--------------|------------------|---------------|----------------|
| | Observations | | | | | | |
| All firms | 2023 | | | | | | |
| Less firms with full disclosure | (402) | | | | | | |
| Less firms without detailed disclosure of individual sales/purchases | (27) | | | | | | |
| Firms with deficiencies in their supplier disclosure | 1594 | | | | | | |
| Less firms without a matching pair | (88) | | | | | | |
| Less firms in groups with uneven numbers of observations | (6) | | | | | | |
| Final deficient firm sample | 1500 | | | | | | |
| Panel B: Characteristics of treatment and control firms | | | | | | | |
| Claims | | | | | | | |
| | Base-line | Regulatory preference | Usefulness to investors | Peer effects | Social influence | Total | ANOVA (F-test) |
| | (1) | (2) | (3) | (4) | (5) | (1)+ ... +(5) | |
| # of firm pairs | 150 | 150 | 150 | 150 | 150 | 750 | |
| Size | | | | | | | |
| Treatment | 21.76 | 22.13 | 21.99 | 22.02 | 22.06 | 22.04 | 1.66 |
| Control | 21.84 | 22.15 | 22.06 | 22.03 | 22.13 | 21.99 | |
| Difference | (0.63) | (0.12) | (0.52) | (0.10) | (0.56) | (0.85) | |
| Market concentration (%) | | | | | | | |
| Treatment | 33.86 | 32.41 | 30.09 | 31.84 | 30.91 | 32.70 | 1.22 |
| Control | 34.90 | 32.47 | 31.16 | 32.79 | 31.20 | 31.82 | |
| Difference | (0.48) | (0.50) | (0.51) | (0.51) | (0.17) | (0.98) | |

In this table, Panel A presents the sample selection process for our deficient firm sample. Panel B compares characteristics of the treatment and control firms across the matching variables. Size is measured as the natural log of the ending total assets in 2018. Market concentration is the purchases from top five suppliers as a percentage of total purchases in 2018. We present the results by the type of question, which varies by the basis given for the disclosure request. The first group is the baseline case, where we insert no basis for our disclosure request. The remaining four groups offer different bases for the disclosure request: (i) regulatory preference, (ii) usefulness to investors, (iii) peer effects, and (iv) social influence. See Section 4.3 for a detailed discussion of the claims. *T*-statistics appear in parentheses and test for the difference in means.

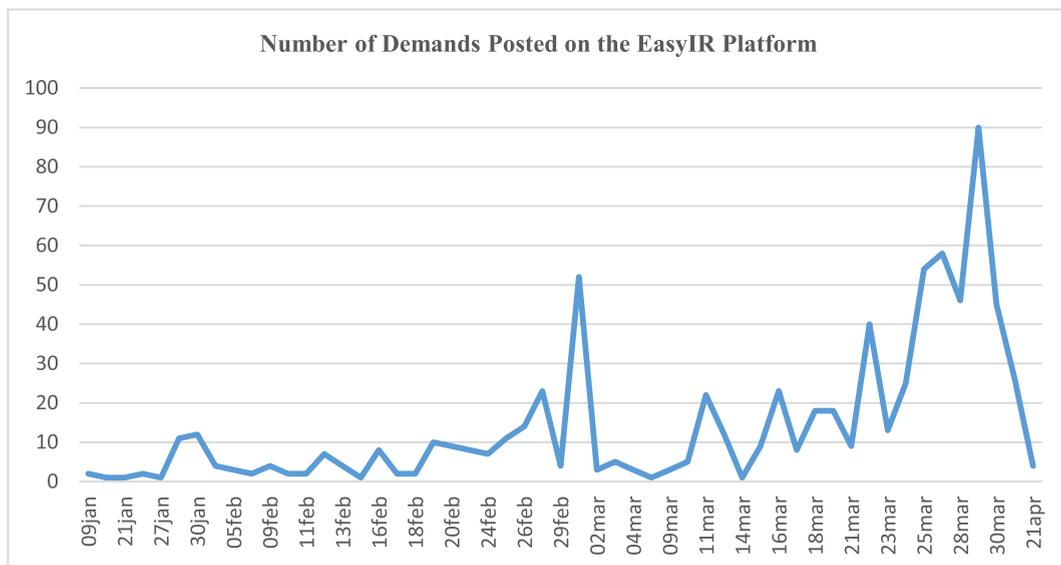


Fig. 1. Distribution of the number of demands posted on the EasyIR platform each day.

number of demands posted each day throughout the experiment.^{16,17} For each inquiry, we follow the firm's responses on a weekly basis until 21 days after the question was posted. On average, firms respond to our inquiries within 3.5 days after the post. More than 75% of treatment firms respond within four days.

Due to the public nature of the online platform, it is possible that there is contamination within treatment groups. For example, treatment firms may see similar questions posted on the platform for other firms and infer that there is heightened investor scrutiny of customer and supplier information. To minimize contamination effects, we ensure that the wording of the questions is not identical within each group. Our information requests are worded differently but similar in content, length, and tone.¹⁸

Another possible contamination could go from the treatment group to the control group. If the control group firms become aware of platform users' frequent inquiries about customer and supplier identities, they may respond by voluntarily providing this information to their own investors. To the extent that control firms respond to conditions that are intended only for treatment firms, it will bias against our finding treatment effects in the experiment. Thus, the documented magnitude is likely to be of a lower bound.

4.3. Varying the types of questions

One salient feature of our experiment is that we can vary how the questions are asked on the platform. This is analogous to asking questions in conference calls but varying the phrasing of the questions. To test for factors that may lead to more responsiveness, we use four variations on the baseline disclosure request.

First, we point out that the Chinese securities regulator, CSRC, encourages firms to disclose their top five suppliers and top five customers. CSRC wields significant influence over firms since it has the final authority to permit their IPOs and subsequent share offerings and since its regulatory actions can determine whether the Chinese courts hear civil lawsuits against firms (Sheng, 2014). Thus, we posit that firms will be more likely to respond to our requests if we mention CSRC's preference for more transparent disclosure. However, it is also possible that mentioning the CSRC preference will have little or no effect. The cost of violating a CSRC regulation may be high, but there are no clear benefits to going beyond what the regulations require. Thus, firms that have already fulfilled the minimum regulatory requirements may have little incentive to respond to our requests. A request for more information on the basis of regulatory preference could even lead them to rationalize their nondisclosure, rather than motivate them to provide more information.

Second, we identify ourselves as a shareholder and state that the requested information will help us make investment decisions. To the extent that appealing to the information's usefulness to shareholders heightens the firms' concern about retail investors' collective identity, this will pressure firms to respond to our information request. A spurned information request on an online platform could become public knowledge, heightening investors' attention and possibly even leading to collective action. However, the firms' disclosure decision is an empirical issue that depends on a cost–benefit trade-off. If firms' disclosure costs outweigh the benefits of providing useful information to investors, then we may not observe an increased response rate with this claim.

Third, we claim that firms should provide the identity information because other firms in the same industry have done so. We posit that a firm will feel pressured to respond to our request if its peer firms are making similar disclosures (Lin et al., 2018). Since 20% of the firms in our sample have voluntarily disclosed the information we request, there is likely to be some peer effect. On the other hand, the peer effect may be limited in China because of the nature of the business transactions there. Since the firms' contracts with stakeholders are primarily relationship-based and since the relationships are highly specific, the peer effect on firms' voluntary disclosures may be minimal (Wong et al., 2019).

Fourth, we claim that the request is from a social influencer. Prior research has found that social media in China (e.g., online stock forums), being independent of the government's press control, can benefit from the “wisdom of the crowd” and provide significant information to the market (Wang et al., 2021). If the firms believe that we, as “a social influencer,” can command other retail investors' attention and prompt them to ask similar questions, the firms may feel increased pressure to disclose. However, because the EasyIR online platform does not allow retail investors to communicate and network with one another, the firms may not consider our claim credible. In addition, the user identities on the platform are anonymous, and firms have no means to verify them. And even if firms do perceive the claim as credible, they may simply view social media as a rumor mill and thus hesitate to share information with a social influencer whose background and track record is unknown (Jia et al., 2020).

¹⁶ The distribution of the number of annual report releases scheduled each day can be uneven, ranging from no firms to a maximum of 90 firms on a single day. The releases are clustered around the 22nd and 30th of April.

¹⁷ The original date we planned to finish posting the questions was March 31, 2020. However, during our periodic check, we discovered that four posts (one from baseline, two from claims of peer effect, and one from claims of social influence) were not uploaded to the platform. We suspect that they may have been dropped in the uploading process because there were too many submissions that week. We submitted these four postings the day we discovered the missing posts (April 21, 2020), which was three weeks after the original scheduled date. Dropping these four firms has no significant results on our findings.

¹⁸ For each treatment group, we populate six differently worded questions. The average similarity score across the different question types (within each treatment group) is 86%, based on the cosign distance of textual words. To ensure that firms' responses were not influenced by our wording differences, we examine the mean differences in the types of responses across the six different question types. The F-score of ANOVA test shows no significant difference for all treatment groups, suggesting that it is unlikely that wording differences led to different firm responses.

APPENDIX D presents the baseline question (without any of the four claims) and the questions with the four different claims. As a sixth question, we add an additional claim for the subsample of small and medium-size enterprises (SMEs) that are listed in the Shenzhen Stock Exchange and are required by the CSRC to disclose the identity of their top supplier or top customer because the purchases from that supplier or the sales to that customer exceed the 30% threshold (see APPENDIX C for the regulation). We expect that, if we refer to this mandatory requirement in our claim (which is different from the *regulatory preference* claim in the voluntary regime), these firms will be likely to disclose the identity information, because the request will remind them that they are in violation of the CSRC regulation. This question can serve as a validation to the experiment, as we expect a higher response rate for firms in a mandatory regime than for firms in a voluntary one.

5. Empirical findings

5.1. Responses on the platform

We present the types of responses on the platform for our treatment firms. In addition to whether or not firms disclose identity information, there is large variation in how they respond to the inquiries. For example, some firms acknowledge having received the question but provide no further explanation; others rationalize not providing the requested information. We classify the responses into four different types: (i) No explanation, (ii) Redirecting, (iii) Rationalizing, and (iv) Providing information.

The *No explanation* category includes all responses where firms acknowledge having received the question but provide no further information—i.e., cases where firms remain silent. At the other extreme is the *Providing information* category, where firms respond by providing identity-related information directly on the platform or opportunities for investors to obtain this information (e.g., by committing to disclose).

In the other two categories, firms do not provide identity information but provide some form of additional explanation. If the firm does not disclose the requested information but provides a rationalization for its lack of disclosure, we label this as a *Rationalizing* response. Firms' stated reasons for not providing identity information include concerns about the public issuance of this information and arguments that they are already in compliance with the minimum mandatory requirement or are adhering to standard industry reporting practices. In contrast, if the firm discloses information that is not directly relevant to the question, we label this as *Redirecting* behavior. A common example of *Redirecting* is when firms respond with slogans or unrelated boilerplate text. Hollander, Pronk, and Roelofsen (2010) find that failing to respond directly to a question can be a negative sign, as it may indicate that managers have no legitimate response. On the other hand, Cade (2018) finds that redirecting behavior can be an effective strategy on social media, as investors prefer it to no response.

Table 3, Panel A presents the distribution of the different types of responses for all treatment firms ($N = 725$).¹⁹ We find that the portion of firms providing new information is small at 5.10% (37 firms).²⁰ The most frequent category is *Rationalizing*, at 51.86% (376 firms), followed by *No explanation* at 21.66% (157 firms) and *Redirecting* at 21.38% (155 firms).

We next examine firms' responses based on the grounds for the information request. We first consider inquiries that base the request on the regulator's preference for greater transparency. When we appeal to regulator's preference, 32.65% of responses are *No explanation*, which is 17.01% higher (z -stat = 3.41) than for the baseline question. Another 43.54% of answers are *Rationalizing*, 20.41% are *Redirecting*, and 3.4% are *Providing information*. These levels are closer to, but lower than, those in the baseline case. The distribution suggests that appealing to the regulator's preference makes firms shift from discussing their lack of disclosure to providing no explanation.

When "usefulness to investors" is the basis for the information request, the findings are very different. The percentage of *No explanation* responses is low, at 15.75%, but not statistically different from the baseline case. The percentage of *Providing information* responses is 8.90%, which is significantly higher (z -stat = 1.96) than the rate (3.4%) in the baseline case.

For the peer effects and social influence categories, the percentage of *No explanation* answers is 22.60% and 21.58%, respectively. In each case, this is higher than, but not statistically different from, the baseline case. The percentage of *Providing information* responses is 4.79% when the claim involves peer effects and 5.04% when the claim involves social influence. These levels are not statistically different from the baseline. Both categories show a lower percentage of *Rationalizing* responses than the baseline case: 17.38% lower (z -stat = -2.98) for peer effects and 10.14% lower (z -stat = -1.73) for social influence. The percentage of *Redirecting* behavior is 9.04% higher (z -stat = 1.81) for the peer effects category than for the baseline case. Thus, in the social influence and peer effects categories, relative to baseline, we find a shift in the responses from *Rationalizing* to either *No explanation* or *Redirecting*, similar to the findings for claims involving regulatory preference.

¹⁹ The number of treatment firms drops from 750 to 725 because the exchange's review process withheld the posts for 23 firms. Additionally, we excluded 2 firms that already disclosed their suppliers' identities but were identified to be deficient in our sample because they did not disclose the identities of their customers.

²⁰ One possible explanation for the low response rate is that the majority of the firms in our sample have already disclosed more information than the regulation requires. As shown earlier, nearly 80% of the firms in our sample disclose sales and purchase figures of individual customers and suppliers even though the disclosure rules only call for the disclosure of aggregate amounts.

Table 3
Treatment firms' responses on the platform.

| Panel A: Distribution of responses for all treatment firms | | | | | | | | | |
|--|----------------------|---------------------|------------------|-----------------------|----------------------------|--|--|--|--|
| Type of responses | No explanation | Redirecting | Rationalizing | Providing information | Final sample in total | | | | |
| # of firm responses | 157 | 155 | 376 | 37 | 725 | | | | |
| % of firms | 21.66% | 21.38% | 51.86% | 5.10% | 100% | | | | |
| Panel B: Distribution of responses by types of questions | | | | | | | | | |
| Types of questions | # of treatment firms | % of No-explanation | % of Redirecting | % of Rationalizing | % of Providing information | | | | |
| Types of questions: | | | | | | | | | |
| Baseline | 147 | 23 15.64% | 29 19.73% | 90 61.22% | 5 3.40% | | | | |
| Claims of regulatory preference | 147 | 48 32.65% | 30 20.41% | 64 43.54% | 5 3.40% | | | | |
| Difference from baseline | | 17.01%*** (3.41) | 0.68 (0.15) | -17.68%*** (-3.04) | 0.00% (0.00) | | | | |
| Claims of usefulness to investors | 146 | 23 15.75% | 23 15.75% | 87 59.59% | 13 8.90% | | | | |
| Difference from baseline | | 0.11% (0.03) | -3.98% (-0.89) | -1.63% (-0.29) | 5.50%*** (1.96) | | | | |
| Claims of peer effects | 146 | 33 22.60% | 42 28.77% | 64 43.84% | 7 4.79% | | | | |
| Difference from baseline | | 6.96% (1.51) | 9.04%* (1.81) | -17.38%*** (-2.98) | 1.39% (0.60) | | | | |
| Claims of social influence | 139 | 30 21.58% | 31 22.30% | 71 51.08% | 7 5.04% | | | | |
| Difference from baseline | | 5.94% (1.29) | 2.57% (0.53) | -10.14%* (-1.73) | 1.64% (0.69) | | | | |

This table presents the distribution of the treatment firms' responses on the platform. Panel A presents the distribution of responses for the entire sample. *No explanation* refers to firms that acknowledge having received the question but provide no further explanation within 20 days after the question is posted. *Redirecting* refers to firms that do not disclose identity information but provide additional information that is not directly relevant to the question. *Rationalizing* refers to firms that do not disclose identity information but provide a rationalization for their lack of disclosure. *Providing information* refers to firms that provide identity-related information directly on the platform or opportunities for investors to obtain this information. Panel B presents the responses by the type of question. The question type varies by the basis given for the disclosure request. In the baseline case, we insert no basis for our disclosure request. The remaining four question types offer different bases for the disclosure request: (i) regulatory preference, (ii) usefulness to investors, (iii) peer effects, and (iv) social influence. See Section 4.3 for a detailed discussion of the question types. We compare the frequency of responses in each claim to the baseline case. *T*-statistics of *t*-tests and *Z*-scores of proportions tests appear in parentheses just below the differences. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Overall, we find that requests that appeal to disclosure's usefulness to investors are the most effective in eliciting disclosure from firms. In contrast, using regulatory preference as the basis for the information request makes firms shift from *Rationalizing* to *No explanation* and leads to the highest *No explanation* rate. We find similar shifts from *Rationalizing* to either *No explanation* or *Redirecting* when we use peer effects or social influence as the basis for the request.

5.2. Subsequent monitoring efforts by other users

Social media channels naturally encourage broader conversations and engagement among their users. Being public in nature, social media interactions may draw attention from other media and information intermediaries, further expanding the range of interactions.²¹ We examine whether our intervention makes other users on the platform increase their monitoring efforts. Specifically, we test whether our inquiries lead to more frequent customer- and supplier-related inquiries by other platform users, which would indicate an increase in collective action.

We capture customer- and supplier-related inquiries based on the questions' content. We classify a question as customer- or supplier-related if it includes any of the following words: "supplier," "customer," "purchase," and "sales."²² We track all questions on the platform for five days before and five days after our intervention. For each firm, we compare the frequency of customer- and supplier-related questions in the post-period [1 day, 5 days] relative to the pre-period [-5 days, -1 day], then compare the changes to those in the control group. The control group allows us to address the concern that we are capturing a general increase in disclosure-related topics during the period.

Table 4, Panel A shows the changes in customer- and supplier-related questions by other platform users before and after our intervention. Before the intervention, the percentage of customer- and supplier-related questions is 7.36% for treatment firms and 9.89% for control firms. The difference is not statistically significant (not tabulated). After our intervention, the percentage of customer- and supplier-related questions increases by 6.15%, to 13.51%, for the treatment firms. The 6.15% increase is statistically significant (*z*-stats = 6.47). For the control firms, the percentage of customer- and supplier-related questions declines from 9.89% to 9.21% during the same time period, a change that is not statistically significant. Overall,

²¹ We find evidence of broader dissemination. Some posts from our experiment were picked up and disseminated widely in investor blogs. For example, on March 9, Xinlian Electronics' (stock code: 002546) answer to our disclosure request appeared on Sina Finance, a financial news network that is the Chinese equivalent of Yahoo Finance. See <https://finance.sina.cn/stock/relnews/dongmiqa/2020-03-09/detail-iimxyqvz9041983.d.html?from=wap>.

²² The word list is based on the most frequent keywords that appear in the text of (i) the regulatory disclosure rules for customer and supplier information and (ii) firm-level disclosure of customer and supplier information in the annual reports of all Chinese A-share listed firms. After excluding the stop words, the four words that appear most frequently are "supplier" (供应商), "customer" (客户), "purchase" (采购), and "sale" (销售). Source: <http://www.sse.com.cn/lawandrules/regulations/csccannoun/cj/4444089.pdf>.

Table 4
Effect on subsequent monitoring by other platform users.

| Panel A: All treatment firms | | | | | | | | |
|-----------------------------------|------------|------------------------------|-----------------------------------|------------|-----------------------------|-----------------------------------|------------|--------------------|
| | # of Firms | Pre-period [-5 days, -1 day] | | | Post-period [1 day, 5 days] | | | Difference |
| | | All questions (a) | Customer and supplier related (b) | % (=b)/(a) | All questions (a) | Customer and supplier related (b) | % (=b)/(a) | |
| Treatment | 725 | 2012 | 148 | 7.36% | 2162 | 292 | 13.51% | 6.15%*** (6.47) |
| Control | 725 | 2254 | 223 | 9.89% | 2074 | 191 | 9.21% | -0.68% (-0.76) |
| Panel B: By types of questions | | | | | | | | |
| Questions | T/C | Pre-period [-5 days, -1 day] | | | Post-period [1 day, 5 days] | | | Difference |
| | | All questions (a) | Customer and supplier related (b) | % (=b)/(a) | All questions (a) | Customer and supplier related (b) | % (=b)/(a) | |
| Baseline | T | 361 | 20 | 5.54% | 380 | 43 | 11.32% | 5.78%*** (2.82) |
| | C | 464 | 41 | 8.84% | 449 | 32 | 7.13% | -1.71% (-0.95) |
| Claims of regulatory preference | T | 445 | 45 | 10.11% | 461 | 67 | 14.53% | 4.42%** (2.02) |
| | C | 514 | 68 | 13.23% | 483 | 54 | 11.18% | -2.05% (-0.99) |
| Claims of usefulness to investors | T | 410 | 22 | 5.37% | 432 | 61 | 14.12% | 8.75%*** (4.26) |
| | C | 505 | 47 | 9.31% | 402 | 44 | 10.95% | 1.64% (0.82) |
| Claims of peer effects | T | 360 | 32 | 8.89% | 456 | 68 | 14.91% | 6.02%*** (2.61) |
| | C | 373 | 37 | 9.92% | 418 | 38 | 9.09% | -0.83% (-0.39) |
| Claims of social influence | T | 436 | 29 | 6.65% | 433 | 53 | 12.24% | 5.59%*** (2.82) |
| | C | 398 | 30 | 7.54% | 322 | 23 | 7.14% | -0.40% (-0.20) |

Panel C: By types of firms' answers

| Responses | T/C | Pre-period [-5 days, -1 day] | | | Post-period [1 day, 5 days] | | | Difference |
|---------------------|-----|------------------------------|-----------------------------------|--------------|-----------------------------|-----------------------------------|--------------|--------------------|
| | | All questions (a) | Customer and supplier related (b) | % $(=b)/(a)$ | All questions (a) | Customer and supplier related (b) | % $(=b)/(a)$ | |
| No explanation | T | 365 | 29 | 7.95% | 430 | 59 | 13.72% | 5.77%*** (2.59) |
| | C | 621 | 64 | 10.31% | 593 | 51 | 8.60% | -1.71% (-1.01) |
| Redirecting | T | 497 | 42 | 8.45% | 507 | 60 | 11.83% | 3.38%* (1.77) |
| | C | 393 | 33 | 8.40% | 353 | 30 | 8.50% | 0.10% (0.05) |
| Rationalizing | T | 1071 | 68 | 6.35% | 1125 | 157 | 13.96% | 7.61%*** (5.88) |
| | C | 1150 | 115 | 10.00% | 1050 | 104 | 9.90% | -0.10% (-0.07) |
| Provide information | T | 79 | 9 | 11.39% | 100 | 16 | 16.00% | 4.61% (0.88) |
| | C | 90 | 11 | 12.22% | 78 | 6 | 7.69% | -4.53% (-0.97) |

This table presents the changes in the types of questions by *other users* on the platform. Panel A presents the changes in the types of questions before and after our experiment for the entire sample. *All questions* include all types of questions posted by other platform users. *Customer and supplier related* questions include any questions related to customer-supplier disclosure issues. We classify a question as customer- or supplier-related if it includes any of the following words: "supplier" (供应商), "customer" (客户), "purchase" (采购), or "sale" (销售). Panel B presents the changes by the different types of question in our intervention. The question type varies by the basis given for the disclosure request. In the baseline case, we insert no basis for our disclosure request. The remaining four question types offer different bases for the disclosure request: (i) regulatory preference, (ii) usefulness to investors, (iii) peer effects, and (iv) social influence. See Section 4.3 for a detailed discussion of the question types. Z-statistics of proportional tests are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

we find that the percentage of customer- and supplier-related questions by other platform users significantly increases for the treatment firms but not the control firms following our intervention.

Next, we examine the difference based on the types of questions asked. The baseline question results in a significant 5.78% increase (z -stat = 2.82) in the frequency of customer- and supplier-related questions from the pre-period to the post-period. In contrast, the control sample shows a 1.71% reduction in the frequency of customer- and supplier-related questions during the same time period. All four question types (other than the baseline question) motivate similar follow-up questions from other platform users, but the “usefulness to investors” type elicits more monitoring than the other three. When “usefulness to investors” is the basis for the information request, the percentage of customer- and supplier-related questions on the platform increases from 5.37% to 14.12% following our intervention. This 8.75% increase is statistically significant (z -stat = 4.26). In contrast, the control firms show a 1.64% increase in the percentage of customer- and supplier-related questions during the same time frame, which is not statistically significant. These results could occur because online platform posts that appeal to retail investors’ collective identity encourage other users to ask similar questions and follow-up questions. Another possibility is that such posts show other investors that customer and supplier information is important, which helps them overcome information-processing costs and spurs them to ask more about the topic.

We also examine how the types of answers by firms affect subsequent monitoring by other platform users. We consider two possible outcomes, which are not mutually exclusive. One is that firms that fail to respond to our inquiry experience a monitoring increase, as they receive many similar questions from other users. The other is that firms that provide information experience a monitoring increase, as retail investors ask them follow-up questions and become more inquisitive about the firms’ IR policies and attitude towards retail investors.

Table 4 Panel C presents the results partitioned by firms’ four answer types. When firms provide no information, the percentage of customer- and supplier-related questions on the platform increases by 5.77% (from 7.95% to 13.72%)—a statistically significant amount (z -stat = 2.59). The control firms show a 1.71% decline in the percentage of such inquiries during the same time, which is not statistically significant. We see an even stronger effect when firms provide a *Rationalizing* response: a 7.61% increase (from 6.35% to 13.96%) in the percentage of customer- and supplier-related questions, which is again statistically significant. Meanwhile, the control firms have a slight decrease of 0.10%. Interestingly, when firms respond by providing information, we do not find significant changes in subsequent monitoring activity. In total, the findings suggest that the platform enables users to identify the non-disclosing firms and focus their monitoring activities on them.

5.3. Subsequent disclosure in regulatory filings

We next test whether the impact of our calls for greater transparency extend beyond the EasyIR platform. We examine whether firms start providing customer and supplier identity information in their next year’s annual report after our intervention.

Table 5 presents the results. The number of treatment firms drops from 725 to 722 because three firms delist after our experiment and before their 2019 annual reports are published. We also drop the control pair firms from our analysis, as the

Table 5
Effects on subsequent disclosure in regulatory filings.

| | Firms Disclosing Identity in 2019 Annual Report | | | | | Difference in Percentage |
|-----------------------------------|---|-----------|--------|---------|-------|--------------------------|
| | Firm Pairs | Treatment | | Control | | |
| | | N | % | N | % | |
| All treatment firms | 722 | 15 | 2.08% | 8 | 1.11% | 0.97% (1.47) |
| By types of questions | | | | | | |
| Baseline | 146 | 5 | 3.42% | 2 | 1.37% | 2.05% (1.15) |
| Claims of regulatory preference | 145 | 4 | 2.76% | 4 | 2.76% | 0.00% (0.00) |
| Claims of usefulness to investors | 146 | 1 | 0.68% | 0 | 0.00% | 0.68% (1.00) |
| Claims of peer effects | 146 | 4 | 2.74% | 1 | 0.68% | 2.06% (1.35) |
| Claims of social influence | 139 | 1 | 0.72% | 1 | 0.72% | 0.00% (0.00) |
| By types of Responses | | | | | | |
| No explanation | 156 | 3 | 1.92% | 3 | 1.92% | 0.00% (0.00) |
| Redirecting | 155 | 2 | 1.29% | 1 | 0.65% | 0.64% (0.58) |
| Rationalizing | 374 | 5 | 1.33% | 4 | 1.07% | 0.26% (0.34) |
| Provide information | 37 | 5 | 13.51% | 0 | 0.00% | 13.51%*** (2.32) |

This table presents the frequency of firms’ starting to provide customer and supplier identity information in their next year’s annual report. We collect the detailed disclosure of customer and supplier information from the 2019 annual report. We present the results for the entire sample and by (i) the types of questions and (ii) the types of firm responses on the platform. For the different question types, the baseline case is where we insert no basis for our disclosure request. The remaining question types offer different bases for the disclosure request: (i) regulatory preference, (ii) usefulness to investors, (iii) peer effects, and (iv) social influence. See Section 4.3 for a detailed discussion of the question types. We present the results by the four types of firm responses on the platform. *No explanation* refers to firms that acknowledge having received the question but provide no further explanation within 20 days after the question is posted. *Redirecting* refers to firms that do not disclose identity information but provide additional information that is not directly relevant to the question. *Rationalizing* refers to firms that do not disclose identity information but provide a rationalization for their lack of disclosure. *Providing information* refers to firms that provide identity-related information directly on the platform or opportunities for investors to obtain this information. Z -statistics of proportional tests are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

control firms did not face any inquiries on the platform from our experiment. We find that 2.08% of the treatment firms (15 firms) start providing customer and supplier identity information in their 2019 annual report. The rate for the control group is lower at 1.11% (eight firms), but the difference is not statistically significant.

When we partition firms by the type of responses they posted on the platform, we find that the firms that provided information on the platform are also more likely to start providing this information in their subsequent annual report: 13.51% of these firms do so, compared with no firms in the control sample. The difference is statistically significant. These findings suggest that public pressure via a social media platform may have lasting effects on firms' disclosure behavior, especially among firms that also provide the requested information on the platform.

5.4. Cross-sectional tests

We conduct cross-sectional tests to better understand the types of firms that disclose information on the EasyIR platform. We posit that disclosure will be an equilibrium outcome of how many demands the firms face on the platform and firms' attitude towards retail investors. Firms may be reluctant to respond to requests if they face an excessive number of them, especially if the firms have resource constraints or weaker incentives to cater to retail investors. At the same time, firms that are more favorable to retail investors should respond more proactively to investor requests.

Table 6, Panel A presents the results of the cross-sectional tests using disclosure in subsequent mandatory filings as the outcome variable.²³ Panel A presents the cross-sectional tests by the number of requests from retail investors, measured using the number of customer- and supplier-related inquiries posted on the platform. We sort all firms into portfolio terciles based on the number of disclosure-related inquiries posted one year prior to the experiment. We find a significant difference in the response rate across the treatment and control groups, but only in the tercile of firms that face the least disclosure-related inquiries from investors. In the *low # of disclosure related inquiries* tercile, the percentage of treatment firms that provide customer or supplier identities in subsequent filings is 3.89%, versus 0.78% for the control firms. The 3.11% difference is statistically significant. We find no significant differences between the treatment and control groups in the high or medium terciles. One possible explanation for these findings is that firms that face excessive demands fail to respond meaningfully due to resource constraints. Another is that firms that face extensive demands become more comfortable with giving non-responses, as they realize that, due to weak enforcement, there is little or no punishment for doing so.

Next, we examine how the response rate varies with firms' attitudes towards retail investors. We measure a firm's attitude based on the timeliness of its responses—i.e., the average number of days the firm takes to respond to investors' inquiries. We also partition by the information content of the responses, which is based on the average number of words they contain. We predict that firms that are more favorable towards retail investors—as shown by more timely responses and more informed responses—are more likely to disclose.

Table 6

Cross-sectional tests.

| Panel A: The number of customer- and supplier-related inquiries previously made by users on the platform | | | | | | |
|--|--|----------------|----------------|---------------------|--------------|--------------|
| Disclosure in subsequent filings | # of disclosure related inquiries posted on the platform | | | | | |
| | High | Middle | Low | | | |
| # of firms | 235 | 230 | 257 | | | |
| Treatment | 1.28% | 0.87% | 3.89% | | | |
| Control | 1.70% | 0.87% | 0.78% | | | |
| Difference | -0.42% (-0.38) | 0.00% (0.00) | 3.11%** (2.34) | | | |
| Panel B: Firm's attitude towards retail investors on the platform | | | | | | |
| Disclosure in subsequent filings | Response timeliness | | | Information content | | |
| | Prompt | Medium | Slow | High | Middle | Low |
| # of firms | 241 | 241 | 240 | 241 | 241 | 240 |
| Treatment | 2.49% | 1.24% | 2.50% | 2.90% | 2.07% | 1.25% |
| Control | 0.00% | 1.66% | 1.67% | 0.83% | 1.66% | 0.83% |
| Difference | 2.49%** (2.46) | -0.42% (-0.38) | 0.83% (0.64) | 2.07%* (1.68) | 0.41% (0.34) | 0.42% (0.45) |

This table presents cross-sectional differences in subsequent disclosure behavior in the next year's annual report based on various partitioning variables. We sort all firms into portfolio terciles based on the partitioning variable measured one year prior to the experiment. Panel A examines a partition based on the demand pressure that firms face from retail investors. We use the number of inquiries posted on the platform in 2018 to measure demand pressure. Panel B examines partitions based on supply side forces that capture firm's attitude towards retail investors. We partition by *timeliness* of firms' responses to all inquiries in 2018. Timeliness is measured using the average duration from when a question is posted to when a firm responds on the platform. We also partition by the *information content* of firm's responses, which is measured using the average number of words the responses contain. To calculate the average information content, we use the firm's responses to all questions posted on the platform in 2018. *T*-statistics of *t*-test and *Z*-score of proportions tests are also reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

²³ We do not present the cross-sectional tests for the responses on the platform, as the lack of an outcome for the control group makes it difficult to draw inferences.

The results are presented in Table 6, Panel B. As before, we sort all firms into portfolio terciles based on the partitioning variable measured one year prior to the experiment. For example, the timeliness measure is based on the average number of days the firm took to respond to all inquiries posted on the platform in 2018. We find that the disclosure rate (i.e., the percentage of firms that provide customer and supplier identities in subsequent filings) is higher among firms that have a favorable attitude towards retail investors. For the timeliness measure, the treatment firms in the most prompt tercile have a 2.49% higher disclosure percentage than the control group. There are no significant differences across the treatment and control groups in the medium or least timely terciles. For the information content measure, we find a monotonic increase in the disclosure percentage for the treatment firms across portfolio terciles. The disclosure percentage is 2.90%, 2.07%, and 1.25% for treatment firms in the high, middle, and low terciles, respectively. In the high tercile, the disclosure percentage is 2.07% higher for treatment firms than for control firms, a statistically significant difference. Our findings indicate that firms' user demand (i.e., volume of inquiries) and catering incentives (i.e., favorability toward retail investors) affect their disclosure, consistent with cross-sectional variation in the types of firms that are likely to supply information to retail investors.

6. Additional test

6.1. Mandatory disclosure regime

We also examine a portion of firms on the SME board, where identity disclosure is required if firms' sales to (purchases from) a single customer (supplier) exceed the 30% threshold (see APPENDIX C for the regulation). We excluded firms that were subject to mandatory identity disclosure from our earlier analysis in order to focus on a voluntary reporting regime. For this sample, we use only one variation of the baseline request: we reference the mandatory disclosure requirement and point out that the firm is in outright violation of the rules (see APPENDIX D for the exact wording).²⁴

We start with 94 firms in the SME board that fall into the mandatory reporting regime because they report sales/purchases concentration levels exceeding 30% in 2018. Of the 94 firms, 71 fail to identify their major customers and suppliers in their 2018 annual report. If their sales to their main customer or purchases from their main supplier again exceed the 30% threshold, these 71 firms will also be subject to the mandatory regime in 2019.²⁵ Within these 71 deficient firms, we randomly assign firms into equal-sized treatment and control groups, following the same matching process as in our earlier tests (i.e., matching on size, supplier concentration, and industry membership). We lose seven firms for which we cannot find a match with the same industry membership within the same size and supply concentration group. Our final sample therefore consists of 32 firm pairs, each with one firm in the treatment group and one firm in the control group. The sample selection process is detailed in Table 7, Panel A. We confirm in Panel B that there are no significant differences in *Size* or *Market concentration* across the two groups.

In Panel C, we find that firms in the mandatory regime have a higher likelihood of providing identity information on the platform than firms in the voluntary regime: 17.24% of the treatment firms provide identity information in response to our posts, compared with 3.40% in the voluntary regime (Table 3, Panel B). The higher likelihood makes sense intuitively, as the treatment calls for compliance by firms that are clearly violating a regulation, as opposed to asking firms to make disclosures that go beyond what is required. We also find that 14.29% of the treatment firms start providing this information in their 2019 annual reports, compared with 0% of the control firms. The findings suggest that our treatment leads to a significant increase in disclosure not only on the platform but in subsequent financial reports.

However, even after the treatment, the disclosure rate is nowhere near 100%. The percentages of *Redirecting* and *No explanation* responses on the platform are not trivial at 20.69% and 3.45%, respectively. A majority of the firms (58.62%) engage in *Rationalizing*. To justify the nondisclosure decision, many say the information is proprietary or subject to a nondisclosure agreement with suppliers or customers.²⁶ And while we find that 14.29% of treatment firms start providing the requested information in their subsequent filings, 85.71% of treatment firms continue to not disclose it.

Another way that firms on the SME board could justify nondisclosure is by lowering their concentration levels to just below the reporting threshold. We therefore test whether treatment firms respond to our requests by lowering their concentration ratios below the 30% threshold for mandatory compliance. We find that 35.71% of them do so. We note that the patterns do not necessarily suggest that the decline in the treatment firms' concentration levels is *intentional*; it could instead result from economic forces such as mean reversion.²⁷

To test for manipulation, we identify firms that lower their concentration levels to immediately below the reporting threshold (between 25% and 30%). We find that 17.86% (10.71%) of treatment (control) firms lower their concentration levels

²⁴ Note that this is different from our appeal, in the voluntary disclosure sample, to the regulator's preference for greater transparency. Firms in the earlier tests were asked to disclose beyond the required regulatory threshold, while firms in this test are told they are in violation of a regulatory requirement.

²⁵ The low compliance rate may be due to a lack of enforcement or a special exemption under the current rules. The regulation has not been enforced—there have been no comment letters or enforcement actions issued to date. In addition, a firm can be exempted from the disclosure (without prior approval) if the disclosed information would reveal a national secret. A firm can also apply for an exemption if the disclosed information would include proprietary information or business secrets. Normally, the exchange approves the exemption, and the identity of the exempted firm is not made public.

²⁶ When a nondisclosure agreement exists, firms can request an exemption from the stock exchange to avoid disclosing the information. The list of firms that file for exemptions is not disclosed to the public.

²⁷ Consistent with mean reversion, we find that 37.4% of firms lower their concentration rate from the prior year's level in any given year based on historical data.

Table 7
Mandatory disclosure regime.

| Panel A: Sample selection | | | | | | | | | |
|--|----------------|----------------|---------|-------------|-----------------------|--------------------------|--------|-----------------------|--------|
| | Observations | | | | | | | | |
| All SME firms with concentration >30% | 94 | | | | | | | | |
| Less firms with full disclosure | 23 | | | | | | | | |
| Firms with deficiencies in their supplier disclosure | 71 | | | | | | | | |
| Less: Firms without a matching pair | 7 | | | | | | | | |
| Final deficient firm sample | 64 | | | | | | | | |
| Panel B: Characteristics of treatment and control firms | | | | | | | | | |
| | Treatment | | Control | | t-value of Difference | | | | |
| | (1) | | (2) | | (3) | | | | |
| # of Obs. | 32 | | 32 | | | | | | |
| Size | 21.78 | | 21.97 | | (0.81) | | | | |
| Market concentration (%) | 64.36 | | 69.11 | | (1.37) | | | | |
| Panel C: Responses on the platform for treatment firms | | | | | | | | | |
| | # of treatment | No explanation | | Redirecting | | Rationalizing | | Providing information | |
| | | N | % | N | % | N | % | N | % |
| All treatment firms | 29 | 1 | 3.45% | 6 | 20.69% | 17 | 58.62% | 5 | 17.24% |
| Panel D: Effects on subsequent disclosure behavior | | | | | | | | | |
| Firms Disclosing Identity in 2019 Annual Report | | | | | | | | | |
| | Firm Pairs | Treatment | | Control | | Difference in Percentage | | | |
| | | N | % | N | % | | | | |
| All treatment firms | 28 | 4 | 14.29% | 0 | 0.00% | 14.29%** (2.08) | | | |
| Firms reducing their concentration threshold in 2019 | | | | | | | | | |
| | Firm Pairs | Treatment | | Control | | Difference in Percentage | | | |
| | | N | % | N | % | | | | |
| Only changes immediately below the 30% threshold (25%–30%) | 28 | 5 | 17.86% | 3 | 10.71% | 7.14% (0.76) | | | |
| All changes below the 30% threshold | 28 | 10 | 35.71% | 9 | 32.14% | 3.57% (0.28) | | | |

This table presents the response rate on the platform for a subsample of firms that are *required* to provide identity information for their major customers and suppliers. Panel A shows the sample selection of these firms. Panel B presents the firm characteristics across the treatment and control firms. Size is measured as the natural log of the ending total assets in 2018. Market concentration is the purchases from a top five supplier as a percentage of total purchases in 2018. Panel C provides the distribution of the treatment firm's responses on the platform. *No explanation* refers to firms that acknowledge having received the question but provide no further explanation within 20 days after the question is posted. *Redirecting* refers to firms that do not disclose identity information but provide additional information that is not directly relevant to the question. *Rationalizing* refers to firms that do not disclose identity information but provide a rationalization for their lack of disclosure. *Providing information* refers to firms that provide identity-related information directly on the platform or opportunities for investors to obtain this information. Panel D provides the changes in subsequent disclosure behavior in the firms' 2019 annual reports. *T*-statistics of *t*-test and *Z*-score of proportions tests are reported in parentheses just below the differences. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

into this range. The difference in rates between the treatment firms and control firms is not statistically significant. We conclude that the decline is unlikely to be driven by intentional manipulation and can instead be explained by economic forces such as mean reversion.

6.2. Capital market tests

Finally, we examine whether firms' responses on the platform have capital market effects. Such effects would suggest that the responses contain useful information.²⁸ The capital market tests allow us to rule out the possibility that firms are

²⁸ Chau et al. (2019) and Lee and Zhong (2022) show that more *questions* being posted on the EasyIR platform is associated with increased market liquidity. These studies also show increase liquidity around firm answers, on average. We are able to examine how the responses may vary by the specific type of responses firms provide, although we do not find any difference in liquidity across these different types of answers.

Table 8
Market response to answers provided on the platform.

| Market Reaction | N | Response | Benchmark | Difference in Percentage |
|------------------------|-----|----------|-----------|--------------------------|
| <i>Turnover</i> [0, 1] | 652 | 0.064 | 0.059 | 0.005** (2.14) |
| <i>Abs_CAR</i> [0, 1] | 652 | 0.038 | 0.034 | 0.004*** (2.86) |
| Liquidity | | | | |
| <i>Amihud</i> [0, 1] | 652 | 0.174 | 0.185 | -0.011**(-2.07) |

This table presents the average market reaction to firms' responses to our questions. The comparison of market outcomes is between event windows on the day of and the day after the firm's response, and a benchmark of two-day rolling window over four weeks around the response day (two weeks after and before). Market reaction is measured two ways: *Turnover* [0, 1], the two-day turnover ratio, which equals the ratio of the number of shares traded during the two days to the number of shares outstanding; and *Abs_CAR* [0, 1], measured as the absolute value of cumulated abnormal return in the window [0, 1], where abnormal returns are calculated as raw returns less the market return on the same day. To perform our analysis, we drop *No explanation* observations without a time stamp but keep *No explanation* observations with a time stamp (i.e., the firm responds to the question but does not provide any information, such as acknowledgement of the question). All variables are defined in Appendix. *T*-statistics of *t*-tests are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

responding to our requests because the information is not useful to investors or is costless for them to provide (i.e., cheap talk).

Following prior literature, we use trading volume and absolute market returns to gauge the information content in the firms' responses (Landsman et al., 2012). Turnover is measured using the number of shares traded during the two days after a firm posts a response, divided by the total number of shares outstanding.²⁹ Absolute returns is calculated as the absolute value of cumulated abnormal return in the two-day window [0, 1] following the response. Abnormal returns are defined as raw returns less the market return on the same day. We find, in Table 8, increases in two-day stock turnover and two-day cumulative absolute abnormal returns after firms post their response. Following a firms' response, we observe a 0.5% increase in the treatment firms' turnover of trading volume, relative to the control firms'. The difference is statistically significant. There is also a statistically significant 0.4% increase in cumulative absolute abnormal returns for the treatment firms relative to the control firms.

We also examine whether market liquidity improves following the firm's responses. Studies argue that disclosure reduces information asymmetry, which can lead to higher liquidity (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994; Balakrishnan et al., 2014). Firms' revealing customer and supplier information may reduce information asymmetry for retail investors who would otherwise price protect themselves.³⁰ For this test, we use the *Amihud* illiquidity measure (Amihud, 2002), calculated as the square root of the absolute value of the daily return over the two-day return window divided by daily trading volume. We observe an improvement in market liquidity, but do not find any significant differences in the results based on our question types or the firms' response types.

7. Conclusion

This paper examines whether retail investors' requests on an IIP can enhance the transparency of emerging-market firms. Using a newly developed stock exchange IIP in China, we post inquiries in which we ask firms to disclose the identities of their major customers and suppliers. The treatment sample consists of a randomized set of firms that receive our requests for enhanced disclosure; the control sample is a set of comparable firms that do not receive the requests. We also vary how the questions are framed, which allows for contextualization of the causal effects.

Our evidence shows that disclosure probability depends on the basis of the information demand. Requests that appeal to the usefulness of disclosure information to investors lead to the highest disclosure rate; requests that appeal to the regulator's preference for more transparency lead to the highest rate of nonresponse. The increase in nonresponses when the regulator's preference is mentioned suggests that firms do not perceive a benefit in voluntarily exceeding disclosure standards.

Our requests on the platform lead to increases in the frequency of customer- and supplier-related inquiries by other platform users. Firms that fail to respond to our information requests also face more inquiries by other users on the platform. These findings highlight the importance of making investors' communication with firms publicly visible to others. Visibility enables retail investors to learn about the demands of other investors and align their monitoring efforts. Users' questions not only lead firms to respond but also, through their public display on the platform, generate coordinated actions involving other users. We also find that our requests lead to improved disclosure of customer and supplier information in the firms' next-period regulatory filings, especially by firms that have historically been more responsive to retail investors. Together, these results suggest that IIPs can enhance corporate transparency by increasing retail investors' ability to demand information.

²⁹ We use a short-term window because, unlike with disclosure regulation, our intervention leads to no long-term commitment on the part of the firms. The experiment is a one-time request, and it seems unlikely that the effects will lead to permanent changes in the information environment.

³⁰ For Chinese firms, capital market incentives may not be a primary driver of voluntary disclosure decisions. Lu, Shin, and Zhang (2019) survey a wide range of Chinese CFOs and find that the majority do not believe that voluntary disclosure leads to positive capital market outcomes. The authors find that, for these CFOs, a more significant driver of voluntary disclosure is to satisfy a wider range of stakeholders, such as investors, customers, and suppliers.

We note that certain features of the EasyIR platform could make it difficult for us to generalize our findings. Notably, the regulator's requirement that all firms on the platform read and respond to all posts may give investors more power than they have on social media platforms elsewhere. One may ask whether imposing a similar regulatory intervention in the U.S. would allow the investor platforms there to function similarly to EasyIR, leading to enhanced disclosure. While the desirability of such a regulated platform is beyond the scope of this paper, we conjecture that the cost of introducing one in the U.S. exceeds the benefits. The requirement to respond to all requests from the public could impose excessive costs on firms, especially in a market where the public has alternative mechanisms through which to exert pressure.

Appendix A. Activities and Posts on the EasyIR Platform

| Panel A: Activities on the Major Interactive Investor Platforms in China | | | | | |
|--|---|------------|----------------|-------------------|-------------------|
| Platform | Administered by | # of Posts | # of Responses | # of Unique Users | # of Unique Firms |
| EasyIR ("HudongYi") | Shenzhen Stock Exchange | 2,584,735 | 2,476,169 | 170,746 | 2134 |
| Panorama | Shenzhen Panorama Network Co., Ltd. (The parent firm is Shenzhen Securities Times Co., Ltd.) | 1,716,514 | 1,639,671 | 45,591 | 3553 |
| eIR ("eHuDong") | Shanghai Stock Exchange | 304,170 | 254,181 | 50,130 | 1459 |

| Panel B: Distribution of Posts on the EasyIR Platform over Time | | | | | | |
|---|------------|---------------------|---------------------|----------------------------|-----------------------------------|------------|
| Year | # of Posts | # of Posts Answered | % of Posts Answered | # of Firms on the Platform | % of Listed Firms on the Platform | # of Users |
| 2010 | 18,447 | 17,131 | 92.87% | 852 | 71.90% | 8773 |
| 2011 | 60,169 | 58,148 | 96.64% | 1319 | 92.11% | 22,924 |
| 2012 | 144,193 | 139,708 | 96.89% | 1514 | 96.99% | 46,909 |
| 2013 | 324,414 | 315,470 | 97.24% | 1518 | 97.18% | 32,904 |
| 2014 | 479,257 | 465,592 | 97.15% | 1597 | 97.44% | 24,507 |
| 2015 | 521,891 | 499,769 | 95.76% | 1728 | 97.57% | 27,576 |
| 2016 | 415,036 | 396,206 | 95.46% | 1858 | 97.74% | 24,186 |
| 2017 | 353,582 | 336,268 | 95.10% | 2082 | 98.11% | 28,693 |
| 2018 | 267,746 | 247,877 | 92.58% | 2130 | 98.07% | 29,358 |
| Total | 2,584,735 | 2,476,169 | 95.80% | 2134 | 98.25% | 170,746 |

| Panel C: Distribution of Topics Posted on the EasyIR Platform | | | | |
|---|-------------------------|-----------|------------|----------|
| Categories | Categories | Posts | Percentage | Answered |
| 1 | Corporate governance | 198,017 | 7.66% | 95.51% |
| 2 | Government Relationship | 242,524 | 9.38% | 95.40% |
| 3 | Investment | 122,754 | 4.75% | 95.64% |
| 4 | Operation | 455,773 | 17.63% | 95.77% |
| 5 | Disclosure | 353,544 | 13.68% | 96.22% |
| 6 | Business Relationship | 242,529 | 9.38% | 95.67% |
| 7 | Financing | 135,458 | 5.24% | 96.27% |
| 8 | Public Activities | 72,105 | 2.79% | 96.03% |
| 9 | Capital Market | 368,125 | 14.24% | 96.03% |
| 10 | Strategy | 139,625 | 5.40% | 96.08% |
| 11 | Others | 254,281 | 9.84% | 95.28% |
| All | | 2,584,735 | 100.00% | 95.80% |

APPENDIX B. Examples of Real Dialogues from the EasyIR Platform

Below are examples of actual dialogues in EasyIR. The questions were raised by other platform users prior to our experiment. All examples are translated from Chinese to English.

Example 1: Disclosure related (Topic #5).

Q: Your loss from asset impairment has increased by 1316.82% over last year. You have such a large amount of asset impairment after only being listed for a few years. Since the increase is more than ten times, why didn't you make a public disclosure?

A: It is primarily because the loss from asset impairment was only 8000 yuan last year. This year, our impairment loss is 126,710.54 yuan.

Example 2: Business relationship related (Topic #6).

Q: Has your company been awarded the gold status as a supplier for Huawei?

A: Thank you for your interest. Recently, Huawei awarded our company the gold status as a core supplier.

Example 3: Government relationship related (Topic #2).

Q: Has your company joined the alliance for central-government-owned electric vehicle manufacturers? Are you eligible to join the alliance?

A: So far, we have not joined the alliance.

Questions related to customer supplier relationships**Example 4:**

Q: May I ask if the U.S. company Novalux is your company's customer? A: We are unable to respond to your question.

Example 5:

Q: Dear Mr. Wang (CEO), your 2016 annual report indicates that the sales to two of your top five customers, Intel and TCL, have dropped by 150 million yuan, but your total sales this year have increased by more than 30 million yuan. Which customer(s) has (have) made up for the drop in sales? Please provide the sales number for each of the top five customers for shareholders' consideration. A: Dear investor, our company is developing rapidly and the market for software business in mobile technology is expanding. It is normal that the sales volume to some of our customers may have dropped. Our company has the ability to compete and adapt to changes in the market. While expanding our business with existing customers, we are actively developing new customers and realizing a steady increase in our total sales performance. Thank you for your interest.

Example 6:

Q: Could you disclose the identity of the top five suppliers in your 2017 annual report? A: Hello. Our company has followed the related rules and requirements to disclose information. Thank you.

Example 7:

Q: Hello. Who is your top supplier? Do you have strategic cooperation with the top supplier? A: Thank you. We cannot disclose this information because it is our company's proprietary information. Our company's suppliers are considered mainstream suppliers in the market.

Example 8:

Q: Dear Mr. Lee (Company Secretary), according to the 2016 annual report, Wo Tai Tong is your company's top supplier and second largest customer. What do they buy from you and sell to you? What are the business models for these transactions? A: Hello. Our company sells raw materials of battery cells to Wo Tai Tong and purchases battery cells from them.

APPENDIX C. Regulation on Disclosure of Customer and Supplier Information in China**I. Standards for the Contents and Formats of Information Disclosure by Companies Offering Securities to the Public No. 2-Contents and Formats of Annual Reports (for all listed firms).³¹**

The company is *required* to disclose its aggregate sales to the top five customers as a percentage of total annual sales, and its aggregate purchases from the top five suppliers as a percentage of total annual purchases. The company is also required to disclose the proportion of the aggregate sales to the top five customers that are considered related parties and the proportion of aggregate purchases from the top five suppliers that are considered related parties.

The company is *encouraged* to disclose the name of and sales to *each* top-five customer, the name of and purchases from *each* top-five supplier, and whether each of these customers or suppliers has any association with the company.

II. SME Board Information Disclosure Memorandum No. 2: Disclosure of Related Matters in Periodic Reports (only for SME board firms).³²

3. If the company's purchase from a particular supplier or sales to a particular customer exceeds 30% of its total annual purchases or sales respectively, in addition to following standard disclosure requirements for annual reports, the company should also disclose the identity of the supplier or customer in the annual report.

APPENDIX D. Examples of Questions Posted for Our Experiment, by Treatment Conditions

| Treatment conditions | Examples (Translated to English) |
|---------------------------------|--|
| Baseline | Hello Company Secretary, I have noticed that the specific names of the top five suppliers and customers were not explicitly disclosed in your company's 2018 annual report. Could you please provide information about their identities and disclose such information in the annual report in 2019 and future years? |
| Claims of regulatory preference | Hello Company Secretary, I have noticed that the specific names of the top five suppliers and customers were not explicitly disclosed in your company's 2018 annual report. According to the annual report content and format requirements of the China Securities Regulatory Commission, companies are encouraged to disclose the top five customers' names and purchase amounts, and the top five suppliers' names and sales amounts. Could you please provide information about their identities and disclose such information in the annual report in 2019 and future years? |
| Claims of social influence | Hello Company Secretary, I manage an influential financial social media account. My readers and I have noticed that the specific names of the top five suppliers and customers were not explicitly disclosed in your company's 2018 annual report. Could you please provide information about their identities and disclose such information in the annual report in 2019 and future years? |

³¹ Revised in 2017, CSRC. See <http://www.sse.com.cn/lawandrules/regulations/csrcannounc/c/4444089.pdf>.

³² Revised in January 2019, SZSE SME Board Company Management Department. See <https://www.pkulaw.com/chl/cf9d5f7cfbd46b64bdfb.html>.

(continued)

| Treatment conditions | Examples (Translated to English) |
|--|--|
| Claims of usefulness to investors | Hello Company Secretary, I am a shareholder of your company. I hope to know the names of your company's customers and suppliers to help me make investment decisions. Being entrusted with shareholders' capital, your company is obligated to provide such information to us. Could you please provide information about the customers' and suppliers' identities and disclose such information in the annual report in 2019 and future years? |
| Claims of peer effect | Hello Company Secretary, I have noticed that your industry peers have provided detailed disclosure of the names of their top five suppliers and customers in the annual reports. However, your company did not disclose such information in its 2018 annual report. Could you please provide information about the customers' and suppliers' identities and disclose such information in the annual report in 2019 and future years? |
| Claims of violating the regulation for SME | Hello Company Secretary, I have noticed that the specific names of the top five suppliers and customers were not explicitly disclosed in your company's 2018 annual report. According to the annual report content and format requirements of the China Securities Regulatory Commission, when the purchase amount of a single supplier or the sales amount of a single customer exceeds 30% of the company's total purchases or sales, in addition to following the standard disclosure requirements for annual reports, the name of the supplier or customer shall also be stated in the annual report. Could you please provide information about the customers' and suppliers' identities and disclose such information in the annual report in 2019 and future years? |

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