

# Can online annual general meetings increase shareholders' participation in corporate governance?

Huasheng Gao<sup>1</sup> | Jun Huang<sup>2</sup> | Tianshu Zhang<sup>3</sup>

<sup>1</sup>Fanhai International School of Finance, Fudan University, Shanghai, China

<sup>2</sup>School of Accountancy, Shanghai University of Finance and Economics, Shanghai, China

<sup>3</sup>Accounting School, Shanghai University of International Business and Economics, Shanghai, China

## Correspondence

Huasheng Gao, Fanhai International School of Finance, Fudan University, Shanghai, China.  
Email: huashenggao@fudan.edu.cn

## Funding information

Shanghai Pujiang Program, Grant/Award Number: 18PJC007; Program for Professor of Special Appointment (Eastern Scholar) at Shanghai Institutions of Higher Learning, Grant/Award Number: TP2018001; National Natural Science Foundation of China, Grant/Award Numbers: 71973029, 71632006; MOE Project for Key Research Institutes of Humanities and Social Science in Universities, Grant/Award Number: 16JJD790037; Higher Education Discipline Innovation Project, Grant/Award Number: B18033; Shanghai Philosophy and Social Science Foundation, Grant/Award Number: 2017BGL009; Dawn Program of the Shanghai Education Commission

## Abstract

We find that annual shareholder meetings conducted online can significantly increase the participation of shareholders, especially minority shareholders. This finding is more evident when the cost of physically attending the annual meeting is higher and when the firm's ownership is more dispersed. We further document significant positive stock returns when firms initiate annual online meetings. We also find that such online meetings help improve corporate governance. Overall, we provide evidence that online shareholder meetings provide shareholders a cost-effective way to participate in governance issues.

## KEYWORDS

online annual general meetings, shareholder participation, corporate governance

## 1 | INTRODUCTION

Annual general meetings (AGMs) often serve as an opportunity for shareholders to receive updates on company developments, ask management and directors questions, consider corporate proposals, and review the company's performance. It is generally believed that shareholder participation is a vital component of a successful annual meeting and overall governance (Easterbrook & Fischel, 1983; Pound, 1991). However, shareholder participation in annual

meetings is extremely low among public firms because of a diffused ownership structure and the inconvenience of physically attending meetings. For example, in the United States, 70% of shares held by minority shareholders are not voted on in annual meetings.<sup>1</sup> In China, more than 90% of shares held by minority shareholders are not voted on in annual meetings.

The number of debates regarding the practice of online AGMs has surged over the past decade; regardless, more firms are using online AGMs than ever before. One view suggests that online AGMs make annual meetings more accessible, transparent, and efficient to meet the corporate governance needs of shareholders. In contrast to traditional AGMs, which typically require shareholders to attend meetings on-site, online AGMs allow shareholders to attend and vote remotely, via an Internet platform. Thus, when the cost of physically attending an AGM is high, an online AGM may facilitate shareholder participation.

Critics of online AGMs assert that such meetings are of limited value, because (a) online participation is a poor substitute for “looking management in the eye”; (b) large shareholders will most likely attend the meeting anyway, whereas minority shareholders may still lack incentive to participate because of their small stake in the firm; and (c) even if minority investors actively participate in online meetings, too much intervention by (unsophisticated) minority investors may be value destroying (Jensen, 1993; Lipton & Rosenblum, 1991).

In this article, we examine whether online AGMs<sup>2</sup> can increase shareholder participation in annual meetings based on data from China, as Chinese public firms have been conducting online AGMs as early as 2005 (and in 2017, all Chinese public firms had adopted online AGMs<sup>3</sup>). The relatively rich history and widespread adoption of online AGMs in China allow us to better examine the effects of online AGMs on shareholder participation in annual meetings.

We find that shareholder participation, especially minority investor participation, increases significantly after a firm adopts online AGMs. Specifically, firms with online AGMs see a 35% higher rate of ownership participation by minority investors than firms without online AGMs. The number of minority investors participating in AGMs in the former group is five times as large as in the latter group. This effect is more pronounced when the cost of physically attending AGMs is higher, suggesting that the cost of physically attending the meeting is an essential factor leading to low participation by shareholders who would otherwise like to attend. Furthermore, the impact of online AGMs on shareholder participation in AGMs is greater for firms with dispersed ownership, because minority shareholders are more likely to be influential when large stakeholders do not dominate firms.

Our main results may be subject to an omitted variable problem. For example, a firm’s culture of shareholder democracy and a firm’s information barriers to communicate with its shareholders may be unobservable variables that are correlated with both online AGM voting and shareholder participation in AGMs. Such a problem could bias our results. We address this endogeneity concern by exploiting a quasi-natural experiment that examines the Shanghai and Shenzhen stock exchanges’ 2014 policy requiring firms to adopt online AGMs. Based on a difference-in-differences approach, we show that such a policy change leads to a significant increase in shareholder participation in AGMs. This result suggests that our implication is unchanged after accounting for possible endogeneity.

We also examine the valuation effects of online AGMs. Online AGMs likely increase shareholder value because active shareholder participation in AGMs (a) facilitates the communication between managers and shareholders and (b) increases the function of corporate governance. Moreover, considering that the financial cost of convening a physical meeting with a large number of shareholders can be nontrivial, online AGMs provide an inexpensive and geographically unlimited means for more shareholders to participate in such meetings. However, shareholders—especially minority shareholders—usually lack specific information about the firm, and their opinions may differ from those of managers with better information (Porter, 1992). Managers facing frequent shareholder interventions might be less

<sup>1</sup>See Broadridge and PwC’s 2013 Proxy Voting Trends (June 4, 2013), available at: <http://www.broadridge.com/news-events/press-releases/Broadridge-and-PwC-Announce-New-Data-on-2013-Proxy-Voting-Trends.html>.

<sup>2</sup>Throughout this article, online AGMs refer to the AGMs in which shareholders can attend meetings and cast a vote online (not just a webstream).

<sup>3</sup>In 2009, Intel became the first U.S. company to enable all its shareholders to attend, ask questions, and cast their votes live on the web in its AGM. Since then, more companies have followed suit, although the total number of firms using online AGMs is still very small in the United States (Joann S. Lublin, 2011, “Online Annual Meetings Begin to Click,” *Wall Street Journal* [November 14], <https://www.wsj.com/articles/SB10001424052970203537304577032313764922458>).

likely to take initiatives (Aghion & Tirole, 1997; Burkart, Gromb, & Panunzi, 1997), which decreases shareholder value. Supporting the first view, we find a positive abnormal return at the firm's announcement of initiating online shareholder meetings.

Finally, we show that online AGM voting helps improve corporate governance. Specifically, online AGM voting is associated with a higher likelihood of a proposal being vetoed, higher executive pay-performance sensitivity, fewer earnings manipulation, and less tunneling by controlling shareholders.

Our article makes at least three significant contributions to the literature. First, to the best of our knowledge, we are the first to examine the effects of online AGMs on shareholder participation, and provide evidence that allowing shareholders to attend online AGMs increases participation and firm value.

Second, in line with the seminal work of Shleifer and Vishny (1986), the incentive for a shareholder to take an active role in corporate governance depends on the shareholder's ownership and costs of monitoring. Shareholders are more likely to monitor a firm's management decisions if they are large shareholders, and their cost of monitoring is low, or both. Empirical research on shareholder monitoring focuses on the effect large shareholdings have on enhancing shareholders' incentive to monitor (e.g., Chen, Harford, & Li, 2007; Denis & Serrano, 1996; Gillan & Starks, 2000; Hartzell & Starks, 2003). However, the cost of monitoring is relatively less examined. Our research provides evidence that even minority shareholders can actively participate in corporate governance issues if their participation cost is reduced.

Finally, our study sheds additional light on the role of information technology in corporate governance. Our results suggest that facilitating shareholder participation in governance issues through information technology can strengthen the corporate governance of publicly traded firms.

## 2 | BACKGROUND OF ONLINE AGMs IN CHINA

According to *The Rules of Listed Companies* issued by the China Securities Regulatory Commission (CSRC) in 1997, AGMs should be held within 6 months after the fiscal year-end. Companies choose the venue of the AGM, which is usually held in their headquarters. For on-site AGMs, shareholders must register before a meeting and then travel to the meeting location to exercise their voting rights. Such meetings are usually held on a weekday, which creates additional problems for shareholders. All expenses associated with attending the meetings, such as airfare and accommodations, are borne by shareholders themselves.

To protect shareholder interests and strengthen corporate governance, the CSRC published *The Guidelines on Online Voting at the Shareholders Meeting of Listed Companies* on November 29, 2004. The guidelines encourage listed companies to facilitate shareholder voting by providing remote means to vote for those who cannot attend the shareholder meeting physically. On February 17, 2005, Celebrities Real Estate Development Group Ltd. became the first public Chinese company to adopt online voting in its AGMs.

According to the guidelines, all shareholders listed on an AGM's registration date have the right to vote online if the company initiates online voting in the AGM; however, they can choose only one of the following voting methods: on-site voting, online voting, or other voting methods stipulated by the company.<sup>4</sup> The registration date is typically 1 week before the AGM. Furthermore, if a company offers online voting access, it must specify in the AGM notice the time to vote online, voting procedures, and proposals on which to vote. The proposals submitted to the meeting include general proposals (which are issued by the board) and temporary proposals (which are issued by shareholders). Shareholders can issue a temporary proposal 10 days before the AGM if they hold more than 3% of firm ownership. Before the AGM begins, the company must disclose the contents of its proposals and materials that are relevant for shareholders to evaluate. The voting method in the AGM must be via disclosed ballot, and each proposal must be voted on individually. Shareholders exercise their voting rights based on the shares they hold, and each share represents one vote. For each

<sup>4</sup>Although the CSRC encourages listed companies to initiate "other" methods to facilitate shareholders' voting in the AGMs, only on-site voting and online voting are provided.

proposal, shareholders must cast a vote of consent, objection, or abstention, and the company must jointly calculate the ballots of on-site and online voting. A proposal is passed if it receives the support of more than half of the votes cast in the AGM. When the proposal is related to issues such as a change in the company's by-laws, mergers and acquisitions, split-ups, and so on, it must obtain more than two-thirds of the votes to pass in the AGM. Finally, the voting results must be announced during the AGM.

There is an essential regulation in China that could make online voting particularly useful for minority shareholders. Effective as of December 7, 2004, the CSRC issued a regulation entitled *The Provisions on Strengthening the Protection of the Rights and Interests of General Public Shareholders*, commonly referred to as the segmented voting regulation. This regulation requires several major corporate decisions, such as equity offerings, convertible bond issuing, major corporate restructuring, and so on, to be separately approved by more than 50% of the tradable shares that contribute to the voting.<sup>5</sup> Minority shareholders typically hold tradable shares. Chen, Ke, and Yang (2013) study the consequence of this regulation and find that such a regulation deters managers from submitting value-decreasing equity-offering proposals.

It is worth noting that proxy voting is allowed in China. According to *Company Law of the People's Republic of China*, shareholders can appoint an agent to attend an AGM and cast votes on their behalf. When appointing an agent to vote in the AGM, the shareholder must sign an authorization letter, proving the name of the agent; an indication of consent, objection, or abstention for each proposal; the period of authorization; and whether the agent can vote based on his/her own will if the shareholder does not provide specific instructions. This procedure is similar to that in the United States. However, relative to the United States (where ownership is more dispersed, and thus proxy voting can be an effective way for minority investors to have a voice), proxy voting in China (in which the ownership structure is more concentrated) is more likely to be used as a tool for large shareholders to fight with each other (Jiang, 2015).

### 3 | SAMPLE AND DESCRIPTIVE STATISTICS

Our initial sample includes all firms listed on the Shanghai and Shenzhen stock exchanges from 2005 to 2017. The sample period begins in 2005—the year firms first allowed shareholders to vote online in AGMs. In that year, only 16 firms (1.22% of public firms) adopted online voting in AGMs. As demonstrated in Table 1A1, Supporting Information, the number of firms adopting online voting in AGMs has increased steadily since 2005. In 2014, the Shanghai and Shenzhen stock exchanges required all public firms to allow their shareholders to vote in AGMs via an online platform. Table 1 shows that the percentage of firms with online AGM voting increases from less than 35% in 2013 to 100% in 2014. Because there is no variation in AGM online voting among sample companies after 2013, we use the 2005–2013 sample period to compare the difference in shareholder participation between firms with and without online AGMs. For our other analyses, we use the full sample period, 2005–2017. During 2005–2013, we have 2,039 firm-year observations with online AGMs and 13,283 firm-year observations without online AGMs. During 2005–2017, we have 12,192 firm-year observations with online AGMs and 13,283 firm-year observations without online AGMs.

We obtain our AGM information from the WIND database<sup>6</sup> and financial information from the China Stock Market Accounting Research (CSMAR) database. We construct two variables to capture shareholder participation in AGMs. The first is *Ownership representation*, which is the number of shares voting in the AGMs, normalized by total shares outstanding. The second is *Shareholder participation*, which is the number of shareholders voting in the AGMs, normalized by the total number of shareholders. Table 2 presents descriptive statistics for firms with and without online AGMs. Variable definitions are provided in the Appendix. For firms with online voting in AGMs, *Ownership representation* is 53.07% on average and 54.12% at the median. In contrast, in firms without online voting in AGMs, the average (median)

<sup>5</sup>See Footnote 7 for a more detailed discussion of tradable and nontradable shares.

<sup>6</sup>WIND is a Chinese corporate database similar to Compustat in the United States; it is regarded as one of the leading providers of financial information in China. This database is widely used in academic research (see, e.g., Bradshaw, Liao, & Yu, 2019; Fang, Lerner, & Wu, 2017; Liu, Stambaugh, & Yu, 2019).

**TABLE 1** Online voting in AGMs over time

Year	Number of firms	Number of firms with online AGM voting	Percentage of firms with online AGM voting
2005	1,308	16	1.22%
2006	1,290	44	3.41%
2007	1,323	80	6.05%
2008	1,490	78	5.23%
2009	1,569	100	6.37%
2010	1,644	139	8.45%
2011	1,991	191	9.59%
2012	2,288	564	24.65%
2013	2,419	827	34.19%
2014	2,341	2,341	100.00%
2015	2,423	2,423	100.00%
2016	2,670	2,670	100.00%
2017	2,719	2,719	100.00%
Total	25,475	12,192	47.86%

Note. This table presents the number of firms with online annual general meeting (AGM) voting from 2005 to 2017. All firms are listed in the Shanghai and Shenzhen stock exchanges.

*Ownership representation* is 48.48% (48.95%). In terms of percentage increase, the average *Ownership representation* in firms with online AGMs is about 10% larger than that in firms without online AGMs, and these differences are significant at the 1% level. We further divide the shares voted in the AGMs into those owned by nonblockholders and blockholders. Blockholders are shareholders who own no less than 5% of firm shares. Statistics show that the difference in *Ownership representation* between online and nononline AGMs is mostly driven by nonblockholders. Average *Nonblockholder ownership representation* is 7.25% for firms with online AGMs, which is significantly larger than that of firms without online AGMs (4.80%). In terms of percentage increase, the former is about 51% higher than the latter. Average *Blockholder ownership representation* is similar for the two types of firms: 47.30% for firms with online AGMs and 46.87% for firms without online AGMs. Thus, compared to blockholders, the effect of online AGMs on attracting shareholder participation is much stronger for nonblockholder shareholders, which is not surprising given that blockholders are likely to attend AGMs physically, whether the firm holds online AGMs or not.

Average (median) *Shareholder participation* in AGMs is 0.20% (0.11%) for firms with online AMGs and 0.04% (0.02%) for firms without online AGMs. Both a t-test and a Wilcoxon test indicate that the difference in shareholder participation in AGMs between these two groups of firms is significant at the 1% level. The economic magnitude is also sizable, considering that the former numbers are approximately five to six times larger than the latter numbers.

Our study has the following caveat: although the difference in shareholder participation is sizable in percentage terms, the difference is small in absolute terms. For example, in absolute terms, the difference in average *Shareholder participation* between the two groups of firms is only 0.16% (= 0.20% – 0.04%). Such a “small” difference is largely due to the fact that unconditional shareholder participation in AGMs is extremely low (as discussed later in Section 5.3, although China has a large population and thus a large number of individual stock investors, many of these investors are short term and do not participate in the governance issue).

Furthermore, relative to firms without online AGMs, those with online AGMs are generally larger and older; have better accounting performance, poorer stock returns, and lower risk; and experience lower growth. Moreover, firms using online AGMs tend to have larger ownership by institutional investors and insiders, but smaller ownership by qualified foreign institutional investors (QFII). They are also more likely to finish the split share reform.

TABLE 2 Difference in characteristics between firms with and without online AGMs

Variable	Firms with online AGM voting		Firms without online AGM voting		Percentage increase		Test of differences	
	Mean (1)	Median (2)	Mean (3)	Median (4)	Mean (1)/(3) - 1	Median (2)/(4) - 1	t-Test (1) - (3)	Wilcoxon test (2) - (4)
Ownership representation	53.068%	54.118%	48.477%	48.950%	9.469%	10.557%	11.904***	12.082**
Nonblockholder ownership representation	7.246%	4.320%	4.797%	1.750%	51.059%	146.857%	14.164***	16.892***
Blockholder ownership representation	47.297%	49.179%	46.868%	49.179%	0.914%	0.000%	1.406	1.329
Shareholder participation	0.198%	0.108%	0.043%	0.021%	359.963%	409.769%	62.116***	48.101***
Size	22.170	21.883	21.678	21.516	2.271%	1.706%	14.607***	13.967***
ROA	4.200%	3.779%	3.033%	3.199%	38.449%	18.128%	7.021***	6.007***
Stock return	27.419%	6.409%	36.526%	5.007%	-24.933%	28.010%	-4.147***	1.325
Stock volatility	13.661%	12.695%	14.847%	13.973%	-7.988%	-9.146%	-9.672***	-11.425***
MB	1.668	1.305	1.865	1.325	-10.540%	-1.496%	-4.663***	-3.044***
Institution ownership	30.626%	25.773%	23.446%	15.451%	30.624%	66.808%	12.968***	13.982***
Insider ownership	8.548%	0.000%	3.850%	0.000%	122.039%	0.000%	15.141***	17.109***
Firm age	13.993	14.000	13.575	13.000	3.078%	7.692%	3.683***	3.816***
Split reform	0.962	1.000	0.862	1.000	11.638%	0.000%	12.832***	12.764***
QFII ownership	0.155%	0.000%	0.187%	0.000%	-17.121%	0.000%	-1.779*	-0.766

Note. This table compares the characteristics of firms with and without online annual general meeting (AGM) voting. Variable definitions are provided in the Appendix. All continuous variables are winsorized at the top and bottom 1%. The last two columns present the t-statistics (z-statistics) for the tests of differences in mean (median) between firms with and without online AGMs.

\*\*\* Significant at the 0.01 level.

\* Significant at the 0.10 level.

## 4 | EMPIRICAL RESULTS

### 4.1 | Online AGMs and shareholder participation

Our main hypothesis is that the availability of online AGMs can increase shareholder participation in AGMs. To test this hypothesis, we construct the following model:

$$\begin{aligned}
 Participation_t = & a_0 + a_1 Online\ AGM\ voting_t + a_2 Size_t + a_3 ROA_t + a_4 Stock\ return_t \\
 & + a_5 Stock\ volatility_t + a_6 MB_t + a_7 Institution\ ownership_t \\
 & + a_8 Insider\ ownership_t + a_9 Firm\ age_t + a_{10} Split\ reform_t \\
 & + a_{11} QFII\ ownership_t + Firm\ FE + Year\ FE + \varepsilon_t.
 \end{aligned} \tag{1}$$

The dependent variable is the measure of shareholder participation in AGMs, including the ownership and number of shareholders attending the AGMs. The key independent variable is *Online AGM voting*, which equals 1 if shareholders can vote in AGMs via an online platform, and 0 otherwise. We also add a set of control variables, including firm size, performance, risk, growth opportunity, firm age, institution ownership, and insider ownership. In April 2005, the Chinese government initiated a reform of the split share structure with the goal of converting all nontradable shares into tradable shares.<sup>7</sup> Considering that this reform may influence shareholder participation in AGMs, we also include *Split reform*, which equals 1 if the firm has finished the split share reform by year  $t$ , and 0 otherwise. The number of qualified foreign institutional investors permitted to invest directly in Chinese-listed firms has also increased over time. Considering that these are by law “large” investors in a given firm, we might expect them to exercise their voting rights in AGMs. Thus, we control for *QFII ownership* in the regression, which is the percentage ownership by qualified foreign institutional investors.<sup>8</sup> We include firm fixed effects to control for any time-invariant unobserved heterogeneity, and year fixed effects to control for time variations. Following Petersen (2009),  $p$ -values are based on robust standard errors clustered at the firm level.

Table 3 reports the regression results of Model (1). In Column (1), we use *Ownership representation* as the dependent variable. The coefficient on *Online AGM voting* is 2.653 and significant at the 1% level, implying that shareholder participation in AGMs is greatly increased when shareholders attend AGMs online.

Given that the effect of online AGMs on shareholder participation can be different between large shareholders and minority shareholders, we further divide the aggregate ownership attending AGMs into ownerships by nonblockholders and blockholders, and employ them as the dependent variable in Columns (2) and (3), respectively, of Table 3. We find that the coefficient on *Online AGM voting* is 1.708 and significant at the 1% level in Column (2). This coefficient indicates that ownership participation by nonblockholders in firms using online AGMs is about 1.7 percentage points higher than that of firms not using online AGMs. Considering that the average nonblockholder’s ownership participation is 4.8 percentage points in firms without online AGMs, this difference is economically important: *Nonblockholder ownership representation* is approximately 35% higher in firms with online AGMs than in firms without online AGMs.

In Column (3) of Table 3, the coefficient on *Online AGM voting* is not significantly different from zero, indicating that online AGMs do not increase blockholder participation in AGMs. This finding is not surprising, as blockholders usually

<sup>7</sup> As summarized by Li, Wang, Cheung, and Jiang (2011), the Shanghai and Shenzhen stock exchanges were characterized by a split share structure after their establishment in the 1990s. Two-thirds of the listed shares were not tradable; the remaining shares were tradable and were mainly held by domestic individual and institutional investors. Over the years, the Chinese government has recognized that the predominance of nontradable shares in the stock market constituted a major problem for the market’s proper development and has thus decided to implement such reform. By the end of 2007, most of the Chinese-listed firms had completed the reform.

<sup>8</sup> The Qualified Foreign Institutional Investor Program represents China’s effort to allow, on a selective basis, global institutional investors to invest in its RMB-denominated capital market. Once licensed, foreign investors are permitted to buy RMB-denominated “A shares” in China’s mainland Shanghai and Shenzhen stock exchanges.

**TABLE 3** Online AGM voting and shareholder participation

Variable	Ownership representation (1)	Nonblockholder ownership representation (2)	Blockholder ownership representation (3)	Shareholder participation (4)
Online AGM voting	2.653*** (.000)	1.708*** (.000)	-0.262 (.285)	0.182*** (.000)
Size	5.628*** (.000)	1.898*** (.000)	2.766*** (.000)	-0.008*** (.000)
ROA	15.300*** (.000)	7.078*** (.000)	1.659 (.189)	0.060*** (.000)
Stock return	0.308** (.021)	0.727*** (.000)	-0.493*** (.000)	0.008*** (.000)
Stock volatility	0.659 (.775)	-1.383 (.424)	4.073* (.084)	0.004 (.880)
MB	0.432*** (.000)	0.308*** (.000)	0.281*** (.000)	0.001 (.148)
Institution ownership	-2.689*** (.000)	-2.933*** (.000)	1.676*** (.000)	0.015*** (.005)
Insider ownership	-5.839*** (.001)	-2.645* (.055)	-0.953 (.612)	-0.035* (.090)
Firm age	-0.481*** (.000)	-0.108 (.224)	-0.012 (.920)	-0.001 (.582)
Split reform	-0.868* (.052)	0.518 (.122)	0.124 (.786)	0.009* (.065)
QFII ownership	-0.959 (.925)	24.605*** (.001)	-40.527*** (.000)	0.196* (.090)
Constant	-59.414*** (.000)	-33.646*** (.000)	-6.813* (.092)	0.242*** (.000)
Firm fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	15,322	15,322	15,322	15,322
R <sup>2</sup>	.815	.482	.687	.540

Note. This table reports the results showing how online annual general meetings (AGMs) influence shareholder participation in AGMs. *Online AGM voting* is an indicator variable that equals 1 if shareholders can vote in AGMs via an online platform, and 0 otherwise. Other variables are defined in the Appendix. All continuous variables are winsorized at the top and bottom 1%. *p*-Values based on robust standard errors clustered at the firm level are reported in parentheses.

\*\*\*Significant at the 0.01 level.

\*\*Significant at the 0.05 level.

\*Significant at the 0.10 level.



attend on-site AGMs because of their greater interest in the firm. In the remainder of this article, we focus our analysis on nonblockholder ownership in AGMs.

In Column (4) of Table 3, the dependent variable is *Shareholder participation* in AGMs (measured in percentage points). The coefficient on *Online AGM voting* is 0.182 and significant at the 1% level, indicating that online voting increases shareholder participation in AGMs. The economic magnitude is also sizable: the shareholder participation number in firms using online AGMs is 0.182 percentage points larger than that in firms not using online AGMs, relative to the sample average participation of 0.04 percentage points in firms without online AGMs (i.e., a difference of approximately five times).

The results of our control variables show that strong performance and high growth opportunities increase the incentives of shareholders to attend AGMs. Furthermore, firms with lower executive ownership and higher QFII ownership have higher shareholder participation in AGMs. Finally, shareholders are more likely to attend AGMs of firms completing the split share reform.

Overall, the results in Table 3 show that shareholders are more likely to participate in AGMs when they can attend the AGMs online. The boosted participation in AGMs is particularly pronounced for nonblockholders.

A natural question is whether participation jumps immediately after firms introduce online AGMs, or if it takes time for the participation rate to increase. We investigate this question in Table 4. The regression specification is similar to that in Table 3. We replace *Online AGM voting* with three indicator variables: *Online AGM voting*<sub>t+1</sub>, *Online AGM voting*<sub>t+2</sub>, and *Online AGM voting*<sub>t+3 and after</sub>. These variables indicate years relative to the year of adoption of online AGM voting. *Online AGM voting*<sub>t+1</sub> indicates the first year the firm initiated online AGM voting, *Online AGM voting*<sub>t+2</sub> indicates the second year the firm initiated online AGM voting, and *Online AGM voting*<sub>t+3 and after</sub> indicates the third and subsequent years the firm initiated online AGM voting. The coefficients on all three indicators are positive and significant at the 1% level. For example, the coefficient on *Online AGM voting*<sub>t+1</sub> is 1.870 (significant at the 1% level) when the dependent variable is *Nonblockholder ownership representation* and is 0.173 (significant the 1% level) when the dependent variable is *Shareholder participation*. The magnitudes of the coefficients are comparable to those reported in Table 3 (1.708 and 0.182, as reported in Columns (2) and (4), respectively, of Table 3). These results indicate that participation jumps immediately after firms introduce online voting in AGMs.

## 4.2 | Effect of costs of attending on-site AGMs

We expect that online AGMs are more beneficial to shareholders who face higher costs of attending on-site AGMs. To test this prediction, we construct *Transportation center*, which is an indicator variable that equals 1 if the firm's headquarters are located in a transportation center, and 0 otherwise. Considering that it is typically more convenient for shareholders to attend on-site AGMs when firms are located in transportation centers, we expect that the positive association between online AGMs and shareholder participation is weaker for firms located in a place that is easy to reach physically. To examine this implication, we add *Transportation center* and its interaction with *Online AGM voting* in Model (1).

Table 5 reports the interaction regression results. In Column (1), the dependent variable is *Nonblockholder ownership representation*. The interaction term *Online AGM voting* × *Transportation center* has a negative and significant coefficient, indicating that the effects of online AGMs on shareholder participation are weaker when firms are located in transportation centers. Specifically, the coefficient on *Online AGM voting* × *Transportation center* is −0.591 (significant at the 10% level), and the coefficient on *Online AGM voting* is 1.918 (significant at the 1% level). The economic magnitude is sizable: online AGMs increase *Nonblockholder ownership representation* by about 2 percentage points for firms located outside transportation centers, but the increase shrinks to about 1.3 percentage points (= 1.918 − 0.591) for firms located in transportation centers. We obtain a similar inference when examining *Shareholder participation* in Column (2).

Overall, these results suggest that the positive effect of online AGMs on shareholder participation in AGMs is more evident when shareholders face higher costs of attending the AGMs on-site.

**TABLE 4** Timing of the effect of online AGM voting

Variable	Nonblockholder ownership representation (1)	Shareholder participation (2)
Online AGM voting <sub>g<sub>t+1</sub></sub>	1.870*** (.000)	0.173*** (.000)
Online AGM voting <sub>g<sub>t+2</sub></sub>	1.481*** (.000)	0.156*** (.000)
Online AGM voting <sub>g<sub>t+3 and after</sub></sub>	1.079*** (.001)	0.162*** (.000)
Size	1.643*** (.000)	-0.005*** (.006)
ROA	6.586*** (.000)	0.083*** (.000)
Stock return	0.726*** (.000)	0.010*** (.000)
Stock volatility	-1.974 (.113)	-0.085*** (.001)
MB	0.339*** (.000)	0.002*** (.002)
Institution ownership	-4.335*** (.000)	0.011** (.012)
Insider ownership	4.028*** (.000)	0.095*** (.000)
Firm age	-0.033 (.654)	0.001 (.377)
Split reform	0.470 (.203)	0.011* (.055)
QFII ownership	26.371*** (.001)	0.237** (.047)
Constant	-29.400*** (.000)	0.148*** (.000)
Firm fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Observations	25,475	25,475
R <sup>2</sup>	.397	.417

Note. This table examines the timing of the effect of online annual general meeting (AGM) voting on shareholder participation. The dependent variables are *Nonblockholder ownership representation* and *Shareholder participation*. *Online AGM voting<sub>g<sub>t+1</sub></sub>* indicates the first year the firm initiated online AGM voting, *Online AGM voting<sub>g<sub>t+2</sub></sub>* indicates the second year the firm initiated online AGM voting, and *Online AGM voting<sub>g<sub>t+3 and after</sub></sub>* indicates the third and subsequent years the firm initiated online AGM voting. Other variables are defined in the Appendix. All continuous variables are winsorized at the top and bottom 1%. *p*-Values based on robust standard errors clustered at the firm level are reported in parentheses.

\*\*\*Significant at the 0.01 level.

\*\*Significant at the 0.05 level.

\*Significant at the 0.10 level.

**TABLE 5** Effect of costs of attending on-site AGMs

Variable	Nonblockholder ownership representation (1)	Shareholder participation (2)
Online AGM voting	1.918*** (.000)	0.186*** (.000)
Transportation center	0.298 (.397)	0.012** (.023)
Online AGM voting × Transportation center	−0.591* (.087)	−0.011** (.035)
Size	1.902*** (.000)	−0.008*** (.000)
ROA	7.086*** (.000)	0.060*** (.000)
Stock return	0.728*** (.000)	0.008*** (.000)
Stock volatility	−1.435 (.407)	0.003 (.909)
MB	0.308*** (.000)	0.001 (.139)
Institution ownership	−2.923*** (.000)	0.015*** (.004)
Insider ownership	−2.622* (.058)	−0.034* (.099)
Firm age	−0.110 (.214)	−0.001 (.567)
Split reform	0.522 (.119)	0.009* (.063)
QFII ownership	24.526*** (.001)	0.193* (.096)
Constant	−33.830*** (.000)	0.235*** (.000)
Firm fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
Observations	15,322	15,322
R <sup>2</sup>	.482	.541

Note. This table examines whether the relation between online annual general meetings (AGMs) and shareholder participation depends on the costs of attending AGMs on-site. The dependent variables are *Nonblockholder ownership representation* and *Shareholder participation*. *Online AGM voting* is an indicator variable that equals one if shareholders can vote in AGMs via an online platform, and zero otherwise. *Transportation center* is an indicator variable that equals one if the firm is located in one of China's transportation centers, and zero otherwise. Other variables are defined in the Appendix. All continuous variables are winsorized at the top and bottom 1%. *p*-Values based on robust standard errors clustered at the firm level are reported in parentheses.

\*\*\*Significant at the 0.01 level.

\*\*Significant at the 0.05 level.

\*Significant at the 0.10 level.

### 4.3 | Effect of ownership concentration

If a firm is heavily controlled by large shareholders, minority shareholders have little influence on corporate decisions, even if they actively participate in online AGMs. In contrast, if a firm is widely held, minority shareholders are more likely to make a difference. For this reason, we expect the effect of online AGMs on shareholder participation to be stronger for firms with more dispersed ownership. To examine this implication, we include *Ownership of controlling shareholders* and its interaction with *Online AGM voting* in Model (1). The expression “controlling shareholders” refers to the largest shareholder in a firm.

Table 6 reports the interaction regression results. In Column (1), the dependent variable is *Nonblockholder ownership representation*. The coefficient on the interaction term *Online AGM voting* × *Ownership of controlling shareholders* is negative and significant (at the 1% level), indicating that the effects of online AGMs on shareholder participation are weaker when a larger proportion of the firm’s shares is held by controlling shareholders. We find similar results when examining *Shareholder participation* in AGMs in Column (2). In summary, these results suggest that the positive relation between online AGMs and shareholder participation is more evident when the firm is more widely held.

### 4.4 | Identification strategy: Difference-in-differences approach based on the mandatory requirement in 2014

Our main results may be subject to an omitted variable problem. That is, some variables omitted from the regression correlate with both online AGM voting and shareholder participation. For example, a firm with a stronger culture of shareholder democracy may be more likely to adopt online AGM voting, and such a culture may attract more shareholder participation in AGMs. In this case, the corporate culture is unobservable but positively correlated with both online AGM voting and shareholder participation, biasing our coefficient estimates of *Online AGM voting* upward. In contrast, a firm facing severe barriers to communication with shareholders may be more likely to adopt online AGMs to overcome those barriers, though the barriers could prevent shareholders from participating in AGMs. In this case, such unobservable communication barriers would be positively correlated with online AGM voting but negatively correlated with shareholder participation in AGMs, biasing our coefficient estimates of *Online AGM voting* downward. In summary, the omitted variable problem could bias our results either upward or downward.

To address this problem, we exploit China’s 2014 policy for online AGM voting, in which the Shanghai and Shenzhen stock exchanges required all public firms to provide online voting in addition to traditional on-site voting at AGMs. As shown in Table 1, the percentage of firms with online AGM voting increases from 34.2% in 2013 to 100% in 2014. We track shareholder participation from 3 years before 2014 to 3 years afterward (i.e., 2011–2013 vs. 2014–2016), and use a standard difference-in-differences approach as specified below:

$$Participation_t = a_0 + a_1 Treat \times Post + a_2 Post + a_3 Control\ variables + Firm\ FE + \varepsilon_t. \quad (2)$$

The *Treat* indicator equals 1 for firms that had not adopted online AGM voting in 2013, and 0 otherwise. Thus, the treated firms are those that were required to adopt online AGM voting in 2014, and the control firms are those that had adopted online AGM voting before 2014. The *Post* indicator equals 1 for the 2014–2016 period and 0 for the 2011–2013 period. We also include the list of control variables used in Table 3. The coefficient of interest in Equation (2) is  $a_1$ , which captures the participation differences in treated firms before and after the mandatory requirement as opposed to similar before and after differences in control firms.<sup>9</sup>

Figure 1 plots shareholder participation for the treated firms (i.e., firms that had not adopted online AGM voting in 2013) and the control firms (i.e., firms that had adopted online AGM voting in 2013) before and after China’s 2014 mandatory requirement of online AGM voting. Panel A illustrates *Nonblockholder ownership representation*, and Panel B illustrates *Shareholder participation*. We find that the treated and control firms share similar trends before the policy

<sup>9</sup>*Treat* is not included in the regression because it is absorbed by firm fixed effects.

**TABLE 6** Effect of ownership concentration

Variable	Nonblockholder ownership representation (1)	Shareholder participation (2)
Online AGM voting	4.558*** (.000)	0.219*** (.000)
Ownership of controlling shareholders	15.466*** (.000)	0.047*** (.003)
Online AGM voting × Ownership of controlling shareholders	-7.825*** (.000)	-0.103** (.014)
Size	1.336*** (.000)	-0.009*** (.003)
ROA	5.475*** (.000)	0.056*** (.000)
Stock return	0.684*** (.000)	0.008*** (.000)
Stock volatility	-1.034 (.691)	0.007 (.904)
MB	0.258*** (.002)	0.001 (.327)
Institution ownership	-2.374*** (.000)	0.018*** (.007)
Insider ownership	-2.043 (.296)	-0.035 (.233)
Firm age	-0.097 (.367)	-0.001 (.738)
Split reform	0.992** (.014)	0.011* (.074)
QFII ownership	24.563*** (.010)	0.189 (.225)
Constant	-28.317*** (.000)	0.245*** (.000)
Firm fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
Observations	15,322	15,322
R <sup>2</sup>	.496	.542

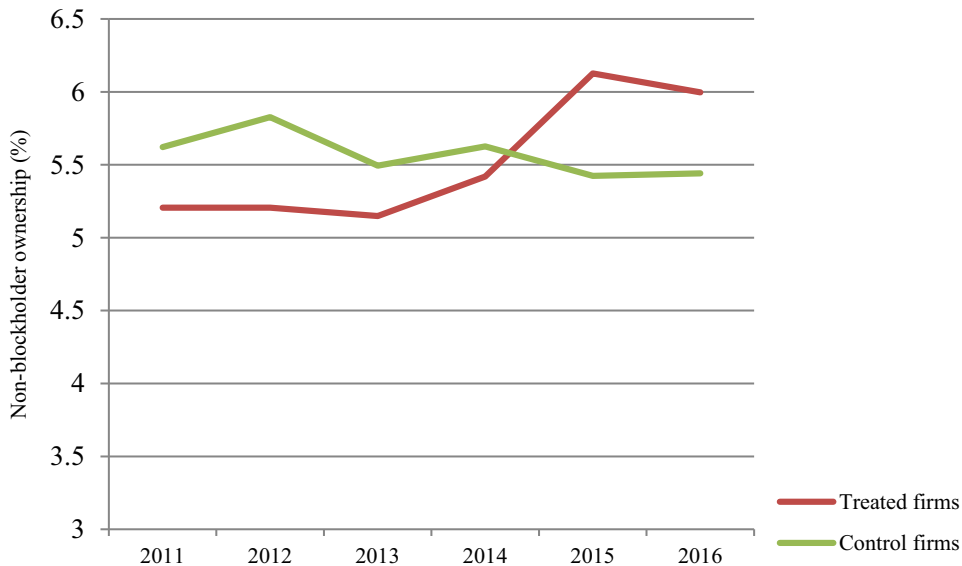
Note. This table examines whether the relation between online annual general meetings (AGMs) and shareholder participation depends on the firm's ownership concentration. The dependent variables are *Nonblockholder ownership representation* and *Shareholder participation*. *Online AGM voting* is an indicator variable that equals one if shareholders can vote in AGMs via an online platform, and zero otherwise. *Ownership of controlling shareholders* is the number of shares owned by the controlling shareholder normalized by total shares outstanding. Controlling shareholder is the largest shareholder in a firm. Other variables are defined in the Appendix. All continuous variables are winsorized at the top and bottom 1%. *p*-Values based on robust standard errors clustered at the firm level are reported in parentheses.

\*\*\*Significant at the 0.01 level.

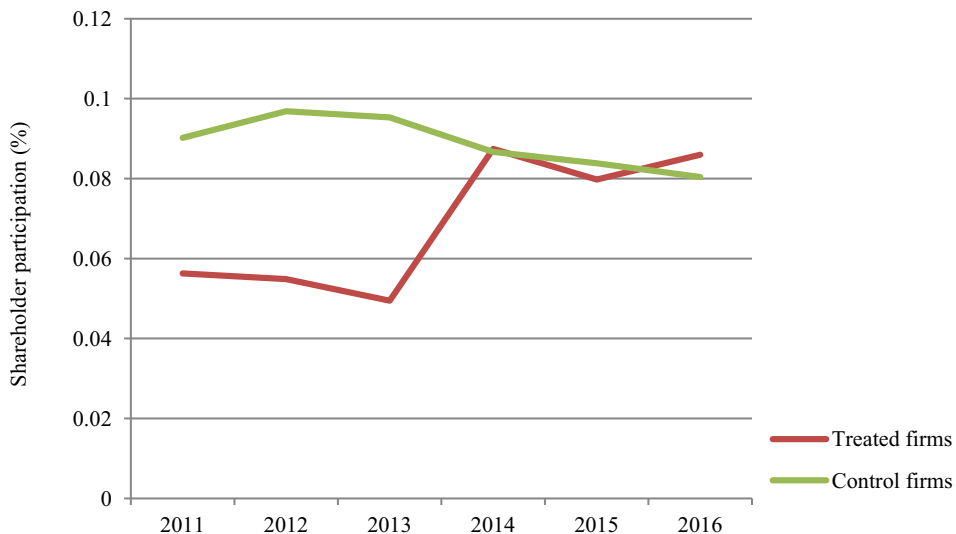
\*\*Significant at the 0.05 level.

\*Significant at the 0.10 level.

### A Non-blockholder Ownership Representation



### B Shareholder Participation



**FIGURE 1** Shareholder participation around the 2014 mandatory requirement of online AGM voting [Color figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

*Note.* This figure presents the average shareholder participation for the treated group (i.e., firms that had not adopted online annual general meeting [AGM] voting in 2013) and the control group (i.e., firms that had adopted online AGM voting in 2013) before and after the 2014 mandatory requirement of online AGM voting

**TABLE 7** Difference-in-differences approach based on the 2014 mandatory requirement of online AGM voting

Variable	Nonblockholder ownership representation (1)	Shareholder participation (2)
Treat × Post	2.019*** (.001)	0.071*** (.000)
Post	-2.543*** (.000)	-0.018** (.042)
Size	2.181*** (.000)	-0.012*** (.000)
ROA	4.874*** (.003)	0.063*** (.006)
Stock return	0.713*** (.000)	0.008*** (.000)
Stock volatility	-1.664 (.382)	-0.173*** (.000)
MB	0.250*** (.000)	-0.001 (.399)
Institution ownership	-4.349*** (.000)	-0.004 (.625)
Insider ownership	8.327*** (.000)	0.127*** (.000)
Firm age	-0.142* (.056)	-0.003*** (.006)
QFII ownership	5.335 (.788)	0.205 (.469)
Constant	-39.825*** (.000)	0.362*** (.000)
Firm fixed effect	Yes	Yes
Observations	8,746	8,746
R <sup>2</sup>	.504	.488

Note. This table reports difference-in-differences tests that examine the effect of the 2014 mandatory requirement of online annual general meeting (AGM) voting on shareholder participation in AGMs. The dependent variables are *Nonblockholder ownership representation* and *Shareholder participation*. *Treat* is an indicator variable that equals one for firms that had not adopted online AGM voting in 2013, and zero otherwise. *Post* is an indicator variable that equals one for the 2014–2016 period, and zero for the 2011–2013 period. Other variables are defined in the Appendix. All continuous variables are winsorized at the top and bottom 1%. *p*-Values based on robust standard errors clustered at the firm level are reported in parentheses.

\*\*\*Significant at the 0.01 level.

\*\*Significant at the 0.05 level.

\*Significant at the 0.10 level.

change, supporting the parallel trends assumption associated with difference-in-differences. Moreover, the figure also shows a sizable increase in shareholder participation after the mandatory requirement of online AGMs is in effect.

Table 7 reports the regression results. In Column (1), the dependent variable is *Nonblockholder ownership representation*. The coefficient on *Treat × Post* is 2.019 and significant at the 1% level, indicating that mandatory online AGM adoption leads to an increase in *Nonblockholder ownership representation* by 2.019 percentage points in the treated

firms as compared to the control firms. We obtain a similar inference when examining *Shareholder participation* in Column (2).

In summary, based on China's 2014 mandatory requirement for online AGM voting as a quasi-natural experiment, we provide evidence that online AGM voting has a positive causal effect on shareholder participation in AGMs.

## 4.5 | Robustness check

First, we employ a matching technique to examine the differences in shareholder participation in AGMs between firms using and not using online AGMs. The matching procedure controls for selection based on observable firm characteristics.

We first estimate the propensity scores from 2005 to 2013 using a probit model in which the dependent variable is *Online AGM voting*. The independent variables compose the full set of firm characteristics, as shown in Table 3. The probit model results are presented in Column (1) in Panel A of Table 1A1 in the Supporting Information. We find that the specification captures some variation in the choice variables, as indicated by the significant coefficients on firm size, return on assets (ROA), stock return, stock volatility, growth opportunity, executive ownership, firm age, and the split reform indicator. We then use the predicted probabilities (propensity scores) from Column (1) and perform a nearest neighbor matching procedure to match each firm-year observation with online AGMs to the firm-year observation without online AGMs.

Because the validity of propensity score matching depends on finding closely matched firms, we conduct a diagnostic test. Specifically, we rerun the probit model restricted to the matched sample of treated firms and control firms. The probit estimates are presented in Column (2) in Panel A of Table 1A1 in the Supporting Information. We find that no independent variables are statistically significant. The diagnostic test suggests that propensity score matching has removed meaningful observable differences between treated firms and control firms (other than the difference in online AGMs).

Based on the matched sample, we then compare shareholder participation in AGMs between firms adopting online AGMs and their matched peers without online AGMs. The results are presented in Panel B of Table 1A1, Supporting Information. As shown in Column (1) for the nearest neighborhood matching, average *Nonblockholder ownership* attending AGMs is higher in firms with online AGMs than in firms without by 1.6 percentage points (or an increase of one-third, considering that average *Nonblockholder ownership* of 4.8 percentage points is in the latter group). Furthermore, average *Shareholder participation* is higher in firms with online AGMs than in firm without by about 0.1 percentage points (or a difference of 2.5 times, considering that average *Shareholder participation* of 0.04 percentage points is in the latter group).

As a robustness test, we employ two other matching techniques: the Gaussian kernel and local linear regression. The comparison results are presented in Columns (2) and (3) in Panel B of Table 1A1 in the Supporting Information, respectively. Similarly, firms using online AGMs have higher *Nonblockholder ownership representation* and *Shareholder participation* than firms not using online AGMs.

Overall, these results further support that the availability of online AGMs significantly increases shareholder participation in AGMs, particularly for minority shareholders.

Second, so far, we have used only the 5% cutoff to define blockholders. As a robustness test, we use various alternative cutoffs in this subsection. The regression in Table 1A2 in the Supporting Information is the same as in Table 3, except that we use a different cutoff value for blockholders. In Columns (1) and (2) of Table 1A2, Supporting Information, we redefine the blockholders using 3% as the cutoff, and we continue to find that online AGMs significantly increase shareholders' participation in annual meetings, especially for minority shareholders. In Columns (3) and (4), we redefine the blockholders using 1% as the cutoff, and our inference is unchanged.

In Table 1A3, Supporting Information, we focus on firms with no institutional ownership and repeat the analysis in Table 3. Because these firms have no institutional ownership, we remove *Institution ownership* and *QFII ownership* from the regression. We continue to find that the coefficients on *Online AGM voting* are positive and significant when the



**TABLE 8** Analysis of CAR on the announcement date of initiating online AGMs

Date	Average CAR	Average dollar value of CAR (USD million)
Day -1 to +1	0.903%***	7.064***
Day -3 to +3	2.289%***	12.648***
Day -5 to +5	3.314%***	18.691***

Note. This table reports the announcement returns when a firm initiates its online annual general meeting (AGM). The sample consists of 2,267 announcements from 2005 to 2017. The dollar value of cumulative abnormal returns (CARs) is computed as CARs multiplied by the values of market capitalization at the previous fiscal year-end.

\*\*\*Significant at the 0.01 level.

dependent variables are *Nonblockholder ownership representation* and *Shareholder participation*. These results indicate that online AGMs significantly increase shareholders' participation in the subsample of firms held by no institutional investors.

In Table 1A4, Supporting Information, we focus on a sample of firms located in Beijing, Shanghai, and Shenzhen. These three cities are China's financial centers, and thus a large number of public firms are located in them. We are interested in determining whether our results are similar or different when focusing on this sample. The regression specification is the same as that in Table 3. Our inference is unchanged: allowing shareholders to vote online significantly increases shareholder participation, especially for minority shareholders. In summary, our main results are similar when focusing on firms in Beijing, Shanghai, and Shenzhen.

## 5 | EFFECTS OF ONLINE AGM VOTING

### 5.1 | Market reaction to the announcements of initiating online AGMs

To shed light on the value implication of online AGMs, we examine the market reaction to a firm's announcement that it is adopting online AGMs. If online AGMs provide minority shareholders more opportunities to communicate with management, voice their concerns, and protect their interests in AGMs, we expect a positive market reaction when a firm initiates the online AGM. However, if online AGMs lead to (inefficient) interventions of unsophisticated minority investors, or if the participation of minority investors in the AGM is economically unimportant, we expect a negative or zero market reaction when a firm initiates the online AGM.

Following the standard methodology for event studies, we calculate cumulative abnormal returns (CARs) around the announcement date when a firm initiates its online AGM. We exclude firm observations with confounding events during the online AGM announcement dates, such as mergers and acquisitions, debt restructuring, asset divestment, asset exchange, and so on. We use the China market index, which is a market capitalization-weighted average of the Shanghai Stock Exchange Composite Index and the Shenzhen Stock Exchange Composite Index, as the market portfolio and estimate the parameters of the market model using stock returns over the 200-trading-day period from trading days -210 to -10 relative to the event date (day 0 is the announcement date of initiating online AGMs). The difference between the firm's daily return and the predicted daily return based on the market model is the firm's daily abnormal return. We calculate the CAR over the event window [-1, +1], [-3, +3], and [-5, +5].

As reported in Table 8, average CAR [-1, +1], CAR [-3, +3], and CAR [-5, +5] are 0.90%, 2.29%, and 3.31%, respectively, all of which are significant at the 1% level. This indicates that online AGMs are positively received by the stock market. We also compute the dollar value of abnormal return by multiplying CAR with the firm's market capitalization in the previous fiscal year-end. Based on CAR [-3, +3], for example, the average dollar value of the abnormal return is close to US\$13 million.

Overall, Table 8 provides evidence that the stock market reacts positively when a firm initiates online AGMs. In other words, the easy access of shareholders to vote in AGMs via an online platform increases shareholder value.

## 5.2 | Online AGMs and corporate governance

So far, we have shown that online AGMs increase minority investors' participation in AGMs. A natural question is "can online AGMs improve corporate governance?" We investigate this question from various aspects in Table 9. We first examine whether online AGMs are associated with a higher likelihood for proposals to be vetoed in AGMs. In Column (1), the dependent variable is *Proposal veto*, which equals 1 if at least one proposal is rejected in the AGM, and 0 otherwise. The key independent variable is *Online AGM voting*. We estimate a linear probability model with firm and year fixed effects. The coefficient on *Online AGM voting* is 0.021 and significant at the 1% level, indicating that online AGMs are associated with a higher likelihood of proposals being rejected by about 2%. The economic magnitude is also meaningful, considering that the corresponding unconditional probability is 1.14%.

In Column (2) of Table 9, we examine the relation between online AGMs and executive compensation. The dependent variable is  $\ln(\text{sum of the compensation of top executives})$ , and the key variable of interest is *Online AGM voting*  $\times$  *ROA*. The coefficient of *Online AGM voting*  $\times$  *ROA* is positive and significant. This result indicates that online AGMs are associated with higher managerial pay-performance sensitivity.

In Column (3) of Table 9, we examine the relation between online AGM voting and earnings management. The dependent variable is the absolute value of discretionary accruals estimated by the Jones model (Dechow, Sloan, & Sweeney, 1995; Jones, 1991). A larger value of discretionary accruals indicates more earnings manipulation or lower earnings quality. We find that the coefficient on *Online AGM voting* is negative and significant, indicating that online AGMs are associated with higher earnings quality.

In Column (4) of Table 9, we examine the relation between online AGM voting and tunneling. In many emerging markets, including China, tunneling is a severe problem for large shareholders expropriating minority shareholders. For example, Jiang, Lee, and Yue (2010) indicate that controlling shareholders in China usually use intercorporate loans to siphon wealth from minority shareholders. Specifically, controlling shareholders or their affiliates "borrow" money from the public firms they control, and in most cases, neither the interest nor the principal of the loan is ever paid back. Such tunneling leads to worse operating performance and a higher likelihood of financial distress for public firms. Following Jiang et al. (2010), we use "other receivables" to measure the tunneling of controlling shareholders. The coefficient on *Online AGM voting* is negative and significant at the 5% level, indicating that online AGM voting is associated with fewer tunneling activities.

In summary, Table 9 provides evidence that online AGMs provide a platform for minority investors to actively participate in annual meetings and lead to an improvement in corporate governance.

## 5.3 | Further discussion

So far, we have shown that online AGMs have a positive and significant effect on shareholder participation in AGMs and in firms' corporate governance. But outside China, what are the barriers preventing firms from adopting online AGMs?

Taking the United States, for example, there is indeed an increasing trend of holding online AGMs among U.S. public firms. As shown in a report by Broadridge Financial Solutions Inc., the number of U.S. firms that hold virtual-only shareholder meetings increases from 19 (in 2010) to 236 (in 2017). However, the major barrier hindering further expansion of online AGMs in the United States appears to be state corporate laws. For example, Delaware, where more than half of U.S. public firms are incorporated, amended its Delaware General Corporation Law to allow online shareholder meetings as late as 2000. As of 2018, nine states, such as Georgia, Idaho, and New York, still preclude corporations incorporated in those states from hosting online AGM meetings and insist that AGMs be held in a physical setting only. Some states, though allowing online shareholder meetings, impose impractical restrictions. For instance, California requires unrevoked shareholder consent to hold virtual-only meetings.<sup>10</sup> Moreover, given that online AGMs

<sup>10</sup>Please refer to the report "Principles and Best Practices for Virtual Annual Shareowner Meetings" ([https://www.broadridge.com/\\_assets/pdf/broadridge-vasm-guide.pdf](https://www.broadridge.com/_assets/pdf/broadridge-vasm-guide.pdf)).

**TABLE 9** Online AGM voting and corporate governance

Variable	Proposal veto (1)	Executive compensation (2)	Earnings management (3)	Tunneling (4)
Online AGM voting	0.021*** (.000)	0.004 (.733)	-0.007* (.055)	-0.002** (.041)
Online AGM voting × ROA		0.318* (.082)		
Size	0.003 (.233)	0.320*** (.000)	0.004 (.160)	0.001 (.133)
ROA	-0.052*** (.004)	0.759*** (.000)	-0.052*** (.005)	-0.014** (.014)
Stock return	-0.001 (.600)	-0.039*** (.000)	0.006*** (.002)	0.003*** (.000)
Stock volatility	-0.052 (.119)	-0.230** (.025)	0.111*** (.001)	0.037*** (.000)
MB	0.000 (.790)	0.027*** (.000)	0.007*** (.000)	-0.002*** (.000)
Institution ownership	0.001 (.862)	0.114*** (.000)	-0.026*** (.000)	-0.002 (.317)
Insider ownership	-0.015 (.585)	0.117 (.157)	-0.067** (.011)	-0.001 (.862)
Firm age	-0.000 (.835)	-0.009* (.086)	-0.003* (.057)	0.000 (.686)
Split reform	0.013* (.054)	0.096*** (.002)	0.021** (.041)	-0.056*** (.000)
QFII ownership	0.031 (.834)	1.464*** (.003)	0.340** (.036)	-0.122*** (.009)
Constant	-0.030 (.609)	7.991*** (.000)	0.032 (.636)	0.046** (.020)
Firm fixed effect	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes
Observations	15,322	15,115	14,885	15,143
R <sup>2</sup>	.163	.878	.347	.524

Note. This table reports the regression results of how online annual general meetings (AGMs) influence corporate governance. In Column (1), the dependent variable is *Proposal veto*, which is an indicator variable that equals 1 if at least one proposal is rejected in the AGM, and 0 otherwise. In Column (2), the dependent variable is *Executive compensation*, which is the natural logarithm of the total compensation of top executives. In Column (3), the dependent variable is *Earnings management*, which is the absolute value of discretionary accruals estimated by the Jones (1991) model. In Column (4), the dependent variable is *Tunneling*, which is other receivables normalized by total assets. *Online AGM voting* is an indicator variable that equals 1 if shareholders can vote in AGMs via an online platform, and 0 otherwise. Other variables are defined in the Appendix. All continuous variables are winsorized at the top and bottom 1%. *p*-Values based on robust standard errors clustered at the firm level are reported in parentheses.

\*\*\* Significant at the 0.01 level.

\*\* Significant at the 0.05 level.

\* Significant at the 0.10 level.

are a relatively new way to hold AGMs, it might take time and effort for a firm to establish the necessary technology and grow familiar with this form of meeting.

Another related question is “why do so few Chinese shareholders vote, even after having access to online AGMs?” There are several possible reasons. First, 80% of investors in China are individual investors. These investors trade very frequently and are highly short-term oriented (Allen, Qian, & Qian, 2005; Dong & Gou, 2010; Ying, Kong, & Luo, 2015). Short-term investors are usually less interested in participating in corporate governance issues. Second, large shareholders in China typically hold a dominating portion of the firm’s shares (Chen et al., 2013; Gul, Kim, & Qiu, 2010). Individual investors may lack the incentive to vote in AGMs, considering that a large shareholder could dominate the meeting.

Moreover, it would be an interesting topic to examine in other countries how shareholders vote in AGMs after obtaining online access. However, to the best of our knowledge, no such research exists, possibly because it is difficult to obtain data on shareholder participation in AGMs in other countries.

## 6 | CONCLUSIONS

There are increasing debates about the potential benefits of allowing shareholders to participate in AGMs via an Internet-based platform. On the one hand, advocates of online AGMs believe that it is a highly efficient way to enable shareholders to actively participate in shareholder meetings without incurring the expense and inconvenience of traveling to physical meeting sites, and thus it enhances shareholder participation in annual meetings. On the other hand, online AGMs could make little difference because large shareholders are likely to attend the physical meetings anyway and thus be unaffected. Moreover, minority shareholders may lack the incentive to attend online meetings because of their small stake in the firm. Furthermore, even if minority investors actively participate in an online meeting, too much intervention by unsophisticated and inexperienced minority investors may hurt managerial initiatives and thus be value destroying.

In this article, we empirically examine whether allowing shareholders to attend annual meetings online enhances shareholder participation in such meetings. We find that online AGMs significantly increase the participation of shareholders, especially minority shareholders. This result is more pronounced when the cost of attending physical meetings is higher and when the firm is more widely held, and it is robust when accounting for endogeneity concerns. Furthermore, we examine the real effects of conducting online AGMs. We document positive and significant stock returns when firms initiate online AGMs, and show that online AGMs are associated with an improvement in corporate governance, such as a higher likelihood of a proposal being vetoed, higher executive pay-performance sensitivity, fewer earnings manipulations, and fewer tunneling activities by controlling shareholders.

Overall, our findings indicate that online AGMs are a cost-effective way for shareholders to participate in corporate governance. Our study has important implications for policy makers who aim to increase shareholder participation in governance issues.

Last, proxy voting can be another way for minority shareholders to participate in corporate governance issues. Thus, it is important to control for proxy voting in the empirical analysis. However, to the best of our knowledge, data for proxy voting in China are not available. Considering that online AGM voting can be substituted by proxy voting, failing to control for proxy voting may work against us in discovering any significant impact of online AGMs. Nonetheless, readers should be aware of this possible limitation when deciding how our findings might be generalized.

## ACKNOWLEDGMENTS

The authors are grateful for the helpful comments from Rajkamal Iyer (Editor), an anonymous referee, Bin Ke, Heng Yue, Hong Zou, and the seminar participants at the 2014 International Young Scholar Corporate Finance and Governance Symposium and the 2015 China International Conference in Finance. Gao acknowledges financial support

from the Shanghai Pujiang Program (Grant No. 18PJC007), the Program for Professor of Special Appointment (Eastern Scholar) at Shanghai Institutions of Higher Learning (Grant No. TP2018001), and the National Natural Science Foundation of China (Grant No. 71973029). Huang thanks the National Natural Science Foundation of China (Grant No. 71632006), the MOE Project for Key Research Institutes of Humanities and Social Science in Universities (Grant No. 16JJD790037), and the 111 Project (Grant No. B18033). Zhang thanks the Shanghai Philosophy and Social Science Foundation (Grant No. 2017BGL009) and the Dawn Program of the Shanghai Education Commission. All errors are of authors.

## REFERENCES

- Aghion, P., & Tirole, J. (1997). Formal and real authority in organizations. *Journal of Political Economy*, 105, 1–29.
- Allen, F., Qian, J., & Qian, M. (2005). Law, finance, and economic growth in China. *Journal of Financial Economics*, 77, 57–116.
- Bradshaw, M., Liao, G., & Yu, M. (2019). Agency costs and tax planning when the government is a major shareholder. *Journal of Accounting and Economics*, 67, 255–277.
- Burkart, M., Gromb, D., & Panunzi, F. (1997). Large shareholders, monitoring, and the value of the firm. *Quarterly Journal of Economics*, 112, 693–728.
- Chen, X., Harford, J., & Li, K. (2007). Monitoring: Which institutions matter? *Journal of Financial Economics*, 86, 279–305.
- Chen, Z., Ke, B., & Yang, Z. (2013). Minority shareholders' control rights and the quality of corporate decisions in weak investor protection countries: A natural experiment from China. *Accounting Review*, 88, 1211–1238.
- Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *Accounting Review*, 70, 193–225.
- Denis, D., & Serrano, J. (1996). Active investors and management turnover following unsuccessful control contests. *Journal of Financial Economics*, 40, 239–266.
- Dong, J., & Gou, Y. (2010). Corporate governance structure, managerial discretion, and the R&D investment in China. *International Review of Economics & Finance*, 19, 180–188.
- Easterbrook, F., & Fischel, D. (1983). Voting in corporate law. *Journal of Law and Economics*, 26, 395–427.
- Fang, L., Lerner, J., & Wu, C. (2017). Intellectual property rights protection, ownership, and innovation: Evidence from China. *Review of Financial Studies*, 30, 2446–2477.
- Gillan, S., & Starks, L. (2000). Corporate governance proposals and shareholder activism: The role of institutional investors. *Journal of Financial Economics*, 57, 275–305.
- Gul, F., Kim, J., & Qiu, A. (2010). Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: Evidence from China. *Journal of Financial Economics*, 95, 425–442.
- Hartzell, J., & Starks, L. (2003). Institutional investors and executive compensation. *Journal of Finance*, 58, 2351–2374.
- Jensen, M. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 68, 831–880.
- Jiang, G., Lee, C., & Yue, H. (2010). Tunneling through intercorporate loans: The China experience. *Journal of Financial Economics*, 98, 1–20.
- Jiang, X. (2015). The problem of the solicitation of voting rights. *Tianjin Legal Science*, 124, 23–29.
- Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29, 193–228.
- Li, K., Wang, T., Cheung, Y., & Jiang, P. (2011). Privatization and risk sharing: Evidence from the split share structure reform in China. *Review of Financial Studies*, 24, 2499–2525.
- Lipton, M., & Rosenblum, S. (1991). A new system of corporate governance: The quinquennial election of directors. *University of Chicago Law Review*, 58, 187–253.
- Liu, J., Stambaugh, R., & Yu, Y. (2019). Size and value in China. *Journal of Financial Economics*, 134, 48–69.
- Petersen, M. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, 22, 435–480.
- Porter, M. (1992). Capital choices: Changing the way America invests in industry. *Journal of Applied Corporate Finance*, 5, 4–16.
- Pound, J. (1991). Proxy voting and the SEC: Investor protection versus market efficiency. *Journal of Financial Economics*, 29, 241–285.
- Shleifer, A., & Vishny, R. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94, 461–488.
- Ying, Q., Kong, D., & Luo, D. (2015). Investor attention, institutional ownership, and stock return: Empirical evidence from China. *Emerging Markets Finance and Trade*, 51, 672–685.

## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**How to cite this article:** Gao H, Huang J, Zhang T. Can online annual general meetings increase shareholders' participation in corporate governance? *Financial Management*. 2020;49:1029–1050. <https://doi.org/10.1111/fima.12301>

## APPENDIX: VARIABLE DEFINITIONS

Variable	Definition
<i>Ownership representation</i>	Number of shares owned by shareholders voting in annual general meetings (AGMs) divided by the total number of shares outstanding.
<i>Shareholder participation</i>	Number of shareholders voting in AGMs divided by the total number of shareholders.
<i>Nonblockholder ownership representation</i>	Number of shares owned by nonblockholders voting in AGMs divided by the total number of shares outstanding. Nonblockholders are shareholders who own less than 5% ownership of the firm.
<i>Blockholder ownership representation</i>	Number of shares owned by blockholders voting in AGMs divided by the total number of shares outstanding. Blockholders are shareholders who own no less than 5% ownership of the firm.
<i>Online AGM voting</i>	Indicator variable that equals one if the firm adopts online voting in the AGM, and zero otherwise.
<i>Size</i>	Natural logarithm of total assets.
<i>ROA</i>	Return on assets: net income divided by total assets.
<i>Stock return</i>	12-month cumulative stock returns during the fiscal year.
<i>Stock volatility</i>	Standard deviation of monthly stock returns for 36 months before the end of the fiscal year.
<i>MB</i>	Market-to-book ratio.
<i>Institution ownership</i>	Percentage of shares owned by institutional shareholders.
<i>Insider ownership</i>	Percentage of shares owned by executive managers.
<i>Firm age</i>	Number of years since the firm's incorporation.
<i>Split reform</i>	Indicator variable that equals 1 if the firm finishes the split share reform, and 0 otherwise.
<i>QFII ownership</i>	Percentage of shares owned by qualified foreign institutional investors.
<i>Transportation center</i>	Indicator variable that equals 1 if the firm locates in one of China's transportation centers, including Beijing, Shanghai, Tianjin, Chongqing, Guangzhou, Xi'an, Zhengzhou, Wuhan, Xuzhou, Jinan, Hangzhou, Lanzhou, Hefei, Taiyuan, Xining, Shijiazhuang, Dalian, Shenyang, Wuhu, Lianyungang, Nanjing, Nanchang, Xiamen, and Haikou, and 0 otherwise.
<i>Ownership of controlling shareholders</i>	Percentage of shares owned by controlling shareholders. Controlling shareholders hold the largest percentage of shares in firms.
<i>CAR</i>	Cumulative abnormal returns around the announcement date of AGMs.
<i>Proposal veto</i>	Indicator variable that equals 1 if at least one proposal is rejected in the AGM, and 0 otherwise.
<i>Executive compensation</i>	Natural logarithm of the total compensation of top executives.
<i>Earnings management</i>	Absolute value of discretionary accruals estimated by the Jones (1991) model.
<i>Tunneling</i>	Other receivables divided by total assets.