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Is Shareholders' Voice Strategically Shaped at Shareholder Meetings, and Does the Market Care?

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I analyze shareholder meeting transcripts and data including on undisclosed shareholder-submitted questions. I demonstrate that companies facing shareholder dissatisfaction (i.e., shareholders voting against management) are more likely to implement methods that limit shareholder voice during these meetings. Such methods include ignoring submitted questions and explicitly restricting the range of topics addressed. When such methods are used, meetings tend to be shorter and allocate less time to addressing shareholder questions. These voice-limiting methods are significantly more prevalent in virtual-only meetings, suggesting that particularly in these meetings shareholders' voice is limited. Virtual-only meetings are followed by smaller absolute abnormal returns, lower trading volume and volatility, and fewer online discussions. In contrast, meetings with more extensive communication are followed by stronger price updating. Taken together, these results indicate that, despite the increased accessibility of virtual-only meetings, relative to in-person meetings they generate less meaningful information for the market and, as a result, stimulate less trading activity.

Keywords: Shareholder meetings, shareholder votes, shareholder voice, virtual, in-person, Covid-19.

JEL Classification: G30, G34, G39, M20, O14, O33

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*School of Business Administration, the Hebrew University of Jerusalem. Email: miriam.schwartz@mail.huji.ac.il and ECGI. I am extremely grateful to John Chevedden and James McRitchie, who spent many hours sharing with me hundreds of questions they submitted to shareholder meetings. For many helpful discussions, I especially thank Douglas Chia (Soundboard Governance and Fellow at Rutgers Center for Corporate Law and Governance) and Nadira Narine (the Interfaith Center on Corporate Responsibility). In addition, I thank Alon Brav (Duke University), Chuck Callan (Broadridge), Jackie Cook (Morningstar), Paul Conn (Computershare), Kateryna Holland (University of Missouri), Rosemary Lally (Council of Institutional Investors), Ilan Guttman (NYU), Alexander Lebow (Say Technologies), Sanford Lewis (Strategic Counsel on Corporate Accountability), Sophia Li (Rutgers), Nadya Malenko (University of Michigan), Ernst Maug (University of Mannheim), Patrick McGurn (Institutional Shareholder Services), Brad Stock (Union Pacific), Yishay Yafeh (Hebrew University), Benjamin Segal (Hebrew University), Cas Sydorowitz (Georgeson), and Kate Volkova (University of Melbourne), and seminar/conference participants at a virtual seminar, Babson University, Boston University, MIT, the University of Technology Sydney, Yeshiva University, Tel Aviv University, Hebrew University, Bar Ilan University, and participants at the Virtual Shareholder Meeting Conference organized by the Institute for Law and Economics at the University of Pennsylvania, the Manchester Corporate Finance Conference, Israel Economic Association Conference, ECGI Ackerman Conference on Corporate Governance, Quanzhou Big Data Management Conference, FMA, and the European Finance Association for many helpful comments and insights, and Eitan Crema, Yehuda Daum, Ori Haimovich, Hadar Grossman, and Elon Shamir for their dedicated research assistance. Miriam Schwartz-Ziv thanks the Israel Science Foundation [grant 1370/23] for supporting this study.

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1. Introduction

On March 3, 2026, Warner Music Group held its annual shareholder meeting. The virtual-only meeting lasted 7 minutes and 31 seconds. While the meeting is a "shareholder meeting," not a single shareholder was heard at the meeting, and the meeting concluded after the host announced that "it appears that we have no germane questions" (submitted by shareholders). Such meetings lead to the question whether we should be concerned that (some) shareholder meetings have evolved into such a configuration.

Shareholder meetings are among the few key opportunities for most investors to engage directly with management and express their concerns about the firm's operations and strategies. These meetings provide a unique opportunity for shareholders to voice their opinions, gain insights into the company's activities, and hold management accountable. While an extensive literature exists on shareholder voting, with numerous studies exploring the determinants and outcomes of these votes, research focusing on the actual content of shareholder meetings, such as what is discussed, is only beginning to emerge. In this study, I focus on the content of shareholder meetings and examine what determines the content of the shareholder meeting, and how the content of the meeting relates to post-meeting trading patterns. [2] I also examine whether shareholders' ability to make their voices heard differs depending on the meeting format (virtual-only versus in-person), and how post-meeting trading patterns differ depending on the meeting format.

I show that when shareholders are less supportive of management, as indicated by low support rates for directors or for one of the proposals, firms are significantly more likely to introduce methods at the meeting that limit shareholders' voice. Support rates are observed by the company before the meeting, and thus before the company decides which methods it should use that may limit shareholders' voice. I examine four such methods.

The first method focuses on the company's choice to ignore questions submitted by shareholders at virtual-only meetings. Asking questions is the simplest and most accessible way for shareholders to make their voice heard. Therefore, understanding if and when companies limit the ability of shareholders to ask questions reveals whether and when firms are restricting shareholder participation. In virtual-only meetings, which are currently the most common format, shareholders submit questions in writing via a text box. Only the company can see the submitted questions and

[2] The literature examining the content of earnings calls has shown that the content of these meetings impacts abnormal volume and abnormal returns (e.g., Price, Doran, Peterson, and Bliss, 2012) and even predicts the likelihood of future restatements (Larcker and Zakolyukina, 2012).

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then decides which to address, while unanswered questions remain unseen by the public. To observe questions submitted but not addressed, I compiled a unique dataset of 767 questions submitted by two shareholders: John Chevedden and James McRitchie. Using this dataset, the first method defined for limiting shareholders' voice examines (I) whether the company addressed the questions submitted by these shareholders.

To capture additional methods firms may use to limit shareholder voice, I analyzed transcripts of 2,513 in-person and virtual-only shareholder meetings held between July 1, 2017 and June 30, 2023. For each transcript, I coded whether the company implemented three additional methods that may limit shareholder voice: (II) whether shareholders were allowed to present their questions themselves, thereby ensuring that the questions are not edited or favorably rephrased by the company and giving shareholders the opportunity to present follow-up questions; (III) whether questions were restricted to proposal-related topics, which significantly narrows the range of issues the company will address; and (IV) whether only pass-fail outcomes were disclosed, as opposed to precise support rates, thereby limiting shareholders' ability to ask questions at the meeting on low-support proposals.

For all four methods described above, I find that methods limiting shareholders' voice are significantly and substantially more common in meetings where shareholder support rates for directors or for a proposal are low. This suggests that firms strategically introduce voice-limiting methods when they observe that shareholders are unsupportive of management. This result is consistent with Li and Yermack (2016), who find that companies with negative insights regarding future performance schedule meetings at locations with difficult accessibility.

Additionally, I find that voice-limiting methods are significantly more likely to be used at virtual-only shareholder meetings, indicating that companies tend to restrict shareholder voice, especially in virtual settings. I strengthen the identification of this pattern by showing that this result holds when limiting observations to companies that shifted from the in-person to the virtual-only format, essentially due to an exogenous reason, namely, Covid. I also show that the likelihood of companies using methods that limit shareholders' voice is consistently higher at virtual-only meetings across all three periods included in the study: before Covid, during Covid, and after Covid.

I further show that using each of the methods noted above shapes the content of shareholder meetings. For example, meetings in which shareholders' questions are restricted to proposal-related topics address fewer questions, allocate less time to Q&A, and are shorter overall. These patterns apply to both in-person and virtual-only meetings. The results demonstrate that using

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each of the four methods noted above indeed limits communication at shareholder meetings. The findings also demonstrate that when companies do not address many or any questions, it is likely because they choose not to address questions, rather than due to a lack of questions submitted by shareholders. For example, I find that companies that choose to answer a question submitted by John Chevedden and James McRitchie adress, on average, 183% more questions than companies that choose to ignore a question they submitted. This demonstrates the power companies have in determining whether shareholders' voices are heard at the meeting.

The paper also highlights a clear shift from in-person to virtual-only shareholder meetings since the onset of the Covid pandemic. Before the pandemic, only 8.3% of S&P 500 companies held virtual-only meetings, with in-person meetings being the dominant format. During the pandemic, however, the use of virtual-only meetings surged to 85.1%. Importantly, even after the pandemic, virtual-only meetings remain the most prevalent format, accounting for 70.7% of meetings. This suggests that the shift toward virtual meetings, initially driven by the pandemic, continues to persist.

While at in-person meetings participants can typically ask a question or may occasionally even shout without permission, in virtual-only meetings shareholders are literally muted and the company controls whether and which shareholder questions are read. This raises the question of whether companies choose to hold virtual meetings strategically. I find that firms that opt for virtual-only meetings are more likely to do so when there is an indication that they will face shareholder scrutiny, i.e., when shareholders submit a relatively large number of proposals.

An important question in the context of financial markets is whether virtual-only meetings are ultimately more or less informative than in-person meetings. Brochet, Chychyla, and Ferri (2024) document that virtual-only meetings involve more limited communication. However, such communication may or may not be more effective. I show that, compared to in-person meetings, post-meeting absolute abnormal returns and trading volume at virtual-only meetings are smaller. For example, after virtual-only meetings, daily volume is expected to be 23.6%–59.8% smaller relative to that of in-person meetings. These results indicate that virtual-only meetings convey less meaningful information and that prices are consequently less likely to move (Karpoff, 1987; Hong and Stein, 1997; Kim and Verrecchia, 1994). This conclusion is also supported by the finding that virtual-only shareholder meetings are followed by fewer tweets about the company, further suggesting that less meaningful information is shared at virtual-only meetings (Cookson, Lu, Mullins, and Niessner, 2024).

The latter results prevail when contrasting the pre-meeting period with post-meeting periods of a given company, and also when limiting the analysis to the post-meeting period, while

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including a company fixed effect. Including a company fixed effect helps alleviate, to some extent, identification concerns, since the majority of the meetings were (initially) forced to shift to virtual-only meetings for exogenous reasons, namely, Covid. The results are evident both in the sample for which transcripts were available, and in a sample of all 2018–2023 S&P 500 companies. While Brochet, Chychyla, and Ferri (2024) do not find that post-meeting trading patterns vary when the meeting is held in a virtual-only format, I find evidence of such differences in part because I examine additional measures that capture trading and online discussions and examine a longer period.

I further examine how the content of shareholder meetings and vote outcomes relate to post-meeting trading patterns. I find that shareholder meetings that contain more extensive communication (e.g., address a large number of shareholder questions) are followed by stronger stock price movements, as reflected in larger post-meeting absolute abnormal returns, and greater investor consensus, as reflected in lower post-meeting trading volume and fewer tweets about the company. Taken together, these findings suggest that more extensive communication at shareholder meetings facilitates clearer price updating and reduces disagreement among investors. This pattern is consistent with Karpoff (1987), who notes that price changes reflect the arrival of new information, whereas trading volume reflects differences in investors' interpretations of that information.

To gain perspective on how shareholders view communication at virtual-only shareholder meetings, I distributed a questionnaire during each of the 2022–2024 proxy seasons to a select group of institutional investors with experience attending both in-person and virtual-only meetings. These investors expressed mixed opinions regarding the efficiency of virtual-only meetings. However, they clearly and consistently raised concerns about companies' ability to filter questions in virtual-only formats. This result aligns with the study's findings that virtual meetings are more likely to use methods that limit shareholders' voice.

Finally, to uncover the type of information companies may prefer to withhold from shareholders during shareholder meetings, I investigate which types of questions firms were particularly inclined to avoid addressing at virtual-only shareholder meetings. The findings indicate that firms were most likely to avoid addressing questions related to shareholders' involvement at meetings, e.g, questions shareholders' asked about the number of questions submitted by shareholders, or on vote outcomes, or on the number of attending shareholders at a virtual meeting. Thus, firms tend especially to refrain from disclosing information about shareholders' efforts to be involved in shareholder meetings.

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To summarize, the paper makes several contributions that I believe are meaningful. First, to my knowledge, this is the first study to show that firms strategically choose to introduce methods that limit shareholders' voice at meetings: They do the latter when they observe that shareholders' support rates are low. Second, I find that methods that limit shareholders' voice are significantly more common at virtual-only meetings, raising concerns about whether this format should continue to be used in its current form, especially given that it remains the most prevalent format. Third, I show that post-meeting absolute abnormal returns, trading volume, volatility, and tweet activity are smaller following virtual-only meetings, indicating that these meetings contain less meaningful information. Fourth, the questionnaire I distribute clearly demonstrates that shareholders are also concerned about their voice being limited at virtual-only shareholder meetings. Finally, I show that when meetings contain more extensive information (e.g., address many questions), prices are more likely to move and investor consensus increases, suggesting that more informative meetings generate stronger market responses. Taken together, the findings emphasize that the format of shareholder meetings and the extent of meaningful communications matter both shareholder voice and market reactions.

2. Methods Used by Firms to Limit Shareholders' Voice

2.1. Background on Shareholder Meetings

Public companies are required to hold an annual shareholder meeting. The meeting includes up to three portions: (a) Proposal presentation, which is the mandatory portion of the meeting that includes presenting the proposals submitted by management and the shareholders. Shareholder proposals are typically presented by the submitters or their authorized representatives. Firms typically disclose at the meeting preliminary vote outcomes for each proposal. (b) Business update, which provides shareholders with an update on the firm's business developments and activities, touching upon performance. (c) Q&A session, which allows shareholders to ask questions that are typically answered by the management team and possibly the directors. Figure 1 presents several snapshots from the Tesla 2019 annual shareholder meeting, which included each of these three portions, and indicates the length of each of these portions.

With respect to the Q&A session, questions are primarily submitted by retail investors, or by semi-social asset managers (e.g., union pension fund for employees). In the United States, the Q&A session is not legally mandatory, but firms have traditionally held such sessions, and firms that have skipped the Q&A session, or limited it, have at times faced harsh criticism (e.g., Home Depot in

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2006).[3] In some countries, like Germany, Australia, and Belgium, the Q&A portion of the meeting is mandatory.[4]

While in-person meetings involve a physical gathering (as illustrated in Figure 1), virtual-only meetings typically consist of a screen displaying a presentation, without video of the individual speaking. This is demonstrated in Figure 2, Panel A, which displays screenshots from Walmart's 2020 and 2025 virtual-only shareholder meetings. At in-person meetings, shareholders typically line up at a microphone and are allowed to ask questions (as illustrated in Figure 1). In contrast, at virtual meetings, questions are submitted via a text box (see Figure 2, Panel B), and the company decides which questions to address and which to ignore (and therefore not disclose).

Figure 3 reports the frequency with which S&P 500 companies held their annual shareholder meetings exclusively in person, in a hybrid format (i.e., in person and simultaneously online), or exclusively online. Panel A presents these figures separately for meetings held before Covid (i.e., July 1, 2017, through March 13, 2020, inclusive), during Covid (i.e., March 14, 2020, through September 1, 2021), and after Covid (i.e., September 2, 2021, through June 30, 2023). Panel B reports the distribution of meeting formats by proxy year for each year from 2018 to 2023. Each proxy year runs from July 1 of the calendar year preceding the proxy year through June 30 of the proxy year.

Figure 3, Panel A, shows that meetings shifted to the virtual format following Covid. This figure also shows that in each of the three periods examined (before, during, and after Covid), variation exists in the preferred meeting formats: As Panel A reports, before Covid, only 8.3% of S&P 500 companies held virtual-only meetings, with in-person meetings being the dominant format; During Covid, the use of virtual-only meetings surged to 85.1%, and even after the pandemic, virtual-only meetings remain the most prevalent format, accounting for 70.7% of meetings. Figure 3, Panel B, reports similar figures broken down by proxy year. Li and Yermack (2025) report similar figures for the S&P 1500 companies. Given that virtual-only meetings remain the most prevalent format, I believe

[3] See article in *New York Times*, https://www.nytimes.com/2006/05/27/business/27nocera.html.

[4] I thank Cas Sydorowitz for pointing this out to me with respect to Germany, and Stephen Bottomley for pointing this out to me with respect to Australia. The requirement to hold a question-and-answer session at shareholder meetings is mandated in Germany (detailed here: https://www.lathamgermany.de/2020/12/anderungen-bei-der-virtuellen-hauptversammlung-fur-die-hauptversammlungssaison-2021/?utm_source=Latham+%26+Watkins+LLP+-LathamGermany&utm_campaign=e42da13253-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_945a78c1cd-e42da13253-78806813) and in Australia under the Corporations Act 2001, Section 250S(1). See also Freeburn and Ramsay (2021). With respect to Belgium, see more information at: https://de-langhe.be/en/how-far-does-the-shareholders-right-to-ask-questions-reach/. Zetzsche, Anker-Sørensen, Consiglio, and Yeboah-Smith (2020) survey the legal obligations firms have to hold a Q&A session, depending on the country in which the firm operates.

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it is important to examine whether this format is effective and whether this format creates certain challenges.

2.2. Methods That Limit Shareholders' Voice

Prior studies have shown that firms may strategically limit shareholders' voices. Li and Yermack (2016) demonstrate that companies with anticipated weak abnormal returns schedule shareholder meetings at locations far from their headquarters, suggesting they strategically make it harder for shareholders to attend when poor performance is expected. Similarly, with respect to earnings calls, Cohen, Lou, and Malloy (2020) find that companies calling on analysts with more favorable recommendations face more negative future earnings surprises and restatements. Gow, Larcker, and Zakolyukina (2021) show that firms are more likely to avoid answering questions (e.g., by saying, "I can't give you any specifics") during earnings calls when performance is weak. Following these studies which suggest that companies limit critical voices, I investigate whether firms used virtual-only meetings to strategically curtail communication with shareholders, especially when facing criticism from them. In the analysis I examine the use of four methods that limit shareholders' voice as described below:

i) The first method focuses on a practice that is unique to virtual meetings—ignoring questions submitted by shareholders online for the Q&A portion of the meeting. In virtual meetings, shareholders typically submit questions in writing via a text box during the Q&A session. Figure 2, Panel B, illustrates such a text box from HP's 2020 virtual-only shareholder meeting. Questions that are submitted but not addressed are not observable to the public. Thus, to capture a firm's decision whether to address a question submitted at a virtual-only meeting, one must collect such questions directly from shareholders. With the generous help of Mr. John Chevedden and Mr. James McRitchie (henceforth, "C&M"), I collected all the questions that C&M submitted to virtual-only shareholder meetings held between March 20, 2020, and June 30, 2021. Appendix A details the questions C&M submitted to a sample of 5 of the 60 firms, along with the responses they received. Table BI (in Appendix B) shows that of the 767 questions C&M submitted and documented for this study, 287 were answered (i.e., 37.4% of the questions submitted). I estimate that during this period, the overall response rate for all questions submitted by shareholders is similar, at 42.1%.[5]

[5] According to the National Association of Corporate Directors (2021), meetings held on the Broadridge platform during the 2020 proxy season included, on average, 4.20 questions submitted by shareholders.

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Thus, the response rate for the questions submitted by C&M is only slightly lower than the overall response rate. Moreover, management rarely, if ever, knew the identity of the shareholder submitting a question at the virtual-only meetings examined. Accordingly, firms did not attempt to strategically ignore or address questions submitted by C&M or any other particular shareholder.[6] In Appendix B, Table BII, I show that proposals submitted by C&M received higher support rates from both ISS and shareholders relative to proposals submitted by other shareholders, suggesting that C&M promote reasonable issues. Using the questions collected from C&M, I construct the variable *Question addressed*, which is an indicator (at the question level) equal to one if the firm addressed a question submitted by C&M, and zero if it did not. This variable provides a proxy for the extent to which firms address or choose to ignore questions submitted by shareholders.

ii) The second variable that captures whether the firm is limiting shareholders' voice (which applies to both virtual-only and in-person meetings) is *Questions presented by shareholders*. This is an indicator variable that equals one if the transcripts and/ or recordings of the shareholder meeting reflect that shareholders presented their own questions and zero if a company representative presented the shareholder questions. Allowing shareholders to present their own questions ensures that the questions are not edited, shortened, or rephrased by the

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ProxyPulse (2020) reports on p. 6 that during the 2020 proxy season, the average number of questions submitted at the 193 virtual shareholder meetings for which shareholder proposals were submitted was 19, and that the average number of questions submitted at the 1,301 virtual shareholder meetings for which no shareholder proposals were submitted was 2. Thus, the weighted average number of questions submitted to a shareholder meeting is $4.20 = (19 \times 193 + 2 \times 1{,}301) / (193 + 1{,}301)$. To estimate how many of the questions submitted were actually addressed, I coded each of the 1,101 shareholder meetings held in the 2020 proxy season for which transcripts are available on Thomson Reuters, as well as the platform on which each meeting was broadcast. These data are obtained from the proxy statements. I identify 782 virtual shareholder meetings that were broadcast on Broadridge during the 2020 proxy season. These meetings addressed, on average, 1.93 questions, i.e., 1.93 / 4.20 of the questions shareholders submitted. C&M's response rate during the 2020 proxy season for firms that broadcast their meetings on Broadridge was 42.1%.

[6] Note, in this context, that during the 2020 proxy season, companies did not require shareholders to self-identify and only rarely requested (but did not require) shareholders to do so. Firms do not know who submitted questions unless shareholders identify themselves. C&M estimate that in the 2020 proxy season they identified themselves, when requested, for approximately 15 of the questions they submitted (they did not document for which questions they did so). In the 2021 proxy season, C&M documented the 20 questions for which they voluntarily identified themselves or were required to identify themselves. Thus, for the vast majority of questions included in the Shareholder Questions Dataset (95.4% = 732 / 767), firms were not able to intentionally screen questions submitted by C&M, since they did not know who submitted each question. Nevertheless, in unreported specifications, I repeat the column 2 specifications and exclude the 20 questions for which C&M documented that they identified themselves, and the results remain almost identical, supporting the conclusion that the documented pattern is not driven by firms that tend to avoid or especially address questions submitted by C&M.

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company in a less critical way. It also gives shareholders the opportunity to push back if they find the response unsatisfactory. This variable is missing for companies that did not address any questions. The measure is coded based on 2,513 transcripts and recordings of shareholder meetings held between July 1, 2017 to June 30 2023. Transcripts were obtained from Thomson Reuters who obtained them from Refinitiv.

iii) *Questions not limited to proposals* is an indicator variable equal to one if the firm did not state at the meeting that it would address only questions related to the proposals submitted by shareholders (this variable applies to both virtual-only and in-person meetings). Limiting questions to proposals limits the topics on which shareholders are permitted to ask questions since questions related directly to proposals are limited to a small range of topics. More specifically, in 92.7% of the meetings no proposals are submitted by shareholders. Additionally, 51.1% of the meetings only have the standard proposals submitted by companies (i.e., approving the auditors, say on pay, and appointing the directors). Thus, for the majority of meetings, limiting questions to proposals essentially limits shareholders' voice to topics pertaining to directors' appointments, the compensation paid in the previous year, and the auditors approved. This variable is coded manually from the above noted transcripts.

iv) *Precise vote outcomes announced*, an indicator equal to one if precise vote outcomes were presented at the meeting, and zero if only pass/fail results were announced (this variable applies to both virtual-only and in-person meetings). Although only preliminary vote outcomes are announced at the meeting, these preliminary results are typically identical/ almost identical to the formal and final vote outcomes, which firms are required to disclose in an 8-K filing up to 4 business days after the final voting results are known. By not revealing precise vote outcomes at the meeting, shareholders are unable to ask questions about proposals that receive low support rates but still pass, as they cannot identify these votes. Additionally, withholding precise vote outcomes delays the speed at which meaningful information is available to the market, potentially cooling the media's and investors' motivation to voice criticism on low-support votes. This variable is coded manually from the above noted transcripts.

To capture shareholder support for management, I use two measures that are based on shareholder votes, as shareholder votes reflect the most updated sentiment regarding satisfaction with the company and its management. [7] Firms observe the votes cast electronically by shareholders as soon as they are

[7] Using shareholder votes as a proxy for a company's most updated sentiment regarding shareholder satisfaction applies both to companies with plurality voting systems (76.9% of the sample) and to those with majority voting

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cast, and votes are typically cast in the days leading up to the meeting. Thus, when management enters the shareholder meeting, it essentially already knows the outcome of each vote. The two measures capturing shareholder support based on shareholder votes are:

I) *Average support rates for directors* measures the average fraction of votes cast in support of the directors proposed by management. Estimated using the ISS Voting Analytics dataset.

II) *At least one proposal bottom quintile support* an indicator variable that equals one if at least one of the proposals received shareholders' support rates within the bottom quintile of this question category (using ISS proposal categories), and zero otherwise. If this variable is equal to one the company had at least one proposal that received extremely low support rates, and it is equal to zero if it does not have such a proposal. Estimated using the ISS Voting Analytics dataset.

2.3. Strategic Use of Methods Limiting Shareholder Voice

Panels A-B of Figure 4 examine the relation between the four methods that limit shareholders' voice and shareholders' opposition. Specifically, Panel A (B) examines the relation between *Average opposition rates for directors* (*At least one proposal bottom quintile support)* and each of the four methods defined above. Panel A (B) of Figure 4 shows that firms that received low support rates for the directors proposed by management (extremely low support rates on at least one of the proposals), were the firms likely to use methods that limit shareholders' voice, i.e., they were less likely to answer questions submitted by C&M (*Question addressed*), less likely to have questions presented by shareholders (*Questions presented by shareholders*), more likely to limit questions to proposals (*Questions not limited to proposals*), and less likely to report at the meeting precise vote outcomes (*Precise vote outcomes announced*). For example, Panel A shows that when questions submitted by C&M were addressed, the average opposition rate for directors was only 3.8%, but when questions were not addressed the average opposition rate for directors is equal to 6.6%. Put differently, precisely when shareholders are not supportive of the firm's leadership, firms are likely to take steps that make it more challenging for shareholders to make their

systems, as lower support rates for directors in either system indicate that shareholders are less satisfied with the director, the company, and/or its management. I also point out that only two companies in the sample had directors receiving less than 50% average support, both these companies followed plurality voting and these votes did not involve proxy fights. Additionally, less than a handful of companies had average support rates near the 50% threshold, the exact number depends on the bandwidth defined, and excluding these observations does not alter the results substantially.

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voice be heard at shareholder meetings.

Table 1 Panel A follows Figure 4 and uses a formal regression model as specified below:

(1) *Method used by company*$=\beta_1$* *Indicator for shareholders' support*$_m$ + β_2* *Controls*$_m$+ FE_y+ FE_q

Method used by company includes in each specification one of the following four methods described above: *Question addressed, Questions presented by shareholders, Questions not limited to proposals, and Precise vote outcomes announced. Indicator for shareholders' support* includes in each of the specifications one of the following two variables specified above: *Average support rates for directors* or *At least one proposal bottom quintile support*. The vector *Controls*$_m$ includes the following variables *Log assets, Log of market capitalization, Book-to-market*, *Abnormal return (annual)*, *ROA, and Leverage*. All variables are defined in the Glossary of Variables. The analysis in columns 1-2 for the dependent variable *Question addressed* is conducted at the question level, and includes a question category fixed effect and proxy year fixed effects. The analysis in columns 3-8 which is conducted for the other three dependent variables is at the meeting level and includes industry fixed effects. Columns 3, 5, and 7 also include year fixed effects.

Since Model 1 of Table 1 includes question category fixed effects which capture the topic of each question, this specification examines how a question on the same topic (and frequently also phrased identically) is likely to be addressed at different firms, depending on the extent shareholders were supportive of the directors. Model 1 documents that if the *Average support rates for directors* increases by one standard deviation (equal to 7.3%, as reported in Panel B of Table 1), the likelihood that a question will be answered by the firm increases by 6.7% (0.073*0.924), and this estimate is significant at the 1% level. Relative to the average frequency C&M's questions were answered (37.42%, see Table BI in Appendix B), the former figure represents an increase of 17.9%. (6.7%/37.42%). Put differently, firms in which shareholders' votes tend to be unsupportive of the directors proposed by management, indicating contention between shareholders and the company's leadership team, are significantly less likely to address questions submitted by shareholders.

The remaining analysis reported in Table 1 Panel A pertains to methods used at both virtual-only and in-person shareholder meetings, and therefore includes both types of meetings. Columns 3-4 of Panel A of Table 1 focus on the dependent variable *Questions presented by shareholders* which is an indicator variable that equals one if shareholders presented their own questions and zero if a company representative presented the shareholder questions. Naturally, allowing shareholders to present their questions assures that shareholders have complete control of the content and the way the question is presented. The results document that shareholders are more likely to receive the opportunity to present their questions when shareholders and ISS are more supportive of management: when average

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support rates are higher (Column 3), and when none of the proposals received support rates within the bottom quintile of support rates (Column 4).[8]

Columns 5-6 show that when shareholders' support rates are high, companies are less likely to limit shareholder questions to proposals. For example, Column 5 estimates that if the *Average support rates for directors* increase by one S.D., the likelihood that questions are limited to proposals decreases by 1.7% (0.073*-0.233), and this estimate is significant at the 1% level. Relative to the mean frequency of questions being limited to proposals (11.8%, based on the variable *Questions not limited to proposals* reported in Table 1 Panel B), the latter estimate equals an increase of 14.4% (1.7%/11.8%). Columns 7-8 show that when shareholders' support rates are high, companies are more likely to disclose precise vote outcomes as opposed to only whether the votes passed or failed. For example, Column 8 estimates that if at least one proposal received support rates within the bottom quintile, the company is 3.7% less likely to announce precise vote outcomes. Given that the average frequency of the latter variable is equal to 20.7%, Column 8 estimates a 17.8% (3.7%/20.7%) increase relative to the mean. Taken together, the results in Panel A of Table 1 demonstrate that when shareholders are relatively unsupportive of management, firms use methods that limit shareholders' voice.

Finally, I note that the relation between the financial-performance measures (*ROA* and *Abnormal return*) and the methods examined in Panel A of Table 1 is insignificant and/ or inconsistent. This suggests that financial-performance-based measures do not relate to companies' choice as to whether to limit shareholders' voice. Rather, as demonstrated above, it is shareholder satisfaction as conveyed in their votes.

3. Are Methods that Limit Shareholders' Voice More Prevalent at Virtual-Only Meetings?

In this section, I examine whether companies are more likely to use methods that limit shareholders' voices at virtual-only meetings compared to in-person meetings. To do so, I test whether the methods that limit shareholders' voices and can be used in both in-person and virtual-only meetings (*Questions presented by shareholders*, *Questions not limited to proposals*, and *Precise vote outcomes announced*) are more likely to be used in one of these meeting formats. As will be shown below, I find

[8] For example, Column 4 documents that if at least one of the proposals on which shareholders voted received support rates within the bottom quintile of support rates for that proposal type (i.e., *At least one proposal bottom quintile* is equal to one), shareholders were 6.1% less likely to have the opportunity to present their questions themselves. Thus, a one S.D. increase in *At least one proposal bottom quintile support* (equal to 49.5%, see Panel B of Table 1) decreases the likelihood that a question is presented by shareholders by 3% (0.061 × 0.495), and this estimate is significant at the 1% level.

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that companies are more likely to use methods that limit shareholders' voice particularly at virtual-only shareholder meetings (as compared to in-person meetings).

More specifically, Table 2, Panel A, Column 1 shows that relative to in-person meetings, at virtual-only meetings questions are 66.6% less likely to be presented by the shareholders (as opposed to being presented by one of the company's executives). In Column 2, I limit the observations to firms transitioning from in-person meetings that were held before Covid to firms holding virtual-only meetings after Covid. I focus on this subset of firms because, as Figure 3, Panel A, demonstrates, following Covid, virtual-only meetings became approximately 10 times more common. Thus, Covid essentially serves as an exogenous shock that forced/pushed companies to hold virtual-only meetings. Accordingly, the analysis reported in Column 2 of Table 2 includes only companies for which there is at least one pre-Covid in-person observation and at least one post-Covid virtual-only observation. This specification includes a company fixed effect to allow the specification to examine how the likelihood that shareholders are able to present their questions changes for the same company depending on whether the meeting was held virtually or not. The results of Column 2 show again that, relative to in-person meetings, at virtual-only meetings companies are 69.4% less likely to allow shareholders to present their own questions.

Column 3 (all observations) and Columns 4 (firms transitioning from in-person to virtual) both show that at virtual meetings questions are significantly more likely to be limited to proposals. For example, Column 4 reports that the likelihood that *Questions not limited to proposals* at *Virtual-only meetings* is 4.3% smaller relative to in-person meetings. Given that in 11.8% of the observations questions are limited to proposals (as indicated from Panel B of Table 1), an increase of 4.3% is equivalent to an increase of 36.4% (4.3%/11.8%) relative to the mean frequency.

In similar spirit, Column 5 also shows that at virtual-only meetings firms are 9% less likely to report precise vote outcomes. Since 20.7% of the time firms do report precise vote outcomes, the latter magnitude is equivalent to a decrease of 43.5% (9%/20.7%) relative to the mean frequency. Appendix C (Table CI) shows that the methods that limit shareholders' voice continued to remain popular post-Covid, highlighting that limiting shareholders' voice remains a concern long after Covid. To conclude, Table 2 Panel A shows that the choice to hold a virtual-only meetings predicts a significantly higher likelihood that the firm chooses to limit shareholders' voice at the shareholder meeting.

To further examine differences between in-person and virtual-only meetings, Panel B reports the frequency with which each method was used, for both the full sample and a propensity

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score–matched sample. The propensity score, estimated via a probit model with the controls from Panel A (*Return on Assets*, *Abnormal return*, *Log market capitalization*, *Log assets*, and *Book-to-market*) matches each in-person meeting to a virtual-only meeting using a 0.05 caliper and no replacement. In the full sample, T-tests show that all three methods are significantly more common at virtual-only meetings, with significance levels ranging from 1% to 10%, depending on the method. In the matched sample, *Questions presented by shareholders* and *Questions not limited to proposals* remain significant at the 1%–10% level, while *Precise vote outcomes announced* does not; The smaller matched sample weakens some statistical significance. Overall, these results confirm the earlier finding: methods that restrict shareholder voice are significantly more likely to be used in virtual-only meetings.

Panel C of Table 2 includes controls to examine whether governance provisions are correlated with voting outcomes, a company's decision to hold a virtual meeting, and its choice to adopt practices that limit shareholders' voices. To proxy for governance, I include the following governance dummies for whether the company has: *Confidential voting, Cumulative voting, Dual class shares, Golden parachute, Limit ability to amend bylaws,* and *Limit ability to call special meetings*.[9] All governance variables were obtained from the ISS Governance database. As noted by Gompers, Ishii, and Metrick (2003), all the variables listed above limit shareholder power, except for *Confidential voting* and *Cumulative voting*, which both increase shareholder power.

Table 2, Panel C documents that most governance provisions are not significantly or consistently related to shareholders' support rates (Columns 1–2), to a company's decision to hold a virtual meeting (Column 3), or to a company's decision to use methods that limit shareholders' voice (Columns 4–6). For example, Column 1 shows that, perhaps contrary to expectations, companies with weaker governance provisions (e.g., those that have golden parachutes) are likely to receive high support rates for directors, and Column 3 does not document a significant relation between the governance measures and the choice to hold a virtual meeting (as opposed to an in-person one). Columns 4–6 show that, when coefficients of the governance variables are statistically significant, they document an inconsistent relation. For example, Column 5 shows that companies with cumulative

[9] *Confidential voting* / secret ballot (a practice where individual shareholder votes remain anonymous, reducing pressure or influence from management or other shareholders). *Cumulative voting* (a system allowing shareholders to allocate all their votes to one or more board candidates, thereby allowing shareholders to strongly support preferred candidates), *Dual class shares* (a corporate structure where some shares grant more voting power than others, often used to maintain control by insiders), *Golden parachute* (a contract providing substantial benefits to executives if they are terminated, especially after a merger or acquisition), *Limit ability to amend bylaws* (restricting shareholders' power to make changes to the company's governing rules), and *Limit ability to call special meetings* (restricting the conditions under which shareholders can convene extraordinary meetings).

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voting (which increases shareholders' power) are more likely to disclose precise vote outcomes at the meeting (i.e., increasing shareholder transparency). However, this specification also shows that companies that limit the ability to call a special meeting (i.e., decrease shareholders' power) are likewise more likely to disclose precise vote outcomes. Importantly, specifications 4-6 show that even after controlling for the governance provisions, companies that receive low support rates for directors are significantly more likely to implement methods that limit shareholders' voice, demonstrating the robustness of these results.

Finally, it is noteworthy that virtual-only shareholder meetings need not be designed in a way that limits communication with shareholders. Firms can design virtual-only shareholder meetings in a way that empowers shareholders' voice and increases democracy. For example, in 2020 Axon Enterprise allowed shareholders (or in fact, anyone) to submit questions through the Slido webpage, and questions submitted were observable to everyone. Moreover, individuals were also able to like and unlike submitted questions. Thus, firms with a desire to increase communication with shareholders at virtual-only meetings can find innovative ways to achieve this goal.

To conclude, companies with lower shareholder support rates are more likely to choose to implement practices that limit shareholders' voice.

4. Do the Methods Firms Choose Shape the Content and Structure of Shareholder Meetings?

Since firms can strategically adopt methods (described above) that may hinder shareholders' ability to make their voice heard, this raises the question of whether these methods actually restrict communication between firms and shareholders. In this section, I investigate whether the methods described above which firms can use to design shareholder meetings indeed limit communication. To address this question, I examine in Panel A of Table 3 the relation between the methods used at shareholder meetings and variables documenting the content and structure of shareholder meetings. More specifically, the table uses the following equation:

$$(2)\quad \textit{Variable measuring meeting structure}_{jm} = \beta_1 * \textit{method variable}_q + \beta_2 * \textit{Controls}_m + FE_y + FE_q$$

The vector *Variable measuring meeting structure*$_{jm}$ includes three (j) alternative variables: *Number of questions addressed* which measures the number of questions addressed by the firm at the shareholder meeting; *Total Q&A time* which measures the number of minutes dedicated to addressing shareholders' questions at a shareholder meeting; and *Length of total meeting* which measures the length of a shareholder meeting in minutes. These three variables were manually coded from the transcripts and audio recordings of the shareholder meetings. These measure are coded based on 2,513 transcripts

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and recordings of shareholder meetings held between July 1, 2017 to June 30 2023 obtained from Thomson Reuters who obtained them from Refinitiv. The vector *method variable* includes in each of the specifications one of the four methods described above that may limit shareholders' voice: *Question addressed*, *Questions presented by shareholders, Questions not limited to proposals*, and *Precise vote outcome announced*. Year and 2 digit SIC industry fixed effects are included.

The analysis is reported in Table 3 Panel A. Row 1 examines whether firms that frequently ignore questions submitted by shareholders have more limited communication with shareholders at shareholder meetings. This analysis sheds light on whether firms have brief communications at shareholder meetings because shareholders are not interested in having extensive communication with the company at shareholder meetings or that brief communication results from firms' desire to have limited communication. As noted above, the number of questions submitted by all shareholders is rarely disclosed by firms, and only the number of questions actually addressed at the meeting is observable from the transcripts. The variable *Question addressed* uniquely allows to capture a firm's tendency to answer (or ignore) shareholders' questions because this variable accounts for questions submitted and typically not observed.

Following Equation (1), Table 3, Panel A, Row 1, Column 1 of estimates that when a question submitted by C&M was addressed at the meeting (i.e., *Question addressed* = 1), on average, an additional 3.24 questions were addressed in aggregate at the meeting, as compared to when a question submitted by C&M was not addressed at the meeting. Relative to the mean value *Number of questions addressed at the meeting* at virtual-only meetings (1.77, as reported in the last row of Panel A of Table 3), the latter estimate represents an increase of 183% (=3.24/1.77), which is clearly large. Thus, firms that frequently chose to ignore the questions submitted by C&M also addressed fewer questions at the shareholder meeting. This finding suggests that when the frequency firms address questions is relatively low, it is, at least partially, because firms choose to ignore questions submitted by shareholders, and not (only) because shareholders refrained from submitting questions. Row 1, column 2, also documents that if the firm addressed a question submitted by C&M, the total Q&A time was 2.73 minutes longer, further demonstrating that firms that made the choice to address shareholders' questions (as proxied by the questions submitted by C&M) are those that ultimately had more extensive communication at the shareholder meeting.[10]

[10] As in the previous section, in unreported specifications I repeat the Row 1 specifications but exclude the 20 questions for which C&M documented that they identified themselves. The results remain almost identical,

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The analysis in Rows 2 to 5 of Table 3 is at the meeting level, and accordingly, the following equation is used:

(3) $Variable\ measuring\ meeting\ structure_{jm} = \beta_1 * Method_m + \beta_2 * Controls_m + FE_y + FE_{ind}$

In Row 2, the *Method* in meeting *m* examined is *Questions not limited to proposals*. Notations follow those described above for previous equations. Year and industry fixed effects are included. All results reported in Rows 2-4 show that companies that make the choice of using practices that limit shareholders' voice have shorter communication at shareholder meetings. For example, Row 3, Column 1, shows that firms that limit their questions to proposals addressed on average 1.32 fewer questions, dedicated 2.03 fewer minutes to Q&A, and their overall meeting time was 6.74 minutes shorter (all these figures are significant at the 1% level). Relative to the mean values of these variables (1.77, 3.26, and 18.76, respectively, as reported in the last row of Panel A of Table 3), these figures represent a decrease of 76.2%, 69.9%, and 33.47%, which reflect a substantial economic magnitude.

These results demonstrate that limiting questions to proposals, which has become a popular method at virtual-only meetings, does indeed limit the extent of communication and shareholders' ability to make their voice be heard at virtual-only meetings. Similarly, the results in Rows 2 and 4 show that shareholder meetings in which shareholders presented their questions and those in which precise vote outcomes were revealed addressed a larger number of questions, spent more time on Q&A and had longer meetings. Thus, using practices that limit shareholders' voice indeed limits communications at shareholder meetings. In row 5 I show that relative to in-person meetings at virtual meetings communication is more brief: fewer questions are addressed, Q&A time is briefer, and meetings are shorter. This result is consistent with Brochet, Chychyla, and Ferri (2023).

As implied by Boros (2004), Ferrazzi and Zapp (2020), and Zetzsche (2005), who discuss the advantages and disadvantages of virtual shareholder meetings, shorter meetings could be either a positive phenomenon (meetings are more efficient) or a negative one (less meaningful communication occurs). In addition, shorter meetings could occur because companies limit communication with shareholders or because shareholders choose to be less active at virtual meetings. The results above (reported in Table 2, Panel A) suggest that companies strategically pick methods that limit shareholders' voice, which ultimately shorten communication at shareholder meetings (Table 3, Panel A).

Panel B of Table 3 compares shareholder engagement in in-person and virtual-only meetings,

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supporting the conclusion that the pattern documented in Row 1 is not driven by firms that may have intentionally tried to avoid or address questions submitted by C&M.

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using both the full sample and a matched sample based on the propensity score described in Table 2, Panel B. This comparison allows us to assess whether differences in engagement reflect the meeting format itself rather than underlying firm characteristics. We begin with the *Number of questions addressed at the meeting*. In the full sample, in-person meetings address more questions than virtual-only meetings (4.1 versus 2.3, a difference of 1.8 significant at the 1% level). In the matched sample, this difference narrows and is no longer statistically significant (4.5 versus 4.0), suggesting that part of the raw difference reflects firm-level characteristics rather than format alone.

Turning to *Total Q&A time*, we observe large and statistically significant differences in both samples. In the full sample, in-person meetings allocate substantially more time to Q&A than virtual-only meetings (10.1 versus 3.5 minutes) and this pattern persists in the matched sample (10.8 versus 6.9 minutes), indicating that in-person formats facilitate more extensive interaction even among comparable firms. A similar pattern emerges for the *Length of the total meeting*. In-person meetings last considerably longer than virtual-only meetings in both the full sample (38.2 versus 20.2 minutes) and the matched sample (37.4 versus 27.2 minutes), with differences remaining statistically significant.

The table also reports results separately for the periods before, during, and after Covid. Across all three periods, *Total Q&A time* and *Length of the meeting* are generally longer for in-person meetings, with most differences statistically significant. Notably, even after Covid, in-person meetings continue to facilitate more extensive engagement. Li and Yermack (2025) also conduct separate analyses of political leaning and meeting format across the periods before, during, and after Covid, and find consistent results in each subperiod, further indicating that some important patterns persist regardless of the time period. Overall, the results of Panel B suggest that virtual-only meetings are associated with more limited shareholder engagement. While virtual formats may offer efficiency benefits, they appear to constrain the extent of communication.

Panel C of Table 3 examines whether the patterns documented in Panel A are unique to virtual-only meetings or also apply to in-person meetings. To do so, Panel C estimates the same specifications separately for virtual-only meetings (odd-numbered columns) and in-person meetings (even-numbered columns). This allows us to assess whether the mechanisms that limit shareholder communication operate differently across meeting formats. Across all specifications reported in Panel A of Table 3, the coefficients are positive, indicating that methods that limit shareholders' voice indeed shorten communication at shareholder meetings, and that this pattern applies to both virtual-only and in-person meetings. In particular, 8 of the 9 coefficients for virtual-only meetings are statistically significant, compared to 5 of the 9 coefficients for in-person meetings. This difference in significance

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is not surprising given the smaller number of observations for in-person meetings.[11]

Taken together, the Table 3 results indicate that the methods limiting shareholders voice indeed significantly limit shareholders voice, and they do so both at in-person meetings and at virtual-only meetings.

5. When Do Companies Choose to Hold Meetings Online?

In this section, I examine which factors lead companies to choose to hold an in-person, hybrid, or virtual-only meeting. These different meeting formats may affect how communication unfolds during the meeting. In-person meetings occasionally escalate to loud and contentious communication (e.g., Coca-Cola's 2019 in-person shareholder meeting). This may occur if the firm does not allow a sufficient number of shareholders to ask a question or if the firm does not address a question to the satisfaction of shareholders. A vocal objection cannot occur in virtual-only meetings, where shareholders are literally muted. This setting, in which attendants/potential participants are muted, is different from the setting of virtual board meetings, which allows directors to speak and interact (Cai, Jiang, and Jun-Koo Kang, 2023). Thus, the limitation on shareholders' ability to vocally protest against management at virtual-only shareholder meetings, and the firm's ability to select which questions to address are unique to virtual-only meetings. Accordingly, firms may opt for a virtual-only format when it is convenient for them to do so, specifically when shareholders are not supportive of management.

To examine whether the latter occurs, I document for each of the S&P 500 companies whether it held an in-person, hybrid, or virtual-only meeting during each year between 2018 and 2023. This sample provides a clean and consistent panel of companies, without the selection bias that arises when examining only companies for which transcripts of virtual-only meetings are available (transcripts are especially less likely to be available for in-person meetings). Because only 8.7% of the

[11] Panel C of Table 3 suggests that methods limiting shareholders' voice do so more strongly at in-person meetings. For example, Row 2 Column 5 shows that if questions are not limited to proposals, virtual-only meetings are expected to last an additional 6.26 minutes, and Column 6 shows that for in-person meetings this figure is equal to 13.02 minutes. Additionally, across all specifications reported in Panel C, the coefficients for the methods used are larger for the in-person meeting specifications than in the virtual-only meeting specifications. However, these differences become more muted once we the more extensive communication at in-person meetings (as reported in Panel B of Table 3) is adjusted for. For example, Panel B of Table 3 shows that a two-sample t-test indicates that the average meeting time for an in-person meeting is 37.4 minutes, while the matched virtual-only meeting typically lasts 27.2 minutes. Thus, the above-noted decreases are equivalent to 23% (6.26/27.2) for virtual meetings and 34% (13.02/37.4) for in-person meetings, which shrinks these differences.

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meetings are held in a hybrid format, and because the hybrid format is essentially an in-person meeting that is also broadcast, in the econometric analysis I combine the hybrid and the in-person categories. Accordingly, the dependent variable in Table 4 is *Virtual-only meeting*, which is an indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format (i.e., exclusively in person or hybrid). As indicated in Table 4, Columns 1 and 3 include year and industry fixed effects, while Columns 2 and 4 include company fixed effects.

Consistent with Panel A of Figure 3, which documents a dramatic shift to virtual-only meetings during Covid, Column 2 of Table 4 shows that, relative to the pre-Covid period, meetings were 73.9% more likely to be held in a virtual-only format during Covid. However, the less obvious outcome is that, compared to the Covid era, companies are still 63.6% more likely to hold virtual-only meetings after Covid. Thus, while most of the world has resumed in-person work post-Covid, this does not appear to be the case for shareholder meetings. Indeed, Column 4 shows that, relative to the Covid period, companies are only 10.3% less likely to hold a virtual-only meeting after Covid (all results are significant at the 1% level).

To examine whether the meeting format (in person, hybrid, or virtual-only) is chosen strategically, I analyze proposals submitted by both management and shareholders. When the meeting format is determined by the company (i.e., just before the proxy is filed, when the meeting format is specified), the company has information on its financial performance, as well as on the number of shareholder and management proposals. A larger number of shareholder proposals indicates that shareholders are using meetings to attempt to govern management and may reflect unresolved issues between shareholders and management. Consequently, when the number of shareholder proposals is large, management may become more concerned about shareholder opposition and may attempt to restrict shareholders' voice. In contrast, a large number of management proposals suggests that management is providing shareholders with greater opportunities to participate in company decisions.

Consistent with this intuition, Column 1 of Table 4 shows that each additional shareholder proposal increases the likelihood that the meeting is held virtually by 1%. This result indicates that when shareholders attempt to become more involved in governance by submitting proposals, companies are more likely to choose a virtual-only meeting rather than an in-person or hybrid format. In contrast, each additional management proposal reduces the likelihood of a virtual-only meeting by 0.3%, suggesting that companies offering greater opportunities for shareholder participation are more likely to hold in-person or hybrid meetings. Specifications 2–4 present additional variations of the specification (e.g., with company fixed effects) and different omitted benchmark periods (Before

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Covid versus After Covid), and report similar results. Brochet, Chychyla, and Ferri (2024) do not find that the number of shareholder proposals submitted predicts whether the meeting will be held in a virtual-only format, but Wong and Chen (2026) who examine a more extended time period (as I do) do find that companies that have a larger number of shareholder proposals are more likely to hold a virtual-only shareholder meeting, and accordingly, argue that companies strategically choose to hold virtual-only meetings when they face shareholder scrutiny.[12] Li and Yermack (2025) document an additional factor that came into play when choosing the meeting format: they show that companies with Republican-leaning managers and in Republican regions (which are generally perceived as being less supportive of restrictions on physical gatherings) are more likely to hold in-person shareholder meetings.

To conclude, while the primary determinant of companies' decisions to hold virtual-only meetings is whether the meeting takes place after Covid, companies also consider the extent to which shareholders are expected to seek to make their voices heard, as reflected in the number of shareholder proposals.

6. Market Response to Meeting Format and Content

6.1. Empirical Design

This section examines whether, relative to in-person meetings, virtual-only meetings generate less meaningful information for shareholders, and why. If a particular meeting format conveys more meaningful information, this should be reflected in trading patterns following the meeting. It is not immediately clear whether, or how, trading patterns following virtual-only meetings should differ from those following in-person meetings. On the one hand, virtual-only meetings are more accessible, as shareholders can attend remotely. They are also more likely to be recorded in financial databases (e.g., Thomson Reuters), further expanding shareholders' accessibility and exposure to their content. This could generate greater investor interest, resulting in higher trading volume and increased online discussion about the company (e.g., tweets).

On the other hand, the analysis above shows that shareholders' voice is typically more limited in virtual-only meetings. This suggests that the information conveyed in such meetings may be less meaningful and more generic, which could result in lower trading volume and fewer online

[12] I also note that in all Table 4 specifications, performance measures such as Return on Assets (ROA) and abnormal returns are not significantly related to the choice of a virtual-only meeting, suggesting that the decision to hold meetings virtually is not driven by firm performance.

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discussions. To examine these two different possibilities, I analyze the following six trading-related measures:

i) *Abnormal return*. Abnormal return is defined as the stock's daily return minus the daily value-weighted market return. If investors view the content of a particular meeting format more favorably, we should observe higher positive abnormal returns following meetings held in that format.

ii) *Absolute abnormal return*. Absolute abnormal return is defined as the absolute value of the abnormal return (defined above) and is expected to be larger when more meaningful information is revealed at the meeting. As Beaver (1968) argues, the absolute magnitude of the price change, rather than its direction, captures the importance of the new information revealed. Following this argument, Karpoff (1987), Cheon, Christensen, and Bamber (2001) and Francis, Schipper, and Vincent (2002) use absolute abnormal returns to measure the importance of new information.

iii) *Volume*. Volume is defined as the raw number of the firm's shares traded on a given day. Frankel, Johnson, and Skinner (1999) argue that when the information revealed (e.g., at an earnings call) is more informative, volume increases. Beaver (1968), Bamber, Barron, and Stober (1997), Kim and Verrecchia (1994), and Hong and Stein (2007) show that high trading volume is generally associated with disagreement and lack of consensus. Antweiler and Frank (2004) and Al-Nasseri and Ali (2018) further document that volume increases when online messages indicate disagreement among investors over whether a stock is over- or underpriced.

iv) *Volume (scaled)*. Volume is defined as the raw number of the firm's shares traded on a given day divided by the number of shares outstanding.

v) *Volatility*. Volatility is measured as trade-based intraday volatility during market hours. This variable is estimated by TQA and further described in the Glossary of Variables. Kim and Verrecchia (1994) argue that information asymmetry and uncertainty drive volatility around the revelation of new information. High volatility is considered a measure of high uncertainty (see, e.g., Pan, Wang, and Weisbach, 2015).

vi) *Number of tweets*. Number of tweets is defined as the daily number of tweets mentioning the company's name or ticker symbol. Sprenger, Tumasjan, Sandner, and Welpe (2014, Table 4) show that a large number of tweets indicates investor disagreement over whether a stock is over- or underpriced. Campbell, Drake, Thornock, and Twedt (2023) argue that controversial and surprising news is followed by a large number of tweets. Similarly, Cookson, Lu, Mullins,

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and Niessner (2024) proxy for investor attention using measures based on the number of tweets. Put differently, the number of tweets serves as a proxy for both disagreement and investor attention.[13]

The six trading-related outcomes are the dependent variables in four models (Equations 4–7), described below. Equation 4 is defined as follows:

(4) $Trading\ related\ outcome_{mt} = \beta_1 * After\ meeting_{mt} + \beta_2 * Virtual\ only_m * After\ meeting_{mt} + \mu_m + \varepsilon_{mt}$

The dependent variable, *Trading outcome*, is one of the six trading measures described above, observed around meeting *m* on day *t*. *After meeting* is an indicator variable that equals one if the observation date is on or after the shareholder meeting date, and zero if it is before the meeting. *Virtual-only meeting* is an indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format (i.e., exclusively in person or hybrid). The coefficient on the interaction term, β_2, captures whether trading outcomes differ after virtual-only meetings relative to in-person meetings. Equation 4 includes μ_m, a meeting fixed effect that ensures the trading outcome is examined before versus after a particular meeting. ε_{mt} is the error term.

The period examined in this analysis spans from 30 trading days before to 30 trading days after the shareholder meeting. This window follows the findings of Li, Maug, and Schwartz-Ziv (2022), who document that abnormal trading volume begins to increase following the proxy filing date (which on average occurs 30 trading days before the meeting), peaks on the meeting date, and then gradually declines over the 30 post-meeting trading days. Because tweets occur on both trading and non-trading days, the window for the tweet analysis is defined as 30 calendar days before to 30 calendar days after the meeting.

The sample used for the Equation 4 analysis includes all S&P 500 companies over the 2018–2023 period. Equation 4 is used in Table 5, Columns 1, 4, 7, 10, 13, and 16. To further examine the robustness of the results, Equation 5 focuses on the post-meeting period, i.e., from the shareholder meeting date through 30 days afterward. [14]

(5) $Trading\ outcome_{mt} = \beta_1 * Virtual\ only_m + \beta_2 * controls_m + \mu_f + \mu_y + \varepsilon_{mt}$

[13] Similarly, Da, Engelberg, and Gao (2011) show that the frequency a ticker is searched on Google serves as a proxy for the attention of retail investors. Nekrasov, Teoh, and Wu (2022), focus on the visuals included in Twitter messages.

[14] Specifically, the window [0, 30] trading days is examined for all variables, except for *Number of tweets*, for which the window [0, 30] calendar days is examined.

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Here too, the dependent variable *Trading outcome*$_{mt}$ is one of the six trading-related outcomes defined above. The key explanatory variable is an indicator for whether the meeting was held in a *Virtual only* format. The model includes a vector of firm-level controls (*Log assets*, *Log of market capitalization*, *Book-to-market*, *Abnormal return*, and *ROA*), as well as company and year fixed effects (μ_f and μ_t, respectively). Including a company fixed effect allows tracking the same company over time and examining how trading patterns for the company shift depending on the meeting format, which has shifted from in-person to virtual-only meetings mostly due to an exogenous reason: Covid. Results from estimating Equation (5) are reported in Columns 2, 5, 8, 11, 14, and 17 of Table 5, Panel A, and in Table 5, Panel B. As in Equation 4, the sample includes all S&P 500 companies over the 2018–2023 period.

The advantage of using the S&P 500 sample for the 2018–2023 period is that it provides a clean dataset that follows the same companies over several years. The disadvantage of this sample is that it does not allow for the inclusion of measures that capture the content of shareholder meetings (e.g., the number of questions addressed at a meeting), since transcripts are not available for many of these companies. To address this limitation, I analyze a separate dataset that includes all meetings for which transcripts were coded for this study. Using this sample allows me to control for measures related to the content of shareholder meetings. I also include controls for vote outcomes to ensure that the measures capture the different types of information revealed at the meeting or shortly thereafter. Accordingly, Equation 6 is defined as follows:

$$(6)\quad Trading\ outcome_{m,t} = \beta_1 * After\ meeting_{mt} + \beta_2 * Virtual\ only_m * After\ meeting_{m,t} + \beta_2 * Number\ of\ questions\ addressed\ at\ meeting_{hm} * After\ meeting_{m,t} + \beta_3 * Average\ support\ rates\ for\ directors\ bot.\ quintile_m * After\ meeting_{m,t} + \mu_m + \varepsilon_{mt}$$

In this specification, the dependent variable *Trading outcome*$_{mt}$ is once again one of six trading-related outcomes measured around meeting *m* on day *t*. The variable *After meeting*$_{mt}$ is an indicator that equals one if day *t* is on or after the shareholder meeting (*m*) date, and zero otherwise. The variable *Virtual only*$_m$ × *After meeting*$_{mt}$ captures whether the meeting is held in a virtual-only format and whether the observation date is after the shareholder meeting.

The model also includes variables that control for the content of the meeting and the vote outcomes: *Number of questions addressed at meeting*$_m$ × *After meeting*$_{mt}$, which measures the number of questions addressed, interacted with a dummy capturing whether the observation is after the meeting, and *Average support rates for directors bot. quintile*$_m$ × *After meeting*$_{mt}$, captures whether directors' support

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rates were in the bottom quintile, interacted with the post-meeting indicator. The Equation 6 analysis includes the same sample period defined above for Equation 4. Equation 6 also includes the variable μ_m, a meeting fixed effect, which ensures that trading outcomes are identified by comparing the period before versus after a particular meeting. Results using Equation 6 are reported in Table 5, Columns 3, 6, 9, 12, 15, and 18.

Finally, I estimate a specification that examines how the content of the meeting and vote outcomes are related to post-meeting trading patterns. Accordingly, the following specification is defined:

$$(7) \quad \textit{Trading outome}_{mt} = \beta_1 * \textit{Content Variable}_m \times \textit{After meeting}_{mt} + \mu_m + \varepsilon_{mt}$$

Content variable$_m$ is, in alternative specifications, one of the following variables: *Number of questions addressed at meeting*, *Total Q&A time*, *Length of meeting*, *Average support rates for directors*, and *At least one proposal in the bottom quintile of support*. The coefficient on the interaction term, β_1, captures whether trading outcomes change significantly after virtual-only meetings relative to in-person meetings. As before, μ_m is a meeting fixed effect that ensures the trading outcome is examined before versus after a particular meeting, ε_{mt} is the error term, and the window examined is 30 trading/calendar days (as specified for each specification in Table 6).

6.2. Market Response to Virtual-Only Versus In-Person Meetings

This subsection uses the models described above to examine how the market responds to virtual-only shareholder meetings relative to in-person meetings. Table 5 reports results for each of the six trading-related outcomes using the three models specified in Equations 4–6.

Table 5, Panel A, Columns 1–3 focus on how abnormal returns differ between virtual-only and in-person meetings. Model 1 follows Equation 4, i.e., it examines the window from 30 trading days before the meeting to 30 trading days after the meeting. It shows that the coefficient on *Virtual-only meeting* × *After meeting* is negative, and while it is close to being significant at the 10% level, it is not significant. This suggests that abnormal returns are not significantly different between virtual-only and in-person meetings. Specification 2 (which follows Equation 5) is confined to the 30 trading days after the meeting and includes a company fixed effect. It reports an insignificant coefficient on *Meeting held exclusively virtually*, once again implying that virtual-only meetings are not followed by abnormal returns that are significantly different from those of in-person meetings.

While the samples in Specifications 1–2 pertain to S&P 500 companies over the 2018–2023 period, Specification 3 (which follows Equation 6) uses the sample for which manually coded

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transcripts are available (as described above) and controls for the content of the meeting and the vote outcomes. Specification 3 shows that the coefficient on *Virtual-only meeting* × *After meeting* implies that daily abnormal returns are 0.13% smaller, significant at the 5% level. This result suggests that abnormal returns are smaller following virtual-only meetings. However, because this conclusion arises only in Specification 3 (and not in Specifications 1–2), I conclude that while there is some evidence that abnormal returns are smaller after virtual-only meetings, this conclusion is not robust across specifications.

In Columns 4–6 of Table 5, Panel A, the dependent variable examined is *Absolute abnormal return*. Column 4 shows that after the meeting, the daily *Absolute abnormal return* is 0.2% smaller following virtual-only meetings relative to in-person meetings, as indicated by the coefficient on *Virtual-only meeting* × *After meeting*, which is significant at the 1% level. Consistent with Beaver (1968), who shows that price changes reflect the arrival of new meaningful information, the smaller absolute abnormal returns observed following virtual-only meetings suggest that these meetings convey less meaningful information to investors, and thus, are less likely to move prices. Specification 5 reinforces this conclusion. It shows that during the 30 trading days that follow the shareholder meeting, relative to in-person meetings, the daily *Absolute abnormal return* of virtual-only meetings is 0.058% smaller, which aggregates to 1.74% over the 30-day window.

Column 5 includes a company fixed effect, which allows us to observe how *Absolute abnormal return* varies for the same company, depending on whether the meeting is virtual-only. Including a company fixed effect helps alleviate identification concerns, since the majority of meetings were (initially) forced to move to a virtual-only format due to an exogenous shock, namely Covid. in unreported specifications, in which I limit the observations to companies that had in-person meetings before Covid and virtual-only meetings after Covid, the results are very similar to those reported in the specifications that include company fixed effects in Table 5, Panel A. Column 6 reports similar results when using the transcript-coded sample and including additional controls for the content of the meeting and vote outcomes. Taken together, the results in specifications 4-6 demonstrate that following virtual-only meetings weaker price updating is observed in the post-meeting period.

In Specifications 7–9, the dependent variable is *Volume*, and in Specifications 10–12 it is *Volume (scaled)*, both defined above. Specifications 7–12 consistently indicate that post-meeting trading volume is significantly lower when meetings are held in a virtual-only format compared to in-person or hybrid formats. Five of these six specifications reports results significant at the 1% level demonstrating that virtual-only meetings are followed by significantly smaller trading volume relative

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to in-person meetings. For example, Specification 10, which includes a meeting fixed effect and compares scaled volume before versus after the meeting for the same company, shows that following a virtual meeting, daily volume decreases on average by 30.26% relative to an in-person meeting (as indicated by the coefficient for *Virtual-only meeting * after meeting*). Specifications 10–12 document that after virtual-only meetings, daily volume is expected to be 23.6%–59.8% smaller relative to that of in-person meetings.

Hong and Stein (2007) argue that trading volume reflects heterogeneity in investors' interpretations of public information. In their framework, when investors interpret the same public signal differently, disagreement increases and trading volume rises. In our context, the consistently lower volume following virtual-only meetings is consistent with virtual-only meetings conveying less meaningful and less controversial information to the market, resulting in less disagreement and, consequently, lower trading activity. Thus, although virtual-only meetings are highly accessible due to their online format and frequent recordings, the evidence suggests that the information disclosed in these meetings is less substantive and less effective in updating investors' beliefs.

In Specifications 13–15, the dependent variable is *Volatility*. The coefficients capturing post-meeting trading patterns conditional on whether the meeting is virtual-only are negative and significant at the 5–10% level. For example, Specification 13, which includes a meeting fixed effect, shows that relative to the average pre-meeting period, average daily trading volatility decreases by 0.99% following a virtual-only meeting. These results indicate that post-meeting volatility is significantly lower when meetings are held in a virtual-only format compared to an in-person format. Volatility is commonly interpreted as reflecting uncertainty and information asymmetry around the arrival of new information (Kim and Verrecchia, 1994; Pan, Wang, and Weisbach, 2015). In this framework, meaningful or controversial information tends to generate greater dispersion in beliefs and, consequently, higher volatility. The lower volatility observed following virtual-only meetings is, once again, consistent with these meetings conveying less substantive information to the market.

Columns 16–18 of Table 5, Panel A, show that the *Number of tweets* is significantly lower following virtual-only meetings compared to in-person meetings. For example, Column 16 indicates that relative to the average daily number of tweets mentioning a company's name or ticker (16), tweet activity declines by 2.59 following a virtual-only meeting, representing a 16.2% decrease relative to in-person meetings. These findings suggest that virtual-only meetings generate less online discussion and engagement. Prior literature shows that social media activity increases when information is meaningful, surprising, or generates disagreement among investors. Campbell, Drake, Thornock, and Twedt (2023)

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argue that more surprising or controversial disclosures attract greater media interaction, including discussions on Twitter. Similarly, Sprenger, Tumasjan, Sandner, and Welpe (2014) and Cookson, Lu, Mullins, and Niessner (2024) interpret higher tweet activity as reflecting greater investor attention and disagreement. Consistent with this argument, the lower tweet activity observed following virtual-only meetings suggests that the information conveyed in virtual-only meetings is less meaningful.

To address identification concerns, in Table 5, Panel B, I repeat the firm fixed effects analysis from Panel A of Table 5, but examine only companies that held in-person meetings before Covid and switched to virtual-only meetings after Covid, i.e., due to an exogenous reason, namely Covid. I show that the patterns observed in this subset are very similar to those observed for the full sample. Taken together, these results supports a causal interpretation of the findings.

To address identification concerns, in Table 5, Panel B, I repeat the firm fixed effects analysis from Panel A of Table 5, (Specifications 2, 5, 8, 11, 14, and 17), but restrict the sample to companies that held in-person meetings before Covid and switched to virtual-only meetings after Covid, i.e.. Put differently, I restrict the sample to the firms that due to an exogenous shock, namely Covid, switched from in-person to virtual-only meetings. As the results in Panel B indicate, all the coefficients that are statistically significant in Panel A across these specifications remain statistically significant in Panel B, and in the same direction, and usually the magnitude documented is even bigger in Panel B. These findings support a causal interpretation of the results discussed above.

I note that the results in this section differ from those of Brochet, Chychyla, and Ferri (2024), henceforth BCF. In a nutshell, BCF find "some evidence of greater abnormal absolute returns around virtual shareholder meetings," and no evidence that virtual meetings are followed by different trading volume. In contrast, I find that virtual-only meetings are followed by a decrease in absolute abnormal returns and volume. This difference is likely, at least partly, due to the different econometric models used: BCF focus on abnormal absolute returns and volatility on a single day, the meeting date, while the analysis in this paper examines a broader period, from 30 trading days before the meeting (essentially the proxy filing date) to 30 trading days after the meeting.

I believe this longer window is more suitable in the context of shareholder meetings for several reasons. First, as Li, Maug, and Schwartz-Ziv (2022) show, the dissemination of information pertaining to shareholder meetings is gradual and reflected in abnormal trading volume. Specifically, they find that abnormal volume increases gradually from the proxy filing date (on average 30 trading days before the meeting) until the meeting date, and then subsides gradually until approximately 30 trading days after the meeting. This implies that the relevant period of analysis should span from 30

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trading days before the meeting/proxy filing date until 30 trading days after the meeting, as in Li, Maug, and Schwartz-Ziv (2022, Table 2). Second, financial databases often delay by several days the uploading of the meeting recording and/or transcript, particularly during the busy proxy season when most meetings are held. Moreover, even once uploaded, investors may not process all the information immediately, since most shareholder meetings take place within a short timeframe during proxy season, and it may take investors more than one day to access and process the information revealed in the transcripts of shareholder meetings.

An additional reason for examining an expanded timeframe is that, as Li, Maug, and Schwartz-Ziv (2022) explain, companies have up to four days to file an 8-K. Consequently, markets often learn the final vote outcomes several days after the meeting. Thus, if vote outcomes matter for trading, the relevant information is frequently not available on the meeting date. An additional important point is that in unreported placebo tests that examine abnormal returns of virtual-only versus in-person meetings on random days preceding the meeting (when vote outcomes and meeting content were clearly not known yet), I obtain results similar to those observed on the meeting date itself. This pattern further motivates an approach that contrasts pre-meeting and post-meeting days while including a meeting fixed effect, which helps crystallize the information revealed after meetings compared to the pre-meeting period. I note that I also examine a slightly different (i.e., longer) period compared to BCF, which may also lead to somewhat different findings.

To conclude, the results in Table 5 show that absolute abnormal returns, trading volume, volatility, and tweet activity are all significantly lower following virtual-only meetings compared to in-person meetings. These findings suggest that, relative to in-person meetings, virtual-only meetings convey less meaningful and less value-relevant information and are accordingly followed by reduced investor trading and engagement.

6.3. Market Response to the Content of Shareholder Meetings

This section examines how the content of the meeting and vote outcomes are related to post-meeting trading outcomes. A meeting that includes long and detailed information may influence trading and tweeting activity in opposite ways. One possibility is that more detailed meetings increase trading and discussion by introducing new information that investors interpret differently, thereby increasing dispersion in beliefs and trading activity (Kandel and Pearson, 1995; Harris and Raviv, 1993). Alternatively, revealing information at the meeting may reduce uncertainty and dispersion in

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investors' beliefs, thereby decreasing trading volume and disagreement (Kim and Verrecchia, 1994; Bamber, Barron, and Stober, 1997; Kandel and Pearson, 1995; Hong and Stein, 2007).

To address this question, I start by examining the results of the analysis that uses Equation 6 specified above, results are reported in Table 5, , Panel A, Columns 3, 6, 9, 12, 15 and 18. As described above, this model includes the interaction term *Number of questions addressed at meeting * after meeting* which allows examining how the post-meeting trading patterns differ depending on the extent of communication at the meeting. The results in Table 5, Panel A, show that meetings with a larger *Number of questions addressed at meeting* are followed by a significant a significant increase in *Absolute abnormal return* (Column 6) and *Volatility* (Column 15), but a significant decrease in trading *Volume* (Column 9), and *Number of tweets* (Column 18). These results suggest that when more questions are addressed, the meeting generates information that prompts stronger price adjustments, reflected in higher absolute abnormal returns and volatility, while simultaneously reducing disagreement and online discussions on the company, as evidenced by lower trading volume and fewer tweets in the post-meeting period.

While Table 5, Panel A, captures the extent of communication using the variable *Number of questions addressed at meeting*, there are additional measures that may capture the extent of communication at shareholder meetings. Table 6 follows Equation 7 described above and includes a meeting fixed effect and an interaction variable that allow examining how post-meeting trading patterns differ depending on the extent of communication at the meeting. Each specification includes a different measure that captures the extent of communication at the meeting. The sample includes the transcripts coded.

Row 1 of Table 6 focuses on *Number of questions addressed at meeting* and reports results consistent with those in Table 5. The results document that for each additional question addressed at the meeting, daily *Absolute abnormal return* increases by 0.1% (Column 2) and *Volatility* increases by 1.8% (Column 5), both significant at the 1% level. At the same time, *Volume* and *Number of tweets* decrease (Columns 4 and 6, respectively). For example, Row 1, Column 6 shows that every additional question addressed at the shareholder meeting decreases the average number of tweets by 1.8 (significant at the 1% level), which relative to the average (16) corresponds to a reduction of 11.3% (1.8/16). Table 6 further shows that when the extent of communication is measured using *Total Q&A time* (Row 2) or *Length of meeting* (Row 3), the significant coefficients remain in the same direction as those reported in Row 1 for *Number of questions addressed at meeting*, demonstrating that the results are robust to using alternative proxies for the extent of communication.

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Overall, these results indicate that meetings with more extensive communication are followed by stronger price updating (as indicated by the increase absolute abnormal return and volatility) and reduced disagreement and controversy (as indicated by the decrease in volatility and tweets on company). This pattern is consistent with Karpoff (1987), who notes that while price changes (as reflected by absolute abnormal return) convey the arrival of new information, trading volume primarily reflects differences in investors' interpretations of that information. When information is interpreted similarly across investors, prices may adjust strongly while trading volume will remain relatively low. This pattern is also consistent with Kandel and Pearson (1995), who show that trading volume increases when investors interpret public information differently. Thus, the results suggest that at shareholder meetings, the information revealed is meaningful but it is also interpreted quite uniformly by investors. Therefore, prices adjust strongly, while trading volume does not increase dramatically.

With respect to the relation between vote outcomes and trading patterns, as one may expect, the results in Table 5, Panel A, and Table 6 (Rows 4–5) show that higher shareholder support rates are associated with more positive post-meeting returns, although the estimates are statistically significant only at the 10% level. For example, Table 6, Row 4, Column 1 shows that when at least one proposal receives support in the bottom quintile, daily abnormal returns are 0.044% lower; over the 30 trading days following the shareholder meeting, this effect aggregates to 1.2% (0.044% × 30). Row 5, Column 1, which focuses on the *Average support rates for directors*, reports that the higher this ratio, the larger the abnormal return (significant at the 10% level), suggesting once again that more supportive vote outcomes are associated with more favorable post-meeting returns.

Taken together, the analysis presented in this section suggests that, even after controlling for vote outcomes, shareholder meetings that contain more extensive communication are followed by stronger stock price movements and greater investor consensus. These results suggest that shareholder meetings contain information that is sufficiently important to move trading patterns.

7. What Do Shareholders Say About Virtual-Only Meetings?

To gain further insight into how shareholders perceive virtual-only meetings, and whether they are concerned that virtual-only meetings are particularly likely to limit shareholders voice, I distribute a short questionnaire to institutional investors. With the generous assistance of Ms. Nadira Narine from the Interfaith Center on Corporate Responsibility (ICCR), I conduct this survey. The ICCR is a coalition of over 300 global institutional investors, primarily U.S.-based, managing a total of more than

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$4 trillion, which averages approximately $13.3 billion per institution. These institutions include asset managers (e.g., Boston Trust Walden), pension funds and unions (e.g., Service Employees International Union), faith-based investors (e.g., Sisters of St. Francis of Philadelphia), and NGOs (e.g., Oxfam America). ICCR members actively engage with other shareholders, interact with management, and submit proposals. Their representatives have been attending both in-person and virtual-only shareholder meetings for many years.

The questionnaire was emailed to ICCR members multiple times between March and June in each of the years 2022, 2023, and 2024. In 2022-2023, it comprised four quantitative questions about virtual-only shareholder meetings, with an additional question included in 2024. A total of 51 responses were collected: 13 in 2022, 27 in 2023, and 14 in 2024. Table 7 reports these questions and their corresponding responses, including separate figures for each of the sample years. The first question asked: "On a scale 1 from 10, to what extent do you believe that virtual shareholder meetings are more efficient than in person meetings, in that the communication is sharper and more concise?" The average response was 4.61, with a standard deviation of 2.57. Thus, this result indicates that shareholders have mixed views on the efficiently of virtual-only meetings.

The second question asked was: "On a scale 1 from 10, to what extent do you believe it is easier for companies to avoid addressing critical questions in virtual-only meetings relative to in-person meetings? (1=not easier to avoid critical questions in virtual-only meetings, 10=easier)." The average value of this response was 9.25, and the S.D. was 0.95. Thus, shareholders believe it is easier for companies to avoid addressing critical questions at virtual-only meetings.

The third question was: On a scale 1 from 10, to what extent do you believe companies avoided addressing critical questions? (1=did not avoid, 10=avoided). The average response was 8.35, with a standard deviation of 2.32. Interestingly, in 2024 the highest value for this question was obtained—9.77 Thus, taken together, shareholders clearly conveyed a concern that firms are more likely to cherry-pick questions at virtual-only meetings and avoid addressing critical questions.

The fourth question included in the survey is, "On a scale from 1 to 10, I expect firms to avoid critical questions especially when shareholders' support for directors is low (10 = agree, 1 = I do not agree)," received an average score of 8.08 with a standard deviation of 2.24. This result demonstrates that shareholders believe that firms are particularly likely to avoid addressing critical questions when shareholders' support for directors is low. It supports the study's findings that companies are more likely to use methods that limit shareholders' voice particularly when shareholders' support for director is low. In 2024, a fifth question was introduced: "On a scale from

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1 to 10, do you think that at virtual shareholder meetings companies avoid presenting critical questions submitted by shareholders when shareholder votes are unsupportive of the nominated directors and/or when shareholders do not vote in line with management recommendation on proposals (1 = yes, 10 = no)?" The average response of 7.31, with a standard deviation of 3.73, reflects a similar perception among shareholders. Shareholders generally believe that companies strategically avoid presenting critical questions when shareholder votes are unfavorable to directors or diverge from management recommendations.

In summary, while virtual-only shareholder meetings may offer some efficiency advantages, the survey results raise concerns about whether the way shareholder meetings are currently implemented allows companies to avoid addressing critical questions in virtual meetings, especially when shareholder votes are unsupportive of management recommendations.

8. Which types of questions are addressed at Shareholders Meetings?

To understand which topics may make companies uncomfortable, and thus explain why companies attempt at times to limit shareholders' voice, I next examine whether there are certain types of questions firms are particularly likely to avoid. To conduct this analysis, I classify each question C&M submitted that is documented in sufficient detail into one of 20 topics. Fortunately, C&M frequently submitted the same or very similar questions to different firms, simplifying the classification process. In Table 8, the average frequency with which questions submitted by C&M were addressed by firms is reported in column 2. In addition, the following specification is estimated:

$$(8)\quad \textit{Question addressed}_q = \beta_1 * \textit{Topic}_i + \beta_2 * \textit{Meeting fixed effect},$$

where $\textit{Question addressed}_q$ is an indicator that equals one if the firm addressed question q submitted, and zero if it did not, and *Topic i* is one of 20 topics listed in the corresponding row. This specification allows examining whether, relative to all questions raised by C&M at a particular meeting, questions on certain topics were less likely to be addressed. Overall, the results in Table 8 Column 3 show that firms are particularly reluctant to answer questions that reveal information enabling investors to gauge shareholder involvement/ indications of criticism at the meeting. Three of the four least-likely-to-be-addressed question categories focus on shareholder involvement or levels of support. Specifically, as reported in Table 8 (Column 2), when C&M asked about the total *"Number of questions submitted by shareholders"* at the shareholder meeting, they received the lowest response rate of all question categories: only 13% (significant at the 10% level according to Column 3). The second least-likely topic to be addressed was questions related to "*Vote outcomes*", with only 22% of these questions

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receiving a response. The fourth least-likely category was questions regarding the number of "*Shareholders in attendance*", addressed in just 28% of cases. These findings suggest that companies are least transparent and forthcoming on topics that would provide insight into shareholder participation and criticism at meetings.

9. Summary and conclusions

This paper studies how the format and conduct of shareholder meetings affect the information they generate for investors. Using shareholder meeting transcripts and novel data on previously undisclosed shareholder-submitted questions, I find that firms facing shareholder dissatisfaction are more likely to limit shareholder voice, particularly in virtual-only meetings. Consistent with this interpretation, virtual-only meetings are followed by weaker market reactions and lower investor engagement, suggesting that despite their greater accessibility, they tend to convey less value-relevant information than in-person meetings. Overall, the findings suggest that while virtual meetings has the potential to increase participation and accessibly to the information revealed at shareholder meetings, additional steps seem to be required to ensure that these meetings allow meaningful interaction and do not limit shareholders' voice. Policy recommendations are offered in Appendix D.

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Glossary of Variables

Variable name	Definition	Source
Abnormal return (annual)	The firm's buy-and-hold stock return over the 12 months preceding the shareholder meeting date minus the return on the CRSP value-weighted index over this same period	CRSP
Abnormal return (daily)	The firm's daily buy-and-hold stock return minus the return on the CRSP value-weighted index.	CRSP
Abnormal volume	Following Chae (2005) and Huang, Tan, and Wermers (2020), Abnormal volume is estimated as the ratio of daily volume and average daily volume during the pre-voting period −1, where the pre-voting period is defined as the [-31, -252] window before the meeting date.	CRSP
Absolute abnormal return	The absolute value of abnormal returns.	CRSP
After Covid	An indicator variable equal to one if the meeting was held after September 1st 2021 and zero otherwise.	ISS voting data
At least one proposal bottom quintile support	An indicator variable equal to one if at least one of the proposals voted upon at the meeting received support rates that are within the bottom quintile of support rates for this type of proposal.	ISS voting data
Average support rates for directors	Average of the average support rate each director received (i.e., the number of votes cast for the director divided by the total number of shares voted).	ISS voting data
Average support rates for directors bottom quintile	An indicator equal to one if the average support rates for directors were within the bottom quintile.	ISS voting data
Before Covid	An indicator variable equal to one if the meeting was held before March 13th 2020 and zero otherwise.	ISS voting data
Book-to-market	Book value of equity/ market value of equity for the most recent financial reports.	Compustat
During Covid	An indicator variable equal to one if the meeting was held between March 13 2020 and September 1st 2021 and zero otherwise.	ISS voting data
Length of total meeting	Length of a shareholder meeting in minutes	Transcripts + recordings of meetings
Leverage	Book Leverage, defined as (Total long-term debt + Debt in current liabilities) / total assets.	Compustat
Log assets	Logarithm of the firm's total book assets	Compustat
Log of market - capitalization	log(closing stock price * number of shares outstanding), for end of month preceding the shareholder meeting	CRSP

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Variable name	Definition	Source
Number of proposals submitted by management	The number of proposals voted upon at the meeting which were submitted by management.	ISS voting data
Number of proposals submitted by shareholders	is the number of proposals voted upon at the meeting which were submitted by shareholders.	ISS voting data
Number of questions addressed	Number of shareholder questions answered at the shareholder meeting	Transcripts + recordings of meetings
Number of tweets	The daily number of tweets that mention the company's name or its ticker	Kindly shared by Lev Muchnik
Precise vote outcomes announced	An indicator equal to one if precise vote outcomes were presented at the meeting, and zero if only pass/fail results were announced.	Transcripts + recordings of meetings
Question addressed	An indicator variable that equals one if the firm addressed the question C&M submitted, and zero otherwise	Shareholder Questions Dataset
Questions not limited to proposals	An indicator variable equal to one if the firm did not state at the meeting it would address only questions related to the proposals submitted by shareholders	Transcripts + recordings of meetings
Questions presented by shareholders	An indicator variable that equals one if shareholders presented their own questions and zero if a company representative presented the shareholder questions.	Transcripts + recordings of meetings
ROA	Income before extraordinary items/total assets, for the most recent fiscal year	Compustat
Total Q&A time	Number of minutes dedicated to addressing shareholders' questions at a shareholder meeting	Transcripts + recordings of meetings
Virtual-only meeting	An indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format (i.e., in-person exclusively or hybrid)	Proxy filings + meeting transcripts
Volatility	Trade-based intra-day volatility (during market hours). Estimated by TAQ, labeled in TAQ as ivol_t. For stock i on day T, the trade-based intraday volatility is computed as: $ivol_t_{i,t} = \sqrt{[(1 / (T-1)) \times \Sigma_{t=1}^{T} (Ret_{i,t} - \hat{R}et_{i,t})^2]}$, Where: $Ret_{i,t} = \ln(P_{k,t} / P_{k-1,t-1})$ is the log return between two consecutive trades; $P_{k,t}$ is the price of trade k at time t; $\hat{R}et_{i,t}$ is the average return for stock i on day T; T is the number of trades (or trade intervals) observed during the day.	TAQ
Volume	The raw number of the firm's shares traded on that day.	CRSP
Volume (scaled)	Volume (scaled) is defined as the raw number of the firm's shares traded on a given day divided by the number of shares outstanding	CRSP

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Figure 1: Snapshots of Tesla's 2019 in-person shareholder meeting
This figure presents snapshots from Tesla's 2019 in-person shareholder meeting. The figure shows one snapshot from each of the three portions of the meeting: proposal presentation, business update, and the Q&A session, and indicates the length of each portion.

Proposal presentation (7 minutes)

Business update (40 minutes)

Q&A session (50 minutes)

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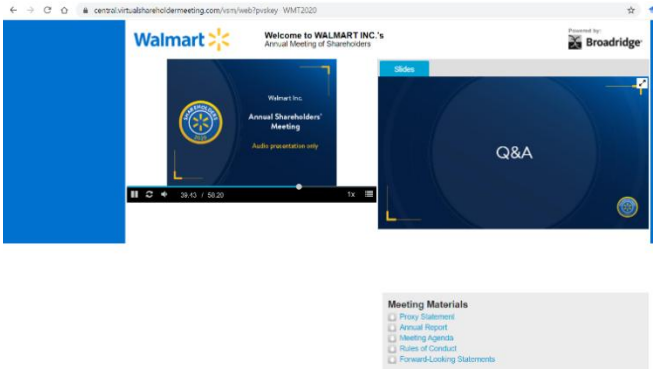
Figure 2: Virtual shareholder meetings

Panel A: Images from Walmart's 2020 and 2025 virtual-only shareholder meeting
The top image displays a screen from Walmart's virtual-only shareholder meeting held on June 3, 2020. The bottom image presents the screen presented to Walmart's shareholders in the June 5, 2025 shareholder meeting. These images were obtained from https://central.virtualshareholdermeeting.com/vsm/home.



Panel B: Shareholder meeting on Broadridge's virtual shareholder meeting platform
This image demonstrates the screen presented to HP's investors who attended the firm's 2020 virtual-only shareholder meeting. The vast majority of firms do not provide a video of the individual speaking, such as the image included in the red square (marked in red by the author). The screen also includes a textbox that shareholders can use to submit questions during the virtual-only shareholder meeting.

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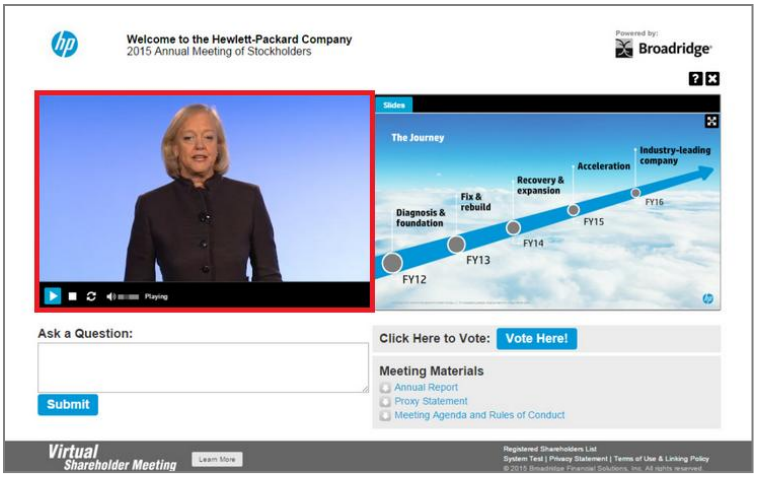

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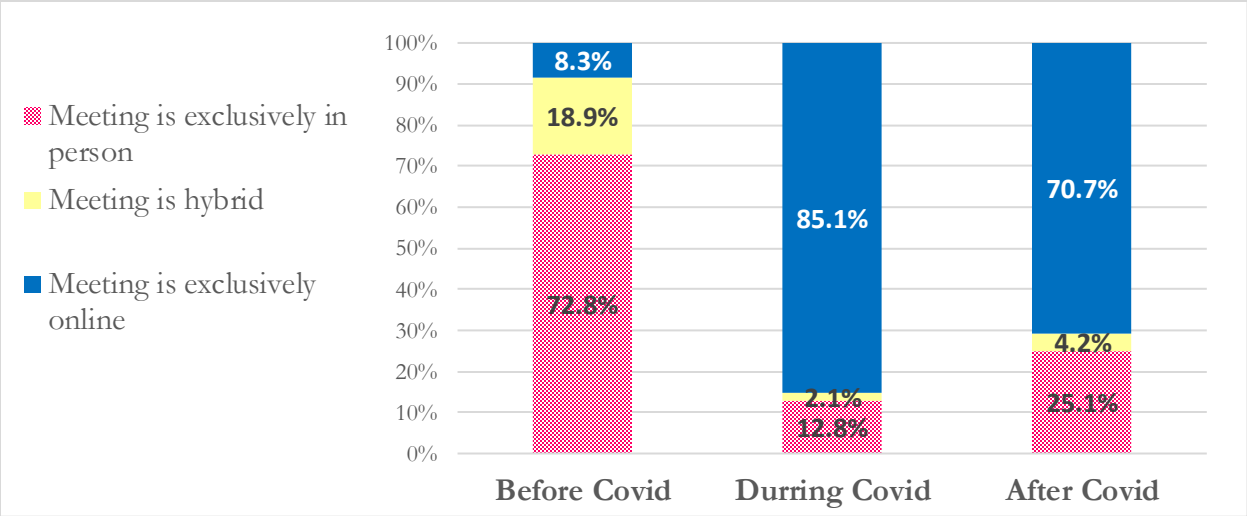
Figure 3: Meeting format

This figure reports the frequency at which S&P 500 companies conducted their annual shareholder meetings in each of the following three formats: exclusively in-person, in a hybrid format (i.e., in person and simultaneously online), or exclusively online. Panel A breaks down these figures depending on whether the meeting was held before Covid (i.e., July 1, 2017, until March 13, 2020, including these days), during Covid (i.e., March 14, 2020, until September 1, 2021), or after Covid (September 2, 2021, to June 30, 2023). Panel B breaks down the meeting format by proxy year for each year within the period 2018–2023. Each proxy year starts on July 1 of the calendar year preceding the proxy year and ends on June 30 of the proxy year. For example, proxy year 2018 starts on July 1, 2017, and ends on June 30, 2018.

Panel A: Meeting format before, during, and after Covid



Panel B: Meeting format broken down by proxy year

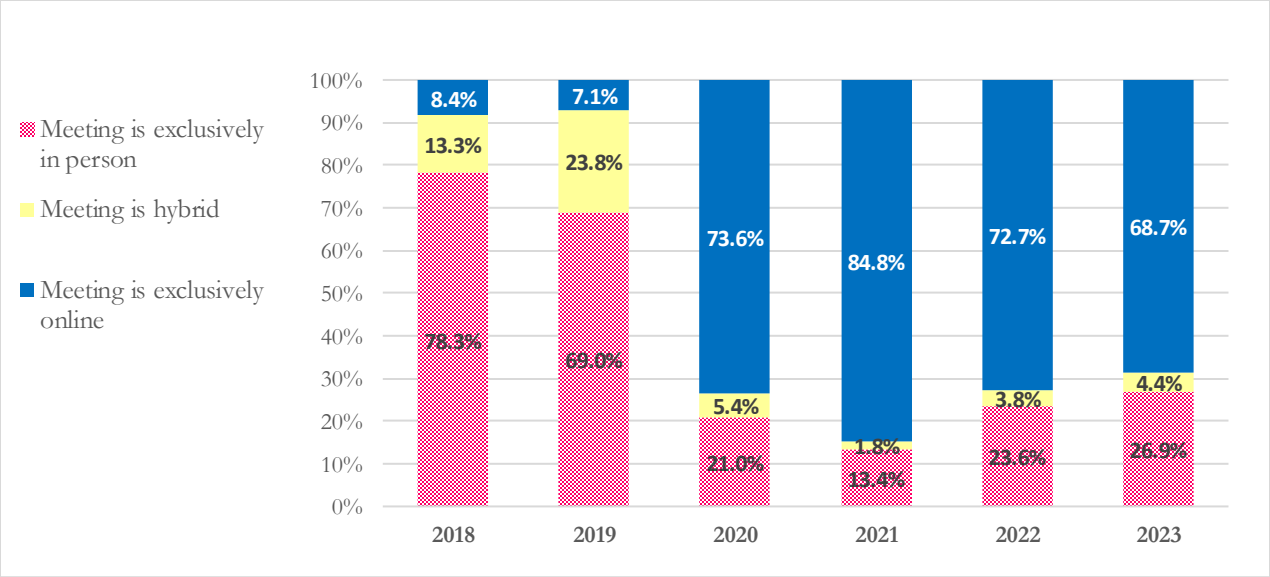


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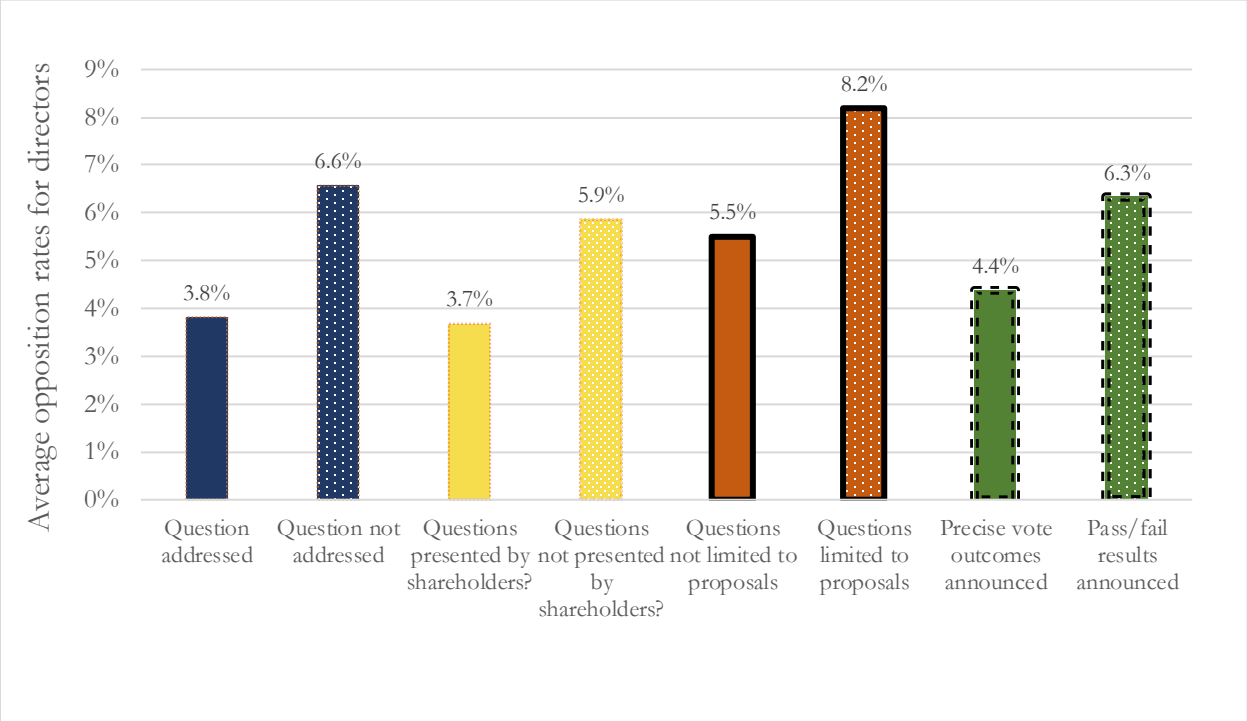
Figure 4: Methods used for designing shareholder meetings

Panels A and B of the figure report the relation between shareholder votes and governance practices for shareholder meetings held between July 1, 2017, and June 30, 2023. *Average opposition rates for directors* measures the average fraction of votes cast against directors proposed by management (Y-axis in Panel A). *At least one proposal bottom quintile support* is an indicator variable that equals one if at least one of the proposals received shareholders' support rates within the bottom quintile of this proposal category, and zero otherwise (Y-axis in Panel B). *Question addressed* is an indicator variable that equals one if the firm addressed the question C&M submitted, and zero if it did not. *Questions presented by shareholders* is an indicator variable that equals one if shareholders presented their own questions and zero if a company representative presented the shareholder questions. *Questions not limited to proposals* is an indicator variable equal to one if the firm did not state at the meeting that it would address only questions related to the proposals submitted by shareholders. *Precise vote outcomes announced* is an indicator equal to one if precise vote outcomes were presented at the meeting, and zero if only pass/fail results were announced.

Panel A: Average opposition rates for directors and methods used for designing shareholder meetings



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Panel B: Extreme low shareholder support rates and methods used for designing shareholder meetings

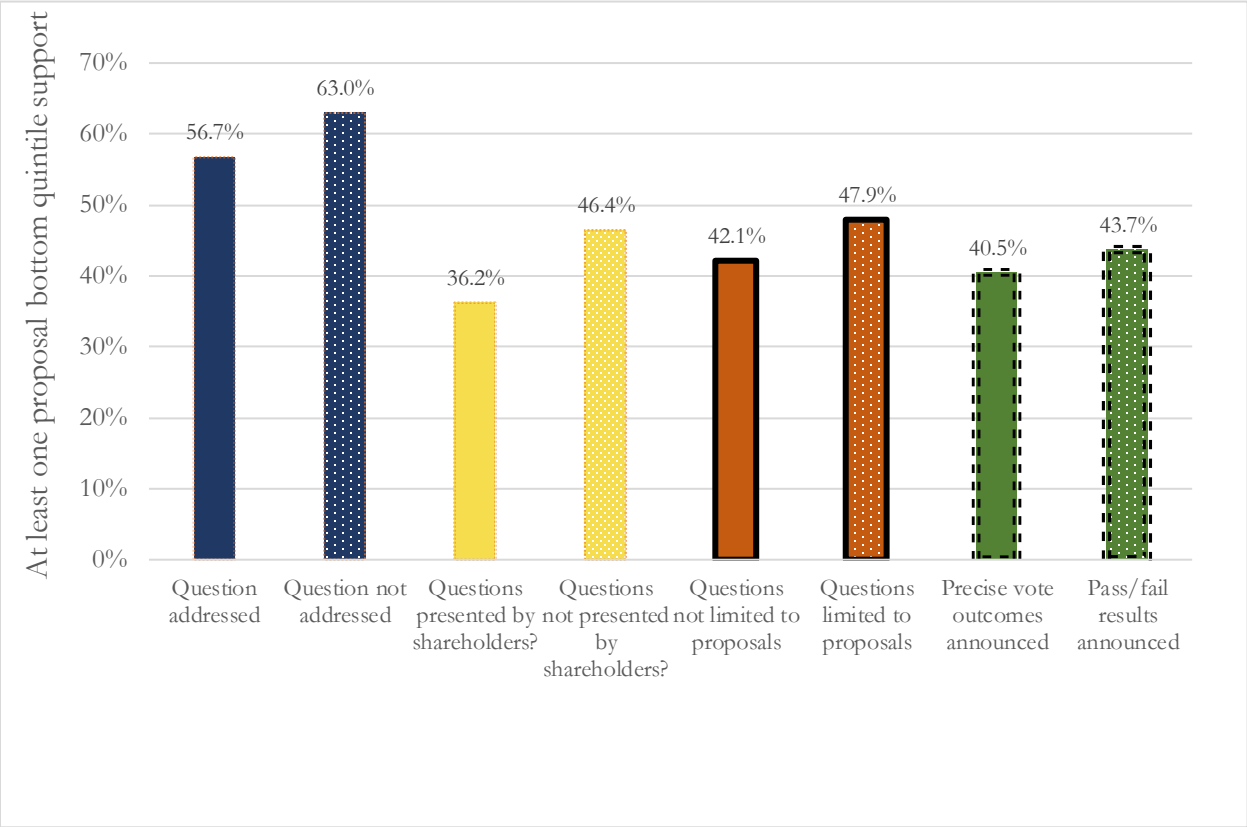

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Table 1: Shareholder support and practices used at meetings

Panel A examines the relation between the extent to which shareholders were supportive of the directors proposed by management and the methods used for designing virtual-only shareholder meetings. The dependent variable *Question addressed* is an indicator variable that equals one if the firm addressed the question C&M submitted, and zero if it did not. *Questions presented by shareholders* is an indicator variable that equals one if shareholders presented their own questions and zero if a company representative presented the shareholder questions. *Questions not limited to proposals* is an indicator variable equal to one if the firm did not state at the meeting that it would address only questions related to the proposals submitted by shareholders. *Precise vote outcomes announced* is an indicator equal to one if precise vote outcomes were presented at the meeting, and zero if only pass/fail results were announced. *Average support rates for directors* measures the average fraction of votes cast in support of the directors proposed by management. *At least one proposal bottom quintile support* is an indicator variable that equals one if at least one of the proposals received shareholders' support rates within the bottom quintile of this proposal category, and zero otherwise. All specifications include a vector of $Controls_m$ that comprises *Log assets*, *Log of market capitalization*, *Book-to-market*, *Abnormal return (annual)*, *ROA*, and *Leverage (book leverage)* as defined in the Glossary of Variables. The analysis in columns 1–2, which is conducted at the question level, includes question category fixed effects and proxy year fixed effects; the period examined is July 1, 2017–June 30, 2020. The analysis in columns 3–8 is conducted at the meeting level and includes firms that held a virtual-only meeting between July 1, 2017, and June 30, 2023 for which complete transcripts were collected. Columns 3–8 include industry fixed effects, and columns 3, 5, and 7 also include year fixed effects. Definitions of all variables are provided in the Glossary of Variables. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively. Panel B reports summary statistics of the primary variables included in Panel A.

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Panel A: Shareholder support rates and methods used

	Question addressed		Questions presented by shareholders		Questions not limited to proposals		Precise vote outcomes announced	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Average support rates for directors	0.924***		0.309***		0.233**		0.302**	
	(4.013)		(2.696)		(2.314)		(2.369)	
At least one proposal bottom quintile support		0.04		-0.061***		-0.026*		-0.037**
		(.937)		(-3.140)		(-1.864)		(-2.014)
ROA	0.46	0.829***	0.016	0.054	0.041	0.047	0.019	0.024
	(1.536)	(2.682)	(.443)	(1.190)	(1.385)	(1.584)	(.499)	(.653)
Abnormal return	0.149***	0.173***	0.005	-0.013	-0.007	-0.013**	0	0.002
	(3.075)	(3.503)	(.477)	(-1.151)	(-1.060)	(-2.008)	(.052)	(.254)
Log market capitalization	-0.005	-0.053*	0.019**	0.032**	-0.011	-0.009	-0.006	-0.004
	(-0.165)	(-1.718)	(1.974)	(2.580)	(-1.330)	(-1.081)	(-0.610)	(-0.384)
Log assets	-0.007	0.024	-0.009	-0.005	0.024***	0.026***	0.047***	0.051***
	(-0.259)	(.890)	(-0.924)	(-0.418)	(2.826)	(3.030)	(4.250)	(4.595)
Book-to-market	-0.046	-0.065	0.013	0.008	-0.009	-0.011	-0.003	-0.001
	(-0.693)	(-0.956)	(.790)	(.367)	(-0.861)	(-0.964)	(-0.189)	(-0.059)
Leverage	0.025	0.02	-0.025	-0.139***	0.044	0.027	-0.019	-0.045
	(.166)	(.530)	(-0.651)	(-3.111)	(1.327)	(.812)	(-0.425)	(-1.018)
Observation level	Question	Question	Company	Company	Company	Company	Company	Company
Fixed effects	Ques. Categ.	Ques. Categ	Industry and year	Industry	Industry and year	Industry	Industry and year	Industry
R-squared	0.104	0.081	0.441	0.11	0.077	0.061	0.135	0.124
N	632	632	1,293	1,299	2,087	2,096	2,059	2,068

Panel B: Summary statistics of primary variables

Variable	Average	S.D.
Question addressed	38.0%	48.6%
Questions presented by shareholders	9.2%	28.9%
Questions not limited to proposals	88.2%	32.2%
Precise vote outcomes announced	20.7%	40.5%
Average opposition rates for directors	5.8%	7.3%
Average support rates for directors	94.2%	7.3%
At least one proposal bottom quintile support	42.6%	49.5%

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Table 2: Methods used for designing in-person versus virtual-only meetings

This table examines the methods used for designing in-person versus virtual-only meetings. *Questions presented by shareholders* is an indicator variable that equals one if shareholders presented their own questions and zero if a company representative presented the shareholder questions. *Questions not limited to proposals* is an indicator variable equal to one if the firm did not state at the meeting that it would address only questions related to the proposals submitted by shareholders. *Precise vote outcomes announced* is an indicator equal to one if precise vote outcomes were presented at the meeting, and zero if only pass/fail results were announced. *Virtual-only meeting* is an indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format (i.e., in-person exclusively or hybrid). In Panel A, Columns 1, 3, and 5 include all companies for which transcripts were coded. Columns 2, 4, and 6 include all companies that transitioned from in-person to virtual-only meetings and for which transcripts were collected. Panel B matches each in-person meeting to a virtual-only meeting of a similar company using a propensity score, as described in Section 3. Panel C includes several governance controls. In all panels, the analysis includes meetings held between July 1, 2017, and June 30, 2023 for which transcripts were collected. Definitions of all variables are provided in the Glossary of Variables. *, **, and *** indicate p < .10, p < .05, and p < .01, respectively.

Panel A: Base specifications

	Questions presented by shareholders		Questions not limited to proposals		Precise vote outcomes announced	
	(1)	(2)	(3)	(4)	(5)	(6)
Virtual-only meeting	-0.666***	-0.694***	-0.029*	-0.043**	-0.090***	-0.067
	(-39.950)	(-12.197)	(-1.659)	(-2.462)	(-3.830)	(-1.376)
ROA	0.032	0.343	0.053*	0.025	0.02	0.331***
	(1.024)	(.489)	(1.910)	(.166)	(.530)	(2.952)
Abnormal return	0	0.132	-0.013**	0.091**	0.004	0.065*
	(.009)	(1.337)	(-2.135)	(2.681)	(.465)	(1.927)
Log market capitalization	0.018**	0.11	-0.009	0.051	-0.012	0.12
	(2.254)	(.703)	(-1.157)	(.953)	(-1.205)	(.838)
Log assets	-0.009	0.01	0.024***	-0.128	0.056***	0.14
	(-1.085)	(.024)	(3.077)	(-1.223)	(5.375)	(.925)
Book-to-market	0.009	0.657	-0.014	0.097	-0.003	0.183
	(.595)	(1.635)	(-1.291)	(1.473)	(-0.217)	(.953)
Leverage	-0.056*	-0.723	0.021	0.258	-0.036	-0.068
	(-1.767)	(-0.932)	(.658)	(1.406)	(-0.824)	(-0.180)
Fixed effects	Industry	Company	Industry	Company	Industry	Company
Sample included	All companies	Companies transitioning from In-person to Virtual	All companies	Companies transitioning from In-person to Virtual	All companies	Companies transitioning from In-person to Virtual
R-squared	0.547	0.789	0.061	0.51	0.132	0.836
N	1,644	144	2,448	301	2,419	280

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Panel B: Summary statistics on virtual and in-person meetings

			In-person		Virtual-only			
			Mean	N	Mean	N	Difference	T-stat
1	Questions presented by shareholders	Full sample	0.7	313	0	1536	0.7***	37.82
		Two-sample t-test	0.7	211	0.1	211	0.6***	19.12
2	Questions not limited to proposals	Full sample	0.94	425	0.88	2349	0.06*	1.81
		Two-sample t-test	0.93	211	0.88	211	0.05*	1.69
3	Precise vote outcomes announced	Full sample	0.4	417	0.2	2330	.002***	2.72
		Two-sample t-test	0.34	211	0.29	211	0.05	1.02

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Panel C: Controlling for governance practices

	Average support rates for directors	At least one proposal bottom quintile support	Virtual-only meeting	Questions presented by shareholders	Questions not limited to proposals	Precise vote outcomes announced
	(1)	(2)	(3)	(4)	(5)	(6)
Confidential voting	0.005 (1.017)	-0.061 (-1.500)	0.036 (1.605)	0.002 (.073)	-0.042* (-1.750)	0.029 (.805)
Cumulative voting	0.011 (1.067)	-0.127 (-1.412)	-0.085 (-1.564)	0.114* (1.695)	0.06 (1.145)	0.258*** (3.183)
Dual class shares	0.005 (.619)	-0.078 (-1.229)	-0.014 (-0.381)	0.025 (.571)	0.006 (.163)	-0.046 (-0.775)
Golden parachute	0.010** (2.097)	-0.063 (-1.629)	0.034 (1.540)	-0.015 (-0.534)	0.009 (.402)	-0.028 (-0.813)
Limit ability to amend bylaws	0.014* (1.767)	-0.085 (-1.241)	-0.021 (-0.493)	-0.003 (-0.048)	0.073* (1.794)	0.095 (1.519)
Limit ability to call special meeting	0.009** (2.379)	-0.011 (-0.366)	-0.014 (-0.764)	0.001 (.050)	0.009 (.473)	0.062** (2.187)
Limit ability to act by written consent	-0.004 (-1.232)	0.03 (.991)	-0.018 (-1.031)	0.01 (.457)	0.027 (1.491)	0.076*** (2.725)
Average support rates for directors				0.402** (2.312)	0.312** (2.178)	0.512** (2.441)
ROA	0.006 (.240)	-0.224 (-1.136)	0.051 (.428)	-0.043 (-0.276)	0.076 (.651)	0.068 (.383)
Abnormal return	-0.001 (-0.418)	-0.029 (-1.125)	0.004 (.270)	0.011 (.615)	-0.002 (-0.141)	0.016 (.690)
Log market capitalization	-0.003 (-1.343)	0.075*** (3.597)	-0.031** (-2.435)	0.035** (2.137)	0.008 (.649)	-0.017 (-0.911)
Log assets	0.006** (2.326)	-0.003 (-0.165)	0.019 (1.593)	-0.015 (-0.928)	0.014 (1.123)	0.060*** (3.286)
Book-to-market	-0.008** (-2.087)	0.139*** (4.267)	0.004 (.198)	0.015 (.543)	-0.009 (-0.406)	-0.008 (-0.277)
Leverage	0.008 (1.458)	-0.121* (-1.708)	0.024 (.527)	0.043 (.870)	0.026 (.645)	-0.031 (-0.488)
Fixed effects	Industry and year	Industry and year	Industry and year	Industry and year	Industry and year	Industry and year
R-squared	0.148	0.124	0.415	0.5	0.119	0.183
N	1,362	1,363	1,681	907	1,319	1,286

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Table 3: Methods used at shareholder meetings and how they design shareholder meetings

All panels include all meetings for which transcripts were coded. Panel B reports a separate analysis for in-person and virtual-only meetings. *Question addressed* is an indicator variable that equals one if the firm addressed the questions C&M submitted, and zero if it did not. *Questions presented by shareholders* is an indicator variable that equals one if shareholders presented their own questions and zero if a company representative presented the shareholder questions. *Questions not limited to proposals* is an indicator variable equal to one if the firm did not state at the meeting that it would address only questions related to the proposals submitted by shareholders. *Precise vote outcomes announced* is an indicator equal to one if precise vote outcomes were presented at the meeting, and zero if only pass/fail results were announced. *Virtual-only meeting* is an indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format. For each row, the following three dependent variables are examined: *Number of questions addressed at meeting*, which measures the number of shareholder questions answered by the firm at the shareholder meeting; *Total Q&A time*, which measures the number of minutes dedicated to addressing shareholders' questions at a shareholder meeting; and *Length of total meeting*, which measures the length of a shareholder meeting in minutes. In Panels A and C, all specifications include the following controls: *Log assets*, *Log of market capitalization*, *Book-to-market*, *Abnormal return (annual)*, and *ROA*, but for brevity, these are not reported. The analysis of the first row of Panel A is conducted at the question level and includes proxy year fixed effects and question category fixed effects, which control for the topic of the question. In the remaining analyses in Panels A and C, the analysis is conducted at the meeting level and includes proxy year and industry (2 digit SIC) fixed effects. Panel B reports separate results for the period before Covid (i.e., July 1, 2017, until March 13, 2020, including these days), during Covid (i.e., March 14, 2020, until September 1, 2021), and after Covid (September 2, 2021, to June 30, 2023). Panel B matches each in-person meeting to a virtual-only meeting of a similar company using a propensity score, as described in Section 3. The sample comprises transcripts of shareholders' meetings held between July 1, 2017, and June 30, 2023 for which transcripts were collected. Definitions of all variables are provided in the Glossary of Variables. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

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Panel A: Methods used for designing the content and structure of shareholder meetings

	Method	Num. of questions addressed at meeting	Total Q&A time	Length of total meeting
		(1)	(2)	(3)
1	Question addressed	3.241***	2.731**	0.199
		3.175	2.286	0.079
	R-squared	0.356	0.301	0.212
	N	417	440	365
2	Questions presented by shareholders	1.190***	6.355***	13.282***
		3.012	7.768	8.846
	R-squared	0.291	0.316	0.326
	N	1638	1422	1649
3	Questions not limited to proposals	1.320***	2.034***	6.740***
		4.657	3.746	6.124
	R-squared	0.254	0.251	0.287
	N	2437	2228	2451
4	Precise vote outcomes announced	1.106***	1.992***	6.607***
		5.269	5.044	8.107
	R-squared	0.268	0.284	0.3
	N	2399	2199	2421
5	Virtual-only meeting	-0.145	-2.702***	-9.351***
		(-0.504)	(-4.792)	(-8.510)
	R-squared	0.246	0.251	0.292
	N	2487	2284	2513
	Avg. of dep. variable	1.77	3.26	18.76

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Panel B: Summary statistics on virtual-only and in-person meetings

			In-person		Virtual-only			
			Mean	N	Mean	N	Difference	T-stat
	Full sample							
1	Num. of questions addressed at meeting	All observations	4.1	449	2.3	2377	1.8***	3.86
		Two-sample t-test	4.5	211	4	211	0.5	0.87
2	Total Q&A time	All observations	10.1	410	3.5	2190	6.6***	7.88
		Two-sample t-test	10.8	211	6.9	211	3.9***	3.15
3	Length of total meeting	All observations	38.2	449	20.2	2399	18.0***	9.6
		Two-sample t-test	37.4	211	27.2	211	10.2***	4.34
	Before covid							
4	Num. of questions addressed at meeting	All observations	4.31	290	2.35	174	1.96***	2.74
		Two-sample t-test	5.40	143	5.27	143	0.12	-0.24
5	Total Q&A time	All observations	10.48	295	4.11	178	6.37***	3.16
		Two-sample t-test	11.88	143	8.65	143	3.232*	1.91
6	Length of total meeting	All observations	38.14	295	21.11	178	17.03***	6.07
		Two-sample t-test	40.27	143	30.99	143	9.274***	2.7
	During covid							
7	Num. of questions addressed at meeting	All observations	3.09	68	1.63	1644	1.46***	3.16
		Two-sample t-test	1.73	33	1.70	33	0.031	0.05
8	Total Q&A time	All observations	8.04	68	2.99	1645	5.05***	5.25
		Two-sample t-test	4.00	33	3.54	33	0.456	0.25
9	Length of total meeting	All observations	31.81	68	18.25	1645	13.56***	6.52
		Two-sample t-test	24.95	33	21.32	33	3.631***	0.76
	After covid							
10	Num. of questions addressed at meeting	All observations	3.45	85	3.56	559	-0.11	-0.19
		Two-sample t-test	3.71	35	3.94	35	-0.23	-0.16
11	Total Q&A time	All observations	10.39	47	5.24	367	5.15***	3.31
		Two-sample t-test	12.57	35	5.84	35	6.73*	1.67
12	Length of total meeting	All observations	43.62	86	25.49	576	18.13***	5.85
		Two-sample t-test	37.13	35	25.29	35	11.83*	1.86

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Panel C: Methods used for designing the content of virtual-only and in-person meetings

		Number of questions addressed at the meeting		Total Q&A time		Length of total meeting	
		(1)	(3)	(3)	(4)	(5)	(6)
		Virtual only	In-person	Virtual only	In-person	Virtual only	In-person
1	Questions presented by shareholders	0.452	2.725**	3.486***	6.201**	8.712***	10.066**
		0.694	2.135	3.039	2.028	3.485	2.284
	R-squared	0.351	0.256	0.36	0.299	0.314	0.342
	N	1369	250	1178	223	1376	254
2	Questions not limited to proposals	1.203***	2.754	1.906***	5.749	6.264***	13.027**
		4.987	1.589	4.645	1.502	6.514	2.28
	R-squared	0.33	0.17	0.311	0.252	0.297	0.311
	N	2074	352	1888	328	2082	358
3	Precise vote outcomes announced	0.999***	1.259	1.701***	2.331	5.159***	10.507***
		5.208	1.358	5.065	1.316	6.766	3.48
	R-squared	0.335	0.191	0.322	0.322	0.301	0.361
	N	2041	348	1866	322	2058	353

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Table 4: When are meetings held online?

This table examines the variables related to a firm's decision to hold a virtual-only meeting. *Virtual-only meeting* is an indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format (i.e., exclusively in-person or hybrid). *Number of proposals submitted by shareholders* is the number of proposals voted upon at the meeting that were submitted by shareholders. *Number of proposals submitted by management* is the number of proposals voted upon at the meeting that were submitted by management. *Before Covid* is an indicator variable equal to one if the meeting was held before March 13, 2020, and zero otherwise. *During Covid* is an indicator variable equal to one if the meeting was held between March 13, 2020, and September 1, 2021, and zero otherwise. *After Covid* is an indicator variable equal to one if the meeting was held after September 1, 2021, and zero otherwise. The analysis includes all S&P 500 companies over the 2018–2023 period. Definitions of all variables are provided in the Glossary of Variables. *, **, and *** indicate p < .10, p < .05, and p < .01, respectively.

	Virtual-only meeting			
	(1)	(2)	(3)	(4)
Number of proposals submitted by shareholders	0.010** (2.558)	0.007* (1.818)	0.010** (2.558)	0.007* (1.818)
Number of proposals submitted by management	-0.003*** (-2.669)	-0.003** (-2.125)	-0.003*** (-2.669)	-0.003** (-2.125)
Before covid			-0.806*** (-12.699)	-0.739*** (-30.613)
During covid	0.806*** (12.699)	0.739*** (30.613)		
After covid	0.695*** (8.144)	0.636*** (22.953)	-0.111* (-1.938)	-0.103*** (-5.894)
ROA	0.101 (.778)	0.183 (1.324)	0.101 (.778)	0.183 (1.324)
Abnormal return	0.005 (.277)	-0.012 (-0.708)	0.005 (.277)	-0.012 (-0.708)
Log market capitalization	0.005 (.289)	-0.054* (-1.685)	0.005 (.289)	-0.054* (-1.685)
Log assets	0.01 (.648)	0.037 (.842)	0.01 (.648)	0.037 (.842)
Book-to-market	0.032 (.859)	-0.04 (-0.610)	0.032 (.859)	-0.04 (-0.610)
Leverage	-0.042 (-1.110)	-0.061 (-0.602)	-0.042 (-1.110)	-0.061 (-0.602)
Year fixed effect	Yes	No	Yes	No
Industry fixed effects	Yes	No	Yes	No
Company fixed effect	No	Yes	No	Yes
R-squared	0.558	0.765	0.558	0.765
N	2,239	2,227	2,239	2,227

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Table 5: Post-meeting returns, volume, and volatility after virtual-only vs. in-person meetings

This table examines the relation between the meeting format of the shareholder meeting (virtual-only or in-person/hybrid) and subsequent returns, volume, and tweets. *Abnormal return* is the daily abnormal return defined as the stock's daily return minus the value-weighted market return. *Absolute abnormal return* is the absolute value of abnormal returns. *Volume (number of shares)* is the raw number of the firm's shares traded on a day. *Volume (scaled)* is defined as the raw number of the firm's shares traded on a given day divided by the number of shares outstanding. *Volatility* is the trade-based intraday volatility (during market hours). *Number of tweets* measures the daily number of tweets that mention the company's name or its ticker. *Virtual-only meeting* is an indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format (i.e., in-person exclusively or hybrid). *After meeting* is an indicator variable that equals one if the observation date is on or after the shareholder meeting date, and zero if it is before. Panel A specifications 1–2, 4–5, 7–8, 10–11, 13–14, and 16–17 and Panel B uses the S&P 500 sample for the 2018–2023 period. Panel A specifications 3, 6, 9, 12, 15, and 18 use the sample of meetings for which transcripts were coded. Panel A uses the full sample. Panel B repeats the firm fixed effects analysis from Panel A (Specifications 2, 5, 8, etc.) of Table 5, Panel A, but examines only companies that held in-person meetings before Covid and switched to virtual-only meetings after Covid, i.e., due to an exogenous reason, namely Covid. Definitions of all variables are provided in the Glossary of Variables. *, **, and *** indicate p < .10, p < .05, and p < .01, respectively.

Panel A: Full sample

	Abnormal return			Absolute abnormal return		
	(1)	(2)	(3)	(4)	(5)	(6)
Virtual-only meeting * after meeting	-0.0003		-0.0013**	-0.0020***		-0.0033***
	(-1.5657)		(-2.2979)	(-14.8172)		(-8.4284)
After meeting	-0.0001		0.0006	-0.0003***		-0.0009**
	(-0.9480)		(1.114)	(-2.7158)		(-2.3632)
Virtual-only meeting		0.00027			-0.00058***	
		(.988)			(-3.133)	
Num. of questions addressed at meeting * after meeting			0			0.0001***
			(1.118)			(2.965)
Average support rates for directors bot. quintile * after meeting			-0.0014*			0.0007
			(-1.7147)			(1.249)
Meeting fixed effect	Yes	No	Yes	Yes	No	Yes
Comp. # day to meet FE	No	Yes	No	No	Yes	No
Dur- after Covid FE	No	Yes	No	No	Yes	No
Controls	No	Yes	No	No	Yes	No
Window included	[-30, +30]	[0, +30]	[-30, +30]	[-30, +30]	[0, +30]	[-30, +30]
Trading or cal. days	Trading days	Trading days	Trading days	Trading days	Trading days	Trading days
Sample	S&P 500	S&P 500	Trans. coded	S&P 500	S&P 500	Trans. coded
R-squared	0.012	0.008	0.013	0.208	0.148	0.214
N	146,937	69,301	132,081	146,937	69,301	132,081

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	Volume (number of shares)			Volume (scaled)		
	(7)	(8)	(9)	(10)	(11)	(12)
Virtual-only meeting * after meeting	-223950.44937*** (-4.786)		-283079.6276*** (-4.5833)	-0.3026*** (-3.6835)		-0.2364 (-0.2016)
After meeting	-63296.58021* (-1.902)		163098.7536*** 2.7735	-0.1594*** (-2.7284)		-0.1677 (-0.1501)
Virtual-only meeting	-223950.44937*** (-4.786)	-743613.93102*** (-8.220)			-0.5982*** (-3.8914)	
Num. of questions addressed at meeting * after meeting	0	0	-45765.8856*** (-9.5903)			-0.0416 (-0.4592)
Average support rates for directors bot. quintile * after meeting			-31329.9602 (-0.3510)			-1.1585 (-0.6834)
Meeting fixed effect	Yes	No	Yes	Yes	No	Yes
Comp. # day to meet FE	No	Yes	No	No	Yes	No
Dur- after Covid FE	No	Yes	No	No	Yes	No
Controls	No	Yes	No	No	Yes	No
Window included	[-30, +30]	[0, +30]	[-30, +30]	[-30, +30]	[0, +30]	[-30, +30]
Trading or cal. days	Trading days	Trading days	Trading days	Trading days	Trading days	Trading days
Sample	S&P 500	S&P 500	Trans. coded	S&P 500	S&P 500	Trans. coded
R-squared	0.813	0.653	0.754	0.66	0.348	0.074
N	146,937	69,301	132,081	146,937	69,301	132,081

	Volatility			Number of tweets		
	(13)	(14)	(15)	(16)	(17)	(18)
Virtual-only meeting * after meeting	-0.0099*** (-12.4230)		-0.2607** (-2.3943)	-2.59160*** (-3.129)		0.2177 (.274)
After meeting	-0.0003 (-0.5048)		-0.0785 (-0.7570)	-9.88892*** (-17.045)		-5.0397*** (-6.6440)
Virtual-only meeting		-0.00533*** (-5.698)		-2.59160*** (-3.129)	-8.34495*** (-5.190)	
Num. of questions addressed at meeting * after meeting			0.0156* (1.828)			-1.5616*** (-24.6203)
Average support rates for directors bot. quintile * after meeting			0.1086 (.691)			7.7627*** (7.084)
Meeting fixed effect	Yes	No	Yes	Yes	No	Yes
Comp. # day to meet FE	No	Yes	No	No	Yes	No
Dur- after Covid FE	No	Yes	No	No	Yes	No
Controls	No	Yes	No	No	Yes	No
Window included	[-30, +30]	[0, +30]	[-30, +30]	[-30, +30]	[0, +30]	[-30, +30]
Trading or cal. days	Trading days	Trading days	Trading days	Calendar days	Calendar days	Calendar days
Sample	S&P 500	S&P 500	Trans. coded	S&P 500	S&P 500	Trans. coded
R-squared	0.304	0.639	0.18	0.653	0.431	0.604
*	146,938	69,302	132,021	144,436	63,856	63,322

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Panel B: Firms switching from in-person to virtual-only meetings following exogenous Covid shock

	Abnormal return	Absolute abnormal return	Volume (number of shares)	Volume (scaled)	Volatility	Number of tweets
	(1)	(2)	(3)	(4)	(5)	(6)
Virtual-only meeting	-0.0055 (-1.5721)	-0.0163*** (-6.7489)	-3334449.4557*** (-3.4299)	-4.9917*** (-2.8296)	-0.0965*** (-23.0110)	-32.9996** (-2.2371)
Meeting fixed effects	No	No	No	No	No	No
Comp. # day to meet FE	Yes	Yes	Yes	Yes	Yes	Yes
Dur- after Covid FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Window included	[0, +30]	[0, +30]	[0, +30]	[0, +30]	[0, +30]	[0, +30]
Trading or cal. days	Trading days	Trading days	Trading days	Trading days	Trading days	Calendar days
Sample	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500	S&P 500
R-squared	0.008	0.123	0.694	0.346	0.194	0.486
N	52,023	52,023	52,023	52,023	52,023	49,799

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Table 6: Votes and post-meeting trades

This table examines the relation between the content of the shareholder meeting and subsequent returns, volume, and tweets. *Abnormal return* is the daily abnormal return defined as the stock's daily return minus the value-weighted market return. *Absolute abnormal return* is the absolute value of abnormal returns. *Volume (number of shares)* is the raw number of the firm's shares traded on a day. *Volume (scaled)* is defined as the raw number of the firm's shares traded on a given day divided by the number of shares outstanding. *Volatility* is the trade-based intraday volatility (during market hours). *Number of tweets* measures the daily number of tweets that mention the company's name or its ticker. *Number of questions addressed* documents the number of shareholder questions answered by the firm at the shareholder meeting; *Total Q&A time* documents the number of minutes dedicated to addressing shareholders' questions at a shareholder meeting; and *Length of total meeting* measures the length of a shareholder meeting in minutes. *At least one proposal bottom quintile support* is an indicator variable that equals one if at least one of the proposals received shareholders' support rates within the bottom quintile of this proposal category, and zero otherwise. *Average support rates for directors* is equal to the average fraction of votes cast in support of the directors proposed by management. *After meeting* is an indicator variable that equals one if the observation date is on or after the shareholder meeting date, and zero if it is before. The analysis includes meetings held between July 1, 2017, and June 30, 2023 for which transcripts were collected. Specifications 1–4 (5–6) include 30 calendar (trading) days before the meeting to 30 calendar (trading) days after the meeting. The specifications include a meeting fixed effect. Definitions of all variables are provided in the Glossary of Variables. *, **, and *** indicate $p < .10$, $p < .05$, and $p < .01$, respectively.

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		Abnormal return	Absolute abnormal return	Volume (number of shares)	Volume (scaled)	Volatility	Number of tweets
		(1)	(2)	(3)	(4)	(5)	(6)
1	Num. of quest. addr. at meet. X after meeting	0.00005	0.00010***	-64894.35644***	-0.1521	0.01875**	-1.81996***
		(1.220)	(3.164)	(-11.905)	(-1.4734)	(2.310)	(-24.064)
	After meeting	-0.00068***	-0.00378***	-42375.5154	0.2245	-0.30645***	-5.93184***
		(-3.007)	(-22.858)	(-1.522)	(.426)	(-7.484)	(-15.194)
	R-squared	0.013	0.206	0.721	0.081	0.186	0.563
	N	139,628	139,628	139,628	139,628	139,569	69,322
2	Total Q&A time X after meeting	0.00002	0.00007***	-27534.70173***	-0.0591	0.01246***	-0.72580***
		(.873)	(3.868)	(-8.710)	(-0.9707)	(2.611)	(-13.570)
	After meeting	-0.00063***	-0.00396***	-94394.43198***	0.089	-0.32457***	-5.85859***
		(-2.707)	(-23.307)	(-3.344)	(.164)	(-7.692)	(-10.749)
	R-squared	0.013	0.205	0.7	0.08	0.185	0.603
	N	134,108	134,108	134,108	134,108	134,043	82,346
3	Length of meeting X after meeting	0.00001	0.00005***	-10623.65613***	-0.0476*	0.00514***	-0.44808***
		(.539)	(6.159)	(-7.828)	(-1.8546)	(2.581)	(-24.616)
	After meeting	-0.00067**	-0.00461***	48297.0927	0.9102	-0.37482***	0.03538
		(-2.133)	(-20.103)	(1.252)	(1.249)	(-6.629)	-(.065)
	R-squared	0.013	0.207	0.721	0.081	0.186	0.563
	N	140,788	140,788	140,788	140,788	140,723	69,017
4	At least one prop. bot. quintile sup. X aft. Meet.	-0.00044*	-0.00027	-6213.99255	0.8333	-6.1713	-2.43547***
		(-1.812)	(-1.444)	(-0.307)	(.884)	(-0.833)	(-7.900)
	After meeting	0.00019	-0.00070***	23630.87615**	0.7002	5.677	-4.98471***
		(1.352)	(-6.635)	(2.041)	(1.296)	(-7.945)	(-26.628)
	R-squared	0.042	0.242	0.651	0.149	0.311	0.599
	N	624,148	624,148	624,157	624,157	9,115	588,861
5	Average support rates for directors X after meeting	0.00325*	0.00116	-227567.4835	-9.5913	5.02351*	-16.38941***
		(1.809)	(.856)	(-1.554)	(-1.4806)	(1.646)	(-6.488)
	After meeting	-0.00309*	-0.00218*	228220.4393	9.8135	-5.00983*	9.75422***
		(-1.785)	(-1.664)	(1.615)	(1.570)	(-1.702)	-(4.041)
	R-squared	0.012	0.208	0.813	0.133	0.185	0.599
	N	146,937	146,937	146,937	528,510	134,043	584,283

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Table 7: Summary of survey response

This table presents the responses of individuals representing organizations that are members of the Interfaith Center on Corporate Responsibility (ICCR), as detailed in the paper. The years listed in the table correspond to the year in which each respondent completed the survey. The last three columns of the table break down the responses by response year.

Num.	Question		All	2022	2023	2024
1	On a scale 1 from 10, to what extent do you believe that virtual shareholder meetings are more efficient than in person meetings, in that the communication is sharper and more concise? (1=virtual-only meetings are not more efficient, 10=virtual-only meetings are more efficient)	Average S.D	**4.61** 2.57	5.31 2.32	4.78 2.44	3.14 2.63
2	On a scale 1 from 10, to what extent do you believe it is easier for companies to avoid addressing critical questions in virtual-only meetings relative to in-person meetings? (1=not easier to avoid critical questions in virtual-only meetings, 10= easier to avoid critical questions in virtual-only meetings)	Average S.D	**9.25** 0.95	9.31 0.95	8.96 1.43	9.79 0.43
3	On a scale 1 from 10, to what extent do you believe companies avoided addressing critical questions? (1=did not avoid, 10-avoided)	Average S.D	**8.32** 2.32	8.08 2.50	7.89 2.47	9.77 0.44
4	On a scale from 1 to 10, I expect firms to avoid critical questions especially when shareholders' support for directors is low. (10=agree, 1=I do not agree)	Average S.D	**8.08** 2.24	7.75 2.70	7.85 2.31	9.23 0.93
5	On a scale from 1 to 10, do you think that at virtual shareholder meetings companies avoid presenting critical questions submitted by shareholders when shareholder votes are unsupportive of the nominated directors and/or when shareholders do not vote in line with management recommendation on proposals (1=yes, 10=no)	Average S.D	**7.31** 3.73			7.31 3.73
	Num. of responses		51	13	27	14

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Table 8: Which questions are likely to be addressed at shareholder meetings?

This table reports the topics of the questions C&M submitted to virtual-only shareholder meetings held between March 20, 2020, and June 30, 2021. Column 2 reports, for each topic, the frequency with which questions submitted were addressed. Column 3 reports the coefficient β_1 from the specification $Question\ addressed_{(q)} = \beta_1 * Topic_i + \beta_2 *$ Meeting fixed effect, where $Question\ addressed_q$ is an indicator equal to one if the firm addressed question q submitted, and zero if it did not, and $Topic_i$ is the topic listed in the corresponding row. Column 4 reports the t-statistic of the coefficient β_1. Column 5 reports the number of questions submitted for each category.

#	Topic (1)	Average frequency question addressed (2)	Coefficient of *Topic* (3)	T-statistic of *Topic* (4)	Number of questions (5)
1	Number of questions submitted	13%	-0.1483*	(1.791)	23
2	Vote outcomes	22%	-0.1833***	(3.090)	45
3	Operational	28%	0.0019	(.029)	43
4	Shareholders' attendance	31%	-0.0797*	(1.687)	81
5	Employees and Covid-19	31%	-0.0787*	(1.861)	102
6	Governance	36%	-0.0465	(.432)	14
7	ESG	36%	0.0374	(.302)	11
8	General	35%	-0.0990*	(1.692)	60
9	Executive compensation	42%	0.0897*	(1.690)	60
10	Layoff	44%	-0.0154	(.161)	16
11	Covid-19	46%	0.0253	(.372)	35
12	Board and Covid-19	45%	0.0402	(.806)	64
13	Directors	47%	0.1563	(1.500)	15
14	Directors' attendance	47%	0.1517*	(1.723)	19
15	Buyback	49%	0.1796***	(3.235)	53
16	Directors' tenure	50%	0.1248	(.799)	6
17	RD	56%	-0.0942	(.942)	18
18	Financial performance	56%	0.0726	(1.022)	32
19	Acquisitions	79%	0.2312**	(2.367)	19
20	Auditor's tenure	83%	0.0872	(.552)	6
	Total				716

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Appendixes

Appendix A: Sample of questions submitted

This table reports the questions submitted by C&M to 5 of the 60 firms to which they submitted at least one question. The table specifies whether the question was answered, and if so, a brief summary of the answer is provided.

#	Firm name	Question submitted	Question answered	Summary of answer
1	American Tower Corp.	Do you plan 2020 share buybacks?	Yes	Strong commitment to dividend, mindful of liquidity
2	American Tower Corp.	What is the greatest impact of Covid-19 on the firm?	Yes	Foreign currency translation
3	American Tower Corp.	What percentage of employees can work mostly from home?	Yes	Vast majority can work from home, many use vehicles to get to the job site and do not go to firm sites
4	American Tower Corp.	When was the last in-person board meeting?	Yes	Early March in Miami, all but one director attended in-person
5	American Tower Corp.	How many employees contracted Covid-19?	No	
6	American Tower Corp.	Can you announce the preliminary percentage vote for each ballot item?	No	
7	American Tower Corp.	How many questions were submitted at this meeting?	No	
8	Booking Holdings Inc.	When was the last in-person board meeting?	Yes	Feb 2020, 4-times-a-year board meetings around earnings announcement, once-a-year board meeting on strategy
9	Booking Holdings Inc.	How often does the board meet by telephone since the beginning of the pandemic?	Yes	Monthly
10	Booking Holdings Inc.	Can you elaborate on the $589 impairment charges recorded for Q1 2020?	Yes	See 10Q for information.
11	Booking Holdings Inc.	What percentage of employees can do most of their work from home?	Yes	Large percentage, BKNG has 300 offices
12	Booking Holdings Inc.	How many shareholders logged into today's meeting?	Yes	25
13	Booking Holdings Inc.	Please elaborate on platform change in presenting offers and prices following EU authorities' requirement.	Yes	Support for the objective of this issue but no firm commitment
14	Booking Holdings Inc.	Have there been layoffs in 2020?	Yes	Feel sympathy for those who leave
15	Booking Holdings Inc.	Please advise whether the say on pay vote was higher today compared to 2019.	Yes	Higher in 2020
16	Booking Holdings Inc.	Of the shareholders who logged into today's meeting is there any way to tell how many logged in late and how many logged out early?	No	

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#	Firm name	Question submitted	Question answered	Summary of answer
17	Lowe's Companies Inc.	When was the last in-person board meeting?	Yes	No in-person board meeting in 2020
18	Lowe's Companies Inc.	Are 2020 share buybacks planned?	Yes	Do not anticipate any for rest of 2020
19	Lowe's Companies Inc.	Does the board have an estimate of when in-person board meetings will resume?	No	
20	Lowe's Companies Inc.	In the past year have directors taken private jets to attend board meetings?	No	
21	Lowe's Companies Inc.	What was the selection process for director Brian Rogers?	No	
22	Lowe's Companies Inc.	How many attended today's shareholder meeting?	No	
23	Lowe's Companies Inc.	How many employees have contracted Covid-19?	No	
24	Lowe's Companies Inc.	What practices does management recommend that shareholders use when shopping at Lowe's?	No	
25	Lowe's Companies Inc.	Can you read the preliminary percentage votes on each ballot item?	No	
26	Lowe's Companies Inc.	How much has Lowe's spent extra to protect employees and customers in response to Covid-19 concerns?	No	
27	Lowe's Companies Inc.	Does Lowes share Covid-19 best practices with Home Depot?	No	
28	McDonald's Corp.	What is the greatest impact of Covid-19 on the firm?	No	
29	McDonald's Corp.	What was the selection process for the newest member of the board?	No	
30	McDonald's Corp.	When was the last in-person board meeting?	No	
31	McDonald's Corp.	How many are attending the meeting today?	No	
32	McDonald's Corp.	Do you plan 2020 share buybacks? How much?	No	
33	McDonald's Corp.	Can you announce the preliminary percentage vote on each ballot item?	No	
34	McDonald's Corp.	Does Covid-19 present new business opportunities?	No	

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#	Firm name	Question submitted	Question answered	Summary of answer
35	O'Reilly Automotive Inc.	Do you plan more 2020 share buybacks?	No	
36	O'Reilly Automotive Inc.	What is the greatest impact of Covid-19 on the firm?	No	
37	O'Reilly Automotive Inc.	What percentage of employees can work mostly from home?	No	
38	O'Reilly Automotive Inc.	How many questions were submitted to this meeting?	No	
39	O'Reilly Automotive Inc.	In what month will the next in-person board meeting be?	No	

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Appendix B: John Chevedden and James McRitchie Involvement at shareholder meetings

I collect the questions John Chevedden and James McRitchie (C&M) attempted to submit at shareholder meetings during the 2020 - 2021 proxy seasons. As Table BI demonstrates, in these seasons, C&M attempted to submit questions to 89 and 110 meetings, respectively. C&M were able to submit questions successfully to 61 and 95 meetings, respectively. As reported in Table BI, 61.2% addressed at least one question C&M submitted.[15]

To provide a complete picture on C&M, I point out that they are frequently referred to as "gadflies", which are individuals who submit a significant number of proposals at annual shareholder meetings. Gantchev and Giannetti (2020) conclude that, on average, gadflies' activism destroys shareholders' value because they frequently submit ill-informed proposals. In contrast, Nili and Kastiel (2021) highlight the significant contribution of gadflies in governing firms, e.g., their proposals receive substantially higher support rates than those submitted by more sophisticated investors (e.g., pension funds).

Since these two studies point to somewhat different conclusions, and because they both group multiple gadflies together (and do not report separate figures for C&M), in Appendix Table Panel BII I report summary statistics pertaining specifically to C&M. As this panel reports, during the 2016-2020 proxy seasons, 1,984 proposals were submitted (figures in this panel are assembled using ISS' Voting Analytics database). Of these, 341 were submitted by John Chevedden, and 91 were submitted by James McRitchie. Thus, C&M submit a non-negligent number of proposals and are familiar with shareholder meetings. Importantly, Table BII documents that C&M's proposals received relatively high support rates from both ISS and shareholders. For example, Table BII documents that average shareholders' support rates for proposals submitted by C&M were 38.4% and 39.2%, respectively, substantially higher than those documented for all other proposals—28.9%. Correspondingly, 15.2% and 22% of the proposals C&M submitted passed, while only 12.4% of the proposals submitted by other shareholders passed. These figures demonstrate that C&M's proposals received higher support rates from both ISS and shareholders relative to proposals submitted by other shareholders (i.e., not C&M), suggesting that C&M promote reasonable issues.

[15] This figure is estimated at the meeting-shareholder level, i.e., if C&M both attended the same meeting, and each of them submitted questions at that meeting, this would be regarded as two observations.

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Table BI: C&M's submitting questions at virtual-only shareholder meetings
This table reports key statistics regarding the attempts of John Chevedden and James McRitchie to submit questions to virtual-only shareholder meetings held during the 2020 and 2021 proxy seasons. These proxy seasons include questions submitted between 20 March 2020-June 30 2020, and 1 July 2020-30 June 2021, respectively.

Item	2020	2021	Total	Observations included in Table 1 Panel A	Observations included in Table 3 Panel A
Number of meetings to which C&M attempted to submit a question	89	110	199	127	86
Of these, num. of meetings C&M were able to submit a question	61	95	156	75	39
Percent of meetings addressed at least one question submitted by C&M (est. at meeting-shareholder level)	63.2%	60.0%	61.2%	59.5%	62.1%
Total number of questions submitted by C&M	390	377	767	632	440
Of these, number of questions addressed	142	145	287	225	175
Response rate	36.41%	38.46%	37.42%	35.60%	39.77%

Table BII: C&M's success rates with submitting proposals
This table reports the average success rates of John Chevedden, James McRitchie ("C&M"), and all other shareholders in submitting proposals during the 2016–2020 period. The table is assembled based on the ISS Voting Analytics database.

Sponsor of proposal	ISS recommended to vote for the proposal	Fraction voted for proposal	Proposal passed	Number of proposals submitted and voted upon by shareholders
Submitter of proposal				
John Chevedden	85.9%	38.4%	15.2%	341
James McRitchie	92.3%	39.2%	22.0%	91
Other shareholders (i.e., not C&M)	69.8%	28.9%	12.4%	1,552
All shareholder proposals	73.6%	31.0%	13.3%	1,984

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Appendix C: Methods for designing shareholder meeting before, during, and after Covid

It is possible to argue that the methods used to limit shareholders' voice were implemented primarily in the wake of Covid, during a limited period immediately after Covid, when firms were adjusting to a swift unexpected shift to virtual meetings, but that these patterns have ceased to exist after Covid. To address this concern, in Table CI I examine how the methods companies use changed before versus after Covid, both for virtual and in-person meetings.

In Table CI, *Before Covid* is an indicator variable equal to one if the meeting was held before March 13 2020 and zero otherwise; *During Covid* is an indicator variable equal to one if the meeting was held between March 13 2020 and September 1st 2021, and zero otherwise; and *After Covid* is an indicator variable equal to one if the meeting was held after September 1st 2021 and zero otherwise. In the odd-numbered specifications, the variables *Before Covid* is the benchmark variable omitted, while in the even-numbered specifications it is *During Covid*. I report both versions of the specification to shed light on how the methods used changed relative to the pre-Covid period and also relative to the Covid-era. Additionally, I report separate regressions for virtual and in-person meetings as indicated in Table CI. All specifications include, but omit for brevity, the control variables included in Panel A of Table 1.

Regressions 1, 5, and 9 of Table CI all clearly show that relative to the period before Covid, the methods that limit shareholders' voice are significantly more likely to be implemented during Covid, but importantly, they also remain intact after Covid. For example, the bottom row of Column 5 reports that in 88.8% of the virtual-only meetings *Questions* (were) *not limited to proposals*, thus, in 11.2% (1-88.8%) of the meetings limited questions to topics related to proposals. Column 5 shows at virtual-only meetings, relative to the pre-Covid period, during Covid, questions were -7.5% not likely to be limited to proposals (significant at the 1% level) or put differently, they were 7.5% more likely to be limited to proposals, i.e. an increase of 63.4% (7.5%/11.8%) relative to the mean frequency of questions being limited to proposals. Column 5 also shows that even after Covid, companies were 4.9% more likely to limit questions to proposals relative to the pre-Covid period (significant at the 10% level), indicating that the tendency to limit shareholders' voice did not disappear after Covid. This conclusion is further demonstrated in specification 6 that shows that the frequency companies limited questions to proposals *After Covid* is not significantly different relative to the period *During Covid*, as indicated by the insignificant coefficient for *After Covid* equal to 0.026.

Specifications 7-8 document similar patterns for in-person meetings—the frequency

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companies limited questions to proposals increased during Covid, and has remained high also after Covid. However, as Table 2 shows, overall, virtual-only meetings are more likely to use methods that limit shareholders' voice such as limiting questions to proposals. Thus, while Covid increased the use of methods that limit shareholders' voice both for virtual and for in-person meetings, overall, methods that limit shareholders' voice are more common at virtual-only meetings.

Regressions 1-4 and 9-12 of Table CI document a similar pattern to those documented in specifications 5-8: relative to the pre-Covid period, questions were significantly less likely to be presented by shareholders (specifications 1-4) and precise vote outcomes were less likely to be revealed (specifications 9-12) both at virtual-only and at in-person meetings.

In sum, this section shows that the methods implemented to limit shareholder voice became significantly more common during the Covid-era. However, the use of these methods has not reverted back to pre-Covid levels. The analysis demonstrates that post-Covid, both virtual and in-person meetings continue to exhibit a higher likelihood of limiting shareholder voice, even after the initial transition to virtual meetings.

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Table CI: Methods for designing shareholder meeting before, during, and after Covid

Panel A-C include all meetings for which transcripts were coded. Panel B reports a separate analysis for in-person and virtual-only meetings. *Questions presented by shareholders* is an indicator variable that equals one if shareholders presented their own questions and zero if a company representative presented the shareholder questions. *Questions not limited to proposals* is an indicator variable equal to one if the firm did not state at the meeting that it would address only questions related to the proposals submitted by shareholders. *Precise vote outcomes announced* is an indicator equal to one if precise vote outcomes were presented at the meeting, and zero if only pass/fail results were announced. *Virtual-only meeting* is an indicator variable that equals one if the meeting was held exclusively online, and zero if it was held in an in-person format. All specifications include a vector of controls that includes *Log assets, Log of market capitalization, Book-to-market*, *Abnormal return (annual)*, and *ROA*, but for brevity these are not reported. The sample comprises of transcripts of shareholders meetings held between July 1, 2017–June 30, 2023 for which transcripts were collected. *Before Covid* is an indicator variable equal to one if the meeting was held before March 13th 2020 and zero otherwise, *During Covid* is an indicator variable equal to one if the meeting was held between March 13 2020 and September 1st 2021 and zero otherwise, and *After Covid* is an indicator variable equal to on*e if the meeting was held after September 1st 2021 and zero otherwise. Definitions of all variables are provided in the Glossary of Variables. *, **, and *** indicate p<.10, p<.05, and p<.01, respectively.

	Questions presented by shareholders				Questions not limited to proposals			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Before Covid		0.183***		0.730***		0.076***		0.137***
		(10.373)		(9.093)		(2.809)		(3.310)
During Covid	-0.183***		-0.730***		-0.075***		-0.137***	
	(-10.373)		(-9.093)		(-2.788)		(-3.310)	
After Covid	-0.188***	-0.005	-0.129**	0.601***	-0.049*	0.026	-0.137***	0.001
	(-10.093)	(-0.443)	(-2.244)	(7.052)	(-1.667)	(1.505)	(-3.795)	(.014)
Type of meeting	Virtual only	Virtual only	In-person	In-person	Virtual only	Virtual only	In-person	In-person
R-squared	0.148	0.148	0.485	0.485	0.069	0.07	0.176	0.176
N	1377	1377	254	254	2083	2083	358	358
Mean	0.0313		0.7284		0.8885		0.9412	

	Precise vote outcomes announced			
	(9)	(10)	(11)	(12)
Before Covid		0.101***		-0.043
		(2.952)		(-0.566)
During Covid	-0.100***		0.043	
	(-2.926)		(.566)	
After Covid	-0.063*	0.037*	-0.052	-0.095
	(-1.691)	(1.693)	(-0.761)	(-1.029)
Type of meeting	Virtual only	Virtual only	In-person	In-person
R-squared	0.127	0.127	0.256	0.256
N	2059	2059	353	353
Mean	0.2090		0.3597	

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Appendix D: Policy recommendations

This appendix presents` several policy recommendations.

A. Make recordings public. Requiring that firms make public the audio and video recordings of shareholder meetings, and transcripts of these meetings. Tesla is one of the few firms that made the video recording of both their 2019 and 2020 shareholder meetings public (on YouTube), and as of February 2021, these recordings have approximately 0.5 million and 3.2 million views, respectively, indicating that investors are interested in shareholder meetings.[16] Requiring that these materials be made available to investors indefinitely, ideally by filing these materials as an SEC filing, would allow tracking some of the actions firms take to empower or, alternatively, limit shareholders' voice.

B. Make submitted questions public. Because firms are not required to disclose which questions were submitted, firms have complete power over selecting which questions are addressed, and they may cherry-pick non-challenging questions and ignore material questions, consistent with concerns raised by the Shareholder Rights Group, the Council of Institutional Investors, and others in their letter to the SEC.[17] Requiring that firms make public all questions submitted by shareholders, the firm's policy on the time it allocates to addressing shareholders' questions, and the mechanism it uses for selecting the questions would create pressure on firms to avoid cherry picking questions.[18]

C. Allow shareholders to present their questions. Just as analysist are online and present their questions at earning calls, shareholders should be able to present their questions.

D. Require firms to disclose the number of attending shareholders. In general, it is likely that the larger the number of shareholders attending a meeting, the larger the number of

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[16] Moreover, firms frequently post transcripts of their earnings calls on their websites. However, posting transcripts and audio recordings of shareholder meetings on firms' websites is only now starting to become common. Some firms do include a link to the audio recording of a meeting, but make the recording available only for a limited period of time (e.g., up to three or twelve months).

[17] This letter was written by Amy Borrus from the Council of Institutional Investors, Sanford Lewis from the Shareholder Rights Group, Mindy Lubber from Ceres, Lisa Woll from US SIF, and Josh Zinner from the Interfaith Center on Corporate Responsibility. The letter can be obtained at this link: https://corpgov.law.harvard.edu/2020/07/28/letter-to-clayton-and-hinman-on-virtual-and-hybrid-meetings/

[18] Additionally, all questions not addressed at shareholder meetings should, ideally, be addressed in writing in a document the firm makes available on its website. Relatedly, when shareholders submit questions they should have the possibility of identifying themselves and providing contact information to ensure that the firm has the possibility of notifying shareholders that an answer to their question has been posted online (if it was not addressed at the meeting).

Shareholders should also be offered to rank the importance of multiple questions they submit. This would ensure that firms attempt to address at least one question submitted by each shareholder, and that the most important question, from the shareholder's perspective, is addressed.

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questions submitted. If firms have a large number of attending shareholders, but a small number of submitted questions, it may indicate that the firm introduced barriers to submitting questions, and, thus, may warrant further inspection.

E. Ease the submission of question. The technical barriers to identifying shareholders should be removed, or the requirement that the platform identify a shareholder in order for the shareholder to submit a question should be removed.[19] Supporting non-Broadridge platforms can enhance competition among platforms and thus motivate these platforms to become more sophisticated.[20]

[19] There are two justifications for the latter policy. First, a significant and increasing number of individuals in the United States invest in index funds. Thus, these individuals are already shareholders in a very large number of firms. Second, any individual is a potential shareholder, and shareholder meetings can allow also potential shareholders to inquire about the firm and/or raise concerns.

[20] For example, platforms can allow to observe other shareholders' questions, to observe the names of the executives and directors who logged into the meeting, and to observe and rank questions submitted by other shareholders.

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