Shareholders' Voice at Virtual-Only Shareholder Meetings

Abstract

Virtual-only shareholder meetings have become dramatically more common following Covid-19. By creating a unique dataset documenting questions shareholders submitted at virtual-only shareholder meetings, I document that precisely when shareholders vote against the directors proposed by management, indicating contention with management, firms are likely to ignore shareholders' questions. Similarly, I show that when such low-support votes prevail, transcripts of virtual-only shareholder meetings reveal that firms are likely to explicitly limit the scope of questions they are willing to address at the meeting, and not reveal at the meeting precise vote outcomes. Companies that use such methods have significantly more limited communication at virtual-only shareholder meetings, and these methods are significantly more common at virtual-only meetings relative to in-person meetings. Overall, relative to in-person meetings, virtual-only meetings are shorter and dedicate less time to addressing shareholders' concerns.

Keywords: Shareholder meetings, shareholder votes, shareholder voice, virtual, in-person, Covid-19.
JEL codes: G30, G34, G39, M20, O14, O33

1. Introduction

Shareholder meetings are one of the only opportunities for most investors to meet and interact directly with management, and to raise concerns regarding the firm.[1] This sentiment is conveyed by Michael Mayo, a shareholder participating in the 2019 in-person JPMorgan Chase & Co. shareholder meeting, who stated: "I appreciate the access I have to management … I'm here today as a shareholder of JPMorgan shares ... because this is the only chance, one time per year, when I can ask questions of the general board and have them be held publicly accountable." While an extensive literature exists on shareholder votes,[2] studies on the content of shareholder meetings are just starting to emerge. In this paper, I examine the content of shareholder meetings, and focus on shareholders' voice at virtual-only meetings.

On the one hand, the shift to a virtual-only shareholder meeting could potentially increase shareholders' ability to use their voice (Fairfax, 2010; Nili and Shaner, 2020), since online participation is substantially less costly than in-person participation, which frequently requires traveling (Boros, 2004; Freeburn and Ramsay, 2001; Cai, Jiang, and Jun-Koo Kang 2021). Thus, the shift can allow shareholders to "attend" many more meetings. Indeed, the CEO of Broadridge, the company that broadcasts the majority of virtual shareholder meetings, reported that shareholders' attendance in virtual meetings has increased relative to in-person meetings.[3] On the other hand, virtual-only meetings, may pose communication challenges and may not promote the same level of interaction (Mittleman, Briggs, and Nunamaker, 2002; Markman, 2009), and virtual-only shareholder meetings may be designed in a way that further limits shareholders'/participants' voice and their ability to interact with and challenge management (Nili and Shaner, 2020; Hurley 2021). Firms may also tend to ignore shareholders' questions at virtual-only meetings (JD Supra, 2020), especially those that are critical of management.

Following the outbreak of Covid-19, which led to severe restrictions on in-person gatherings, the SEC, ISS, and Glass Lewis became substantially more supportive of holding virtual-only shareholder meetings (i.e., meetings held only virtually), and the frequency of such meetings increased dramatically. For example, Clabaugh, Connors, and Peters (2020) report that before Covid-

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[1] For retail investors, shareholder meetings may be the only opportunity to interact with senior management. Institutional investors, especially large funds and asset managers, have other avenues to access management, one of which is earnings calls.

[2] E.g., Iliev and Lowry (2014) and Malenko and Shen (2016).

[3] See interview with Tim Gokey, Broadridge's CEO, conducted on August 12, 2020, on Bloomberg. The interview is available here: https://www.bloomberg.com/news/videos/2020-08-11/shareholders-benefiting-from-virtual-communication-broadridge-ceo-video.

19, only 12% of the S&P 500 companies held virtual-only meetings, but this figure increased to 77% after Covid-19. These figures demonstrate that following Covid-19, the majority of companies moved from having in-person shareholder meetings to having virtual-only meetings. Given that such meetings are now common practice, I focus on these types of meetings and, more specifically, on whether shareholders' voice at such meetings is heard.

Both in-person and virtual-only shareholder meetings can include up to three sections: (a) proposal presentation, which is the mandatory portion that includes presentation of proposals submitted by the firm and/or shareholders; (b) business update, which includes management's update on the firm's business developments and activities; and (c) Q&A session, which allows shareholders to ask questions to be addressed by management. Figure 1 presents a visual depiction of each of these three sections via snapshots from Tesla's 2019 in-person shareholder meeting.

Given the new era of virtual-only meetings, I investigate whether at virtual-only meetings firms strategically employ certain methods that limit shareholders' voice, i.e., firms limit shareholder voice when shareholders are relatively critical of the directors proposed by management. The latter indicates shareholders' discomfort and perhaps even dissatisfaction with the management team. I focus on three methods, which I show/argue are especially common at virtual-only meetings, perhaps because shareholders are unable to protest against such methods. For all three methods, shareholders cannot vocally oppose management in any way at virtual-only meetings since their "voice" is literally muted throughout the meeting.

The first method I focus on is a firms' choice to ignore shareholders questions at virtual-only meetings. At virtual-only meetings, questions to the Q&A session are submitted by shareholders in writing via a text box, frequently during the meeting, and firms can then observe all the questions submitted, and select which questions to reveal and address (questions not addressed are almost never revealed). The virtual-only shareholder meeting setting differs from the in-person one. At in-person shareholder meetings, shareholders typically line up in front of the microphone (see Figure 1), and each shareholder is typically permitted to ask a question (if a large number of shareholders wish to ask questions, not all shareholders will receive the opportunity to do so). The firm does not know in advance which question each shareholder will ask.

To capture the selection process of the questions ultimately addressed at shareholder meetings, I assemble a unique dataset that documents questions submitted by shareholders. I do this with the generous help of Mr. John Chevedden and Mr. James McRitchie (henceforth, "C&M"). C&M are two shareholders who for many years have been actively participating in shareholder meetings, notably by submitting shareholder proposals, but also by asking questions at these meetings. As shown in this study, their proposals garner on average higher support rates from both ISS (Institutional Shareholder Services) and from shareholders, relative to proposals submitted by other shareholders. This suggests that ISS and shareholders are relatively supportive of the agenda promoted by C&M. I assemble a unique dataset that records, starting soon after the Covid-19 outbreak—from March 2020 until June 2021, i.e., essentially two proxy seasons,[4] all of the successful and unsuccessful attempts of C&M to submit questions at virtual-only shareholder meetings, and the answers they received to the questions they submitted. I refer to this dataset as the "Shareholder Questions Dataset."

My goal in documenting the questions submitted by C&M is to capture data that are not disclosed by firms and that, consequently, allow me to investigate if and when firms choose to address or ignore shareholders' concerns raised at shareholder meetings. The Shareholder Questions Dataset documents the attempts of C&M to submit questions to 199 virtual-only shareholder meetings. C&M ultimately submitted 767 questions, of which 287 were addressed, resulting in a response rate of 37.41%. As shown in the paper, the response rate to C&M's questions is similar to the response rate for questions submitted by all shareholders.

Using the Shareholder Questions Dataset I find that a question on a particular topic was significantly less likely to be addressed by a company when shareholders' voted against the directors proposed by management. For example, a one S.D. increase in the frequency shareholders support the directors proposed by management is followed by a 21.9% increase in the likelihood that a question is answered by the firm (relative to the average frequency of the latter variable). Put differently, precisely when shareholders' votes indicate that they are contentious with management, as indicated by shareholders' low support rates for the directors proposed by management, management is more likely to ignore the questions shareholders submit at virtual-only meetings, thereby limiting shareholders' voice.

The next two methods analyzed reflect the extent to which companies wish to encourage communication with shareholders at virtual-only shareholder meetings. To obtain this data, I hand-code 1,904 transcripts of shareholder meetings held between January 2019 and June 2021 (inclusive). The first method analyzed is whether the firm explicitly limited shareholder questions at virtual-only meetings to topics related to the proposals submitted by shareholders. This policy severely limits the topics on which shareholders can ask questions, since proposals pertain to a small range of topics. I

[4] This is the case because approximately 70% of the meetings are held between March and June of each year, and a proxy season is typically defined as the period between July 1 of the prior calendar year and June 30 of the current calendar year.

find that that when shareholders tend to vote against the directors proposed by management, firms are significantly more likely to limit questions to questions related to proposals. Specifically, a decrease of one S.D. in shareholders' support of directors is followed by a 13.8% increase in the likelihood that the firm limits questions to topics related to proposals (relative to the average frequency of the latter variable).

Moreover, the data documents that the method of limiting questions to topics related to proposals has significantly increased, by at least 50%, at virtual-only shareholder meetings relative to in-person meetings. Taken together, these findings demonstrate that limiting the topics of questions has become more common at virtual-only meetings, and that this practice is especially used by firms that likely want to avoid shareholders' scrutiny.

The last method analyzed, also based on data coded from the transcripts, is whether the firm reveals at the shareholder meetings the precise vote outcome for each vote, i.e., in percentage, or whether, alternatively, it merely reports whether each vote passed or failed. While 98.9% of the votes pass, support rates vary, and some votes receive only low support rates that are, nevertheless, sufficient for the vote to pass. When the firm does not reveal precise vote outcomes at the meeting, shareholders cannot "cite" a low-support vote outcome and ask why support rates are low, or how the firm intends to respond to the low-support vote outcome. It also demonstrates that the firm is not attempting to reveal the most meaningful available information to shareholders at the meeting. Finally, by delaying the revelation of the precise vote outcomes, the firm can stave off the media's and shareholders' legitimate criticism of proposals that passed with only low margins.

The results indicate that especially firms that receive low support rates for the directors proposed by management are likely to disclose only pass/fail vote outcomes. A decrease of one S.D. in shareholders' support of directors is followed by a 12.4% decrease in the likelihood that the firm reports precise results in percentages (relative to the average frequency of the latter variable). Here, too, the data shows that the practice of only reporting a pass/fail outcome has become significantly more common at virtual-only meetings relative to in-person meetings. Taken together, the results show that firms that receive relative low support rates from shareholders, are the firms that tend to use methods that make it more challenging for shareholders to make their voice be heard. Moreover, these methods have become significantly more common at virtual-only shareholder meetings.

However, one may wonder whether the above-noted methods (i.e., ignoring shareholders' questions and limiting questions to those pertaining to proposals) that are particularly common at virtual-only meetings do indeed limit communication between firms and shareholders. This question can be challenging to address since the questions submitted by all shareholders are not disclosed, and only the questions actually addressed at the meeting are observable from the transcripts. Using the Shareholder Questions Dataset, I am able to show that when firms frequently ignored the questions C&M submitted, they were also likely to address a small number of questions at the shareholder meeting and spend less time on the Q&A session. This suggests that when firms address a small number of questions at the meeting it is, at least partly, because firms choose to ignore questions submitted by shareholders, and not (only) because shareholders refrain from submitting questions. This conclusion is further strengthened by the unique setting of the virtual-only meetings examined, in which questions were typically submitted anonymously. This mitigates the potential concern that firms particularly attempted to ignore questions submitted by C&M.

Similarly, the results show that when firms limit questions to those pertaining to proposals, the number of questions addressed is smaller, and the Q&A time and the total meeting time are shorter. This demonstrates that limiting the topics of the questions also limits communication at meetings. Additionally, when firms disclose only a pass/fail vote outcome, as opposed to the precise vote outcome, the number of questions addressed is smaller, and the Q&A time and the total meeting time are shorter. This indicates that firms that choose to disclose only a pass/fail vote outcome are firms that, in general, communicate less with shareholders at shareholder meetings.

I then examine which types of questions firms were especially likely to avoid addressing at virtual-only shareholder meetings. The results show that firms were most likely to ignore questions included in the Shareholder Questions Dataset when these questions asked about the number of questions submitted by shareholders. This suggests that firms prefer to keep shareholders in the dark with respect to shareholders' attempts to ask a question at the shareholder meeting.

While firms with low shareholder support rates may use methods that shorten communication at shareholder meetings, perhaps given shareholders' accessibility to virtual-only shareholder meetings (they do not require commuting), overall, communication at virtual-only shareholder meetings may increase. The quasi-forced shift to virtual-only shareholder meetings allows investigating how the content and structure of the meetings vary depending on the format of the meetings. I show that virtual-only meetings are, on average, 15%–29% shorter (depending on the sample), allocate 16%–22% less time to answering questions, and allocate 24%–27% less time to answering each question. These differences exist for firms that held an in-person meeting before Covid-19, and a virtual-only meeting after Covid-19, and also for all firms for which transcripts were coded. These results demonstrate that, overall, relative to in-person meetings, less time is dedicated at virtual-only shareholder meetings to addressing shareholders' concerns.

One may be concerned that a selection bias exists for this analysis for the pre- or post-Covid-19 sample noted above. Thus, I note that revealing transcripts of shareholder meetings before Covid-19 (which is required to be included in the above-noted sample of firms that held an in-person meeting before Covid-19 and a virtual-only meeting after Covid-19) was not customary. Thus, it was likely done by the firms that were relatively open to having communication with shareholders. In addition, in the post-Covid-19 era, when, due to Covid-19 restrictions, commuting was not possible/very difficult (in contrast to the pre-Covid-19 era), holding virtual-only meetings could give shareholders more access to the meetings relative to in-person meetings. Thus, if a selection bias exists, it likely leads to underestimating the extent of communication at in-person versus virtual-only meetings.[5] And yet, even these relatively pro-shareholder firms reduced their communication post-Covid-19 when meetings moved to the virtual arena. I point out that the same arguments prevail also for the analysis showing that the methods examined were more common at virtual-only meetings.

The paper also documents that communication at shareholder meetings of firms that held virtual-only meetings *both* before and after Covid-19 remained similar, or even slightly increased in the post-Covid-19 era relative to the pre-Covid-19 era, suggesting that Covid-19 by itself did not lead to a reduction in communication, and that when the meeting's format remains constant, so does the content and structure of the meeting. Moreover, the content and structure of virtual-only shareholder meetings held in the 2020 and 2021 proxy seasons are very similar; i.e., they seem to remain similar over time.

To further understand how shareholders view communication at virtual-only shareholder meetings, I distribute a questionnaire to a limited number of institutional investors who have been attending both in-person and virtual-only shareholder meetings. These investors convey mixed opinions with respect to whether virtual-only meetings are more efficient, but they somewhat lean toward the view that they are not. However, these investors are quite clear that they are concerned that firms filter out critical questions especially at virtual-only shareholder meetings relative to in-person meetings. Their responses further confirm that it can be challenging for shareholders to make

[5] The latter argument is further supported by the notion that Covid-19 created substantial uncertainty for firms, and therefore we would expect shareholders to seek more communication during post-Covid-19 shareholder meetings. However, as noted, communication decreased at the post-Covid-19 virtual-only meetings.

their voice be heard at virtual-only shareholder meetings, and perhaps also shed further light on why virtual-only meetings are shorter.

While Li, Maug, and Schwartz-Ziv (2021) document large abnormal volume around shareholder meetings, Brochet, Chychyla, and Ferri (2021) do not find that abnormal volume is related to the content of the meeting. One may argue that this indicates that the content of shareholder meetings is not important since it is not associated with abnormal trading, and that, therefore, there is no reason to investigate the content of shareholder meetings in the first place. I would like to suggest a different interpretation—interactions between investors and firms must be sufficiently meaningful so that they do affect trading. More specifically, the literature that has examined the content on earnings calls has shown that the content of these meetings impacts upon 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). In my view, to achieve more meaningful content at shareholder meetings, we must first understand which barriers currently prohibit this from occurring.

Additionally, almost all proposals are submitted by retail investors, asset owners (e.g., United Brotherhood of Carpenters), pension funds, and unions (Gantchev Giannetti, 2020). The proposals shareholders file and the outcomes of these proposals clearly affect trading (Li, Maug, and Schwartz-Ziv, 2021), and some proposals, e.g., those focusing on ESG, are receiving increasingly higher support rates even from financial institutions (Cook, 2020). Moreover, the same type of investors that submit proposals are also those that typically ask questions at shareholder meetings (as is evident from the transcripts). Given the recent emphasis on "stakeholder capitalism", which emphasizes the importance of hearing voices of a wide range of shareholders, as these voices ultimately affect firm performance (Blackrock, 2022), the importance of hearing the voice of a diverse shareholder base is becoming increasingly important.

Brochet, Chychyla, and Ferri (2021) also examine virtual shareholder meetings and focus on the question of whether firms strategically choose to hold virtual-only meetings and conclude that this is not the case. My study differs from their study in several ways. First, I focus on a different question: whether firms with relatively low support from shareholders were those that took advantage of the new virtual-only format to strategically limit shareholders' voice. Second, I create and utilize a unique dataset that documents all of the successful and unsuccessful attempts of shareholders to submit questions, which allows me to analyze data that is otherwise not observable. Finally, Brochet, Chychyla, and Ferri (2021) use different methods to analyze the content of the meeting. They use textual analysis tools (e.g., measuring the frequency of negative words), whereas I manually code the transcripts of meetings, and thus capture and analyze different types of variables on the content of the meetings (e.g., were questions restricted to those pertaining to proposals?).

To summarize, this paper analyzes the unique Shareholder Questions Dataset and hand-coded transcripts. Using these datasets, the paper, in my view, makes several revelations and contributions. First, at virtual-only shareholder meetings, firms that receive relative low support from shareholders, are those that strategically choose methods that limit shareholders' voice and, more specifically, methods that limit shareholders' ability to receive answers to questions. Second, such methods have become significantly more common at virtual-only meetings. Third, the content and structure of shareholder meetings differ depending on the methods firms choose for designing the shareholder meeting. Fourth, a questionnaire distributed to investors documents that investors are concerned that firms screen difficult questions at virtual-only meetings. Finally, in the virtual-only shareholder meeting setting, significantly less time is dedicated to addressing shareholders' concerns.

2. Background on virtual shareholder meetings

2.1. Virtual shareholder meetings

The possibility of having a virtual meeting has existed for over two decades. Prior studies on virtual meetings (not necessarily virtual shareholder meetings) have highlighted challenges that can arise when meetings are held virtually. For example, Markman (2004) highlights the difficulty of managing the flow of discussion, and Mittleman, Briggs, and Nunamaker (2000) point out that it can be challenging for participants to follow a virtual meeting, receive feedback, be aware of who is present, and be involved. On the other hand, Price (2020) points out advantages of virtual meetings. He argues that virtual meetings are less costly, and can facilitate the flow of discussion and audience questions via backchannel private messaging. With respect to board meetings, Ferrazzi and Zapp (2020) argue that decisions can be made substantially more rapidly and efficiently if they are made via virtual meetings. Cai, Jiang, and Jun-Koo Kang (2021) show at virtual board meetings monitoring is more effective because these meetings facilitate status equalization among directors . Thus, virtual meetings can have both advantages and disadvantages.

With respect to virtual *shareholder* meetings, the advantage of in-person shareholder meetings is that due to the face-to-face nature of the interactions, they include more deliberation, confrontation, and require taking accountability (Boros, 2004; Zetzsche, 2005; Iwasaki, 2020; Nili and Shaner, 2020; ShareAction, 2021). Additionally, it is more difficult to ignore shareholders' questions at in-person meetings (JD Supra, 2020). The advantages of virtual shareholder meetings are that they can increase shareholder democracy (Nili and Shaner, 2020), that because participation costs are low they allow for frequent voting opportunities (Zetzsche, 2005), and that they can be more efficient (van der Krans, 2007).

Both in-person and virtual-only shareholder meetings include up to three portions: (a) Proposal presentation, which is the mandatory portion of the meeting that includes presenting the proposals submitted by the shareholders. These proposals are typically presented by the submitters or their authorized representatives. Frequently, firms 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 in-person 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. In the United States, the Q&A session is not legally mandatory, but firms have traditionally had such sessions, and firms that have skipped the Q&A session, or severely limited it, have at times faced harsh criticism (e.g., Home Depot in 2006).[6] In some countries, like Germany, Australia, and Belgium, the Q&A portion of the meeting is mandatory.[7] The Q&A session may take place after the official adjournment of the shareholder meeting, but while the participants are still present.

Table AI of Appendix A reports the topics of the questions addressed at virtual-only and in-person meetings. Table AI demonstrates that shareholder meetings, in general, provide shareholders with an opportunity to bring to management's attention concerns on a broad range of topics, which include both issues related to the core business of the firm and also social issues.

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

[7] 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 in the Corporations Act 2001, Section 250S(1). See also Freeburn and Ramsay (2021). With respect to Belgium see more information at this link: 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 obligation firms have to hold a Q&A session, depending on the country in which the firm operates.

2.2. Background on the shift to virtual-only shareholder meetings

Every firm is required to hold an annual general meeting once a year. Before the outbreak of Covid-19, these meetings were almost always held as in-person meetings because, at that time, governance concerns were raised with respect to holding virtual-only shareholder meetings. Proxy advisory firms ISS and Glass Lewis were concerned that a virtual-only format for shareholder meetings would limit shareholders' ability to have a genuine opportunity to connect with management, express concerns, and raise questions intended for management and board members.[8] Concerns were also raised about firms cherry-picking favorable questions and downplaying, rephrasing, or ignoring negative or hostile questions.[9]

In late February–early March 2020, due to the Covid-19 outbreak, increasingly severe restrictions were imposed on in-person meetings across the United States. Thus, at that point in time, most firms were required to reevaluate the format they would use to conduct their shareholder meetings. On March 13, 2020, the SEC provided guidance on how firms should handle this new and unprecedented situation with respect to shareholder meetings.[10] The SEC stated: "The spread of COVID-19 has affected the ability to hold these in-person meetings […] under the guidance, the affected parties can announce in filings made with the SEC […] the use of 'virtual' meetings without incurring the cost of additional physical mailing of proxy materials."

Thus, this announcement gave firms the legitimacy to move their shareholder meetings to the virtual-only arena. Many states did not allow firms to hold virtual-only shareholder meetings prior to 2020, but did allow for such meetings following Covid-19 (Broadridge, 2020; Zetzsche, Anker-Sørensen, Consiglio, and Yeboah-Smith, 2020; Rutgers Center for Corporate Law and Governance et al., 2020). Following the Covid-19 outbreak, ISS and Glass Lewis supported holding virtual-only shareholder meetings while Covid-19 restrictions prevailed.[11] As Figure 2 shows, approximately 70% of the shareholder meetings are held between mid-March and mid-June of each calendar year. Given that the support of the SEC and the proxy advisory firms for virtual-only shareholder meetings was initiated in mid-March 2020, and is still ongoing, it affected over 70% of the shareholder meetings held in the 2020 proxy season/2020 calendar year.

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[8] See Harvard Law School Forum on Corporate Governance, available at https://corpgov.law.harvard.edu/2020/03/20/virtual-annual-meetings-and-coronavirus/#7

[9] See JD Supra, available at https://www.jdsupra.com/legalnews/virtual-shareholder-meetings-in-the-33689/

[10] See SEC Release No. 2020-62, available at https://www.sec.gov/news/press-release/2020-62

[11] See Harvard Law School Forum on Corporate Governance, available at https://corpgov.law.harvard.edu/2020/03/20/virtual-annual-meetings-and-coronavirus/#7.

Thus, following the Covid-19 outbreak, firms moved their shareholder meetings from the physical arena to the virtual-only one. Figure 3 reports the number of virtual-only meetings that took place in each of the years 2018–2020. This figure is obtained, with permission, from the report of the Rutgers Center for Corporate Law and Governance et al. (2020). The figure shows that in 2018 and 2019 only 266 and 318 virtual-only meetings took place, respectively. By contrast, in 2020 this figure jumped by more than 7 times to 2,367 meetings. Correspondingly, only 12% of shareholder meetings pre-Covid-19 were virtual-only meetings, but post-Covid-19 this figure jumped to 77% (Intelligize, 2020). Thus, Covid-19 apparently pushed firms toward a virtual-only format.

Figure 4 visually demonstrates how a virtual-only shareholder meeting differs from an in-person meeting. The first two images in Figure 4 are from Walmart's 2019 in-person shareholder meeting. The third image in Figure 4 is from Walmart's 2020 virtual-only shareholder meeting. As the images depict, the in-person meeting was a large social gathering (albeit Walmart's meeting is particularly large), whereas the virtual-only meeting included only an audio (without a video) of an executive speaking. In fact, as reported in Figure 3, in 2020, 98% of firms that held virtual- shareholder meetings did so in an audio-only format (they did not include a video),[12] thereby further limiting the possible interaction between participating individuals.

Given that virtual-only meetings have become substantially more common, they warrant special attention. The subsequent analysis will investigate whether certain methods used at virtual-only meetings are used strategically, i.e., specifically when management receives relatively low support rates from shareholders, and whether such methods indeed limit communication with shareholders.

3. Description and discussion of datasets assembled

3.1. Description of the shareholder questions dataset

Since questions submitted at virtual-only meetings are almost never made public (unless they are addressed), to capture the selection process of the questions I collected questions submitted by shareholders to virtual-only shareholder meetings. I did so with the generous help of Mr. John Chevedden and Mr. James McRitchie (henceforth, "C&M"), two shareholders who for many years have been participating in shareholder meetings, submitting proposals, and asking questions at these meetings.

[12] See Broadridge's homepage, available at https://www.broadridge.com/intl/financial-services/corporate-issuer/issuer/build-your-brand-and-engage-shareholders/virtual-shareholder-meeting

To provide a complete picture on C&M, I point out that they are frequently referred to as "gadflies", which are individuals that 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 (2020) 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 Table 1 Panel A 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, these two shareholders submit a non-negligent number of proposals, and are familiar with shareholder meetings. Importantly, Panel A of Table 1 documents that C&M's proposals received relatively high support rates: 85.9% and 92.3% of the proposals submitted by C&M received an ISS recommendation to vote in support of the proposal, respectively. These ISS support rates are substantially higher than those documented for proposals submitted by all other shareholders—69.8%. Similarly, the 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.

With the help of C&M, I constructed the "Shareholder Questions Dataset," a dataset that documents all their attempts to submit a question at virtual-only shareholder meetings held between March 20 2020 and June 30 2021. Appendix B details the questions C&M submitted to a sample of 5 of the 60 firms, and the responses they received to each question. The period between March 20 and June 30 corresponds to the calendar weeks 16–26, which, as Figure 2 demonstrates, are the weeks during which approximately 70% of all shareholder meetings are held. Thus, my sample covers almost two full proxy seasons. While I am extremely grateful to C&M for providing me with the questions they submitted to shareholder meetings, my goal is not to judge or evaluate the quality of the questions submitted by them, nor to take a position with respect to their agenda. Rather, my goal is to observe data that are not disclosed by firms, including the questions firms choose not to address at their meetings.

As Panel B of Table 1 specifies, the Shareholder Questions Dataset documents C&M's attempts to submit questions at shareholder meetings during the 2020 and 2021 proxy season. In these seasons, C&M attempted to submit questions to 89 and 110 meetings, respectively. C&M were able to submit successfully questions to 61 and 95 meetings, respectively. They were not able to submit questions to all meetings due mostly to technical challenges, as detailed in Appendix C. Most of the firms—61.2% addressed at least one question C&M submitted.[13]

Ultimately, C&M submitted 767 questions, and 287 of these were answered, i.e, 37.4% of the questions they submitted. To get a sense of how the response rate to C&M's questions compares to the overall response rate for all questions shareholders submitted I estimate the latter. According to the National Association of Corporate Directors (2021), the meetings held on the Broadridge platforms during the 2020 proxy season had on average 4.20 questions submitted by shareholders.[14] To estimate how many of these questions were actually addressed, I code for each of the 1,101 shareholder meetings held in the 2020 proxy season for which transcripts are available on Thomson Reuters on which platform the meeting was broadcasted. This data is obtained from the proxy statements. I identify 782 virtual shareholder meetings that were broadcasted on Broadridge during the 2020 proxy season. These meetings addressed on average 1.93 questions, i.e., 45.9% (1.93/4.20) of the questions shareholders submitted. C&M's response rate during the 2020 proxy season for firms that Broadcasted their meetings on Broadridge was 42.1%, i.e., very similar to the above-noted average for all questions submitted equal to 45.9%. Moreover, (as will be detailed in Section 4.1) since management rarely knew the identity of the shareholder submitting a question at virtual-only meetings, firms likely did not attempt to strategically ignore/address, in particular, questions submitted by C&M.

3.2. Transcripts coded

To compare the content and structure of in-person shareholder meetings (which include hybrid meetings, i.e., meetings that are held in-person and are also broadcasted virtually) to virtual-only

[13] 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.

[14] ProxyPulse (2020) report 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 1301 virtual shareholder meetings for which *no* shareholder proposals were submitted was 2. Thus the weighted average of the number of questions submitted to a shareholder meeting is equal to 4.20 =(19*193+1301*2)/(193+1301).

shareholder meetings, I manually code 1,904 transcripts and audio recordings of shareholder meetings held between 1 January 2019 and 30 June 2020[15]. The approach of manually analyzing transcripts follows some of my prior work (Schwartz-Ziv and Weisbach, 2013; Schwartz-Ziv, 2017), which uses the content analysis methodology (as described in these prior papers). I obtained transcripts and audio recordings of the shareholder meetings from Thomson Reuters who obtain it from Refinitiv. Using these transcripts and the recordings of shareholder meetings, various metrics pertaining to the content of shareholder meetings are coded. These include, for example, the length (in minutes) of each of the three portions of the meeting, and the number of questions addressed at the meeting. Additional variables documenting the content of the meeting are coded, as will be specified below.

4. Analysis of methods used for designing virtual-only shareholder meetings

4.1. Strategic use of methods that design shareholders' voice

Prior studies have shown that when possible, firms do at times attempt to strategically limit shareholders' voice. For example, Li and Yermack (2016) demonstrate how firms create obstacles for shareholders who wish to participate in shareholder meetings, by setting meetings at locations that are distant from the firm's headquarters. Moreover, firms do so especially when subsequent abnormal return is weak, suggesting that firms strategically attempt to make it challenging for shareholders to attend meetings when the firm has insider information of expected weak performance. In a similar vein, Cohen, Lou, and Malloy (2020) show that at earning calls, certain firms strategically call upon analysts who tend to be friendlier toward management; and Gow, Larcker, and Zakolyukina (2021) show that at earning calls companies are likely to avoid addressing questions (e.g., by answering "I can't give you any specifics") when firm performance is weak. Following these studies, I next investigate whether firms used the virtual-only setting to strategically design more limited communication with shareholders especially when shareholders are relatively critical of the management team.

As will be detailed, I focus in this section on three methods that limit shareholders' voice/ make communication at shareholder meetings less meaningful, and show that firms use these strategically at virtual-only shareholder meetings, i.e., especially when shareholders are critical of management. In the next section I will explain why/ demonstrate that these methods are particularly

[15] All complete transcripts available for meetings held between January 1, 2019 to June 30, 2020 are coded, and those of companies that held a meeting between July 1st 2020-June 30th 2021, if the company's transcripts were also available for the prior year, to allow comparing the 2020 and 2021 proxy season meetings.

likely to be used at virtual shareholder meetings, and therefore warrant special attention in the context of virtual-only meetings.

The first method examined is *Question addressed indicator*, which is an indicator equal to one if the firm addressed a question submitted by C&M, and zero if it did not. The questions examined are those included in the Shareholder Questions Dataset described above in Section 3.1. This variable essentiality provides a proxy for the extent firms address, or choose to ignore questions submitted by shareholders.

The second method is *Questions limited to proposals* which is an indicator variable equal to one if the firm stated at the meeting it would address only questions related to the proposals submitted by shareholders. This policy severely limits the topics on which shareholders are permitted to ask questions, since questions directly related to proposals are limited to a small range of topics. To illustrate how this practice is implemented, consider the 2020 virtual-only Verizon shareholder meeting. As the transcripts document, the firm's corporate secretary stated that "if … shareholders would like to comment or submit a question *on a proposal*, you may do so by clicking on the message icon." Ultimately, at the end of the meeting the firm's corporate council stated: "We have not received any questions or comments from our shareholders *on the proposals*, and therefore no questions will be addressed."[16]

The third method is *Vote results announced in percentages*, which documents whether the company announced at the meeting the precise vote outcome in percentages for each vote or, alternatively, only whether the vote passed or failed. The vote outcomes announced are formally preliminary, however, given that almost all votes are cast electronically, and that all votes must be cast by the meeting, these preliminary results are typically 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. According to my coding, 98.8% of the companies disclose the vote outcome at the meetingg-either a precise vote outcome in percentage, or a pass/fail vote outcome (the remaining companies do not disclose at the meetings vote outcomes in any way). Since in the 2016-2020 proxy seasons only 1% of the votes fail, disclosing a pass/fail outcome does not reveal when a proposal passes but, nevertheless, receives low support rates. For example, the votes that are within the bottom 5% (10%) of the vote being consistent with management recommendation receive 72.3% (82.9%) support rates, i.e., relatively low-support votes, that nevertheless pass.

[16] Consider, for example, a shareholder who submits a question on sexual harassment or on Covid-19, but a proposal on these topics was not submitted (which is the case in almost all firms); his question will automatically not be addressed.

By not revealing precise vote outcomes at the meeting, shareholders cannot ask questions about low-support votes since shareholders cannot identify these votes. It can also provide an indication that the company is not sharing the most meaningful information it has with its shareholders at the meeting. Additionally, it slows the information available to the market on the vote outcomes, immediately after the shareholder meeting, potentially cooling the media's and investors' interest to voice criticism on a low-support vote.

Figure 6 examines the relation between shareholders' opposition rates for the directors proposed by management, and each of the three methods defined above. Shareholders' support rates for the directors proposed by management serves as a proxy for the extent shareholders support the firm's leadership. Firms observe the votes cast electronically by shareholders as soon as they are cast, and votes are typically cast on the days leading up to the meeting. Thus, on the meeting day, and to a great extent already on the days preceding the meeting, firms know the almost final vote outcome. Accordingly, when management attends the shareholder meeting, the extent shareholders are supportive of the directors proposed by management is the most up-to-date information the company has on the extent shareholders are supportive of the company and its leadership.

Figure 6 shows that firms that received low support rates for the directors proposed by management, were the firms likely to use methods that may limit shareholders' voice, i.e., they were less likely to answer questions submitted by C&M, more likely to limit questions to proposals, and less likely to report at the meeting precise vote outcomes. Put differently, 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 voice be heard at shareholder meetings.

Table 2 examines the pattern documented in table 6 in a formal regression framework. Column 1 of Table 2 focuses on the first method, and accordingly, uses the following model:

$$(1)\ \ \textit{Questions addressed indicator}_q = \beta_1 * \textit{Average support rates for directors}_m + \beta_2 * \textit{Controls}_m + FE_y + FE_q$$

The variable *Average support rates for directors*$_m$, measures the average fraction of votes cast at meeting m in support of the directors proposed by management. The vector *Controls*$_m$ controls for the variables *Log assets, Log of market capitalization, Book-to-market*, *Abnormal return (annual)*, and *ROA*, all defined in the Glossary of Variables. The specification also include FE_y which are proxy year fixed effects, and FE_q, which are fixed effects on the topic of the questions (detailed later in Table 5). Errors are clustered at the meeting level. The period included in the analysis is 1 January 2019-30 June 2020.

Since Model 1 of Table 2 includes question category fixed effects which capture the topic of the 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 frequency with which shareholders vote consistently in support of the directors increases by one standard deviation (equal to 8.5%), the likelihood that a question will be answered by the firm increases by 8.2% (0.085*0.9753), and this estimate is significant at the 1% level. Relative to the average frequency C&M's questions were answered (37.42%, see Table 1 Panel B), the former figure represents an increase of 21.9%. (8.2%/37.42%). Put differently, in firms in which shareholders' votes are unsupportive of the directors proposed by management, indicating contention between shareholders and the company's leadership team, companies are significantly less likely to address questions submitted by shareholders.

It is noteworthy that 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 give a sufficient number of shareholders an opportunity 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 when shareholders are literally muted. The latter setting of attendants/potential participants being muted is different from the setting of virtual board meetings that allows directors to speak and interact (Cai, Jiang, and Jun-Koo Kang, 2021). The virtual-only shareholder meeting setting is also different from the earnings calls setting in which the analyst asking a question is on the line and she interacts back-and-forth with the CEO/executive answering her question (as documented in transcripts of such meetings).

Moreover, at in-person meetings, it is not uncommon for the chair of the meeting to order that the microphones be turned off when a speaker is unruly. In those instances, some shareholders may continue to speak without amplification.[17] This is not an option at virtual-only meetings. 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. Consequently, perhaps it is not surprising that precisely when shareholders' votes are unsupportive of management at virtual-only meetings, firms are more likely to ignore questions shareholders submitted thereby limiting shareholders' voice.

Note, in this context, that in the 2020 proxy season companies did not require shareholders to self-identify and 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

[17] I thank Patrick McGurn for pointing this out.

proxy season they identified, 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, or were required to identify. 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 that C&M documented that they identified and the results remain almost identical, supporting the conclusion that the pattern documented is not driven by firms that tended to avoid/ especially address questions submitted by C&M.

Models 2 and 3 of Table 2 conduct an analysis on the meeting level, and using the notations above, use the following model:

(2) $Method_m = \beta_1 * Average\ support\ rates\ for\ directors_m + \beta_2 * Controls_m + FE_y + FE_{ind}$

As will be specified, *Method*$_m$ is the method used by the firm that may potentially limit shareholders' voice in meeting *m* (it varies in each specification). FE_{ind} are 2 digit sic codes industry fixed effects. Errors are double clustered at the year and industry level. In column 2 of Table 2 *Method*$_m$ is *Questions limited to proposals*, which is an indicator variable equal to one if the firm stated at the meeting it would address only questions related to the proposals.

Column 2 estimates that if the average frequency with which shareholders vote in support of the directors increases by one S.D., the likelihood that questions are limited to proposals decreases by 1.7% (0.085*-0.2087), and this estimate is significant at the 5% level. Relative to the mean frequency of questions limited to proposals at virtual meetings (12.32%), the latter estimate equals an increase of 13.8% (1.7%/12.32%). Thus, this finding too demonstrates that when shareholders are less supportive of management, firms choose to adopt methods that limit shareholders' ability to make their voice be heard at shareholder meetings.

In column 3 of Table 2 the *Method*$_m$ examined is *Vote results announced in percentages*. Column 3 estimates that a one S.D. increase in the *Average support rates for directors* is associated with an increase in the *Vote results announced in percentages* equivalent to 2.6% (0.085*0.3145). The latter estimate reflects an increase of 12.4% (2.6%/20.96%) relative to the mean of *Vote results announced in percentages* in the full sample, indicating that firms whose directors receive relatively low support rates are those likely to reveal at the meeting only pass-fail outcomes, i.e., share less meaningful information at the shareholder meeting.

Taken together, the results demonstrate that when shareholders are relatively unsupportive of the directors proposed by management, firms use certain methods that limit shareholders' voice, including methods that limit shareholders' ability to receive a response to a question. Specifically, these methods include firms ignoring questions submitted by shareholders, explicitly limiting the scope of topics regarding which the firm is willing to answer questions, and choosing not to disclose precise vote outcomes at the meeting.[18]

I note that the relation between the performance measures (*ROA* and *Abnormal return*) and the methods examined in Table 2 is insignificant. This suggests that performance-based variables do not necessarily capture shareholders overall satisfaction as do variables that are based on shareholder votes.

In unreported specifications, I repeat the analyses reported in columns 2-3 of Table 2 (i.e., the analyses that include all virtual-only meetings for both the pre- and post-Covid period), but limit the observations to post-Covid virtual-only observations. I find essentially very similar results, indicating that the results are not driven by firms that may have strategically chosen to hold a virtual-only meeting before the Covid-19 outbreak. In unreported analyses I also repeat these specifications for in-person meetings. I do not find a significant relation between *Average support rates for directors* and *Questions limited to proposals*, implying that this method is not strategically used at in-person meetings. I do find a significant relation between *Average support rates for directors* and *Vote results announced in percentages* also at in-person meetings, suggesting that this method is strategically used also at in-person meetings. But as I will show in the next section, this method is significantly more likely to be used at virtual-only meetings, and therefore warrants special attention in the context of virtual-only meetings.

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. I observe an unusual effort to achieve this goal in two firms. The first firm is Axon Enterprise, which allowed shareholders (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. Panel A of Figure 7 displays a screenshot of all questions submitted. The second company is Tesla. Panel B of Figure 7 reports snapshots from Tesla's 2020 virtual-only shareholder meetingm, and reflects Tesla's

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[18] Brochet, Chychyla, and Ferri (2021) find that firms do not select a virtual-only format to avoid shareholders' scrutiny. As highlighted in the introduction, they focus on the question when firms chose to hold, or not to hold a virtual-only meeting. The analysis in this section examines whether once virtual-only meetings are common practice, firms strategically choose to avoid shareholders scrutiny when it is convenient for the firms to do so. Thus, these are different questions that, naturally, may have different answers.

effort to increase shareholders' voice at the meeting. Questions were submitted by shareholders before the meeting through a platform hosted by Say Technologies. Questions submitted were displayed at the meeting on a large screen. The meeting was organized as a drive-in event, thereby allowing shareholders to be physically present at the meeting. These rare examples demonstrate that firms with a desire to increase communication with shareholders at virtual-only meetings can find innovative ways to achieve this goal.

4.2. Methods used especially at virtual-only meetings

Potentially, the three methods analyzed in the previous section could also be implemented at in-person meetings, and they are not necessarily unique to virtual-only meetings. In this section, this possibility will be addressed with respect to each of the three methods. With respect to the first method—*Question addressed indicator*, which captures the frequency firms addressed the questions submitted by C&M, I am not aware of data that would allow examining the frequency firms ignored/ blocked shareholders from asking questions at in-person meetings. However, as explained above, it is substantially more easy for firms to screen and select which questions to address and which to ignore at virtual-only meetings, while shareholders are unable to protest since they are literally muted and not visible (which is, naturally, not the case at in-person meetings). In Section 6 I provide evidence further supporting this conclusion.

I will now focus on the second and third methods–*Questions limited to proposals* and *Vote results announced in percentages*. Figure 8 demonstrates that these methods became substantially more common at virtual-only meetings relative to in-person meetings. Figure 8 includes the sample of firms that, as most firms, held an in-person meeting before Covid-19, and moved to virtual-only meetings after Covid, and for which transcripts are available for each of the following three periods: "2019 in-person" shareholder meetings, i.e., pre-Covid in-person meetings held between 1 January 2019 and 15 March 2020; "2020 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 16 March 2020 and 30 June 2020; and "2021 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 1 July 2020 and 30 June 2021. The sample includes 333 transcripts of 111 companies. The sample includes only 111 companies because it was rare for companies that held in-person meetings to have transcripts.[19]

[19] It is noteworthy that relative to the 2019 proxy season, the number of audio recordings and transcripts of shareholder meetings available from Thomson Reuters for the 2020 and 2021 proxy seasons is approximately 3-4 times larger (for each of the seasons). This is because many of the 2020-21 proxy season shareholder meetings were virtual-only, making these materials substantially more accessible for transcription.

I break down the analysis into these three groups since it allows examining how firms that followed the mainstream meeting format both before Covid (by holding an in-person meeting) and after Covid (by holding a virtual-only meeting) altered their governance practices when the format of the meeting changed. As noted in the introduction, if a selection bias exists for such a sample it likely should be towards showing that governance practices improved for the post-Covid virtual-only meetings. This is because the more shareholder-oriented firms quasi-voluntarily disclosed transcripts of in-person meetings in the pre-Covid era when it was not customary to do so,[20] and (in contrast to the pre-Covid era), the more shareholder-oriented firms held a virtual-only meeting in the post-Covid era when it was very difficult for shareholders to physically attend a meeting. Nevertheless, as I will show, even this subset of "shareholder friendly" firms chose governance practices that were less shareholder friendly when the meetings were held as virtual-only meetings. Moreover, this occurred at a time that shareholders were, likely, especially interested to be involved due to the uncertainty introduced by Covid.

Figure 8 demonstrates that in the "2019 in-person" meetings, not a single company limited shareholders questions to topics related to proposals. However, in the 2020 and 2021 virtual-only meetings, the percentage of firms that limited shareholders questions to proposals increased to 4.95% and 6.7% respectively. Moreover, (unablated figures show that) when examining all transcripts coded, 0.5%, 9.9%, and 16.3% of the firms limited questions to proposals in the 2019 in-person, 2020 virtual-only, and 2021 virtual-only subsets, respectively, i.e., the differences are even larger for this subset. Figure 8 also shows that *Vote results announced in percentages* drops when firms shift to virtual-only meetings: It is equal to 41.1% for the "2019 in-person" meetings, but decreases to 36.6% and 34.6% at the "2020 virtual-only" and "2021 virtual-only" shareholder meetings, respectively. For all transcripts coded (unablated figures show that), 38.5%, 17.1%, and 21.5% of the firms limited questions to proposals in the 2019 in-person, 2020 virtual-only, and 2021 virtual-only subsets, respectively, i.e., the differences are even larger for this subset of firms. Thus, both of the above noted methods become substantially more common at virtual-only meetings.

Table 3 examines the patterns analyzed in Figure 8 in a formal regression framework, and

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[20] As Akerlof (1970) and Diamond and Verrecchia (1991) demonstrate, individuals and firms that choose to voluntarily disclose information are typically those that are cherries (i.e., high-quality firms) rather than lemons (i.e., low-quality firms). In our context, firms that quasi-voluntarily disclosed audio recordings of their 2019 in-person shareholder meetings are likely the firms that were particularly outgoing toward shareholders. Thus, if anything, this potential sample selection should make it more challenging to observe a decrease in the extent to which firms communicated with their shareholders in 2020 relative to 2019, especially given that the 2020 proxy season occurred during a very challenging period for most firms that likely increased uncertainty, and the extent of information shareholders were interested in receiving.

shows that the differences documented are significant. In columns 1 and 2 the dependent variable is *Questions limited to proposals*. The model includes the same controls as the prior models, and the primary variable of interest 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., in-person exclusively or hybrid). Model 1 includes only the sample of Figure 8, and a firm fixed effect to allow comparing how for the same firm the likelihood that *Questions limited to proposals* varies depending on whether the meeting was virtual-only. Model 2 includes all companies for which transcripts were coded, and industry fixed effects. In both specifications, proxy year fixed effects are included, and errors are clustered at the firm level.

Model 1(2) estimates that firms that held a virtual-only meeting were 6.5% (7.1%) more likely to limit questions to proposals. Relative to the average frequency of *Questions limited to proposals* in the full sample (11.16%), the model 1 and 2 estimate represents an increase of 56.1% (6.5%/11.6%) and 61.2% (7.1%/11.6%), respectively, i.e., an economically large magnitude. Thus, explicitly limiting questions to topics related to proposals is significantly more common in virtual-only meetings, and therefore warrants special attention in the context of virtual-only meetings. Similarly, column 3 (includes Figure 8 sample) and column 4 (includes full sample) report that in virtual-only meetings, firms were 6.3% (12.7%) less likely to report precise results in percentage. Relative to the average frequency of *Vote results announced in percentages* in the full sample (20.96%), columns 3 and 4 estimate an increase of 30% (6.3%/20.96%), and 60.6% (12.7%/20.96%), respectively. Taken together, these results show that both *Questions limited to proposals* and *Vote results announced in percentages* were significantly and substantially more common at virtual-only meetings relative to in-person meetings.

4.3. Do the methods firms choose shape the content and structure of shareholder meetings?

Given that firms can strategically choose to use certain methods that make it challenging for shareholders to make their voice be heard, it remains to be seen whether using such methods indeed leads to less communication between firms and shareholders. In this section I address the question of whether the methods chosen by firms for designing shareholder meetings enable firms to design the content and structure of virtual-only shareholder meetings. To address this question, in column 1 of Table 4 The following model is estimated at the question level:

(3) $\textit{Variable measuring meeting structure}_{jm} = \beta_1 * \textit{Questions addressed indicator}_q + \beta_2 * \textit{Controls}_m + FE_y + FE_q$

Question addressed indicator is an indicator equal to one if the firm addressed the question submitted by C&M, and zero if it did not. The vector *Variable measuring meeting structure*$_{jm}$ includes three (*j*) alternative variables that measure the content or structure of shareholder meeting *m*, which vary in each specification. These variables are obtained from transcripts and recordings of shareholder meetings and include the following variables: *Number of shareholder questions addressed* which measures the number of shareholder 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. Other variables follow the notations defined above. Errors are clustered at the meeting level.

The goal of the analysis in Row 1 of Table 4 is to understand whether, overall, when firms frequently ignore questions submitted by shareholders they also have more limited communication with shareholders at shareholder meetings. This is important since firms may have brief communications at shareholder meetings because shareholders may not be interested in engaging with the company at shareholder meeting. Alternatively, brief communication may be a result of a firm's desire to have limited communication. As noted above, the number of questions submitted by all shareholders is almost never disclosed by firms, and only the number of questions actually addressed at the meeting is observable from the transcripts. Thus, to create a measure for the firm's tendency to answer (or ignore) shareholders' questions, the Row 1 specification focuses on the *Question addressed indicator* variable.

Following Equation (3), Row 1 column 1 of Table 4 estimates that when a question submitted by C&M was addressed at the meeting (i.e., *Question addressed indicator* = 1), on average, 3.24 more questions were addressed in aggregate at the meeting (i.e., the actual number of questions addressed out of the questions submitted by *all* shareholders), as compared to when a question submitted by C&M was not addressed at the meeting. Relative to the mean value of *Number of questions addressed at the meeting* at virtual-only meetings (1.77, as reported later in column 4 of Panel B of Table 6), the latter estimate represents an increase of 183% (=3.24/1.77), which is clearly large. Thus, firms that frequently ignored 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 more extensive communication between firms and shareholders when C&M's questions were addressed. 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. The results remain almost identical, supporting the conclusion that the pattern documented in Row 1 is not driven by firms that may have internationally tried to avoid/address questions submitted by C&M.

The analysis in Rows 2 and 3 of Table 4 is at the meeting level, and accordingly, the following equation is used:

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

In Row 2, the *Method* in meeting *m* examined is *Questions limited to proposals*. Notations follow those described above for previous equations. Errors are clustered at the company level. Row 2 of Table 4 shows that firms that limit their questions to proposals addressed on average 1.35 fewer questions, dedicated 2.28 fewer minutes to Q&A, and their overall meeting time was 6.28 minutes shorter (all these differences are significant at the 1% level). Relative to the mean values of these variables (1.77, 3.26, and 18.76, respectively, as reported later in column 4 of Panel B of Table 6), 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.

In Row 3 of Table 4 the method examined is *Vote results announced in percentages* which is an indicator that equals one if the firm announced precise vote outcomes in percentages, or 0 if it only announced whether the vote passed or failed. To clarify, I only argue that a correlation (and not causal relation) exists between *Vote results announced in percentages* and the dependent variables examined in Table 4 measuring the content and structure of shareholder meetings. Put differently, firms that *choose* to disclose a more informative vote outcome at shareholder meetings, i.e., the precise support rate for each proposal, are those that design their meetings to be longer and include more communication with shareholders.

Indeed, Row 3 estimates that if *Vote results announced in percentages* is equal to one, on average 0.75 additional questions are addressed, 1.55 additional minutes are dedicated to the Q&A session, and the overall meeting time is 4.02 minutes longer (all these differences are significant at the 1-5% level). Relative to the mean values of these variables (1.77, 3.26, and 18.76, respectively), these figures represent an increase of 42.3%, 47.5%, 14.7%, which reflect a substantial economic magnitude.

In unreported specifications, I repeat the analysis reported in Rows 2 and 3 of Table 4 (i.e., the analyses that include all virtual-only meetings for both the pre- and post-Covid period), but limit the observations to post-Covid virtual-only observations. I obtain very similar results, indicating that the results are not driven by firms that may have strategically chosen to hold a virtual-only meeting in the pre-Covid period. Rather, once virtual-only meetings become common practice, by using the simple methods described above which were not possible/substantially less common at in-person meetings, companies are able to shape the content and structure of the meeting.

In sum, this section shows that the methods firms use strategically for designing shareholder meetings—i.e., ignoring shareholders' questions, and limiting questions to topics pertaining to proposals—reduce communication between firms and shareholders. Additionally, reporting only pass/fail vote outcomes is correlated with briefer communication at shareholder meetings.

4.4. Which types of questions are addressed?

Based on the finding in Table 2 that firms are less likely to address shareholders' questions when shareholders' votes are unsupportive of the directors proposed by management, I 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, which simplifies the classification process. In Table 5, 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:

$$(5)\ \ \textit{Question addressed indicator}_q = \beta_1 * \textit{Topic}_i + \beta_2 * \textit{Meeting fixed effect},$$

where *Question addressed indicator*$_q$ 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. 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. As column 2 of Table 5 indicates, when C&M submitted a question in which they asked about the total "Number of questions submitted by shareholders" at the shareholder meeting, the response rate they received was the lowest response rate of all question categories—only 13%. As indicated in columns 2-3, the coefficient for this *Topic* is significant at the 10% level, which is quite reasonable given the sample size. Thus, Table 5 implies that firms are especially reluctant to reveal information that would allow investors to get a sense of the extent to which the firm addresses shareholders' questions.

5. Content and structure of virtual-only versus in-person meetings

Prior sections have shown that at virtual-only meetings firms are more likely to use methods that limit shareholders voice, and that these methods are especially likely to be used in firms in which shareholders were critical of management. However, given that virtual meetings are more accessible than in-person meetings, and that shareholders from all over the world can easily participate at virtual-only shareholder meetings, firms may have taken advantage of (the shift to) virtual-only meetings to increase communication between shareholders and the firm. In this section I examine whether this has indeed occurred.

As noted previously, Covid led to a dramatic shift from in-person to virtual-only shareholder meetings, and thus I examine how the pre-Covid in-person meetings compare to the post-Covid virtual-only meetings. Accordingly, as in the Figure 8 analysis, Panel A of Table 6 reports summary statistics on the structure and content of shareholder meetings for companies for which complete transcripts and recordings are available for each of the following three shareholder meeting categories: "2019 in-person" shareholder meetings, i.e., pre-Covid in-person meetings held between 1 January 2019 and 15 March 2020; "2020 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 16 March 2020 and 30 June 2020; and "2021 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 1 July 2020 and 30 June 2021. This sample includes 333 meetings of 111 companies.

Panel A of Table 6 reports separate summary statistics for each of these three periods (in columns 1-3) and also a combined summary statistic for virtual-only meetings (column 4). Columns 5-8 compare the different columns (as specified in the table), and report paired T-tests (Columns 5-7) or a quasi-paired T-test.[21] The "quasi-paired T-test" is estimated by regressing the dependent variable (e.g., Length of total meeting) on a firm fixed effect, a constant, and the primary variable of interest—*Virtual-only meeting*, and reporting the coefficient of the latter variable. Column 9 of Panels A and B estimates the difference, in percentage, between the change estimated for virtual-only versus in-person meetings, relative to the in-person meetings. Panel A column 8 shows that in comparison to in-person shareholder meetings, virtual-only shareholder meetings are on average 6.1 minutes shorter in terms of the total meeting time (39.97 versus 33.27, as indicated in columns 1 and 4 of Panel A of Table 6). A quasi-paired t-test that compares, for each firm, the average length of the in-person shareholder meetings to that of the virtual-only shareholder meetings shows that this difference is significant at

[21] When only two observations per company exist, one for an in-person meeting, and one for a virtual-only meeting, this method generates an estimate that is equivalent to a paired T-test. I use this method here since I have three observations per company—one for an in-person meeting, and two for virtual-only meetings.

the 1% level, as reported in column 8 of Table 6. Column 9 indicates that the difference in the meeting length of in-person versus virtual-only meetings is equivalent to a reduction of 15.49% (6.1/39.37) relative to the meeting length of in-person meetings.

Column 8 of Panel A also reports that in comparison to the in-person shareholder meetings, the virtual-only shareholder meetings dedicated on average 4.025 minutes less time on the *Total business update time* portion (i.e., a reduction of 29.84%, see column 9). The *Total proposal time* at virtual-only meetings also decreased by 2.035 minutes, i.e. a reduction of 15.52%.

As for the *Total Q&A time*, in comparison to the in-person shareholder meetings, the virtual-only shareholder meetings dedicated on average 1.475 minutes less (i.e., a reduction of 13.56%) to answering shareholders' questions. The *Number of shareholder questions addressed* at in-person versus virtual-only meetings slightly decreased from, 5.26 to 5.175 questions, respectively (the difference is insignificant). Finally, Table 6 reports the *Average time dedicated to each question* which is estimated by dividing the total number of minutes dedicated to the Q&A portion of the meeting by the number of questions addressed at the meeting. Here we see that relative to the in-person meetings, the virtual-only meetings dedicated on average 0.61 minutes (i.e., 24.11% less time) to each question, the difference being significant at the 1% level.

The sample included in Panel A of Table 6 is the same sample included in Figure 8. As noted with respect to Figure 8, this sample includes the firms that are relative shareholder-engaging since in order to be included in this sample, firms are required to quasi-voluntarily have revealed the transcripts of their in-person pre-Covid meetings, which was not customary at the time, and especially not for in-person meetings. Nevertheless, even these pro-shareholder firms limited communication and the extent they addressed shareholders' concerns when they moved to the virtual-only arena. Moreover, although the post-Covid virtual-only shareholder meetings were held in a period in which much uncertainty prevailed due to Covid-19, and shareholders likely wanted to receive details related to this uncertainty, overall, virtual-only shareholder meetings included less communication.

In Panel B of Table 6, I essentially repeat the analysis of Panel A of Table 6, but expand the sample to all transcripts coded. This panel includes all companies with complete transcripts for the 1 January 2019 to 30 June 2020 period, and all transcripts of companies from 1 July 2020-30 June 2021 if transcripts of the same company are available for the prior year, which allows comparing the 2020 and 2021 proxy season transcripts. This analysis includes in total 1,904 meetings (181 in column 1, 1031 in column 2, and 692 in column 3). As column 8 of Panel B demonstrates, for all variables, the difference between in-person and virtual-only meetings is significant at the 1% level. Additionally, this panel reports substantially starker differences than those reported in Panel A. For all variables, the magnitudes in Panel B are larger than (or equal to) those reported in Panel A. However, these larger differences reported in Panel B of Table 6 are likely due, at least partly, to the differences in the size of the firms included in Panel B. For as Panel B documents, the average market capitalization of firms that held an in-person shareholder meeting was 52.7 Billion dollars, while that of firms that held a virtual-only meeting was 17.9.

To address this concern, Appendix D reports a regression analysis that uses the sample of Panel B of Table 6, but includes the control variables included in the prior analysis. Appendix D demonstrates once again that the length of the meeting, the Q&A time, and the average time dedicated to each question, as well as the total business update time, and the total proposal time, are consistently and significantly shorter in virtual-only meetings relative to in-person meetings. For example, Table DI, columns 1 and 4 estimate that the total meeting time and the total Q&A time are 11.75 and 2.59 minutes shorter at virtual-only meetings, respectfully. Relative to the average values of these variables at in-person meeting documented in Panel B of Table 6 (40.99 and 11.71, respectively), the latter estimates represent a decrease of 28.6% (=11.75/40.99) and 22.1% (=2.59/11.71), respectively, relative to the values of in-person meetings. Similarly, column 8 shows that the *Average time dedicated to each question* is 0.72 minutes shorter, i.e., an increase of 27.1% (0.722/2.66) relative to in-person meetings.

Given the above-noted figures, it should perhaps come as no surprise that as column 4 of Panel B indicates, overall commination at virtual-only meetings is limited: the average meeting time for the virtual-only meeting included in Panel B of Table 6 was only 18.76 minutes, only 3.26 minutes were dedicated to the Q&A session, and only 35.6% of the firms addressed at least one question, i.e., the median firm did not address even one shareholder question.

I note that Brochet, Chychyla, and Ferri (2021) also document that communication is briefer at virtual-only meetings than at in-person meetings. The advantage of the current analysis is that all coding is done manually, whereas, Brochet, Chychyla, and Ferri (2021) use an automated algorithm, which as these authors document, frequently codes the data well, but nevertheless some discrepancies exist.

It is possible that the decrease in communication demonstrated thus far is due to the firms having more limited time to communicate since they were busy with managing Covid-related issues, and not because of the shift to virtual-only meetings. To address this possibility, in Panel C of Table 6 I compare the content of meetings of firms that held a virtual-only meeting before and also after

Covid-19. Specifically, the sample includes "2019 virtual-only" shareholder meetings, i.e., pre-Covid virtual-only meetings held between 1 January 2019 and 15 March 2020, and "2020 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 16 March 2020 and 30 June 2020. While this sample is limited and includes only 108 transcripts of 54 firms, Panel C demonstrates that firms *increased* or maintained similar communication in the post-Covid shareholder meetings relative to the pre-Covid period. Thus, the outbreak of Covid-19 per se does not seem to have led to more limited communication.

Finally, in Panel D I compare the transcripts of all companies for which transcripts of virtual-only meetings from both the 2020 and 2021 proxy seasons are available. The sample includes "2020 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 16 March 2020 and 30 June 2020, and "2021 virtual-only" shareholder meeting, i.e., post-Covid virtual-only meetings held between 1 July 2020 and 30 June 2021. This analysis includes 671 companies, i.e., 1342 transcripts. The analysis documents that the content and structure of the meetings of these two proxy seasons is almost identical and it is not statistically different. Thus, we may conclude that virtual-only meetings were not particularly short in the 2020 proxy season because companies did not have sufficient time to plan a more communicative meeting.

In sum, Table 6 and Appendix D consistently show that, overall, firms dedicated less time to addressing shareholders' concerns at virtual-only meetings than at in-person meetings. Thus, firms did not use the potential advantages afforded in virtual meetings to increase communication with shareholders.

6. What do shareholders say about virtual-only meetings?

To get further insight on how shareholders view virtual-only meetings, I distribute a short questionnaire to institutional investors who have been involved for many years in shareholder meetings. I do this with the generous help of Ms. Nadira Narine from the Interfaith Center on Corporate Responsibility (ICCR). The ICCR comprises a coalition of over 300 global institutional investors (mostly U.S.-based) that manage more than $4 trillion, i.e., on average 13.3 Billion USD per institution, although the distribution of the assets under management is skewed. 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). The ICCR members regularly engage with other shareholders, engage with management, and submit proposals. Importantly, their representatives have been attending in-person and virtual-only shareholder meetings for many years.

The questionnaire was sent to the ICCR members by email several times between March-June 2021, and included three quantitative questions on virtual-only shareholder meetings. These questions and the responses obtained for them are reported in Figure 9. The first question is: "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)." 34 responses were obtained for this question, with an average value for this response of 3.6, with a S.D. of 2.4. Thus, this result indicates that shareholders somewhat leaned towards virtual-only meetings not being more efficient than in-person 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 (i.e., in general, and not just with respect to this specific company)? (1=not easier to avoid critical questions in virtual-only meetings, 10=easier to avoid critical question in virtual-only meetings)." Here the feedback of 35 respondents was especially clear: the average value of this response was 9.37, and the S.D. was 1.95. Thus, shareholders thought it is easier for companies to avoid 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 of the 36 respondents was 7.11 with a 2.7 S.D. Thus, taken together, while shareholders conveyed that virtual-only meetings were perhaps somewhat more efficient, they also conveyed a concern that firms can more easily cherry-pick questions at virtual-only meetings.

7. Conclusions

Virtual and virtual-only shareholder meetings have grown dramatically post-Covid-19. Proxy Insight (2020) surveyed investors and found that 58.4% of them stated that they support the use of virtual-only meetings, and if shareholder rights are protected, 82.2% support virtual-only meetings, and 81% support hybrid meetings. Similarly, in a survey ISS conducted in 2018, already at that point in time the majority of institutional shareholders and corporate community members surveyed supported holding hybrid shareholder meetings, especially when they provided the same shareholder rights as a physical meeting.[22] These figures demonstrate that, overall, shareholders support virtual-only and hybrid meetings as long as they do not limit their rights and voice.

Based on the findings of this study, I make several policy recommendations that can support the goal of having more meaningful communication at virtual-only and hybrid shareholder meetings. The main recommendations are to make recordings public, to make submitted questions public, to allow shareholders to present their questions "live and unfiltered," to require firms to disclose the number of attending shareholders, and to ease the submission of questions on non-Broadridge platforms. I further detail each of these recommendations in Appendix E.

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[22] The summary of this survey is available here: https://www.issgovernance.com/iss-announces-results-2018-benchmark-voting-policy-survey/

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
Average support rates for directors	The average fraction of votes cast at the meeting in support of the directors proposed by management.	Computed by authors based on data obtained from 8-K filings
Average time dedicated to answering each question	Average number of minutes dedicated to answering each question addressed at the shareholder meeting, conditional on the meeting addressing at least one question. This figure is estimated by dividing the total number of minutes dedicated to the Q&A portion of the meeting by the number of questions addressed at the meeting.	Transcripts + recordings of meetings
Book-to-market	Book value of equity/ market value of equity for the most recent financial reports.	
Length of total meeting	Length of a shareholder meeting in minutes	Transcripts + recordings of meetings
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
Number of interactions per question	The average number of interactions per question. An interaction is defined as an exchange in which, once the shareholder has asked the question and the firm representative has started answering the question, the person asking the question, or a different firm representative, interrupts the person answering the question in order to refine the question or the answer	Transcripts + recordings of meetings
Number of shareholder questions addressed	Number of shareholder questions addressed at the shareholder meeting	Transcripts + recordings of meetings

Variable name	Definition	Source
Question addressed indicator	An indicator variable that equals one if the firm addressed the question C&M submitted, and zero otherwise	Shareholder Questions Dataset
Questions limited to proposals	An indicator variable equal to one if the firm stated at the meeting it would address only questions related to the proposals submitted by shareholders	Transcripts + recordings of meetings
ROA	Income before extraordinary items/total assets, for the most recent fiscal year	Compustat
Total business update time	Number of minutes management dedicated to providing a business update	Transcripts + recordings of meetings
Total number of interactions at meeting	Total number of interactions that occurred at the meeting. An interaction is defined as an exchange in which, once the shareholder has asked the question and the firm representative has started answering the question, the person asking the question, or a different firm representative, interrupts the person answering the question in order to refine the question or the answer	Transcripts + recordings of meetings
Total proposal time	Number of minutes dedicated to presenting the proposals submitted by shareholders	Transcripts + recordings of meetings
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
Vote results announced in percentages	An indicator equal to one if the vote outcomes were announced at the meeting in percentages, and zero if only a pass/fail outcome was announced.	Transcripts + recordings of meetings

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Figure 1: Snapshots of Tesla's 2019 in-person shareholder meeting

This figure presents several snapshots from Tesla's 2019 in-person shareholder meeting, one snapshot from each of the three portions of the meetings, and indicates the length of each portion.

Proposal presentation (7 minutes)

Business update (40 minutes)

Q&A session (50 minutes)

Figure 2: Weekly distribution of the number of annual shareholder meetings

This figure reports for the 2016-2020 period the weekly distribution of the number of annual shareholder meetings, broken down by the week number in the calendar year.

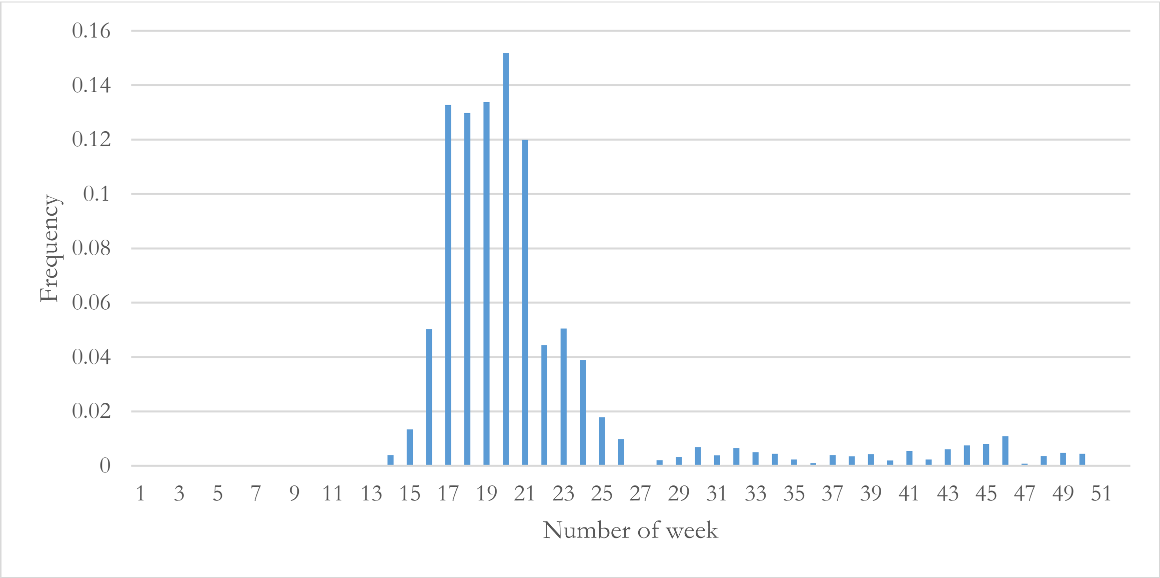


Figure 3: Frequency of virtual-only meetings before and after Covid-19
The figure reports the number of virtual-only shareholder meetings. This figure is obtained, with permission, from the report of the Rutgers Center for Corporate Law and Governance et al. (2020).

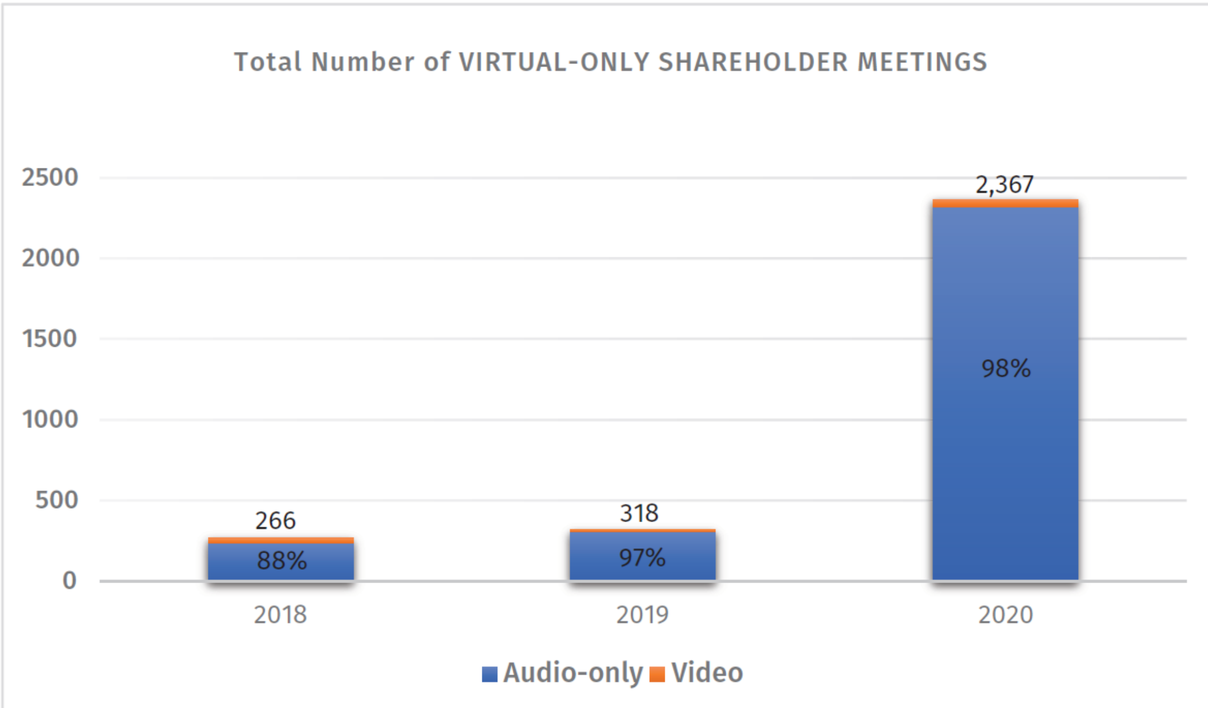


Figure 4: Walmart in-person versus virtual shareholder meeting

The first two images are from Walmart's 2019 in-person shareholder meeting. The third image is from Walmart's 2020 virtual-only annual shareholder meeting.

Images from Walmart's June 5, 2019 in-person meeting

(The images are obtained from https://www.youtube.com/watch?app=desktop&v=7mTGIfQtVsE)

Images from Walmart's June 3, 2020 virtual-only shareholder meeting

(Images obtained from https://central.virtualshareholdermeeting.com/vsm/home)

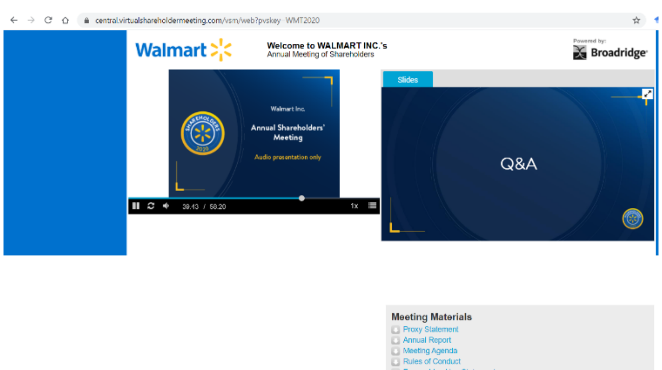


Figure 5: Shareholder meeting on Broadridge's virtual shareholder meeting platform
This image demonstrates the screen presented to HP's investors who attended the firm's 2020 virtual-only shareholder meeting. The vast majority of firms do not provide a video of the individual speaking, i.e., the image included in the red square (marked in red by the author). The image includes a textbox that shareholders can use to submit questions to the virtual-only shareholder meeting.

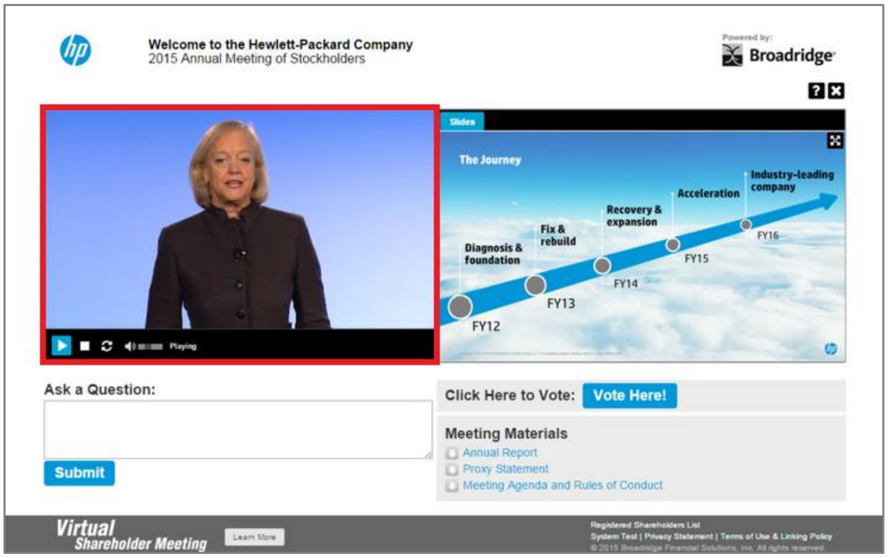


Figure 6: Methods used for designing in-person versus virtual-only meetings

This figure reports the relation between governance practices and shareholder votes for virtual-only shareholder meetings held between 1 January 2019 and -30 June 2021. *Average opposition rates for directors* measures the average fraction of votes cast against the directors proposed by management at a given meeting. *Question addressed indicator* is an indicator variable that equals one if the firm addressed the question C&M submitted, and zero otherwise. *Questions limited to proposals* is an indicator variable equal to one if the firm stated at the meeting it would address only questions related to the proposals submitted by shareholders. *Vote results announced in percentages* is an indicator equal to one if the vote outcomes were announced at the meeting in percentages, and zero if only a pass/fail outcome was announced.

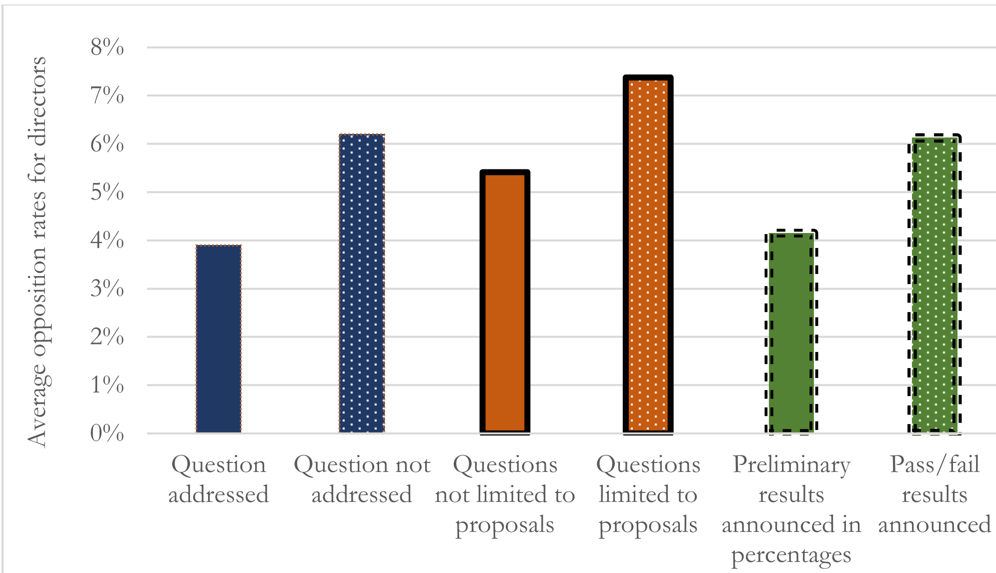
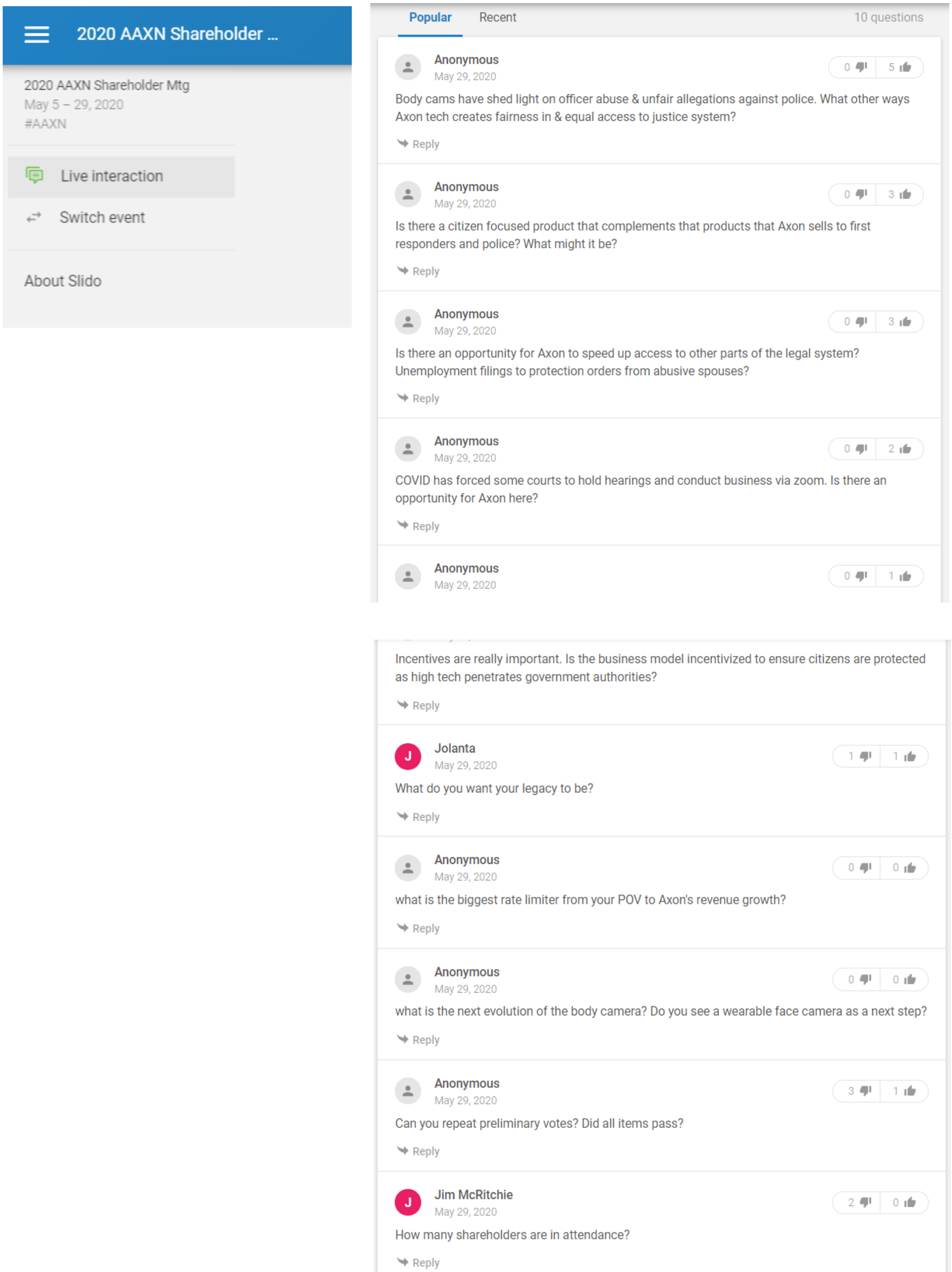


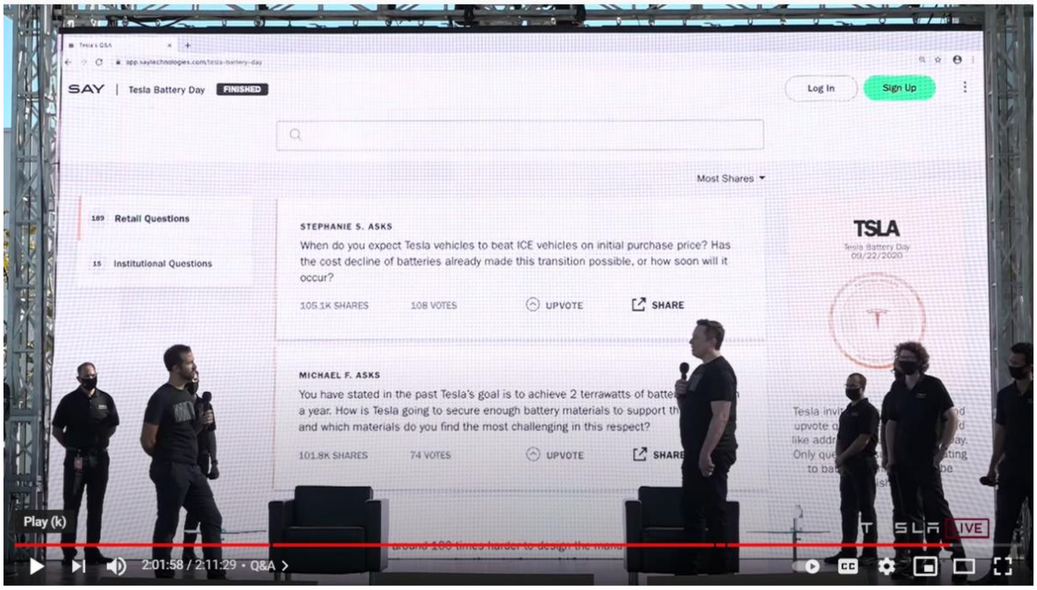
Figure 7: Enhancing communication at virtual-only shareholder meetings
Panel A: Axon Enterprise

This figure reports the questions submitted by shareholders at the 2020 virtual-only Axon Enterprise annual shareholder meeting. Questions were submitted before the meeting through the Slido website at this link: https://app.sli.do/event/xis3mxtb/live/questions. These questions could be observed by anyone, and investors could like and unlike each question submitted.



Panel B: Tesla

This figure portrays two snapshots from the 2020 Tesla virtual-only shareholder meeting. Questions were submitted by shareholders before the meeting through a platform hosted by Say Technologies. Questions submitted were displayed at the meeting on a large screen. Shareholders were able to be physically present at the meeting since the meeting was organized as a drive-in event. The snapshots are obtained from https://www.youtube.com/watch?v=l6T9xIeZTds.



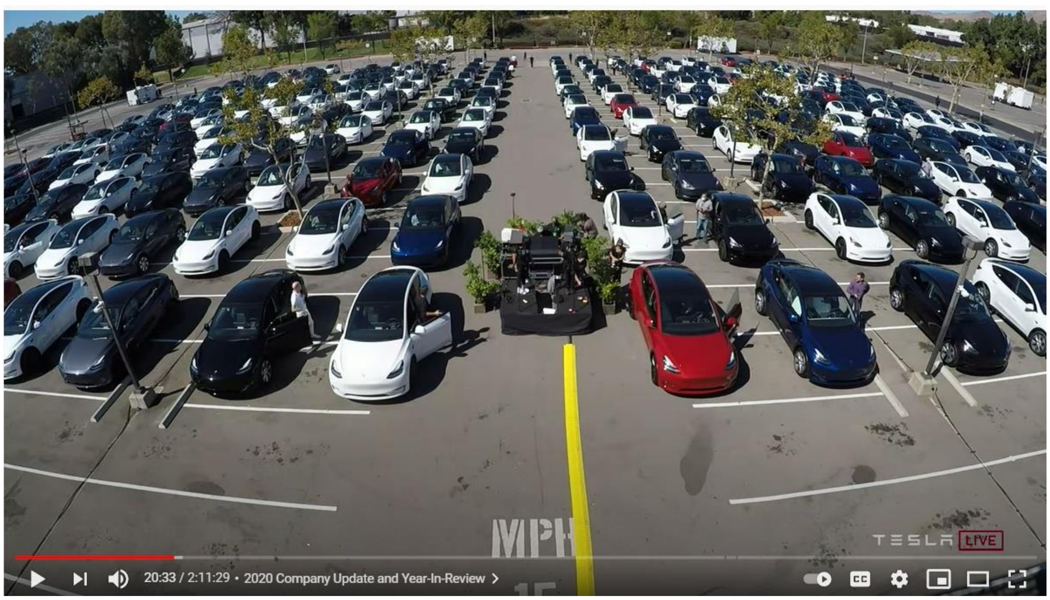


Figure 8: Methods used for designing the content and structure of shareholder meetings
This figure reports governance practices for "2019 in-person" shareholder meetings, i.e., pre-Covid in-person meetings held between 1 January 2019 and 15 March 2020; "2020 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 16 March 2020 and 30 June 2020; and "2021 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 1 July 2020 and 30 June 2021. The sample is based on 333 transcripts of 111 companies for which transcripts are available for each of the three periods specified above. *Questions limited to proposals* is an indicator variable equal to one if the firm stated at the meeting it would address only questions related to the proposals submitted by shareholders. *Vote results announced in percentages* is a binary variable that equals to one if vote outcomes were announced at the meeting in percentages rather than pass/fail.

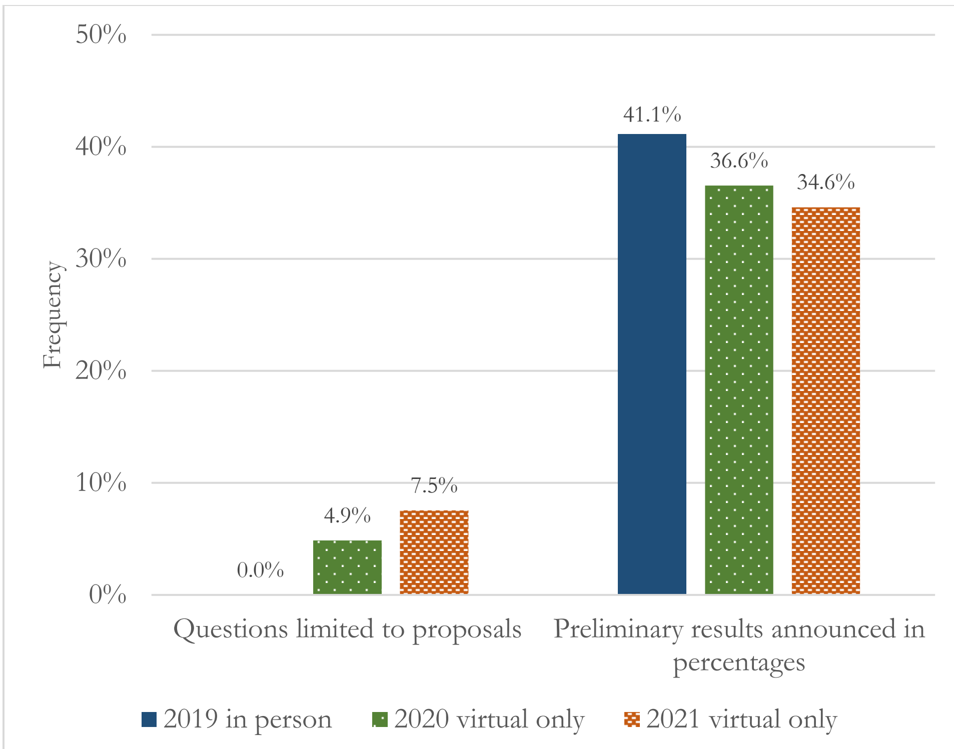
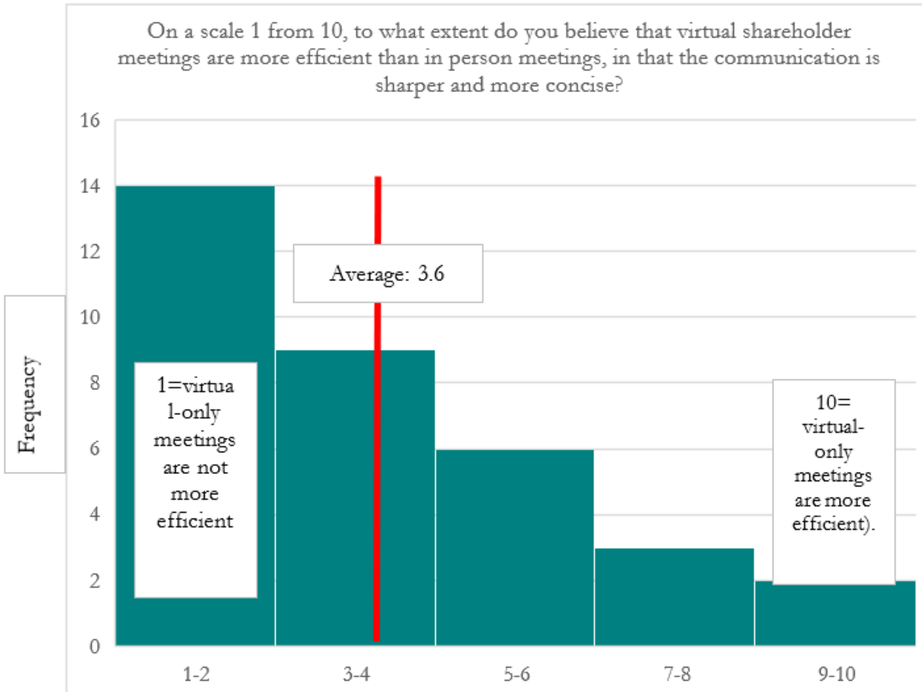
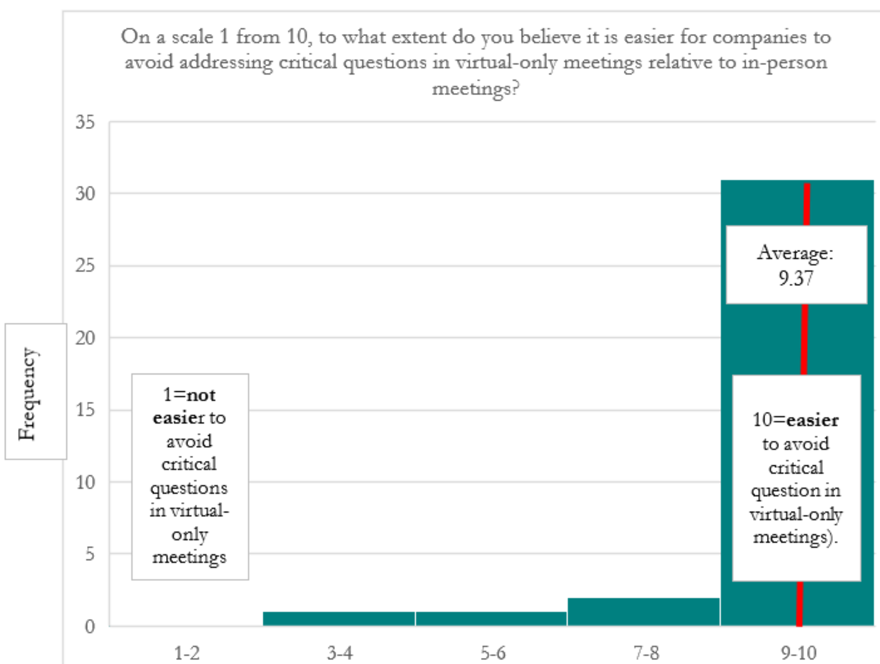


Figure 9: Investors experiences at virtual-only shareholder meetings

This figure reports response of individuals who represent organizations that are members of the Interfaith Center on Corporate Responsibility (ICCR).





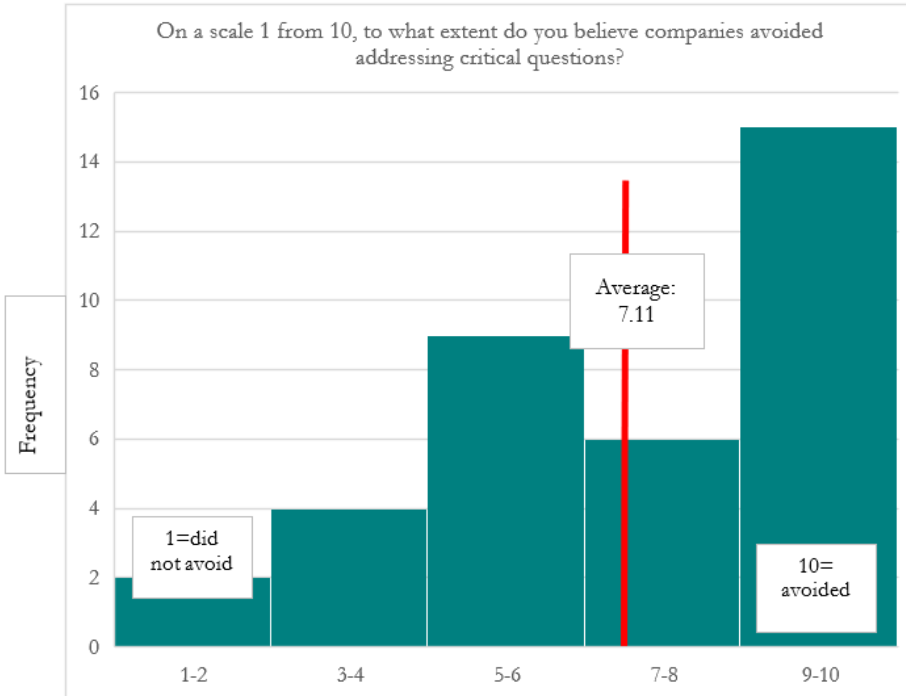

On a scale 1 from 10, to what extent do you believe companies avoided addressing critical questions?
Frequency
16
14
12
10
8
6
4
2
0
1-2
3-4
5-6
7-8
9-10
1=did not avoid
Average: 7.11
10= avoided

Table 1: Proposals and questions submitted by C&M

Panel A: 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

Panel B: 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
Number of meetings to which C&M attempted to submit a question	89	110	199
Of these, number of meetings C&M were able to submit a question	61	95	156
Percent of meetings that addressed at least one question submitted by C&M (at meeting–shareholder level)	63.2%	60.0%	61.2%
Total number of questions submitted by C&M	390	377	767
Of these, number of questions addressed	142	145	287
Response rate	36.41%	38.46%	37.42%

Table 2: Shareholder support rates and methods used at virtual-only meetings

This table 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. *Question addressed indicator* is an indicator variable that equals one if the firm addressed the question C&M submitted, and zero if it did not. *Questions limited to proposals* is an indicator variable equal to one if the firm stated at the meeting it would address only questions related to the proposals submitted by shareholders. *Vote results announced in percentages* is an indicator equal to one if the vote outcomes were announced at the meeting in percentages, and zero if only a pass/fail outcome was announced. *Average support rates for directors* measures the average fraction of votes cast in support of the directors proposed by management in meeting *m*. All specifications include a vector of $Controls_m$ that comprises *Log assets, Log of market capitalization, Book-to-market*, *Abnormal return (annual)*, and *ROA*. The analysis in column 1, which is conducted at the question level, includes question category fixed effects and proxy year fixed effects, and errors are clustered at the meeting level. The analysis in columns 2-3 is conducted at the meeting level and includes firms that held a virtual-only meeting between 1 January 2019–30 June 2021 for which complete transcripts were collected and data on control variables are available. The models include industry and proxy year fixed effects. Errors in these specifications are double clustered at the year and industry level. Definitions of variables are included in the Glossary of Variables. *, **, and *** indicate p<.10, p<.05, and p<.01, respectively.

	Question addressed indicator (1)	Questions limited to proposals (2)	Vote results announced in percentages (3)
Average support rates for directors	0.9753*** (3.970)	-0.2087** (-2.493)	0.3145*** (2.798)
ROA	0.4161 (1.731)	0.0226 (.567)	-0.0676 (-1.273)
Abnormal return	0.0402 (.429)	0.0016 (.143)	0.0013 (.199)
Log assets	-0.0389 (-0.906)	-0.0233* (-2.001)	0.0600*** (3.975)
Log market capitalization	0.0198 (.360)	0.0058 (.441)	-0.0076 (-0.662)
Book-to-market	-0.151 (-1.014)	-0.0007 (-0.481)	-0.0014 (-0.698)
Observation level	Question	Meeting	Meeting
Industry and proxy year fixed effects included	Yes	Yes	Yes
Question topic fixed effects	Yes	No	No
R-squared	0.051	0.089	0.151
N	585	1,712	1,685

Table 3: 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 limited to proposals* is an indicator variable equal to one if the firm stated at the meeting that it would address only questions related to the proposals submitted by shareholders. *Vote results announced in percentages* is a binary variable that equals one if vote outcomes were announced at the meeting in percentages rather than as a pass/fail outcome. *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). Columns 1 and 3 include only firms that held meetings in each of the following three periods: "2019 in-person," i.e., pre-Covid-19 in-person meetings held between 1 January 2019 and 15 March 2020; "2020 virtual-only" i.e., post-Covid virtual-only meetings held between 16 March 2020 and 30 June 2020; and "2021 virtual-only" i.e., post-Covid virtual-only meetings held between 1 July 2020 and 30 June 2021. Columns 2 and 4 include all shareholder meetings for which transcripts were collected i.e., all complete transcripts available from 1 January 2019 to 30 June 2020, and all transcripts of companies from 1 July 2020-30 June 2021 if transcripts of the same company are available for the prior year. Errors are clustered at the company level. Definitions of variables are included in the Glossary of Variables. *, **, and *** indicate p<.10, p<.05, and p<.01, respectively.

	Questions limited to proposals		Preliminary results announced in %	
	(1)	(2)	(3)	(4)
Virtual-only meeting	0.065*** (2.638)	0.071*** (4.285)	-0.063* (-1.715)	-0.127*** (-3.716)
ROA	-0.003 (-0.043)	0.014 (.451)	0.588 (1.421)	-0.012 (-0.362)
Abnormal return	0.088 (1.231)	0.017* (1.659)	0.121** (2.315)	0.003 (.329)
Log assets	-0.048 (-0.969)	-0.023** (-2.409)	-0.063 (-0.435)	0.051*** (3.878)
Log market capitalization	0.043 (.614)	0.009 (1.016)	0.18 (1.373)	-0.006 (-0.521)
Book-to-market	0.074 (.701)	0.016* (1.920)	-0.186 (-0.650)	0.003 (.290)
Firm fixed effects	Yes	No	Yes	No
Industry fixed effects	No	Yes	No	Yes
Proxy year fixed effects	Yes	Yes	Yes	Yes
Sample included	Firms that held an in-person meeting before Covid-19, and two virtual-only meetings after Covid-19	All firms for which transcripts were collected	Firms that held an in-person meeting before Covid-19, and two virtual-only meetings after Covid-19	All firms for which transcripts were collected
R-squared	0.564	0.065	0.827	0.13
N	266	1,783	239	1,757

Table 4: Methods used for designing the content and structure of shareholder meetings

This table examines the relation between the methods used for designing virtual-only shareholder meetings and the structure and content of shareholder meetings. In Row 1 the primary independent variable is *Question addressed indicator,* an indicator variable that equals one if the firm addressed the questions C&M submitted, and zero if it did not; in row 2 it is *Questions limited to proposals*, an indicator variable that equals to one if the firm stated at the meeting it would address only questions related to the proposals submitted by shareholders; in row 3 it is *Vote results announced in percentages*, an indicator variable equal to one if the vote outcomes were announced at the meeting in percentages, and zero if only a pass/fail outcome was announced. For each row, the following three dependent variables are examined: *Number of shareholder questions addressed*, which measures the number of shareholder 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. 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 analysis of Row 1, which is conducted at the question level, includes proxy year fixed effects and question categories fixed effects, which control for the topic of the question. Errors in this specification are clustered at the meeting level. The analysis in Rows 2 and 3, which is conducted at the meeting level, includes all firms that held a virtual-only meeting between 1 January 2019–30 June 2021 for which transcripts were collected and data on control variables are available. The models include industry and proxy year fixed effects. Errors in these specifications are clustered at the company level. Definitions of variables are included in the Glossary of Variables. *, **, and *** indicate p<.10, p<.05, and p<.01, respectively.

#	Method	Number of questions addressed at meeting (1)	Total Q&A time (2)	Length of total meeting (3)
1	Question addressed indicator	3.241***	2.731**	0.199
		(3.175)	(2.286)	(.079)
	Observation level	Question	Question	Question
	Question topic and proxy year fixed effects	Yes	Yes	Yes
	Controls	Yes	Yes	Yes
	R-squared	0.319	0.356	0.301
	N	420	417	440
2	Questions limited to proposals	-1.346***	-2.275***	-6.279***
		(-8.850)	(-8.682)	(-8.797)
	Observation level	Meeting	Meeting	Meeting
	Industry and proxy year fixed effects	Yes	Yes	Yes
	Controls	Yes	Yes	Yes
	R-squared	0.319	0.309	0.268
	N	1,543	1,560	1,568
3	Vote results announced in percentages	0.749***	1.553***	4.019***
		(2.706)	(2.928)	(3.584)
	Observation level	Meeting	Meeting	Meeting
	Industry and proxy year fixed effects	Yes	Yes	Yes
	Controls	Yes	Yes	Yes
	R-squared	0.317	0.313	0.264
	N	1,519	1,540	1,547

Table 5: 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 20 March 2020 and 30 June 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 indicator*$_q$ = β_1**Topic*$_i$ + β_2**Meeting fixed effect*, where *Question addressed indicator*$_q$ 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 *Question addressed* (3)	T-statistic of *Question addressed* (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

Table 6: Summary statistics on in-person versus virtual-only shareholder meetings

Panel A reports summary statistics on companies that held three shareholder meetings that fall into each of the following three categories: "2019 in-person" shareholder meetings, i.e., pre-Covid-19 in-person meetings held between 1 January 2019 and 15 March 2020; "2020 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 16 March 2020 and 30 June 2020; and "2021 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 1 July 2020 and 30 June 2021. Panel B reports summary statistics for all shareholder meetings for which transcripts were collected, i.e., all complete transcripts available from 1 January 2019 to 30 June 2020, and all transcripts of companies from 1 July 2020-30 June 2021 if transcripts of the same company are available for the prior year. Panel C reports summary statistics for firms that held both a "2019 virtual-only" shareholder meeting, i.e., pre-Covid-19 virtual-only meetings held between 1 January 2019 and 15 March 2020, and a "2020 virtual-only" shareholder meeting, i.e., post-Covid-19 virtual-only meetings held between 16 March 2020 and 30 June 2020. Panel D reports summary statistics for firms that held both a "2020 virtual-only" shareholder meetings, i.e., post-Covid-19 virtual-only meetings held between 16 March 2020 and 30 June 2020, and a "2021 virtual-only" shareholder meeting, i.e., post-Covid-19 virtual-only meetings held between 1 July 2020 and 30 June 2021. Panel A, C, and D report paired t-tests as indicated. In column 8 of Panel A, a "quasi-paired T-test" is estimated by regressing the dependent variable (e.g., *Length of total meeting*) on a firm fixed effect, a constant, and the primary variable of interest (i.e., *Virtual-only meeting*), and reporting the coefficient of the latter variable. T-tests are reported for Panel B in columns 5-8. Column 9 of Panels A and B estimates the difference, in percentage, between the change estimated for virtual-only versus in-person meetings, relative to the in-person meetings. *Length of total meeting* measures the length of a shareholder meeting in minutes, *Total business update time* measures the number of minutes management dedicated to providing a business update, *Total proposal time* measures the number of minutes dedicated to presenting the proposals submitted by shareholders, *Total Q&A time* measures the number of minutes dedicated to addressing shareholders' questions at a shareholder meeting, *Number of shareholder questions addressed* measures the number of shareholder questions addressed at the shareholder meeting, and *Average time dedicated to answering each question* measures the average number of minutes dedicated to answering each question addressed at the shareholder meeting, conditional on the meeting addressing at least one question. *, **, and *** indicate p<.10, p<.05, and p<.01, respectively.

Panel A: Firms that held an in-person meeting before Covid-19, and two virtual-only meetings after Covid-19

Average values of measure	2019 in-person meeting	2020 virtual-only meeting	2021 virtual-only meeting	2020–21 virtual-only meetings (2)+(3)	(2)–(1) paired T-test	(3)–(1) paired T-test	(3)–(2) paired T-test	(4)–(1) Quasi-paired T-test	Δ Virtual-only/in-person (8)/(1)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Length of total meeting	39.37	31.97	34.57	33.27	-7.4***	-4.8*	2.6	-6.1***	-15.49%
Total business update time	13.49	8.66	10.27	9.465	-4.8***	-3.22*	1.61	-4.025***	-29.84%
Total proposal time	13.11	12.18	9.97	11.075	-0.93	-3.14***	-2.21**	-2.035***	-15.52%
Total Q&A time	10.88	9.08	9.73	9.405	-3.1*	-1.64	1.51	-1.475*	-13.56%
Number of shareholder questions addressed	5.26	4.86	5.49	5.175	-0.4	0.23	0.63	-0.085	-1.62%
Average time dedicated to each question	2.53	1.95	1.89	1.92	-0.58***	-0.64***	-0.06	-0.61***	-24.11%
% firms that addressed at least one question	69.5%	65.8%	68.9%	67.4%	-0.037	-0.006	0.031	-0.022	-3.09%
Average market cap (in millions)	53,310	62,748	58,401	60,575					
ROA	7.3%	7.0%	7.0%	7.0%					
Number of meetings	111	111	111	222					

Panel B: All firms for which transcripts were collected

Average values of measure	2019 in-person meeting	2020 virtual-only meeting	2021 virtual-only meeting	2020–21 virtual-only meeting (2)+(3)	(2)–(1) T-test	(3)–(1) T-test	(3)–(2) T-test	(4)–(1) T-test	Δ Virtual-only/in-person (8)/(1)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Length of total meeting	40.99	17.77	20.22	18.76	-23.22***	-20.77***	2.45***	-13.80***	-33.67%
Total business update time	15.409	4.257	5.467	4.74	-11.15***	-9.94***	1.21***	-6.79***	-44.07%
Total proposal time	13.8	9.667	5.456	7.98	-4.13***	-8.34***	-4.21***	-3.58***	-25.94%
Total Q&A time	11.71	2.867	3.838	3.26	-8.84***	-7.87***	0.97***	-5.26***	-44.92%
Number of shareholder questions addressed	4.917	1.5276	2.143	1.77	-3.39***	-2.72***	0.67***	-1.77***	-36.00%
Average time dedicated to each question	2.66	1.81	1.83	1.82	-0.85***	-0.83***	0.02	-0.69***	-25.94%
% firms that addressed at least one question	58.01%	32.78%	39.88%	35.64%	-0.25***	-0.18***	0.07***	-0.13***	-22.41%
Average market cap (in millions)	52,722	15,805	21,019	17,952					
ROA	7.70%	6.19%	6.17%	0.06					
Number of meetings	181	1031	692	1723					

Panel C: Firms that held a virtual-only meeting in 2019 and 2020

Average values of measure	2019 virtual-only meeting	2020 virtual-only meeting	(2)–(1) paired T-test
	(1)	(2)	(3)
Length of total meeting	18.37	20.3	1.93**
Total business update time	4.76	4.88	0.12
Total proposal time	9.85	10.78	0.93
Total Q&A time	3.25	4.15	0.9
Num. of shareholder questions addressed	1.94	2.38	0.44*
Average time dedicated to each question	1.54	1.61	.07*
% firms that addressed at least one question	40.4%	48.1%	0.077
Average market cap (in millions)	18,635	21,054	
ROA	7.18%	7.11%	
Number of meetings	54	54	

Panel D: Firms that held virtual-only meeting in the 2020 and 2021 proxy seasons, and for which transcripts are available

Average values of measure	2020 virtual-only meeting (1)	2021 virtual-only meeting (2)	(2)–(1) paired T-test (3)
Length of total meeting	19.75	20.14	0.39
Total business update time	5.27	5.47	0.2
Total proposal time	9.8	9.67	-0.13
Total Q&A time	3.52	3.82	0.3
Num. of shareholder questions addressed	1.91	2.07	0.16
Average time dedicated to each question	1.87	1.89	0.02
% firms that addressed at least one question	38.9%	46.3%	7.41%
Average market cap (in millions)	21,621	22,968	
ROA	6.42%	6.13%	
Number of meetings	671	671	

Internet Appendix

Appendix A: Topics discussed at in-person and virtual-only meetings

Table AI reports the topics of the questions that were addressed by the firms that are included in Panel B of Table 6. Each question addressed at the meeting is categorized under one of 18 topics. Column 1 reports the average number of questions addressed at in-person shareholder meetings, broken down by the topic of the question. Column 2 reports this figure for virtual-only meetings. Column 3 reports the difference between the value reported in column 1 and that reported in column 2. Column 4 reports a paired t-test, conducted at the firm level, that examines whether the difference reported in column 3 is significant.

While Table AI documents that differences exist between the topics addressed at the (pre-Covid) in-person meetings and those addressed at the (post-Covid) virtual-only meetings, the table shows that, overall, both types of meetings address a broad range of topics. In both types of meetings questions on environmental issues are quite common (on average 0.53 and 0.63 questions at in-person and virtual-only meetings, respectively), as are questions on financial issues (0.347 questions for both types of meetings), and, in the virtual-only post-Covid meetings, questions on Covid-related issues (1.8 questions).

Table AI: Topics discussed at in-person and virtual-only meetings

Column 1 of this table reports the average number of questions addressed at in-person shareholder meetings, broken down by the topic of the question. Column 2 reports this figure for virtual-only meetings. Column 3 reports the difference between the value reported in column 1 and that reported in column 2. Column 4 reports a paired t-test, conducted at the firm level, examining whether the difference reported in column 3 is significant. The table analyzes the transcripts of companies for which transcripts are available for the following two periods: "2019 in-person" shareholder meetings, i.e., pre-Covid in-person meetings held between 1 January 2019 and 15 March 2020; and "2020 virtual-only" shareholder meetings, i.e., post-Covid virtual-only meetings held between 16 March 2020. The sample includes 164 shareholder meetings held by 82 firms, i.e., two meetings per firm.

	Topic of question	In-person	Virtual-only	Difference (in-person minus virtual only)	T-statistic of paired t-test
		(1)	(2)	(3)	(4)
1	Attendance	0.020	0.163	0.1429**	-(2.449)
2	Board	0.082	0.286	0.222041*	-(1.698)
3	Comment	0.122	0.000	-0.1224**	(-2.203)
4	Compensation	0.082	0.204	0.1224	-(1.520)
5	Covid-19	0.000	1.816	1.8163***	-(6.652)
6	Diversity	0.245	0.102	-0.1429	(-1.477)
7	Dividends	0.082	0.265	0.1837*	-(1.928)
8	Donations	0.082	0.041	-0.0408	(-0.703)
9	Employees	0.327	0.286	-0.0408	(-0.306)
10	Environmental	0.531	0.633	0.1020	-(.868)
11	Financial issues	0.347	0.347	0.0000	(.000)
12	Governance	0.367	0.490	0.1224	-(.883)
13	Outlook	0.000	0.020	0.0204	-(1.000)
14	Praise	0.551	0.816	0.2653	-(1.241)
15	Regulatory	0.408	0.837	0.4286**	-(2.353)
16	Social policy	0.694	0.163	-0.5306***	(-3.071)
17	Stock buyback	0.102	0.020	-0.0816	(-1.662)
18	Strategy	1.122	0.388	-0.7347***	(-3.374)

Appendix B: 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	

#	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	

#	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	

Appendix C: Technical challenges encountered by shareholders

To broadcast a virtual meeting, firms must select a platform that technically supports doing so. Broadridge offers such a platform, called Virtual Shareholder Meeting, which allows broadcasting meetings via streaming video or audio.[23] Broadridge manages the largest number of virtual-shareholder meetings of any platform.[24]

Almost all firms allow only individuals identified as shareholders to submit questions. In this respect, Broadridge has a huge advantage over competing platforms. As the SEC has recognized, Broadridge has a near monopoly on managing the electronic votes submitted at shareholder meetings.[25] For this reason, Broadridge has all the information required to identify a shareholder, including the identity of the broker through which the investment is made, the investor's account number, the number of shares each investor holds in each firm, and more. Non-Broadridge platforms do not have this information, and thus, to be identified as a shareholder, shareholders were and frequently still are forced to go through a tedious and cumbersome process. Given this setting, it is probably not surprising that almost all firms for which C&M were not able to submit questions (as reported in Panel B of Table 1) broadcasted their meetings on non-Broadridge platforms.[26]

Following the outcry of investors as reflected in the Rutgers Center for Corporate Law and Governance et al. (2020), efforts were made to resolve some of the access issues (as described in memo written on 2 February 2021 by the Council of Institutional Investors and the Society of Corporate Governance). However, unreported analysis that I conducted show that both in the 2020 and the 2021 proxy season, meetings broadcasted on non-Broadridge platforms were shorter, included fewer questions, and spent less time on the Q&A session. [27]

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[23] Broadridge Financial Solutions is an S&P 500 firm that specializes in supporting firms in managing aspects related to the annual shareholder meeting, offers services for sending materials to shareholders pertaining to these meetings, and manages online votes for almost all shareholder meetings of publicly listed firms in the United States.

[24] According to Broadridge (2020), between January 1 and June 19, 2020, the firm hosted 1,378 virtual meetings in the United States. For comparison, Computershare (2020), which also offers broadcasting services for shareholder meetings, reports that between January 1, 2020 and June 30, 2020 it broadcast 460 meetings in the United States. These figures, as well as discussions I had with individuals familiar with shareholder meetings, show that Broadridge dominates the market of broadcasting shareholder meetings, and Computershare is the runner up. Additional platforms that broadcast shareholder meetings include Alliance Advisors, Choruscall, Diligent, Edge Media Server, Equinity, Global Meet, GoToMeeting, Kaltura, Lumi Global, Mediant, On24, Qualcomm, and Yahoo! Finance.

[25] See SEC Recommendation, available at https://www.sec.gov/spotlight/investor-advisory-committee-2012/recommendation-investor-as-owner-subcommittee-proxy-plumbing.pdf

[26] Firms were required in a very short time to readjust their shareholder meetings to a new virtual setting. In one year, the number of shareholder meetings Broadridge broadcast grew by over 500% (Broadridge, 2020). Thus, Broadridge was likely constrained by the number of meetings it was able to broadcast. Accordingly, firms were not always able to pick their preferred platform for broadcasting the shareholder meeting.

[27] I will describe here the process of submitting a question at a shareholder meeting. Based on the information Broadridge receives on the portfolio of each investor, Broadridge issues for each shareholder-meeting combination a unique 16-digit

Appendix D: In-person versus virtual-only shareholder meetings – additional specifications

Table DI conducts a formal test with the same observations included in Panel B of Table 6, but includes a vector of $Controls_{im}$ that comprises *Log assets, Log of market capitalization, Book-to-market*, *Abnormal return (annual)*, and *ROA*. Definitions for all variables are included in the Glossary of Variables. Additionally, these specifications include industry and proxy year fixed effects. The results reported in Table DI are similar to those reported in Panel B of Table 6. They show that at virtual-only meetings the length of total meeting, total business update time, total proposal time, total Q&A time, and the average time dedicated to each question are all significantly shorter.

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control number, which the investor can use to cast her votes electronically. The control number can also be used by the investor to log into virtual shareholder meetings broadcast on Broadridge's Virtual Shareholder Meeting platform, and to submit questions on this platform. However, the control number cannot be used to log into meetings broadcast on non-Broadridge platforms, or to submit a question on these platforms, since non-Broadridge platforms do not have access to the control numbers that would allow them to immediately identify shareholders. These procedures apply only to shareholders who wish to submit a question to a shareholder meeting on a non-Broadridge platform. Logging into a meeting on a non-Broadridge platform only as a listener is substantially simpler.

When a shareholder wishes to log in and submit a question to a meeting held on a non-Broadridge platform, she is required to request from her broker a legal proxy, which is a document proving that she is indeed a shareholder. She must then send the legal proxy to the non-Broadridge provider, who then issues and sends her a new control number that she can use to log into the meeting and submit a question. To further complicate the procedure, shareholders are usually required to send the legal proxy to the non-Broadridge provider several days before the shareholder meeting. Given the limited time available from the proxy filing to the meeting date (30 trading days according to Li, Maug, and Schwartz-Ziv, 2021), completing the process described above before the meeting can be challenging. This is especially true given that most meetings are clustered around a short period (see Figure 2), thereby further constraining shareholders' attention and time. Finally, when a shareholder requests a control number allowing her to participate at a virtual shareholder meeting via a non-Broadridge platform, any votes that she cast through her broker are immediately cancelled, and she must cast her votes again during the shareholder meeting.

No legal requirement exists that requires that only verified shareholders be permitted to submit questions. As Computershare (2020) points out, 95% of the firms that conduct meetings on Computershare platforms choose to require that only verified shareholders be able to ask questions. Only 5% of the firms allow also non-verified shareholders to submit questions (i.e., the procedures described above do not apply to them).

Table DI: In-person versus virtual shareholder meetings

This table reports regressions that examine how the structure and content of shareholder meetings differ, depending on whether the meeting is virtual-only or not. The table includes all transcripts of shareholder meetings collected, i.e., all complete transcripts available from 1 January 2019 to 30 June 2020, and all transcripts of companies from 1 July 2020-30 June 2021 if transcripts of the same company are available for the prior year. *Length of total meeting* measures the length of a shareholder meeting in minutes, *Total business update time* measures the number of minutes management dedicated to providing a business update, *Total proposal time* measures the number of minutes dedicated to presenting the proposals submitted by shareholders, *Total Q&A time* measures the number of minutes dedicated to addressing shareholders' questions at a shareholder meeting, *Number of shareholder questions addressed* measures the number of shareholders' questions addressed at the shareholder meeting, and *Average time dedicated to answering each question* measures the average number of minutes dedicated to answering each question addressed at the shareholder meeting, conditional on the meeting addressing at least one question. Definitions of variables are included in the Glossary of Variables. *, **, and *** indicate p<.10, p<.05, and p<.01, respectively.

	Length of total meeting	Total business update time	Total proposal time	Total Q&A time	Num. of shareholder questions addressed	Average time dedicated to each question
	(1)	(2)	(3)	(4)	(5)	(6)
Virtual-only meeting	-11.175***	-7.482***	-3.244***	-2.595***	-0.586	-0.722***
	(-6.837)	(-7.188)	(-4.200)	(-3.777)	(-1.476)	(-5.435)
ROA	-2.991*	0.336	-0.606	-2.221***	-1.215***	0.207
	(-1.936)	(.470)	(-0.925)	(-3.004)	(-2.766)	(.698)
Abnormal return	0.245	0.121	-0.456**	0.146	0.104	0.047
	(.910)	(.725)	(-2.575)	(1.349)	(1.567)	(.789)
Log assets	1.266**	-0.198	0.446*	0.876***	0.454***	0.062
	(2.544)	(-0.731)	(1.776)	(3.810)	(3.648)	(1.202)
Log market capitalization	1.371***	0.698***	0.085	0.477***	0.355***	-0.088*
	(3.120)	(2.637)	(.374)	(2.596)	(3.350)	(-1.721)
Book-to-market	0.333	0.121	-0.035	0.221	0.204	-0.128**
	(.730)	(.583)	(-0.293)	(.883)	(1.111)	(-2.006)
Industry and proxy year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.291	0.181	0.126	0.294	0.266	0.149
N	1,826	1,826	1,826	1,826	1,832	673

Appendix E: Policy recommendations

This appendix presents` several policy recommendations.

A. Make recordings public. Requiring that firms make public the audio recordings of shareholder meetings, and possibly also the video recordings 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 at least for some firms, investors are interested in such content.[28] 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.[29] 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.[30]

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 when they are "live" and on the line.

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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[28] 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).

[29] 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/

[30] 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.

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 questions on non-Broadridge platforms. The technical barriers to identifying shareholders on non-Broadridge platforms should be removed, or the requirement that the platform identify a shareholder in order for the shareholder to submit a question should be removed.[31] Supporting non-Broadridge platforms can enhance competition among platforms and thus motivate these platforms to become more sophisticated.[32]

[31] 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.

[32] 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.