

How Shifting from In-Person to Virtual-Only Shareholder Meetings Affects Shareholders' Voice

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April 2021

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Abstract

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

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

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*School of Business Administration, the Hebrew University of Jerusalem. Email: miriam.schwartz@mail.huji.ac.il. I am extremely grateful to John Chevedden and James McRitchie, who spent many hours in sharing with me hundreds of questions they submitted to shareholder meetings. For many helpful discussions I thank especially Douglas Chia (Soundboard Governance and Fellow at Rutgers Center for Corporate Law and Governance) and Nadira Narine (the Interfaith Center on Corporate Responsibility). In addition, I thank Alon Brav (Duke University), Chuck Callan (Broadridge), Jackie Cook (Morningstar), Paul Conn (Computershare), Kateryna Holland (University of Missouri), Rosemary Lally (Council of Institutional Investors), Alexander Lebow (Say Technologies), Sanford Lewis (Strategic Counsel on Corporate Accountability), Sophia Li (Rutgers), Nadya Malenko (University of Michigan), Ernst Maug (University of Mannheim), Patrick McGurn (Institutional Shareholder Services), Brad Stock (Union Pacific), Yishay Yafeh (Hebrew University), Benjamin Segal (Hebrew University), Cas Sydorowitz (Georgeson), and Kate Volkova (University of Melbourne), and seminar/conference participants of a virtual seminar (<https://www.youtube.com/watch?v=vjp6VcISqDE&feature=youtu.be>), the University of Technology Sydney, Yeshiva University, and the Virtual Shareholders Meeting Conference organized by the Institute for Law and Economics at the University of Pennsylvania, for many helpful comments and insights, and Yehuda Daum, Ori Haimovich, Hadar Grossman, Aharon Layosh, and Niv Mishan for their dedicated research assistance. I thank the Israel Science Foundation for generously supporting my research via grant number 264/20.

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.² This sentiment is conveyed by Michael Mayo, a shareholder participating in the 2019 JPMorgan Chase & Co shareholder meeting who stated: “I appreciate the access I have to management of the company, but I’m here today as a shareholder of JPMorgan shares. And the reason I do this is 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,³ 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 how the shift from in-person to virtual-only meetings affects shareholders’ voice.

On the one hand, the shift to a virtual-only shareholder meeting could potentially increase shareholders’ ability to use their voice (Fairfax, 2010), since online participation is substantially less costly than in-person participation, which frequently requires traveling (Boros, 2004). Thus, the shift can allow shareholders to “attend” many more meetings—and according to Broadridge’s CEO, indeed shareholders’ attendance in virtual meetings has increased in the virtual era.⁴ On the other hand, virtual, and especially 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’ voice and their ability to interact and challenge management (Boros, 2004).

² For retail investors shareholder meetings may be the only opportunity to interact with senior management and directors. Institutional investors, especially large funds and asset managers, have additional avenues to access management and directors.

³ E.g., Iliev and Lowry (2014) and Malenko and Shen (2016).

⁴ 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>.

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 and possibly directors. Figure 1 presents a visual depiction of each of these three sections via snapshots from Tesla's 2019 in-person shareholder meeting.

Following the outbreak of Covid-19, which led to severe restrictions on in-person gatherings, the number of virtual-only shareholder meetings (i.e., the only option for attending the meeting is virtually) increased approximately sevenfold. Thus, the Covid-19 outbreak can practically be viewed as an exogenous shock that increased dramatically the number of virtual-only shareholder meetings. The quasi-forced shift to virtual-only meetings allows examining how changing the format of the meeting alters the content and structure of the meeting, and whether a change occurred in the extent to which shareholders were able to make their voice be heard. I note that this change in the meeting format likely didn't occur due to firms' strategic preferences, but rather because it was almost impossible to hold an in-person shareholder meeting after the Covid-19 outbreak.

In the first analysis, I analyze all meetings for which transcripts are available if, in addition, the firm held an in-person shareholder meeting (or hybrid one, i.e., an in-person meeting that is also virtually broadcasted) in the pre-Covid era, and a virtual-only meeting in the post-Covid era (i.e., meetings held after the outbreak of Covid). Specifically, I code and analyze 250 transcripts and audio recordings held by 125 firms, i.e., two shareholder meetings per firm. When comparing the in-person shareholder meetings to the virtual-only meetings, I find significant differences: relative to in-person meetings, virtual-only meetings, are on average, 17% shorter (39.4 versus 32.7 minutes, respectively), allocate 16% less time to answering questions (10.7 versus 9 minutes, respectively), and allocate 23%

less time to answering each question (2.6 versus 2 minutes, respectively). These differences are robust in regressions controlling for standard variables, and include a firm fixed effect, and also in analyses that include a larger sample of 1,320 firms, i.e., all shareholder meetings for which complete transcripts and audio recordings are available for the July 1, 2018–June 30, 2020 period.

The above-noted figures demonstrate that communication is more extensive at in-person shareholder meetings, even when virtual-only meetings are not strategically selected. Additionally, the larger sample of 1,320 shareholder meetings coded reveals that virtual-only meetings are characterized by limited communication: these meetings last on average only 17.9 minutes, and only 34% of them address at least one question. To gain an initial insight as to what may explain the relative brevity of communication at virtual-only meetings, I distribute a questionnaire to a limited number of investors familiar with shareholder meetings. These investors convey mixed opinions with respect to whether virtual-only meetings are more efficient, but are quite clear that relative to in-person meetings, virtual-only meetings make it easier for firms to avoid devoting time to answering critical questions.

Thus, I investigate whether the new reality of virtual-only meetings is used strategically by firms, i.e., whether especially firms that face increased scrutiny by shareholders take actions to limit shareholders' voice. 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 are permitted to ask one question each (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. By contrast, in virtual-only meetings, questions are submitted by shareholders in a text box, frequently during the meeting, and firms can then decide which questions to address. Questions submitted at virtual-only meetings are almost never made public unless they are addressed at the shareholder meeting, and even the number of questions submitted is not disclosed.

To capture the selection process of the questions that are addressed, with the generous help of Mr. John Chevedden and Mr. James McRitchie (henceforth, “C&M”), two shareholders who for many years have been actively participating in shareholder meetings, I assemble a unique “Shareholder Questions Dataset.” This dataset records, starting soon after the Covid-19 outbreak, all of the successful and unsuccessful attempts of C&M to submit questions at virtual-only shareholder meetings, and the answers they received to each question they submitted. My goal in documenting the questions submitted by C&M is to capture data from a shareholder’s perspective 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 virtual-only shareholder meetings held by 89 firms. C&M ultimately submitted 390 questions, of which 142 were addressed.

Using the Shareholder Questions Dataset and the coded transcripts, I find that an identical or similar question was significantly less likely to be addressed by the company when shareholders’ votes (at the company level) were inconsistent with management recommendations, indicating that shareholders were contentious with management. This finding shows that precisely when shareholders disagree with management, management is more likely to ignore the questions shareholders submitted at virtual-only meetings, thereby limiting shareholders’ voice.

In the in-person setting, it is more challenging for firms to ignore shareholders’ questions when shareholders are visibly lined up in front of the microphone, and to select which questions are to be addressed, since firms do not know in advance what question each shareholder will ask. By contrast, since questions are submitted electronically at virtual-only shareholder meetings, firms are able to strategically select how many and which questions to address or, alternatively, ignore. Moreover, at an in-person meeting, shareholders can, and at times do, raise their voices to object to statements made by the firm. At virtual-only shareholder meetings, shareholders do not have this

possibility, since they are literally muted, and cannot vocally object if the firm selectively addresses questions.

Additionally, I find that that when shareholders' votes are inconsistent with management recommendations, firms are likely to substantially limit questions to a small range of topics—those for which a proposal was submitted at the same meeting. It is noteworthy that the method of limiting questions to proposals has become at least four times more common at virtual-only shareholder meetings, relative to in-person meetings, perhaps because shareholders are unable to protest this policy at a virtual-only meeting. Hence, this finding also implies that when shareholders are more critical of management, limitations on communication with shareholders are introduced, and that these limitations pertain to receiving an answer to a question submitted, or to a question that shareholders would potentially like to submit.

However, one may wonder whether the above-noted methods (i.e., ignoring shareholder questions and limiting questions to proposals) indeed limit communication between firms and shareholders. This question is somewhat challenging to answer since the number of questions submitted by all shareholders is not disclosed, although the number of questions actually addressed at the meeting is observable from the transcripts. My results suggest that the above-noted methods do limit shareholders' voice: when firms frequently ignored the questions C&M submitted, they were also likely to address a small number of questions at the shareholder meeting. This suggests that when firms address a small number of questions at the meeting it is, at least partially, because firms choose to ignore questions submitted by shareholders, and not because shareholders refrain from submitting questions. This conclusion is further strengthened by the unique setting of the virtual-only meetings examined in which management almost never knew that the questions submitted (and included in this study) were submitted by C&M. This mitigates the potential concern that firms attempted to ignore especially questions submitted by C&M.

Similarly, the results show that when firms limit questions to questions pertaining to proposals, the number of questions addressed, Q&A time, meeting time, and average time allocated to each question are all shorter. Shareholders can also control the content and structure of shareholder meetings in other ways. Specifically, I identify several tactics firms use to evade addressing shareholders' questions at virtual-only shareholder meetings. An example of such a tactic is when the firm claims that no additional questions have been submitted, whereas the questions collected in the Shareholder Questions Dataset indicate that this is simply not true, and that not all questions submitted have been addressed. When firms use tactics such as incorrectly stating that no additional questions have been submitted, the total Q&A time tends to decrease. Similar and even stronger results are found with respect to using non-Broadridge platforms to broadcast the meeting, i.e., platforms from which it is technically more difficult to submit questions. While these latter two methods are not found (in a statistically significant way), to be used strategically by firms, these new potential methods further allow firms to shape the content and structure of virtual-only shareholder meetings.

Since companies can more discreetly cherry-pick questions at virtual-only meetings, I examine which types of questions firms were especially likely to avoid addressing at such meetings. Firms were particularly likely to ignore questions included in the Shareholder Questions Dataset when these questions asked about the number of questions submitted by shareholders, or the number of shareholders (virtually) in attendance. This suggests that firms prefer to keep shareholders in the dark with respect to shareholders' participation and involvement in the shareholder meeting.

Finally, I address the possibility that briefer communication does not necessarily indicate that the quality of the meetings is lower, or that less meaningful information is communicated. To address this possibility, following Li, Maug, and Schwartz-Ziv (2021) who document large abnormal volume surrounding shareholder meetings, I examine how abnormal volume changes depending on

the content of the shareholder meeting. I show that as the time allocated to addressing shareholders' questions at virtual-only shareholder meetings increases, abnormal volume of such meetings is particularly high *after* the meeting. This result indicates that shareholders pay attention to the content of the Q&A session of the shareholder meeting, and that they use the information conveyed in this portion of the meeting for their trading decisions.

This paper is related to Brochet, Chychyla, and Ferri (2021) who also examine virtual shareholder meetings. They investigate only the pre-Covid period since they are interested in understanding whether firms strategically choose to hold virtual-only meetings. Fortunately, my study differs from their study in several ways. First, I focus on the question of whether firms that were forced to hold virtual meetings (due to Covid-19) took advantage of this new format and attempted to strategically limit shareholders' voice. Additionally, Brochet, Chychyla, and Ferri (2021) use different methods to capture the content of the meeting. They use tools from the textual analysis world (e.g., measuring the extent of negative tone), whereas I manually code the transcripts of meetings, and therefore capture different types of variables (e.g., were questions restricted to those pertaining to proposals). Additionally, 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. Thus, each of these studies investigates a different and unique angle of virtual-only meetings. Nili and Shaner (2020) also provide a comprehensive discussion on virtual shareholder meetings, which is somewhat more legally oriented.

Recently, Proxy Insight (2020) surveyed investors and found that only 9.5% of them stated that they expect shareholder meetings to go back to the traditional in-person format. The new era of virtual-only shareholder meetings presents challenges, but also offers new opportunities to enhance communication between firms and shareholders. I conclude by making several policy recommendations that aim to improve communication between shareholders and firms at virtual-only

shareholder meetings: (1) Require making audio recordings/transcripts public to ensure transparency of the information shared at shareholder meetings. (2) Require complete disclosure of all questions submitted to shareholder meetings and transparency of the question-selection mechanism. (3) Require disclosure of the number of shareholders who logged into the meeting. (4) Ease the process of submitting questions on non-Broadridge platforms.

To summarize, this paper quite uniquely analyzes transcripts and recordings of shareholder meetings. Combined with unique data assembled in the Shareholder Questions Dataset, the paper, in my view, makes several revelations and contributions: First, in the virtual-only shareholder meeting setting, less time is allocated to addressing shareholders' concerns. Second, firms that face increased scrutiny by shareholders are those that strategically choose methods that limit shareholders' voice, and specifically methods that limit shareholders' ability to receive answers to questions. Third, the methods firms choose for designing the shareholder meeting, including the methods used strategically, affect the content and structure of the shareholder meeting. Fourth, the content of the meetings, and specifically the amount of time allocated to answering questions, is followed by large abnormal volume, indicating that investors use the information disclosed in this portion of the meetings for their trading decisions. Finally, the paper proposes policy recommendations that can enhance communication between firms and shareholders at virtual shareholder meetings.

This paper will, hopefully, be of interest to researchers and practitioners active in the area of shareholder meetings. In addition, in an era in which the world has shifted to online communication, the paper may also be of interest to a wider audience that is interested in understanding how virtual interactions differ from in-person ones.

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 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. Thus, virtual meetings can have both advantages and disadvantages.

With respect to shareholder meetings, Boros (2004) argues that face-to-face accountability, deliberation, and confrontation exist to a greater extent at in-person meetings, and that these elements confer a valuable advantage to in-person meetings over virtual meetings. Similarly, Zetzsche (2005) also highlights that communication challenges exist for virtual shareholder meetings. On the other hand, 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. These issues are further exacerbated when shareholder meetings are held in a virtual-only format.

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 firm and/or shareholders. Proposals submitted by shareholders 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 faced harsh criticism (e.g., Home Depot in 2006).⁵ Moreover, in some countries like Germany and Australia, the question and answer portion of the meeting is mandatory.⁶ The Q&A session may take place after the official adjournment of the shareholder meeting, but while the participants are still present.⁷

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

Every firm is required to hold a shareholder 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 both strongly objected to holding virtual-only shareholder meetings because, they argued, virtual-only meetings limit shareholders' ability to have a genuine opportunity to connect with and express concerns or 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

⁵ See article in *New York Times*, <https://www.nytimes.com/2006/05/27/business/27nocera.html>

⁶ 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).

⁷ 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.

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/>

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 legitimization to move their shareholder meetings to the virtual-only arena. The majority of the states that did not allow firms to hold virtual-only shareholder meetings prior to 2020 did allow for such meetings in the 2020 proxy season due to Covid-19 (Broadridge, 2020; Zetsche, 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 changed their recommendations regarding virtual-only shareholder meetings, and supported holding virtual-only shareholder meetings for the 2020 proxy season.¹¹ As Figure 2 shows, 85% 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 85% of the shareholder meetings in 2020.

Thus, following the Covid-19 outbreak, firms moved their shareholder meetings from the physical arena to the virtual-only one. Indeed, 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

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>.

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.

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, 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 held these meetings in an audio-only format (that did not include a video),¹² thereby further limiting the possible interaction between participating individuals.

Given the setting described above, the subsequent analysis will investigate whether certain methods used at in virtual-only meetings limit the communication with shareholders and limit their voice, and whether these methods are used strategically, i.e., specifically when management faces scrutiny by shareholders.

3. Analyzing transcripts of shareholder meetings

To compare in-person shareholder meetings (which include in my analysis hybrid meetings) to virtual-only shareholder meetings, I manually code transcripts and audio recordings of shareholder meetings. The approach to manually analyzing transcripts follows some of my prior work (Schwartz-Ziv and Weisbach, 2013; Schwartz-Ziv, 2017), which follows the content analysis methodology (as described in these prior papers). I obtained transcripts and audio recordings of the shareholder meetings from

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>

Thomson Reuters. Using these transcripts and the recordings of shareholder meetings, I code various metrics pertaining to the content of shareholder meetings.

Table 1 reports summary statistics on the structure and content of shareholder meetings. Panel A of this table includes only firms that held an in-person meeting before Covid, and a virtual-only meeting after Covid. The reason I first focus on these meetings is because firms that shifted to a virtual-only format after Covid likely did not do so for strategic reasons, but out of necessity. Thus, by focusing on this subset, I can observe how the format of the meetings, even when no likely strategic intentions exist, alters the structure and content of the meetings. Specifically, this panel includes shareholder meetings for which complete transcripts and recordings are available for two regular (i.e., annual non-special) shareholder meetings that were both held between July 1, 2018 and June 30, 2020, if, additionally, those firms held an in-person shareholder meeting before the Covid-19 outbreak (i.e., through March 15, 2020), and a virtual-only meeting after the Covid-19 outbreak (i.e., starting from March 16, 2020). The sample includes 250 shareholder meetings held by 125 firms, i.e., two meetings per firm.

The coding documents substantial differences between in-person and virtual-only shareholder meetings. As Panel A of Table 1 reports, in comparison to the in-person shareholder meetings, the virtual-only shareholder meetings are on average 17% shorter in terms of the total meeting time (39.4 and 32.7 minutes, respectively). A 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 the 1% level, as reported in column 4 of Table 1.

Thus, these results indicate that, although the post-Covid virtual-only shareholder meetings were held in a period in which much uncertainty prevailed due to Covid-19, and thus more communication between firms and shareholders could have been expected, overall, the virtual-only shareholder meetings were shorter than the in-person meetings. Additionally, and similarly, in

comparison to the in-person shareholder meetings, the virtual-only shareholder meetings allocated on average 33% less time to providing shareholders with a business update on their business activity; however, the average amount of time allocated to presenting proposals at virtual-only and in-person meetings was very similar.¹³

As for the Q&A session, in comparison to the in-person shareholder meetings, the virtual-only shareholder meetings allocated on average 16% less time to answering shareholders' questions (10.7 and 9 minutes, respectively, significant at the 10% level). The average number of questions addressed at in-person and virtual-only meetings is almost identical, 4.9 and 4.7 questions, respectively (the difference is insignificant). Finally, Table 1 reports the average time allocated to addressing each question *Average time allocated to each question*. This figure is estimated by dividing the total number of minutes allocated 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 allocated on average 23% less time to each question, the difference being significant at the 1% level.

In the Panel A sample, I include only firms for which complete audio recordings and transcripts are available for both the 2019 and 2020 proxy seasons, to allow comparing changes for a given firm depending on the format of the meeting. This strategy may raise concerns of a selection bias. However, most likely, firms that were more open to extensive communication with shareholders were those that quasi-voluntarily shared the content of their 2019 in-person shareholder meetings when this was not common practice.¹⁴ Nevertheless, the recordings and transcripts reveal that the

¹³ Since presenting proposals essentially entails reading proposals that were all submitted before the meeting, and before the Covid-19 outbreak, and quite limited discretion exists on the content of this portion of the meeting, perhaps this finding is not surprising. All proposals were submitted before the Covid-19 outbreak due to the requirement that shareholder proposals be submitted 120 trading days before the release of the firm's proxy statement to shareholders (this requirement is specified here <https://www.sec.gov/divisions/corpfin/rule-14a-8.pdf>). The sample included in this paper ends on June 30, 2020, and thus 120 trading days before that date was before the Covid-19 outbreak.

¹⁴ 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

extent of communication with shareholders decreased in the (post-Covid) virtual-only meetings relative to the (pre-Covid) in-person meetings. Thus, the results indicate that even firms that had quasi-voluntarily disclosed the (pre-Covid) transcripts and recordings of in-person shareholder meetings, limited communication with shareholders when meetings moved to the virtual-only arena.

In Panel B of Table 1, I essentially repeat the analysis of Panel A of Table 1, but include all 1,320 meetings (245 in-person and 1,075 virtual-only) for which complete transcripts and recordings are available for the July 1, 2018 to June 30, 2020 period. This panel reports substantially starker differences; e.g., the total Q&A time (total meeting time) of virtual-only meetings is 75% (54%) shorter, compared to 16% (17%) reported in Panel A. However, these larger differences reported in Panel B of Table 1 are likely due, at least partly, to the differences in the size of the firms included in Panel B, especially the firms that held virtual-only meetings. Specifically, while 72% of the firms included in Panel A are firms included in the S&P 500 index, the comparable figure for the firms included in Panel B is only 64% for those that held in-person meetings, and only 20% for those that held virtual-only meetings.

Given the above-noted figures, it should perhaps come as no surprise that the average meeting time for the virtual-only meeting included in Panel B of Table 1 was only 17.9 minutes, only 3 minutes were allocated to the Q&A session, and only 34% of the firms addressed at least one question, i.e., the average firm did not address even one shareholder question. Put differently, communication in the average virtual-only meeting is severely limited.

Appendix A reports a regression analysis that is similar in spirit to the analysis reported in Panels A and B of Table 1, but includes standard control variables. Appendix A demonstrates once

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.

again that the length of the meeting, the Q&A time, and the average time allocated to each question are consistently and significantly shorter in virtual-only meetings relative to in-person meetings.

One interpretation of the findings presented above is that virtual-only meetings are more efficient than in-person meetings (van der Krans, 2007), and thus the discussions can be more concise. A second interpretation is that fewer and less meaningful interactions take place at virtual-only meetings (e.g., Iwasaki, 2020; ShareAction 2021), and that firms are more likely to ignore shareholders' questions (JD Supra, 2020), especially those that are critical of management. To get an initial insight on these two possibilities, I distribute a short questionnaire to investors who have been involved for many years in shareholder meetings. I do this with the generous help of Ms. Rosemary Lally from the Council of Institutional Investors and Ms. Nadira Nadine from the Interfaith Center on Corporate Responsibility.¹⁵ To date, thirteen investors have responded to the questionnaire, but reminders on the questionnaires will be sent several more times, and these are expected further to increase the number of responses.

The questionnaire includes two questions. The first one is: "On a scale from 1 to 10, to what extent do you believe that virtual-only 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)." The average value for this response was 6, with a S.D. of 3.6. Thus, this result indicates that shareholders had mixed opinions on whether virtual-only meetings are more efficient. The second question asked was: "On a scale from 1 to 10, to what extent do you believe it is easier for companies to avoid addressing critical questions in virtual-only meetings relative to in-person meetings? (1=not easier to avoid critical questions in virtual-only

¹⁵ The Council of Institutional Investors members are U.S.-based asset owners or issuers and include more than 135 public pension, corporate and labor funds, and foundations and endowments with more than \$4 trillion in combined assets under management. The Interfaith Center on Corporate Responsibility comprises a coalition of over 300 global institutional investors that manage more than \$500 billion.

meetings, 10=easier to avoid critical questions in virtual-only meetings).” Here the feedback was clearer: the average value of this response was 8.6, and the S.D. was 1.95. Thus, shareholders conveyed a concern that firms can more easily cherry-pick questions at virtual-only meetings. The analyses in Section 5.1 address this concern.

Based on pre-Covid transcripts, Brochet, Chychyla, and Ferri (2021) also document that communication is briefer at virtual-only meetings than at in-person meetings; however, as these authors note, in the pre-Covid period, firms may have strategically chosen to hold virtual-only meetings. This possibility is not the case when comparing the pre- and post-Covid settings, since the virtual-only shareholder meetings in the post-Covid period took place in the virtual-only format due to an exogenous shock, namely, the outbreak of Covid-19. Thus, the Covid-19 outbreak allows for a cleaner identification.

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 1 I compare the content of meetings of firms that held a virtual-only meeting before and also after Covid-19. While this sample is limited and includes only 18 firms, Panel C demonstrates that the latter firms *increased* or maintained similar communication in the post-Covid shareholder meetings. Thus, the outbreak of Covid-19 per se does not seem to have led to more limited communication.

In sum, Table 1 and Appendix A consistently show that, overall, firms allocated less time to addressing shareholders’ concerns at virtual-only meetings than at in-person meetings, even when the shift to virtual-only meetings was not strategic.

4. Methods for designing the content and structure of virtual-only shareholder meetings

The results thus far demonstrate that even firms that did not schedule virtual-only meetings

for strategic reasons had more limited communication with shareholders. Yet, the virtual-only setting offers new methods that allow firms to have more control in designing the content and structure of shareholder meetings. Firms may make use of these same methods to strategically limit shareholders' voice when it is convenient for them to do so. To address these possibilities, I survey here the methods firms use to design virtual-only meetings. In subsequent sections I analyze how these methods shape the content and structure of virtual-only meetings, and whether they are used by firms strategically.

4.1. Shareholders' attempts to submit questions

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. With their help, I constructed the "Shareholder Questions Dataset," a dataset that documents all their attempts to submit a question at virtual-only shareholder meetings held between April 20 and June 30, 2020. This period corresponds to the calendar weeks 16–26, which, as Figure 2 demonstrates, are the weeks during which approximately 85% of all shareholder meetings are held. While I am extremely grateful to C&M for providing me with the questions they submitted throughout the 2020 proxy season, 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 which questions firms choose to address at their meetings, and whether discrepancies exist between what firms report and the actions they actually take.

As Table 2 specifies, the Shareholder Questions Dataset documents attempts to submit questions at shareholder meetings of 89 firms (these firms are listed in Appendix B). C&M were able

to successfully submit a question to 60 firms, while for 29 firms they were not able to submit a question or gave up in the attempt (I elaborate on these instances in Section 4.3). For the 60 firms to which they were able to submit a question, C&M submitted in aggregate 390 questions. Appendix C details the questions C&M submitted to a sample of 5 of the 60 firms, and the responses they received to each question. Of these 60 firms, 22 firms (36.6%) used some tactic that may potentially limit shareholders' voice, as will be detailed in Section 4.2 and in Appendix D.

Ultimately, of the 390 questions C&M submitted, 142 (36%) were answered. Taken together, these figures show that conditional on C&M succeeding to submit a question, most questions were not addressed, and half the firms completely ignored the questions C&M submitted. While these figures may not represent other shareholders' success rates with respect to submitting questions, they do provide perhaps the first available figures on the extent to which shareholders are able to make their voice be heard at virtual-only meetings. Moreover, since management almost never knows the identity of the shareholder submitting a question at virtual-only meetings, this decreases the likelihood that firms attempted to ignore especially questions submitted by C&M.

4.2. Tactics potentially limiting communication with shareholders

In this section I focus on the firms to which C&M were able to submit a question, and describe obstacles C&M, and shareholders in general, encountered when attempting to receive a response to a question submitted. I identify five tactics firms used that may assist firms in evading answering shareholders' questions. Appendix D specifies each tactic and provides detailed examples of firms that have used each of these tactics.

Creating a misleading portrayal of a lack of additional questions. For example, eBay addressed two questions C&M had submitted and then the firm representative stated: "At this point, there are no further questions, so we will now conclude the question-and-answer portion of our meeting."

However, the firm ignored 6 of the 8 questions C&M had submitted, and thus this statement did not reflect the reality of the questions submitted and left unanswered.

Announcing only at the meeting that only questions related to proposals will be addressed. Shareholders submit questions (usually via a text box where questions are entered; see Figure 5), and are informed only at some point thereafter that the firm will only address questions that are directly related to proposals. Thus, 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. In the examples included in Appendix D, this Q&A policy is not disclosed in any other place (e.g., the proxy statement). Moreover, at the meeting, no justification for this policy is given.

Promising to provide shareholders with answers to unanswered questions but not following through. By this tactic, firms promise to get back to shareholders with answers to unanswered questions, but they do not follow through. For example, at AT&T's meeting, at the end of the Q&A session the firm stated that it would "answer every one of your questions that have been submitted," but they did not do so.¹⁶

Imposing an early deadline for submitting questions. By this tactic, firms impose an early deadline for submitting questions. For example, Eastman Chemical required that questions for the shareholder meeting be submitted seven days prior to the meeting. Such an early deadline is unusual, and thus, shareholders are likely to miss it.

¹⁶ In correspondence I had with the firm on this statement, they clarified that they were not planning to publish the questions and answers. The firm representative did write: "Please share your question with me and I will reply." However, this type of communication can be done all year round, does not allow for the input of the CEO and the board, and is not related to the proceedings of the shareholder meeting.

It is noteworthy that the sample also includes several firms—Alcoa, American Airlines, General Motors, and Sonoco—that promised to get back to shareholders on unanswered questions and followed through. For example, General Motors posted after the meeting a 7-page document in which they answered questions not addressed at the meeting, including 12 questions C&M submitted that were not addressed at the meeting. It can be challenging to find these Q&As on firms' websites, and it is not clear how the visibility of Q&As posted on a firm's website compares to a Q&A session occurring at a shareholder meeting. Nevertheless, this method is certainly friendlier toward shareholders than not addressing shareholders' questions in any way.

Stating that questions will be answered in an allotted period of time, but reducing that time and thus creating the impression that all questions have been answered. By this tactic, a firm states that questions will be answered in an allotted period of time, but ultimately spends substantially less time on the Q&A session, thereby giving the impression that all questions have been addressed, when this is not the case. For example, International Paper stated that the firm would dedicate up to 15 minutes to Q&A, but spent in total only one minute on answering two questions, while ignoring 7 of the 9 questions C&M had submitted.

4.3. Platform used to broadcast meetings

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.¹⁷ Broadridge manages the largest number of virtual-shareholder meetings of any platform.¹⁸

In the 2020 proxy season, almost all firms allowed only those 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.¹⁹ 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

¹⁷ 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.

¹⁸ 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.

¹⁹ See SEC Recommendation, available at <https://www.sec.gov/spotlight/investor-advisory-committee-2012/recommendation-investor-as-owner-subcommittee-proxy-plumbing.pdf>

account number, the number of shares each investor holds in each firm, and more. By comparison, non-Broadridge platforms do not have this information, and thus, to be identified as a shareholder, shareholders were forced to go through a tedious and cumbersome process detailed in Appendix E. Given this setting, it is probably not surprising that of the 29 firms reported in Table 2 to which C&M were unable to submit questions, 28 were firms that broadcasted meetings via non-Broadridge platforms.

However, the choice of platform was not necessarily intentional in the 2020 proxy season. In early 2020, the entire world was required to adjust overnight to a new Covid-induced virtual reality, and firms were not necessarily able to work with their preferred platform.²⁰ Additionally, following the outcry of investors as reflected in the Rutgers Center for Corporate Law and Governance et al. (2020), and possibly even following the findings of earlier versions of this paper, some of the access issues described in Appendix E are likely to be at least partially resolved during the 2021 proxy season (as described in memo written on February 2, 2021 by the Council of Institutional Investors and the Society of Corporate Governance). Nevertheless, analyzing the challenges shareholders encountered in the 2020 proxy season is important, since similar challenges may creatively be introduced in different variations in the future.

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

5.1. Do firms strategically use certain methods to limit 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

²⁰ 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.

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 and Lou (2019) show that at earnings calls, certain firms strategically call upon analysts who tend to be friendlier toward management. Following these studies, I next investigate whether firms used the virtual-only setting to strategically design more limited communication with shareholders especially when firms face shareholders' scrutiny.

This relation between shareholders' scrutiny and methods firms use to potentially limit shareholders' voice is estimated using the following model:

$$(1) \text{ Method}_{im/q} = \beta_1 * \text{Fraction of votes cast with management}_m + \beta_2 * \text{Controls}_{km}$$

To measure whether firms may have a motivation to introduce methods that limit shareholders' voice, I focus on the variable *Fraction of votes cast with management_m*, which measures the average fraction of votes cast that are consistent with management recommendations in meeting *m*, across all proposals voted upon at the meeting. 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 final or projected outcomes of the vote, and they frequently announce it at the shareholder meeting. Accordingly, when management attends the shareholder meeting, the *Fraction of votes cast with management_m* is perhaps the most up-to-date information that management has on the extent to which shareholders are supportive of management. The vector *Controls_{km}* controls for the variables *Ln marketcap*, *Log of book asset*, *Abnormal return (annual)*, and *ROA*, which are defined in the glossary of variables. *Method_{im/q}* is a vector that includes four (*i*) alternating methods potentially used by a firm in meeting *m*, or alternatively, with respect to question *q* (as defined below for each specification). All specifications are limited to virtual-

only meetings for which complete transcripts and recordings are available.

In Model 1 of Table 3 the method examined as the dependent variable is *Question addressed indicator*, which is an indicator equal to one if the firm addressed the question submitted by C&M, and zero otherwise. This specification is conducted at the question level, and includes a question category fixed effect that controls for the type of question addressed (these categories are further discussed with respect to Table 5).

Since Model 1 includes question category fixed effects, 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 to which shareholders voted consistently with management recommendation. According to Model 1, if the average frequency with which shareholders vote consistently with the management's recommendation increases by one standard deviation (i.e., 9%), the likelihood that a question will be answered by the firm increases by 8.4% (0.09×0.942), and this estimate is significant at the 1% level. Put differently, in firms in which shareholders' votes are unsupportive of management, indicating contention between shareholders and management, firms are significantly less likely to answer 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. 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.²¹ This is not an option at virtual-only meetings. Given the latter setting which limits shareholders' ability to

²¹ I thank Patrick McGurn for pointing this out.

protest against management at virtual-only shareholder meetings, perhaps it is not surprising that precisely when shareholders' votes are unsupportive of management, firms are more likely to ignore questions shareholders submitted at virtual-only meetings, i.e., limit shareholders' voice.

In Column 2 the method examined is *Questions limited to proposals*, which is an indicator equal to one if the firm limited the questions it was willing to answer to questions related directly to the proposals submitted by shareholders. This variable is one of the five tactics identified in Section 4.2 as a tactic that makes it challenging for shareholders to receive an answer to a question. Since this variable can be documented based on the statements made in the transcripts, and regardless of C&M's actions, I expand the analysis of this variable beyond those firms for which C&M attempted to submit a question, and document this variable for all companies for which transcripts are available. As noted in Section 4.2, this policy severely limits the topics on which shareholders are able to receive an answer to a question they submitted. 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.

Admittedly, this method could also be implemented at in-person meetings, and is not necessarily unique to virtual-only meetings. However, I observe that the use of this method jumps dramatically at virtual-only meetings relative to in-person meetings: in the sample of firms included in Panel A of Table 1, i.e., firms that held an in-person meeting before Covid-19, and a virtual-only meeting after Covid-19, this method has become approximately four times more common and increases from 0.82% to 3.31%, the difference being significant at the 5% level in a paired t-test (not reported). Moreover, in the sample included in Panel B of Table 1, i.e., all firms for which complete transcripts are available for a meeting held between July 1, 2018–July 30, 2020, the frequency of this method increases by 5.5 times, from 1.75% for in-person meetings to 9.71% for virtual-only meetings, the difference being significant at the 1% level in a regression model parallel to that reported in Panel

B of Table AI (not reported). Once again, at virtual-only meetings shareholders are unable to protest against limiting questions to topics related to proposals, and perhaps for this reason this method has become substantially more common at virtual-only meetings.

Thus, limiting questions to topics related to proposals is significantly more common in virtual-only meetings (perhaps because shareholders cannot oppose this policy), and therefore warrants special attention in that context of virtual-only meetings. Column 2, which is a specification at the company level, estimates that if the average frequency with which shareholders vote inconsistently with management recommendation increases by one S.D., the likelihood that questions are limited to proposals increases by 4.3% (0.09×0.4793), and this estimate is significant at the 5% level. 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 the method examined is *Tactic used to avoid addressing shareholders' questions*, which is an indicator that equals one if the firm used one of the five tactics specified in Section 4.2 and zero otherwise. Column 3 does not report a significant relation between *Fraction of votes cast with management* and the use of one of the tactics described above, albeit the direction of the coefficient *Tactic used to avoid addressing shareholders' questions* indicates that firms in which shareholders are less supportive of management are also those that use such tactics. However, because these specifications are at the company level, and confined to companies to which C&M attempted to submit a question, and for which transcripts are available, the number of observations is limited, which likely makes it challenging to obtain significant results. I nevertheless report this analysis because the five tactics included in Section 4.2 illustrate different types of challenges shareholders may encounter when attempting to make their voice be heard at shareholder meetings, and perhaps future studies can further investigate these tactics.

In Column 4 the method examined is whether the *Broadridge platform* was chosen by the firm to broadcast the shareholder meeting. This analysis includes all firms for which transcripts are available. As described above in Section 4.3, using a non-Broadridge platform made it substantially more difficult for shareholders to submit a question. Column 4, which reports a specification conducted at the meeting level, does not document a significant relation between *Fraction of votes cast with management* and using the *Broadridge platform*, suggesting that the choice of the platform was not a strategic choice.

Taken together, the results demonstrate that when shareholders are relatively unsupportive of management, firms use certain methods that limit shareholders' voice, and these methods are focused on the ability of shareholders to receive a response to a question they submitted, or to one they would potentially like to submit. Specifically, these methods include firms ignoring questions submitted by shareholders, and explicitly limiting the scope of topics regarding which the firm is willing to answer questions.

I note that the relation between the performance measures and the methods used as dependent variables is inconsistent. For example, Columns 1 and 4 show that firms with stronger performance (measured by abnormal return and ROA, respectively) are those that are likely to use methods that limit shareholders' voice. By contrast, Column 2 shows the opposite relation (where performance is measured in terms of ROA). Indeed, past performance is probably not the only factor investors take into account when assessing the extent to which they are satisfied with management. The extent to which shareholders vote consistently with management recommendation likely measures this more directly since the latter variable is benchmarked relative to the actions that management recommends that shareholders take.

In unreported specifications, I repeat the analyses reported in Columns 2 and 4 of Table 3 (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 strategically chose to hold a virtual-only meeting before the Covid-19 outbreak.

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 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 6 displays a screenshot of all questions submitted. The second company is Tesla. Panel B of Figure 6 demonstrates Tesla's attempt to increase shareholders' voice at its 2020 virtual-only 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.

5.2. Do the methods firms choose shape the content and structure of the 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. Thus, in this section I address the question of whether the methods chosen by firms for designing shareholder meetings, including those chosen strategically, enable firms to design the content and structure of virtual-only shareholder meetings. The following model is estimated to address this question:

$$(2) \text{ Variable measuring meeting structure}_{jm} = \beta_1 * \text{Method}_{im/q} + \beta_2 * \text{Controls}_{km}$$

The vector *Variable measuring meeting structure_{jm}* includes the following four (*j*) variables, obtained from transcripts and recordings of shareholder meetings, that measure the content or structure of shareholder meeting *m*: *Number of questions addressed at meeting*, *Total Q&A time*, *Length of total meeting*, and *Average time allocated to each question*. All specifications include the vector of *Controls_{km}* which comprises (*k*) four controls for meeting *m*, namely, *Ln marketcap*, *Log of book asset*, *Abnormal return (annual)*, and *ROA*, but for brevity these are not reported. All specifications are limited to virtual-only meetings for which complete transcripts and recordings of meetings are available. *Method_{im/q}* is defined as in the previous section. All variables are defined in the Glossary of Variables.

Overall, Table 4 shows that firms can choose to use methods that limit the extent of communication with shareholders and shareholders' ability to make their voice be heard. For example, Row 1 of Table 4 focuses on the method *Question addressed indicator*. The goal of this analysis is to understand whether, in general, firms that frequently ignore questions submitted by shareholders also have more limited communication with shareholders at shareholder meetings. 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 variable *Question addressed indicator*, which is an indicator equal to one if the firm addressed the question submitted by C&M, and zero otherwise.

The Row 1 specification is conducted at the question level, and includes a question category fixed effect that controls for the type of question addressed (specified in Table 5). As Row 1, Column 1 reports, the specification estimates that when a question submitted by C&M was addressed at the meeting (i.e., *Question addressed indicator* = 1), on average, 4.59 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. 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 with which firms address questions is relatively low, it is, at least partially, because they choose to ignore questions submitted by shareholders, and not because shareholders refrain from submitting questions. Note, in this context, that in the 2020 proxy season setting that was examined in this study, management almost never knew that questions submitted by C&M were submitted by them. This suggests that the relative infrequency with which their questions were addressed reflects a general policy toward shareholders rather than a special attitude toward C&M.

Specifically, in the period examined, most companies did not offer shareholders a field to self-identify when submitting a question for a virtual-only meeting, and even for companies that did include such a field, completing this field was not mandatory. Of the 390 questions included in the Shareholder Questions Dataset, 309 were submitted by Chevedden and he never identified himself. As for McRitchie, who submitted the other 81 questions, he did not document when he did self-identify, but estimates that only in 30% of the meetings he attended shareholders were asked to identify themselves, and that in 60% of those he indeed did so. Since he submitted his 81 questions at a total of 21 shareholder meetings, I estimate that he identified himself with regard to 14.5 questions ($21 \times 30\% \times 60\% \times (81/21)$). Thus, C&M did not self-identify for approximately 96.2% $((390-14.5)/390)$ of the questions submitted. Hence, since C&M rarely self-identified, this mitigates the potential concern that firms attempted to ignore questions submitted by C&M in particular.

Row 1, Column 2 also documents that if the firm addressed a question submitted by C&M, the total Q&A time was 2.98 minutes longer, further demonstrating more extensive communication between firms and shareholders when C&M's questions were addressed. However, there seems to be

a tradeoff between the number of questions addressed at the meeting and the average time allocated to addressing each question: firms that addressed a question submitted by C&M allocated on average one-third of a minute less to addressing each question.

In Row 2, the method examined is *Questions limited to proposals*, and the analysis is conducted at the meeting level. Row 2 of Table 4 shows that firms that limit their questions to proposals addressed on average 1.3 fewer questions, allocated 2.51 fewer minutes to Q&A, and their overall meeting time was 0.085 minutes shorter (all these differences are significant at the 1% level). Relative to the mean values of these variables (1.6, 3, and 17.9, respectively, as reported in Panel B of Table 1), these figures represent a decrease of 81%, 83%, 0.47%, which reflect a substantial economic magnitude. These results demonstrate that limiting questions to proposals, which has become a popular method for 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 *Tactic used to avoid addressing shareholders' questions*, which is an indicator that equals one if the firm used one of the five tactics specified in Section 4.2 and zero otherwise; the analysis is conducted at the meeting level. Row 3, Column 2 estimates, at the firm level, that if a firm uses one of these five tactics, the total Q&A time is 5.6 minutes shorter. This magnitude is very large, given that the average Q&A time of virtual-only meetings is 3 minutes (see Panel B of Table 1). Nevertheless, I note that this relation is significant only at the 10% level (the t-statistic is equal to 1.94), likely due to the limited number of observations.

Finally, in Row 4 of Table 4 the method examined is the use of the *Broadridge Platform* from which it is easier for shareholders to submit questions. Row 4 documents that meetings broadcasted on the Broadridge platform were, on average, likely to address an additional 0.98 question (Column 1), and allocate an additional 1.3 minutes to the Q&A session (Column 2). Both these figures are significant at the 1% level, and they represent an increase of 61% and 43%, respectively, relative to

the mean values of these variables. Additionally, firms choosing Broadridge allocated, on average, an additional 0.056 minute to each question (Column 4), which suggests that these firms were somewhat more oriented toward providing shareholders with detailed information. Thus, this method too can shape the extent of communication between the firm and the shareholders, and the type of content included in the meeting.

In unreported specifications, I repeat the analysis reported in Rows 2 and 4 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 strategically choose to hold a virtual-only meeting. Rather, once virtual-only meetings become common practice, using the simple methods described above which were not possible/common at in-person meetings, companies have the ability 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. Other methods can also lead to similar outcomes, but these methods are not necessarily used strategically by firms.

5.3. Which type of questions are addressed?

Following the finding in Table 3 that firms are less likely to address shareholders' questions when shareholders' votes are inconsistent with management recommendation, 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 to one of 18 topics. Fortunately, C&M frequently submitted the same, or very similar questions, to different firms, which simplifies the classification process. In Table 5, I report the average frequency with which questions submitted by C&M were addressed by

firms (Column 1) and the number of questions submitted for each category (Column 2).

In addition, I estimate the specification:

$$(3) \text{ Question addressed indicator}_q = \beta_1 * \text{Topic}_i + \beta_2 * \text{Meeting fixed effect},$$

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 in a particular meeting, questions on certain topics were less likely to be addressed. As Column 1 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 18%. A somewhat related topic on which they also received relatively low response rates (24%) was “Shareholders’ attendance,” i.e., the number of virtual participants in attendance at virtual-only meetings. As indicated in Column 3, the coefficient for *Topic* is significant at the 10% level for both of these variables, which is quite reasonable given the sample size and the number of questions included in each of these categories.

Thus, Table 5 implies that firms are especially reluctant to share information on the involvement of shareholders in shareholder meetings, and that their response rate on these topics is particularly low.

6. Is the content of shareholder meetings related to post-meeting trading?

Perhaps the content of shareholder meetings is of no importance, and thus there is not much justification for analyzing the content of shareholder meetings. To address this possibility, following Li, Maug, and Schwartz-Ziv (2021) who show that large abnormal volume exists on days around shareholder meetings, I examine whether the content of the shareholder meeting is related to large abnormal volume. My motivation for examining abnormal volume is to understand whether the

content of the meeting is sufficiently meaningful to investors to catalyze trading. In Table 6, which reports this analysis, the following model is estimated:

$$(4) \text{ } AbnormalVolume_{dm} = \beta_1 * TotalQ\&A\ time_m + \beta_2 * Total\ business\ update\ time_m + \beta_3 * Total\ business\ update\ time_m + \beta_4 * Controls_{km},$$

where $Abnormal\ volume_m$ on day d for meeting m is estimated as the “(daily volume/average daily volume during pre-voting period) – 1,” and the pre-voting period is defined as the [-252, -21] window before the meeting date. As detailed in Li, Maug, and Schwartz-Ziv (2021), this definition follows a long literature that examines abnormal volume around unusual events. The specifications include a vector of $Controls_{km}$ that is comprised of $Ln\ marketcap$, $Log\ of\ book\ asset$, $Abnormal\ return\ (annual)$, and ROA , but for brevity these are not reported.

In Panels A and B of Table 6, each pair of columns is confined to a quasi-symmetric window. For example, Column 1 is confined to the [-5, -1] window around the meeting, whereas Column 2 is confined to the [0, +5] window. As the columns progress, the length of the windows increases. All even-numbered columns focus on the pre-meeting period, while all odd-numbered columns focus on the post-meeting period. Panel A of Table 6 is limited to virtual-only meetings, while Panel B is limited to in-person meetings. I examine virtual-only meetings separately from in-person meetings since the exposure of investors to the content of the meeting may differ depending on the format of the meeting.

Panel A of Table 6 demonstrates two interesting patterns. First, the magnitude of the coefficient $Total\ Q\&A\ time$ is always larger in the post-meeting period relative to the pre-meeting period. For example, in Column 6, the coefficient for $Total\ Q\&A\ time$ in the [0, 15] window is 0.204, which is approximately three times larger than the 0.071 coefficient reported in Column 5 for this variable during the [-15, -1] pre-meeting window. The chi-squared test reported at the bottom of Column 6 indicates that the difference between these two coefficients is significant at the 5% level (as

indicated by the chi-square that is equal to 4.61).

Second, as the length of the window increases, the magnitudes of the even-numbered coefficients for the variable *Total Q&A time* gradually decrease. For example, in Column 2 this coefficient is equal to 0.312 for the [0, 5] period, while in Column 6 it is 0.204 for the [0, 15] period. These decreasing magnitudes demonstrate that the content of the Q&A session is particularly related to large and unusual trading in the days just following the meeting, and gradually subsides thereafter. Admittedly, the coefficients for the post-meeting windows are only significant starting from the [0, +10] window, i.e., in Columns 4, 6, 8, and 10, since these specifications include an increasingly larger number of observations. Nevertheless, the pattern pointed out above suggests that the information revealed in the Q&A session is especially meaningful to investors immediately following the shareholder meeting.

To demonstrate the magnitude reported in Column 6, consider a one s.d. increase in *Total Q&A time*, which is equal to 9.1 minutes. According to model 6, the average daily abnormal volume is expected to increase during each of the days included in the [0, 15] period by 1.85% (9.1×0.204). Interestingly, the coefficient for *Total business update time* is negatively related to abnormal volume, indicating that this information, over which the firm has complete control, is less informative to shareholders, and is not positively associated with increased post-meeting trading.

In unreported specifications, I repeat the analysis reported in Panel A of Table 6 (which includes virtual-only meetings from both the pre- and post-Covid period), but limit the observations to post-Covid virtual-only observations, and find essentially very similar results, indicating that the results are not driven by firms that strategically choose to hold a virtual-only meeting.

In Panel B of Table 6 I repeat the analysis of Table A, but limit the observations to in-person meetings. Here the results do not document a significant relation between *Total Q&A time* and abnormal volume before or after the meeting. Not surprisingly, the chi-squared test reported at the

bottom of this panel does not report that the coefficients for *Total Q&A* are significantly different in the pre- versus post-meeting period. Thus, it seems that especially when meetings are held in a virtual-only format (as opposed to in-person), extensive Q&A sessions are associated with larger post-meeting trading.²² These results may indicate that when the content of shareholder meetings is more accessible to a large number of investors, since the meeting is broadcasted virtually, the relation between the content of the meeting and the post-meeting abnormal trading is boosted.

To conclude, the Table 6 specifications show that the time allocated specifically to the Q&A portion of virtual-only meetings is related to post-meeting abnormal trading. These findings suggest that the content of the Q&A session is particularly meaningful to investors (at virtual-only meetings), and thus introducing limitations on this portion of virtual-only meetings may be of concern to shareholders.

7. Dynamics of virtual-only meetings

Following Section 3 which documents that the extent of communication at virtual-only meetings is more limited compared to in-person meetings, even when meetings are not strategically scheduled, I further investigate in this section why this is the case. In Table 7 I focus on the Q&A session, and define the variable *Number of interactions per question*, which measures 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.

Table 7 is limited to the observations included in the sample of Panel A of Table 1 (i.e., firms

²² Brochet, Chychyla, and Ferri (2021) focus on how abnormal volume differs around virtual-only versus in-person shareholder meetings, whereas this section focuses on the relation between the content of shareholder meetings and abnormal volume.

that held an in-person meeting before the outbreak of Covid-19 and a virtual-only meeting after the outbreak), and that also addressed at least one question at their meeting. The Table 7 specifications include a vector of controls that is comprised of *Ln marketcap*, *Log of book asset*, *Abnormal return (annual)*, and *ROA*, but for brevity these are not reported. Column 1 of Table 7 examines whether a larger number of interactions takes place at virtual-only meetings compared to in-person meetings. This specification reports an analysis at the question level, and includes dummies controlling for the topic of the question (these topics are presented in detail in Table 8). As the result shows, in virtual-only meetings, on average, 0.44 fewer interactions are likely to occur. Given that for the average question 0.89 interactions take place, the former magnitude represents a decrease of 49.4% relative to the mean. Thus, perhaps not surprisingly, the results indicate that at virtual-only meetings the number of interactions is substantially more limited.

In the subsequent specifications included in Table 7, I examine whether having fewer interactions limits the extent of communication at virtual-only shareholder meetings. Columns 2 and 3 report specifications at the meeting level. They estimate that for each additional interaction that takes place in a meeting, the total Q&A time and meeting time are expected to increase by 0.57 and 0.85 minutes, respectively. Thus, if the number of interactions increases by one,²³ relative to the average Q&A time and average meeting time (3 and 17.9 minutes, respectively; see Panel B of Table 1), the latter values increase by 19% and 4.7%, respectively. Column 4 which reports a specification at the question level, estimates that for each additional interaction that occurs, the average time allocated to each question increases by 0.077 minutes, equivalent to a 4.2% increase relative to the mean. Taken together, the results suggest that the limited back-and-forth interactions that take place at virtual-only meetings ultimately limit the communication between the participants in such meetings.

²³ Since the average meeting had 10.5 interactions, an additional interaction is equivalent to a 9.5% increase in the number of interactions.

Finally, Table 8 reports the topics of the questions that were addressed by the firms that are included in Panel A of Table 1. 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 8 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). Thus, Table 8 demonstrates that shareholder meetings, in general, provide an important opportunity to bring to management's attention shareholders' concerns on a broad range of topics, which include both issues related to the core business of the firm and also to social issues.

8. Policy recommendations

Virtual and virtual-only shareholder meetings are a relatively new phenomenon, and best practices are still emerging (Buellingen, 2019). Proxy Insight (2020) surveyed investors and found that 58.4% of them stated that they support the use of virtual meetings, and if shareholder rights are protected, 82.2% support virtual meetings, and 81% support hybrid meetings. Similarly, in a survey ISS conducted in 2018, already at that point in time, the majority of the institutional shareholders and corporate community members surveyed supported holding hybrid shareholder meetings, especially

when they provided the same shareholder rights as a physical meeting.²⁴ These figures demonstrate that overall, shareholders support virtual and hybrid meetings as long as they do not limit their rights and voice.

This leads to the question of how this goal can be achieved. Based on the findings of this study, I make several policy recommendations pertaining to virtual-only and hybrid shareholder meetings.²⁵

A. Make recordings public. I would recommend requiring firms to 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.²⁶ 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 expand 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 the selection of the questions to be 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.²⁷ Requiring that firms make public all questions

²⁴ The summary of this survey is available here: <https://www.issgovernance.com/iss-announces-results-2018-benchmark-voting-policy-survey/>.

²⁵ Broadridge (2018), Rutgers Center for Corporate Law and Governance et al. (2020), and Nili and Shaner (2020) make additional recommendations on the best practices recommended for virtual shareholder meetings

²⁶ 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 may make the recording available only for a limited period of time (e.g., up to three months or twelve months).

²⁷ 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

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.²⁸

C. 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 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.²⁹

D. 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.³⁰ Supporting non-Broadridge platforms can enhance competition among platforms and thus motivate these platforms to become more sophisticated.³¹

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/>

²⁸ 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. Finally, shareholders should receive a confirmation of receipt documenting the question(s) they have submitted. This possibility does not currently exist in the standard platforms, and, consequently, shareholders cannot prove that they submitted a question at a shareholder meeting. Ideally, the number of questions submitted and the number of attending shareholders should be disclosed in the 8-K filing in which the vote outcomes are disclosed.

²⁹ Firms are required to report which directors attended the shareholder meetings, but only in their next proxy, i.e., after a one-year lag.

³⁰ 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.

³¹ For example, platforms can allow shareholders to present a question via live video, to submit questions in advance, 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.

Glossary of Variables

Variable name	Definition	Source
Abnormal return (annual)	The firm's buy-and-hold stock return over the 12 months preceding the shareholder meeting date minus the return on the CRSP value-weighted index over this same period	CRSP
Abnormal volume	(Daily volume/average daily volume during pre-voting period)– 1, where the pre-voting period is defined as the [-252, -21] window before the record date	CRSP
After Covid	An indicator variable equal to one if the meeting was held after the outbreak of Covid, i.e., March 16, 2020, and zero if it was held before that date	Date obtained from meeting transcript
Average time allocated to answering each question	Average number of minutes allocated 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 allocated to the Q&A portion of the meeting by the number of questions addressed at the meeting.	Transcripts + recordings of meetings
Average time allocated to answering each question	The average time (in minutes) devoted to answering each question addressed at a shareholder meeting, conditional on the meeting addressing at least one question	Transcripts + recordings of meetings
Broadridge platform	An indicator that is equal to one if the firm broadcasted the meeting via Broadridge, and zero if it broadcasted the meeting via a different platform	Proxy filings + various online sources
Fraction of votes cast with management	Average fraction of votes cast that were consistent with management recommendations in meeting	Computed by authors based on data obtained from 8-K filings
Length of total meeting	Length of a shareholder meeting in minutes	Transcripts + recordings of meetings
Ln marketcap	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
Question addressed indicator	An indicator variable that equals one if the firm addressed the question C&M submitted, and zero otherwise	Shareholder Questions Dataset

Variable name	Definition	Source
Questions limited to proposals	An indicator variable equal to one if the firm limited the questions it addressed at the shareholder meeting to 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
Tactic used to avoid addressing shareholders' questions	An indicator that equals one if the firms used one of the five tactics specified in Section 4.2	Shareholder Questions Dataset
Total assets	Logarithm of the firm's total book assets	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 allocated to presenting the proposals submitted by shareholders	Transcripts + recordings of meetings
Total Q&A time	Number of minutes devoted to addressing shareholders' questions at a shareholder meeting	Transcripts + recordings of meetings
Virtual-only meeting	A dummy 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

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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 the weekly distribution of the number of annual shareholder meetings, broken down by the number of weeks in the calendar year.

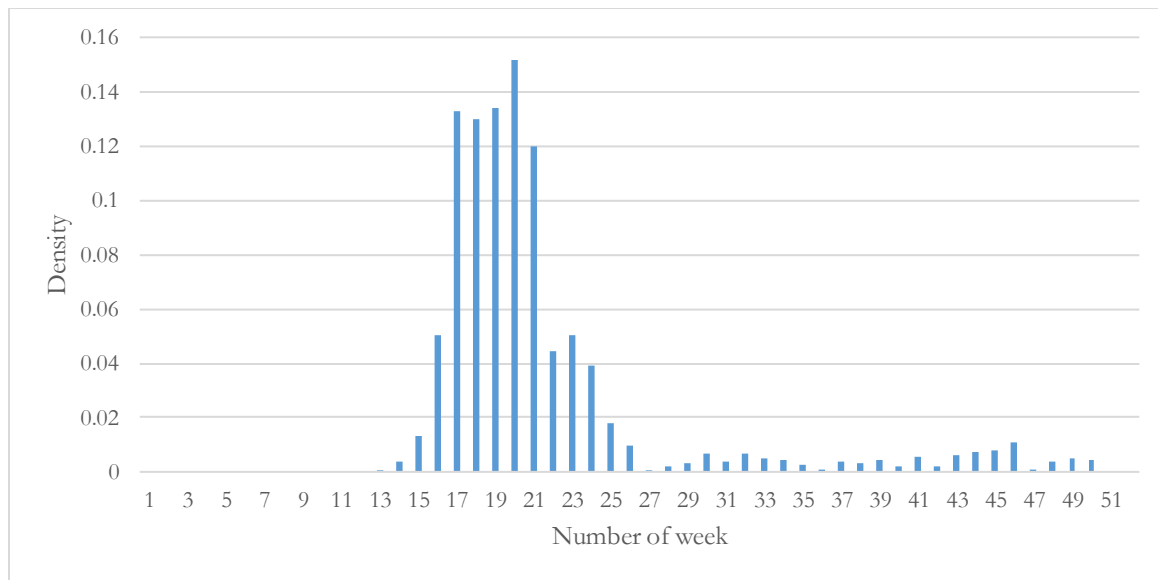


Figure 3: Frequency of virtual-only meetings before and after Covid-19

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).

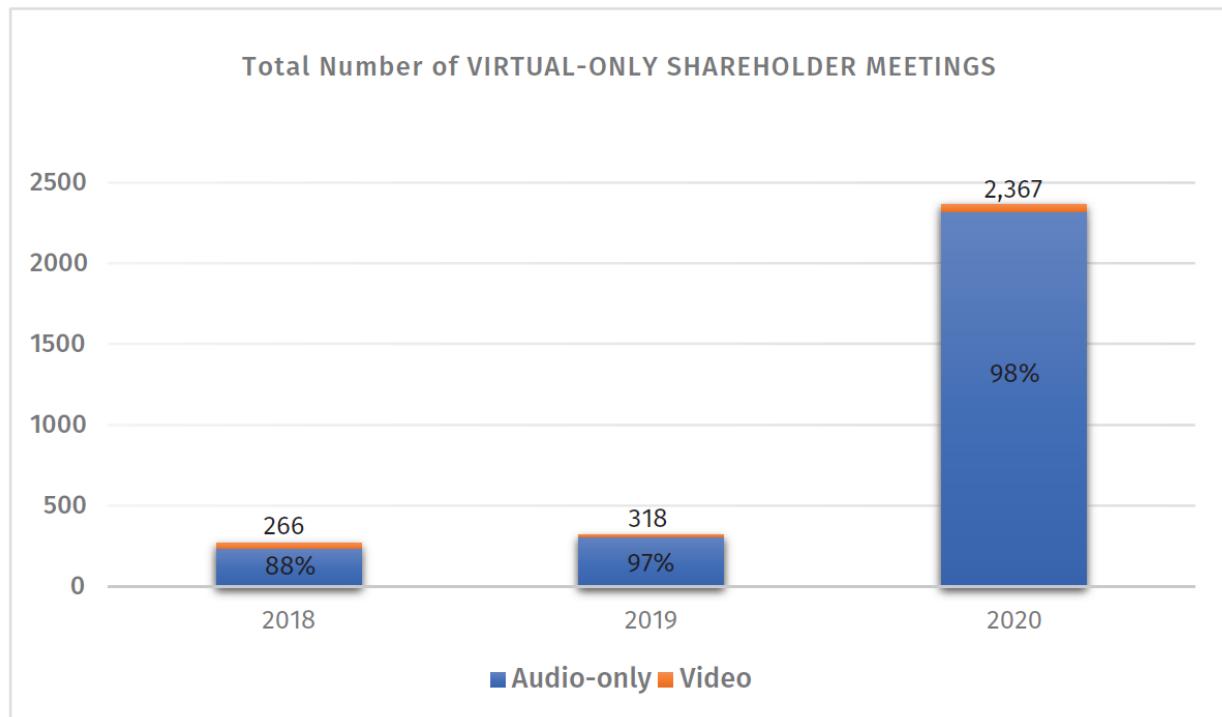


Figure 4: Walmart in-person versus virtual shareholder meeting

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=7mT'GIfQtVsE>)



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

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

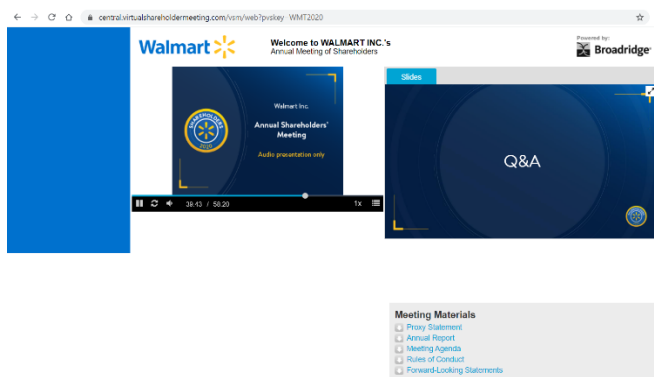


Figure 5: Shareholder meeting on Broadridge's virtual shareholder meeting platform

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

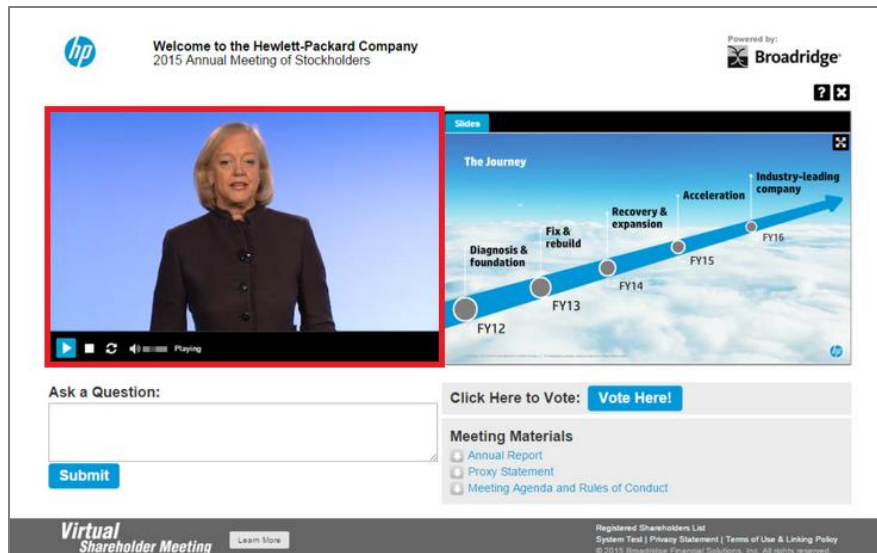


Figure 6: Enhancing communication at virtual-only shareholder meetings

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.

The screenshot shows the Slido interface for the 2020 AAXN Shareholder Meeting. The left sidebar displays the event title, date, and options for live interaction and switching events. The main area displays a list of 10 questions submitted by shareholders, each with a 'Reply' button and a 'Like' button.

Question	Author	Date	Dislike	Like
Body cams have shed light on officer abuse & unfair allegations against police. What other ways Axon tech creates fairness in & equal access to justice system?	Anonymous	May 29, 2020	0	5
Is there a citizen focused product that complements that products that Axon sells to first responders and police? What might it be?	Anonymous	May 29, 2020	0	3
Is there an opportunity for Axon to speed up access to other parts of the legal system? Unemployment filings to protection orders from abusive spouses?	Anonymous	May 29, 2020	0	3
COVID has forced some courts to hold hearings and conduct business via zoom. Is there an opportunity for Axon here?	Anonymous	May 29, 2020	0	2
Incentives are really important. Is the business model incentivized to ensure citizens are protected as high tech penetrates government authorities?	Anonymous	May 29, 2020	0	1
What do you want your legacy to be?	Jolanta	May 29, 2020	1	1
what is the biggest rate limiter from your POV to Axon's revenue growth?	Anonymous	May 29, 2020	0	0
what is the next evolution of the body camera? Do you see a wearable face camera as a next step?	Anonymous	May 29, 2020	0	0
Can you repeat preliminary votes? Did all items pass?	Anonymous	May 29, 2020	3	1
How many shareholders are in attendance?	Jim McRitchie	May 29, 2020	2	0

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>.

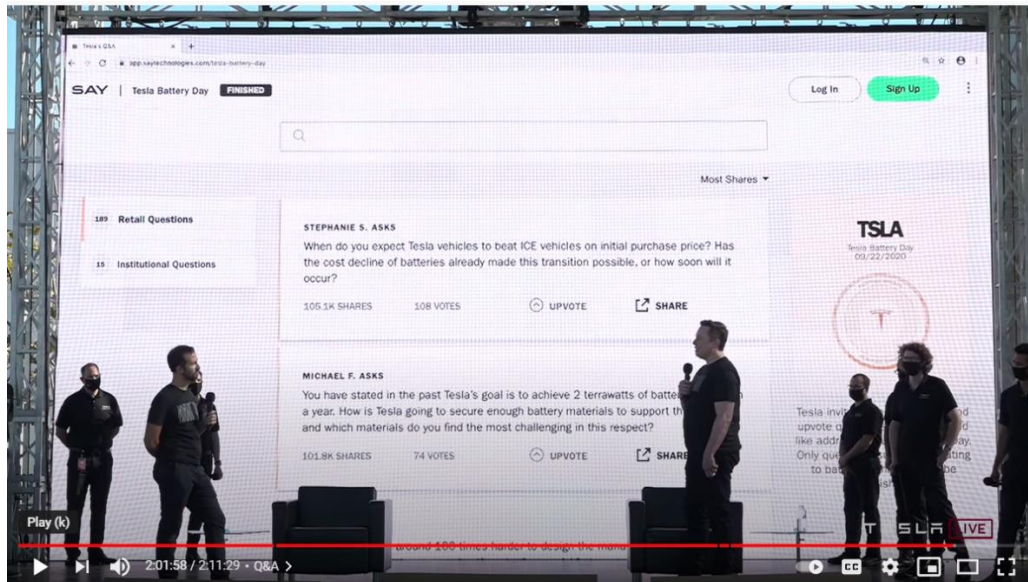


Table 1: Summary statistics on in-person versus virtual-only shareholder meetings

Panel A of this table reports summary statistics on the content and structure of shareholder meetings for all firms for which complete transcripts and recordings of these meetings are available for two shareholder meetings held between July 1, 2018 and June 30, 2020, if, additionally, those firms held an in-person/hybrid shareholder meeting before the Covid-19 outbreak (i.e., up to March 15, 2020) and a virtual-only meeting after the Covid-19 outbreak (i.e., starting from March 16, 2020). The sample includes 250 shareholder meetings held by 125 firms, i.e., two meetings per firm. Column 4 reports the t-statistic of a paired t-test that compares, for each firm, the values obtained for the 2019 in-person shareholder meeting to those obtained for the 2020 virtual-only shareholder meeting. Panel B reports summary statistics for all shareholder meetings for which transcripts are available for the July 1, 2018 to June 30, 2020 period. Panel C reports summary statistics for firms that held a virtual-only meeting both before Covid (July 1, 2018–March 15, 2020) and after Covid (i.e., between March 16, 2020 and June 30, 2020). *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 Q&A time* measures the number of minutes devoted to addressing shareholders' questions at a shareholder meeting, *Total proposal time* measures the number of minutes allocated to presenting the proposals submitted by shareholders, *Number of shareholder questions addressed* measures the number of shareholder questions addressed at the shareholder meeting, and *Average time allocated to answering each question* measures the average number of minutes allocated 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.

Average values of measure	In-person meeting	Virtual-only meeting	Virtual-only relative to in-person ((1)-(2))/(1)	Coefficient of paired t-test for Columns (1) and (2)	T-test of paired t-test	Num. of in-person meetings	Num. of virtual-only meetings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Firms that Held an In-person Meeting before Covid-19, and a Virtual-only Meeting after Covid-19							
Length of total meeting	39.4	32.7	-17%	0.000***	-(3.530)	125	125
Total business update time	14.3	9.6	-33%	0.000***	-(3.920)	125	125
Total proposal time	14.0	13.2	-6%	0.341	-(1.080)	125	125
Total Q&A time	10.7	9.0	-16%	0.096*	-(1.680)	125	125
Num. of shareholder questions addressed	4.9	4.7	-4%	0.716	-(.370)	125	125
Average time allocated to each question	2.6	2.0	-23%	0.012**	-(2.580)	82	82
% firms addressed at least one question	66%	66%					
% firms in S&P 500 index	72%	72%					
Panel B: All Firms							
Length of total meeting	39.2	17.9	-54%			245	1,075
Total business update time	14.6	4.3	-71%			245	1,075
Total proposal time	13.7	9.8	-28%			245	1,075
Total Q&A time	12.1	3.0	-75%			245	1,075
Num. of shareholder questions addressed	4.9	1.6	-67%			245	1,075
Average time allocated to each question	2.7	1.8	-33%			141	362
% firms addressed at least one question	58%	34%					
% firms in S&P 500 index	64%	20%					

Panel C: Firms that Held a Virtual-only Meeting before and after Covid

	Pre- Covid virtual- only meetings	Post- Covid virtual- only meetings	Pre-Covid relative to post-Covid ((1)- (2))/(1)	Coefficient of paired t-test for Columns (1) and (2)	T-test of paired t- test	Num. of pre- Covid virtual- only meetings	Num. of post- Covid virtual- only meetings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Length of total meeting	21.0	24.5	16%	0.31	(1.050)	18	18
Total business update time	4.5	5.0	12%	0.817	(.230)	18	18
Total proposal time	8.2	9.5	16%	0.473	-(.730)	18	18
Total Q&A time	3.1	5.1	63%	0.184	(1.390)	18	18
Num. of shareholder questions addressed	3.0	4.0	33%	0.861	(.180)	18	18
Average time allocated to each question	1.1	1.5	30%	0.000	(4.380)	13	13
% firms addressed at least one question	72%	72%					
% firms in S&P 500 index	89%	89%					

Table 2: Percentage of successful attempts at submitting a question

This table reports key statistics regarding the attempts of Mr. John Chevedden and Mr. James McRitchie (“C&M”) to log into virtual-only shareholder meetings during the 2020 proxy season, and to submit questions at these meetings.

Item	
Number of firms to which C&M attempted to submit a question (detailed in Appendix B)	89
Of these: number of firms to which C&M were not able (or gave up in the attempt) to submit a question	29
Of these: number of firms to which C&M successfully submitted at least one question (see Appendix C for a sample of questions)	60
Of these: number of firms that used a tactic potentially to evade shareholders’ questions (see Appendix D for details)	22
Total number of questions submitted by C&M	390
Of these, number of questions addressed	142

Table 3: Do firms strategically design shareholder meetings to limit shareholders' voice?

This table examines the relation between the extent to which shareholders are supportive of management and the methods used for designing virtual-only shareholder meetings and the structure and content of shareholder meetings. All specifications reported use the following equation: $Method_{im/q} = \beta_1 * Fraction\ of\ votes\ cast\ with\ management_m + \beta_2 * Controls_{km}$. The vector $Method_{im/q}$ includes the following four methods potentially used by a firm in meeting m , or with respect to question q (depending on the specification as given below): (1) *Question addressed indicator* is an indicator variable that equals one if the firm addressed the question C&M submitted, and zero otherwise. (2) *Questions limited to proposals* is an indicator variable equal to one if the firm limited the questions it addressed at the shareholder meeting to questions related to the proposals submitted by shareholders. (3) *Tactic used to avoid addressing shareholders' questions* is an indicator that equals one if the firms used one of the five tactics specified in Section 4.2. (4) *Broadridge platform* is an indicator that is equal to one if the firm broadcasted the meeting via Broadridge, and zero if it broadcasted the meeting via a different platform. *Fraction of votes cast with management_m* measures the average fraction of votes cast that were consistent with management recommendations in meeting m . All specifications include a vector of $Controls_{km}$ that comprises of *Ln marketcap*, *Log of book asset*, *Abnormal return (annual)*, and *ROA*. The analysis in Column 1, which is conducted at the question level, is limited to firms to which C&M were successfully able to submit at least one question and includes a question category fixed effect, the analysis in Column 3, which is conducted at the firm level, is limited to the firms to which C&M attempted to submit a question, and the analysis in Columns 2 and 4, which is conducted at the firm level, includes all firms that held a virtual-only meeting between July 1, 2018–July 30, 2020 for which complete transcripts and data on control variables are available. 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)	Tactic used to avoid addressing shareholders' questions (3)	Broadridge platform (4)
Fraction of votes cast with management	0.9421*** 2.71	-0.4793** (-2.456)	-0.3633 (-0.433)	-0.3084 (-1.165)
Abnormal return (annual)	-0.0051*** (-4.558)	-0.0018 (-0.703)	0.0029 1.246	0.0033 0.981
ROA	-0.2769 (-0.706)	-0.0845* (-1.786)	-0.278 (-0.390)	-0.1177* (-1.824)
Ln marketcap	0.0649*** 2.634	-0.0107 (-1.386)	-0.0339 (-0.776)	0.0191* 1.812
Log of book asset	-0.0039 (-1.611)	-0.0002 (-0.263)	0.0008 0.155	0.0016 1.442
Level of analysis	Question	Meeting	Meeting	Meeting
Question categories FE	Yes	No	No	No
Source of dependent variable	C&M	Transcripts	C&M	Transcripts
R-squared	0.212	0.035	0.047	0.036
N	359	696	77	733

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. All specifications reported use the following equation: $Variable\ measuring\ meeting\ structure_{jm} = \beta_1 * Method_{im/q} + \beta_2 * Controls_{km}$. The vector *Variable measuring meeting structure*_{jm} includes four (*j*) variables, obtained from transcripts and recordings of shareholder meetings, that measure the content and structure of shareholder meeting *m*. *Number of shareholder questions addressed* measures the number of shareholder questions addressed by the firm at the shareholder meeting, *Total Q&A time* measures the number of minutes devoted to addressing shareholders' questions at a shareholder meeting, *Length of total meeting* measures the length of a shareholder meeting in minutes, and *Average time allocated to answering each question* measures the average number of minutes devoted to answering each question addressed at the shareholder meeting, conditional on the meeting addressing at least one question. *Method*_{im/q} is a vector that includes the following four (*i*) methods potentially used by a firm in meeting *m*, or alternatively, with respect to question *q* (depending on the specification, as specified for each method): (1) *Question addressed indicator* is an indicator variable that equals one if the firm addressed the question C&M submitted, and zero otherwise. (2) *Questions limited to proposals* is an indicator variable equal to one if the firm limited the questions it addressed at the shareholder meeting to questions related to the proposals submitted by shareholders. (3) *Tactic used to avoid addressing shareholders' questions?* is an indicator that equals one if the firms used one of the five tactics specified in Section 4.2. (4) *Broadridge platform* is an indicator that is equal to one if the firm broadcasted the meeting via Broadridge, and zero if it broadcasted the meeting via a different platform. All specifications include a vector of *Controls*_{km} that comprises (*k*) four controls, namely, *Ln marketcap*, *Log of book asset*, *Abnormal return (annual)*, and *ROA*, but for brevity these are not reported. The analysis of Row 1, which is conducted at the question level, is limited to the firms to which C&M were successfully able to submit at least one question, and includes a question category fixed effect. The analysis in Row 3, which is conducted at the firm level, is limited to firms to which C&M attempted to submit a question, and the analysis in Rows 2 and 4, which is conducted at the firm level, includes all firms that held a virtual-only meeting between July 1, 2018–July 30, 2020 for which complete transcripts and data on control variables are available. 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 the meeting (1)	Total Q&A time (2)	Length of total meeting (3)	Average time allocated to each question (4)	Source of dependent variable (5)
1	Question addressed indicator	4.5936*** (7.073)	2.9828** (2.543)	-1.7066 (-0.764)	-0.3261*** (-2.634)	C&M
	R-squared	0.355	0.25	0.314	0.236	
	N	226	233	256	220	
2	Questions limited to proposals	-1.3736*** (-4.008)	-2.5127*** (-3.797)	5.1488*** (6.745)	-0.0858*** (-5.486)	Transcripts
	R-squared	0.234	0.167	0.193	0.164	
	N	760	770	770	258	
3	Tactic used to avoid addressing shareholders' questions?	-2.4992 (-1.317)	-5.6087* (-1.942)	-9.3537 (-1.645)	-0.5964 (-1.317)	C&M
	R-squared	0.123	0.185	0.301	0.116	
	N	51	52	56	37	
4	Broadridge platform	0.9866*** (4.045)	1.3307*** (2.869)	0.5662 (.534)	0.0562*** (5.113)	Proxy statements
	R-squared	0.246	0.178	0.184	0.175	
	N	777	791	795	791	

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 in the 2020 proxy season. Column 1 reports, for each topic, the frequency with which questions submitted were addressed. Column 2 reports the number of questions submitted for each category. Column 3 reports the coefficient β_i from the specification $Question\ addressed\ indicator_q = \beta_1 * Topic_i + \beta_2 * Meeting\ fixed\ effect$, 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_i .

	Topic	Average frequency question addressed	Number of questions	Coefficient of <i>Question addressed indicator</i>	T-statistic of <i>Question addressed</i>
#		(1)	(2)	(3)	(4)
1	Number of questions submitted	18%	17	-0.1892*	(-1.907)
2	General	18%	22	-0.1227	(-1.226)
3	RD	20%	5	-0.0567	(-0.320)
4	Vote outcomes	22%	36	-0.1397**	(-2.031)
5	Shareholders' attendance	24%	51	-0.1068*	(-1.830)
6	Operational	27%	11	-0.0019	(-0.015)
7	Employees and Covid	33%	53	-0.1060*	(-1.814)
8	Covid	35%	29	-0.0089	(-0.117)
9	ESG	36%	11	0.0431	(.317)
10	Governance	36%	11	0.016	(.131)
11	Executive compensation	38%	8	0.0541	(-0.381)
12	Layoff	42%	12	0.016	(.131)
13	Directors	42%	14	0.1999*	(1.781)
14	Board and Covid	47%	47	0.0518	(.867)
15	Directors tenure	54%	6	0.0405	(.247)
16	Directors' attendance	57%	14	0.2131**	(2.000)
17	Financial performance	60%	15	0.2048**	(1.974)
18	Auditor tenure	66%	3	-0.2623	(-1.128)
19	<u>Buyback</u>	68%	<u>25</u>	0.3899***	(5.042)
	Total		390		

Table 6: Time allocated to Q&A and abnormal volume

This table reports abnormal volume on the days before the shareholder meeting (the odd-numbered specifications) and the days following the meeting date, including that date (the even-numbered specifications). The specifications report the following model: $Abnormal\ Volume_d = \beta_1 * Total\ Q\&A\ time_m + \beta_2 * Total\ business\ update\ time_{dm} + \beta_3 * Total\ business\ update\ time_m + \beta_4 * Controls_{km}$. The variable $Abnormal\ volume_m$ on day d for meeting m is estimated as the “(daily volume/average daily volume during pre-voting period) – 1,” where the pre-voting period is defined as the [-252, -21] window before the meeting date. $Total\ Q\&A\ time_m$ measures the number of minutes devoted to addressing shareholders’ questions at a shareholder meeting, $Total\ business\ update\ time_m$ measures the number of minutes management dedicated to providing a business update, and $Total\ proposal\ time_m$ measures the number of minutes allocated to presenting the proposals submitted by shareholders. The specifications include a vector of $Controls_{km}$ that comprises $Ln\ marketcap$, $Log\ of\ book\ asset$, $Abnormal\ return\ (annual)$, and ROA , but for brevity these are not reported. The analysis includes all shareholder meetings held during the July 1, 2018–July 30, 2020 period for which complete transcripts and data on control variables are available. Panel A is limited to virtual-only meetings, while panel B is limited to in-person meetings. In both panels, the two bottom rows report a chi-squared test that compares the coefficient for the variable $Total\ Q\&A\ time$ reported in the column in which the chi-test is reported and the corresponding coefficient reported in the previous column.

Panel A: Time allocated to Q&A at virtual-only meetings and abnormal volume

	Abnormal Volume									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Total Q&A time	0.1 (.691)	0.312 (1.594)	0.085 (1.143)	0.237** (2.157)	0.071 (1.424)	0.204** (2.546)	0.068* (1.793)	0.173*** (2.746)	0.056* (1.829)	0.151*** (2.864)
Total business update time	-0.009 (-0.071)	-0.284* (-1.740)	-0.013 (-0.217)	-0.191** (-2.070)	-0.01 (-0.233)	-0.167** (-2.497)	-0.014 (-0.434)	-0.138*** (-2.625)	-0.013 (-0.505)	-0.117*** (-2.648)
Total proposal time	-0.032 (-0.290)	0.163 (1.114)	0.001 (.021)	0.111 (1.353)	0.012 (.326)	0.098 (1.634)	0.017 (.580)	0.078* (1.671)	0.018 (.766)	0.063 (1.631)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Window included	[-5, -1]	[0, +5]	[-10, -1]	[0, +10]	[-15, -1]	[0, +15]	[-25, -1]	[0, +25]	[-30, -1]	[0, +30]
R-squared	0.007	0.007	0.006	0.006	0.007	0.007	0.006	0.007	0.005	0.006
N	4,165	4,903	8,330	8,723	12,495	12,249	16,660	15,541	20,825	18,600
Chi2 for <i>Time allocated to Q&A</i>		2.39		3.40*		4.61**		4.35**		4.91**
Prob > chi2		0.122		0.065		0.032		0.037		0.027

Panel B: Time allocated to Q&A at in-person meetings and abnormal volume

	Abnormal Volume									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Total Q&A time	-0.006 (-1.269)	-0.003 (-0.559)	-0.004 (-1.515)	-0.003 (-0.823)	-0.003 (-1.207)	-0.003 (-1.154)	-0.003 (-1.313)	-0.002 (-0.848)	-0.004 (-1.507)	-0.002 (-1.110)
Total business update time	0.009** (2.165)	0.011*** (2.590)	0.006*** (2.766)	0.008*** (3.251)	0.006*** (3.465)	0.006*** (3.583)	0.008*** (4.656)	0.005*** (3.353)	0.010*** (5.383)	0.004*** (3.541)
Total proposal time	-0.008* (-1.685)	-0.002 (-0.327)	-0.005* (-1.766)	-0.002 (-0.742)	-0.003 (-1.554)	-0.002 (-0.827)	-0.004* (-1.661)	-0.002 (-1.143)	-0.001 (-0.363)	-0.002 (-1.585)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Window included	[-5, -1]	[0, +5]	[-10, -1]	[0, +10]	[-15, -1]	[0, +15]	[-25, -1]	[0, +25]	[-30, -1]	[0, +30]
R-squared	0.01	0.043	0.009	0.03	0.015	0.025	0.025	0.022	0.029	0.019
N	920	1,104	1,840	2,024	2,760	2,944	3,680	3,859	4,600	4,762
Chi2 for <i>Time allocated to Q&A</i>		1.23		0.62		0.01		0.51		0.97
Prob > chi2		0.268		0.433		0.906		0.473		0.324

Table 7: Dynamics of virtual-only meetings

This table focuses on the number of interactions that take place between the individuals involved in the asking and the firm representative answering the question (e.g., the CEO). 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. The table is limited to firms for which complete transcripts and recordings of these meetings are available for two shareholder meetings held between July 1, 2018 and June 30, 2020, if, additionally, those firms held an in-person shareholder meeting before the Covid-19 outbreak (i.e., up to March 15, 2020) and a virtual-only meeting after the Covid-19 outbreak (i.e., starting from March 16, 2020), and at least one question was addressed at the meeting. *Virtual-only meeting* is a dummy variable that equals one if the meeting was held exclusively online, and 0 if it was held in an in-person format (i.e., in-person exclusively or hybrid). *Total number of interactions at meeting* measures the total number of interactions that occurred at the meeting. *Number of interactions per question* measures the average number of interactions per question. *Total Q&A time* measures the total number of minutes devoted to shareholders' questions at a shareholder meeting. *Length of total meeting* measures the length of a shareholder meeting in minutes. *Average time allocated to answering each question* measures the average time (in minutes) devoted to answering each question addressed at a 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.

	Number of interactions per question (1)	Total Q&A time (2)	Length of total meeting (3)	Average time allocated to each question (4)
Virtual-only meeting	-0.4482*** (-3.115)	-5.1230** (-2.225)	-10.8271** (-2.570)	-0.5945*** (-6.882)
Total number of interactions at meeting		0.5713*** (6.409)	0.8565*** (5.250)	
Number of interactions per question				0.0770*** (3.363)
Market cap	-0.2824*** (-4.039)	5.0706*** (4.461)	9.3423*** (4.492)	0.1709*** (4.070)
Log of book asset	0.0036*** (2.865)	-0.0492* (-1.786)	-0.022 (-0.435)	-0.0050*** (-6.698)
Abnormal return (annual)	0.0154** (2.249)	-0.3309** (-2.559)	-0.5800** (-2.451)	-0.0126*** (-3.121)
ROA	-1.3484 (-1.315)	-17.2811 (-0.866)	18.5631 (.509)	-4.2109*** (-6.966)
Question topic FE	Yes	No	No	Yes
Level of specification	Question	Firm	Firm	Firm
Observations included	All available	All available	All available	All available
R-squared	0.083	0.389	0.376	0.191
N	810	117	117	798

Table 8: 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 is limited to firms for which complete transcripts and recordings of these meetings are available for two shareholder meetings held between July 1, 2018 and June 30, 2020, if, additionally, those firms held an in-person shareholder meeting before the Covid-19 outbreak (i.e., up to March 15, 2020), and a virtual-only meeting after the Covid-19 outbreak (i.e., starting from March 16 2020), and at least one question was addressed at each of these meetings. 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 A: In-person versus virtual-only shareholder meetings – additional specifications

Panel A of Table AI conducts a formal test with the same observations included in Panel A of Table 1, but includes a vector of *Controls_{in}* that comprises *Ln marketcap*, *Log of book asset*, *Abnormal return (annual)*, and *ROA* (definitions for all variables are included in the Glossary of Variables). Additionally, these specifications include firm fixed effects to allow comparing how, for the same firm, the dependent variable changed after the meeting moved from the in-person arena to the virtual one. The dependent variables are those examined in Table 1. The results reported in Panel A of Table AI are quite similar to those reported in Panel A of Table 1. I point out here the statistically significant results: relative to in-person meetings, virtual-only meetings, on average, are 9.04 minutes shorter (Column 1), have a Q&A session that is 5.2 minutes shorter (Column 3), and allocate 0.63 minutes less time to each question (Column 6). Relative to the mean values of these variables for virtual-only meetings (32.7, 9, and 2, respectively; see Panel A of Table 1), these figures represent a 27.6%, 57.7%, and 31.5% increase, i.e., significant in terms of the economic magnitudes.

Panel B of Table AI repeats the analysis of Panel A of Table AI, but includes all meetings held between July 1, 2018 to June 30, 2020 (i.e., the sample included in Panel B of Table 1).³² Accordingly, two additional control variables are included in the specifications – *After Covid* and *After CovidX Virtual-only meeting* – to control for the possibility that before Covid firms strategically selected to hold virtual-only meetings. The patterns documented here are similar to those documented for Panel A of Table AI, and the magnitudes are even somewhat larger: relative to in-person meetings, virtual-only meetings, on average, are 10.67 minutes shorter (Column 1), have a Q&A session that is 10.54 minutes shorter (Column 3) and allocate 1.38 minutes less time to each question (Column 6).

³² 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 proxy season is approximately three times larger. This is because many of the 2020 shareholder meetings were virtual-only shareholder meetings, thus making these materials substantially more accessible.

Table AI: 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. Panel A is limited to firms for which complete transcripts and recordings of these shareholder meetings are available for two shareholder meetings held between July 1, 2018 and June 30, 2020, if, additionally, those firms held an in-person/hybrid shareholder meeting before the Covid-19 outbreak (i.e., up to March 15 2020) and a virtual-only meeting after the Covid-19 outbreak (i.e., starting from March 16 2020). The analysis in Panel B includes all firms for which complete transcripts and recordings of these meetings are available for two shareholder meetings held between July 1, 2018 and June 30, 2020. *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 Q&A time* measures the number of minutes devoted to addressing shareholders' questions at a shareholder meeting, *Total proposal time* measures the number of minutes allocated to presenting the proposals submitted by shareholders, *Number of shareholder questions addressed* measures the number of shareholders' questions addressed at the shareholder meeting, and *Average time allocated to answering each question* measures the average number of minutes devoted 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.

Panel A: Firm-pair specifications

	Length of total meeting	Total business update time	Total Q&A time	Total proposal time	Number of shareholder questions addressed	Average time allocated to each question
	(1)	(2)	(3)	(4)	(5)	(6)
Virtual-only meeting	-9.0449** (-2.589)	-0.7707 (-0.745)	-5.2703** (-2.506)	-2.864 (-1.633)	-0.5483 (-0.402)	-0.6396*** (-2.774)
Ln marketcap	0.8972 (.085)	-2.0577 (-0.659)	-0.1742 (-0.027)	0.9801 (.185)	-2.1704 (-0.527)	1.4967** (2.150)
Log of book asset	1.3195 (.939)	0.9708** (2.333)	0.1116 (.132)	0.0245 (.035)	-0.0389 (-0.071)	-0.0565 (-0.609)
Abnormal return (annual)	-0.1498 (-0.427)	-0.1728 (-1.662)	0.0243 (.115)	-0.1156 (-0.656)	0.0362 (.264)	-0.0502** (-2.168)
ROA	8.5629 (.262)	4.1301 (.427)	-0.4549 (-0.023)	-9.1457 (-0.558)	-5.5815 (-0.438)	-1.3912 (-0.646)
Sample included	One in-person meeting before Covid-19, one virtual-only meeting after Covid-19 for same firm					
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.843	0.933	0.827	0.845	0.706	0.787
N	198	198	198	198	198	198

Panel B: All observations

	Length of total meeting (1)	Total business update time (2)	Total Q&A time (3)	Total proposal time (4)	Number of shareholder questions addressed (5)	Average time allocated to each question (6)
Virtual-only meeting	-10.6705** (-2.316)	-2.2257 (-0.803)	-10.5492*** (-4.001)	-2.6836 (-1.268)	0.2312 (.211)	-1.3865*** (-3.436)
Ln marketcap	1.9100*** (6.608)	0.5210*** (2.998)	0.4473*** (2.704)	0.9449*** (7.182)	0.6520*** (9.852)	0.1223*** (5.026)
Log of book asset	0.1012*** (3.292)	0.0339* (1.831)	0.009 (.513)	0.0346** (2.475)	0.0261*** (3.737)	0.0023 (.882)
Abnormal return (annual)	0.1611 (1.595)	-0.0017 (-0.028)	-0.0477 (-0.825)	0.0401 (.873)	0.0418* (1.819)	0.0069 (.812)
ROA	1.02 (.652)	0.0061 (.006)	1.4239 (1.591)	-0.0666 (-0.094)	-0.2932 (-0.822)	0.1677 (1.279)
After Covid	3.493 (.861)	-0.9023 (-0.370)	-4.1045* (-1.769)	3.4916* (1.856)	2.2579** (2.305)	-0.2719 (-0.755)
After Covid * Virtual-only meeting	4.9669 (.943)	2.026 (.640)	7.5880** (2.518)	-0.8536 (-0.352)	-0.9678 (-0.767)	0.7639* (1.647)
Sample included	All available					
Firm FE	No	No	No	No	No	No
R-squared	0.291	0.074	0.112	0.288	0.3	0.16
N	845	845	844	838	819	819

Appendix B: Firms to which C&M attempted to submit a question

This appendix lists the 89 firms to which C&M attempted to submit at least one question at a virtual meeting held during the 2020 proxy season.

1. E S CORP
2. A M C NETWORKS INC
3. A T & T INC
4. ABBOTT LABORATORIES
5. ACTIVISION BLIZZARD INC
6. ADMIRALTY RESOURCES NL
7. ALARM COM HOLDINGS INC
8. ALASKA AIR GROUP INC
9. ALCOA CORP
10. ALEXION PHARMACEUTICALS INC
11. ALPHABET INC
12. AMAZON COM INC
13. AMERICAN AIRLINES GROUP INC
14. AMERICAN INTERNATIONAL GROUP INC
15. AMERICAN TOWER CORP NEW
16. AMN HEALTHCARE SERVICES, INC.
17. ANTHEM INC
18. ASSEMBLY BIOSCIENCES INC
19. ASTERIAS BIOTHERAPEUTICS INC
20. AXON ENTERPRISE INC
21. BANK OF NEW YORK MELLON CORP
22. BLACKROCK INC
23. BLOOMIN' BRANDS INC
24. BOEING CO
25. BOOKING HOLDINGS INC
26. BRISTOL MYERS SQUIBB CO
27. CADENCE DESIGN SYSTEMS INC
28. CAPITAL ONE FINANCIAL CORP
29. CATERPILLAR INC
30. CENTENE CORP DEL
31. CHIPOTLE MEXICAN GRILL INC
32. CIGNA CORP NEW
33. COGNIZANT TECHNOLOGY SOLS CORP
34. COLGATE PALMOLIVE CO
35. CUMMINS INC
36. DANAHER CORP
37. DELTA AIR LINES INC
38. EASTMAN CHEMICAL CO
39. EBAY INC
40. EQUINIX INC
41. EUROPEAN EQUITY FUND INC
42. FISERV INC
43. FITBIT INC
44. FLOWSERVE CORP
45. GENERAL ELECTRIC CO
46. GENERAL MOTORS CO
47. GILEAD SCIENCES INC
48. GOODYEAR TIRE & RUBBER CO
49. GREENHILL & CO INC
50. H P INC
51. HOME DEPOT INC
52. HOWMET AEROSPACE INC
53. HUNTINGTON INGALLS INDS INC
54. IIT INC
55. INTERNATIONAL BUSINESS MACHS COR
56. INTERNATIONAL PAPER CO
57. INTERPUBLIC GROUP COS INC
58. KANSAS CITY SOUTHERN
59. KELLOGG CO
60. KEYCORP NEW
61. KIMBERLY CLARK CORP
62. LINCOLN NATIONAL CORP
63. LOCKHEED MARTIN CORPORATION
64. LOWES COMPANIES INC
65. MARATHON PETROLEUM CORP
66. MATTEL INC
67. MCDONALDS CORP
68. MERCK & CO INC NEW
69. NETFLIX INC
70. NETGEAR INC
71. NORTHROP GRUMMAN CORP
72. REILLY AUTOMOTIVE INC NEW
73. OMNICOM GROUP INC
74. PFIZER INC
75. PRUDENTIAL FINANCIAL INC
76. SALESFORCE COM INC
77. SEMPRA ENERGY
78. SKYWORKS SOLUTIONS INC
79. SONOCO PRODUCTS CO
80. SOUTHWEST AIRLINES CO
81. STERICYCLE INC
82. TELEPHONE & DATA SYSTEMS INC
83. TRIUMPH GROUP
84. UNION PACIFIC CORP
85. UNITEDHEALTH GROUP INC
86. VALLEY NATIONAL BANCORP
87. VERISIGN INC
88. VERIZON COMMUNICATIONS INC
89. ZILLOW GROUP INC

Appendix C: 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 Foreign currency translation
2	American Tower Corp.	What is the greatest impact of Covid-19 on the firm?	Yes	
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	Support for the objective of this issue but no firm commitment
13	Booking Holdings Inc.	Please elaborate on platform change in presenting offers and prices following EU authorities' requirement.	Yes	
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 D: Details on tactics potentially limiting communication with shareholders

This Appendix details five tactics firms employed for evading questions submitted by shareholders at virtual-only shareholder meetings held during the 2020 proxy season. The complete sample includes the 60 shareholder meetings to which C&M were able to submit a question. Of these, 22 unique firms that imposed potential barriers to the submission of questions are identified (Eastman Chemicals appears twice). If the “Transcript available” column indicates that a transcript was available, the classification is based on the content included in the transcript. If the “Transcript available” column indicates a transcript was not available, the information used to classify the observation is based primarily on C&M’s documentation of the virtual-only shareholder meeting.

	Firm name	Transcript available	Explanation of classification
I. Misleading portrayal of the lack of additional questions			
1	Alexion Pharmaceuticals	Yes	The firm stated: “One question was submitted,” implying this was the only question submitted. However only 1 of the 7 questions C&M submitted was addressed.
2	Goodyear Tire & Rubber	No	The firm’s representatives stated that they had run out of questions, while none of the 6 questions C&M submitted were addressed.
3	Google	Yes	The firm stated: “We will not be covering those [questions related to proposals] again during the question-and-answer session. Also, questions received from several stockholders on the same topic, or that were otherwise related, have been grouped and summarized so that they could be answered together. Finally, a few questions had to be paraphrased for readability.” The firm then addressed several questions during 15 minutes (although it stated it would dedicate “approximately 20 minutes” to Q&A) and then stated “and now for our final comment” before addressing the last question. The statements made, especially the last one, gave the impression that all questions were addressed at some point in the meeting. However, the firm addressed only 1 of the 11 questions C&M submitted.
4	eBay	Yes	After addressing 2 questions the firm stated: “At this point, there are no further questions, so we will now conclude the question-and-answer portion of our meeting.” However, the firm ignored 6 of the 8 questions C&M submitted.
5	Merck & Company	Yes	After 5 minutes of Q&A the firm stated that it had “run out of time for Q&A” while ignoring all 7 questions submitted by C&M.
6	Salesforce.com	Yes	The firm initially stated: “At this point, there are no more questions,” and later stated: “So we have addressed all of the questions submitted through the web portal as of now,” but they had addressed only 2 of the 4 questions C&M submitted.

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	Firm name	Transcript available	Explanation of classification
II. Announcing only at the meeting that only questions related to proposals will be addressed			
7	Alarm.com	No	The firm stated that no questions related to the business update of the meeting were submitted, and ignored all four questions C&M submitted.
8	AMN Healthcare Services	Yes	The firm stated: "We open up the floor for any discussion on any of the foregoing proposals [...] There are no questions. So thank you." Thus, the firm did not answer any questions, and ignored both questions submitted by C&M.
9	Assembly Biosciences	Yes	The firm initially stated: "We have with us on the line today Phil Howard, Ernst & Young's lead audit partner for the assembly audit, who will respond to appropriate questions after presentation of the proposals," and later stated: "There are no questions in the portal regarding these proposals." The firm didn't disclose in advance its policy of addressing only questions related to proposals. The firm ignored all four questions C&M submitted, and did not address any questions at the meeting.
10	g	Yes	The firm stated in its proxy that "stockholders may, during registration, submit questions concerning the matters to be considered at the Annual Meeting."
11	Fitbit	Yes	General Counsel stated: "We will now address any questions that stockholders have submitted that are relevant to the proposals. Please note that we will not address any questions that are irrelevant to the matters presented at this meeting [...] We have received some questions that are not relevant to the proposal, and therefore we will not be addressing them." One question was addressed.
12	Marathon Petroleum	Yes	The CEO stated: "We will address questions on proposals." No question was addressed.
13	NetGear	Yes	The chairman & CEO stated: "After all the proposals have been described, we will answer any questions submitted online related to the proposals. As a reminder, we ask that any comments or questions during this portion of the meeting pertain only to these proposals. Please submit any questions as soon as possible for our review." Shortly thereafter he stated: "There are no questions related to the proposals." The firm didn't disclose in advance its policy of addressing only questions related to proposals. The firm ignored all three questions C&M submitted, and did not address any questions at the meeting.
14	Northrop Grumman	Yes	The CEO stated: "We've taken steps to ensure that our shareholders can ask questions on the proposal." No question was addressed.
15	O'Reilly Automotive Parts	Yes	The Chairman stated: "All submitted questions will be addressed if they are pertinent to the firm and the business agenda of this meeting."
16	Verisign Inc.	Yes	The CEO stated: "Only questions on the proposals to be voted on at this meeting that are consistent with the rules of conduct will be considered." No questions were addressed.
17	Verizon	Yes	During the meeting, the firm encouraged shareholders to submit questions. Then the firm's corporate secretary stated: "As a reminder, shareholders were able to submit questions in advance and may continue to do so during the meeting by clicking on the messages icon." Later in the meeting he stated: "If other shareholders would like to comment or submit a question on a proposal, you may do so by clicking on the message icon." Thus, the second statement already confines shareholders' questions to questions related to proposals. 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."

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	Firm name	Transcript available	Explanation of classification
III. Promising to provide shareholders with answers to unanswered questions, but not following through			
18	AT&T	Yes	At the meeting the chairman and CEO said: "Okay. Look, we have so many questions, and there is no way we're going to be able to get to these. I think we have, as you look at these, we've got the broad categories of those that seem to be most prevalent. And so what we'll do is we're going to stop the Q&A right now, <i>and we will answer every one of your questions that have been submitted.</i> " However, I couldn't locate any such answers. Therefore, I wrote to the firm to inquire where the answers were made available. The firm's representative wrote to me that "we are not planning to publish the questions and answers," thereby contradicting what was stated at the meeting. The firm's representative did write: "Please share your question with me and I will reply."
19	Delta	Yes	The firm stated: "If we are unable to address all the questions, we plan to post a summary of responses to any remaining questions that would be of general interest to our shareholders on the IR section of Delta's website following the meeting." The firm did not answer at the meeting 4 of the 13 questions C&M submitted. I could not locate the answers, and I had my assistant contact the firm to inquire where these answers could be found, but we have not received a response.
IV. Imposing an early deadline for submitting questions			
20	Eastman Chemical	Yes	Questions were required to be submitted a week in advance as detailed below. The proxy noted that "The Annual Meeting will [...] be held on Thursday, May 7, 2020 [...] To attend the annual meeting, stockholders must register in advance, prior to Thursday, April 30, 2020, at 5 p.m. (EDT). Stockholders may, during registration, submit questions concerning the matters to be considered at the annual meeting."
21	Union Pacific	No	C&M report that they were not able to submit a question to this firm since questions were not accepted after midnight on the day before the meeting date (this was confirmed by the firm).
V. Stating that questions will be answered in an allotted period of time, but reduces that time and thus creating the impression that all questions have been answered			
22	International Paper	No	The firm stated that it would dedicate up to 15 minutes to Q&A, but ended up allocating only one minute to answering 2 questions, and ignoring 7 of the 9 questions C&M submitted.
23	Stericycle	Yes	The firm stated they would dedicate 10 minutes to shareholders' questions. However, they answered only 2 questions for 2 minutes, and ignored all 6 questions submitted by C&M. The firm stated: "There are no other appropriate questions to be addressed at this time."

Appendix E: Challenges encountered by shareholders in the 2020 proxy season with non-Broadridge platforms

Based on the information Broadridge receives on the portfolio of each investor, Broadridge issues for each shareholder-meeting combination a unique 16-digit 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.

To demonstrate the procedures shareholders are required to follow in order to log in and submit a question to a virtual shareholder meeting broadcast by a non-Broadridge platform, Figure EI reports an excerpt from Caterpillar's 2020 proxy statement describing some of these procedures. I will summarize them here and add some details I have learned from other proxy statements and discussions with C&M, Douglas Chia (of Soundboard Governance), and Nadira Narine (of the Interfaith Center on Corporate Responsibility). I point out that 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, 2020), 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 canceled, and she must cast her votes again during the shareholder meeting.³³

³³ 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).

Figure EI: Submitting questions at Caterpillar's virtual meeting

This figure reports the instructions provided by Caterpillar for logging into the firm's 2020 virtual shareholder meeting and submitting questions to that meeting. The text is obtained from the firm's proxy statement, and is available at the following link: <https://www.caterpillar.com/en/investors/financial-information/proxy-materials/annual-meeting-proxy-statement.html>.

Q:

HOW CAN I ATTEND THE ANNUAL MEETING?

A:

The 2020 Annual Meeting will be a completely virtual meeting of shareholders, which will be conducted exclusively by webcast. You are entitled to participate in the Annual Meeting only if you were a Caterpillar shareholder as of the close of business on the Record Date, or if you hold a valid proxy for the Annual Meeting. There is no physical location for this meeting.

You can attend the Annual Meeting online, vote and submit your questions during the meeting by visiting www.meetingcenter.io/268805716. The password for the meeting is CAT2020. Please follow the registration instructions outlined below.

The online meeting will begin promptly at 8:00 a.m., Central Time. We encourage you to access the meeting prior to the start time to provide ample time for check-in.

Q:

HOW CAN I REGISTER FOR THE ANNUAL MEETING?

A:

Registered Holders: If you are a registered shareholder (i.e., you hold your shares through the Company's transfer agent, Computershare), you do not need to register to attend the Annual Meeting virtually on the Internet. To attend the meeting, please follow the instructions on the Proxy Card or Notice that you received with this Proxy Statement. To access the meeting, you will need the 15-digit control number printed on your card or notice.

Street Holders: If your shares are held in "street name" (i.e., you hold your shares through an intermediary, such as a bank or broker), you must register in advance to attend the Annual Meeting virtually on the Internet. To register, you must submit a Legal Proxy that reflects your proof of proxy power. The Legal Proxy must reflect your Caterpillar Inc. holdings along with your name. Please forward a copy of the Legal Proxy, along with your email address to Computershare. Requests for registration should be directed to Computershare either by email to legalproxy@computershare.com (forward the email from your broker, or attach an image of your legal proxy) or by mail to *Computershare, Caterpillar Inc. Legal Proxy, P.O. Box 43001, Providence, RI 02940-3001*.

Requests for registration must be labeled as "Legal Proxy" and be received no later than 5:00 p.m., Eastern Time, on June 5, 2020. You will receive a confirmation of your registration by email (or by mail, if no email address is provided) after Computershare receives your registration materials.

Proponent of a Shareholder Proposal: For each shareholder proposal included in this proxy statement, the shareholder sponsor should notify the Company in writing of the individual authorized to present the proposal on behalf of the shareholder at the Annual Meeting. **The notification should be received no later than 5:00 p.m., Eastern Time, on June 5, 2020,** and include the name, address and email address of the authorized individual. The Company will provide the authorized individual with instructions to join the virtual meeting and present the proposal. Please submit notification by email to catshareservices@cat.com or by mail to *Caterpillar Inc. c/o Corporate Secretary, 510 Lake Cook Road, Suite 100, Deerfield, IL 60015*.

Q:

WHAT IS THE DIFFERENCE BETWEEN A REGISTERED SHAREHOLDER AND A STREET NAME HOLDER?

A:

A registered shareholder is a shareholder whose ownership of Caterpillar common stock is reflected directly on the books and records of our transfer agent, Computershare Inc. If you hold stock through a bank, broker or other intermediary, you hold your shares in "street name" and are not a registered shareholder. For shares held in street name, the registered shareholder is the bank, broker or other intermediary. Caterpillar only has access to ownership records for registered shareholders.

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