

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

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## Abstract

Shareholder meetings are one of the only opportunities for most retail investors to interact directly with management. Following Covid-19, virtual-only shareholder meetings have become dramatically more common. Analysis of transcripts and recordings of in-person versus virtual-only shareholder meetings held during the 2018–2020 period shows that in virtual-only meetings, less time is spent on shareholders' concerns: virtual-only meetings are 17% shorter, and 23% less time is spent on addressing shareholders' questions. To understand whether these figures should be of concern, with the assistance of shareholders, I uniquely construct a dataset on shareholders' attempts to submit questions at virtual-only shareholder meetings. I show that firms with low support rates on votes are those that are likely to ignore shareholders' questions and explicitly limit the scope of questions shareholders are permitted to ask. Especially questions concerning shareholder involvement in the shareholder meeting are frequently ignored. Finally, I show that when the overall time spent on answering questions at virtual-only shareholder meetings is relatively extensive, meetings are followed by large abnormal volume, indicating that the content of this portion of the meeting is used by shareholders for their trading decisions.

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## 1. Introduction

Shareholder meetings are one of the only opportunities most investors have to meet and interact directly with management, and to raise concerns regarding the firm.<sup>2</sup> This sentiment is conveyed by Michael Mayo, a shareholders 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 (which are cast at shareholder meetings),<sup>3</sup> 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 having a virtual meetings versus an in-person meeting affect shareholders’ voice.

On the one hand, the shift to a virtual 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.<sup>4</sup> On the other hand, virtual meetings may pose communication challenges and may not promote the same level of interaction (Mittleman, Briggs, and Nunamaker, 2002; Markman, 2009), and, specifically, virtual shareholder meetings may be designed in a way that further limits shareholders’ voice and their ability to interact and challenge management (Boros, 2004).

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<sup>2</sup> 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.

<sup>3</sup> E.g., Iliev and Lowry (2014) and Malenko and Shen (2016).

<sup>4</sup> See interview with Tim Gokey, Broadridge’s CEO, conducted on August 12<sup>th</sup>, 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 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 outburst of Covid which led to severe restrictions on in-person gatherings, the number of virtual-only shareholder meetings increased approximately seven-fold. Thus, Covid-19 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 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.

In the first analysis, I analyze all meeting for which transcripts are available if, in addition, the company held in the pre-Covid era an in-person (or hybrid) shareholder meeting, and a virtual-only meeting in the post-Covid era. Specifically, I code and analyze 250 transcripts and audio recordings held by 125 companies, i.e., two shareholder meetings per company. When comparing the in-person shareholder meetings to virtual-only meetings, I find significant differences: relative to in-person meetings, virtual-only meetings are on average 17% shorter, spend 16% less time on answering questions, and spent on average 23% less time answering each question. These differences are robust in regressions controlling for standard variables, and include a company fixed effect, and also in analysis 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<sup>st</sup> 2018-June 30<sup>th</sup> 2020 period. Additionally, for a small sample of firms that held virtual-only meetings both before and after Covid, I document that communication increased or remained similar in the post-Covid era, implying that the limited communication I document for the virtual-only post-Covid meetings relative to the in-person pre-Covid meetings is not due to Covid, but rather, to the shift to virtual meetings.

These figures demonstrate that communication is more extensive at in-person shareholder meetings, even when virtual-only meetings are not strategically selected. I continue by investigating whether the new reality of virtual meetings allows companies to use methods which limit the communication between companies and shareholders, ultimately limiting shareholders' voice. I then examine whether such methods are used strategically especially by firms which face increased scrutiny of shareholders.

The virtual 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 company does not know in advance which question each shareholder will ask. In contrast, in virtual-only meetings, questions are submitted by shareholders in a text box, frequently during the meeting, and firms can then decide if and which questions to address. Questions submitted at virtual meetings are almost never made public unless they are addressed.

Thus, to capture the selection process of the questions 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 dataset "Shareholder Questions Dataset." This dataset records, starting soon after the Covid-19 outbreak, all attempts and success of C&M to submit questions at shareholder meetings, and the answers they

received for these questions. 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.

To further understand the barriers facing shareholders attempting to submit a question at a shareholder meeting, I combine the Shareholder Questions Dataset with data I code based on the transcripts and recordings of the meetings. I identify several tactics firms use to evade addressing shareholder questions at virtual-only shareholder meetings. An example for such a tactic is that the company 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.

Using the Shareholder Questions Dataset and the coded transcripts, I find that when firms frequently ignore the questions submitted by C&M at virtual-only meetings, the number of questions addressed in practice by the company and the total Q&A time in the meeting significantly decreases. This finding 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, rather than shareholders refraining from submitting questions. Similarly, when firms use tactics such as incorrectly stating that no additional questions have been submitted, the total Q&A time tends to decrease.

Moreover, in a larger sample of 770 virtual-only meetings I find that when firms limit questions to questions pertaining to proposals, thereby limiting dramatically the possible topics on which shareholders are able to ask questions, the number of questions addressed, Q&A time, meeting time, and average time spent on each question, are all shorter. Similar results are found when firms

choose to use a non-Broadridge platform to broadcast the meeting, i.e., a platform on which it is technically more difficult to submit questions. These results indicate that firms can shape the content and the extent of communication depending on the methods they choose to use for designing the virtual-only shareholder meeting.

I continue by examining whether the above noted methods which are used to design virtual-only meetings are strategically introduced at virtual-only meetings by firms who may prefer to avoid shareholder scrutiny. Such firms may be especially keen to limit shareholders' ability to make their voice be heard particularly in the Q&A session. Indeed, I find that the percentage of questions addressed (of those C&M submitted) is smaller when a relatively low percentage of the votes are cast consistent with management recommendations. In similar spirit, when shareholders' votes are inconsistent with management recommendation, firms are likely to limit questions to those pertaining to proposals. These findings imply that limitations on communication with shareholders are introduced precisely when shareholders are more critical of management, and that these limitations are focused on restrictions pertaining to the submission of questions and/ or receiving answers to questions submitted.

I note that at the in-person meeting setting, it is more challenging for firms to limit shareholders' questions when shareholders are visibly lined up in front of the microphone, and to select which questions are to be addressed, since companies do not know in advance which question each shareholder will ask. In contrast, since questions are submitted electronically at virtual shareholder meetings, companies are able to strategically select 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 shareholder meetings, shareholders do not have this possibility, and cannot vocally object if the firm selectively addresses questions.

I continue the analysis by documenting that at virtual-only meetings, firms were especially likely to avoid addressing questions on certain topics, suggesting that cherry-picking of questions may be occurring. For example, firms were particularly likely to ignore questions submitted by C&M when these concerned the number of questions submitted by shareholders, or the number of shareholders (virtually) in attendance. These findings suggest 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 point, 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 spent on questions at shareholder meetings increases, abnormal volume of virtual-only shareholder meetings is particularly large *after* the shareholder meeting. These results indicate that shareholders pay attention to the content of shareholder meetings, and that when more extensive information is revealed in the Q&A session, the meeting is followed by increased trading.

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 meetings. Fortunately, my study differs from their study in several ways. First, I focus on the question whether, companies that were forced to hold virtual meetings (due to Covid) 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 the attempts and success of shareholders to submit questions which allows me to analyze data that is otherwise not observable. Thus, each of these studies provides a unique and complementing angle to understanding how virtual meetings change the dynamics of shareholder meeting. 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 shareholder meetings presents challenges, but also offers new opportunities to enhance communication between companies and shareholders. I conclude the paper by making several policy recommendations that aim to support this goal: (1) Require making audio recordings/transcripts public to allow transparency concerning the information shared at shareholder meetings. (2) Require complete disclosure of all questions submitted to shareholder meetings and transparency on the question-selection mechanism. (3) Require to disclose 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 the following contributions. First, it shows that in the virtual shareholder meetings setting, less time is spent on shareholders' concerns. Second, the paper demonstrates that the methods firms choose for designing the shareholder meeting will affect the content and structure of the shareholder meeting. Third, I find evidence that firms who face increased scrutiny of shareholders, are those that strategically choose methods that limit shareholders voice, and I document some of the challenges shareholders face when attempting to submit questions at virtual shareholder meetings. Fourth, the paper demonstrates that the content of the meetings, specifically, the amount and percentage of time spent on answering questions, is followed by large abnormal volume indicating



that the content of this portion of the meeting is of interest to shareholders, and they use it 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 a flow of conversation, 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.

Both in-person and virtual 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 companies 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, and (c) A Q&A session that 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 that includes 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 companies have traditionally had such sessions, and companies that have skipped the Q&A session, or severely limited it, have faced harsh criticism (e.g., Home Depot in 2006).<sup>5</sup> Moreover, in some countries like Germany and Australia, the question and answer portion of the meeting is mandatory.<sup>6</sup> The Q&A session may take place after the official adjournment of the shareholder meeting, but while the participants are still present.<sup>7</sup>

## 2.2. Background on the shift to virtual shareholder meetings

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

<sup>6</sup> 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](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).

<sup>7</sup> 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.

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.<sup>8</sup> Concerns were also raised about firms cherry-picking favorable questions and downplaying, rephrasing, or ignoring negative or hostile questions.<sup>9</sup>

In late February–early March 2020, due to the Covid-19 outbreak, increasingly severe restrictions were imposed on in-person meetings across the US. 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.<sup>10</sup> 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 arena. In addition, 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). In addition, following the Covid-19 outbreak, ISS

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

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

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

and Glass Lewis changed their recommendations regarding virtual-only shareholder meetings, and supported holding virtual-only shareholder meetings for the 2020 proxy season.<sup>11</sup> As Figure 2 implies, 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 shareholder meetings was initiated in mid-March 2020, and is still ongoing, it affected around 85% of the shareholder meetings in 2020.

Thus, following Covid-19, firms moved their shareholder meetings from the physical arena to the virtual one. Indeed, Figure 3 reports the number of virtual-only meetings that took place in each of years 2018-2020. This figure is obtained, with permission, from the report of the Rutgers Center for Corporate Law and Governance et. al (2020). The figure shows that in 2018 and 2019 only 266 and 318 virtual-only meetings took place, respectively. In contrast, in 2020 this figure jumped by more than 7 times to 2,367 meetings.

Figure 4 visually demonstrates how a virtual shareholder meeting differ from an in-person meeting. The first two images in Figure 4 are from Walmart's 2019 in-person shareholder meetings. The third image in Figure 4 is from Walmart's 2020 virtual-only shareholder meeting. As the images depict, the in-person meetings were large social gatherings, whereas the virtual 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),<sup>12</sup> thereby further limiting the possible interaction among 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

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<sup>11</sup> Ibid, Harvard Law School Forum on Corporate Governance.

<sup>12</sup> 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>

voice, and whether these methods are used strategically, i.e., when shareholders are generally less supportive of management.

### **3. Analyzing transcripts of shareholder meetings**

To compare in-person shareholder meetings (which include in my analysis hybrid meetings, i.e., meetings which take place in-person, and are also virtually broadcasted) to virtual-only shareholder meetings, I manually code transcripts and audio recordings of shareholder meetings. The approach of 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 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 companies that held an in-person meeting before Covid-19, and a virtual-only meeting after Covid-19. The reason I first focus on these meetings is because companies who shifted to a virtual-only format post-Covid likely did not do this for strategic reasons, rather, they did so because they were forced to do so. Thus, by focusing on this subset, I can observe how the format of the meeting, even when likely no strategic intentions exist, alters the structure and content of shareholder meetings. Specifically, this panel includes meetings for which complete transcripts and recordings of shareholder meetings are available for two regular (i.e., annual non-special) shareholder meetings which were both held between July 1<sup>st</sup> 2018 and June 30<sup>th</sup> 2020, if, additionally, those companies held an in-person shareholder meeting before the Covid-19 outbreak (i.e., 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—two meetings by each company.

The coding documents substantial differences between in-person and virtual shareholder meetings. As Panel A of Table 1 reports, in comparison to the in-person shareholder meetings, the virtual-only shareholder meetings were on average 17% shorter in terms of the total meeting time (39.4 minutes versus 32.7, respectively). A paired t-test that compares for each firm the length of the in-person shareholder meeting to that of the virtual-only shareholder meeting 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 shareholder meeting were held in a period in which much uncertainty prevailed due to Covid-19, and thus perhaps more communication between companies and shareholders may have been expected, overall, virtual shareholder meetings were shorter than in-person meetings. Additionally, and similarly, in comparison to in-person shareholder meetings, the virtual-only shareholder meetings spent on average 33% less time on providing shareholders with a business update on the firm's business activity; however, firms spent on average very similar time on presenting proposals at in-person and virtual meetings.<sup>13</sup>

As for the time spent on answering questions, in comparison to the in-person shareholder meetings, virtual shareholder meetings dedicate, on average 16% less time to the Q&A session (10.7 minutes versus 9, respectively, significant at the 10% level). The average number of questions addressed at in-person versus virtual meetings is almost identical—4.9 and 4.7, respectively (the difference is insignificant). Finally, Table 1 reports the average time spent addressing each question. This figure is estimated by dividing the total number of minutes spent on Q&A at the meeting by the number of questions addressed at the meeting. Here we see that relative to in person meetings, virtual-

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<sup>13</sup> Since presenting proposals essentially entails reading proposals which were all submitted before the meeting, and before the Covid 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 Covid due to the requirement that shareholder proposals be submitted 120 trading days before the date of the company's proxy statement released 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<sup>th</sup>, 2020, and thus, 120 trading days before that date was before the Covid outbreak.

only meetings spent on average 23% less time on 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 the 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.<sup>14</sup> Nevertheless, the recordings and transcripts reveal that the extent of communication with shareholders decreased in the (post-Covid) virtual meetings relative to the (pre-Covid) in-person meetings. Thus, the results indicate that even companies that were pro-shareholder-communication, limited communication with shareholders when meetings moved to the virtual 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<sup>st</sup> 2018 to June 30<sup>th</sup> 2020 period. This Panel reports substantially starker differences – for example, the total Q&A time (total meeting time) of virtual-only meetings is 75% (54%) shorter, [as compared to 16% (17%) reported in Panel A]. However, these larger differences reported in Panel B of Table 1 are likely, at least partially, due the differences in the size of the companies included in Panel B—i.e., the firms included in Panel B are on average smaller than those included in Panel A. Specifically, while 72% of the firms included in Panel A are firms included in the

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<sup>14</sup> As Akerlof (1970) and Diamond and Verrecchia (1991) demonstrate, individuals and firms that choose to voluntarily disclose information are typically those that are cherries (i.e., high-quality firms) rather than lemons (i.e., low-quality firms). In our context, firms that quasi-voluntarily disclosed audio recordings of their 2019 in-person shareholder meetings are likely the firms that were particularly outgoing toward shareholders. Thus, if anything, this potential sample selection should make it more challenging to observe a decrease in the extent firms communicate 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.

S&P 500 index, the comparable figure for the Panel B firms is only 64% for the in-person meetings, and only 20% for the virtual-only meetings.

Thus, perhaps it should not come as a 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 spent on the Q&A session, and that only 34% of the firms addressed at least one question, i.e., the average company did not address even one shareholder question. Put differently, at least in virtual-only meetings, communication in the average firm is quite limited.

Appendix A reports a regression analysis which is similar to that reported in Panel A and B of Table 1. Appendix A demonstrates once again that the length of the meeting, the Q&A time, and the average time spent on 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 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 less meaningful interactions take place at virtual-only meetings (e.g., Iwasaki, 2020), and this is reflected in the briefer communication. This concern is also raised in the ShareAction 2021 report which states with respect to virtual meetings: “interactions, and questions and answers can operate at a superficial level rather than going into the factual detail and nuance required”. The latter concern may be particularly relevant with respect to companies who receive low support rates from shareholders and may prefer to avoid comprehensive interactions with shareholders. In subsequent analysis I will address this possibility.

Based on pre-Covid transcripts, Brochet, Chychyla, and Ferri (2021) also document that communication at virtual meetings is briefer relative to 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 realistic when examining the pre- versus post-Covid setting, since the virtual post-



Covid shareholder meetings took place in the virtual format due to an exogenous shock—i.e., Covid. Thus, Covid 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 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. 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 introduction of Covid per se, does not seem to lead to more limited communication.

In sum, Table 1 and Appendix A consistently show that, overall, relative to in-person meetings, in virtual-only meetings less time is dedicated to addressing shareholders' concerns, even when the shift to virtual meetings is 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 meetings for strategic reasons had more limited communication with shareholders. Notwithstanding this conclusion, the virtual setting may offer companies new methods that allow them to have more control in designing the content and structure of shareholder meetings. Firms may also make use of these methods to strategically limit shareholders' voice when it is convenient for them to do so. To address these possibilities, I survey here methods firms use to design virtual-only meetings. In subsequent sections I will 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 Submitting Questions**

Since questions submitted at virtual meetings are almost never made public (unless they are addressed), to capture the selection process of the questions I collect questions submitted by shareholders to virtual-only shareholder meetings. I do 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 construct the “Shareholder Questions Dataset” a dataset that documents all their attempts to submit a question at a virtual shareholder meeting 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 the 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 question 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 on it (I will elaborate on these instances in subsequent sections). 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 companies, and the responses they received to each question. Of these 60 companies, 22 companies (i.e., 36.6%) used some tactic that may potentially limit shareholders’ voice, as will be detailed in Section 4.2 Appendix D and in Appendix D.

Since for 8 of the 60 firms both Mr. Chevedden and Mr. McRitchie independently submitted questions, the sample includes 68 observations at the firm-shareholder level. In 50% of these observations (34 of these observations), the firm answered at least one question submitted by each of these shareholders. Ultimately, of the 390 questions C&M submitted, 142 (i.e., 36%) were answered. Taken together, these figures show that conditional on C&M succeeding to submit a question, most questions were not addressed (65%), 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, these figures provide, perhaps the first available figures on the extent shareholders are able to make their voice be heard at virtual meetings.

#### **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 focus on 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.* Rows 1–6 of Appendix D demonstrate how six firms created a misleading portrayal of a lack of additional questions. For example, eBay addressed two questions 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 company ignored 6 of the 8 questions C&M submitted, thus this statement did not reflect the reality of the questions submitted.

*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, quite often at the end of the meeting when the Q&A session is typically held, 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 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. With respect to this tactic, and as well as the first tactic, shareholders cannot audibly oppose this policy at a virtual-only shareholder meetings since they are literally muted.

*Promising to provide shareholders with answers to unanswered questions but not following through.* Under 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 company stated that the company "will answer every one of your questions that have been submitted," but in correspondence I had with the firm on this statement, they clarified that they are not planning to publish questions and answers.<sup>15</sup>

*Imposing an early deadline for submitting questions.* Under 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. Since at most companies questions are submitted during the meeting, shareholders are likely to discover this unusual requirement at the meeting in which they expected to be able to submit the question, only to discover that it is already too late to do so.

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<sup>15</sup> The company representative did write: "Please share your question with me and I will reply." However, this type of communication can be done year round, does not allow involving the CEO and the board, and is not related to a shareholder meeting.

It is noteworthy that the sample also includes several companies—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 companies' websites, and it is not clear how the visibility of Q&As posted on a company's website compares to a Q&A session occurring at a shareholder meeting. Nevertheless, this method is certainly friendlier towards shareholders than not addressing shareholders' questions in any way.

*Stating that questions will be answered in an allotted time, but reducing that time and thus creating impression that all questions were answered.* This tactic entails a company stating that questions will be answered in an allotted period of time, but ultimately answering questions in a substantially shorter period of time, thereby giving the impression that all questions have been addressed, when this is not the case. For example, Appendix D reports that International Paper stated that the company would dedicate up to 15 minutes to Q&A, but ended up spending only one minute on answering two questions, and ignoring 7 of the 9 questions C&M submitted.

To summarize this section, as documented in Appendix D, of the 60 firms to which C&M were able to submit a question, in 22 unique firms (i.e., 36.6%, Eastman Chemicals appears in Appendix D twice) shareholders faced obstacles that limited their ability to receive an answer to a question they had submitted.

#### **4.3. Platform Used to Broadcast Meeting**

To allow broadcasting a virtual meeting, firms must select a platform that technically supports doing so. Broadridge offers such a platform named Virtual Shareholder Meeting which allows broadcasting the meetings via a video or an audio broadcast. Broadridge Financial Solutions is an S&P 500 company 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. It manages the largest number of virtual-shareholder meetings.<sup>16</sup>

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<sup>16</sup> According to Broadridge (2020), between January 1 and d 19, 2020, the company 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 I am aware of 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.

Currently, 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.<sup>17</sup> For this reason, Broadridge has all the information required to identify a shareholder, including the identity of the broker through which the investment is made, the investor's account number, the number of shares each investor holds in each company, and more. Appendix E further details challenges shareholders faced when attempting to submit a question in the 2021 proxy season. Given the technical challenges shareholders encountered in the 2020 proxy season, it is probably not surprising that of the 29 firms reported in Table 2 for 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 from one day to the next to a new Covid-virtual-reality. Companies 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, companies were possibly not always able to pick their preferred platform for broadcasting the shareholder meeting.

Additionally, the outcry of investors as reflected in the Rutgers Center for Corporate Law and Governance et al. (2020), and potentially following the findings of earlier versions of this paper, some of the access issues described here and in Appendix E are likely to be at least partially resolved in the 2021 proxy season. These changes are specified in a memo written on February 2, 2021 by the Council of Institutional Investors and the Society of Corporate Governance. Nevertheless, I believe that it is important to analyze the challenges shareholders encounters in the 2020 proxy season, even

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<sup>17</sup> See SEC Recommendation, available at <https://www.sec.gov/spotlight/investor-advisory-committee-2012/recommendation-investor-as-owner-subcommittee-proxy-plumbing.pdf>

if these were later addressed to a certain extent, to assure that similar challenges are not creatively introduced in different ways in the future.

## 5. Methods Used for Designing Virtual-only Shareholder Meetings

### 5.1. Do the Methods Firms Choose to Design Shareholder Meeting Shape the Content and Structure of the Meeting?

In this section I examine whether the methods chosen by firms, which were described in Section 4, enable firms to design the content and structure of virtual-only shareholder meetings.

In Table 3 I report an analysis that addresses this question. In all Table 3 specifications I use the following model:

$$(1) \text{ Variable measuring meeting structure}_{im} = \beta_1 * \text{Method}_{im/q} + \beta_2 * \text{Controls}_{im}$$

The vector *Variable measuring meeting structure<sub>im</sub>*, includes the following four variables that measure the content and structure of shareholder meeting *m*, variables that are obtained from transcripts and recordings of shareholder meetings: *Number of questions addressed at the meeting*, *Total Q&A time*, *Length of total meeting*, and *Average time spent on each question*. All specifications include a vector of *Controls<sub>im</sub>* which comprises of *Ln marketcap*, *Total assets*, *Abnormal return (annual)*, and *ROA*, but for brevity these are not reported. All specifications are limited to meetings for which complete transcripts and recordings of meetings are available. *Method<sub>im/q</sub>* is a vector which includes four alternating methods potentially used by a company in meeting *m*, or with respect to question *q* (depending on the specification). These methods will be explained below.

Overall, Table 3 shows that firms can, indeed, choose methods that limit the extent of communication with shareholders, and shareholders' ability to make their voice be heard. For example, in Table 3, Row 1 Colum1 focuses on the method *Question addressed (Y/N)*, which is an indicator variable equal to one if the company addressed the question C&M submitted, and zero otherwise.

This specification is limited to companies for which C&M were successfully able to submit a question, is conducted at the question level, and includes a question category fixed effect which controls for the type of question addressed (these categories are further discussed with respect to Table 5).

As Row 1, Column 1 reports, the specification estimates that in meetings that address a question submitted by C&M (i.e., *Question addressed* (Y/N)=1), on average, 4.59 more questions are addressed in aggregate (i.e., questions that were submitted and addressed by all shareholders), relative to meetings that did not address the question submitted by C&M. This finding demonstrates that firms that frequently ignored questions submitted by C&M, ultimately addressed a small number of questions, in aggregate, at their meeting. This suggests that the fraction of questions addressed of those submitted by C&M may be a reasonable proxy for a firm's tendency to choose to address shareholders' questions in general (i.e., the questions submitted by *all* shareholders). Put differently, this specification supports the argument that when firms address a small number of questions at shareholder meetings, this occurs because the firm chooses to ignore questions submitted by shareholders rather than shareholders refraining from submitting questions.

I point out 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 and 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.<sup>18</sup> This is not an option at virtual meetings.

Row 1 Column 2 also documents that if the firm addresses the question C&M submitted,

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<sup>18</sup> I thank Patrick McGurn for pointing this out.



the total Q&A time is expected to be an additional 2.98 minutes, further demonstrating more extensive communication between companies and shareholders when C&M's questions are addressed. However, there seems to be a tradeoff with respect to addressing many questions—firms that address a question submitted by C&M spend on average 0.32 less minutes on each question.

In Row 2 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. Row 2 Column 2 estimates, at the firm level, that if a firm uses one of these five tactics, the total Q&A time is expected to be 5.6 minutes shorter. This magnitude is very large, given that the average Q&A time of virtual 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).

Rows 3-4 of Table 3 expand the sample to all firms for which transcripts are available for virtual-only meetings held between July 1<sup>st</sup> 2018 – July 30<sup>th</sup> 2020. Thus, this sample includes a substantially larger sample of firms—approximately 740.<sup>19</sup> Here, the variable *Questions limited to proposals* is an indicator equal to one if the firm limited the questions it was willing to address to questions related directly to the proposals submitted by shareholders. As noted in Section 4.2, this policy severely limits the topics on which shareholders are permitted to ask questions. Admittedly, such a method could take place also at in-person meetings, and is not necessarily unique to virtual 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 Table 1 Panel A, i.e., companies that held an in-person meeting before Covid-19, and a virtual-only meeting after Covid-19, the frequency of this method becomes 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. In the sample included in Panel B of Table 1, i.e.,

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<sup>19</sup> This sample includes the firms included in Panel B of Table 1, and for which all control variables specified in equation 1 are available.

all firms for which complete transcripts are available for a meeting held between July 1<sup>st</sup> 2018 – July 30<sup>th</sup> 2020, the frequency of this variable 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 Table AI Panel B.

Thus, this method is significantly more common in virtual-only meetings, and therefore warrants special attention in that context of the methods used by firms to design the content and structure of shareholder meetings. Row 3 of Table 3 shows that companies that limit their questions to proposals, indeed, addressed on average 1.3 fewer questions, spend 2.51 fewer minutes on Q&A, and their overall meeting time was 0.085 minutes shorter (all these differences are significant at the 1% level).<sup>20</sup> Relative to the mean values of these variables (1.6, 3, and 17.9, respectively), these figures represent a decrease of 81%, 83%, 0.47%, i.e., substantial in terms of the economic magnitudes. These results demonstrate that this method, which has become popular at virtual-only meetings, does indeed limit the extent shareholders are able to make their voice be heard at virtual-only meetings.

Finally, in Row 4 of Table 3 the method examined is whether the *Broadridge platform* was chosen by the firm to broadcast the shareholder meeting. As described above in Section 4.3, using a non-Broadridge platform made it substantially more difficult for shareholders to submit questions. Given this setting, perhaps it is not surprising that Row 4 documents that firms that chose the Broadridge platform, were on average, likely to address an additional 0.98 questions, and spend another 1.3 minutes on the Q&A session. 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 spent on average, an additional 0.056 minutes on each question, which perhaps suggests that these firms were somewhat more oriented in providing

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<sup>20</sup> In unreported specifications I repeat the analysis, but limit it to in-person meetings. While this analysis includes only 189 firms, I note that none of these specifications are significant.

shareholder detailed information.

In unreported specifications, I repeat the analysis reported in Rows 3-4 of Table 3, 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. Rather, once such an opportunity becomes common practice, companies can use new methods which provide them more flexibility in designing the content and structure of the meeting.

Virtual shareholder meetings do not necessarily have to be designed in a way that limits communication with shareholders. Firms can use virtual shareholder meetings to increase shareholders' voice and democracy. I observe an unusual effort to achieve this goal in two companies. The first company is Axon Enterprise, which allowed shareholders (in fact, anyone) to submit questions through the Slido webpage, and these questions were observable to anyone. Moreover, individuals were also able to like and unlike submitted questions. Figure 6, Panel A displays a screenshot of all questions submitted. Figure 6 Panel B, reports Tesla's attempt to increase shareholders' involvement 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 ways to achieve this goal.

In sum, this section shows that the methods firms choose for designing virtual meetings significantly shape the extent of communication, the content, and structure of virtual-only shareholder meetings.

## **5.2. Do Firms Strategically Use 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 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 returns 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 similar spirit, Cohen and Lou (2019) show that at earnings calls, certain firms strategically call upon analysts who tend to be more friendly 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 it was convenient for firms to avoid shareholders' criticism.

This analysis is reported in Table 4, which focuses on the relation between variables that measure the potential motivation of firms to limit shareholders' voice and the methods analyzed in Table 3 and discussed in the previous section. The following model is examined in Table 4:

$$(2) \text{ Method}_{im/q} = \beta_1 * \text{Fraction of votes cast with management}_m + \beta_2 * \text{Controls}_{im}$$

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<sub>m</sub>*, which measures the average fraction of votes cast consistent with management recommendations in meeting *m*. Firms observe the votes cast electronically by shareholders as soon as they are cast, and votes are typically cast on the days leading to the meeting. Thus, on the meeting day, and to a great extent, already on the days preceding the meeting, companies know (and frequently announce) the vote outcomes/ almost final vote outcomes. Accordingly, when management attends the shareholder meeting, the *Fraction of votes cast with management<sub>m</sub>* is perhaps the most up-to-date information management has on the extent shareholders are supportive of management. The vector *Controls<sub>im</sub>* controls for the variables *Ln marketcap*, *Total assets*, *Abnormal return (annual)*, and *ROA*.

The results are reported in Table 4. Model 1 reports a specification at the question level, and includes question categories fixed effects. According to model 1, if the average support rates increase by one standard deviation—equal to 9%, the likelihood that a question is answered increases by 8.4% ( $0.09 \times 0.942$ ), the results being significant at the 1% level. Column 2 does not report a significant relation between the *Fraction of votes cast with management* and the use of one of the tactics described above. However, Column 3 estimates that if the average support rates increase by one s.d., the likelihood that questions are limited to proposals decreases by 4.3% ( $0.09 \times 0.4793$ ), and this estimate is significant at the 5% level. Finally, Column 4 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 necessarily strategic. Taken together, the results demonstrate that when shareholders are less supportive, the methods firms choose to use are especially related to how firms manage the questions submitted by shareholders: firms are more likely to avoid addressing questions, and to explicitly limit the scope of questions that are addressed at shareholder meetings.

I point out that the relation between the performance measures and the methods used as dependent variables is inconsistent. For example, Column 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 shareholder voice. In contrast, Column 3 shows the opposite relation (where performance is measured in terms of ROA).

In unreported specifications, I repeat the Table 4 analysis, 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. Taken together, the results suggest that methods that limit shareholders' ability to ask questions or made their voice be heard, are likely to occur in particular when firms face explicit scrutiny by shareholders.

Following the finding in Table 4 that documents that companies are less likely to address

shareholders' questions when firms receive low support rates from shareholders, 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 19 topics. Fortunately, C&M frequently submitted the same, or very similar questions, to different companies, which simplifies the classification process. In Table 5, I report the average frequency questions submitted by C&M were addressed by companies (Column 1) and the number of questions submitted for each category (Column 2).

In addition, I estimate the specification:

$$(1) \text{ Question addressed indicator} = \beta_1 * \text{Topic}_i + \beta_2 * \text{Meeting fixed effect}$$

where *Question addressed indicator* is an indicator equal to one if the firm addressed the question 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. Column 3 reports the coefficient  $\beta_1$  from this specification, and Column 4 reports the T-statistic of the coefficient  $\beta_1$ . I point out to two topics that receive particularly low support rates, and have a  $\beta_1$  coefficient significant at the 10% level, as reported in Columns 3 and 4. These topics are the the “Number of questions submitted by shareholders” and “Shareholders’ attendance”, i.e., questions C&M submitted concerning the number of questions shareholders submitted to the virtual shareholder meeting, and questions concerning the number of virtual participants in attendance at a virtual meeting. Thus, Table 5 demonstrates that companies are especially not enthusiastic 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 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, I conduct

the following analysis: Following Li, Maug, and Schwartz-Ziv (2021) who show that large abnormal volume exists in the period before, and also after shareholder meetings, I examine whether the content of the shareholder meeting is related to large abnormal volume. This analysis is reported in Table 6. My motivation for examining abnormal volume is to understand whether the content of the meeting is sufficiently meaningful for affecting trading. Table 6 which reports this analysis the following model is estimated:

$$(2) \text{ } Abnormal \text{ } Volume_{dm} = \beta_1 * Total \text{ } Q\&A \text{ } time_m + \beta_2 * Total \text{ } business \text{ } update \text{ } time_m + \beta_3 * Total \text{ } business \text{ } update \text{ } time_m + \beta_4 * Controls_{im}$$

Where,  $Abnormal \text{ } volume_m$  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 record 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, but for brevity, do not report the  $Controls_{im}$  which include  $Ln \text{ } marketcap$ ,  $Total \text{ } assets$ ,  $Abnormal \text{ } return \text{ } (annual)$ , and  $ROA$ .

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 the even-numbered columns focus on the pre-meeting periods, while all the 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 separately virtual-only versus 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  $Total \text{ } Q\&A \text{ } time$  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 squares that is equal to 4.61).

Second, as the length of the window increases, the magnitudes of the even-numbered coefficient 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 coefficient 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% ( $9.1 \times 0.204$ ). 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, 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 I do not find that the *Total Q&A time* is associated with significant abnormal volume before or after the meeting. Not surprisingly, the chi-test reported at the bottom of this panel do not report that the coefficients for *Total Q&A* is significantly different for the pre- versus post-meeting period. Thus, it seems that especially when meetings are virtual (as opposed to in-person), which makes the content of the meeting more accessible to investors, extensive Q&A sessions are associated with larger post-meeting trading.<sup>21</sup>

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

## 7. Dynamics of Virtual Meetings

Since Section 3 documents that at virtual-only meetings the extent of communication with shareholders is shorter, even when meetings are not strategically scheduled, I investigate 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 number of interactions that took place between the company representative (e.g., CEO) answering a question submitted by a shareholder, and the shareholder submitting the question or other individuals involved in the process of asking or answering the question. An interaction is defined as an instance in which, after the company representative started answering the question, the

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<sup>21</sup> Brochet, Chychyla, and Ferri (2021) focus on how abnormal volume differs around virtual versus in-person shareholder meetings, whereas this section focuses on the relation between the content of shareholder meetings and abnormal volume.

shareholder asking the question/ other individual interrupts her, and continues asking the question/ refines the question, etc.

Table 7 is limited to the observations included in the sample of 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), which also address at least one question at their meeting. The Table 7 specifications includes the vector of  $Controls_{im}$  which comprises of  $Ln\ marketcap$ ,  $Total\ assets$ ,  $Abnormal\ return\ (annual)$ , and  $ROA$ , but for brevity these are not reported. Column 1 examines whether in virtual meetings, more interactions take place. This specification reports an analysis at the question level, includes a company fixed effect, and also dummies controlling for the topic of the question (these topics are presented later in detail Table 8). As the result shows, in virtual 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. Specifications 2, which is again at the question level, estimates that for each additional number of interactions that occurs, the average time spent on each question increases by 0.077 minutes for each additional interaction that takes place.

Similarly, Columns 3 and 4, which are specifications conducted at the meeting level, estimate that for each additional interaction that took 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 increased by one,<sup>22</sup> 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 would increase by 19% and 4.7%, respectively. Taken together, this analysis suggests that the limited back-and-forth interactions that take place at virtual-only meetings, ultimately limit the communication among participants of such meetings.

Finally, Table 8 reports the topics of the questions that were addressed in the firms that are

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<sup>22</sup> Since the average meeting had 10.5 interactions, an additional interaction is equivalent to a 9.5% increase in the number of interactions.

included in Panel A of Table 1. Each question addressed at the meeting is categorized under one of 18 categories. 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 company level, examining 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 versus those addressed at the post-Covid virtual only meetings, Table 8 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 meetings, respectively), financial issues (0.347 questions for both types of meetings), and in the virtual-only post-Covid meetings, 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 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 of 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.<sup>23</sup> 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 how this goal can be achieved. Broadridge (2018) offers a comprehensive guide on the best practices recommended for virtual shareholder meetings. Additional recommendations are made in a letter sent by the Shareholder Rights Group, Council of Institutional Investors, et al. to the SEC, and also in Nili and Shaner (2020).<sup>24</sup>

Notwithstanding these recommendations, given the findings of this study, in this section I will make several policy recommendations pertaining to virtual-only and hybrid shareholder meetings. The goal of these recommendations is to facilitate communication between shareholders and firms in virtual and hybrid meetings.

**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 meeting 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.<sup>25</sup> Requiring that these materials be made available to investors, indefinitely, allows tracking whether and how firms limit shareholders' voice. Ideally, firms should also file these materials as an SEC filing.

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<sup>23</sup> The summary of this survey is available here <https://www.issgovernance.com/iss-announces-results-2018-benchmark-voting-policy-survey/>.

<sup>24</sup> This letter was written by Amy Borrus from the Council of Institutional Investors, Sanford Lewis from the Shareholder Rights Group, Mindy Lubber from Ceres, Lisa Woll from US SIF, and Josh Zinner from the Interfaith Center on Corporate Responsibility. The letter can be obtained at this link: <https://corpgov.law.harvard.edu/2020/07/28/letter-to-clayton-and-hinman-on-virtual-and-hybrid-meetings/>

<sup>25</sup> Moreover, firms frequently post on their websites transcripts of their earnings calls. However, posting transcripts and audio recordings of shareholder meetings on firms' websites is only 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).

**B. Make questions submitted public.** Price (2020) argues that virtual meetings can potentially be managed more efficiently than in person-meetings since organizers can screen and select the most important questions, and because moderators can better control the flow of discussion and questions by privately messaging one another behind the scenes. Given that for some shareholder meetings hundreds of questions are submitted, and clearly not all questions can be addressed, these advantages may very well be beneficial for shareholder meetings. However, they may also create a double-edged sword. Because firms are not required to disclose which questions were submitted, firms have complete power over the selection of the questions addressed, and they may cherry-pick non-challenging questions and ignore material questions, consistent with concerns raised the Shareholder Rights Group, Council of Institutional Investors, et al. in their letter to the SEC.<sup>26</sup> Requiring that firms make public all questions submitted by shareholders, the firm's policy on the time it spends for addressing shareholders' questions, and the mechanism it uses for selecting the questions, would create pressure to avoid the use of tactics that limit shareholders voice.<sup>27</sup>

**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

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<sup>26</sup> This letter was written by Amy Borrus from the Council of Institutional Investors, Sanford Lewis from the Shareholder Rights Group, Mindy Lubber from Ceres, Lisa Woll from US SIF, and Josh Zinner from the Interfaith Center on Corporate Responsibility. The letter can be obtained at this link: <https://corpgov.law.harvard.edu/2020/07/28/letter-to-clayton-and-hinman-on-virtual-and-hybrid-meetings/>

<sup>27</sup> Additionally, all questions not addressed at shareholder meetings should, ideally, be addressed in writing in a document the company make available on their 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 to notify 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 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 attending shareholders would be disclosed in the 8-K filing in which the vote outcomes are disclosed.

submitted questions, it may indicate that the firm introduced barriers to submitting questions, and, thus, may warrant further investigation.<sup>28</sup>

**D. Enhancing alternatives to Broadridge.** As detailed in the paper, since Broadridge has a near monopoly on the electronic voting process, it also has a significant advantage over identifying shareholders. This situation creates significant entry barriers for the competitors of Broadridge's Virtual Shareholder Meeting platform. The technical barriers for identifying shareholders should be removed, or the requirement to identify a shareholder in order to submit a question should be completely removed.<sup>29</sup> Supporting non-Broadridge platforms can enhance competition among platforms and thus motivate these platforms to become more sophisticated.<sup>30</sup>

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<sup>28</sup> Firms are required to report which directors attended the shareholder meetings, but only in their next proxy, i.e., after a one-year lag.

<sup>29</sup> There are two justifications for latter policy. First, a significant and increasing number of individuals in the US invest in index funds. Thus, these individuals are already shareholders in a very large number of companies. Second, any individual is a potential shareholder, and shareholder meetings can allow also potential shareholders to inquire about the company and/or raise concerns.

<sup>30</sup> 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.

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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)

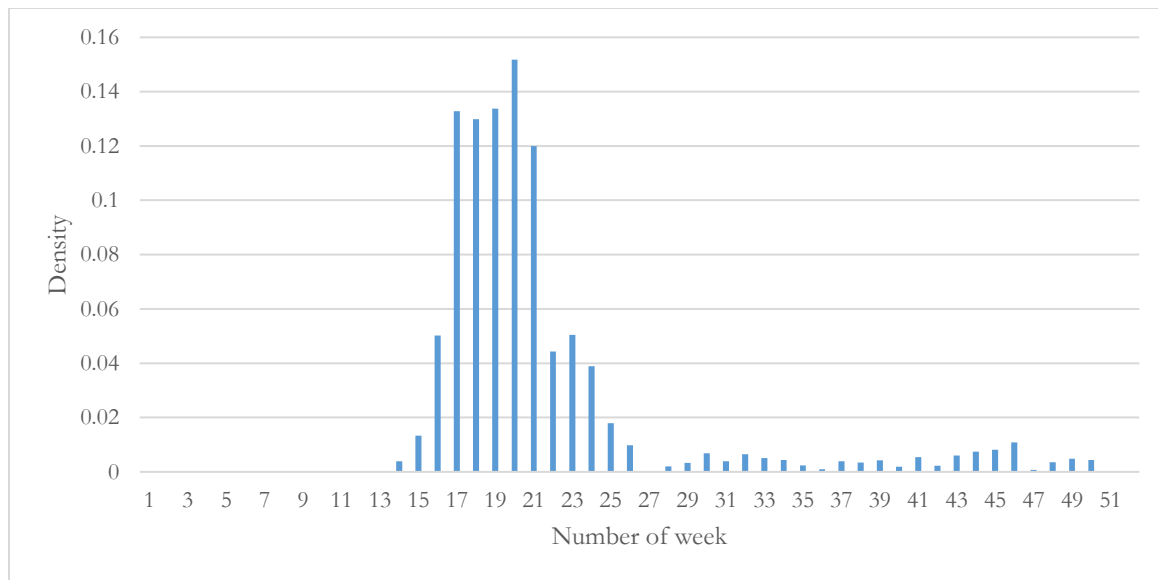


Q&A session (50 minutes)



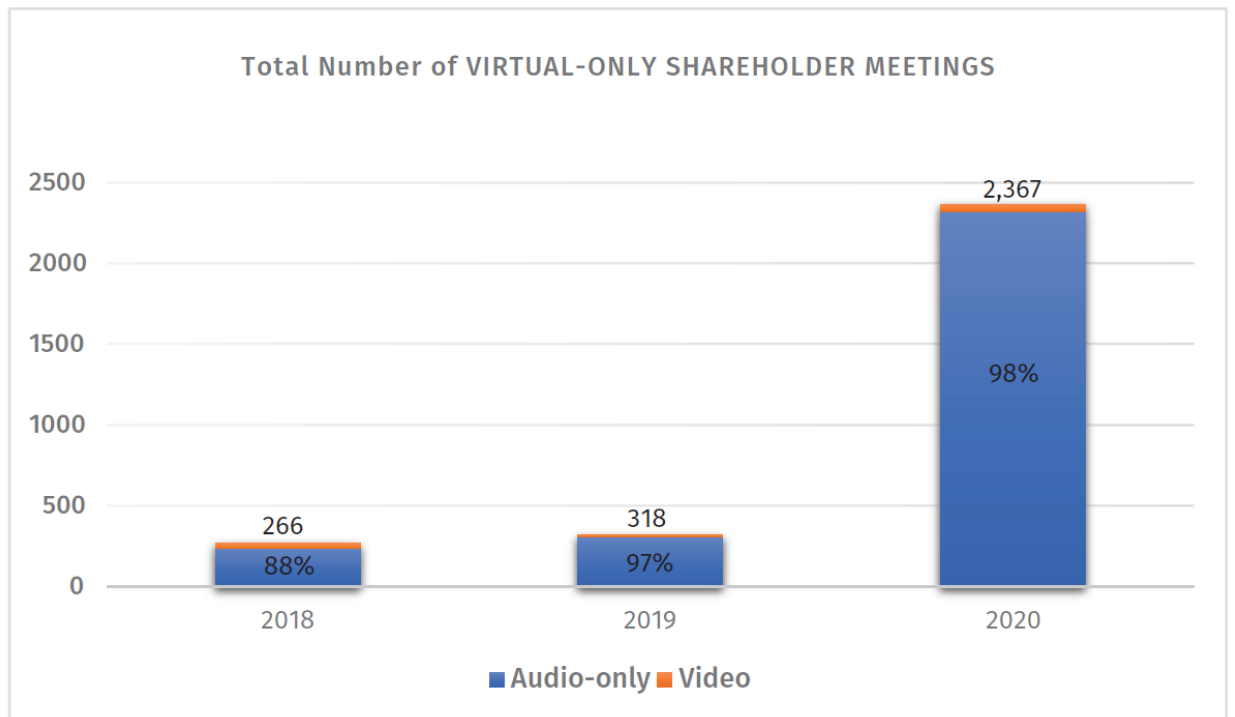
**Figure 2: Weekly distribution of the number of annual shareholder meetings**

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 meetings. The third images is from Walmart's 2020 virtual annual shareholder meeting.

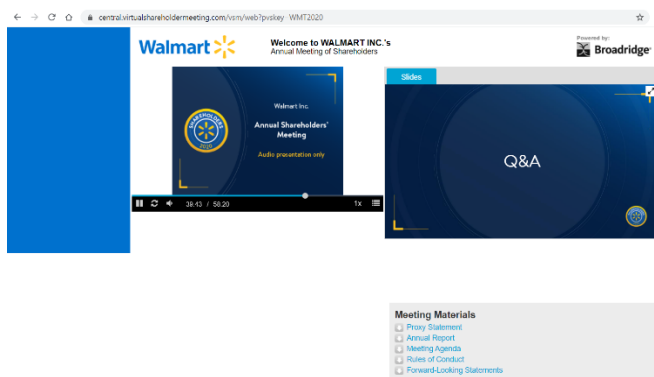
##### Images from Walmart's June 5, 2019 in person meeting

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



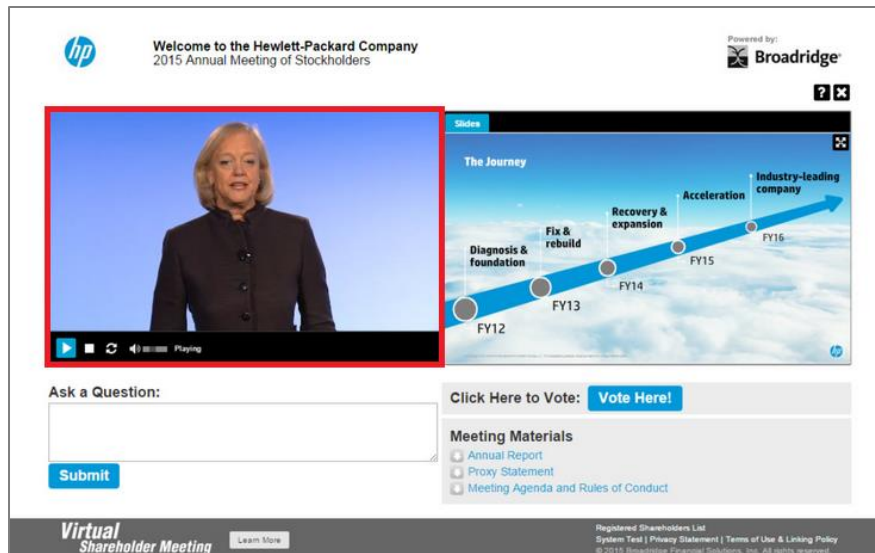
##### Images from Walmart's June 3, 2020 virtual-only shareholder meeting

(Images obtained from [https://central.virtualshareholdermeeting.com/vsm/web/home](https://central.virtualshareholdermeeting.com/vsm/web/puskey_VMT2020))



### 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 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 which shareholders can use to submit questions to the virtual shareholder meeting.



## Figure 6: Enhancing Communication at Virtual 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.

**2020 AAXN Shareholder ...**

2020 AAXN Shareholder Mtg  
May 5 – 29, 2020  
#AAXN

Live interaction

Switch event

About Slido

**Popular** Recent 10 questions

**Anonymous**  
May 29, 2020  
0 5  
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?  
Reply

**Anonymous**  
May 29, 2020  
0 3  
Is there a citizen focused product that complements that products that Axon sells to first responders and police? What might it be?  
Reply

**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?  
Reply

**Anonymous**  
May 29, 2020  
0 2  
COVID has forced some courts to hold hearings and conduct business via zoom. Is there an opportunity for Axon here?  
Reply

**Anonymous**  
May 29, 2020  
0 1  
Incentives are really important. Is the business model incentivized to ensure citizens are protected as high tech penetrates government authorities?  
Reply

**Jolanta**  
May 29, 2020  
1 1  
What do you want your legacy to be?  
Reply

**Anonymous**  
May 29, 2020  
0 0  
what is the biggest rate limiter from your POV to Axon's revenue growth?  
Reply

**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?  
Reply

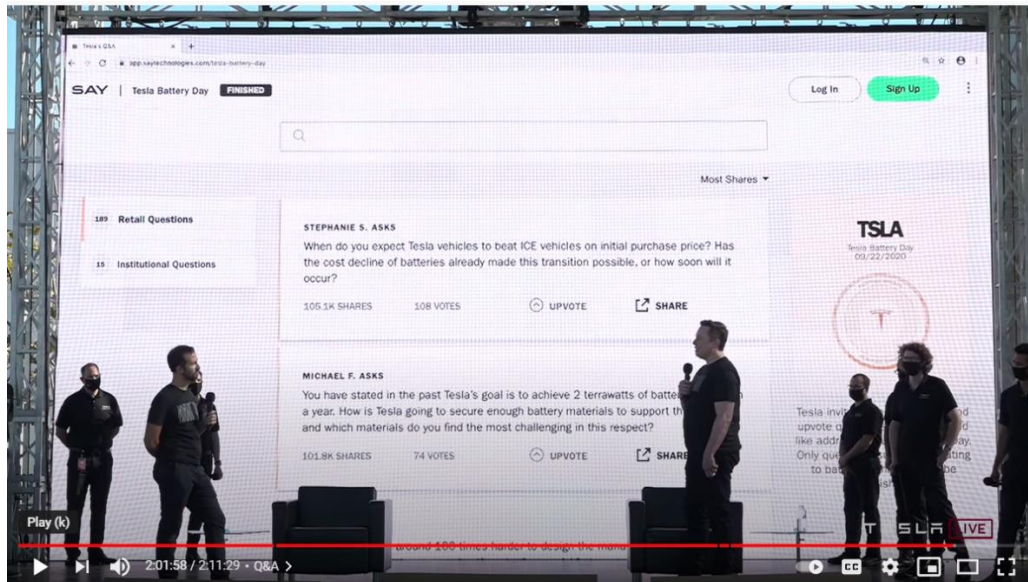
**Anonymous**  
May 29, 2020  
3 1  
Can you repeat preliminary votes? Did all items pass?  
Reply

**Jim McRitchie**  
May 29, 2020  
2 0  
How many shareholders are in attendance?  
Reply



## Panel B: Tesla

This Figure E displays 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 Shareholder Meetings**

Panel A of this table reports summary statistics on the content and structure of shareholder meetings for all companies for which complete transcripts and recordings of these meetings are available for two shareholder meetings held between July 1<sup>st</sup> 2018 and June 30<sup>th</sup> 2020, if, additionally, those companies held an in-person/hybrid shareholder meeting before the Covid-19 outbreak (i.e., 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—two meetings by each company. Column 4 reports the T-statistic of 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 shareholder meeting. Panel B reports summary statistics for all shareholder meetings for which transcripts are available for the July 1<sup>st</sup> 2018 and June 30<sup>th</sup> 2020 period. Panel C reports summary statistics for firms that held a virtual-only meeting both before Covid (July 1<sup>st</sup> 2018- March 15 2020) and after Covid (i.e., between March 16 2020- June 30<sup>th</sup> 2020). *Length of total meeting* reports the average meeting time, measured in minutes. *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 shareholder question at a shareholder meeting, *Total proposal time* measures the number of minutes spent on presenting the proposals submitted by shareholders, the *Number of shareholder questions addressed* measures the number of shareholder questions addressed at the shareholder meeting, and the *Average time spent on 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. \*, \*\*, and \*\*\* indicate  $p < .10$ ,  $p < .05$ , and  $p < .01$ , respectively.

Average values of measure	In-person meeting	Virtual meeting	Virtual relative to in-person ((1)-(2))/(1)	Coefficient of Paired t-test for Column (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)
<b>Panel A: Companies that held an In-person Meeting before Covid-19, and a Virtual-only Meeting after Covid-19</b>							
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 QA 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 spent on 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%	-	-	-	-	-
<b>Panel B: All Companies</b>							
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 QA time	12.1	3.0	-75%			245	1,075
Num. of shareholder questions addressed	4.9	1.6	-67%			245	1,075
Average time spent on 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 Column (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 QA 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 spent on 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 in to virtual 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 on trying) 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 detail)	22
Number of company-shareholder obs. of C&M successfully submitting at least one question	68
Of these: number of firm-shareholder obs. of C&M receiving at least one answer to a question submitted	34
Total number of questions submitted by C&M	390
Of these, number of questions addressed	142

**Table 3: Methods used for Designing the Content and Structure of Shareholder Meetings**

This table examines the relation between the methods used for designing virtual shareholder meetings and the structure and content of shareholder meetings. All specifications reported use the following equation:  $Variable\ measuring\ meeting\ structure_{im} = \beta_1 * Method_{im/q} + \beta_2 * Controls_{im}$ . The vector  $Variable\ measuring\ meeting\ structure_{im}$ , includes four variables that measure the content and structure of shareholder meeting  $m$ , variables that are obtained from transcripts and recordings of shareholder meetings: *Number of shareholder questions addressed* measures the number of shareholder questions addressed by the company at the shareholder meeting, *Total Q&A time* measures the number of minutes devoted to addressing shareholder question at a shareholder meeting, *Total Q&A time* measures the number of minutes devoted to addressing shareholder question at a shareholder meeting, *Length of Total meeting* measures the length of a shareholder meeting in minutes, and the *Average time spent on 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 which includes the following four methods potentially used by a company in meeting  $m$ , or with respect to question  $q$  (depending on the specification as specified below): (1) *Question addressed* (Y/N) is an indicator variable that equals one if the company addressed the question C&M submitted, and zero otherwise. (2) *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. (3) *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. (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  $Controls_{im}$  which comprises of *Ln marketcap*, *Total assets*, *Abnormal return (annual)*, and *ROA*, but for brevity these are not reported. The analysis for Row/ Method 1 is limited to the companies for which C&M were successfully able to submit at least one question, is conducted at the question level, and includes a question category fixed effect. The analysis for Row/ Method 2, which is at the company level, is limited to the companies for which C&M attempted to submit a question, and the analysis for Rows/ Methods 3-4, which is at the company level, includes all companies that held a virtual-only meeting between July 1<sup>st</sup> 2018 – July 30<sup>th</sup> 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 spent on each question (4)	Source of dependent variable (5)
1	Question addressed (Y/N)?	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	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	
3	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	
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 4: Do Firms Strategically Design Shareholder Meetings to Limit Shareholders Voice?**

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

**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 shareholder meetings in the 2020 proxy season. Column 1 reports, for each topic of questions, the frequency questions submitted were addressed. Column 2 reports the number of questions submitted for each category. Column 3 reports the coefficient  $\beta_i$  from the specification:  $Question\ addressed\ indicator = \beta_1 * Topic_i + \beta_2 * Meeting\ fixed\ effect$  where  $Question\ addressed\ indicator$  is an indicator equal to one if the firm addressed the question 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  $\beta_i$ .

	Topic	Average Frequency question addressed	Number of questions	Coefficient of <i>Question addressed</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	6-(.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: Abnormal Volume around Shareholder Meetings**

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:  $Abnormal\ Volume_d = \beta_1 * Total\ Q\&A\ time_m + \beta_2 * Total\ business\ update\ time_m + \beta_3 * Total\ business\ update\ time_m + \beta_4 * Controls_{im}$ .  $Abnormal\ volume_m$  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 record date.  $Total\ Q\&A\ time_m$  measures the number of minutes devoted to addressing shareholder question 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 spent on presenting the proposals submitted by shareholders. The specifications include, but for brevity, do not report include a vector of  $Controls_{im}$  which comprises of  $Ln\ marketcap$ ,  $Total\ assets$ ,  $Abnormal\ return\ (annual)$ , and  $ROA$ . The analysis includes all shareholder meetings held during the July 1<sup>st</sup> 2018 – July 30<sup>th</sup> 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 contrasts, the coefficient for the variable  $Total\ Q\&A\ time$  reported in the in the column in which the chi-test is reported, versus the corresponding coefficient reported in the previous column.



**Panel A: Time spent on Q&A at Virtual Meetings and Abnormal Volume**

	Abnormal Volume									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Total QA time	<b>0.1</b> (.691)	<b>0.312</b> (1.594)	<b>0.085</b> (1.143)	<b>0.237**</b> (2.157)	<b>0.071</b> (1.424)	<b>0.204**</b> (2.546)	<b>0.068*</b> (1.793)	<b>0.173***</b> (2.746)	<b>0.056*</b> (1.829)	<b>0.151***</b> (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]	[-25, -1]	[0, +25]
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 spent on QA</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 spent on Q&A at In-person Meetings and Abnormal Volume**

	Abnormal Volume									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Total QA time	<b>-0.006</b> (-1.269)	<b>-0.003</b> (-0.559)	<b>-0.004</b> (-1.515)	<b>-0.003</b> (-0.823)	<b>-0.003</b> (-1.207)	<b>-0.003</b> (-1.154)	<b>-0.003</b> (-1.313)	<b>-0.002</b> (-0.848)	<b>-0.004</b> (-1.507)	<b>-0.002</b> (-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]	[-25, -1]	[0, +25]
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 spent on QA</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 meetings**

This table focuses on the *Number of interactions* that took place between the company representative (e.g., CEO) answering a question submitted by a shareholder, and the shareholder submitting the question or other individuals involved in the process of asking or answering the question. An interaction is defined as an instance in which, after the company representative started answering the question, the shareholder asking the question/ other individual interrupts her, and continues asking the question/ refines the question, etc. 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<sup>st</sup> 2018 and June 30<sup>th</sup> 2020, if, additionally, those companies held an in-person shareholder meeting before the Covid-19 outbreak (i.e., 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 meeting exclusively* is a dummy variable that equals one if the meeting was held exclusively online, and 0 if it was held in person format (i.e., in person and also virtually). *Number of interactions per question* measures the average number of interactions per question. *Total number of interactions at meeting* measures the total number of interactions that occurred at the meeting. *Average time spent on 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. *Total Q&A time* measures the total number of minutes devoted to shareholder question at a shareholder meeting, and *Length of Total meeting* measures the length of a shareholder meeting in minutes. 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)	Average time spent on each question (2)	Total Q&A time (3)	Length of total meeting (4)
Virtual meeting exclusively	-0.4482*** (-3.115)	-0.5945*** (-6.882)	-5.1230** (-2.225)	-10.8271** (-2.570)
Number of interactions per question		0.0770*** (3.363)		
Total number of interactions at meeting			0.5713*** (6.409)	0.8565*** (5.250)
Market cap	-0.2824*** (-4.039)	0.1709*** (4.070)	5.0706*** (4.461)	9.3423*** (4.492)
Total assets	0.0036*** (2.865)	-0.0050*** (-6.698)	-0.0492* (-1.786)	-0.022 (-0.435)
Abnormal return (annual)	0.0154** (2.249)	-0.0126*** (-3.121)	-0.3309** (-2.559)	-0.5800** (-2.451)
ROA	-1.3484 (-1.315)	-4.2109*** (-6.966)	-17.2811 (-0.866)	18.5631 (.509)
Question topic FE	Yes	Yes	No	No
Level of specification	Question	Company	Company	Company
Observations included	All available	All available	All available	All available
R-squared	0.083	0.191	0.389	0.376
N	810	798	117	117

**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 company 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<sup>st</sup> 2018 and June 30<sup>th</sup> 2020, if, additionally, those companies held an in-person shareholder meeting before the Covid-19 outbreak (i.e., 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—two by each company.

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 buy back	0.102	0.020	-0.0816	-(1.662)
18	Strategy	1.122	0.388	-0.7347***	-(3.374)

## Appendix A

Panel A of Table AI conducts a formal test with these same observations included in Panel A of Table 1, but includes a vector of *Controls<sub>im</sub>* which comprises of *Ln marketcap*, *Total assets*, *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 Table AI Panel A are quite similar to those reported in Panel A of Table 1. I point out here the statistically significant results here: relative to in-person meetings, virtual-only meetings are 9.04 minutes shorter (Column 1), have a Q&A session that is 5.2 minutes shorter (Column 3) and spend on average 0.63 minutes less time on 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%, 31.5% increase, i.e., significant in terms of the economic magnitudes.

In Panel B of Table AI I repeat the analysis of Panel A of Table AI, but include all meetings held between July 1<sup>st</sup> 2018 to June 30<sup>th</sup> 2020 (i.e., the sample included in Panel B of Table 1).<sup>31</sup> Accordingly, I include two additional control variables in the specifications—*After Covid*, and *After Covid X Virtual 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, however, the magnitudes are somewhat larger: relative to in-person meetings, virtual-only meetings are 10.67 minutes shorter (Column 1), have a Q&A session that is 10.54 minutes shorter (Column 3) and spend 1.38 minutes less time on each question (Column 6).

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<sup>31</sup> 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 which 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<sup>st</sup> 2018 and June 30<sup>th</sup> 2020, if, additionally, those companies held an in-person/hybrid shareholder meeting before the Covid-19 outbreak (i.e., 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<sup>st</sup> 2018 and June 30<sup>th</sup> 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 shareholder question at a shareholder meeting, *Total proposal time* measures the number of minutes spent on presenting the proposals submitted by shareholders, the *Number of shareholder questions addressed* measures the number of shareholder questions addressed at the shareholder meeting, and the *Average time spent on 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: Company-pair Specifications**

	Length of total meeting	Total business update time	Total QA time	Total proposal time	# of shareholder questions addressed	Average time spent on each question
	(1)	(2)	(3)	(4)	(5)	(6)
Virtual meeting exclusively	-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)
Total assets	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 company					
Company 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 QA time (3)	Total proposal time (4)	# of shareholder questions addressed (5)	Average time spent on each question (6)
Virtual meeting exclusively	-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)
Total assets	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 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					
Company 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 to a virtual meeting held during the 2020 proxy season.

- |   |   |
|---|---|
| 1. E S CORP                             | 46. GENERAL MOTORS CO                   |
| 2. A M C NETWORKS INC                   | 47. GILEAD SCIENCES INC                 |
| 3. A T & T INC                          | 48. GOODYEAR TIRE & RUBBER CO           |
| 4. ABBOTT LABORATORIES                  | 49. GREENHILL & CO INC                  |
| 5. ACTIVISION BLIZZARD INC              | 50. H P INC                             |
| 6. ADMIRALTY RESOURCES NL               | 51. HOME DEPOT INC                      |
| 7. ALARM COM HOLDINGS INC               | 52. HOWMET AEROSPACE INC                |
| 8. ALASKA AIRGROUP INC                  | 53. HUNTINGTON INGALLS INDS INC         |
| 9. ALCOA CORP                           | 54. I T T INC                           |
| 10. ALEXION PHARMACEUTICALS INC         | 55. INTERNATIONAL BUSINESS MACHS<br>COR |
| 11. ALPHABET INC                        | 56. INTERNATIONAL PAPER CO              |
| 12. AMAZON COM INC                      | 57. INTERPUBLIC GROUP COS INC           |
| 13. AMERICAN AIRLINES GROUP INC         | 58. KANSAS CITY SOUTHERN                |
| 14. AMERICAN INTERNATIONAL GROUP<br>INC | 59. KELLOGG CO                          |
| 15. AMERICAN TOWER CORP NEW             | 60. KEYCORP NEW                         |
| 16. AMN HEALTHCARE SERVICES, INC.       | 61. KIMBERLY CLARK CORP                 |
| 17. ANTHEM INC                          | 62. LINCOLN NATIONAL CORP               |
| 18. ASSEMBLY BIOSCIENCES INC            | 63. LOCKHEED MARTIN CORPORATION         |
| 19. ASTERIAS BIOTHERAPEUTICS INC        | 64. LOWES COMPANIES INC                 |
| 20. AXON ENTERPRISE INC                 | 65. MARATHON PETROLEUM CORP             |
| 21. BANK OF NEW YORK MELLON CORP        | 66. MATTEL INC                          |
| 22. BLACKROCK INC                       | 67. MCDONALDS CORP                      |
| 23. BLOOMIN BRANDS INC                  | 68. MERCK & CO INC NEW                  |
| 24. BOEING CO                           | 69. NETFLIX INC                         |
| 25. BOOKING HOLDINGS INC                | 70. NETGEAR INC                         |
| 26. BRISTOL MYERS SQUIBB CO             | 71. NORTHROP GRUMMAN CORP               |
| 27. CADENCE DESIGN SYSTEMS INC          | 72. REILLY AUTOMOTIVE INC NEW           |
| 28. CAPITAL ONE FINANCIAL CORP          | 73. OMNICOM GROUP INC                   |
| 29. CATERPILLAR INC                     | 74. PFIZER INC                          |
| 30. CENTENE CORP DEL                    | 75. PRUDENTIAL FINANCIAL INC            |
| 31. CHIPOTLE MEXICAN GRILL INC          | 76. SALESFORCE COM INC                  |
| 32. CIGNA CORP NEW                      | 77. SEMPRA ENERGY                       |
| 33. COGNIZANT TECHNOLOGY SOLS<br>CORP   | 78. SKYWORKS SOLUTIONS INC              |
| 34. COLGATE PALMOLIVE CO                | 79. SONOCO PRODUCTS CO                  |
| 35. CUMMINS INC                         | 80. SOUTHWEST AIRLINES CO               |
| 36. DANAHER CORP                        | 81. STERICYCLE INC                      |
| 37. DELTA AIR LINES INC                 | 82. TELEPHONE & DATA SYSTEMS INC        |
| 38. EASTMAN CHEMICAL CO                 | 83. Triumph Group                       |
| 39. EBAY INC                            | 84. UNION PACIFIC CORP                  |
| 40. EQUINIX INC                         | 85. UNITEDHEALTH GROUP INC              |
| 41. EUROPEAN EQUITY FUND INC            | 86. VALLEY NATIONAL BANCORP             |
| 42. FISERV INC                          | 87. VERISIGN INC                        |
| 43. FITBIT INC                          | 88. VERIZON COMMUNICATIONS INC          |
| 44. FLOWSERVE CORP                      | 89. ZILLOW GROUP INC                    |
| 45. GENERAL ELECTRIC CO                 |   |

### 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.

#	Company name	Question submitted	Question answered?	Summary of answer
1	American Tower Corp.	Do you plan 2020 share buybacks?	Yes	Strong commitment to dividend, mindful of liquidity
2	American Tower Corp.	What is the greatest impact of Covid-19 on the company?	Yes	Foreign currency translation
3	American Tower Corp.	What percentage of employees can work mostly from home?	Yes	Vast majority can work from home, many use vehicles to get to the job site and do not go to company 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	
13	Booking Holdings Inc.	Please elaborate on platform change in presenting offers and prices following EU authorities' requirement.	Yes	Support for the objective of this issue but no firm commitment
14	Booking Holdings Inc.	Have there been layoffs in 2020?	Yes	Feel sympathy for those who leave
15	Booking Holdings Inc.	Please advise whether the say on pay vote was higher today compared to 2019.	Yes	Higher in 2020
16	Booking Holdings Inc.	Of the shareholders who logged into today's meeting is there any way to tell how many logged in late and how many logged out early?	No	



#	Company 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 company?	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	

#	Company 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 company?	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 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 companies that imposed potential barriers to the submission of questions are identified (Eastman Chemicals appears twice). If the “Transcripts 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 shareholder meeting.

	Company name	Transcript available	Explanation of classification
<b>I. Misleading portrayal of the lack of additional questions</b>			
1	Alexion Pharmaceuticals	Yes	The firm stated: “One question was submitted,” implying this was the only question submitted. However only one 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, give 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.
3	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 stated: “At this point, there are no more questions,” and later: “So we have addressed all of the questions submitted through the web portal as of now,” but they only addressed 2 of the 4 questions C&M submitted.

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	Company name	Transcript available	Why observation is classified as dishonest/misleading
<b>II. Company states only at the meeting that only questions related to proposals will be addressed</b>			
7	Alarm.com	No	The firm stated that no questions related to the business 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 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 "there's 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	Eastman Chemical	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 as such, we will not be addressing these questions." One question was addressed.
12	Marathon Petroleum	Yes	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	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	Chairman stated: "All submitted questions will be addressed if they are pertinent to the company and the business agenda of this meeting."
16	Verisign inc	Yes	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 thus, no questions were addressed."

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	Company name	Transcript available	Why observation is classified as dishonest/misleading
<b>III. Promising to provide shareholders with answers to unanswered questions, but not following through</b>			
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 company 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 company did not answer at the meeting 4 of the 13 questions C&M submitted. I could not locate the answers, and thus, my assistant contacted the firm to inquire where these answers could be found, but we have not received a response.
<b>IV. Imposing an early deadline for submitting questions</b>			
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 of the day before the meeting date (this was confirmed by the firm).
<b>V. Stating that questions will be answered in an allotted time, but reducing that time and thus creating impression that all questions were answered</b>			
22	International Paper	No	The company stated that it would dedicate up to 15 minutes to Q&A, but ended up spending only one minute on answering 2 questions, and ignoring 7 of the 9 questions C&M submitted.
23	Stericycle	Yes	The company 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 company 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 in to 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 in to 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 to 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 (from Soundboard Governance), and Nadira Narine (from 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 in to a meeting on a non-Broadridge platform only as a listener is substantially simpler.

When a shareholder wishes to log in to 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 in to the meeting and submit a question. To further complicate the situation, 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.<sup>32</sup>

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<sup>32</sup> No legal requirement exists that requires that only verified shareholders be permitted to submit questions. As Computershare (2020) points out, 95% of the firms who conduct meetings on Computershare platforms choose to require that only verified shareholders will be able to ask questions. Only 5% of the companies 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 company'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](http://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](mailto:legalproxy@computershare.com) (forwarding 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](mailto: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.