WITHDRAWAL OF MANAGEMENT EARNINGS GUIDANCE DURING THE COVID-19 PANDEMIC

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Withdrawal of Management Earnings Guidance During the Covid-19 Pandemic

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ABSTRACT

The Covid-19 pandemic has produced unprecedented adverse macroeconomic conditions for many firms. It has also provoked a surge in firms withdrawing prior guidance—a corporate disclosure phenomenon that has captured the attention of media and practitioners. In this paper, we examine how firms' exposure to the onset of the pandemic affects their guidance withdrawals. Our empirical analysis reveals that firms more affected by the pandemic are more likely to withdraw guidance, consistent with firms being unwilling to publicly commit to targets when facing macroeconomic adversity. The effect is more pronounced for firms facing higher litigation risk and product market competition, consistent with these conditions making the firm less willing to publicly commit to targets in the face of adversity. We also provide evidence that firms with greater exposure to the pandemic are likely to take the combined action of withdrawing prior guidance and stopping the issuance of new guidance. Moreover, as the number of guidance reinstatements is quite large, we find that firms that are likely to do so are those with improving firm performance subsequent to their initial withdrawal decision. Finally, we document that firms with greater exposure to the pandemic are discussing the pandemic less during earnings conference calls, suggesting that the unwillingness to disclose information about the pandemic extends beyond quantitative disclosure to qualitative disclosure. Overall, our paper offers early and novel evidence on how corporate disclosure has been affected by the pandemic.

Keywords: Covid-19, Voluntary Disclosure, Management Guidance

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1. INTRODUCTION

On January 30, 2020, the World Health Organization described the global spread of the Covid-19 virus as a public health emergency of international concern; on March 11, 2020, the WHO upgraded the virus to a pandemic. Many firms experienced unprecedented macroeconomic conditions due to factors largely outside their control—yet nonetheless having a significant impact on their businesses. These factors included rapidly rising global numbers of new Covid-19 cases and huge spikes in global unemployment rates as well as public health actions (e.g., lockdowns) and major economic initiatives (e.g., government stimulus packages). For many firms, especially shortly after the onset of the pandemic, the Covid-19 pandemic produced adverse conditions, reducing future earnings and causing extreme uncertainty as to what these lower earnings would be. The Securities and Exchange Commission (SEC) recognized early on that the pandemic would pose challenges for firms' various disclosures, including forward-looking disclosures. In its press release on March 4, 2020, the SEC stated the following about disclosure considerations for all public companies (SEC 2020):

> When companies do disclose material information related to the impacts of the Coronavirus, they are reminded to take the necessary steps to avoid selective disclosures and to disseminate such information broadly. Depending on a company's particular circumstances, it should consider whether it may need to revisit, refresh, or update previous disclosure to the extent that the information becomes materially inaccurate. Companies providing forward-looking information in an effort to keep investors informed about material developments, including known trends or uncertainties regarding the Coronavirus, can take steps to avail themselves of the safe harbor in Section 21E of the Exchange Act for this information.

Despite the SEC's advice for public firms to update investors with revised information and reminding them of the safe harbor protection for forward-looking information, many firms withdrew their previously issued guidance instead of revising it. Consistent with this paper's epigraph, we find that almost half (45 percent) of the firms in our sample withdrew their guidance between March 2020

and May 2020.[1] Not surprisingly, the issue of guidance withdrawal has captured the attention of the media and practitioners alike (e.g., Ashwell 2020; Barshay et al. 2020; Bright, Hunt, and Hessels 2020; Butters 2020a; Caruso and Fogarty 2020).

Motivated by significant public interest in the issue of guidance withdrawal soon after the onset of the pandemic, we first investigate how firms' exposure to the pandemic affects their decision to withdraw, as opposed to revise or reaffirm their previously issued guidance. We posit that the pandemic-driven adverse conditions would disincline firms to publicly commit to targets. Firms that have issued guidance—to the extent that this guidance has become materially inaccurate—have a legal obligation to revise this guidance, which firms typically do in ordinary times. As we discuss in detail in Section 2, the adverse conditions triggered by the pandemic generate incentives for firms not to publicly commit to revised targets, as they face significant challenges to generating new targets and might want to avoid the pressure of having to meet any new targets. Such firms might also be concerned about potential litigation and reputational loss from inaccurate guidance.

To examine the link between firms' Covid-19 exposure and their decisions to withdraw guidance, we begin with a sample of publicly listed firms with fiscal year-ends from March 2020 to February 2021 and any guidance issued in 2019. We then develop a textual analysis algorithm that crawls every form 8-K filed via EDGAR from March 1, 2020, to May 31, 2020.[2] For each form, we search the whole text for relevant words or phrases to identify whether the firm withdrew guidance. The algorithm reveals that among the 1,670 publicly traded U.S. firms in our sample, 751 withdrew their guidance.

[1] This finding contrasts with prior research showing that withdrawal of guidance is rare. For example, Lee and Van Buskirk (2017) find a forecast withdrawal rate of 1.5 percent in a general sample, and Marshall and Skinner (2020) find a withdrawal rate of 4.8 percent among firms with a material deviation between the initial management forecast and the ultimate earnings realization.

[2] We choose this sample period to determine whether a firm has withdrawn guidance because of both the previously mentioned SEC announcement on March 4, 2020, stating that firms should revise their prior forward-looking disclosures and the surge in guidance withdrawals from March 2020 to May 2020 (see Table 1).

We measure a firm's exposure to the adverse effects of the Covid-19 pandemic based on the impact of the pandemic declines in employment in the firm's industry. As shown in Figure 1, unemployment rose sharply from February to April 2020, with significant variation in the change in employment across different industries. We capture this variation by measuring the increase in unemployment for each industry from February to April 2020. Using this measure, we find that firms that are severely affected by the pandemic are more likely to withdraw guidance and also more likely to withdraw early. We further show that this finding is robust to two alternative measures of a firm's exposure to the adverse effects of the pandemic based on variations in Covid-19 impact across countries rather than industries. One measure is based on the exposure of a firm's sales to the reduction in people's mobility globally; another is based on the exposure of a firm's sales to the number of confirmed cases globally.

We then conduct cross-sectional analyses of the conditions under which firms are likely to be even more unwilling to commit to targets. First, we examine the influence of litigation risk on the decision to withdraw guidance. Despite the safe harbor provision provided by the SEC, legal practitioners have urged firms to be wary of providing forecasts (Barshay et al. 2020). Some lawyers have encouraged their clients to consider removing outlook estimates altogether—at least for the first quarter of 2020. Others warn that the safe harbor provisions may protect companies from SEC penalties but not from investor litigation (Johnson 2020). Consistent with the connection between higher litigation risk and firms' increased unwillingness to publicly commit to targets, we find that firms with greater exposure to the adverse effects of the pandemic are more likely to withdraw guidance when they face high litigation risk, compared to firms facing low litigation risk.

Second, we examine the influence of product market competition on firms' guidance withdrawal decisions. In the context of guidance withdrawal during the pandemic, more competition will make it even harder for a firm to take into account the actions of competitors in developing its targets, especially if competitors are more likely to take unpredictable actions in face of the pandemic-

driven upheaval to their businesses. In addition, the proprietary cost of providing a revised guidance during the pandemic might also be higher, given that competitors are also likely to try to figure out the impact of the pandemic on the firm and the actions that the firm might take. Consistent with higher product market competition making firms even more unwilling to publicly commit to targets, we find that firms with greater exposure to the adverse effects of the pandemic are more likely to withdraw guidance when they face high product market competition, compared to those firms facing low product market competition.

Finally, we conduct several supplementary analyses. First, we confirm that both our baseline and cross-sectional analyses are robust to alternative samples.[3] Second, we find that when firms are more severely affected by the pandemic, they are more likely to take the combined action of withdrawing prior earning guidance and stopping the issuance of new guidance. This finding further supports the notion that firms that were more exposed to the adverse effects of the pandemic were less willing to publicly commit to a target. Third, we note that many firms that withdraw guidance later reinstate their guidance (with revised numbers). We investigate the drivers of the reinstatement decision and find that guidance reinstatement is less common amongst firms most affected by the pandemic, and more common for firms with better stock performance after the withdrawal. Fourth, motivated by the fact that many firms discuss issues related to the pandemic during their earnings conference calls, we examine the association between a firm's exposure to the adverse effects of the Covid-19 pandemic and the length of discussion about the pandemic during the calls. Similar to our earlier findings that firms more severely affected by the pandemic are unwilling to provide revised or new guidance, we find that these firms are engaging in less discussion about the pandemic during the calls.

[3] In doing so, we use two alternative samples. The first alternative is limited to firms that provided earnings-related guidance, which means we exclude firms that provided only capital expenditure, dividends per share, cash flow guidance, and any combination of those three guidance items. Meanwhile, the second alternative is limited to firms that provided EPS guidance only.

Our paper contributes to the literature in two important ways. First, it extends the understanding of corporate consequences of the pandemic, which has inspired an emerging stream of studies examining its implications on the economy, corporations, and individuals (e.g., Baker, Bloom, Davis, and Terry 2020; Ding, Levine, Lin, and Xie 2020; Hassan, Hollander, Van Lent, and Tahoun 2020; Dingel and Neiman 2020; Dechow, Erhard, Sloan, and Soliman 2021).[4] Our study, motivated by concerns from regulators and practitioners about corporate disclosure during the pandemic, complements these recent studies by focusing on firms' guidance withdrawal as a consequence. It presents findings likely to be of interest to these parties; for example, our finding that firms with higher litigation risk are more likely to withdraw guidance when they are more exposed to the pandemic conforms with the point raised by legal practitioners that withdrawing guidance will help firms avoid litigation.

Second, our study adds insight to understandings of how firms strategically adjust their voluntary disclosure in response to changing macroeconomic conditions (e.g., Bergman and Roychowdhury 2008; Kim, Pandit, and Wasley, 2016; Nagar, Schoenfeld, and Wellman 2019).[5] Related literature considers guidance stoppage (e.g., Houston, Lev, and Tucker 2010; Feng and Koch, 2010; Chen, Matsumoto, and Rajgopal 2011). While both stoppage and withdrawal of guidance reduce the amount of public information, the latter is conceptually different because the firm has previously publicly committed to an earnings target—only to announce later that it is no longer doing so. Extending the limited literature on guidance withdrawal (Lee and Van Buskirk 2017; Marshall and Skinner 2020), we document that firms withdraw guidance when faced with pandemic-driven adverse conditions, with factors such as litigation risk and product market competition playing a role

[4] For example, Dechow et al. (2021) show that implied equity duration, which they argue is useful for analyzing the sensitivity of equity prices to pandemic shutdowns, has a strong positive relation to U.S. equity returns and analyst forecast revisions during the onset of the shutdown due to the pandemic.

[5] We note that many papers in the voluntary disclosure literature focus on how firm-level conditions affect voluntary disclosure decisions. Few papers study the effect of firms' exposure to macroeconomic conditions. There also appears to be some mixed evidence on how uncertainty in the economy affects earnings guidance. Measuring macroeconomic uncertainty using the dispersion in GDP forecasts and the CBOE's Volatility Index (VIX), Kim et al. (2016) find that periods of high macroeconomic uncertainty see a decrease in management forecasts. In contrast, Nagar et al. (2019) find that economic policy uncertainty leads to an increase in management forecasts.

in the decision process. Our supplementary analyses provide novel insights into how firms adjust their strategic disclosure during the pandemic. We extend the guidance stoppage literature by examining how firms jointly withdraw prior guidance and stop new guidance in the face of extreme adverse conditions during the pandemic. We are also among the first to show that firms reinstate their guidance when conditions improve. Finally, while our study is motivated by the significant media and practitioner attention on guidance withdrawal at the onset of the pandemic, we also examine how qualitative disclosure, in the form of discussion about the pandemic during conference calls, is affected. We find that, among the most affected firms, the unwillingness to provide quantitative disclosure about the pandemic extends to qualitative disclosure.

We organize the remaining contents of this paper as follows. Section 2 elaborates on the background of the setting and the hypothesis development. Section 3 describes the sample and empirical research design of this study. Section 4 presents and discusses the empirical evidence of our determinant tests. Section 5 presents the supplementary analyses related to a firm's exposure to the pandemic and guidance stoppage, guidance reinstatement, and management discussion about the pandemic during earnings conference calls. Section 6 concludes.

2. HYPOTHESIS DEVELOPMENT

2.1 Exposure to the Covid-19 pandemic and guidance withdrawal

Management guidance is a very common form of voluntary disclosure and has been extensively studied in the academic literature. Understanding the factors that influence earnings (and other forms of) guidance is undoubtedly important. While most extant studies focus on firm-level determinants of management guidance, in recent years, there has been increased interest in how macroeconomic factors affect management guidance (Bergman and Roychowdhury 2008; Kim, Pandit, and Wasley, 2016; Nagar, Schoenfeld, and Wellman 2019). As noted earlier, the recent pandemic has drawn significant attention to an unusual guidance decision: the withdrawal of previously issued guidance. On the surface, the surge in guidance withdrawals contradicts the notion

that firms should be more transparent when demand for information is greater. This trend also goes against the SEC's recommendation that firms revisit, refresh, or update previous disclosures to keep investors informed about material developments regarding the pandemic.

Management guidance is an important tool for firms to communicate their expectation of future performance. In addition to reducing the information asymmetry between the firm and its investors, management guidance signals a commitment to achieving future targets (Fuller and Jensen 2010; Houston et al. 2010). Most firms, at least soon after the onset of the pandemic, would be expecting significantly lower earnings and may have incentives to withhold the bad news, especially when there is significant uncertainty about what managers know (Dye, 1985; Jung and Kwon, 1988; Kothari, Shu, and Wysocki, 2009). Managers might also have heightened proprietary cost concerns about providing targets that could be useful for competitors' decision making, especially in difficult times (Verrecchia 1983). In addition, managers have reputational concerns about inaccurate forecasts, such as being labeled a bad forecaster or poor manager, losing credibility in future disclosures, and facing potential litigation risk (Feng and Koch, 2010; Goodman, Neamtiu, Shroff, and White, 2014; Hui, Liu, and Zhang, 2015; Hui, Wang, and Zhang, 2018; Pae, Song, and Yi, 2016). In the face of extreme pandemic-driven uncertainty, some might worry about pressure to engage in earnings or expectation management to avoid disappointing investors should firms face difficulty in meeting an earnings target (Kasznik 1999; Cheng, Subramanyam, and Zhang 2005). Hence, one might expect firms to be unwilling to publicly commit to a (likely lower) target in the face of pandemic-driven adverse conditions.

Anecdotal evidence during the pandemic supports the idea that firms are unwilling to publicly commit to a target. For example, in a press release dated April 9, 2020, GE stated, "Given the evolving nature of the COVID-19 pandemic, at this time, GE cannot forecast with reasonable accuracy the full

duration, magnitude, and pace of recovery across our end markets, operations, and supply chains. Therefore, the Company believes it is prudent to withdraw guidance for 2020" (GE 2020).[6]

Legal practitioners have also been extending advice to firms on providing management guidance during the pandemic. For example, in a memorandum to their legal clients, Barshay et al. (2020) note:

> In determining whether to retain, withdraw or revise guidance, public firms should evaluate whether they are in a position to produce reliable guidance at the moment given market conditions and the degree of uncertainty in respect of COVID-19. Additionally, public firms should consider the implications of disclosing revisions to previously issued guidance on their future public disclosure obligations. If a public company issues revised guidance, plaintiffs' firms may later argue that the company has assumed a duty to provide further revisions as a result of changing circumstances relating to COVID-19 or otherwise. Therefore, a public company that issues revised guidance should include an explicit disclaimer to updating such guidance. (p. 2)

In summary, based on the argument that the withdrawal of guidance reflects firms' unwillingness to publicly commit to targets in the face of unprecedented adverse macroeconomic conditions arising from the pandemic, our first hypothesis, stated in alternative form, is:

H1: Firms that are more exposed to the adverse effects of the Covid-19 pandemic are more likely to withdraw their previously issued guidance.

This hypothesis is not without some tension. Evidence in the extant management guidance literature suggests that firms might revise (or reaffirm), as opposed to withdraw, prior guidance when they face adverse conditions. First, some findings indicate that firms that are expecting bad news are more likely to disclose this news (e.g., Skinner, 1994; Soffer, Thiagarajan, and Walther, 2000; Hutton, Miller, and Skinner, 2003). Second, some theory predicts that more uncertainty about a firm's future cash flows could stimulate investors' demand for more information from firms (Verrecchia, 2001). To the extent that firms respond to investors' demand for more information due to pandemic-driven

[6] In a country-level example, China made a rare decision not to set a target for its 2020 economic growth due to uncertainties about the impact of the coronavirus. In an announcement on May 22, 2020, Chinese Premier Li Keqiang stated, "I would like to point out that we have not set a specific target for economic growth this year. This is because our country will face some factors that are difficult to predict in its development due to the great uncertainty regarding the Covid-19 pandemic and the world economic and trade environment" (CNBC 2020).

uncertainty, firms with greater exposure to the pandemic are expected to revise (or reaffirm) prior guidance, instead of withdrawing the guidance. In a related paper on how macroeconomic factors affect management forecasts, Nagar et al. (2019) find that higher economic policy uncertainty is associated with higher bid-ask spreads and that managers respond to this uncertainty by increasing voluntary disclosure by increasing management forecasts. Despite the possible tension in the hypothesis, our reading of the many news articles about guidance withdrawal during the pandemic leads us to posit that an unwillingness to publicly commit to targets is likely to be the dominant effect driving the decision to withdraw guidance.

2.2 Cross-sectional analyses: Litigation risk and product market competition

In this section, we develop additional hypotheses to further examine the aforementioned channel of unwillingness to publicly commit to targets that link firms' guidance withdrawal to their exposure to the adverse effects of the Covid-19 pandemic. In particular, we consider conditions that are more likely to make firms less willing to publicly commit to targets and examine if these conditions make the proposed positive effect of firms' exposure on guidance effect more pronounced.

First, we consider the role of litigation risk. Firms that are more affected by the pandemic risk major earnings shortfalls, thereby increasing the likelihood of being sued through securities class action lawsuits. The extant literature suggests that disclosing negative news voluntarily before a mandated release date (e.g., a pre-emption effect) can minimize litigation costs (Skinner 1994; Bao et al. 2019). However, pre-emptive action does not guarantee that firms will not be sued (Francis et al. 1994a, 1994b; Skinner 1997). Firms may be sued if the management forecasts themselves are inaccurate ex-post, because it is not entirely possible for the current legal system to separate whether the errors in management forecasts are caused by management bias or by unexpected business events (Johnson, Kasznik, and Nelson 2001; Baginski, Hassell, and Kimbrough 2002; Rogers and Van Buskirk 2009).

As discussed in the introduction, the SEC has highlighted the importance of providing investors with forward-looking information and reiterated legal protections for such information through the safe harbor provision. Despite these assurances, it is critical to note that although safe harbor provisions can protect against SEC enforcement, they may not protect against private securities lawsuits. For example, in an article posted on Harvard Law School Forum on Corporate Governance, Mast, Palmer, and Hickok (2020) recommend special caution when navigating disclosure concerns during the pandemic:

> Ultimately, public companies' best defense is to be thoughtful and diligent in updating their risk disclosures and any earnings guidance—and possibly to withdraw guidance altogether at this time—as well as to ensure close collaboration with their accountants and auditors on the accuracy of estimates, reserves, asset valuations, and other impacted financial reporting matters.

Based on the above discussion, we posit that firms with higher litigation risk are less willing to publicly commit to targets during the pandemic; hence, our second hypothesis, stated in alternative form, is:

> *H2: The positive association between firms' exposure to the adverse effects of the Covid-19 pandemic and withdrawal of their previously issued guidance is more pronounced for firms facing higher litigation risk.*

Next, we consider the role of product market competition. Studies have documented that firms adjust disclosure strategically in the face of competition (e.g., Huang, Jennings, and Yu 2017; Burks et al. 2018). Not surprisingly, more competition will increase the uncertainty with which a firm is able to achieve its target because the actions of competitors can have spillover effects on the firm's performance and the actions and spillover effects can be difficult to determine (Gaspar and Massa, 2006; Datta et al. 2011). More competition also increases the proprietary cost of disclosure; for example, Verrecchia and Weber (2006) find that firms are more likely to redact disclosure from their material contract filings when they are in a more competitive industry.

In the context of the pandemic, many firms are competing in unprecedented adverse economic conditions, with some even fighting for survival. Riley and Kalbfleish (2020) observe that:

> The Covid-19 pandemic has up-ended markets worldwide, leading to massive shifts in supply and demand, information asymmetry and other disconnects in markets, and significant market uncertainty, all of which has changed, and will continue in the near future to change, the competitive dynamics of affected markets.

We posit that in such conditions, more competition will make it even harder for a firm to take into account the actions of competitors in developing their targets. Further, firms might be more concerned about the proprietary cost of disclosure in such economic conditions. To the extent that peer firms are figuring out the impact of the pandemic on the firm's financial condition through public disclosures by the firm, the proprietary cost of providing the disclosures might be higher. Maslar, Serfling, and Shaikh (2021) find that earnings guidance is more informative during economic downturns.

Hence, we posit that firms facing higher product market competition have greater incentives to avoid publicly disclosing any targets during the pandemic; hence, our third hypothesis, stated in alternative form, is:

> *H3: The positive association between firms' exposure to the adverse effects of the Covid-19 pandemic and withdrawal of their previously issued guidance is more pronounced for firms facing higher product market competition.*

3. EMPIRICAL DESIGN

In detailing our research design, we begin by discussing how we construct the key firm-level measures in our study: exposure to the Covid-19 pandemic and guidance withdrawal. We then specify the regression model that we use to test the hypothesis (H1) linking firms' exposure to the pandemic and guidance withdrawal. Finally, we describe how we construct our sample used in the regression model.

3.1 Measuring a firm's exposure to the Covid-19 pandemic

We measure a firm's exposure to the onset of the pandemic based on the initial impact of the pandemic on the employment in the firm's industry. Specifically, we measure a firm's exposure to the pandemic using the percentage reductions in employment in the firm's industry from February 2020 to April 2020 and label this measure *CovidUnemp*.

Even within the same country, Covid-19 has wildly different effects on firms, depending on their industry. We gather detailed employment data for each industry from the Bureau of Labor Statistics using the monthly data series in Employment and Earnings Table B-1a, which provides employment levels for over 800 different industries according to the North American Industry Classification System (NAICS). We capture the economic impact by measuring the decrease in employment for each industry from February to April 2020. Note that the Bureau of Labor Statistics conducts the surveys in the middle of each month. As shown in Figure 1, the March numbers are not strongly affected by the pandemic, the April employment numbers show a large decline, and the May numbers show some recovery.

It is important to measure the impact at a detailed level because it can vary substantially within a broader industry. For example, in the retail sector (e.g., NAICS 44), employment at furniture stores (NAICS 4421) dropped by 39 percent over the two-month period, whereas employment at supermarkets and other grocery stores (NAICS 44511) increased by 2 percent over the same period. Using just the first two digits of the NAICS industry codes would not capture this difference. Therefore, for each firm, we assign the percentage change in employment in the firm's industry based on the most detailed NAICS industry code available to match the firm to its industry. We use a 6-digit NAICS code for 30.9 percent of the sample, a 5-digit code for 36.3 percent of the sample, a 4-digit code for 23.0 percent of the sample, a 3-digit NAICS code for 9.7 percent of the sample, and a 2-digit or 1-digit code for less than 0.1 percent of the sample. For most firms, this process generates granular firm-level matches to industry-level employment numbers.

Before we discuss our measure of guidance withdrawal in the next section, we would like to highlight that we are not arguing that firms were basing their decisions on the Bureau of Labor Statistics publications, which may have appeared after the firm withdrew its guidance. Rather, we use the industry unemployment numbers as a proxy for the economic conditions that firms faced when making decisions such as guidance withdrawals.

3.2 Measuring whether a firm has withdrawn guidance

Whether a firm has withdrawn its guidance cannot be determined using the data provided in the standard databases (usually the I/B/E/S Guidance database) commonly used to study earnings (and other forms of) guidance.[7] To identify firms that withdraw their guidance, we parse all available 8-K filings in the SEC's EDGAR database using our textual analysis algorithm, which determines whether the firm has announced a guidance withdrawal. Appendix A provides a detailed description of the algorithm as well as the algorithm's accuracy statistics, whereas Appendix B provides examples of guidance withdrawal from 8-K filings.

After identifying 761 cases of guidance withdrawals using the algorithm, we manually check each case against the contents of the 8-K filing that indicated that the firm has withdrawn its guidance. The objective of doing so is to reduce the likelihood of false positives (i.e., a firm is identified as having withdrawn guidance when in fact it did not). We find 10 cases of false positives and reclassify these cases as non-guidance-withdrawal firms.[8] In other words, there are 751 guidance withdrawal firms within our sample. In addition, when we scrutinize what firms write when they withdraw their guidance, we find that a large majority of the guidance withdrawal firms (91.54%) simply indicate

[7] The I/B/E/S Guidance database only provides the date of the initial issuance of a guidance and dates of subsequent revisions (not but withdrawals) of this guidance. However, in the course of our research, we find that there are many cases where I/B/E/S guidance database removes the guidance that has been withdrawn, which creates the false impression that the firm that withdrew the guidance did not previously issue the guidance. Future researchers might want to check whether this issue has been corrected when using I/B/E/S guidance database for their research. More details are provided in Appendix D.

[8] The accuracy rate of 98.69% falls within the test-sample confidence interval indicated in Appendix B. The details of the manual checking, in particular, the sentence(s) from the 8-K that indicated or did not indicate guidance withdrawal, are available upon request. All our results remain qualitatively the same regardless of whether we correct for the false negatives.

that they are withdrawing their guidance for 2020 and do not indicate the specific guidance types (e.g., EPS, sales, and capital expenditure) being withdrawn. Firms that do mention the specific type of guidance being withdrawn typically indicate all their previously issued guidance types. Hence, it seems reasonable to conclude that the guidance withdrawal firms are withdrawing all their previously issued guidance when they announce guidance withdrawal. We construct an indicator variable, *GuidWithdrawal*, which equals 1 if a firm withdraws guidance, and 0 otherwise.

For more illustration, Table 1 gives the monthly new guidance withdrawals from January to June of 2020 and 2019. The guidance withdrawals are identified by parsing the 8-K filings with our algorithm, and the sample is restricted to the firms with records for the correspondent fiscal year in the I/B/E/S guidance database. Although cases of Covid-19 have been reported since December 2019, Table 1 shows that its impact on the guidance withdrawal of U.S. firms did not become noticeable until March 2020. Fewer than 10 firms each withdrew guidance in January or February. The number of firms that withdrew guidance increased to 185 in March, 321 in April, and 238 in May.[9] By June, the number of withdrawals dropped back to near normal levels, possibly because i) firms that wanted to withdraw guidance had already done so, and ii) there is an improvement in the adverse conditions facing the firm as the pandemic evolved (see Figure 1 for indication of improvement in employment numbers). In contrast, the numbers for 2019 are low in every month, supporting the prior research that shows guidance withdrawal is rare (Lee and Van Buskirk 2017; Marshall and Skinner 2020).

In addition, before Covid-19, the 2008 crisis was considered the most serious financial crisis since the Great Depression. Stock and commodity prices plummeted in late 2008, just as in early 2020. So, for comparison, we incorporate the monthly guidance withdrawal numbers of 2008 in the last row of Table 1. While there are more guidance withdrawals at the end of 2008, these numbers are not even comparable to the withdrawal numbers of March, April, and May in 2020.

[9] Note that in Table 1, we show the number of guidance firms and withdrawal using calendar year (not fiscal year). Consequently, firms with fiscal year-end in January and February 2021 included in our sample are not captured here.

3.3 Regression specifications to test the hypotheses

To examine how a firm's exposure to the Covid-19 pandemic affects its decision to withdraw guidance, we rely on the following baseline regression specification:

$$GuidWithdrawal = \beta_0 + \beta_1 CovidUnemp_i + \beta_2 Book - to - market_i + \beta_3 Financing_i + \beta_4 Size_i + \beta_5 Loss_i + \beta_6 ROA_i + \beta_7 Illiquidity_i + \beta_8 ShareTurnover_i + \beta_9 ReturnVolatility_i + \beta_{10} MeanReturn_i + \beta_{11} Analysts_i + \beta_{12} InstOwnership_i + \epsilon_i. \quad (1)$$

As discussed earlier, *GuidWithdrawal* is an indicator variable equal to 1 if the textual analysis algorithm identifies at least one 8-K filing with guidance withdrawal in March, April, or May of 2020, and 0 otherwise. *CovidUnemp* measures a firm's economic exposure to the onset of the pandemic, measured using the percentage changes in unemployment in the firm's industry from February 2020 to April 2020. A statistically positive (negative) coefficient β_1 would indicate that a higher exposure level to Covid-19 is associated with a higher (lower) likelihood of guidance withdrawal. For our regressions, we utilize a linear probability model (e.g., an OLS regression with a binary dependent variable) because the linear probability model has better interpretability than non-linear models, such as probit and logit models (Angrist and Pischke 2009).[10] In addition, our second and third hypotheses involve tests of moderating effects, and such tests can create challenges in non-linear models (Ai and Norton 2003; Greene 2010).

We include multiple firm characteristics as controls. *Book-to-Market* is the book value of equity over market value of equity in the latest available fiscal year (FY 2019). *Financing* is the total of net debt and net equity issues in FY 2019. *Size* is the natural logarithm of the market value of equity in FY 2019. *Loss* is an indicator variable equalling 1 if the net income before extraordinary items in FY 2019 is negative, and 0 otherwise. *ROA* is net income before extraordinary items divided

[10] Apart from utilizing the linear probability model, we run the analysis using logit and probit models; however, as all models have similar results, we do not report the latter models for the sake of parsimony.

by total assets in FY 2019. *Illiquidity* is the stock's illiquidity measurement, based on Amihud (2002). *ShareTurnover* is the ratio of the annual average of daily trading volume over the numbers of shares outstanding in FY 2019. *ReturnVolatility* is the standard deviation of the monthly returns during FY 2019. *MeanReturn* refers to the mean of the monthly returns during FY 2019. *Analysts* is the number of analysts following the firm in the last month of FY 2019. Finally, *InstOwnership* represents the average percentage of shares outstanding held by all institutional investors in FY 2019.

Our second and third hypotheses are about the moderating effects of litigation risk and product market competition on the relation between firms' exposure to the adverse effects of the pandemic and withdrawal of their previously issued guidance. Tests of these hypotheses essentially involves dividing our baseline sample, described in the next section, into two subsamples based on proxies of these characteristics, and then examining whether there is a difference in coefficients on *CovidUnemp* across the subsamples that is consistent with the predictions of the hypotheses.

3.4 Sample

Our sample consists of U.S.-listed firms with outstanding guidance in the I/B/E/S guidance database before March 2020 for fiscal period-end dates between March 1, 2020, and February 28, 2021. Firms are included in the withdrawal sample if the initial withdrawal filing date is between March 1, 2020, and May 31, 2020; otherwise, they are assigned to the control sample. This three-month period captures the bulk of Covid-19-related withdrawals, as seen in Table 1. We exclude firms that withdrew their guidance before March 1, 2020, and we assign firms that withdrew guidance for the first time after May 31, 2020, to the control sample. Although this approach introduces potential measurement errors, removing them based on ex-post information would introduce hindsight bias.[11]

We obtain the control variables *Book-to-Market, ROA, Financing, Size*, and *Loss* from Compustat; *Illiquidity*, *ShareTurnover*, *ReturnVolaility,* and *MeanReturn* from CRSP; *Analysts* from

[11] Only a few firms withdrew guidance for the first time after May 31, 2020. We continue to find a positive association with Covid-19 exposure and guidance withdrawal when we exclude these firms.

I/B/E/S; and *InstOwnership* from Thomson Reuters Institutional. The control variables use the most recent available data before March 2020. The final sample for the main analysis contains 1,670 firms. Table 2 presents the construction strategy, and Appendix C provides detailed definitions of all variables.

Table 3 presents descriptive information about guidance withdrawal and other variables used in our study. Panel A provides summary statistics for our main variables of interest and control variables used in Equation (1). As previously mentioned, almost half of the firms in our sample (45 percent) withdrew their previous guidance in March, April, or May of 2020. *CovidUnemp* is based on the percentage increase in unemployment for the firm's industry from February to April. The average *CovidUnemp* of 0.075 shows that, in our sample, firms experience an average increase in industry-level unemployment of 7.5 percent.

Panels B and C provide some illustrations of the capital market outcomes associated with the guidance withdrawal based on event studies of abnormal stock returns, share turnover, bid-ask spreads, and return volatility for the short windows surrounding guidance withdrawal announcements. *t* refers to the date of the announcement.[12] In Panel B, the average buy-and-hold abnormal returns in the pre-announcement [t-4, t-2], announcement [t-1, t+1], and post-announcement windows [t+2, t+4] are -0.015, 0.004, and 0.001, respectively. The significant negative abnormal returns in the pre-announcement window suggest that adverse conditions facing the guidance withdrawal firms might be leading them to withdraw their guidance.

In Panel C, we find that the share turnover, bid-ask spreads, and volatility of returns increase significantly during the announcement window, compared to the pre-announcement window. These findings suggest that when firms announce their guidance withdrawals, there is increased trading interest in the stocks, greater information asymmetry among investors, and greater investor

[12] We use the report date in the 8-K rather than the filing date of the 8-K itself as the announcement date because, in some cases, the underlying disclosure (e.g., a press release) may have happened one or two days before the filing date of the 8-K, though the two dates are the same in most cases.

uncertainty over firm value, respectively. Moving on to the post-announcement window, we still find heightened trading interest in the stocks compared to the pre-announcement window. However, we notice that information asymmetry among investors and investor uncertainty over firm value in the post-announcement window are lower, compared to the pre-announcement window.

4. REGRESSION RESULTS

In this section, we present the regression results for our tests of our three hypotheses. As noted, the tests are based on the regression model specified as Equation (1).

4.1 Exposure to the Covid-19 pandemic and guidance withdrawal

In our first and baseline hypothesis, we posit that firms that are more exposed to the adverse effects of the pandemic are more likely to withdraw their previously issued guidance because they are more unwilling to publicly commit to a target.

Table 4 presents the results of our analysis of this hypothesis. Columns 1 and 2 show the regression results without and with *CovidUnemp*, respectively. We note from comparing the adjusted R^2 in Columns 1 and 2 that the inclusion of *CovidUnemp* increases the adjusted R^2 from 3.5 percent to 5.7 percent. This finding suggests that *CovidUnemp* contributes significantly to the explanatory power of a regression model on the determinants' guidance withdrawal. More importantly, in Column 2, we document a strong positive relation between a firm's economic impact of the pandemic and its withdrawal of management guidance. The coefficient of *CovidUnemp* is positive and statistically significant, with a size of 0.636 and t-statistic of 6.60. The economic interpretation of the coefficient is that for a one-standard-deviation increase in *CovidUnemp*, the likelihood of withdrawal increases by 7.7 percent. Hence, we conclude that there is a statistically and economically important positive association between firms' exposure to the pandemic and their guidance withdrawal decision. In column 3, we show that among firms withdrawing guidance, those that are most affected by the pandemic are more likely to withdraw early in the sample period.

4.2 Robustness test – alternative measures of a firm's exposure to the Covid-19 pandemic

We note that while we have chosen *CovidUnemp* as our measure of a firm's exposure to the adverse effects of the pandemic, there could be alternative ways to measure this exposure. As a robustness test, we consider alternative measures based on the notion that a firm with greater sales-weighted exposure to countries with more severe Covid-19 problems in the form of reduced population mobility and more confirmed Covid-19 cases are more likely to be suffering more from the adverse effects of the pandemic.[13] Specifically, we construct two measures as follows:

$$CovidImmobility_i = \sum_{k=1}^{K} \frac{Sales_{i,k}}{TotalSales_i} \; x \; CovidImmobility_k \tag{2a}$$

$$CovidCases_i = \sum_{k=1}^{K} \frac{Sales_{i,k}}{TotalSales_i} \; x \; CovidCases_k \tag{2b}$$

where *i* refers to firm *i, k* refers to country *k*, which firm *i* sells to, and *K* refers to the total number of countries. We obtain data on firm *i*'s sales to each country from the Compustat segment file. $Sales_{i,k}$ refers to firm *i*'s sales to country *k* and $TotalSales_i$ refer to the total sales of firm *i*.

Using data from Google's Covid-19 Community Mobility Reports, we measure $CovidImmobility_k$ using the percentage change in people's mobility in country *k* from the median value from the 5-week period from January 3, 2020, to February 6, 2020 (Google defines the days within this period as baseline days) to March 31, 2020.[14] Specifically, we construct the following six indicators of mobility for each country *k*:

1. Percentage change in attendance at entertainment venues, such as restaurants, shopping malls, museums, and cinemas ($\Delta RetailRecreation_k$);
2. Percentage change in visits to grocery markets and drug stores ($\Delta GroceryPharmacy_k$);

[13] We rely on an employment-based measure as our primary measure because we want to focus more on the economic effects of the pandemic on firms, and there is significant attention on employment levels during the pandemic. In particular, the level of underemployment was viewed as an important indicator of the adverse conditions arising from the pandemic. As we discuss later, other measures might also suffer from limitations (e.g., the use of noisy sales weights to convert country-level measures to firm-level measures).

[14] The data are publicly available at https://www.google.com/covid19/mobility/.

3. Percentage change in attendance at parks and public gardens ($\Delta ParksVisit_k$);
4. Percentage change in use of public transportation hubs, such as train stations and bus stops ($\Delta Transits_k$);
5. Percentage change in employees commuting to workplaces and offices ($\Delta Workplaces_k$); and
6. Percentage change in amount of time people spend in their homes ($\Delta Home_k$).

Figure 2, Panel A provides an illustration of the variation in people's mobility from February 17, 2020, to June 17, 2020, in the United States based on the above indicators. This figure shows that around the time that Covid-19 was declared a pandemic, on March 11, 2020, by the WHO, there was a significant increase (decrease) in the amount of time people spent at home (outdoors). Given the insight and the above indicators, we construct a composite index of people's immobility using the following formula:

$$CovidImmobility_k = \Delta Home_k - \Delta RetailRecreation_k - \Delta GroceryPharmacy_k - \Delta Parks_k - \Delta Transits_k - \Delta Works_k \quad (3)$$

Next, to determine the number of confirmed Covid-19 cases, we use data from the John Hopkins Coronavirus Resource Center.[15] Because countries can vary widely in population, we calculate the exposure level of country *k* as the number of confirmed Covid-19 cases in the country divided by its population. Specifically,

$$CovidCases_k = \frac{Confirm_k}{Population_k} \quad (4)$$

where $Confirm_k$ is the number of confirmed new cases in country *k* and $Population_k$ is the population in country *k*. Figure 2, Panel B provides an illustration of the variation in the number of confirmed cases from February 17, 2020, to June 17, 2020, in the United States. Similar to the figure in Panel

[15] The data are publicly available at https://github.com/CSSEGISandData/COVID-19/.

A, this figure shows that around the time that WHO declared Covid-19 a pandemic, there was a sharp increase in the number of confirmed new cases.

Table 5 presents the results for our analysis of how firms' global exposure to the adverse effects of the pandemic, measured using *CovidImmobility* and *CovidCases*, relates to guidance withdrawal.[16] In Column 1, the coefficient on *CovidImmobility* is 0.005, with a t-statistic of 2.73. This result indicates that firms whose sales are more prominent in countries in which the people become more immobile during the pandemic are more likely to withdraw their guidance. In terms of economic significance, a one-standard-deviation increase in *CovidImmobility* increases the likelihood of withdrawal by 3.5 percentage points. In Column 2, the coefficient on *CovidCases* is 0.176, with t-statistic of 1.73. This result indicates that firms whose sales are more prominent in countries in which the people become more immobile are more likely to withdraw their guidance. In terms of economic significance, a one-standard-deviation increase in *CovidCases* increases the likelihood of withdrawal by 2.3 percentage points.[17] Overall, the results in Table 5 provide the same inference as that in Table 4; that is, firms that are more exposed to the adverse effects of the pandemic are more likely to withdraw their previously issued guidance.

4.3 Cross-sectional Analyses

Having demonstrated that firms that are more exposed to the adverse effects of the Covid-19 pandemic are more likely to withdraw their previously issued guidance, we now move on to two cross-sectional analyses of this relation. As discussed in the introduction, a key objective of these analyses is to study the conditions—specifically litigation risk and product market competition—that are more likely to make firms less willing to publicly commit to targets and thus make the positive effect of firms' exposure on guidance effect more pronounced. To conduct the analyses, we run

[16] Note that the number of observations is lower than in the full sample due to the need for segment data.
[17] The standard deviation for *CovidImmobility* and *CovidCases* is 7.002 and 0.134, respectively.

regressions based on Equation (1) for subsamples based on the proxies of the cross-sectional condition, and then examine the differences in the coefficient on *CovidUnemp* across the subsamples.

4.3.1 Cross-sectional variation with litigation risk

To test our second hypothesis (H2) on whether firms with higher litigation risk are more unwilling to publicly commit to targets when they are more exposed to the adverse effects of the Covid-19 pandemic, we construct *LitigationRisk_KS* and *LitigationRisk_FPS* to measure litigation risk. *LitigationRisk_KS* is calculated based on Model 3 in Kim and Skinner (2012), which predicts the probability of a firm being sued. *LitigationRisk_FPS* is an indicator variable that captures industries with high litigation risk (Francis et al. 1994a, 1994b).

Table 6, Panel A presents the results of our analysis of how the relation between firms' exposure to the pandemic and guidance withdrawal varies with litigation risk. In Columns 1 and 2, we rely on *LitigationRisk_KS* as the proxy for litigation risk. We find that the coefficients on *CovidUnemp* are 0.334 and 0.865, respectively, and that these coefficients are statistically significant. The results thus indicate that in both subsamples of firms with higher and low litigation risk, firms that are more exposed to the adverse effects of the pandemic are more likely to withdraw guidance. More importantly, from the perspective of testing our second hypothesis, the statistically significant difference, based on the Wald Chi-square statistic of 7.51 (statistical significance at 1% level), in the two coefficients indicates that firms with higher litigation risk are more likely to withdraw guidance when they are more exposed to the adverse effects of the pandemic. Columns 3 and 4 present the results with *LitigationRisk_FPS* as the proxy for litigation risk. Similar results are found with this proxy. In particular, based on the Wald Chi-square statistic of 3.37 (statistical significance at 10% level), we infer that there is marginal evidence that firms with higher litigation risk are more likely to withdraw guidance when they are more exposed to the adverse effects of the pandemic.

4.3.2 Cross-sectional variation with product market competition

To test our third hypothesis (H3) on whether firms with higher product market competition are less willing to publicly commit to targets when they are more exposed to the adverse effects of the Covid-19 pandemic, we construct *ProductMarketFluidity* and *ProductSimilarity* to measure product market competition. *ProductMarketFluidity* captures the changes in rival firms' products relative to the firm's products (Hoberg et al. 2014), and *ProductSimilarity* captures the degree of relation among products mentioned in the business descriptions of a firm's 10-K annual filings with those of its competitors (Hoberg and Phillips 2016).[18]

Table 6, Panel B presents the results of our analysis of how the relation between firms' exposure to the pandemic and guidance withdrawal varies with product market competition. In Columns 1 and 2, we rely on *ProductMarketFluidity* as the proxy for product market competition. We find that the coefficients on *CovidUnemp* are 0.486 and 0.928, respectively, coefficients that are statistically significant. The results thus indicate that in both subsamples of firms with higher and low product market competition, firms that are more exposed to the adverse effects of the pandemic are more likely to withdraw guidance. More importantly, from the perspective of testing our third hypothesis, the statistically significant difference, based on the Wald Chi-square statistic of 4.74 (statistical significance at 5% level), in the two coefficients indicates that firms with higher product market competition are more likely to withdraw guidance when they are more exposed to the adverse effects of the pandemic. Columns 3 and 4 present the results with *ProductSimilarity* as the proxy for product market competition. Similar results are found with this proxy. In particular, based on the Wald Chi-square statistic of 6.88 (statistical significance at 1% level), we find further evidence that firms with higher product market competition are more likely to withdraw guidance when they are more exposed to the adverse effects of the pandemic.

[18] We obtain the data for *ProductMarketFluidity* and *ProductSimilarity* from the official website of Gerald Hoberg and Gordon Phillips (https://hobergphillips.tuck.dartmouth.edu/).

5. SUPPLEMENTARY ANALYSES

The previous section focuses on how firms' exposure to the Covid-19 pandemic affects their guidance withdrawal. In this section, we provide several supplementary analyses that enhance our understanding of how firms' exposure to the pandemic influences their voluntary disclosure strategies.

5.1 Earnings-related and EPS guidance

We begin by investigating whether our baseline as well as cross-sectional results hold for different guidance items provided by firms. Specifically, I/B/E/S guidance database provides 14 unique guidance items as follows: (1) sales, (2) gross margin, (3) operating profit, (4) EBITDA, (5) EBITDA per share, (6) pretax income, (7) net income, (8) return on assets, (9) return on equity, (10) EPS, (11) GAAP EPS (fully reported), (12) capital expenditure, (13) dividend per share, and (14) funds from operations per share. While, in the previous sections, we treated all of those guidance items similarly, in this section, we follow most studies in the management forecast literature that just focus on earnings-related guidance or even EPS guidance only.

In doing so, we note that the top three guidance items provided by U.S. firms are, respectively, sales, capital expenditure, and EPS guidance. Meanwhile, return on assets, return on equity, and pretax income are the rarest three guidance items, respectively, to be provided. To construct our first alternative sample consisting of merely earnings-related guidance, we exclude firms providing only capital expenditure, dividends per share, cash flow guidance, and any combination of those three guidance items. Accordingly, we remove 268 firms from our previous sample due to the above criteria. More specifically, 215, 22, and 19 firms are excluded for providing only capital expenditure, dividends per share, and funds from operations per share, respectively. We further exclude 12 firms providing any combination of those three non-earnings-related guidance items. Moreover, when constructing our second alternative sample consisting only of firms providing EPS guidance, we lose 600 more firms.

Table 7 Panel A (Panel B) presents the results of all three of our hypotheses for firms provided earnings-related guidance (EPS guidance only). In Column 1, the coefficient on *CovidUnemp* is 0.775 (0.860) with a t-statistic of 7.41 (6.29). The economic interpretation of the coefficient is that for a one-standard-deviation increase in *CovidUnemp*, the likelihood of withdrawal increases by 8.9 (7.1) percent, or 1.2 (0.6) percent greater (lesser) than in the case of our previous sample.[19]

Next, we repeat our earlier cross-sectional analyses with litigation risk and product market competition. For the analyses, we run subsample regressions similar to those in Table 6. Columns 2–5 of both panels in Table 7 show the regression results for the subsamples with low and high litigation risk determined either by *LitigationRisk_KS* or *LitigationRisk_FPS*. When we compare the coefficients on *CovidUnemp* across the subsamples based on both proxies of litigation risk, we continue to find statically significant evidence that in both subsamples of firms with higher and low litigation risk, firms that are more exposed to the adverse effects of the pandemic are more likely to withdraw guidance. Columns 6–9 of both panels in Table 7 show the regression results for the subsamples with low and high product market competition determined either by *ProductMarketFluidity* or *ProductSimilarity*. The finding consistently suggests that firms with higher product market competition are more likely to withdraw guidance when they are more exposed to the adverse effects of the pandemic. Overall, our results do not change when we restrict our sample to firms providing earnings-related or EPS guidance only.

5.2 Exposure to the Covid-19 pandemic and guidance stoppage

We then examine the impact of exposure to the pandemic on guidance stoppage. Conceptually, guidance stoppage differs from guidance withdrawal. Guidance stoppage is when a firm stops providing new guidance for future fiscal periods, despite having done so in the past. Guidance withdrawal is when a firm retracts previously issued guidance. To the extent that firms

[19] The standard deviations of *CovidUnemp* in the samples consisting only of firms providing earnings-related guidance or EPS guidance are 0.115 and 0.114, respectively.

more exposed to the adverse effects of the pandemic demonstrated an unwillingness to publicly commit to targets at the onset of the pandemic, we expect these firms to be more likely to stop issuing new guidance.

We construct an indicator variable *GuidStoppage* that equals one if a firm provides bundled guidance (i.e., at least one guidance together with the earnings announcement from March to May 2019, but do not do so during the earnings announcement from March to May 2020[20]). Specifically, we download from Compustat all earnings announcements from March to May 2019 and from March to May 2020. A firm is retained only if it has two earnings announcements, one from March to May 2019 and March to May 2020. After combining data on earnings announcements with data from I/B/E/S guidance database, we retain firms that provided a bundled guidance in 2019. We then determine that a firm is a guidance stopper if it did not provide a bundled guidance in 2020. We find that guidance stoppage is prevalent in our sample, with 479 out of 1,513 firms stopping their guidance.

Table 8 presents the results of our analysis of how firms' exposure to the pandemic relates to guidance stoppage as well as guidance withdrawal and stoppage jointly. In Column 1, the coefficient on *CovidUnemp* is 0.541, with a t-statistic of 5.65. In terms of economic magnitude, this result indicates that a one-standard-deviation rise in *CovidUnemp* leads to a 7.5 percent increase in the probability of stopping guidance.[21]

We further study the effects of Covid-19 exposure on the combination of guidance withdrawal and stoppage decisions. To study this joint effect, we construct a sample of firms that meet the sample construction criteria of both our guidance withdrawal and stoppage samples. In particular, of the 1,513 firms in our guidance stoppage sample, we drop 266 firms because these firms did not provide guidance for fiscal year 2020. We construct a categorical variable, *GuidWithdrawal&Stoppage*, with four categories. The categories are i) firms that do not withdraw or stop the guidance (517 firms), ii)

[20] Note that March to May 2020 is the period we used in our earlier analysis on guidance withdrawals.
[21] The standard deviation of *CovidUnemp* in the sample of guidance stoppage analysis is 0.139.

firms that do not withdraw but stopped the guidance (121 firms), iii) firms that do not stop but withdraw guidance (388 firms), and iv) firms that stop and withdraw the guidance (221 firms).

Columns 2 to 4 of Table 8 show the multinomial logistic regression results of pandemic exposure on *GuidWithdrawal&Stoppage*. The coefficients on *CovidUnemp* of stop-only, withdraw-only, and stop-and-withdraw firms are 5.698, 4.840, and 6.342; all are significant at 1%. These results indicate a significant positive effect of pandemic exposure on firms' unwillingness to publicly commit to targets; this unwillingness can be observed in terms of guidance stoppage and/or withdrawal. The tests of the pairwise differences in the effects of *CovidUnemp* between other categories indicate that the effects of *CovidUnemp* on firms that either stop guidance or withdraw guidance are similar. There is a significantly stronger effect of pandemic exposure on the joint decision to withdraw and stop guidance, as opposed to simply withdrawing guidance.

5.3 Post-guidance-withdrawal firm performance and guidance reinstatement

Following the surge in the guidance withdrawal at the onset of the Covid-19 pandemic a non-trivial number of firms reinstated guidance.[22] Conceptually, guidance reinstatement differs from guidance revision. In the case of guidance revision, a firm will simply modify its previous guidance and publicly announce the new guidance. However, in the case of guidance reinstatement, a firm first publicly states that it is withdrawing its commitment to a prior guidance and then, at some later time, decides to recommit by issuing forecasts that can be either be same or different from the ones that were withdrawn.

For illustration, in a press release dated April 30, 2020, SPS Commerce stated, "Due to uncertainties related to the macroeconomic impact of the COVID-19 pandemic, we are withdrawing 2020 guidance until we can ascertain the scale of the impact on retail dynamics, and our business" (SPSC 2020a). In a later press release dated July 30, 2020, the company stated "The dynamics of the

[22] Butters (2020b) shows that there was a 37% increase in the number of S&P 500 companies providing annual EPS guidance during the Q2 earnings season relative to the Q1 earnings season, and attributes this increase to companies reissuing annual EPS guidance during the Q2 earnings season after withdrawing or not providing annual EPS guidance during the Q1 earnings season.

current situation continue to impact our business and we continue to monitor the uncertainty around the duration and magnitude of the pandemic, and the impact that a second wave of infections may have on economic activity. We are also taking into account the possibility of continued pressure on retailers, prolonged store closures and potential bankruptcies, all of which would negatively impact our business. However, with two quarters left in the year, and the ongoing need for automation across our network which continues to drive momentum for our Fulfillment product, we are reinstating 2020 annual guidance" (SPSC 2020b).

In this section, we examine whether improving firm performance makes a firm more willing to recommit to a target via guidance reinstatement. However, unlike the guidance withdrawal identification, which is straightforward, identifying guidance reinstatement is much trickier and thus requires extensive manual checking to ensure its validity.

Specifically, to determine whether a firm has reinstated a guidance, we first rely on the I/B/E/S guidance database to determine if there is reissuance of any guidance after the guidance withdrawal date. In particular, we ensure the appearance of any guidance after the withdrawal date corresponds exactly to at least one guidance that was withdrawn by the firm. We find that of the 751 firms in our sample that withdrew their guidance, 298 have the potential to be classified as valid reinstatement cases.

Second, for each of those 298 cases, we looked at the specific withdrawing sentences. By doing so, we can confirm what kind of guidance type was being withdrawn. We noted that while some firms chose to withdraw all of their 2020 guidance, other firms chose to withdraw specific guidance (e.g., either its annual or quarterly guidance, or any specific guidance item[s] such as EPS and Sales guidance). For firms that provided specific guidance withdrawal that did not match with the I/B/E/S guidance observations as described in the first step, we classified the case as a false positive.

For example, in a press release dated April 21, 2020, Carlisle companies, Inc. stated, “In light of current economic uncertainty caused by COVID-19, we have decided to withdraw full-year 2020 revenue guidance until a clearer picture emerges for our businesses” (CSL 2020). Nonetheless, after the withdrawal date, I/B/E/S guidance only shows observations related to capital expenditure guidance for the company; hence, we classified this case as a false positive and not as a guidance reinstatement.

Lastly, we did manual comparison of the withdrawal statement and reinstatement statement to check that the guidance in the reinstatement statement was not guidance that was actually withdrawn. For illustration, in its press release dated on April 2, 2020, “Barnes Group Inc. (NYSE: B), a global provider of highly engineered products, differentiated industrial technologies, and innovative solutions, today announced that given the unprecedented end market environment and the significant macroeconomic disruption brought on by the global COVID-19 pandemic, the Company is withdrawing its full year 2020 sales, earnings, and other outlook provided on February 24, 2020” (Barnes 2020a). Later on, in its press release dated on July 28, 2020 the company mentioned, “Our full year 2020 capital expenditures forecast of $40 to $45 million is down slightly from our prior view,” and “Barnes Group believes that the prevailing business environment does not allow for the forecast of performance with reasonable precision, and as such the Company continues to suspend its 2020 full year outlook. As clarity in our end markets returns, the Company will reestablish its practice of providing annual guidance” (Barnes 2020b).

In the above example, it is clear that capital expenditure guidance was not withdrawn. Hence, the capital expenditure guidance that is issued together with the re-affirmation that the firm would continue to suspend its guidance is a revised capital expenditure guidance; that is, the firm has not reinstated withdrawn guidance. Reiterating the above steps for all possible cases, we find that of the 751 firms in our sample that withdrew their guidance, merely 136 of them are true reinstatement cases.

Accordingly, we construct a dependent variable, *GuidReinstatement*, that equals 1 if a firm reinstates during March to August 2020 any guidance withdrawn during March to May 2020, and 0 otherwise.

We then measure the post-withdrawal performance of a firm using its stock returns since the date of the guidance withdrawal. Specifically, for the firms that have withdrawn their guidance, we construct a variable, *PostWithdrawalReturn*, which is defined as average daily abnormal stock return from the day after the guidance withdrawal to i) the day before the guidance reinstatement for firms that reinstate their withdrawn guidance and ii) the last trading date of 6 months period since the beginning of our sample period (August 31, 2020) for firms that do not. To examine how post-guidance withdrawal firm performance is associated with guidance reinstatement, we adopt a regression specification similar to Equation (1) with the following adjustments: i) the dependent variable is *GuidReinstatement* instead of *GuidWithdrawal* and ii) *PostWithdrawalReturn* is added as the independent variable of interest.

Table 9 presents the results of our analysis of how firm performance after guidance withdrawal relates to guidance reinstatement. In Column 1, the coefficient on *CovidUnemp* is -0.230, with a t-statistic of -2.98. In terms of economic magnitude, this result indicates that a one-standard-deviation rise in *CovidUnemp* leads to a 3.2 percent decrease in the probability of reinstating guidance. In Column 2, while we still find similar results for *CovidUnemp*, the coefficient on *PostWithdrawalReturn* is 11.524, and it is significant at the 5% level. In terms of economic magnitude, this result indicates that a one-standard-deviation rise in *PostWithdrawalReturn* leads to a 4.6 percent increase in the probability of reinstating guidance.[23] Overall, the findings suggest that while the decision to reinstate guidance is also highly affected by the severity of pandemic exposure that led to the withdrawal decision, the improving firm performance might mitigate it and make firms more willing to publicly commit to a target.

[23] For the sample restricted to withdrawing firms, the standard deviation of *CovidUnemp* and *PostWithdrawalReturn* is 0.139 and 0.004, respectively.

5.4 Exposure to the Covid-19 pandemic and discussion about the pandemic during earnings conference calls

We now consider how firms' exposure to the adverse effects of the pandemic might be associated with another form of disclosure: discussion about the pandemic during earnings conference calls. We consider two possible scenarios. On one hand, while firms with greater exposure to the adverse effects of the pandemic might be less willing to publicly commit to targets, they might be willing to engage in other forms of disclosure to share information about the impact of the pandemic on the firm. In particular, qualitative disclosures do not require commitments to targets and yet can provide useful information about the impact of the pandemic on the firm's earnings. On the other hand, firms with greater exposure to the adverse effects of the pandemic might be less willing to discuss the pandemic, as such discussion can also lead to other forms of commitment (e.g., actions to mitigate the impact of the pandemic) and elicit questions from conference call participants about the impact of the pandemic on earnings.

An important venue in which firms can share information related to its earnings is earnings conference calls. Hassan et al. (2020) document firms that discuss pandemic-related issues in their earnings conference calls during the pandemic. Hence, we rely on Hassan et al.'s (2020) measure of the count of the number of mentions of Covid-19-related words in earnings conference calls, divided by the total number of sentences in the transcript to account for differences in transcript length. In our paper, we label the variable *CovidDiscussion*. Using data provided by Hassan et al. (2020) at www.firmlevelrisk.com, we identify 3,433 firms with measures of *CovidDiscussion* from March to May 2020.[24] Of these firms, after removing firms with missing values for the independent variables (e.g., *CovidUnemp*), 3,202 firms remain. With these 3,202 firms as our sample, we examine the association between firms' exposure to the adverse effects of the pandemic and pandemic-related discussion during earnings calls.

[24] Note that March to May 2020 is the period we used in our earlier analysis on guidance withdrawals.

Table 10 presents the results of our analysis of how firms' exposure to the pandemic relates to discussion about the pandemic during earnings conference calls. In Column 1, the coefficient on *CovidUnemp* is -0.576 with a t-statistic of -3.76. This finding implies that, similar to less disclosure in terms of management guidance, firms with greater Covid-19 exposure are also disclosing less about Covid-19 issues during earnings conference calls. This finding suggests, for these firms, the unwillingness to provide disclosure extends to qualitative disclosures.

Next, we repeat our earlier cross-sectional analyses with litigation risk and product market competition. For the analyses, we run subsample regressions similar to those in Table 6, but replace the dependent variable with *CovidDiscussion*. Ex ante, it is less clear whether the positive association between firms' exposure to the adverse effects of the pandemic and Covid-19-related discussion would be influenced by litigation risk and product market competition. From a litigation risk perspective, for most if not all firms, the discussion might not provide sufficiently specific litigable information, especially if cautionary language is used in the discussion. From a product market competition perspective, the discussion might be too vague to provide really useful information to competitors.

First, we examine the cross-sectional variation with litigation risk. We found an anecdote that illustrates that discussion about the pandemic during earnings conference calls can attract shareholder litigation. In *Douglas v. Norwegian Cruise Lines* (2021), a lawsuit was brought by all investors who purchased Norwegian Cruise Lines (NCL) common stock between February 20, 2020, and March 10, 2020. The suit concerned suspected violations of Section 10(b) and 20(a) of the Securities Exchange Act of 1934 related to various allegations of misrepresentations and omissions regarding the impact of Covid-19 on the company during the press release and conference call with regard to the earnings announcement for the fourth quarter and year ending on December 31, 2019. The court granted the defendants' motion to dismiss the complaint. In particular, the court agreed with the defendants that most of the statements at issue are within the purview of the safe harbor provisions because the

challenged statements directly involve NCL's future operational plans, particularly those in response to Covid-19, and were accompanied by sufficient cautionary language.

Columns 2–5 of Table 10 show the regression results for the subsamples with low and high litigation risk determined either by *LitigationRisk_KS* or *LitigationRisk_FPS*. When we compare the coefficients on *CovidUnemp* across the subsamples based on *LitigationRisk_KS*, we do not find statically significant evidence that litigation risk matters when firms discuss the pandemic during earnings conference calls. Similarly, we do not find statistically significant evidence when we compare the coefficients on *CovidUnemp* across the subsamples based on *LitigationRisk_FPS.* One possible explanation for the lack of evidence that litigation risk matters could be the vagueness of the discussion and use of sufficiently cautionary language.

Columns 6–9 of Table 10 show the regression results for the subsamples with low and high product market competition determined by either *ProductMarketFluidity* or *ProductSimilarity*. With *ProductMarketFluidity* as the measure of product market competition, we find that, compared to firms facing lower product market competition, firms facing higher product market competition are even less willing to discuss the pandemic during earnings conference calls when they are more exposed to the adverse effects of the pandemic. The difference in the coefficient on *CovidUnemp* across the two samples is statistically significant at the 1% level. Similarly, with *ProductSimilarity* as the measure of product market competition, we find similar evidence that product market competition matters. The difference in the coefficient on *CovidUnemp* across the two samples is statistically significant at the 5% level. The finding that product market competition matters suggests that firms with greater exposure to adverse effects of the pandemic are conscious of revealing information useful to competitors, even in their qualitative disclosures.

6. CONCLUSION

From certain perspectives, the Covid-19 pandemic is a shock that produced extreme adverse conditions for many firms. For firms that have previously issued management guidance, this guidance

is likely to have become materially inaccurate; moreover, under SEC rules, firms should provide updates to the guidance. In fact, as noted in the introduction, the SEC even urged firms to update their guidance in view of the pandemic-driven change in business conditions. Prior to the pandemic, firms typically provided revised guidance, even when they were facing difficult times.[25] However, at the onset of the pandemic, many firms chose to withdraw their guidance, a phenomenon that attracted significant attention from media and practitioners. To shed insight on how the pandemic has affected corporate disclosure, we examine how firms' exposure to the pandemic affect their decision to withdraw guidance.

Our primary finding is that firms with greater exposure to the pandemic are more likely than other firms to withdraw their guidance. This finding is consistent with firms being unwilling to commit to targets when faced with pandemic-driven adverse conditions. This finding also conforms with statements issues by many firms when they withdraw their guidance and practitioner articles on the guidance withdrawal phenomenon. Further support for the explanation of unwillingness to commit to targets come from cross-sectional analyses that show that the effect of pandemic exposure on guidance withdrawal is more pronounced for firms with higher litigation risk or higher product market competition. As we argued earlier, these firms are likely to be those less willing to publicly commit to targets, especially when faced with pandemic-driven adverse conditions.

We conduct a series of supplementary analyses to provide a more holistic picture of how firms' corporate disclosure strategy was impacted by the pandemic. First, we confirm that our baseline results as well as cross-sectional results hold for all guidance items as well as earnings-related guidance and EPS guidance only. Next, we find that firms with greater exposure to the pandemic are likely to take the combined action of guidance withdrawing and guidance stoppage, a finding in support of the argument that such exposure makes firms less willing to publicly commit to earnings

[25] Some studies have suggested that firms might even have more incentives to provide guidance in such times (e.g., Skinner, 1994; Nagar et al., 2019).

targets. Moreover, we document that some firms reinstated guidance and that the likelihood of doing so is affected by improving conditions after the guidance withdrawal. Finally, we find that firms with greater exposure to the pandemic discuss the pandemic less during earnings conference calls, especially when they face greater product market competition. This finding suggests that firms' unwillingness to provide disclosure at the onset of the pandemic extends beyond quantitative disclosure to qualitative disclosure.

Overall, the sudden arrival of the Covid-19 pandemic and surge in guidance withdrawal provides a unique opportunity to study how firms adjust corporate disclosure in the face of extreme adversity driven by global conditions and largely beyond the control of the firms. Our various findings highlight that the corporate disclosure response is driven by considerations of litigation risk and product market competition. Future studies might consider how the pandemic affects other corporate decisions.

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Appendix A: Algorithm for detecting *GuidWithdrawal* by parsing 8-K filings

Using a machine-based algorithm, we collect relevant information from firms' 8-K filings and construct several variables to measure the withdrawals of previous managers' forward-looking forecasts. We use Python to write our program. The program downloads and reads the complete submission text files of all 8-K filings from the SEC's EDGAR database. Each 8-K filing may contain multiple HTML files. Thus, we extract all text content and separate it into sentences using standard sentence boundary disambiguation.[26] By doing so, we deduce that the locations of guidance withdrawal statements in 8-K reports may vary across firms but mostly appear in Item 7.01, Item 8.01, and Item 9.01. The program filters out text from the Regulation Fair Disclosure (Item 7.01), Other Events (Items 8.01 and 9.01), and Financial Statements & Exhibits (Exhibits 99.x). The identification process normatively reads the filings and parses the text according to the narrative HTML tags. Our machine-based algorithm labels the 8-K filings containing guidance withdrawal statements and records the corresponding firm identifier and filing date. The algorithm identifies withdrawing firms as those whose guidance contains certain keywords related to "withdraw" or "guidance" in close proximity in at least one sentence of their filings.

The algorithm mainly follows these steps:

1. Obtain 8-K filings.
   1.1 Access URLs of all 8-K filings index pages from the EDGAR daily updated index files.
   1.2 Visit and parse the index page directed by each URL, then identify and read the "complete submission text file" of each 8-K filing (if there is one).
2. Identify the contents from targeted sections and 8-K filing items.

[26] For example, the starting node is determined by matching the sequential splitting points of expressions (e.g., ["first character", item 7.01, item 8.01, item 9.01, exhibits]"). The ending node is determined by matching ["last character," signature]. The program treats the text between the starting and ending nodes as the targeted content.

2.1 The complete submission text file contains all information from each 8-K filing, which can include multiple complete HTML files. For example, an 8-K filing normally contains one HTML file called "8-K Form" and another HTML file with detailed exhibits. We identify each HTML file using the starting tag "<html*>" and ending tag of "<\html>," respectively.

2.2 From each HTML file, extract all text content and decompose it into sentences according to the fundamental rule of sentence boundary detection. The starting node is determined by matching the sequential splitting points of expressions (e.g., ["first character", item 7.01, item 8.01, item 9.01, exhibits]").[27] The ending node is determined by matching ["last character," signature]. The program treats the text between the starting and ending nodes as the targeted content.

3. Label the targeted sections of 8-K filings.

3.1 First, create two keyword dictionaries for "withdraw" and "guidance" terms. The withdraw dictionary includes the verbs "suspend," "withdraw," "retract," "rescind," "remove," "revoke," and their gerunds and conjugations. The guidance dictionary includes the nouns "guidance," "outlook," and their plurals. The program counts the number of words between a withdraw keyword and guidance keyword if there are no more than 20 words in between and inactivates the identification if there are more than 20 words in between.

3.2 For the extracted contents of each HTML file (step 2.2), match appearances of the guidance keywords on a sentence basis, which are led or followed by the withdraw keywords simultaneously. The program labels the 8-K file as "Guidance suspension" if at least one sentence fits the matching criterion in the targeted contents.

[27] Each expression includes various forms of the item name, ignoring upper and lower cases and spaces. For example, expression "item 7.01" includes "Item 7.01" and "Item 7.01 Regulation FD." Matching starts from the first expression of starting sequential splitting points of expressions. The starting node is updated if latter expressions match.

To test the validity of the algorithm, we follow Bentley, Christensen, Gee, and Whipple (2018) and manually check the accuracy of the 8-K filings identification by our algorithm. Panel A and B in Table A1 provide accuracy statistics for the training sample and test sample, respectively. The training sample consists of 950 8-K filings filed on 30-Mar-2020 and 31-Mar-2020, and it belongs to the filings that we used to develop, update and complete our algorithm.[28] We further construct the test sample consists of 1,101 8-K filings filed on 29-Apr-2020 and 30-Apr-2020, and these filings are not read when we construct the algorithm. We manually read the filings in both samples and identify guidance withdrawal, and compare with the outputs of the algorithm. Overall, both the in-sample and out-of-sample accuracies of the algorithm identification process exceed 99.5%.

[28] We mainly used the 8-K filings filed on March 2020 to develop our algorithm, so the training sample to examine the accuracy does not contain all the filings for algorithm construction.

Table A1 Accuracy of the algorithm

We report the accuracy examinations for our algorithm of identifying "guidance withdrawal" from 8-K filings. Panel A presents the results of in-sample accuracy using the training sample to construct, update, and improve the algorithm. Panel B shows the results of out-of-sample accuracy using a test sample that consists of all 8-K filings filed on 29-Apr-2020 and 30-Apr-2020, and these filings are not considered during algorithm construction. Each panel contains a confusion matrix, which reports the number of identified "guidance withdrawal" filings by algorithm and manual check, and the accuracies of the algorithm identification. Confidence intervals are Clopper-Pearson exact confidence limits.

Panel A: Training sample

Accuracy		N	Correct	95% Confidence Interval	
When algorithm detects	Withdraw = 1	55	100.00%	100.00%	100.00%
	Withdraw = 0	895	99.89%	99.67%	100.00%
	Total	**950**	**99.89%**	**99.69%**	**100.00%**

Panel B: Test sample

Accuracy		N	Correct	95% Confidence Interval	
When algorithm detects	Withdraw = 1	124	99.19%	97.62%	100.00%
	Withdraw = 0	977	99.90%	99.70%	100.00%
	Total	**1,101**	**99.82%**	**99.57%**	**100.00%**

Appendix B: Examples of guidance withdrawal from 8-K filings

Note: The words in bold below are those results in our algorithm treating the firm as a guidance withdrawal firm.

The Gap Inc. (Item7.01, 8-K filing date: 26-Mar-2020)
Item 7.01 Regulation FD Disclosure.
On March 26, 2020, the Company issued a press release announcing that it was deferring the record and payment dates for its previously declared first quarter dividend to the first quarter of fiscal year 2021 and suspending its dividend program for the remainder of fiscal year 2020. A copy of the press release is furnished hereto as Exhibit 99.1. The previously declared dividend will now be payable on or after April 28, 2021 to shareholders of record at the close of business on April 7, 2021. The Company's board of directors determined that deferring payment of the previously announced dividend was in the best interests of the Company in order to preserve liquidity in the context of the impact of COVID-19 on the Company's operations. The Company reserves the right to further defer the record and payment dates for the previously declared first quarter dividend, depending upon, among other factors, the progression of the COVID-19 outbreak, business performance and the macroeconomic environment.

On March 26, 2020, the Company also announced in the same press release that, given the uncertainty regarding the potential duration and impact of COVID-19, it is **withdrawing** the full year 2020 **guidance** issued on March 12, 2020 and is not providing an updated outlook at this time. A copy of the press release is furnished hereto as Exhibit 99.1.

Note about algorithm used to capture guidance withdrawal: "suspending its dividend program" in the above item does not trigger the algorithm to classify the firm as "Guidance Withdrawal". The algorithm classifies the firm as withdrawing only if the verb words from "withdraw" dictionary and the object words from "guidance" dictionary appear in the same sentence and the distance between these two words is less or equal than 10 words. Consequently, the algorithm identifies this firm as a guidance withdrawal firm based on the phrase "it is withdrawing the full year 2020 guidance" in the second paragraph.

Under Armour (Exhibit 99.1, 8-K filing date: 03-Apr-2020)
2020 Earnings Outlook Update
As a result of ongoing disruption and uncertainty related to the global COVID-19 pandemic, Under Armour has **withdrawn** its first quarter and full-year 2020 **outlook** provided on February 11, 2020 and will not offer an updated outlook at this time. More information will be provided during the company's first quarter fiscal 2020 conference call.

American Airlines Inc. (Item 7.01, 8-K filing date: 10-Mar-2020)
ITEM7.01 REGULATION FD DISCLOSURE.
Due to the heightened uncertainty surrounding the outbreak of the COVID-19 virus, its duration and its impact on overall demand for air travel, American Airlines Group Inc. (the Company) is **withdrawing** its 2020 **guidance** issued on January23, 2020.

On March10, 2020, the Company is presenting information relating to its financial and operational outlook at the J.P. Morgan 2020 Industrials Conference. This presentation and webcast are located on the Company's website at www.aa.com/investorrelations under

Presentations& Investor Updates. The presentation is also furnished as Exhibit 99.1 to this report.

The information in this Item 7.01, including Exhibit 99.1, is being furnished and shall not be deemed to be filed for purposes of Section18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that Section and shall not be deemed incorporated by reference into any registration statement or other document filed pursuant to the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such filing.

United Airlines Inc. (Item 7.01, 8-K filing date: 24-Feb-2020)
Item7.01 Regulation FD Disclosure.
As a result of the coronavirus ("COVID-19") outbreak, as of the date of this report, United Airlines, Inc. ("United"), a wholly-owned subsidiary of United Airlines Holdings, Inc. ("UAL", and together with United, the "Company"), has suspended flights between the United States and each of Beijing, Chengdu, Shanghai and Hong Kong through April 24, 2020. These routes represented approximately 5% of the Company's 2020 planned capacity and the Company's other trans-Pacific routes represented an additional 10% of the Company's 2020 planned capacity. As a result of COVID-19, we are currently seeing an approximately 100% decline in near-term demand to China and an approximately 75% decline in near-term demand on the rest of our trans-Pacific routes. We are managing our business to minimize the operational and financial disruption.

For the first quarter of 2020, we currently expect the reduced revenue on our trans-Pacific routes to be partially offset by the related decline in fuel prices and other cost savings. The incremental earnings headwind is also expected to be offset by higher earnings from our recently extended co-brand partnership with JPMorgan Chase Bank, N.A. and Visa U.S.A. Inc. Accordingly, we expect first quarter adjusted diluted earnings per share ("EPS") to remain within our previously provided guidance range of $0.75 to $1.25.1 Beyond the first quarter, we believe the range of possible scenarios is too wide to provide earnings guidance at this time. If COVID-19 were to run its course by mid-May, and normal travel patterns on trans-Pacific routes resume gradually over five months, we would expect to be tracking to deliver 2020 adjusted EPS within our previously provided guidance range of $11.00 to $13.00.1 However, due to the heightened uncertainty surrounding this outbreak, its duration, its impact on overall demand for air travel and the possibility the outbreak spreads to other regions, the Company is **withdrawing** all full-year 2020 **guidance** issued on January 21, 2020.

General Motors Company (Item 8.01, 8-K filing date: 24-Mar-2020)
Item 8.01 Other Events
GM is **suspending** its 2020 **guidance** due to uncertainty around the business impact of the COVID-19 pandemic.

Royal Caribbean Cruises Ltd. (Exhibit 99.1, 8-K filing date: 10-Mar-2020)
ROYAL CARIBBEAN COMMENTS ON LIQUIDITY ACTIONS AND 2020 OUTLOOK
March 10, 2020
MIAMI March 10, 2020 - Royal Caribbean Cruises Ltd (NYSE: RCL) today announced that due to the spread and recent developments related to the COVID-19 outbreak, the company has increased its revolving credit capacity by $550 million bolstering the company’s liquidity. The company is pursuing additional actions to improve its liquidity by reducing

capital expenditures, operating expenses and taking other actions to improve liquidity by at least a further $1.7 billion in 2020. The company is also planning reductions to the 2021 capital expenditures and operating expenses.

The company had previously communicated that its 2020 guidance did not include the impact of the COVID-19 outbreak. Given the recent government actions and the heightened impact and uncertainty of changes in the magnitude, duration and geographic reach of COVID-19, the company is **withdrawing** its first quarter and full-year 2020 **guidance**.
These are extraordinary times and we are taking these steps to manage the company prudently and conservatively, said Richard D. Fain, chairman and CEO. I am proud of the work our teams are doing to address this unprecedented situation.

Norwegian Cruise Line Holdings Ltd. (Item 7.01, 8-K filing date: 24-Apr-2020)
Item 7.01 Regulation FD Disclosure
Given the meaningful and rapidly evolving impacts from the pandemic, the temporary suspension of sailings globally and the uncertainty and fluidity of the ongoing situation, the Company and NCLC **withdraw** their first quarter and full year 2020 **guidance** provided earlier this year, including on the earnings call on February 20, 2020, which excluded known and unknown impacts from COVID-19.

Appendix C. Variable definitions

Variable	Description
Analysts	Number of analysts following the firm in the last month of FY 2019.
Book-to-Market	Book value of equity over market value of equity in FY 2019.
BHAR	Buy-and-hold abnormal returns.
CovidCases	A firm's sales-weighted global exposure to the adverse effects of the Covid-19 pandemic based on exposure to the number of confirmed Covid-19 cases in the countries where the firm sells to. Please refer to Section 4.2 for details on how this index is constructed.
CovidDiscussion	Management discussion of the Covid-19 pandemic during earnings conference call. Following Hassan et al. (2020), it is measured as the count of the number of mentions of Covid-19–related words in an earnings conference calls transcript, divided by the total number of sentences in the transcript to account for differences in transcript length.
CovidImmobility	A composite index derived from Google's Community Mobility Report, which measures the overall effect of immobility caused by the Covid-19 pandemic. Please refer to Section 4.2 for details on how this index is constructed.
CovidUnemp	A firm's economic exposure to the onset of the Covid-19 pandemic, measured using the percentage change in unemployment in the firm's industry from February 2020 to April 2020. The data on employment numbers are publicly available from the official website of the U.S. Bureau of Labor Statistics. For each firm, we assign the percentage change in unemployment in the firm's industry based on the most detailed NAICS industry code available to match the firm to its industry.
Financing	The total of net debt and net equity issues. Specifically, net debt issues are a ratio of long-term debt minus the portion of long-term debt classified as short-term debt plus the change in current debt over total assets at the beginning of FY 2019. Net equity issues are a ratio of the sales of common and preferred stock minus purchases of common and preferred stock over total assets at the beginning of FY 2019.
GuidStoppage	Indicator variable equal to one if there is a bundled guidance for the fiscal year of 2019 but not for the fiscal year of 2020. The issuance of bundled guidance is restricted to the second quarter only for each fiscal year.
GuidWithdrawal	Indicator variable equal to 1 if there is a guidance withdrawal in the 8-K filings based on our textual analysis algorithm, 0 otherwise.
GuidWithdrawal&Stoppage	Categorical variable without a ranking. It is equal to "0" if firms do not withdraw or stop the guidance. It is equal to "1" if firms do not withdraw but stopped the guidance. It is equal to "2" if firms do not stop but withdraw guidance. It is equal to "3" if firms stop and withdraw the guidance.
GuidReinstatement	Indicator variable equal to one if the firm reinstated guidance after withdrawing its guidance, 0 otherwise.
Illiquidity	Stock's illiquidity measure, based on Amihud (2002).
InstOwnership	Average percentage of shares outstanding held by all institutional investors in FY 2019.
LitigationRisk_FPS	Indicator variable equal to 1 if firms are operating in biotech, computers, electronics, or retails industries, 0 otherwise (Francis et al. 1994a, 1994b).
LitigationRisk_KS	Indicator variable equal to 1 if the firm's probability of being sued is above the median, 0 otherwise. Estimates are based on the model from Kim and Skinner (2012).
Loss	Indicator variable equal to 1 if net income before extraordinary items is less than 0, 0 otherwise.
MeanReturn	Mean of the monthly returns during FY 2019.
PostWithdrawalReturn	Average daily abnormal stock return from the day after the guidance withdrawal to i) the day before the guidance reinstatement for firms that reinstate their withdrawn guidance and ii) the last trading date of 6 months period since the beginning of our sample period (Aug 31, 2020) for firms that do not.

ProductMarketFluidity	Indicator variable equal to 1 if the degree of firm fluidity exceeds the median, and 0 otherwise. Firm-level data of fluidity are based on Hoberg et al. (2014).
ProductSimilarity	Indicator variable equal to o1 if the degree of firm product similarity exceeds the median and 0 otherwise. Firm-level data of product similarity are based on Hoberg and Phillips (2016).
ReturnVolatility	Standard deviation of the monthly returns during FY 2019.
ROA	Net income before extraordinary items divided by total assets in FY 2019.
ShareTurnover	Ratio of the annual average of daily trading volume over the numbers of shares outstanding in FY 2019.
Size	Natural logarithm of firm's market value of equity at the end of FY 2019. A measurement for firm size.
Spreads	Difference between the highest ask price and lowest bid price during an event window scaled by the stock price.
Turnover	Total number of shares traded during an event window over the average number of shares outstanding for the same window.
Volatility	Standard deviation of stock returns during an event window.

Appendix D. Treatment of guidance withdrawal in the IBES guidance database

In the course of our study on guidance withdrawals, we find some significant inconsistencies when we compare different versions of the I/B/E/S guidance database. In particular, the versions are:

Version 1: Downloaded on Mar 26, 2020 (last modified date: Feb 27, 2020)

Version 2: Downloaded on July 28, 2020 (last modified date: May 28, 2020)

Version 3: Downloaded on June 13, 2021 (last modified date: May 27, 2021)

In Version 2, there are many cases where I/B/E/S removed from the database the guidance that has been withdrawn. This creates the false impression that the guidance was never issued.

In Version 3, I/B/E/S added the wrongly removed guidance back to the database. However, I/B/E/S records the withdrawal date as the announcement date instead of the original issue date. This creates the false impression that the firm announced guidance on this date, when in fact it withdrew guidance on this date.

We use PayPal as an example to illustrate the above issues.

Paypal withdrew its guidance on May 6, 2020 during the earnings conference calls for the first quarter 2020. The statement related to this withdrawal is:
"PayPal is withdrawing its full year 2020 revenue and earnings guidance" (PayPal 2020).[29]

EPS guidance
Version 1 correctly reported Paypal issued on Jan 29, 2020 annual EPS guidance of 3.39 – 3.46 for fiscal year 2020.
Version 2 removed the guidance.
Version 3 added the guidance back. However, the announcement date is given as May 6, 2020 (instead of Jan 29, 2020). In addition, the guidance amount is given as 3.39 (instead of 3.39 – 3.46).

Sales guidance
Version 1 correctly reported Paypal issued on Jan 29, 2020 an annual sales guidance of 20800 - 21000 for fiscal year 2020.
Version 2 removed the guidance.
Version 3 added the guidance back. However, the announcement date is given as May 6, 2020 (instead of Jan 29, 2020). In addition, the guidance amount is given as 20800 (instead of 20800 - 21000).

The above problems arising from guidance withdrawals can be a significant issue for research using I/B/E/S guidance data for periods that cover periods of significant number of guidance withdrawals, such as early 2020. In particular, the treatment of withdrawal dates as announcement dates is an especially important issue for event studies that requires accurate

[29] https://s1.q4cdn.com/633035571/files/doc_news/archive/6fc33651-04e2-4083-88e1-64fb427c79d6.pdf).

initial/revised guidance announcement dates. The missing value for the upper value of a range forecast can lead to two issues: misclassification of a range forecast as a point forecast and incorrect an forecast number. With regard to the latter issue, it is common for researchers to use the midpoint of a range forecast as the guidance. Due to the missing upper value, for firms that have withdrawn guidance, the lower value will be used as the guidance.

Future researchers might want to check whether the I/B/E/S guidance data for firms that have withdrawn guidance is accurate.

Appendix E. Figures

Figure 1 Changes in unemployment during the pandemic in the United States

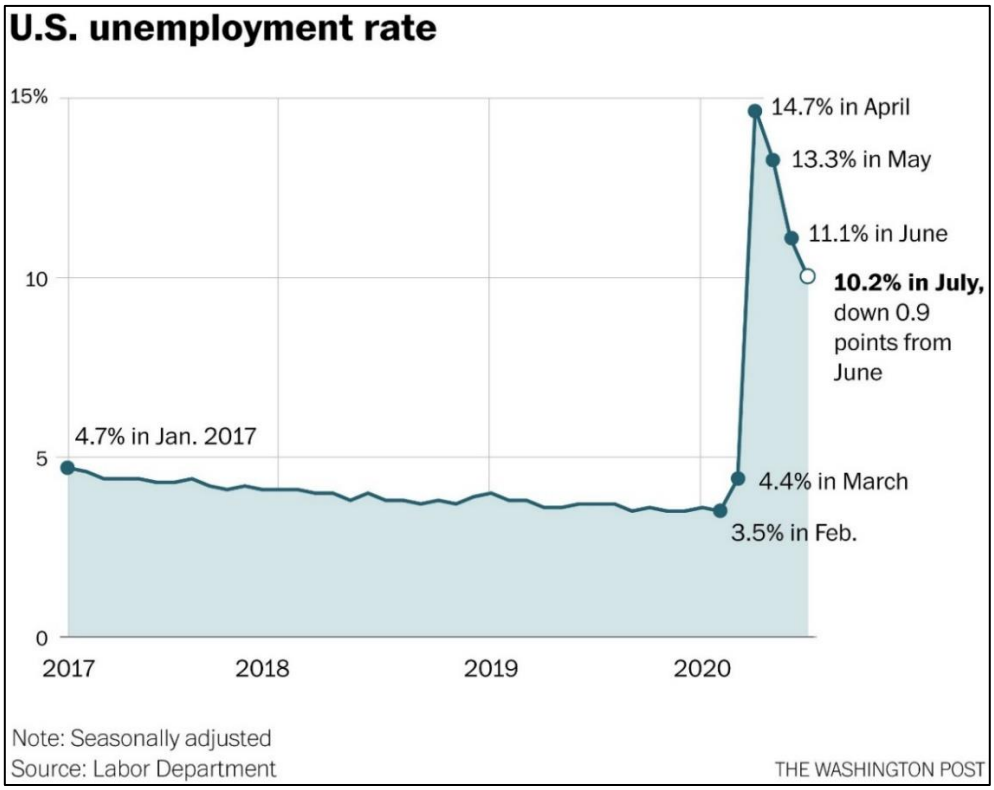
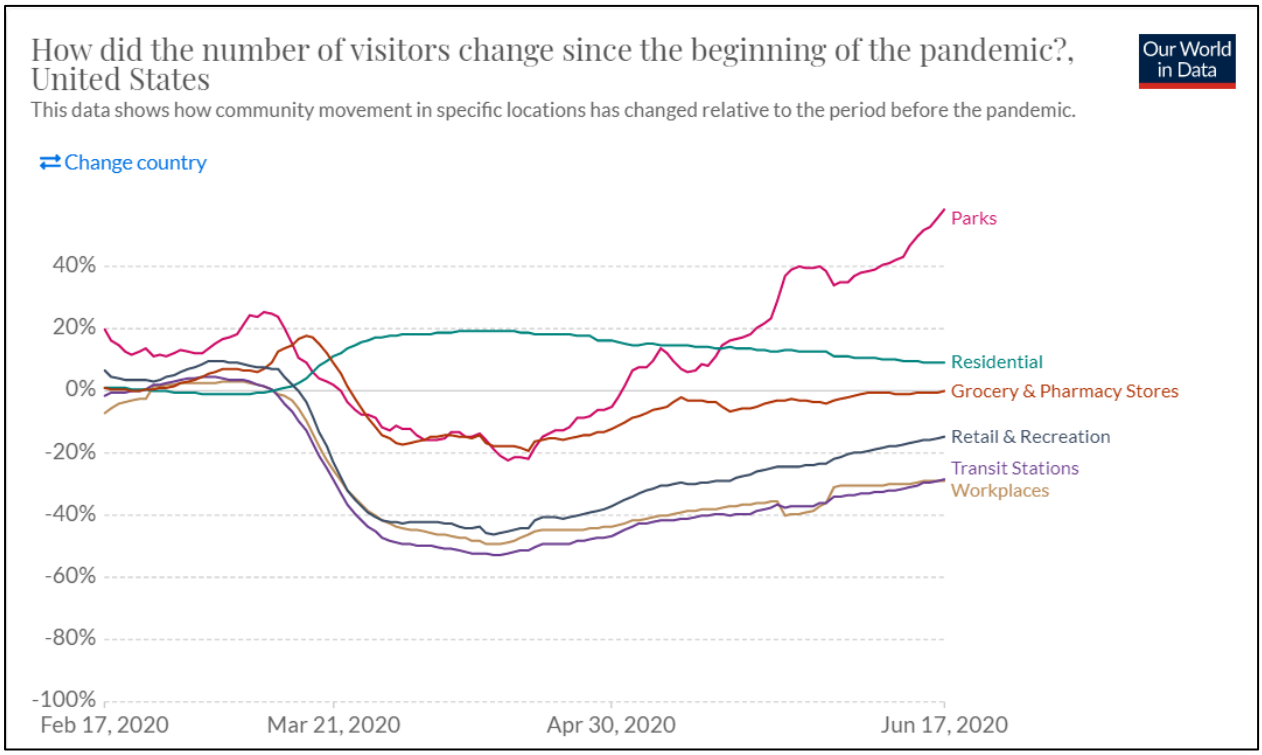
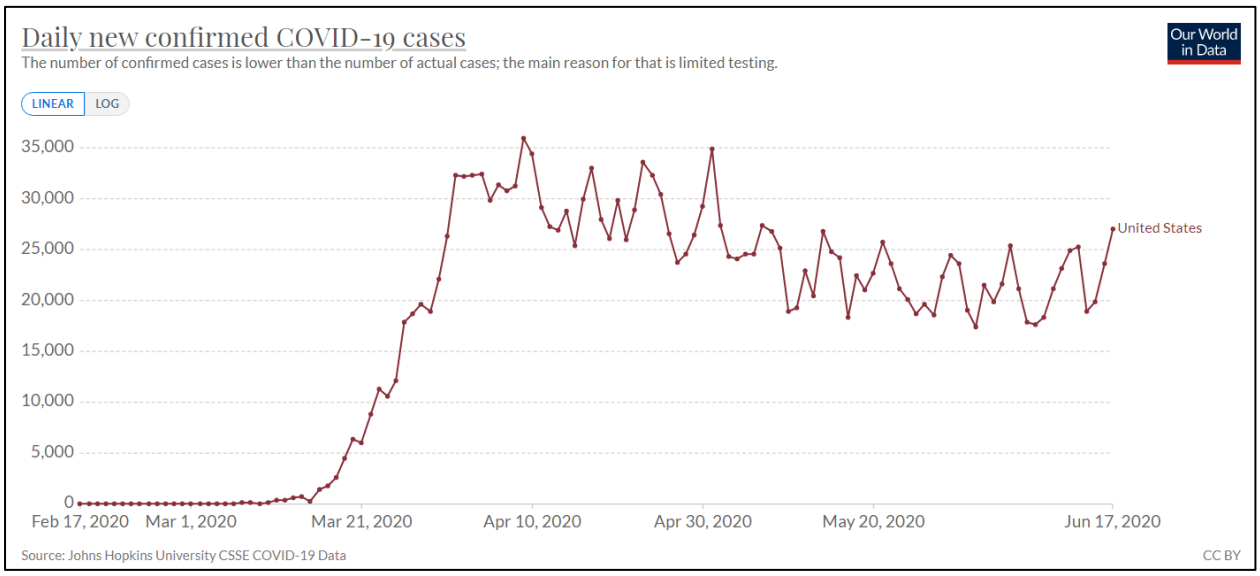


Figure 2 Covid-19 exposure in the United States

Panel A: Changes in people's mobility



Panel B: Number of daily new confirmed cases of Covid-19



Appendix F. Tables

Table 1 Frequency of guidance withdrawals

This table presents the monthly number of guidance withdrawals for three different periods. The first two rows present the numbers of guidance withdrawals from January to June of 2020 and 2019. Meanwhile, the last row shows the monthly guidance withdrawal numbers of the whole year of 2008. Column "Number of Guidance Firms" gives the number of the firms which have records for the correspondent fiscal year in the I/B/E/S guidance database.

Calendar Year	Number of Guidance Firms	Calendar Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2020	1,728	6	8	185	321	238	13						
2019	2,179	3	4	4	4	6	3						
2008	2,292	1	2	1	2	1	2	2	7	3	9	12	5

Table 2 Sample construction

In this table, we present the procedures on how we construct our sample. Specifically, we first obtain our initial dataset from the I/B/E/S guidance database. We then limit our sample to U.S. firms and to those that provided management forecasts for the year-ends from March 2020 to February 2021. We also ensure that the forecasts are not released prior to 2019, to remove any obsolete information. We exclude firms that provided guidance or withdrew guidance in January and February 2020 as we believe that the impact of Covid-19 was not pronounced before March 2020 (e.g., the World Health Organization did not classify Covid-19 as a pandemic until March 11, 2020). We also exclude firms that withdrew guidance in June 2020 as there is an improvement in the adverse conditions facing the firm as the pandemic evolved (see Figure 1). Accordingly, the sample period in this study ranges from March to May 2020, both months inclusive.

	# Firms
Firms with fiscal year-ends from March 2020 to February 2021 with guidance issued in 2019	1,775
Minus firms with missing identifier link (e.g., I/B/E/S TICKER, GVKEY, CIK)	-15
Minus firms that withdrew guidance not in March to May 2020	-23
Minus firms without complete control variables	-67
Final Sample	1,670

Table 3 Descriptive information

This table presents descriptive information about guidance withdrawal and other variables used in our study. In Panel A, we report the summary statistics of variables used in the main analysis. The primary dependent variable, *GuidWithdrawal*, is an indicator equal to 1 for firms that withdrew their guidance for the fiscal year of 2020, and 0 otherwise. *CovidUnemp* is our key independent variables, expressed in continuous form. The number of observations for all variables is 1,670, except for *GuidStoppage* and *GuidReinstatement*, which is 1,513 and 751, respectively. In Panel B, we present the market reaction of guidance withdrawal during the pre-announcement [t-4, t-2], announcement [t-1, t+1], and post-announcement [t+2, t+4] windows, where *t* is the filing day of the withdrawal announcement. In Panel C, we present the short-term effect of guidance withdrawal on stock turnover (*Turnover*), bid-ask spreads (*Spreads*), and stock volatility (*Volatility*). The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Panel A: Summary statistics of variables

Variable	Mean	SD	P25	Median	P75
GuidWithdrawal	0.450	0.498	0.000	0.000	1.000
GuidStoppage	0.317	0.465	0.000	0.000	1.000
GuidReinstatement	0.181	0.385	0.000	0.000	1.000
CovidUnemp	0.075	0.121	0.003	0.027	0.093
Book-to-market	0.482	0.567	0.171	0.348	0.636
Financing	0.040	0.189	-0.033	0.000	0.049
Size	8.058	1.741	6.924	8.029	9.200
Loss	0.254	0.436	0.000	0.000	1.000
ROA	0.024	0.115	-0.001	0.035	0.077
Illiquidity	0.087	0.242	0.009	0.024	0.062
ShareTurnover	0.009	0.006	0.005	0.007	0.011
ReturnVolality	0.108	0.054	0.069	0.097	0.134
MeanReturn	0.017	0.029	0.003	0.019	0.034
Analysts	10.213	7.493	4.000	8.000	15.000
InstOwnership	0.721	0.228	0.564	0.753	0.905

Panel B: Equity market reaction

N=751	Pre-announcement window [t-4, t-2]	Announcement window [t-1, t+1]	Post-announcement window [t+2, t+4]
BHAR	-0.015***	0.004	0.001
	(-4.11)	(0.81)	(0.41)

Panel C: Other equity market outcomes

N=751	Pre-announcement window [t-4, t-2]	Announcement window [t-1, t+1]	Post-announcement window [t+2, t+4]	Pre-announcement vs. Announcement window	Pre-announcement vs. Post-announcement window
Turnover	15.544	19.712	17.315	4.167***	1.770***
				(9.35)	(4.38)
Spreads	0.084	0.094	0.079	0.010***	-0.005***
				(5.88)	(3.57)
Volatility	0.056	0.066	0.052	0.010***	-0.004***
				(4.81)	(2.61)

Table 4 Firms' exposure to the Covid-19 pandemic and guidance withdrawal

This table presents the results of our analysis of how guidance withdrawal is associated with firms' exposure to the Covid-19 pandemic. Column 1 reports how guidance withdrawal (*GuidWithdrawal*) is associated with various control variables, as indicated in Equation (1). Column 2 reports the results after adding our measure of exposure to the pandemic (*CovidUnemp*), which is the percentage change in unemployment changes in the firm's industry at the onset of the pandemic. Column 3 reports, using the sample of guidance withdrawers only, how early guidance withdrawal (*EarlyGuidWithdrawal*) is associated with *CovidUnemp*. *EarlyGuidWithdrawal* equals 1 if the firm withdrew its guidance before the median withdrawal date, that is before Apr 24, 2020. An intercept is included in all the regressions but not reported. The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Dependent:	*GuidWithdrawal*		*EarlyGuidWithdrawal*
	(1)	(2)	(3)
CovidUnemp		0.636***	0.824***
		(6.60)	(7.39)
Book-to-market	-0.089***	-0.086***	-0.092**
	(-3.84)	(-3.83)	(-2.48)
Financing	-0.001	0.011	-0.087
	(-0.02)	(0.16)	(-0.89)
Size	-0.019	-0.010	-0.024
	(-1.40)	(-0.72)	(-1.13)
Loss	-0.125***	-0.110***	-0.085
	(-3.08)	(-2.72)	(-1.34)
ROA	-0.177	-0.242	-0.324
	(-1.15)	(-1.60)	(-1.32)
Illiquidity	-0.002	-0.002	0.057
	(-0.04)	(-0.04)	(0.54)
ShareTurnover	4.948*	3.271	3.734
	(1.89)	(1.26)	(0.91)
ReturnVolality	-0.058	0.076	0.092
	(-0.18)	(0.23)	(0.19)
MeanReturn	-0.267	-0.022	0.079
	(-0.58)	(-0.05)	(0.11)
Analysts	-0.001	-0.001	0.009**
	(-0.51)	(-0.53)	(2.30)
InstOwnership	0.303***	0.292***	0.055
	(5.38)	(5.25)	(0.61)
Observations	1,670	1,670	751
Adjusted R^2	0.035	0.057	0.064

Table 5 Firms' geographical exposure to the Covid-19 pandemic and guidance withdrawal

This table reports the robustness tests for our baseline analysis using alternative key independent variables. Specifically, we present the results for our analysis of how firms' global exposure to the Covid-19 pandemic, measured based on sales-weighted measures of exposure to different regional Covid-19 impact indicators, relates to guidance withdrawal. In column 1, we measure firm's weighted geographical exposure using the percentage of change in people's mobility before and after the spread of the virus around the world. The community mobility data are provided by Google. We focus on six measurements of interest, namely the percentage of change in (1) visits to entertainment places, such as restaurants, shopping malls, and cinemas; (2) visits to grocery markets and drug stores; (3) visits to parks and public gardens; (4) visits to public transportation hubs, such as train stations and bus stops; (5) visits to workplaces and offices; and (6) staying home. We compute the *CovidImmobility* as detailed in Section 4.2. In column 2, we measure firm's weighted geographical exposure using the sales-weighted average of confirmed Covid-19 case counts (per 1,000 people) by country in which the firm operates (*CovidCases*). To ensure consistency, we use the same cut-off date for all measurements (i.e., March 31, 2020). An intercept is included in all our models but not reported. The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Dependent:	*GuidWithdrawal*	
	(1)	(2)
CovidImmobility	0.005***	
	(2.73)	
CovidCases		0.176*
		(1.73)
Book-to-market	-0.103***	-0.101***
	(-3.68)	(-3.60)
Financing	-0.080	-0.072
	(-0.99)	(-0.88)
Size	-0.021	-0.021
	(-1.32)	(-1.35)
Loss	-0.118***	-0.120***
	(-2.59)	(-2.62)
ROA	-0.254	-0.268
	(-1.40)	(-1.47)
Illiquidity	-0.007	-0.005
	(-0.10)	(-0.07)
ShareTurnover	2.287	2.506
	(0.78)	(0.85)
ReturnVolality	0.028	-0.051
	(0.07)	(-0.14)
MeanReturn	-0.195	-0.234
	(-0.38)	(-0.45)
Analysts	-0.001	-0.001
	(-0.28)	(-0.31)
InstOwnership	0.251***	0.257***
	(3.86)	(3.94)
Observations	1,369	1,369
Adjusted R^2	0.030	0.027

Table 6 Moderating effects of litigation risk and product market competition

This table presents the results of our analysis of how the relation between firms' exposure to the Covid-19 pandemic and guidance withdrawal varies with litigation risk and product market competition. Panel A presents the regressions examining the role of litigation risk on the relation between a firm's exposure to the pandemic and its guidance withdrawal. Specifically, we measure litigation risk as the probability of being sued (*LitigationRisk_KS*), following Model 3 in Kim and Skinner (2012). As for the alternative, we also use an indicator variable following based on whether a firm is in a high litigation risk industry (*LitigationRisk_FPS*). A value of 1 is assigned for firms in biotech, computer, electronics, and retail industries, and 0 otherwise (Francis et al. 1994a, 1994b). For both measures, higher values indicate higher litigation risk. Panel B presents the regressions examining the role of product market competition on the relation between a firm's exposure to the pandemic and its guidance withdrawal. Specifically, we measure the product market competition using two measurements: product market fluidity (*ProductMarketFluidity*), developed by Hoberg et al. (2014) and product similarity (*ProductSimilarity*), developed by Hoberg and Phillips (2016). For both measures, higher values indicate more competition. We divide the sample into low and high subsamples based on the within-sample median value of these measures. An intercept is included in all our models but not reported. The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. The Wald Chi-square statistic is used to test the difference in the coefficients on *CovidUnemp* across the low and high subsamples. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Panel A: Cross-sectional variation with litigation risk

Dependent:	*GuidWithdrawal*			
	LitigationRisk_KS		*LitigationRisk_FPS*	
	Low	High	Low	High
	(1)	(2)	(3)	(4)
CovidUnemp	0.334**	0.865***	0.422***	0.780***
	(2.22)	(6.91)	(3.27)	(5.25)
Book-to-market	-0.053	-0.075***	-0.141***	0.036
	(-1.01)	(-2.94)	(-5.15)	(0.76)
Financing	-0.091	0.101	0.001	0.062
	(-0.72)	(1.21)	(0.01)	(0.64)
Size	0.009	0.001	-0.011	-0.017
	(0.40)	(0.07)	(-0.59)	(-0.74)
Loss	-0.109*	-0.118**	-0.071	-0.112
	(-1.69)	(-2.28)	(-1.38)	(-1.64)
ROA	-0.437	-0.152	-0.213	-0.281
	(-1.63)	(-0.83)	(-0.99)	(-1.24)
Illiquidity	0.040	-0.028	0.040	-0.153**
	(0.52)	(-0.26)	(0.52)	(-2.44)
ShareTurnover	8.971	1.552	2.633	4.311
	(1.49)	(0.52)	(0.75)	(1.06)
ReturnVolatility	0.420	0.786*	0.189	-0.070
	(0.59)	(1.68)	(0.47)	(-0.12)
MeanReturn	0.573	-0.329	-0.322	0.323
	(0.69)	(-0.61)	(-0.54)	(0.48)
Analysts	0.001	-0.002	0.000	0.000
	(0.24)	(-0.55)	(0.01)	(0.08)
InstOwnership	0.273***	0.285***	0.337***	0.207**
	(3.18)	(3.82)	(4.94)	(1.97)
Wald Chi-square	7.51***		3.37*	
Observations	833	832	1,187	483
Adjusted R^2	0.028	0.087	0.053	0.076

Panel B: Cross-sectional variation with product market competition

Dependent:	*GuidWithdrawal*			
	ProductMarketFluidity		*ProductSimilarity*	
	Low	High	Low	High
	(1)	(2)	(3)	(4)
CovidUnemp	0.486***	0.928***	0.402***	0.934***
	(3.50)	(6.19)	(2.75)	(6.53)
Book-to-market	-0.072*	-0.076**	-0.064*	-0.081**
	(-1.88)	(-2.49)	(-1.79)	(-2.53)
Financing	0.000	0.080	-0.140	0.143
	(0.00)	(0.87)	(-1.08)	(1.63)
Size	0.003	-0.023	0.003	-0.021
	(0.14)	(-1.14)	(0.12)	(-1.07)
Loss	-0.168**	-0.053	-0.154**	-0.078
	(-2.56)	(-0.91)	(-2.45)	(-1.30)
ROA	-0.408	-0.129	-0.323	-0.134
	(-1.35)	(-0.64)	(-1.23)	(-0.67)
Illiquidity	-0.012	0.054	0.024	0.065
	(-0.12)	(0.57)	(0.25)	(0.64)
ShareTurnover	2.449	2.797	-0.683	4.918
	(0.55)	(0.80)	(-0.16)	(1.34)
ReturnVolatility	0.455	-0.319	-0.118	0.202
	(0.88)	(-0.69)	(-0.23)	(0.42)
MeanReturn	0.324	0.038	-0.120	0.418
	(0.44)	(0.06)	(-0.18)	(0.62)
Analysts	0.001	-0.002	0.000	-0.001
	(0.20)	(-0.45)	(0.07)	(-0.38)
InstOwnership	0.246***	0.247***	0.256***	0.221**
	(2.74)	(2.96)	(2.99)	(2.58)
Wald Chi-square	4.74**		6.88***	
Observations	773	773	774	773
Adjusted R^2	0.034	0.066	0.030	0.086

Table 7 Robustness tests using alternative samples

This table reports the robustness tests for both the baseline and cross-sectional analyses using alternative samples. In Panel A, we present the results for firms provided earnings-related guidance (e.g., excluding firms provided only capital expenditure, dividends per share, cash flow guidance, and any combination of those three guidance items). In Panel B, we present the results for firms provided EPS guidance only. Column 1 in both panels reports how guidance withdrawal (*GuidWithdrawal*) is associated with *CovidUnemp*. Following Table 6, Columns 2–5 (6–9) in both panels report the cross-sectional variation with litigation risk (product market competition) on the relation between *CovidUnemp* and *GuidWithdrawal*. The Wald Chi-square statistic is used to test the difference in the coefficients on *CovidUnemp* across the low and high subsamples. An intercept is included in all our models but not reported. The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Panel A: Robustness test using sample of firms with earnings-related guidance

Dependent:	*GuidWithdrawal*								
		Litigation Risk				Product Market Competition			
		LitigationRisk_KS		*LitigationRisk_FPS*		*ProductMarketFluidity*		*ProductSimilarity*	
		Low	High	Low	High	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CovidUnemp	0.775***	0.369**	1.089***	0.438***	1.107***	0.591***	1.188***	0.545***	1.195***
	(7.41)	(2.14)	(9.02)	(3.13)	(8.00)	(3.89)	(8.00)	(3.57)	(7.77)
Wald Chi-square		11.93***		11.80***		8.05***		9.19***	
Control Variables	Included	Included	Included	Included	Included	Included	Included	Included	Included
Observations	1,402	700	699	948	454	649	648	649	649
Adjusted R^2	0.055	0.021	0.095	0.042	0.081	0.023	0.077	0.027	0.098

Panel B: Robustness test using sample of firms with EPS guidance only

Dependent:	*GuidWithdrawal*								
		Litigation Risk				Product Market Competition			
		LitigationRisk_KS		*LitigationRisk_FPS*		*ProductMarketFluidity*		*ProductSimilarity*	
		Low	High	Low	High	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CovidUnemp	0.860***	0.574**	1.075***	0.424**	1.036***	0.480**	1.155***	0.492**	1.058***
	(6.29)	(2.32)	(6.72)	(2.14)	(5.56)	(2.19)	(7.45)	(2.34)	(5.64)
Wald Chi-square		2.99*		5.23**		6.55**		4.17**	
Control Variables	Included	Included	Included	Included	Included	Included	Included	Included	Included
Observations	802	401	400	528	274	384	384	385	384
Adjusted R^2	0.045	0.022	0.067	0.047	0.065	0.032	0.063	0.017	0.065

Table 8 Firms' exposure to the Covid-19 pandemic, guidance withdrawal, and guidance stoppage

This table presents the results of our analysis of how firms' exposure to the Covid-19 pandemic relates to guidance stoppage, as well as guidance withdrawal and stoppage jointly. Column 1 examines the association between *CovidUnemp* and *GuidStoppage* using OLS regression. Columns 2–4 examine the joint choice of guidance withdrawal and stoppage using multinomial logistic regression. *GuidWithdrawal&Stoppage* is constructed by combining *GuidWithdrawal* and *GuidStoppage*. A value of "0" refers to the firm did not withdraw or stop the guidance; a value of "1" refers to the firm did not withdraw but stopped the guidance; a value of "2" refers to the firm did not stop but withdrew guidance; and a value of "3" refers to the firms stopped and withdrew the guidance. We further show the effect of *CovidUnemp* on different outcomes of *GuidWithdrawal&Stoppage.* An intercept is included in all our models but not reported. The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Dependent:	*GuidStoppage*	*GuidWithdrawal&Stoppage*		
		Stop only	Withdraw only	Stop and withdraw
	(1)	(2)	(3)	(4)
CovidUnemp	0.541***	5.698***	4.840***	6.342***
	(5.65)	(5.09)	(4.97)	(6.35)
Book-to-market	-0.041*	0.170	-0.220	-0.411**
	(-1.81)	(0.77)	(-1.42)	(-2.08)
Financing	-0.141**	-1.703**	0.331	-0.371
	(-2.17)	(-2.00)	(0.86)	(-0.71)
Size	-0.003	0.083	-0.016	-0.125
	(-0.24)	(0.65)	(-0.18)	(-1.30)
Loss	0.041	-0.195	-0.754***	-0.389
	(1.04)	(-0.58)	(-3.03)	(-1.33)
ROA	-0.050	-1.172	-1.737*	-1.034
	(-0.36)	(-0.82)	(-1.89)	(-0.98)
Illiquidity	0.091**	0.347	-0.300	0.423
	(2.30)	(1.10)	(-0.66)	(1.53)
ShareTurnover	5.115**	20.219	16.571	30.190
	(2.13)	(0.81)	(1.08)	(1.49)
ReturnVolatility	0.036	1.055	-0.672	-2.216
	(0.12)	(0.34)	(-0.34)	(-0.93)
MeanReturn	-0.848**	-3.296	-3.255	-0.643
	(-2.00)	(-0.75)	(-1.16)	(-0.20)
Analysts	-0.005*	-0.016	0.002	-0.024
	(-1.93)	(-0.73)	(0.13)	(-1.26)
InstOwnership	-0.083	-0.352	0.983***	0.886**
	(-1.51)	(-0.71)	(2.81)	(2.13)
Observations	1,513		1,247	
Adjusted R^2	0.057		0.050	

Tests of the effect of *CovidUnemp* on different outcomes in multinomial logit regression	χ^2 (p-value)	
Firms that stop guidance only (1) versus firms that withdraw guidance only (2)	1.12	(0.288)
Firms that stop guidance only (1) versus firms that withdraw and stop guidance (3)	0.66	(0.415)
Firms that withdraw guidance only (2) versus firms that withdraw and stop guidance (3)	6.44**	(0.011)

Table 9 Post-guidance-withdrawal firm performance and guidance reinstatement

This table presents the results of our analysis of how firms' exposure to the Covid-19 pandemic relates to guidance reinstatement. Column 1 examines the association between *CovidUnemp* and *GuidReinstatement* using OLS regression. Column 2 presents the results of how firm performance after guidance withdrawal relates to guidance reinstatement. *GuidReinstatement* equals 1 if the firm reinstated guidance after withdrawing its guidance during our sample period, and 0 otherwise. *PostWithdrawalReturn* is the average daily abnormal stock return from the day after the guidance withdrawal to i) the day before the guidance reinstatement for firms that reinstate their withdrawn guidance and ii) the last trading date of 6 months period since the beginning of our sample period (Aug 31, 2020) for firms that do not. An intercept is included in all our models but not reported. The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Dependent	*GuidReinstatement*	
	(1)	(2)
CovidUnemp	-0.230***	-0.258***
	(-2.98)	(-3.28)
PostWithdrawalReturn		11.524***
		(2.70)
Book-to-market	-0.000	-0.002
	(-0.01)	(-0.06)
Financing	0.110	0.110
	(1.22)	(1.23)
Size	-0.002	0.003
	(-0.14)	(0.17)
Loss	0.017	0.025
	(0.37)	(0.56)
ROA	0.103	0.128
	(0.51)	(0.64)
Illiquidity	-0.044	-0.037
	(-0.73)	(-0.65)
ShareTurnover	0.580	-0.504
	(0.21)	(-0.18)
ReturnVolality	-0.437	-0.553
	(-1.27)	(-1.59)
MeanReturn	1.516***	1.417***
	(2.96)	(2.81)
Analysts	0.004	0.003
	(1.15)	(0.89)
InstOwnership	-0.006	-0.000
	(-0.08)	(-0.00)
Observations	751	751
Adjusted R^2	0.022	0.031

Table 10 Firms' exposure to the Covid-19 pandemic and discussion about the pandemic during earnings conference calls

This table presents the results of our analysis of how firms' exposure to the Covid-19 pandemic relates to discussion about the pandemic during earnings conference calls. Column 1 presents the results of our analysis of how firms' exposure to the pandemic relates to managerial disclosure about the pandemic during earnings conference calls (*CovidDiscussion*). Higher values indicate more mentions of Covid-19 during earnings conference calls. Following Table 6, Columns 2–5 (6–9) report the cross-sectional variation with litigation risk (product market competition) on the relation between *CovidUnemp* and *CovidDiscussion*. The Wald Chi-square statistic is used to test the difference in the coefficients on *CovidUnemp* across the low and high subsamples. An intercept is included in all our models but not reported. The numbers in parentheses are the t-statistics calculated based on the Huber-White robust standard errors. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels (two-tailed), respectively. The definitions of the variables are in Appendix C.

Dependent:	*CovidDiscussion*								
		Litigation Risk				Product Market Competition			
		LitigationRisk_KS		*LitigationRisk_FPS*		*ProductMarketFluidity*		*ProductSimilarity*	
		Low	High	Low	High	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CovidUnemp	-0.576***	-0.862***	-0.421*	-0.609***	-0.579***	-0.212	-1.300***	-0.290	-0.986***
	(-3.76)	(-3.90)	(-1.95)	(-2.70)	(-2.65)	(-1.14)	(-3.93)	(-1.32)	(-4.40)
Book-to-market	-0.225***	-0.209***	-0.232***	-0.253***	0.056	-0.023	-0.399***	-0.089	-0.355***
	(-4.62)	(-2.86)	(-3.68)	(-4.29)	(0.50)	(-0.29)	(-5.82)	(-1.20)	(-4.98)
Financing	0.003	0.021	0.019	-0.094	0.058	-0.260*	0.162	-0.110	0.123
	(0.04)	(0.14)	(0.23)	(-0.80)	(0.63)	(-1.67)	(1.21)	(-0.72)	(0.94)
Size	0.089***	0.122***	0.058*	0.082***	0.149***	0.082**	0.151***	0.043	0.160***
	(3.64)	(3.10)	(1.72)	(2.71)	(3.25)	(2.50)	(3.61)	(1.26)	(3.94)
Loss	0.098	0.083	0.079	0.111	0.038	-0.100	0.185*	-0.010	0.170
	(1.50)	(0.87)	(0.87)	(1.28)	(0.35)	(-1.04)	(1.77)	(-0.10)	(1.64)
ROA	0.146	0.155	0.130	-0.136	0.273*	0.013	0.283	0.151	0.207
	(1.31)	(0.84)	(0.94)	(-0.72)	(1.88)	(0.05)	(1.61)	(0.74)	(1.12)
Illiquidity	0.031	0.074***	-0.030	0.062**	-0.016	0.054*	0.049	0.016	0.073**
	(1.50)	(3.01)	(-0.84)	(2.23)	(-0.54)	(1.74)	(1.43)	(0.49)	(2.12)
ShareTurnover	-4.158	2.016	-5.496	-10.068*	-2.601	-5.350	-4.501	-12.838***	0.984
	(-1.17)	(0.25)	(-1.38)	(-1.81)	(-0.56)	(-0.83)	(-0.82)	(-2.77)	(0.16)
ReturnVolatility	1.313***	3.253***	0.112	1.049	1.669**	2.114***	1.412**	1.710**	1.684**
	(2.87)	(2.67)	(0.17)	(1.58)	(2.40)	(2.60)	(2.05)	(2.12)	(2.45)
MeanReturn	-3.703***	-3.743***	-3.195***	-2.857***	-4.693***	-3.748***	-4.988***	-3.419***	-5.146***
	(-5.49)	(-3.11)	(-3.90)	(-2.98)	(-4.76)	(-3.08)	(-4.51)	(-3.05)	(-4.29)
Analysts	-0.025***	-0.021**	-0.031***	-0.023***	-0.034***	-0.021***	-0.037***	-0.011	-0.039***
	(-5.02)	(-2.57)	(-4.57)	(-3.49)	(-4.09)	(-3.27)	(-4.38)	(-1.63)	(-5.21)
InstOwnership	0.143	0.161	0.054	0.286**	-0.131	-0.016	0.244	0.267*	0.053
	(1.41)	(1.06)	(0.38)	(2.29)	(-0.70)	(-0.10)	(1.49)	(1.82)	(0.32)
Wald Chi-square		2.05		0.01		8.28***		4.97**	
Observations	3,202	1,601	1,601	2,133	1,069	1,410	1,410	1,429	1,429
Adjusted R^2	0.024	0.023	0.028	0.025	0.031	0.014	0.052	0.011	0.050