How Do Corporates Respond to Economic Recessions? Evidence from Form 10-K, 10-Q, and Earnings Call Transcripts*

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Abstract

This paper examines how corporates respond to economic recessions triggered by events such as SARS, the 2008 subprime crisis, and COVID-19. Based on the Management's Discussion and Analysis (MD&A) section in the 10-K and 10-Q filings and the earnings calls transcripts of listed stocks in the United States, three response variables are constructed: conditional exposure, conditional sentiment, and conditional risk. Empirical results show that the response measures in 10-K & 10-Q filings have different impacts on post-release returns from those in earnings calls. We further explore the causes of this difference through three decompositions. Different from prior research, we find that when discussing economic recessions, the market more reacts to management narratives than analysts' questions during earnings calls. Nevertheless, analysts do bring up significant risks during the questioning process. On the other hand, management may obscure risk-related information in the earnings calls, reducing its negative impact on stock returns.

Keywords: COVID-19, Great Recession, SARS, Earnings call, Form 10-K & 10-Q.

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1 Introduction

Since COVID-19 spread from a regional issue to a global crisis at the beginning of 2020, the pandemic has completely disrupted our daily lives and caused global economic recession. In the middle of Feb. 2020, it hit the U.S. stock market more forcefully than previous infectious disease outbreaks. Following the first quantitative easing (QE) announcement from the Federal Reserve on Mar. 15, 2020, the S&P 500 index lost 11.98%, which records the worst one-day decline since 1987.

Much research has focused on the economic impact of the COVID-19 pandemic since the outbreak. Barrios and Hochberg (2020), He and Liu (2021), and Rebucci et al. (2022) focus on the effects of financial and economic politics during the pandemic. Bretscher et al. (2020), Cheng (2020), Gormsen and Koijen (2020), Ramelli and Wagner (2020), and Ding et al. (2021) discuss the impact on financial markets and the expectations of investors. Loughran and McDonald (2020), Hassan et al. (2021), and Stephany et al. (2022) explore the risk disclosure in financial reports and earnings calls.

It arouses our curiosity if corporations have similar reactions when facing economic recession caused by global pandemics, such as COVID-19 in 2020 and the SARS[1] in 2003, as when facing those caused by other extreme events, such as the Great Recession in 2008. To the best of our knowledge, related literature (e.g., Baker et al., 2020; Bissoondoyal-Bheenick et al., 2021; Hassan et al., 2021; and Ru et al., 2021) more focus on the different impacts and determinants among COVID-19, SARS, and other pandemics, while very few researches (e.g., Spatt, 2020[2]) compare the financial impacts among COVID-19 epidemic and other recessions like us. We believe that our efforts in this research can help explore the management's reactions

[1] Though the economy during SARS in 2003 did not satisfy the requirement of an economic recession, we choose this epidemic as a reference for COVID-19.

[2] By qualitative analysis, Spatt (2020) compares the 2008 mortgage meltdown and the 2020 COVID-19 crisis from risk and asset pricing, interconnectedness and opacity, moral hazard, economic concentration, and capital market regulation.

toward economic recessions from a more general perspective.

To evaluate the corporates' reactions, we follow Hassan et al. (2021) and construct three measures from the Management's Discussion and Analysis (MD&A) section in Forms 10-K and 10-Q (KQ) and transcripts of earnings calls (EC) by natural language processing. More specifically, the reaction measures include conditional exposure, conditional sentiment, and conditional risk, which can capture the characteristics of the context intuitively and clearly. The conditional exposure filters the information related to the specific event from the text, representing the extent to which the firm was exposed to the impact of the corresponding event. On the other hand, it also measures how much the firm is concerned about the event. The conditional sentiment captures the managers' positive or negative attitudes toward the event by analyzing the tone when they mentioned it. The conditional risk measures the related uncertainties the firm faced during the hit of the event.

From two dimensions: three different events (COVID-19, SARS, and the Great Recession) and two different types of text materials (Forms 10-K & 10-Q and earnings call transcripts), our empirical analysis shed light on the differences among corporates' reactions toward economic recessions from two parts. At first, by performing event studies, we examine *how reaction measures impact the post-release holding period returns* (*HPRs*). The results from earnings calls are almost consistent under different events, which are also in line with our expectations and results by Hassan et al. (2021). (1) The conditional exposure has a significantly negative relation with the HPRs. Since a higher conditional exposure means that the firm suffers more from the corresponding event, it would cause a lower return after the release of the financial reports or earnings calls. (2) On the other hand, the conditional sentiment has a significantly positive impact on the HPRs, which is driven by the negative sentiment specifically. When discussing the corresponding event, a more positive tone usually reflects a more stable financial situation. In other words, during the large shocks, the management is confident with the firm's performance at least. (3)

However, the conditional risk in EC is positively related to the HPRs, which is unexpected.

Which are more interesting, the results from Forms 10-K and 10-Q are unexpected. In contrast to the results from earnings calls, the conditional exposure and conditional sentiment from Forms 10-K and 10-Q hold exact opposite relations. The conditional exposure has a significantly positive impact on the HPRs, while the conditional sentiment holds a negative relation. The conditional risk, however, following our expectation, is negatively related to the HPRs in general. A higher conditional risk means that the firm faces more risks and challenges during large shocks, which could reduce the post-announcement returns.

Besides, by examining short-horizon and long-horizon HPRs (i.e., three-day window return and thirty-day post-event return), we witness a "*fade-out effect*": some significant relations in the short term would become insignificant or even change the direction in the long term. We think this finding reflects that the impact validity of the corresponding event would fade out as time goes by. More specifically, this effect varies from different types of events. Compared with large shocks caused by pandemics, the fade-out effect is more obvious for economic recession directly caused by financial crisis. In other words, the impacts of epidemics like COVID-19 are more lasting than the Great Recession. Furthermore, following our usual idea, as a measure reflecting forward uncertainties, the conditional risk can keep its relation in the long horizon.

In the second part, since we witness more expected results from earnings calls than from Forms 10-K and 10-Q, we seek to answer the question: *how do these differences come*? To figure out this issue, we use three decompositions of the reaction measures in earnings calls to examine the sources. Our research questions in this part can be formulated as follows: (a) Do differences between earnings calls and Forms 10-K & 10-Q impact the holding period returns? (b) Do statements from the

management and analysts have different impacts? (c) Do managers reveal more or cover up information in earnings calls?

Our question (a) explores if EC contains more information than KQ or only repeat the same information at a different time in a different format. Compared with Forms 10-K and 10-Q, the transcript of the earnings call has two main differences: prerelease and limited length. Generally held about one week[3] before the release of the corresponding Form 10-K or 10-Q, the earnings call takes on the role a summary of the information in financial reports. Besides, since the earnings call usually lasts forty-five minutes to one hour, the managers would emphasize (or de-emphasize) the information that would be completely revealed later. Therefore, to answer the question (a), we construct the difference measures between the earnings call and Forms 10-K & 10-Q by decomposing the reaction measures in an earnings call. The result shows that the differences do impact the HPRs and hold the same directions as the EC does. On the other hand, the conditional measures from KQ also have significant impacts. More surprisingly, different from the unexpected results before, these KQ measures have more rational relations than we expected. The result indicates that the information in Forms 10-K and 10-Q has been reacted in the market before being officially revealed.

More notably, the result above clearly reminds us of the important role of the differences between EC and KQ. Hence, we try to determine the cause of these differences by answering questions (b) and (c). The question (b) focuses on the speakers. As is widely acknowledged, the earnings call usually contains two sessions: the managers would discuss the firm's current status, potential challenges, and future expectations in the first session (so-called "presentation and discussion of the financial results"), and answer questions asked by investors and financial analysts

[3] According to You and Zhang (2007), the average time gap between earnings call and the release of 10-K/10Q filings is 42 days with a sample from January 1, 1995, to December 31, 2005. According to our samples, the average gap days are 21 days during the SARS epidemic, 5 days during the Great Recession, and 4.9 days during COVID-19 outbreak.

(usually the latter) in the second session (so-called "Q&A session"). Since the Forms 10-K and 10-Q are official statements by the management, it is necessary to examine if the differences come from the additional participants in the earnings call, the financial analysts. To answer question (b), we decompose the measures in earnings calls according to managers and financial analysts separately. Unfortunately, the result shows that the information in earnings calls is mainly driven by the management, but the financial analysts do mention noteworthy risks in question. Furthermore, we cannot recover the negative relation in risk by splitting financial analysts and the management, which means the irrational relation still exists in the managers' statement.

As a further investigation, question (c) helps us figure out whether managers reveal more or cover-up information in earnings calls than in Forms 10-K and 10-Q. Or in other words, does managers' adjustment (summarization or emphasis/de-emphasis) of the information in earnings calls cause a market reaction? Therefore, we further extract the differences between the managers' statements in EC and KQ from the managers' measures in question (b). The results here indicate that the management's adjustment in earnings call does efficiently affect the market, but the market does not ignore the original information in financial reports because of this. For financial analysts, the market still believes in the risk mentioned by them but starts to have selective belief in risk disclosed by the management. When focusing on the difference in risk, we notice that the management's adjustment of the risk statement in earnings calls does not provide enough disclosure power. From the perspective of the management, it means that the risk disclosure in Forms 10-K and 10-Q cannot be replaced by that in the earnings call.

To the best of our knowledge, this research contributes to the related literature as follows. First of all, we fill in the blank by comparing the market reactions towards epidemics like COVID-19 with those towards the Great Recession. Recent research (e.g., Baker et al., 2020; Bissoondoyal-Bheenick et al., 2021; Hassan et al., 2021; and

Ru et al., 2021) has generally focused on the comparison between COVID-19 and other pandemics, but ignore the similarities and differences with an economic recession caused by the financial crisis. We not only find similar reactions towards pandemics as these studies from the earnings call transcripts but also provide evidence that the disclosed information about pandemics has a longer efficiency than that about the Great Recession, especially in the fade-out effect.

Secondly, we extend the large literature of accounting disclosure by investigating the different impacts of corporates' reactions in earnings calls and Forms 10-K & 10-Q. Unlike most research pay attention to either accounting fillings (see, e.g., Asthana et al., 2004; Li, 2006; Li, 2010; Brown and Tucker, 2011; Loughran and McDonald, 2011; Li et al., 2013; Campbell et al., 2014; and Tsai et al., 2016) or earnings calls (see, e.g., Davis et al., 2012; Davis et al., 2015; Ramelli and Wagner, 2020; and Hassan et al., 2021), we use both narrative disclosures to examine the role of the difference between these two materials. Our empirical results support the finding by You and Zhang (2007) and Davis and Tama-Sweet (2012)[4]: the earnings call can cause a more rational response, in other words, release information more efficiently than Form 10-K and 10-Q. We further find out that such differences are caused by the management's selective disclosure of information in earnings calls. This strategy, however, also reduces investors' belief in risk disclosure in earnings calls, leading to more rational responses towards the risks revealed in Forms 10-K and 10-Q.

Last but not least, we also contribute to the literature (e.g., Mayew and Venkatachalam, 2012; Brockman et al., 2015; Brockman et al., 2017; Mlian and Smith, 2017; Borochin et al., 2018; Chen et al., 2018; and Druz et al., 2020) examining the different roles of the management and the analysts in earnings call by decomposing the reaction measures according to the participants separately. In contrast to prior literature, our result indicates that under the circumstances of large

[4] You and Zhang (2007) and Davis and Tama-Sweet (2012) compare the differences between earnings announcements and Form 10-K & 10-Q. Compared with the earnings press releases, the earnings call transcripts we used can provide a more intuitive perspective.

shocks in markets, investors place more emphasis on the management than on analysts. But on the other hand, the market put more trust in the risks mentioned by analysts, while selectively believing the management in this scope, which is consistent with the findings by Borochin et al. (2018).

The remainder of the paper is organized as follows. Section 2 introduces the keywords lists for COVID-19, the Great Recession, and SARS, the construction of the reaction measures and further decomposition measures, and the hypotheses. Section 3 contains the data and control variables. Section 4 presents the empirical results in two parts. Section 5 concludes the paper.

2 Measures and Hypotheses

2.1 Keywords lists

Above all, to capture the information related to the events (COVID-19, the Great Recession, and SARS) precisely, we construct the keywords lists in Table 1. For each event, we summarize specific words that directly define the corresponding topic. For epidemics, based on the words used by Hassan et al. (2021) and Stephany et al. (2022), we adopt the official names defined by the World Health Organization (WHO) and those usually appeared in newspaper articles, earnings calls, and Forms 10-K & 10-Q, such as “covid-19”, “coronavirus” and “sars-cov-2” for COVID-19, and “sars”, “severe acute respiratory syndrome” and “sars-cov” for SARS. For the Great Recession, we adopt common synonyms and names of related corporates used in academic research (e.g., Mian and Sufi, 2010; Aguiar et al., 2013; Ball, 2014; Christiano et al., 2015; Gertler and Gilchrist, 2018) and financial reports, such as “2008 financial crisis”, “subprime mortgage crisis” and “Lehman Brothers”.

Besides, we also use general words that are widely used to describe the event types. We use words like “pandemic”, “epidemic” and “infectious disease” for COVID-19 and SARS, and words like “crisis”, “economic recession” and “challenging economic conditions” for the Great Recession. It should be noticed that

the text recognition in this paper is case-insensitive, i.e. “COVID-19”, “Covid-19” and “covid-19” are all identified, which can avoid missing related information.

[Insert Table 1 here]

2.2 Reaction measures

In this section, we construct three reaction measures: conditional exposure, conditional sentiment, and conditional risk as Hassan et al. (2021) to evaluate the corporate’s reaction towards economic recessions. Having compiled our keywords list, we measure a firm i’s time-varying conditional exposure to the impact of the event e (COVID-19, the Great Recession, or SARS) at time t, denoted $Con.Expoure_{i,t}^{e}$, by counting the number of times the event-related synonyms appear in the text. To remove the effect of the text length, we divide the number by the total word count:

$$Con.Exposure_{i,t}^{e} = \frac{1}{B_{i,t}} \sum_{b=1}^{B_{i,t}} 1[b \in L_e], \tag{1}$$

where $1[\cdot]$ is the indicator function, $b = 1, 2, \dots, B_{i,t}$ index the words contained in the text (earnings call transcript or MD&A session in Forms 10-K or 10-Q) of firm i in quarter t, $B_{i,t}$ is the total word count of the text and L_e is the set of keywords for the corresponding event e.

The conditional exposure measures how much a firm suffers from the impact of the specific economic recession. In other words, it reflects how much the firm’s management concerned about the corresponding event. According to our expectation, a firm suffering more from the impact would have a higher conditional exposure, which can cause a lower return after the release of the accounting reports or earnings calls.

Since we have known the firm’s concertation about the event, it is important to figure out if the management reacts towards the impact optimistically or pessimistically. Hence, we construct the conditional sentiment by calculating the

managers' tone when they mention the corresponding event. Focusing on the neighborhood of 10 words before and after the keyword appears in the text, we count the positive-tone words and negative-tone words within the range. These positive- or negative-tone words are identified according to the Master Dictionary by Loughran and McDonald (2011). For a given firm i, the conditional sentiment of the event e at time t, denoted $Con.Sentiment_{i,t}^{e}$, is calculated as the number of positive-tone words minus the number of negative-tone words. Similar to the conditional exposure, we also exclude the effect of the text length here:

$$Con.Sentiment_{i,t}^{e} = \frac{1}{B_{i,t}} \sum_{b=1}^{B_{i,t}} \left(1[b \in L_e] \sum_{c=b-10}^{b+10} S(c) \right), \tag{2}$$

where $S(c)$ is a function that equals 1 when word c is a positive-tone word, -1 when word c is a negative-tone word and 0 otherwise. Besides, to further examine the different roles of different tones, we also split the conditional sentiment into a positive sentiment and a negative sentiment as follows:

$$Con.Positive_{i,t}^{e} = \frac{1}{B_{i,t}} \sum_{b=1}^{B_{i,t}} \left(1[b \in L_e] \sum_{c=b-10}^{b+10} 1\left[c \in D_{pos}\right] \right), \tag{3}$$

$$Con.Negative_{i,t}^{e} = -\frac{1}{B_{i,t}} \sum_{b=1}^{B_{i,t}} \left(1[b \in L_e] \sum_{c=b-10}^{b+10} 1\left[c \in D_{neg}\right] \right), \tag{4}$$

where D_{pos} is the set of positive-tone words and D_{neg} is the set of negative-tone words. It should be noticed that $Con.Positive_{i,t}^{e} > 0$ and $Con.Negative_{i,t}^{e} < 0$.

According to our expectation, a higher conditional sentiment reflects a more optimistic attitude the management holds towards the extreme event, which can cause a higher return after the release of the accounting reports or earnings calls. On the opposite, a more pessimistic attitude should result in a lower post-announcement return.

To disclose information, the managers would discuss the firm's current status, potential challenges, and future expectations in MD&A sessions and earnings calls. According to Li (2006), Kravet and Muslu (2013), and Campbell et al. (2014), these contents can reveal rich information about risk the firm faces. It thus provides us a chance to evaluate the management's response to the risks caused by the event through these texts. Similar to the conditional sentiment, the conditional risk, denoted $Con.Risk_{i,t}^{e}$, is constructed by counting the number of keywords that are in proximity to a synonym for "risk" or "uncertainty"[5] within the 10-words range. Same as the measures above, the text-length effect is removed:

$$Con.Risk_{i,t}^{e} = \frac{1}{B_{i,t}} \sum_{b=1}^{B_{i,t}} (1[b \in L_e] \times 1[|b - r| < 10]), \quad (5)$$

where r is the position of the nearest synonyms of "risk" or "uncertainty" and $1[|b - r| < 10]$ identifies if any risk synonym exists within the 10-word neighborhood of the keyword.

Our expected implication of the conditional risk is a negative relation with the post-announcement return. A higher conditional risk score implies more risks the firm faces under the impact of the extreme event, which can hurt the ex-post stock return.

2.3 Decomposition measures

Though the earnings call conveys similar information as the MD&A session in Forms 10-K and 10-Q, the distinctive features of the earnings call (i.e. prerelease timing, limited length, and additional participants) can lead to the managers' different reactions. To better understand these differences, we perform three decompositions of the reaction measures in earnings calls. These decomposition measures are

[5] Instead of following Li (2006), we use the same list of risk synonyms as Hassan et al. (2021) to better compare our results with theirs. The words used by Li (2006), "risk" (including "risk", "risks", and "risky") and "uncertainty" (including "uncertain", "uncertainty", and "uncertainties"), are also included in this list, while misleading words mentioned by Li (2006), such as "may", "might", and "could", are not included. The risk synonyms list is obtained from Tarek A. Hassan's website and GitHub: https://github.com/mschwedeler/firmlevelrisk

constructed based on a similar mechanism as Hassan et al. (2021) but in a different scope.

To examine whether the difference between reactions in earnings call and Forms 10-K & 10-Q can evoke the market response, we first decompose the reaction measure in earnings call into two terms: one is the reaction measure in Forms 10-K & 10-Q, and the other is the difference between two text materials, denoted by $Diff.Measure_{i,t}^{e}$:

$$Diff.Measure_{i,t}^{e} = Con.Measure\_EC_{i,t}^{e} - Con.Measure\_KQ_{i,t}^{e}, \quad (6)$$

where $Diff.Measure_{i,t}^{e}$ is $Diff.Exposure_{i,t}^{e}$, $Diff.Sentiment_{i,t}^{e}$, or $Diff.Risk_{i,t}^{e}$ with respect to conditional exposure, conditional sentiment, or conditional risk, $Con.Measure\_EC_{i,t}^{e}$ is the reaction measure from earnings call, and $Con.Measure\_KQ_{i,t}^{e}$ is the reaction measure from Forms 10-K & 10-Q respectively.

We further investigate the causes of the difference from two perspectives: the additional speakers in the earnings call, the analysts, and the different information disclosed by the management. To examine the role of the financial analyst, we split the whole transcript into different parts according to different participants, managers, or analysts. Then we decompose the reaction measures in earnings call into two terms: one is the measure based on the content (i.e., the questions asked) from the analysts, denoted by $Con.Measure\_A_{i,t}^{e}$, the other is the measure based on the content (i.e., the presentation session and the answers) from the managers, denoted by $Con.Measure\_M_{i,t}^{e}$. By taking the conditional exposure as an example, we have

$$Con.Exposure\_A_{i,t}^{e} = \frac{1}{B_{i,t}^{A}} \sum_{b=1}^{B_{i,t}^{A}} 1[b \in L_e], \quad (7)$$

$$Con.Exposure\_M_{i,t}^{e} = \frac{1}{B_{i,t}^{M}} \sum_{b=1}^{B_{i,t}^{M}} 1[b \in L_e], \quad (8)$$

where $B_{i,t}^{A}$ ($B_{i,t}^{M}$) is the total word count of what the analysts (managers) say. Similarly, we decompose the other reaction measures according to speakers separately by changing the based content and the total word count $B_{i,t}$ in Equations (2) to (5) into $B_{i,t}^{A}$ or $B_{i,t}^{M}$ respectively.

Besides, due to the time limit of the earnings call, the managers cannot reveal all the related information in 10-K/10-Q filings. We thus examine whether the management's adjustment of the disclosure information in the arnings call can impact the post-release stock return by performing a further decomposition. We split the reaction measure of the management into two terms: one is the reaction measure in Forms 10-K & 10-Q, which represents the management's reaction in accounting filings, and the other is the difference between the content from managers in transcript and 10-K/10-Q filings, denoted by $Diff.Measure\_M_{i,t}^{e}$:

$$Diff.Measure\_M_{i,t}^{e} = Con.Measure\_M_{i,t}^{e} - Con.Measure\_KQ_{i,t}^{e}. \quad (9)$$

2.4 Hypotheses

In the above subsections, we construct three different measures, conditional exposure, conditional sentiment, and conditional risk, to evaluate the corporates' response to economic recessions. Based on these measures, we try to answer our first research question: *How do these reaction measures impact the post-release holding period returns under different economic recessions?* Prior literature (Li, 2006; Loughran and McDonald, 2011; Hassan et al., 2021) provide evidence for us to refer to, leading to our first hypothesis for the empirical study:

Hypothesis 1. *No matter whether earnings calls or 10-K/10-Q filings, conditional exposure and conditional risk are negatively related to the post-release holding period returns, when conditional sentiment holds a positive relation and is mainly driven by negative sentiment.*

As is discussed in Section 2.2, a firm more exposed to the economic recession or

facing more related risks should have a lower stock return after disclosing the corresponding information. A firm with a more optimistic attitude can better survive or even gain benefits from the economic recession, leading to a positive post-release stock return. However, a firm with a more pessimistic attitude would face the opposite situation. Since earnings call and 10-K/10-Q filings reveal similar information, the relations discussed above should remain the same within these two information disclosures.

In addition to comparing the reactions between information disclosure approaches, our research also focuses on the differences between different extreme events, which leads to our second hypothesis:

Hypothesis 2. *The corporate's reactions have different impacts on the post-release returns when facing different economic recessions.*

According to Spatt (2020), the COVID-19 epidemic and the Great Recession have quite different causes and consequences but share similarities in medical and financial systems. Therefore, we think the corporations' reactions to pandemics (COVID-19 and SARS) should have different impacts from reactions to the Great Recession.

However, our empirical results in the first part indicate that corporate reaction measures of earnings call have different impacts on the stock return from those of 10-K/10-Q filings. Hence, we try to figure out the causes of these differences in the second part. First of all, to examine the role the difference plays in impacting holding period returns, we obtain our next hypothesis:

Hypothesis 3. *The differences between earnings calls and Forms 10-K and 10-Q impact the post-call holding period return.*

As mentioned in the Introduction and Section 2.3, due to the additional participants and limited time length, the differences can have a significantly impact on the stock returns. According to You and Zhang (2007), Davis and Tama-Sweet (2012),

Mayew and Venkatachalam (2012), Brockman et al. (2015), Druz et al. (2020), and other related literature, we propose our final two hypotheses to explore the causes:

Hypothesis 4. *The statements from the management and analysts have a different impact on the post-release returns. The market has more responses to analysts.*

Hypothesis 5. *The managers adjust the information disclosure in earnings calls rather than just repeating the same information in Forms 10-K and 10-Q.*

3 Data

To test our hypotheses, we use the Management's Discussion and Analysis (MD&A) section in Forms 10-K and 10-Q and quarterly earnings call transcripts of public-listed firms to construct our reaction measures. Forms 10-K and 10-Q are collected from SEC's "Electronic Data Gathering, Analysis, and Retrieval System" (EDGAR). The corresponding conference call transcripts are collected from Thomson Reuters Eikon. As is shown in Table 2, the sample is cut into three periods according to the development of events we investigate. The data set contains 19,115 firm-quarter level records, including 4,971 for the SARS outbreak, 5,962 for the Great Recession, and 8,182 for the COVID-19 pandemic.

[Insert Table 2 here]

Besides, we collect firms' financial data from CRSP and Compustat databases on WRDS, including stock prices (to calculate the post-release holding period returns), SIC code (for sector fixed effect), market value, ROA, ROE, PE ratio, BM ratio, and cash/debt (as control variables).

Based on the collected data, we calculate the reaction measures, conditional exposure, conditional sentiment, and conditional risk. Table 3 provides descriptive statistics for these measures. Generally speaking, the statistics of reaction measures between earnings calls and Forms 10-K and 10-Q are close for the SARS outbreak and the Great Recession. But considering the situation of the COVID-19 pandemic,

the earnings call has a more focused discussion. On average, the conditional exposure in earnings calls is higher than that in 10-K or 10-Q filings. The average conditional sentiment is more pessimistic for earnings calls with a higher positive and a lower negative sentiment. It can be inferred that the earnings call reveals more about the pandemic-related risks than 10-K/10-Q filings on average.

[Insert Table 3 here]

Table 4 summarizes the descriptive statistics of the decomposition measures. From two difference measures $Diff.Measure^{e}_{i,t}$ and $Diff.Measure\_M^{e}_{i,t}$, we can find that the differences between earnings calls and 10-K & 10-Q filings are larger during the COVID-19 pandemic than the other two events. Since the accounting filings contain an overview of the firm's performance with enormous scope, the management may more focus on several key topics in the earnings call. The rather larger differences between earnings calls and 10-K & 10-Q filings indicate that the firms pay more attention to the COVID-19 pandemic. In other words, the firms suffer more from the COVID-19 pandemic than the previous two events. In addition, we can notice that on average, managers have larger reaction measures than analysts in earnings calls. Since we have excluded the effect of different text length, this observation may imply that the management conveys more related information than analysts in an earnings call.

[Insert Table 4 here]

4 Empirical Results

Our empirical analysis is conducted in two parts. In the first part, we examine the first two hypotheses by checking the reaction measures' impacts on the post-release holding period returns under different economic recessions. Further in the second part, we try to figure out the role and the causes of the difference between earnings calls and Forms 10-K and 10-Q by examining the last three hypotheses.

4.1 How do response measures impact the post-release holding period returns?

To reveal the corporate's response towards three economic recessions, we examine the reaction measures' impacts on the post-release holding period returns by the following regression

$$R_{i,t}^{e} = \delta_{Quarter} + \delta_{SIC} + \beta Con.Measure_{i,t}^{e} + \gamma Z_{i,t}' + \varepsilon_{i,t}, \qquad (10)$$

where $R_{i,t}^{e}$ is either the cumulative return $R[-1,1]_{i,t}^{e}$ over a three-day (-1,1) window around the release date or the thirty-day holding period return $R[0,30]_{i,t}^{e}$ from the same date; $Con.Measure_{i,t}^{e}$ is a single or a combination of the reaction measures, including $Con.Exposure_{i,t}^{e}$, $Con.Sentiment_{i,t}^{e}$, and $Con.Risk_{i,t}^{e}$; and the vector $Z_{i,t}$ contains the control variables, including market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. In empirical, we also split the $Con.Sentiment_{i,t}^{e}$ into ($Con.Positive_{i,t}^{e}$ and $Con.Negative_{i,t}^{e}$) to examine the different roles of positive and negative tones. Because of the panel data, we include both quarter ($\delta_{Quarter}$) and two-digit SIC sector (δ_{SIC}) fixed effects. The standard errors are clustered at the firm level in all regressions.

4.1.1 Short-horizon impact

Table 5 presents our results of the reaction measures' impacts on the short-horizon return $R[-1,1]_{i,t}^{e}$. To verify the accuracy, we find that our result of COVID-19 in the earnings call is close to Hassan et al. (2021), though our conditional risk holds the same insignificant relation as theirs but a positive one, and the positive sentiment plays an important role when theirs is insignificant. We further investigate the results from two dimensions: different text materials and different events.

From the row dimension, we find different results from different materials, earnings call in panel A and Form 10-K & 10-Q in panel B. First, the conditional exposure in earnings call holds a significantly negative relation to the short-horizon return, which is consistent with our expectation: a higher exposure means suffering more from the economic recession, leading to a lower stock return. However, the

exposure in 10-K & 10-Q filings is positively related to the return.

Second, consistent with the rational idea, the conditional sentiment in earnings call is positively related to the stock return. Though the driver of sentiment may vary across events, the negative sentiment always plays a significant role, which is the same as the result of Hassan et al. (2021). It means that when facing an economic recession, a more optimistic firm can have a better performance in the stock market, while a more pessimistic firm will have the opposite experience. However, the sentiment in Form 10-K & 10-Q negatively impacts the stock return and is not driven by a consistent polarity across events.

Third, the conditional risk does not have a significant relation to the previous two measures in both the earnings call and Form 10-K & 10-Q. But generally speaking, the negative relation held by risk in 10-K & 10-Q filings is more expected. When managers mention more risk when discussing the event, the firm may be facing more uncertainties during the economic recession, which can lead to a lower stock return. On the other hand, the positive relation held by risk in earnings calls seems to be somewhat unacceptable. Therefore, we will notice how to recover an ideal relation for risk measure in the second part of the empirical results.

Above all, the results in short-horizon suggest we partially reject hypothesis 1. Though the results of conditional exposure and sentiment in earnings call and conditional risk in Form 10-K/10-Q are consistent with the expectation, we cannot ignore the nearly opposite results between these two information disclosures.

From the column dimension, we compare the results between different events, the COVID-19 pandemic, the Great Recession, and the SARS outbreak. We can find that the firm's reactions from earnings calls are not different from each other. However, this situation is not robust in Form 10-K/10-Q since there is minor inconsistency: not only the conditional exposure of SARS and the conditional sentiment of COVID-19 are insignificant, but also the driver of sentiment is not clear. Hence, we cannot reject

hypothesis 2 in the short horizon.

4.1.2 Long-horizon impact

Table 6 presents our results of the reaction measures' impacts on the long-horizon return $R[0,30]_{i,t}^{e}$. From an overview of the results, we can notice that the information in Form 10-K, 10-Q, and earning calls still hold the impacts as short horizon. But there exists a "fade-out effect": some measures hold insignificant relations in the long-horizon, implying the impacts on stock return are not as strong as those in the short-horizon. When we focus on conditional exposure and sentiment, most of these two measures lose their significance in both earnings calls and 10-K/10-Q filings.

However, compared with the previous two measures, the conditional risk can still hold some significant impacts on long-horizon return, such as for COVID-19 and SARS. This implies that as a measure of potential uncertainties, the conditional risk can have a more enduring impact than the other two measures.

On the other hand, the reaction measures still hold different directions between two materials on long horizon. Thus, we still partially reject hypothesis 1 because of the noticeable differences between earnings calls and Forms 10-K and 10-Q.

When comparing the results from the column dimension, we find that the fade-out effect is more obvious in the Great Recession than in the pandemics of COVID-19 and SARS. Nearly no measures can still hold a significant relation with long-term return in a financial crisis. This finding can be explained by the fundamental difference between the two types of events. Compared with the sudden crash of the financial crisis, the epidemic will have a longer-term impact. For example, the widespread of infectious viruses, the time-consuming development of vaccines, and even the continuous mutation of viruses can torture the economy like boiling a frog. Thus, the reaction measures in epidemics can have a more lasting impact. Back to examination, this observation provides evidence supporting hypothesis 2 that the reactions towards different recessions can have different impacts on the stock returns.

4.2 What causes the differences between earnings calls and Forms 10-K & 10-Q?

According to the results in section 4.1, we witness obviously different reactions in 10-K & 10-Q filings from those in earnings call. The results from the earnings call are more expected. Hence in the second part, we seek to figure out how these differences come by examining the last three hypotheses.

4.2.1 Do differences between earnings calls and Forms 10-K & 10-Q impact the holding period returns?

As mentioned in the Introduction, we examine if the earnings call contains more information that can cause market response than Forms 10-K & 10-Q, or only repeat the same information at different times in different formats. Therefore, we construct our first decomposition measure $Diff.Measure_{i,t}^{e}$ as equation (6) and examine its impact on the post-release stock returns as the following regression

$$R_{i,t}^{e} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Diff.Measure_{i,t}^{e} + \beta_2 Con.Measure\_KQ_{i,t}^{e} + \gamma Z_{i,t}' + \varepsilon_{i,t}, \quad (11)$$

where $R_{i,t}^{e}$ is either the cumulative return $R[-1,1]_{i,t}^{e}$ or the thirty-day holding period return $R[0,30]_{i,t}^{e}$; $Diff.Measure_{i,t}^{e}$ and $Con.Measure\_KQ_{i,t}^{e}$ are the same combinations of the reaction measures as in regression (10); and the vector $Z_{i,t}$ contains the control variables.

Table 7 shows the regression results of short-horizon return. From the difference measures of exposure and sentiment (including positive and negative sentiment), we can find that the differences between earnings call and Forms 10-K and 10-Q have significant impacts on the three-day return, supporting our hypothesis 3.

What is more interesting, when focusing on the conditional reaction measures from 10-K/10-Q filings, these measures do not hold the original relations as in section 4.1 but are more expected ones as the earnings call. The rational negative relation of conditional risk still holds. The conditional exposure negatively affects the return

when conditional sentiment (especially the negative sentiment) holds a positive relation. It indicates that the prerelease of the earnings call can efficiently disclose the information in 10-K/10-Q filings before it is officially revealed. In other words, our findings support You and Zhang (2009) that the key information in 10-K/10-Q reports was disclosed to the market in an earnings call before being filed to the Securities and Exchange Commission (SEC).

In addition, compared with the positively related conditional risk from earnings calls, we can see a negative relation of conditional risk from 10-K & 10-Q filings and a positive relation of the difference in risk. It implies that the earnings call has a mitigating effect on risk disclosure, which even covers the expected negative relation.

For long-horizon return, Table 8 presents the regression results. The fade-out effect, long-term impact of risk, and difference between events still exist. But more notable, the conditional reaction measures from 10-K & 10-Q filings can still have little significant impacts, such as exposure in SARS and great recession, positive sentiment in epidemics, and risk in the COVID-19 pandemic. This can be explained by two points. On one hand, the release of accounting filings is closer to the end of the long-horizon period. On the other hand, compared with a vocal release of earnings call on the firm's website for a limited time, the Forms 10-K and 10-Q are more accessible. Though conference transcript can exist longer, it is not as convenient as accounting filings.

In summary, the empirical results here support our hypothesis 3. The differences between earnings calls and 10-K & 10-Q filings impact the post-release holding period returns. Furthermore, we find that the reaction measures from accounting filings have more rational relations than we expected during the release of earnings calls, which means the key information in financial reports has been efficiently disclosed before it is officially published.

4.2.2 Do statements from the management and analysts have different impacts?

The previous results remind us of significant impacts of the differences between the two text materials. We thus want to figure out the cause of these differences in sections 4.2.2 and 4.2.3. Compared with the accounting reports, there are additional speakers in the earnings call, the investors and analysts, who will ask the managers questions during the Q&A session. We try to determine if the differences come from the additional participants in the earnings call by examining hypothesis 4.

In this section, we construct another two decomposition measures: conditional reaction measures from the content of analysts $Con.Exposure\_A_{i,t}^{e}$ and from the content of managers $Con.exposure\_M_{i,t}^{e}$, which are defined by equations (7) and (8) respectively. We examine their impacts on the post-release stock returns as the following regression

$$R_{i,t}^{e} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Con.Measure\_A_{i,t}^{e} + \beta_2 Con.Measure\_M_{i,t}^{e} + \gamma Z_{i,t}' + \varepsilon_{i,t}, \quad (12)$$

where $R_{i,t}^{e}$ is either the cumulative return $R[-1,1]_{i,t}^{e}$ or the thirty-day holding period return $R[0,30]_{i,t}^{e}$; two decompositions $Con.exposure\_A_{i,t}^{e}$ and $Con.Exposure\_M_{i,t}^{e}$ have the same combinations of the reaction measures as in regression (10); and the vector $Z_{i,t}$ contains the control variables.

Table 9 shows the regression results of short-horizon return. We find that the conditional exposure, sentiment, and negative sentiment from managers hold the same significant impact on the three-day window return as from the whole transcript, while on the contrary, the reactions from analysts do not have a significant impact. It means that the impact of earnings calls is mainly driven by the statement of the management rather than analysts.

In contrast, when we move to the conditional risk, it should be noticed that the risk from analysts can cause a significant response in the market, while the risk disclosure from the management only brings effect in the SARS outbreak. This observation reflects that the investors pay more attention to the risk proposed by

analysts rather than that disclosed by managers. Or we can say, that analysts do mention noteworthy risks of the economic recession during the questioning in a conference call.

However, we cannot recover the negative relation in risk by splitting the transcripts into contents from managers and analysts, while the conditional exposure and sentiment from the management show expected results. Associating the result in the previous section, we can infer that the mitigating effect on risk disclosure does not come from the involvement of analysts, but may from the managers themselves.

The results of long-horizon return are summarized in Table 10. Similar to results in previous sections, we can still find the fade-out effect and difference between events here. But further, we notice that the impacts from conditional risks of analysts become negative in all events, and even become significant in both pandemics. It not only supports our conclusion that analysts disclose noteworthy risks about economic recessions, but also reveals that the long-term impact of risk in earnings calls is mainly driven by content from analysts.

Above all, our empirical results in this section partially reject hypothesis 4. The statements from the management and analysts do have a different impact on the post-release returns. Opposite to the hypothesis, when discussing economic recessions, the market more responses to managers rather than analysts. However, compared with the risk disclosure by the management, the risk proposed by the analyst gains more attention from investors. Besides, the mitigation effect on risk disclosure may come from the managers rather than the analysts, which leads to our further investigation in the next section.

4.2.3 Do managers reveal more or cover-up information in earnings calls?

According to the results in section 4.2.2, the negative relation of risk cannot be recovered by splitting the earnings call's transcript into contents from analysts and managers. Furthermore, since the difference between the two materials does not come

from the participation of analysts, we seek to check if managers reveal more or cover-up information in earnings calls than 10-K/10-Q filings by examining hypothesis 5.

In this section, we extract our last decomposition measure, the difference between reaction measures based on the transcript content of managers and those based on 10-K/10-Q filings, $Diff.Measure\_M_{i,t}^{e}$, as equation (9). We examine its impact on the post-release stock returns as following regression

$$R_{i,t}^{e} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Con.Measure\_A_{i,t}^{e} + \beta_2 Diff.Measure\_M_{i,t}^{e} + \beta_3 Con.Measure\_KQ_{i,t}^{e} + \gamma Z'_{i,t} + \varepsilon_{i,t}, \quad (13)$$

where $R_{i,t}^{e}$ is either the cumulative return $R[-1,1]_{i,t}^{e}$ or the thirty-day holding period return $R[0,30]_{i,t}^{e}$; $Con.measure\_A_{i,t}^{e}$ is the reaction measure based on the content of transcripts from analysts; $Con.measure\_KQ_{i,t}^{e}$ is the reaction measure based on 10-K/10-Q filings; and the vector $Z_{i,t}$ contains the control variables. All measures have the same combinations of the reaction measures as in regression (10).

Table 11 shows the regression results of short-horizon return. First of all, from exposure, sentiment, and negative sentiment of our decomposed pair, the difference and the reaction measures from Forms 10-K/10-Q, we find that these measures have a significant impact on the post-release return in expected directions across different events. This robust result indicates that the management does reveal more efficient information in earnings calls, but the market does not ignore the original information in 10-K/10-Q filings because of this.

However, when we focus on the risk-related measures, we can find that even if we extract the difference from the original term, both *Diff.Risk_M* and *Con.Risk_KQ* still cannot significantly account for the return under COVID-19 and the Great Recession. On the contrary, the risk from analysts, the *Con.Risk_A*, can significantly impact the stock return during the COVID-19 pandemic and the SARS outbreak, though the direction is not consistent enough. However, we can conclude that the management does not reveal more efficient information about the related risk in the

earnings call. The market has more responses to the risk mentioned by analysts.

In addition, *Con.Risk_KQ* has recovered the negative impact on stock return when the difference in risk still holds a positive relation, which supports our previous inference that the mitigating effect on risk disclosure comes from the managers themselves. The management might cover up their risk disclosure in earnings calls, which reduces its negative impact on stock return.

Table 12 presents the results of long-horizon return. In this section, we still witness the fade-out effect and the difference between events. On the other hand, the risk measures tell us a new story. Similar to the result in section 4.2.2, the *Con.Risk_A* still has a significant impact on long-horizon return in COVID-19 and SARS. But for managers, the *Con.Risk_KQ* has a significantly negative impact on returns in the COVID-19 pandemic and the *Diff.Risk_M* has a significantly positive impact in the SARS outbreak. This observation means that the market has selective belief in the information disclosed by management, either from the original risk disclosure in accounting filings or from their additional adjustment.

To summarize the empirical results of this section, we accept hypothesis 5 that the managers adjust the information disclosure in earnings call rather than just repeating the same information in 10-K & 10-Q filings. More detailly, the management might cover up their risk disclosure in the earnings calls, reducing the negative impact on stock return, which is the reason why the conditional risk from the earnings call has an unexpected relation with the post-release stock return. Associating with the findings in section 4.2.2, our results in this examination support the conclusion that the market considers the risks proposed by analysts in earnings calls. But we also find that investors have selective belief in the risk disclosure by managers.

5 Conclusion

In this paper, we examine how corporates response to the COVID-19 pandemic, the

Great Recession, and the SARS epidemic. Based on the MD&A section in Forms 10-K/10-Q and earnings call transcripts, we construct three reaction measures, conditional exposure, sentiment, and risk, to evaluate the firm's reactions.

Our empirical results in the first part show that in earnings calls, conditional exposure hurts the post-release returns when conditional sentiment and risk have positive impacts. The impact of sentiment is mainly driven by the negative tone. In addition, we find that these relations are not robust between different events, which can be explained by the fundamental characteristics of different recession types. Besides, we also find that there is a "fade-out effect": the significant relations may fade out in long-horizon results. However, our results on the accounting filings tell us a quite different story. The impacts of reaction measures in Forms 10-K and 10-Q have nearly opposite directions to those in earnings calls.

Therefore, we further perform three decompositions of the reaction measures in earnings calls to determine the causes of these differences in the second part. At first, we examine the role of the difference in the stock return. Our result indicates that the difference between earnings calls and 10-K & 10-Q filings impacts the post-release returns. We further investigate the causes of these differences by splitting the transcript according to speakers and examining if the management adjusted their information disclosure from accounting filings in earnings calls. Different from prior studies, we find the market more response to the information from the management than analysts when discussing economic recessions. However, the analysts do propose noteworthy risks during the questioning, causing the market's response. By examining the difference between statements of managers in earnings calls and Forms 10-K & 10-Q, we find that the managers adjust the information disclosure in earnings calls rather than just repeating the same information in accounting filings. More specifically, the management may cover up their risk-related information in accounting filings during the earnings call, which reduces the negative impact on stock returns.

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Table 1. Keywords lists

This table shows the keywords we used to identify the related information in the MD&A section in Form 10-K/10-Q and earnings call transcripts. For each event, we summarize specific words that directly define the corresponding topic. For epidemics, based on the words used by Hassan et al. (2021) and Stephany et al. (2022), we adopt the official names defined by the World Health Organization (WHO) and those usually appeared in newspaper articles, earnings calls, and Forms 10-K & 10-Q. For the Great Recession, we adopt common synonyms and names of related corporates used in academic research (e.g., Mian and Sufi, 2010; Aguiar et al., 2013; Ball, 2014; Christiano et al., 2015; Gertler and Gilchrist, 2018) and financial reports. Besides, we also use general words that are widely used to describe the event types. It should be noted that the text recognition in this paper is case-insensitive.

Events	Keywords
COVID-19	Specific words: Coronavirus, Corona virus, COVID-19, COVID19, SARS-CoV-2, 2019-nCoV, Wuhan virus, virus
	General words: pandemic, epidemic, outbreak, plague, contagious disease, contagious illness, infectious disease, infectious outbreak
The Great Recession	Specific words: 2008 Financial Crisis, global financial crisis, financial crisis, sub-prime financial crisis, sub-prime mortgage financial crisis, subprime mortgage crisis, sub-prime crisis, subprime mortgage, Lehman Brothers, Wall Street
	General words: economic recession, economic downturn, challenging economic conditions, challenging economic environment, crisis, economic challenges, economic condition, economic pressure
SARS	Specific words: SARS, Severe Acute Respiratory Syndrome, Virus, coronavirus, SARS-CoV
	General words: pandemic, epidemic, outbreak, plague, contagious disease, contagious illness, infectious disease, infectious outbreak

Table 2. Sample period, sample size, and cutting reason

This table presents the sample periods, sample sizes, and the reasons for cutting samples for three events we investigate: the SARS outbreak, the Great Recession, and the COVID-19 pandemic. The Forms 10-K and 10-Q are collected from EDGAR while earnings call transcripts are collected from Thomson Reuters Eikon. Sample size reports the amount of data after merging the 10-K, 10-Q filings and earnings call transcripts.

Event	Sample period	Sample size	Cutting reason
SARS outbreak	Mar. 1, 2003 to Oct. 31, 2003 (8 months)	4,971	In March 2003, the WHO officially issued a global alert of the SARS outbreak. On 5 July 2003, Taiwan was removed from the list of affected areas as the last one, which signifying the end of the outbreak. To include the financial reports of Q3, we choose October 31, 2003, as the end of the period.
Great Recession	Aug. 1, 2008 to Aug. 31, 2009 (12 months)	5,962	On July 30, 2008, *the Housing and Economic Recovery Act of 2008* was enacted to address the subprime mortgage crisis. However, on Sept. 15, 2008, Lehman Brothers filed for bankruptcy protection, which caused the largest drop by points in a single day since the attacks on September 11, 2001. This indicated the financial crisis entered an acute phase. The National Bureau of Economic Research (NBER) declared June 2009 as the end date of the U.S. recession. To include the financial reports of Q2, we choose August 31, 2009, as the end of the period.
COVID-19 pandemic	Mar. 1, 2020 to Dec. 31, 2020 (10 months)	8,182	On 12 March 2020, the WHO declared the outbreak of COVID-19 a pandemic. In October, WHO reported that one in ten people around the world, or 780 million people, may have been infected. Since December 2020, the COVID-19 vaccines have been approved and widely distributed in various countries, which reducing the severity and death caused by this pandemic.

Table 3. Descriptive statistics for reaction measures

This table presents the mean, median, standard deviation (SD), and the number of observations (N) for reaction measures, including conditional exposure, conditional sentiment (including conditional positive and negative sentiments), and conditional risk, under different economic recessions, including SARS outbreak, the Great Recession, and the COVID-19 pandemics. All reaction variables are calculated as defined in Section 2 and standardized by their standard deviation.

	Earnings call			Form 10-K/10-Q			
	Mean	Median	SD	Mean	Median	SD	N
Panel A. Conditional exposure							
SARS	0.16	0.00	1.00	0.16	0.00	1.00	4,971
Great Recession	0.52	0.13	1.00	0.53	0.20	1.00	5,962
COVID-19	1.12	0.94	1.00	0.54	0.31	1.00	8,182
Panel B. Conditional sentiment							
SARS	-0.13	0.00	1.00	-0.15	0.00	1.00	4,971
Great Recession	-0.44	-0.19	1.00	-0.70	-0.38	1.00	5,962
COVID-19	-0.44	-0.20	1.00	-0.38	0.00	1.00	8,182
Panel C. Conditional positive sentiment							
SARS	0.14	0.00	1.00	0.06	0.00	1.00	4,971
Great Recession	0.73	0.41	1.00	0.51	0.00	1.00	5,962
COVID-19	0.88	0.61	1.00	0.15	0.00	1.00	8,182
Panel D. Conditional negative sentiment							
SARS	-0.19	0.00	1.00	-0.15	0.00	1.00	4,971
Great Recession	-0.79	-0.48	1.00	-0.78	-0.45	1.00	5,962
COVID-19	-0.97	-0.73	1.00	-0.41	0.00	1.00	8,182
Panel E. Conditional risk							
SARS	0.11	0.00	1.00	0.06	0.00	1.00	4,971
Great Recession	0.49	0.00	1.00	0.56	0.00	1.00	5,962
COVID-19	0.74	0.43	1.00	0.22	0.00	1.00	8,182

Table 4. Descriptive statistics for decomposition measures

This table presents the mean, median, standard deviation (SD), and the number of observations (N) for decomposition measures as defined in section 2.3 under different economic recessions, including the SARS outbreak, the Great Recession, and the COVID-19 pandemics. $Diff.Measure^{e}_{i,t}$ is the difference of reaction measures between earnings call and 10-K/10-Q filings. $Con.Measure\_A^{e}_{i,t}$ is the reaction measure based on the content from the analysts, when $Con.Measure\_M^{e}_{i,t}$ is the reaction measure based on the content from the management respectively. These two measures are standardized by their standard deviation. $Diff.Measure\_M^{e}_{i,t}$ is the difference of reaction measures between the content from managers in transcript and 10-K/10-Q filings.

	$Diff.Measure^{e}_{i,t}$			$Con.Measure\_A^{e}_{i,t}$			$Con.Measure\_M^{e}_{i,t}$			$Diff.Measure\_M^{e}_{i,t}$			
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	N
Panel A. Conditional exposure													
SARS	0.00	0.00	1.34	0.12	0.00	1.00	0.14	0.00	1.00	-0.01	0.00	1.34	4,971
Great Recession	-0.01	-0.04	1.36	0.16	0.00	1.00	0.61	0.19	1.00	0.08	0.00	1.31	5,962
COVID-19	0.59	0.49	1.33	0.67	0.39	1.00	1.13	0.97	1.00	0.61	0.52	1.33	8,182
Panel B. Conditional sentiment													
SARS	0.02	0.00	1.35	-0.06	0.00	1.00	-0.12	0.00	1.00	0.02	0.00	1.35	4,971
Great Recession	0.25	0.13	1.29	-0.16	0.00	1.00	-0.45	0.00	1.00	0.24	0.12	1.29	5,962
COVID-19	-0.06	0.00	1.39	-0.17	0.00	1.00	-0.43	-0.20	1.00	-0.05	0.00	1.39	8,182
Panel C. Conditional positive sentiment													
SARS	0.08	0.00	1.38	0.05	0.00	1.00	0.13	0.00	1.00	0.07	0.00	1.38	4,971
Great Recession	0.23	0.00	1.34	0.16	0.00	1.00	0.72	0.40	1.00	0.19	0.00	1.33	5,962
COVID-19	0.73	0.56	1.38	0.28	0.00	1.00	0.89	0.62	1.00	0.74	0.57	1.38	8,182

Panel D. Conditional negative sentiment													
SARS	-0.03	0.00	1.34	-0.09	0.00	1.00	-0.17	0.00	1.00	-0.02	0.00	1.34	4,971
Great Recession	-0.01	0.00	1.25	-0.24	0.00	1.00	-0.80	-0.49	1.00	-0.02	0.00	1.25	5,962
COVID-19	-0.57	-0.47	1.36	-0.39	0.00	1.00	-0.99	-0.75	1.00	-0.59	-0.47	1.36	8,182
Panel E. Conditional risk													
SARS	0.05	0.00	1.41	0.07	0.00	1.00	0.09	0.00	1.00	0.03	0.00	1.41	4,971
Great Recession	-0.07	0.00	1.37	0.13	0.00	1.00	0.45	0.00	1.00	-0.11	0.00	1.36	5,962
COVID-19	0.52	0.37	1.38	0.29	0.00	1.00	0.70	0.40	1.00	0.48	0.00	1.38	8,182

Table 5. The impacts of reaction measures on short-horizon stock return

This table presents the results of the regressions (10) that examines the short-horizon impacts of reaction measures from earnings call and Form 10-K/10-Q via the following equation:

$$R[-1,1]^{e}_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta Con.Measure^{e}_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The three-day cumulative return $R[-1,1]^{e}_{i,t}$ is regressed against either a single or a combination of the reaction measures: conditional exposure, conditional sentiment, and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[-1,1]^{e}_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. Earnings call									
Con.Exposure	-0.4924**			-0.5480***			-0.4030***		
	(0.2503)			(0.1981)			(0.0700)		
Con.Sentiment		0.6557***			1.2725***			0.2993***	
		(0.1556)			(0.1849)			(0.0566)	
Con.Positive			0.4972***			-0.1908			0.0764**
			(0.1014)			(0.2135)			(0.0333)
Con.Negative			0.7706***			1.7373***			0.3719***
			(0.2375)			(0.2974)			(0.0698)
Con.Risk		0.2400	0.2455		-0.1280	0.1109		0.1343***	0.1831***
		(0.1832)	(0.2103)		(0.1998)	(0.2280)		(0.0506)	(0.0521)
R^2	0.0046	0.0069	0.0069	0.0147	0.0207	0.0255	0.0144	0.0151	0.0153
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Panel B. Form 10-K/10-Q									
Con.Exposure	0.3914**			0.5577***			0.0861		
	(0.1945)			(0.1681)			(0.1254)		
Con.Sentiment		0.1021			-0.3779***			-0.2333***	
		(0.1768)			(0.1304)			(0.0517)	
Con.Positive			0.6930***			-0.2431			-0.2675***
			(0.1870)			(0.2261)			(0.0327)
Con.Negative			-0.0369			-0.4124***			-0.2345***
			(0.2226)			(0.1437)			(0.0488)
Con.Risk		-0.0881	-0.0963		-0.2332***	-0.2147***		-0.5943	-0.7927*
		(0.0627)	(0.0777)		(0.0827)	(0.0783)		(0.4156)	(0.4118)
R^2	0.0077	0.0072	0.0096	0.0069	0.0057	0.0058	0.0153	0.0187	0.0198
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Table 6. The impacts of reaction measures on long-horizon stock return

This table presents the results of the regressions (10) that examines the long-horizon impacts of reaction measures from earnings call and Form 10-K/10-Q via the following equation:

$$R[0,30]^e_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta Con.Measure^e_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The three-day cumulative return $R[0,30]^e_{i,t}$ is regressed against either a single or a combination of the reaction measures: conditional exposure, conditional sentiment, and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[0,30]^e_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. Earnings call									
Con.Exposure	-0.1175			0.9194**			0.1386		
	(0.6721)			(0.4131)			(0.6721)		
Con.Sentiment		1.1835***			0.8403			0.2023	
		(0.4086)			(0.6643)			(0.2855)	
Con.Positive			1.6473***			0.3630			0.5550***
			(0.3777)			(0.5091)			(0.1423)
Con.Negative			0.8755			0.9923			0.1431
			(0.7040)			(0.7495)			(0.3390)
Con.Risk		-0.7615***	-0.9936**		0.0490	0.0842		0.6191***	0.4052**
		(0.0652)	(0.1762)		(0.4272)	(0.3712)		(0.0933)	(0.1636)
R^2	0.2006	0.2029	0.2037	0.2081	0.2080	0.2080	0.1494	0.1514	0.1523
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Panel B. Form 10-K/10-Q									
Con.Exposure	1.7183***			0.8258			-0.0635		
	(0.4824)			(0.8787)			(0.5218)		
Con.Sentiment		-0.4383			-0.4431			0.4136***	
		(0.6584)			(1.1589)			(0.1572)	
Con.Positive			2.5112***			-0.1405			1.2480**
			(0.2501)			(0.7736)			(0.2501)
Con.Negative			-1.0313*			-0.4742			0.3961***
			(0.5297)			(1.1822)			(0.1499)
Con.Risk		-0.6177***	-0.6502***		0.2812	0.2845		-2.6052	-1.6040
		(0.1782)	(0.0878)		(0.5976)	(0.5036)		(1.9614)	(0.5111)
R^2	0.1644	0.1645	0.1689	0.2072	0.2070	0.2070	0.0980	0.1011	0.1029
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Table 7. The impacts of the differences between earnings call and Form 10-K & 10-Q on short-horizon stock return

This table presents the results of the regressions (11) that examine if the differences between earnings calls and Forms 10-K/10-Q really impact the short-horizon holding period return via the following equation:

$$R[-1,1]^{e}_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Diff.Measure^{e}_{i,t} + \beta_2 Con.Measure\_KQ^{e}_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The three-day holding period return $R[-1,1]^{e}_{i,t}$ is regressed against the differences between two text materials, $Diff.Measure^{e}_{i,t}$, defined as equation (6), and the reaction measures from 10-K/10-Q filings, $Con.Measure\_KQ^{e}_{i,t}$. All measures are adopted in the form of either a single or a combination: conditional exposure, conditional sentiment, and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[-1,1]^{e}_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Diff.Exposure	-0.4771**			-0.5752***			-0.3872***		
	(0.2520)			(0.2040)			(0.0793)		
Con.Exposure_KQ	-0.9612**			-0.2038			-0.6097***		
	(0.2503)			(0.3861)			(0.2028)		
Diff.Sentiment		0.6242***			1.3315***			0.2998***	
		(0.1643)			(0.1849)			(0.0584)	
Con.Sentiment_KQ		1.1918***			0.8938***			0.3095**	
		(0.1378)			(0.1849)			(0.1440)	
Diff.Positive			0.4496***			-0.1872			0.0892**
			(0.0980)			(0.2123)			(0.0367)
Con.Positive_KQ			1.4473***			-0.3242			-0.6974*
			(0.2265)			(0.2099)			(0.3706)

Diff.Negative			0.6992***			1.8141***			0.3977***
			(0.2491)			(0.1681)			(0.0661)
Con.Negative_KQ			1.1178***			1.2958***			0.4238***
			(0.0836)			(0.2034)			(0.1077)
Diff.Risk		0.2889	0.2935		-0.1303	0.1142		0.1407***	0.2179***
		(0.1821)	(0.2058)		(0.1960)	(0.2245)		(0.0529)	(0.2179)
Con.Risk_KQ		-0.1606	-0.1661		-0.3920	-0.0905		-0.2668***	-0.8647***
		(0.2645)	(0.2925)		(0.3134)	(0.3609)		(0.0632)	(0.2474)
R^2	0.0033	0.0081	0.0114	0.0218	0.0290	0.0346	0.0210	0.0219	0.0253
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Table 8. The impacts of the differences between earnings call and Form 10-K & 10-Q on long-horizon stock return

This table presents the results of the regressions (11) that examines if the differences between earnings calls and Forms 10-K/10-Q really impact the long-horizon holding period return via the following equation:

$$R[0,30]^e_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Diff.Measure^e_{i,t} + \beta_2 Con.Measure\_KQ^e_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The thirty-day holding period return $R[0,30]^e_{i,t}$ is regressed against the differences between two text materials, $Diff.Measure^e_{i,t}$, defined as equation (6), and the reaction measures from 10-K/10-Q filings, $Con.Measure\_KQ^e_{i,t}$. All measures are adopted in the form of either a single or a combination: conditional exposure, conditional sentiment and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[0,30]^e_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Diff.Exposure	-0.4590			0.7402			0.1177		
	(0.6854)			(0.4827)			(0.6760)		
Con.Exposure_KQ	0.7027			2.0030*			0.4105*		
	(1.1681)			(1.0916)			(0.2479)		
Diff.Sentiment		0.7854			0.5088			0.2022	
		(0.5931)			(0.6498)			(0.2818)	
Con.Sentiment_KQ		0.7619			-0.9766			0.1757*	
		(0.5599)			(1.1422)			(0.0954)	
Diff.Positive			1.4272***			0.3245			0.5395***
			(0.4333)			(0.4989)			(0.1473)
Con.Positive_KQ			4.0768***			0.3642			1.5713***
			(0.2152)			(0.5912)			(0.4579)

Diff.Negative			0.1893			0.5668			0.1100
			(0.7699)			(0.7372)			(0.3475)
Con.Negative_KQ			-0.3387			-0.9864			0.0768
			(0.5542)			(1.2291)			(0.1230)
Diff.Risk		-0.1878	-0.4740**		0.4267	0.4296		0.6217***	0.3706**
		(0.2320)	(0.2191)		(0.4466)	(0.4026)		(0.0767)	(0.1625)
Con.Risk_KQ		-1.0136***	-1.3485***		0.6401	0.5874		0.4059	1.0385
		(0.3128)	(0.3182)		(0.9786)	(0.8576)		(0.9427)	(0.8030)
R^2	0.0951	0.0968	0.0114	0.1129	0.1140	0.1142	0.1884	0.1911	0.1925

Table 9. The impacts of reactions from managers and analysts on short-horizon stock return

This table presents the results of the regressions (12) that examines if the statements from the management and analysts in earnings call have different impact on the short-horizon holding period return via the following equation:

$$R[-1,1]^e_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Con.Measure\_A^e_{i,t} + \beta_2 Con.Measure\_M^e_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The three-day holding period return $R[-1,1]^e_{i,t}$ is regressed against the reaction measures based on content from analysts, $Con.measure\_A^e_{i,t}$, and based on content from the management, $Con.measure\_M^e_{i,t}$. All measures are adopted in the form of either a single or a combination: conditional exposure, conditional sentiment and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[-1,1]^e_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Con.Exposure_A	0.0935			-0.4094***			0.1226		
	(0.1005)			(0.1043)			(0.1313)		
Con.Exposure_M	-0.5056***			-0.5983***			-0.6444***		
	(0.1275)			(0.1843)			(0.0673)		
Con.Sentiment_A		0.4604**			0.2500			-0.0892	
		(0.2120)			(0.2829)			(0.0765)	
Con.Sentiment_M		0.6446***			1.2803***			0.2596***	
		(0.1029)			(0.1582)			(0.0539)	
Con.Positive_A			0.1991			-0.2824			0.0074
			(0.1585)			(0.2232)			(0.0251)
Con.Positive_M			0.4287***			-0.1008			-0.0574
			(0.0756)			(0.2012)			(0.0579)

Con.Negative_A			0.4948**			0.3522			-0.1228
			(0.2265)			(0.2598)			(0.0764)
Con.Negative_M			0.8077***			1.8006***			0.3625***
			(0.2081)			(0.1463)			(0.0704)
Con.Risk_A		0.6772***	0.7447***		0.1300	0.2609		-0.0744**	-0.0968***
		(0.1697)	(0.1922)		(0.3551)	(0.3256)		(0.0318)	(0.0360)
Con.Risk_M		0.0295	0.0608		0.0934	0.2848		0.1450***	0.2649***
		(0.2303)	(0.2335)		(0.2688)	(0.2835)		(0.0339)	(0.0751)
R^2	0.0036	0.0116	0.0114	0.0241	0.0297	0.0363	0.0244	0.0236	0.0252
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Table 10. The impacts of reactions from managers and analysts on long-horizon stock return

This table presents the results of the regressions (12) that examines if the statements from the management and analysts in earnings call have different impact on the long-horizon holding period return via the following equation:

$$R[0,30]^e_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Con.Measure\_A^e_{i,t} + \beta_2 Con.Measure\_M^e_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The thirty-day holding period return $R[0,30]^e_{i,t}$ is regressed against the reaction measures based on content from analysts, $Con.Measure\_A^e_{i,t}$, and based on content from the management, $Con.Measure\_M^e_{i,t}$. All measures are adopted in the form of either a single or a combination: conditional exposure, conditional sentiment and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[0,30]^e_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Con.Exposure_A	0.2299			-0.0043			-0.0368		
	(0.3334)			(0.3829)			(0.1891)		
Con.Exposure_M	-0.5292			-0.1637			0.2974		
	(0.4534)			(0.5939)			(0.8228)		
Con.Sentiment_A		-1.5554***			0.0214			-0.0587	
		(0.2044)			(0.4340)			(0.1004)	
Con.Sentiment_M		1.1435**			0.2281			0.0708	
		(0.4581)			(0.5103)			(0.3157)	
Con.Positive_A			-0.4562**			0.2957			0.1450***
			(0.2167)			(0.4307)			(0.0208)
Con.Positive_M			1.2102***			-0.0493			0.2298
			(0.2611)			(0.3071)			(0.1918)

Con.Negative_A			-1.9024***			-0.1063			-0.0974
			(0.3817)			(0.3668)			(0.1259)
Con.Negative_M			1.1081			0.3516			0.0258
			(0.8033)			(0.6693)			(0.3802)
Con.Risk_A		-1.2536***	-1.6388***		-0.3628	-0.4773		-0.4047**	-0.4168***
		(0.2331)	(0.4161)		(0.2367)	(0.3076)		(0.1637)	(0.1801)
Con.Risk_M		-0.4038	-0.5151		0.6954	0.7405		0.6645***	0.5590***
		(0.3310)	(0.3158)		(0.7784)	(0.7219)		(0.1358)	(0.1835)
R^2	0.1126	0.121	0.1209	0.1074	0.1073	0.1078	0.1575	0.1612	0.1619
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Table 11. The impacts of differences from managers between earnings call and Form 10-K & 10-Q on short-horizon stock return

This table presents the results of the regressions (13) that examines if managers reveal more or cover up information that can impact the short-horizon return in earnings calls via the following equation:

$$R[-1,1]^e_{i,t} R^e_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Con.Measure\_A^e_{i,t} + \beta_2 Diff.Measure\_M^e_{i,t} + \beta_3 Con.Measure\_KQ^e_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The three-day holding period return $R[-1,1]^e_{i,t}$ is regressed against the reaction measures based on content from analysts, $Con.Measure\_A^e_{i,t}$, the difference between reaction measures based on the transcript content of managers and those based on 10-K/10-Q filings, $Diff.Measure\_M^e_{i,t}$, and reaction measures from 10-K/10-Q filings, $Con.Measure\_KQ^e_{i,t}$. All measures are adopted in the form of either a single or a combination: conditional exposure, conditional sentiment and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[-1,1]^e_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Con.Exposure_A	0.1035			-0.4118***			0.1249		
	(0.1023)			(0.1042)			(0.1302)		
Diff.Exposure_M	-0.4954***			-0.6141***			-0.6283***		
	(0.1407)			(0.1728)			(0.0792)		
Con.Exposure_KQ	-0.9284***			-0.3968			-0.8388***		
	(0.2812)			(0.3368)			(0.1612)		
Con.Sentiment_A		0.4580**			0.2379			-0.0890	
		(0.2146)			(0.2779)			(0.0755)	
Diff.Sentiment_M		0.6371***			1.3119***			0.2561***	
		(0.1122)			(0.1649)			(0.0547)	

Con.Sentiment_KQ		1.1718***			0.8849***			0.2386	
		(0.1740)			(0.1673)			(0.1592)	
Con.Positive_A			0.1933			-0.2898			0.0068
			(0.1650)			(0.2181)			(0.0252)
Diff.Positive_M			0.4193***			-0.0847			-0.0563
			(0.0732)			(0.2017)			(0.0624)
Con.Positive_KQ			1.4960***			-0.2970			-0.8987**
			(0.3113)			(0.2313)			(0.3909)
Con.Negative_A			0.4595**			0.341			-0.1228*
			(0.2259)			(0.2570)			(0.0738)
Diff.Negative_M			0.7594***			1.8489***			0.3782***
			(0.2262)			(0.1589)			(0.0596)
Con.Negative_KQ			1.1337***			1.3206***			0.3665***
			(0.0830)			(0.1859)			(0.1401)
Con.Risk_A		0.6879***	0.7776***		0.1260	0.2571		-0.0749**	-0.0937***
		(0.1675)	(0.1993)		(0.3564)	(0.3293)		(0.0317)	(0.0352)
Diff.Risk_M		0.0348	0.0480		0.0986	0.2896		0.1476***	0.2883***
		(0.2257)	(0.2260)		(0.2661)	(0.2847)		(0.0358)	(0.0650)
Con.Risk_KQ		-0.2500	-0.2292		-0.1575	0.0937		-0.3947***	-1.0628***
		(0.2944)	(0.3442)		(0.3815)	(0.4187)		(0.0469)	(0.2320)
R^2	0.0038	0.0129	0.0174	0.0244	0.0305	0.0373	0.0245	0.0240	0.0291
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971

Table 12. The impacts of differences from managers between earnings call and Form 10-K & 10-Q on long-horizon stock return

This table presents the results of the regressions (13) that examines if managers reveal more or cover up information that can impact the long-horizon return in earnings calls via the following equation:

$$R[0,30]^{e}_{i,t}R^{e}_{i,t} = \delta_{Quarter} + \delta_{SIC} + \beta_1 Con.Measure\_A^{e}_{i,t} + \beta_2 Diff.Measure\_M^{e}_{i,t} + \beta_3 Con.Measure\_KQ^{e}_{i,t} + \gamma Z'_{i,t} + \varepsilon_{i,t}.$$

The thirty-day holding period return $R[0,30]^{e}_{i,t}$ is regressed against the reaction measures based on content from analysts, $Con.Measure\_A^{e}_{i,t}$, the difference between reaction measures based on the transcript content of managers and those based on 10-K/10-Q filings, $Diff.Measure\_M^{e}_{i,t}$, and reaction measures from 10-K/10-Q filings, $Con.Measure\_KQ^{e}_{i,t}$. All measures are adopted in the form of either a single or a combination: conditional exposure, conditional sentiment and conditional risk, or conditional risk and conditional positive and negative sentiments. The control variable set $Z_{i,t}$ includes market value, ROA, ROE, PE ratio, BM ratio, and cash/debt. We also control both quarter ($\delta_{Quarter}$) and sector (δ_{SIC}) fixed effects. Standard errors in parentheses are clustered at the firm level. Superscripts ***, **, and * denote significance levels of 1, 5, and 10% respectively.

$R[0,30]^{e}_{i,t}$	COVID-19			Great Recession			SARS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Con.Exposure_A	0.1980			-0.0184			-0.0416		
	(0.3114)			(0.3832)			(0.1868)		
Diff.Exposure_M	-0.5619			-0.2590			0.2630		
	(0.4332)			(0.5530)			(0.8646)		
Con.Exposure_KQ	0.8173			1.0547			0.7125		
	(0.7882)			(1.0553)			(0.4670)		
Con.Sentiment_A		-1.5452***			0.0005			-0.0606	
		(0.2078)			(0.4298)			(0.1000)	
Diff.Sentiment_M		1.1427**			0.4001			0.0708	
		(0.4691)			(0.4515)			(0.3199)	

Con.Sentiment_KQ		1.0635*			-1.4507			-0.1599	
		(0.6391)			(0.9195)			(0.2025)	
Con.Positive_A			-0.4780**			0.2953			0.1459***
			(0.1976)			(0.4136)			(0.0217)
Diff.Positive_M			1.1519***			-0.0104			0.2154
			(0.2390)			(0.3262)			(0.1990)
Con.Positive_KQ			3.7731***			-0.1277			1.3507***
			(0.1714)			(0.5776)			(0.4468)
Con.Negative_A			-1.9719***			-0.1349			-0.1002
			(0.3598)			(0.3691)			(0.1266)
Diff.Negative_M			1.0295			0.5783			0.0002
			(0.8224)			(0.5771)			(0.3902)
Con.Negative_KQ			0.4532			-1.393			-0.2579
			(0.7358)			(1.0533)			(0.2488)
Con.Risk_A		-1.2548***	-1.5614***		-0.3695	-0.4869		-0.4033**	-0.4211***
		(0.2317)	(0.3998)		(0.2364)	(0.2984)		(0.1634)	(0.1798)
Diff.Risk_M		-0.4018	-0.5483*		0.7002	0.7665		0.6592***	0.5297***
		(0.3222)	(0.3075)		(0.7736)	(0.7267)		(0.1280)	(0.1773)
Con.Risk_KQ		-0.9873***	-1.1926***		0.5984	0.6385		0.5589	1.5430*
		(0.2951)	(0.4086)		(1.2011)	(1.0794)		(0.9296)	(0.8948)
R^2	0.1130	0.1211	0.1254	0.1103	0.1120	0.1128	0.1582	0.1616	0.1634
N	8,182	8,182	8,182	5,962	5,962	5,962	4,971	4,971	4,971