How Quiet Are Quiet Periods: Evidence from Pre-earnings Announcement Quiet Periods

Stacey Choy*

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Abstract

A growing number of companies have voluntarily adopted pre-earnings announcement quiet period policies. During quiet periods, companies restrict private communications with the investment community to prevent the selective disclosure of quarterly results. The details of quiet periods vary across firms, potentially creating important variations in the private information shared with select parties. Using hand-collected data, this study examines determinants of quiet periods and their consequences on price discovery patterns and information asymmetry among investors. I find that firms (i) are more likely to adopt quiet periods when they face higher litigation risks and (ii) less likely to do so when they face higher investor demands for private access or when managers can profit from inside information leaks. In addition, quiet periods are associated with (i) increased investor reactions to earnings news by reducing the anticipatory price run-up before announcements and (ii) decreased information asymmetry among investors, consistent with a more level information playing field without selective disclosures. However, these patterns manifest only in the presence of effective SEC monitoring, which likely increases the credibility of voluntary quiet period commitments by making it costly for managers to deviate from their policies. In light of the increasing evidence of pervasive selective disclosures, these findings have policy implications.

Keywords: Quiet Periods, Private Information, Earnings Announcements, Selective Disclosure, Regulation Fair Disclosure, Investor Communications

*Rotman School of Management, University of Toronto - stacey.choy@rotman.utoronto.ca. My deepest gratitude goes to my dissertation committee members, Partha Mohanram (co-chair), Franco Wong (co-chair), Nayana Reiter, and Charles Martineau, for their invaluable feedback. I also extend my gratitude to Gord Richardson, Sandra Schafhäutle, Shibin Tang, Xingchao Gao, Chongho Kim, and Ole-Kristian Hope for their thoughtful comments and to several anonymous investor relations officers for sharing their quiet period practices. Additionally, I thank Jihwon Park, Jen Choi, Rachel Yoon, Johnny Yoon, the seminar participants at the Rotman School of Management, the AAA-Deloitte Foundation-J Michael Cook Doctoral Consortium, and the CAAA. I gratefully acknowledge financial support from Behavioral Economics in Action at Rotman (BEAR).

1. Introduction

Private communications between firm managers and investors are omnipresent despite regulations aimed at curbing them (Green, Jame, Markov, and Subasi, 2014a; Brown, Call, Clement, and Sharp, 2015). Private communications, especially those occurring near or after quarter ends, have the potential to increase information asymmetry among investors because the information privately shared by managers may create profitable trading opportunities for select parties by providing hints about quarterly results (Allee, Bushee, Kleppe, and Pierce, 2022; Ali, Durney, Fisch, and Kyung, 2023).[1] The Securities and Exchange Commission (SEC) has recently rekindled its focus on these private communications that might create unfair advantages for certain investors (SEC, 2021). As a result, companies are prompted to reevaluate their current practices regarding such private communications (Chia, 2021).

The focus of this study is *quiet period policies* that a growing number of companies have *voluntarily* developed and disclosed through their investor relations websites, press releases, and SEC filings. During these quiet periods, firm managers restrict private communications with investors until the release of earnings news in order to address the issues associated with selective disclosures.[2] In this paper, I use hand-collected data on quiet period policies to provide economic narratives about their determinants and consequences on price discovery patterns and information asymmetry among investors. In tackling these questions, I aim to shed light on whether quiet periods can be an effective voluntary control mechanism capable of creating a level field among investors prior to earnings announcements.

I first document the emergence of quiet periods (Figure 1); from 2000 to 2021, the percentage of firms identified as having quiet periods increased steadily from 4% to 25%,

[1] Anecdotal evidence suggests that institutional investors may strategically schedule their meetings with managers to benefit from managers' foreknowledge of earnings. One investor relations advisor commented, "Why do you think so many of the sell-side firms insist on scheduling their conferences...when many companies are in their quiet periods [at quarter end]? They know information will be more current and buy-side interest for attending those conferences will be higher...Those last-minute 'love to drop by' visits just happen to cluster around quarter end. Coincidence? I think not." (Buckley, 2012)

[2] Pre-earnings announcement quiet periods should not be confused with IPO quiet periods mandated by the SEC to prevent lead underwriters from releasing favorable research reports in the initial weeks of an IPO. Due to the similarity of the names, there is a misconception that pre-earnings announcement quiet periods are also mandated. Such misconception has been frequently corrected by investor relations and legal advisors (Harmon, 2016; Edelson, 2021).

with a total of 622 U.S. listed companies. In addition, the details of quiet periods vary considerably along three dimensions: (i) *formality* – whether the policy is codified, (ii) *scope of restrictions* – which topics are to be restricted from private discussions or which private communication channels are to be restricted (e.g., participation in investor conferences, one-on-one meetings, and phone calls), and (iii) *length* – how long such restrictions persist during each quarter. The observed heterogeneity in the data suggests that in the absence of clear requirements or explicit guidelines from the SEC, companies exercise substantial discretion in designing the overall "degree of quietness," in terms of the policies' formality, the private communication channels that are restricted, and the duration of these restrictions. In doing so, companies impose an upper bound on the amount or precision of private information they intend to share with the investment community before earnings announcements.[3]

The fact that quiet periods are voluntary and heterogeneous leads to questions about why some firms are more likely to restrict private communications than others. To address these questions, it is important to note that the securities regulation governing selective disclosures, Regulation Fair Disclosure (henceforth, Reg FD), permits private disclosures of *non-material* information, which investors or analysts gather to complete a mosaic view of the company (SEC, 2010).[4] However, challenges lie in determining what constitutes non-material information. This determination depends on managers' subjective judgments, and they are often made in retrospect within the context of the spontaneous nature of private conversations (Soltes, 2018). The ambiguity surrounding materiality judgment is further amplified near earnings announcements since seemingly minor details may sometimes become material enough to create informational advantages for investors due to managers'

[3]Companies may have internally adopted quiet periods but may not have publicly disclosed them. Such instances only bias against finding significant effects. Moreover, I expect that the capital market effects of such unobserved quiet period policies will be less salient than observed quiet period policies. One investor relations officer from an S&P 500 company responded to my question regarding why the company does not disclose its policies by saying, "We don't have an official date when a 'quiet period' starts...We don't strictly adhere to quiet periods...We haven't communicated a strict quiet period because we don't have one to communicate." This suggests that firms not identified as having quiet periods may have no formal quiet period policies or that they loosely implement quiet periods with a lot of flexibility due to their unobservability. Nevertheless, I address biases from measurement errors using the methodology of Lewbel (2012) in robustness checks.

[4]Information is material if it would be "viewed by the reasonable investor as having significantly altered the 'total mix' of information made available" about the firm (SEC, 2000).

foreknowledge.[5] From this perspective, quiet periods can be viewed as proactive measures to eliminate any ambiguity about the materiality of the information they would privately disclose.

Given this institutional context, I develop several predictions about firm-level determinants of quiet periods. On the one hand, the benefits of quiet periods are likely to increase with firms' exposures to SEC or shareholder litigation risks, as investors trading aggressively based on firm-supplied private information could raise the risk of detection or provide the SEC with legal grounds for determining materiality ex-post (Kacperczyk and Pagnotta, 2023). On the other hand, quiet periods increase the acquisition costs of private information for investors, forcing investors to fill in their mosaic views of the companies on their own by acquiring and processing information from other sources. When marginal investors face the high costs of acquiring sufficiently precise information, they may decide not to invest (Dutta, 1996; Arya, Glover, Mittendorf, and Narayanamoorthy, 2005; Jorgensen, Li, and Melumad, 2022). Therefore, firms whose investors rely on private access as a major source of information or operate in a poor public information environment may find implementing quiet periods costly and may thus continue meeting or speaking with investors to provide non-material private information. Lastly, insights from theoretical research (Indjejikian, Lu, and Yang, 2014; Michaeli, 2017) predict that managers have incentives to leak garbled versions of private information to outsiders to gain personal trading gains from their perfect foreknowledge of quarterly results. Therefore, firms with opportunistic insiders may prefer to continue private communications to leak noisy private information for their benefit.

To test these predictions, in addition to using an indicator for quiet periods, I construct a composite quiet score by adding rankings to each dimension that determine the overall quietness of quiet period policies. Determinant analyses conducted using the time-dependent Cox hazard model and the Fama-Macbeth model with the Newey-West adjustment collectively

[5]For example, in the SEC v. AT&T case (2021), firm managers privately provided downward guidance on wireless equipment upgrade rates to select analysts prior to earnings announcements. The managers argued that the information was non-material, as wireless equipment was not their core business and the downward adjustment could have been reasonably expected given industry-wide trends. However, the SEC contended that the mere *timing* of the private conversations (i.e., near and after the quarter ends), as well as the *subject matter*, could imply that material non-public information was being conveyed.

support my predictions. Specifically, exposure to SEC or shareholder litigation risk (proxied by firm size and the Kim and Skinner (2012) model) is positively associated with the decision to adopt quiet periods; furthermore, quiet periods are more likely to be stringent. Indeed, these factors emerge as the most important determinants, suggesting that litigation risks pose threats to the continuation of private communications. In contrast, firms are less likely to adopt quiet periods or stringent ones when they face higher demands for private access from investors (proxied by dedicated institutional investors), have a lesser amount or lower precision of public information (proxied by lower frequency of management guidance and higher dispersion of analyst forecasts), or have opportunistic insiders (proxied by a high number of insiders trading before earnings announcements and the absence of a disclosure or compliance committee).

I next examine whether and how quiet periods affect price discovery patterns around earnings announcements. Classical models predict that, all else being equal, to the extent that quiet periods effectively limit the leakage of earnings information, prices will reflect less precise private information about earnings (Demski and Feltham, 1994; Kim and Verrecchia, 1991, 1994, 1997; McNichols and Trueman, 1994). As a result, there will be a less anticipatory run-up of prices in the preannouncement period, with more responsive earnings announcement returns to earnings surprises. However, the important tension in this empirical prediction is that the voluntary nature of quiet period policies makes it easier for managers to deviate from them in the absence of effective enforcement mechanisms to verify their compliance (Crawford and Sobel, 1982; Stocken, 2000; Bengtzen, 2017; Frankel, 2017). Indeed, practitioners have criticized how frequently managers deviate from quiet period policies, as noted anecdotally in the following statement (Edelson, 2021): "*As a former sell-side analyst myself, my strongest recollection about quiet period policies is how inconsistent...they were.*" Therefore, the credibility of voluntary commitment to quiet periods is likely dependent on the effective SEC monitoring of trades based on selective disclosures, which will incentivize managers to strictly adhere to the quiet periods to minimize legal risks associated with selective disclosures.

To empirically assess this prediction, I use the earnings response coefficient (ERC) and unbiasedness regressions (Biais, Hillion, and Spatt, 1999; Van Kervel and Menkveld, 2019; Boguth, Fisher, Grégoire, and Martineau, 2023). These methodologies are standard approaches to measure the extent to which the market is surprised by the earnings news and how quickly prices reflect potential private information about earnings. To account for the fact that quiet periods are endogenous firm choices, I perform these analyses using matched samples, constructed from coarsened exact matching, entropy balancing, or propensity score matching, and include industry and year-quarter fixed effects. As an alternative design, I employ stacked regressions based on the matched samples and include cohort-firm and cohort-year-quarter fixed effects to obtain difference-in-differences estimates (Baker, Larcker, and Wang, 2022).

Across different models, I find evidence supporting my predictions that quiet periods and/or higher quiet scores are associated with less anticipatory price-run-up in pre-earnings announcement periods and higher ERCs. The results are also economically significant; pre-earnings announcement prices for firms with quiet periods contain 5% less information about earnings news compared to firms without quiet periods. As a result, firms with quiet periods experience a stronger investor reaction to earnings announcements of a similar magnitude. In other words, if investors could develop perfect foresight of earnings news through private access, they could take positions on stocks before earnings announcements and increase their trading profits by 5% compared to the alternative case in which they do not have private access. Importantly, such results are consistently found only after 2016, when the SEC began using the Advanced Relational Trading Enforcement Metrics Investigation System to monitor suspicious trading patterns at the stock and trader level. This monitoring system was largely unexpected by the investment community and proved to be highly successful in producing enforcement cases, creating a plausibly exogenous increase in the legal risks associated with selective disclosures (Ehret, 2017). From this perspective, the findings on price discovery suggest that managerial incentives to adhere strictly to policies are likely subject to dynamic shifts based on regulatory environments, which ultimately determine the

credibility of their voluntary commitments.

Finally, I examine whether quiet periods reduce information asymmetry among investors by decreasing the likelihood of trading against privately informed investors. The reduction in information asymmetry will result in lower effective bid-ask spreads, price impact, and realized spreads (Copeland and Galai, 1983; Glosten and Milgrom, 1985; Kyle, 1985). Using the difference-in-differences design, I show that in the presence of effective monitoring by the SEC, firms with quiet period policies are associated with a 5% reduction in these measures. I caveat these results are only indicative, as it is not feasible to observe instances of private communication or information. Nevertheless, the consequences results, taken together, provide a consistent interpretation that quiet periods likely reduce the proportion of privately informed investors who might have previously enjoyed selective access to managers, thereby shaping unique price discovery patterns leading up to earnings announcements.

I conduct several additional analyses to strengthen my inferences. First, inferences are not driven by (i) firms with quiet periods changing their public disclosure policies to bundle more public disclosures on earnings announcements, (ii) investors switching to acquire more private information from companies that do not have quiet periods (Fischer and Heinle, 2020), or (iii) investors switching to trade in different markets, such as option markets (Johnson and So, 2018). Second, to address measurement issues associated with the identification of quiet periods, I perform instrumental variable analyses using the methodology of Lewbel (2012), producing robust results. Lastly, I track actual participation in investor conferences and analyst/investor days for companies that have imposed restrictions on this communication channel and show that the likelihood of deviating from quiet period policies significantly declines after 2016. This evidence corroborates the notion that the managerial incentive to adhere to quiet periods has increased in response to increasing regulatory risks.

This study contributes along three main dimensions. First, I contribute to the scholarly understanding of private disclosure practices around earnings announcements. Investors' private access to undisclosed earnings information creates information asymmetry, and such access has been shown to be prevalent by a growing body of research (Brown et al., 2015;

Allee et al., 2022; Ali et al., 2023; Choy and Hope, 2023). However, little is known about the mechanisms that create variations in such private access. To the best of my knowledge, Frankel, Joos, and Weber (2002) is the only work to provide empirical evidence on the presence of quiet periods in the early Reg FD periods.[6] The authors focus on "no comment" policies, in which managers decline to comment on prospective financial results. I show that such policies could create additional variations in firm-supplied private information depending on whether the policies are formalized or how long such restrictions are imposed during each quarter. I also expand on their study by presenting evidence on the evolution and capital market consequences of quiet period policies within a dynamic regulatory environment.

Second, this study adds to the broader literature on the information content of earnings announcements, which originated with Ball and Brown (1968). Recent studies have documented a striking increase in investor response to earnings announcements, which can be partially explained by firms bundling more public disclosures on their earnings announcements (Beaver, McNichols, and Wang, 2020; Shao, Stoumbos, and Zhang, 2021; Thomas, Zhang, and Zhu, 2022). Without considering the pre-earnings announcement private information component, our understanding of market behaviors around earnings announcements is incomplete (Demski and Feltham, 1994; Kim and Verrecchia, 1991, 1994, 1997; McNichols and Trueman, 1994). This study identifies conditions that consistently yield theoretically predicted results and shows that under these conditions, quiet periods can serve as a proxy for pre-earnings announcement private information that can be used to explain market reactions to earnings announcements.

Third, I contribute to policy debates on effective control mechanisms aimed at enhancing perceived fairness in the market – one of the SEC's core missions. Studies have focused on blackout periods that restrict insider trading by managers and directors (Bettis, Coles, and Lemmon, 2000; Huddart and Ke, 2007; Jagolinzer, Larcker, and Taylor, 2011). Quiet periods aim to rectify a problem outside the scope of blackout periods – that is, information

[6] Frankel et al. (2002) observe that the number of firms mentioning the keyword, quiet periods, in press releases increased in 2001. This timing is consistent with the adoption of Reg FD, which incentivized firms to consider utilizing quiet periods to reduce legal risks associated with Reg FD.

advantage of *outsiders* who are privy to inside information.[7] My results suggest that in the presence of the SEC's credible commitment to monitoring selective disclosures, quiet periods can play an important role in advancing the SEC's mission. Furthermore, by providing comprehensive evidence regarding which firms stand to benefit from observing quiet periods through determinant analyses, this study offers regulatory guidance on where SEC monitoring and enforcement should be directed.

2. Hypothesis Development

In this section, I develop testable predictions on the determinants and effectiveness of quiet periods based on economic theory and prior empirical studies. I complement my predictions by conducting interviews with investor relations officers (IRO) from 10 firms belonging to the S&P 500.[8]

2.1. Determinants of Quiet Periods

Reg FD prohibits selective disclosures of material non-public information. However, what may constitute material information involves managers' subjective judgments (Soltes, 2018). For example, to the extent that managers believe that discussions do not involve material information, they can continue discussing strategy and business operations. Managers can also privately confirm expected quarterly results by saying that prior managerial earnings guidance has "not changed" or that they are "still comfortable with" the guidance (SEC, 2010). Certainly, there is no one-size-fits-all answer to whether such discussions trigger materiality; it ultimately depends on managers' subjective judgments (often made in hindsight) in light of the timing and context of their discussions. Given the flexibility afforded to firms under the current regime, managers may try to choose an optimal level of private discussion by considering the associated benefits and costs. In this light, both the adoption of

[7] Blackout periods are more pervasive and more likely to be codified than quiet periods (Bettis et al., 2000). Consistent with Lee, Lemmon, Li, and Sequeira (2014), 95% of my sample firm is estimated to have blackout period policies.

[8] I ask IROs whether they can share the details of the policies. For firms not identified as having quiet period policies, I ask whether they have internally adopted quiet period policies. Depending on their answers, I ask follow-up questions to obtain elaborations.

quiet periods and how stringently they are designed can be considered a reflection of managers' voluntary private disclosure choices about non-material information that could assist investors and analysts in completing their mosaic view of the company. Therefore, in the following subsections, I provide predictions that could speak to the benefits and costs of limiting discussions about non-material information around quarter-ends.

2.1.1. Benefits of Quiet Periods

I predict that firms are more likely to adopt quiet periods when facing higher SEC scrutiny or securities litigation risks. The potential monetary and reputation costs associated with Reg FD violations can be large. The SEC utilizes various resources, such as surveillance programs that track trades (Heyman, 2014), to monitor potential violations. Once the SEC opens an investigation, it can issue subpoenas, obtain documents from investigated firms (e.g., phone call records and email exchanges), and conduct interviews with various parties involved, and it can take up to several years to reach a settlement. In addition to SEC fines or penalties, companies may experience a decline in stock prices, which can reach 4%-9% of their market capitalization (Griffin, Lont, and Segal, 2011). Moreover, Reg FD violations may increase shareholder litigation risks by enabling shareholders to sue a company under Rule 10b-5, which deals with the intentional disclosure of information and the fraudulent or intentional misuse of material non-public information (Bengtzen, 2017). Therefore, it is important for firms with high exposures to SEC or shareholder litigation risks to minimize the risks of violating Reg FD.

This raises questions about the need for restrictions on private communications to be imposed specifically before earnings announcements. As noted above, issuers and management personnel bear a compliance burden of making materiality judgments, and this task becomes particularly challenging around quarter ends when seemingly non-material pieces of information could become material due to managers' foreknowledge of upcoming results. Furthermore, unlike earnings conference calls or press releases, private communications are spontaneous and not carefully scripted. This means that managers often only make judg-

ments about the materiality of these conversations retrospectively, after observing stock price movements triggered by the trading activities of those who received the information (Soltes, 2018; Park and Soltes, 2018). Therefore, should potentially material information be implicitly or explicitly disclosed to select investors, who will then trade aggressively based on that information before earnings announcements, the likelihood of detection will increase and assist the SEC or shareholders in proving the materiality of the information ex-post. Importantly, the risk of violating Reg FD increases as earnings announcement dates approach, as investors are likely to trade more aggressively on private information, which tends to provide more precise information about earnings (Kacperczyk and Pagnotta, 2023). Consistent with this prediction, one IRO mentioned, "*For the simple reason that legal risks increase as the length of time since our prior reporting increases.*"

Adopting and then meticulously adhering to quiet period policies can help companies avoid these challenges. Specifically, by adhering to a "no comment" policy with respect to all information pertaining to financial results, companies can eliminate any ambiguity that may arise due to the materiality of such information (see Appendix B for examples of topics that cannot be discussed). In extreme cases, managers may enter radio silence by avoiding all types of communication. This way, managers can avoid inadvertently or recklessly divulging material non-public information. Consistent with this explanation, the following phrases or their equivalents are frequently found in quiet period policies: "to avoid the potential for selective disclosure or even the perception or appearance of selective disclosure" and "to mitigate the risk of inadvertent disclosures of material information or selectively disclosing, implicitly or explicitly, material information." Therefore, I expect that SEC or securities litigation risks will be positively associated with the incidence of quiet periods.

Hypothesis 1a: Firms that face higher litigation risks by continuing private conversations are more likely to adopt quiet periods.

2.1.2. Costs of Quiet Periods

Imposing quiet periods is not without cost. Analytical studies that model investors' search for private information in anticipation of public earnings announcements assume that investors acquire less precise private information when faced with high marginal costs of obtaining it (Demski and Feltham, 1994; Kim and Verrecchia, 1991, 1994, 1997; McNichols and Trueman, 1994). From this theoretical standpoint, quiet periods are associated with the increase in the costs of obtaining private information by restricting private communication channels. Absent these private channels, investors are constrained by a limited information set from which they are expected to derive informational advantages through independent analysis and interpretation. This information set may include noisy public signals, such as prices, management guidance, or analysts' forecasts. Theoretical studies predict that when investors face the high costs of acquiring sufficiently precise information from these alternative sources, they will not find it worthwhile to invest resources in processing information and will avoid investing, resulting in a reduction in liquidity (Dutta, 1996; Arya et al., 2005; Jorgensen et al., 2022; Xue and Zheng, 2021). These outcomes render quiet periods costly for firms. Building on these economic intuitions, I outline two factors that likely make the costs of quiet periods outweigh their benefits.

First, I expect firms whose investors have relied on private access as the major source of information advantages to find quiet periods costly. This is because these investors likely face higher marginal costs of obtaining private information once quiet periods are imposed and, as a result, may end up with significantly less precise private information than before. Several studies (Green, Jame, Markov, and Subasi, 2014b; Brown et al., 2015; Jung, Wong, and Zhang, 2018) show that institutional investors and sell-side investors consider private access an important source of information. One former sell-side analyst said, "*the company was blacked out and unable to communicate for two-thirds* of *the entire year. To me, this increased the risk profile of recommending the stock* (Edelson, 2021)." The following excerpt from the March 12, 2004, earning conference call of McDermott International serves as another illustration of institutional investors demanding that managers relax overly strict

quiet periods.[9]

> *ALEX BOCOX (Buy-Side Analyst at Investment Management of Virginia, LLC)*: In keeping with your new shareholder-friendly policies, are you going to adopt the policies of virtually every other public company and agree to meet with shareholders throughout the year regardless of whether or not you're in a quiet period?
>
> *BRUCE WILKINSON (Chairman and CEO of McDermott):* I will have to let John Nesser (General Counsel of McDermott) address that. I didn't know there was any policy that would let us obviate Regulation FD and things like that.
>
> *ALEX BOCOX (Buy-Side Analyst at Investment Management of Virginia, LLC):* Well, other companies managed to meet with investors regardless of whether or not they are in a quiet period and feel comfortable that they are not violating FD...What is so special about this business that makes it impossible for you just to meet with people and get people familiar with this story and not be afraid of gushing forth with inappropriate information?

Since analysts' unwillingness to follow stocks and/or institutional investors' unwillingness to invest in stocks can lead to a reduction in liquidity (Roulstone, 2003a), the investment community's demands for private access can make silence costly for firms. Based on these arguments, I expect firms facing greater demands for private access to be less likely to observe quiet periods and to continue private discussions of non-material information.

Hypothesis 1b: Firms facing higher investor demands for private discussions are less likely to adopt quiet periods.

Second, firms with poor public information environments may find it costly to observe quiet periods. Studies show that when the public information environment is of low quality and the information asymmetry between firms and investors is severe, private communications with investors can alleviate such asymmetry and bring capital market benefits to firms. For example, private communications can enhance liquidity and visibility, when companies

[9]Similarly, managers' unresponsiveness to investors' inquiries during quiet periods is often condemned by the investment community or media as a "lame excuse." A columnist from *Market Watch* (February 10, 2006) commented on the email responses from Pra Group Inc's CEO about its accounts receivables, saying that "even though earnings will be reported on Tuesday, he [the CEO] didn't hide behind the lame "quiet period" excuse used by so many companies." One IRO endorsed this practice, saying that "selfishly, the quiet period also serves as a bit of a 'break' for the investor relations team as we prepare for the upcoming earnings cycle"

are small, seek new equity financing (Green et al., 2014b), operate in weak enforcement environments (Yoon, 2021), or pursue cross-listing (Reiter, 2021). Therefore, if firms operate in poor public information environments where investors have difficulty obtaining information that is precise information enough for investment decisions, these firms are likely to prefer to continue private communications to fill in investors' mosaic understanding of their companies.

Hypothesis 1c: Firms with poor public information environments are less likely to adopt quiet periods.

Last but not least, managers' foreknowledge of earnings may provide them with opportunities to exploit private communication channels for their benefit. Indjejikian et al. (2014) examine insiders' strategic motives for leaking information to outside investors. Specifically, insiders strategically leak garbled versions of private information to outsiders to make recipients trade in the same direction as their positions but at the same time maintain their information advantages regarding future prices that arise from their perfect foreknowledge of upcoming quarterly results. The main implication of this model is that selective leakage of information increases information asymmetry among investors, allowing insiders and information recipients to benefit at the expense of uninformed investors. Similarly, Michaeli (2017)'s model predicts that managers will leak private information to selected parties to persuade them to take action that aligns with managers' interests. These models collectively provide predictions that firms with self-serving managers are more likely to continue private communications to accrue their gains at the expense of uninformed investors who do not receive private information. Empirical and anecdotal evidence suggests that such information leaks take place frequently; for example, short sellers front-run insider sales (Khan and Lu, 2013), and executives sell information through expert networks to hedge funds and mutual fund managers (Zuckerman and Pulliam, 2010). For these reasons, I expect quiet periods to be costly for opportunistic insiders by reducing their chances of rent extraction.

Hypothesis 1d: Firms with opportunistic insiders are less likely to adopt quiet periods.

2.2. Consequences of Quiet Periods

Do quiet periods control firm-supplied private information flow? One important caveat in developing testable predictions is that private communications and private information are generally unobservable; thus, we need to infer the consequences of quiet periods from price discovery patterns. Theoretical models (Demski and Feltham, 1994; McNichols and Trueman, 1994; Kim and Verrecchia, 1991, 1994, 1997) offer insights into empirical predictions about how prices are influenced by pre-earnings announcement private information. *All else being equal*, to the extent that quiet periods effectively limit firm-supplied private earnings information leading up to earnings announcements, pre-earnings announcement period prices will aggregate private information to a lesser degree. As a result, there will be a less anticipatory run-up of prices in the preannouncement period, leading to more responsive earnings announcement returns to earnings surprises. Furthermore, effective decreases in selective access to managers will be associated with a lower proportion of privately informed investors compared to uninformed investors in pre-earnings announcement periods. In classical models (Copeland and Galai, 1983; Glosten and Milgrom, 1985; Kyle, 1985), this ratio is closely related to information asymmetry among investors. Therefore, effective quiet periods reduce information asymmetries among investors (i.e., level of the information field) by decreasing the percentage of investors who are privately informed through selective access to managers in the market.

However, some tensions suggest that these patterns may not be observed. Importantly, quiet periods are only as good as managers' willingness to observe them scrupulously, and such willingness may dynamically change depending on the regulatory environment. As noted above, the major reason for observing quiet periods is to reduce SEC litigation risks. Such risks materialize only when the SEC is effective in detecting selective disclosures and successfully increasing enforcement against them. A growing number of studies suggest that Reg FD enforcement may not be as effective as it was believed to be. Accordingly, a number of companies have altered their investor communication policies to a point where they may allow selective disclosures and grant select investors profitable trading opportunities (Bushee,

Gerakos, and Lee, 2018; Campbell, Twedt, and Whipple, 2020; Allee et al., 2022; Ali et al., 2023; Schafhäutle, 2023). This is in stark contrast to the findings of early Reg FD studies, which showed that managers reduced private disclosures in the first few years of Reg FD (e.g., Bailey, Li, Mao, and Zhong, 2003; Heflin, Subramanyam, and Zhang, 2003; Gintschel and Markov, 2004; Francis, Nanda, and Wang, 2006; Mohanram and Sunder, 2006).

From this perspective, quiet period firms may decide to deviate from their policies if they perceive that the benefits of observing quiet periods (i.e., reductions in litigation risks) are not high enough to compensate for their costs within the lax regulatory environment. Indeed, anecdotal evidence suggests that inconsistent implementations of quiet periods are common (Edelson, 2021). In the absence of effective enforcement or monitoring mechanisms, deviations from the policies come with relatively low costs for several reasons. First, the SEC has not established any specific requirements or guidelines regarding quiet periods; accordingly, few companies provide potential adverse consequences for such deviations (e.g., termination of employment). Second, a lack of disclosure requirements for the occurrence or content of private conversations makes it challenging for outsiders to detect deviations unless they are inferred through investors' trading behavior (Bengtzen, 2017). Therefore, the credibility of these voluntary policies is likely dependent on the effectiveness of enforcement and monitoring mechanisms that increase SEC litigation risks (Crawford and Sobel, 1982; Stocken, 2000).

The effectiveness of SEC monitoring and the perceived likelihood of enforcement have significantly improved since 2016, coinciding with the SEC's adoption of the Advanced Relational Trading Enforcement Metrics Investigation System (ARTEMIS). ARTEMIS is renowned for its remarkable success rate in identifying suspicious trading patterns, even the smallest illegal market activity, at both the stock and trader levels (Ehret, 2017). In particular, prior to 2016, there were only a handful of Reg FD enforcement actions, a fact that had been cited as evidence of its ineffectiveness (Allee et al., 2022; Ali et al., 2023). However, after 2016, the SEC initiated investigations into potential violations of Reg FD, resulting in

successful enforcement actions in 2019 and 2021.[10] The adoption of ARTEMIS was largely unexpected by the investment community, thus creating plausibly exogenous increases in legal risks associated with selective disclosures.

Because of the tensions associated with the credibility of quiet periods, I state the hypothesis in its null form:

Hypothesis 2: There is no association between quiet periods and price discovery patterns or information asymmetry among investors.

3. Heterogeneity of Quiet Periods

3.1. Collecting Quiet Period Policies

I collect quiet period policies following two steps. First, I hand-collect investor communication policies (hereafter, ICP) by searching investor relations websites for related information using the sample of firms whose stocks are publicly traded on NYSE, NASDAQ, and AMEX and covered by I/B/E/S in 2021.[11] Sample firms' ICPs are searched on Google using their website addresses or legal names, combined with various strings that broadly speak to firms' shareholder communication or disclosure policies. ICPs sometimes go by different names or are incorporated under other corporate policies. After I inspect the first fifty examples identified as ICP, I develop a list in which keywords are joined by the OR operator.[12] Second, using Factiva and Nexisuni, I search for EDGAR filings, press releases, and media articles that mention quiet periods from 2000 to 2021.[13] I require that search

[10] One such example is the SEC's charges against AT&T in 2021, which resulted in record-high penalties and garnered considerable attention from media outlets, legal professionals, and investor relations advisors, who commented about its potential impact on investor communication practices. Moreover, until 2014, there were legal debates on to what extent tipping and trading on stock tips constitute violations of the antifraud provisions of the federal securities laws. This uncertainty was clarified in 2016 by the United States vs. Salman (792 F.3d 1087) prosecution case, which resolved the ambiguities related to tipper liability.

[11] It is generally impossible to access shareholder communication policies of delisted companies because such firms no longer maintain investor relations websites.

[12] Specifically, I use "quiet period" OR "silent period" OR "investor relations policy" OR "communication policy" OR "communications policy" OR "disclosure policy" OR "fair disclosure policy" OR "regulation fair" OR "shareholder communication" OR "closed communication" OR "closed period" OR "end of quarter communication." This method is similar to Jagolinzer et al. (2011) who manually collect blackout period policies using web search queries.

[13] After a reading of the first fifty identified examples from these sources, I refine the keyword to include "quiet period" OR "silent period" OR "closed communication."

results contain certain words, such as earnings and quarter, and manually check them to ensure that collected data are related to pre-earnings announcement quiet periods.

As a result, 622 firms are identified as having quiet periods disclosed to the public from 2000 to 2021. I next develop regular expressions to extract the start date and end date of quiet periods each quarter. This information is then mapped to earnings calendars to determine the duration, in trading days, of quiet periods for each quarter. In addition, I use regular expressions to gather information on the scope of restrictions imposed during these periods (see Internet Appendix 1). Firms also sometimes provide time stamps of when the policies are first adopted and approved by the Board. I identify the establishment date of the policies by collecting such information. Alternatively, I track the earliest version of the website archived in Wayback Machine.

3.2. Descriptive Evidence of Quiet Periods

Quiet periods exhibit a great deal of heterogeneity regarding their formality, the scope of restrictions, and length (Figure 1, Panel A, B, and C, respectively). 28% of companies formally establish quiet periods as a part of corporate Reg FD or disclosure policies or in a format that specifies when they begin and end quiet periods and how they intend to implement them. 52% of firms (unwillingly) reveal the presence of quiet periods when they decline to comment on prospective financial results or recent corporate developments while attending investor conferences or conference calls, and 20% do so when approached by the media, stating, "sorry, we're in the quiet period.[14] Since these companies do not specify the details of quiet period policies as to how they intend to implement the policies in terms of timing and manner, they are considered to have informal quiet periods. Informal policies are considered less stringent than formal policies since the absence of codified procedures may make it easier for firms to deviate from them. Several examples of formal or informal quiet period policies are presented in Appendix A and B.

The details of quiet periods can vary by which type of communication is restricted. A

[14]Broadly speaking, informal (formal) policy in this study refers to the unwritten (written) and uncodified (codified) forms.

vast majority of companies (90%) adopt the least restrictive "no comment" policy; that is, they do not comment on financial results while keeping all communication channels open to discuss other topics that they consider non-material. The rest of the firms restrict one to three types of communication channels (participation in investor conferences, one-on-one meetings, and phone calls) or even go as far as complete radio silence (3%). The greater the number of restrictions on these private channels, the more stringent the quiet periods are.

Details of quiet periods, particularly beginning dates, exhibit significant variations (Figure 1, Panel 3). The majority of firms (57%) start their quiet periods at the end of the quarter or even a month prior, while some firms begin their quiet periods only two weeks before their earnings announcements. On average, firms are in quiet periods for 21 trading days for each fiscal quarter. As earnings announcements approach, managers' private information about earnings becomes more precise; consequently, if the quiet period restrictions are imposed earlier or for a longer duration, investors will receive less precise private signals.

Overall, an increasing number of firms have formally developed and disclosed guidelines and procedures for how they intend to communicate during earnings seasons. These actions may reflect their voluntary commitment to fair disclosure practices to reduce potential legal risks. At the same time, due to the lack of specific requirements or guidelines, companies appear to have considerable flexibility in establishing their own quiet periods. Using these variations, I construct a metric ranging from 0 to 10 to measure the degree of quietness that firms intend to achieve through quiet period policies (see Figure 1 description). Specifically, I create a ranking for each dimension, ranging from 1 to 3 for formality (1 for informal policies to 3 for formal policies), 1 to 4 for the scope of the restriction (1 for no comments to 4 for radio silence), and 1 to 3 for the length (1 for the bottom tercile to 3 for the top tercile of the number of quiet days each calendar quarter). The *Quiet Score* is the aggregate score derived from these rankings; firms with formal policies that impose more extensive restrictions on private channels for longer durations are assigned higher quiet scores.[15]

[15]Note that each restricted private channel – investor conferences, one-on-one meetings, and phone calls – is assigned equal weight when added up. This is because three factors may differently affect how aggressively investors trade on privately obtained information and therefore how much prices reflect earnings. (1) *the size of information recipients*: if a manager shares private information with multiple traders simultaneously, such

4. Research Design

4.1. Determinants of Quiet Periods

To test Hypothesis 1 (determinants of quiet periods), I estimate the following time-dependent Cox hazard model at the firm-quarter-level:

$$h\left(i,\ t, Determinant\left(i,\ t-1\right)\right) = h_0 exp\left(\sum_k \beta_k Determinant_k\left(i,\ t-1\right)\right) + e_{it}$$

where i indexes firm, t quarter. For the dependent variable (incidence of an event), I use *Quiet Period* (indicator that is equal to one if firm i imposes quiet period at point-in-time t). To estimate this model, the data are restructured in a counting process style. This way, at each calendar year-quarter, the determinant values of the firm that has quiet periods are compared to those of all others. Since the Cox hazard model only takes a binary variable as a dependent variable, I repeat the analyses using the Fama-Macbeth methodology (Fama and MacBeth, 1973) where both *Quiet Period* and *Quiet Score* (numeric ranking of quietness that ranges from 0 to 10) are used. Specifically, regressions are run for each calendar year-quarter, and the mean coefficient across year-quarters and its statistical significance is calculated from the distribution of the coefficients. Standard errors are corrected for serial dependence using the Newey and West (1987) adjustment, with 8 lags for serial dependence in the coefficients.

Below, I discuss empirical proxies used to test H1a (litigation risks), H1b (ownership profile), H1c (public information environment), and H1d (opportunistic insiders). First, prior studies show that the SEC is resource-constrained (Kedia and Rajgopal, 2011; Correia, 2014; Stice-Lawrence, 2023) and thus tends to target large firms (Blackburne, Kepler, Quinn,

as through well-attended investor conferences, prices may adjust faster than if only one trader has access to it. (2) *frequency of private interactions through each channel*. While managers participate in hundreds of private meetings per year, even more so for phone calls (Bengtzen, 2017), investor conferences occur much less frequently (Bushee, Jung, and Miller, 2017). (3) *precision of private information*: In settings that allow face-to-face interactions, investors are likely to gather more precise private signals about quarterly results than in settings where such interactions are not possible (i.e., phone calls) due to additional opportunities to observe nonverbal cues of managers, such as their tone of voice, body language, and facial expressions (Mayew and Venkatachalam, 2012; Blankespoor, Hendricks, and Miller, 2017). Investors trade more aggressively when signals are more precise (Kim and Verrecchia, 1997). Consistent with the intricacies of assessing the quietness levels of the restricted private channels, my findings indicate that these channels do not have varying impacts on the pattern of price discovery (untabulated).

and Taylor, 2021). Therefore, I use *Firm Size* (log of market capitalization) as a proxy for the SEC and shareholder litigation risk. Additionally, I use Kim and Skinner (2012)'s model to estimate ex-ante shareholder litigation risks (*Litigation*).[16]

Second, institutional investors spend billions of dollars on private access to managers (Green et al., 2014b; Brown et al., 2015, 2016), suggesting that private access is the primary source of obtaining information. Therefore, I predict that firms with higher institutional ownership and thus facing greater demands for corporate access will be *less* likely to reduce private discussions by *not* observing quiet periods.

Furthermore, studies (Bushee, 2001; Solomon and Soltes, 2015; Brown, Call, Clement, and Sharp, 2019) find that large shareholders have strong incentives to gather private information, and they are often given preferential access to company executives due to their influence on governance through voice and exit (Edmans, 2014). The firms' inability to communicate with significant shareholders during quiet periods can damage relationships. Therefore, I expect firms with a high percentage of ownership by *Dedicated Institutions*, who have low turnover and concentrated holdings, will likely choose *not* to adopt quiet periods.[17] For comparison, I also include a percentage of ownership held by *Transient Institutions*, who have high portfolio turnover and diversified portfolios. While transient investors may have a high demand for private access specifically around earnings announcements due to their focus on short-term earnings (Bushee, 2001), these investors tend to trade aggressively on short-term trading strategies, which may increase firms' legal risks. Therefore, I do not make signed predictions on *Transient Institutions*.

Third, to proxy for the amount and precision of public information available regarding a firm's value (Roulstone, 2003a), I include *Guidance* (log of the number of management guidance for a quarter) and *Analyst Dispersion* (standard deviation of analyst earnings forecasts). I expect firms that issue management guidance less frequently or have higher

[16] Kim and Skinner (2012)'s model includes an indicator for the membership in the biotechnology, computers, electronics, and retail industries, log of total assets, sales growth, cumulative market-adjusted returns, return skewness, and return volatility, and turnover. All variables are lagged.

[17] I obtain classifications from Professor Bushee's website. Institutions are classified using a factor and cluster analysis approach described in Bushee (2001).

dispersion in analyst forecasts are less likely to adopt quiet periods as observing quiet periods can exacerbate adverse selection issues when obtaining sufficiently precise information from public sources is difficult.

Fourth, to proxy for the presence of opportunistic insiders, I use *Blackout Policy* (indicator that is equal to one if the firm is estimated to have blackout policies that restrict insider trading before earnings announcements using the methodology of Roulstone, 2003b), and *Disclosure/Compliance Committee* (indicator for the presence of disclosure/compliance committee). I expect firms with blackout policies or disclosure/compliance committees will exercise oversight over insiders' potential self-serving motives to utilize private communication channels and thus are more likely to adopt quiet periods. Further, studies (e.g., Huddart and Ke, 2007; Jagolinzer et al., 2011; Ali and Hirshleifer, 2017) find that even with restrictions on insider trading before earnings announcements, insiders frequently trade in these periods, typically a month before earnings announcements, and they tend to be opportunistic. Therefore, I include *Opportunistic Insider* (log number of insiders who make transactions in the 21 trading days before earnings announcements). To facilitate the interpretation, I scale all determinant variables to have a mean of 0 and a standard deviation of 1. I do not include fixed effects due to incidental problems associated with non-linear models. I cluster standard errors by industry.[18]

4.2. Price Discovery Patterns for Quiet Period Firms

To test Hypothesis 2 (effectiveness of quiet periods), I estimate the following regression to whether ERCs vary with quiet period measures:

$$CAR\left[0,2\right]_{i,t} = \beta_1 QuietPeriod_{i,t} \times UE + \beta_2 QuietPeriod_{i,t} + \beta_3 UE + Controls + FE + \epsilon_{i,t}$$

CAR[0,2] is cumulative abnormal three-day returns around earnings announcements estimated using the Fama-French 5-factor model that capture expected returns related to market risk, size, value, profitability, and investment patterns (Fama and French, 2015). Specifically,

[18]Quiet period firms are not clustered in specific industries; the industry distribution of quiet periods closely resembles the distribution of the population.

I calculate daily abnormal returns using 5-factor model parameters estimated using one year's trading data, ending a day before the previous quarter end. *UE* is standardized unexpected earnings defined based on a rolling seasonal random walk model (Livnat and Mendenhall, 2006). To the extent that quiet periods effectively constrain the leakage of earnings information, more information will be discovered on earnings announcement dates, and earnings announcement returns will be more responsive to earnings surprises. Thus, I expect positive β_1 in such cases. Since quiet period policies are sticky once adopted, the estimated effect (if any) will be largely cross-sectional. Therefore, I include industry and year-quarter fixed effects. For these models, I additionally control for *Return Volatility* (standard deviation of stock return for a quarter) and *Earnings Volatility* (standard deviation of earnings per share in last eight quarters) (Collins and Kothari, 1989). Standard errors are clustered by industry and year-quarter.

To capture anticipatory price run-up in the pre-earnings announcement periods, I apply unbiasedness regressions (Biais et al., 1999; Van Kervel and Menkveld, 2019; Boguth et al., 2023). Unbiasedness regressions are used in the literature to study how quickly prices reflect potential private information. The following regression is estimated:

$$Ret[-21,2]_{i,q,t}=\alpha_t+\beta_t Ret[-21,t]_{i,q,t}+\epsilon_{i,q,t}$$

Where i indexes firm, q quarter, and t day. $Ret[-21,t]_{i,q,t}$ is cumulative returns over the window [-21, t] calculated using the log price, where t is in event time relative to firm i's earnings announcement q.[19] Considering that the average number of trading days between quarter end and earnings announcements is 21, I choose fixed windows of [-21, 2] around earnings announcements. I regress the full-window return from t = -21 to t = 2 on partial returns over intervals beginning at t = -21 and ending at dates $t \in$ {-20, -19, ..., 2} by each sample of interest. ${R_t}^2$ from these regressions capture all potential channels through which future earnings information is incorporated into prices at t (Boguth et al., 2023).

[19]To follow the standard approach in the literature, I use changes in log prices. Results are robust to using abnormal returns estimated from the 5-factor model.

To the extent that firms with quiet periods effectively constrain the leakage of earnings information, their pre-earnings announcement prices will contain less private information about future earnings (i.e., lower ${R_t}^2$) than firms without quiet periods.[20]

5. Sample and Results

5.1. Sample

For empirical analyses, I restrict the sample period to begin in 2010 for two reasons. First, the coverage of Thomson Reuters insider trading and Boardex data has been improved since 2010. Second, a part of quiet period data comprises the information disclosed on the investor relation websites at the time of data collecting (May 2022 to September 2022). Thus, the data likely becomes noisier as the sample rolls back in time due to the limited ability to restore historical web pages. Therefore, the sample spans the years between 2010 and 2021 and combines hand-collected quiet period data with firm-level data from Compustat, CRSP, I/B/E/S, Thomson Reuters, and Boardex. I further require the price per share as of the end of the fiscal quarter to be greater than \$1 and the market value of equity at the fiscal quarter end to be larger than \$5 million, with share code 10 or 11 in the CRSP. As a result, the determinant sample has a total of 77,117 firm-quarter observations. For supplemental analyses, data from TAQ, Option Metrics, and Estimize are merged additionally, with the number of observations subject to data availability.

Table 1 Panels A and B present descriptive statistics for the determinant and Panel D for consequences samples. I note that the percentage of quiet period firms increases from 16% for the sample period of 2010-2015 to 23% for the sample period of 2016-2021 (Panel D). In Panel C, I provide the unique number of quiet period firms by each ranking of quiet score or dimension. In the cross-section of quiet period firms, 75% of quiet scores are clustered between 1 and 5. In addition, I find that if firms are strict on one dimension, they tend to be lenient on other dimensions: for example, Pearson correlations between

[20]The concept of R^2 to capture price informativeness with regards to earnings information has been used in Ball and Shivakumar (2008), Beaver et al. (2020), and Shao et al. (2021).

Quiet Scope and *Quiet Days* is -0.08 (p-value $<$ 0.01, untabulated), suggesting that when companies extensively restrict private communication channels, they tend to maintain these restrictions for relatively a short period.[21] Over time, an increasing number of companies have adopted strict quiet period policies, evidenced by the increase in average quiet scores from 2.8 in 2010 to 3.3 in 2021 (untabulated). The cross-sectional and time-series properties of quiet periods collectively suggest that in response to growing regulatory risks, firms are increasingly adopting stricter quiet period policies while balancing the associated costs by carefully tailoring various features of the policies. For these reasons, I mainly focus on *Quiet Period* (indicator) and *Quiet Score* (numeric ranking), rather than examining each dimension separately.

5.2. Determinants of Quiet Periods

Table 2 presents the results of determinant analyses.[22] In Columns (1) and (2), results of time-dependent Cox regressions are reported, and the estimated hazard ratios of Column (2) are presented in Figure 2. Consistent with Hypothesis 1a (litigation risks), in Column (1), I find that *Firm Size* and *Litigation* are positively, and significantly associated with the likelihood of adopting the quiet period. Importantly, these two factors contribute most to the decision to observe quiet periods; a one-standard-deviation increase in *Firm Size* (*Litigation*) raises the likelihood by 65% (15%).

In Columns (1), *Institution Ownership* is not significant, and thus I repeat the analyses by classifying it into *Dedicated Institutions* and *Transient Iinstitutions* in Columns (2) and (4). While a one-standard-deviation increase in *Dedicated Institutions* decreases the likelihood of observing quiet periods by 15%, the same increase in *Transient Institutions*increases the likelihood by 8%. Moreover, the associations are statistically significant. These results suggest that different types of ownership are a more important predictor of quiet periods

[21] In Internet Appendix 2, I provide the tally of quiet period firms, encompassing all potential permutations of the three dimensions, for the sample period spanning from 2000 to 2021. The most common combination is informal policies, where managers abstain from making comments during investor conferences (339 instances), followed by informal policies where managers refrain from commenting in response to media inquiries (122 instances), and formal no-comment policies with varying degrees of quiet days (210 instances=77+74+59).

[22] Variance inflation factors do not exceed 2.

than institutional ownership as a whole. The results are consistent with H1b (ownership profile); maintaining relationships with important investors who require private access on a continual basis leads to a decision not to observe quiet periods.

Consistent with H1c (public information environment), I find that a one-standard-deviation increase in *Guidance* raises the likelihood by 34%, suggesting that firms that provide frequent management guidance find observing quiet periods less costly. Lastly, a one-standard-deviation increase in *Blackout Policy* or *Disclosure/Compliance Committee* (*Opportunistic Insiders*) raises (decreases) the likelihood by 7% or 4% (7%), consistent with H1d (corporate governance) that firms with better corporate governance are more likely to observe quiet periods. I repeat analyses using the Fama-Macbeth methodology with Newey-West adjustment using *Quiet Period* (Column 3) and *Quiet Score* (Column 4) as dependent variables. I find qualitatively similar results using these alternative specifications, suggesting not only these firm characteristics determine managers' decision to observe quiet periods, but also the overall degree of quiet periods.[23][24]

5.3. Consequences of Quiet Periods

5.3.1. Investor Reactions to Earnings Announcements

In untabulated analyses, I find that quiet periods are *not* significantly associated with increased investor reactions to earnings surprises (i.e., higher ERCs), consistent with H2.

[23] One exception is *Transient Institutions*. Using generalized additive models that fit spline regressions, I find non-linear relationships between *Transient Institutions* and *Quiet Period*. When ownership by transient investors remains below approximately 5%-7%, the probability of observing quiet periods tends to rise, consistent with an explanation that short-term trading strategies of *Transient Institutions* increase firms' legal risks associated with private communications. However, beyond that threshold, firms are less inclined to adhere to quiet periods. This implies that ignoring demands from transient investors becomes more costly for firms when they become common types of owners.

[24] I perform three additional tests (untabulated). First, I repeat the analyses using the sample of firms with quiet periods. Second, I use scores in each quiet dimension as alternative dependent variables. Results and inferences are largely unaffected, indicating that the determinants linked to the adoption of quiet periods are also relevant in explaining the relationship between these factors and the specific features of quiet periods in the cross-section of quiet period companies. Third, I use OLS regressions to test whether companies are more likely to adopt quiet periods and more strict ones in response to increases in legal risks associated with selective disclosures in 2016. Specifically, I regress quiet measures on the indicator for post-2016 after controlling all determinants and industry-fixed effects. I find the likelihood of *Quiet Period* (*Quiet Score*) increases by 3 percentage points (11%) for the sample period following 2016.

One of the important premises for the effectiveness of quiet periods is managers' incentive to abide by policies. Their incentives partially depend on the perceived likelihood of being caught by the SEC when material non-public information is divulged, and investors trade on it. I use the SEC adoption of ARTEMIS in 2016 as plausibly exogenous increases in legal risks associated with selective disclosures and examine whether capital market consequences of quiet periods materialize after 2016. Table 3 Panel A presents results for ERC using the sample period of 2010-2015 (Columns 1 and 2) and 2016-2021 (Columns 3 and 4). Consistent with the SEC monitoring effectiveness increasing managerial incentives to abide by the policies, I find that in Column (4), ERCs for quiet periods increase with *Quiet Score* (i.e., coefficients on the interacted terms between *Quiet Score* and *UE*), in the years following 2016. In contrast, before 2016, ERCs for quiet period firms are positive but insignificant, and the estimated ERCs between these two subsamples are significantly different at 5% level.[25] I also note that the coefficients for the interacted terms between *Quiet Period* and *UE* are positive, but insignificant in Column (3), suggesting that variations in the level of quietness, rather than the mere presence of quiet periods, better explain ERCs. In Table 3 Panel B, to address concerns about selection biases, I repeat analyses using various matching techniques, coarsened exact matching (Columns 1 and 2), entropy balancing (Columns 3 and 4), and propensity score matching (Columns 5 and 6).[26] The inferences on ERCs for quiet period firms are unaffected.

Table 4 Panel A, using a sample period of 2016-2021 and a coarsened exact matched sample (henceforth, CEM), I provide estimated coefficients of *Quiet Score* >=d, which is equal to one if the firm's quiet score is of d or higher. The regression allows progressively more expansive control groups and estimates the quiet score's marginal effects. The coefficients turn significant for *Quiet Score* >=2, indicating that the effectiveness of quiet periods is

[25]Inferences are unaffected if I introduce a triple interaction term, *Quiet Period* × *UE* × *Post* into the pooled regressions, with *Post* taking on a value of one for years 2016 or later. In addition, I find that quiet period companies facing higher shareholder litigation risks (Kim and Skinner, 2012), specifically those with high return volatility, high return skewness, and low returns, are associated with more pronounced ERCs. This cross-sectional evidence lends support to the idea that the implementation of ARTEMIS in 2016 incentivizes firms to more scrupulously observe quiet periods by increasing legal risks associated with selective disclosures.

[26]The absolute standardized differences after matching are below 0.2.

concentrated in this group, suggesting that the group of a *Quiet Score = 1*, which consists of firms that decline to comment on media inquiries is not significantly different from the group of a *Quiet Score = 0*, which do not have quiet period policies. Moreover, the magnitude of estimated coefficients generally increases with quiet scores, consistent with the theoretical prediction that price reactions to earnings surprises are inversely correlated with the level of pre-earnings announcement private information or its precision.[27] In Table 4 Panel B, I repeat the same analyses but replace test variables with scores in each quiet dimension. The estimated coefficients generally increase with each score, suggesting the importance of considering all dimensions together.

5.3.2. Pre-Earnings Announcement Period Price Run-up

Figure 3 Panel A presents the results of unbiasedness regression. R^2 is estimated within various groups based on the CEM sample from 2016 to 2021. *Quiet Period = Yes (No)* comprises firms that have (do not have) quiet periods. For comparison, I also present results for *Quiet Score >= 2,4 or 6*. Over the pre-earnings announcement periods, [-21,-1], R^2 of quiet period firms are below that of firms without quiet periods, meaning that prices in the preannouncement periods for quiet period firms are less reflective of future prices than their counterparts. To facilitate the interpretation, I provide differences in R^2 using *Quiet Period = No* group as a baseline in Figure 3, Panel B. The differences in R^2 increase as earnings announcement dates approach, ultimately leading to more surprises on earnings announcement dates for quiet period firms than firms without quiet periods. In Table 5, I formally test the differences in ΔR^2 over different windows by generating a distribution using 5,000 bootstraps under the null that $\Delta R^2$of quiet period firms are identical to CEM-matched firms without quiet periods. The differences in ΔR^2 during pre-earnings announcements are statistically significant and economically important (3-9% with a p-value < 0.05 in Columns 5 and 7). Furthermore, reinforcing the ERC results in Section 5.3.1, the plot shows a significantly

[27] In Internet Appendix 3, I also provide results for the sample of 2010-2015. I find that estimated ERCs turn significant only after Quiet Score reaches or exceeds 7, suggesting that in the absence of effective SEC monitoring, firms with sufficiently high quiet scores are more likely to scrupulously follow quiet periods than others.

greater increase in R^2 on earnings announcement dates, *t = 0* for quiet period firms (36%, 37%, 41%, 40% for *Quiet Period = Yes* and *Quiet Score >= 2,4, or 6*, respectively) than those without quiet periods (33% for *Quiet Period = No*). For completeness, I repeat these analyses in Internet Appendix 4 using the sample period of 2010-2015 and do not find such patterns.[28]

5.3.3. Stacked Regression

Analyses to this point only speak to the cross-sectional effects of quiet periods. To make inferences on the changes in outcomes between quiet period firms and those that do not have quiet periods, I employ stacked regression as an alternative to staggered differences in differences design (Baker et al., 2022). Specifically, for each year-quarter, I form a cohort that consists of firms that have adopted quiet periods for the first time in that quarter and matched non-quiet period firms that have never adopted quiet periods or adopted them at least three years before the fiscal quarter of interest using the CEM. Each matched pair is stacked. I restrict the treatment group to firms that implement quiet periods for the first time after 2016 and analyze three years surrounding each cohort. I include cohort-firm and cohort-time fixed effects. As shown in Table 6, inferences on ERCs for quiet periods are unaffected; specifically, for quiet period companies with a quiet score of one, the return responsiveness to their earnings news increase by 24% (=0.02/0.083) after they adopt quiet periods (Column 4).

Furthermore, in Figure 4, I extend the concept of unbiasedness regressions to this sample to examine to what extent the pre-earnings announcement window returns reflect the full quarterly window returns. Following a similar approach used in the literature (Akey, Grégoire, and Martineau, 2022), I interact pre-earnings announcement partial returns with

[28]Not only the speed of price discovery is faster in 2010-2015 than in 2016-2021, but quiet period firms also exhibit higher R^2 than firms without quiet periods until one week before earnings announcements. To explain these results, suppose a company establishes a policy outlining restrictions on participation in investor conferences. If the firm is quiet during one quarter but appears at a conference in the next quarter, analysts and investors may take note of such inconsistencies, which could give information on its quarterly performance. Therefore, deviation from the quiet period policies can create even more profitable opportunities for selected parties by providing more precise information on earnings that they could aggressively trade on.

quiet period measures, using [-50, 2] as a full quarterly return window.[29] Negative coefficients on the interacted term, β_t, indicate slower or less incorporation of private information than the baseline (i.e., firms without quiet periods) as of t. Results indicate that quiet period firms do not exhibit different patterns from the baseline until 21 days before earnings announcement. However, after 21 days (i.e., approximately past the quarter end), quiet period firms' returns reflect significantly less information than the baseline. For example, the estimated coefficient on the partial returns over the window [-50,-1] is 1.018 (p-value <0.01), and the estimated coefficient on the interacted term is -0.064 (p-value <0.01), meaning that quiet period firms reflect 6.3% less information in the pre-earnings announcement prices than the baseline (=-0.064/1.018). This lends support to the R^2 results in Section 5.3.2.

5.3.4. Pre-Earning Announcement Period Information Asymmetry

Results from different models and samples generate consistent interpretations that in the presence of effective SEC monitoring, quiet periods effectively constrain the leakage of earnings information, shaping the unique price discovery patterns prior to earnings announcements. To further support the idea that these price discovery patterns are driven by reductions in the percentage of privately informed market participants who had previously enjoyed selective access to managers in the absence of quiet periods, I regress proxies for pre-earnings announcement period information asymmetry on quiet period measures. Table 7 presents results using the stacked CEM sample. Quiet period firms are associated with a 4-5% reduction in the one standard deviation of pre-earnings announcement effective bid-ask spread, price impact, and realized bid-ask spread.

[29] Given that the sample average for the number of days between earnings announcements is 60 days, I choose 50 days prior to earnings announcements as a starting point to exclude the price discovery effects from the prior earnings announcements' [0, 10] window. Cumulative returns over the window [-50,-2] proxy for the fundamental information to be learned throughout the quarter.

6. Supplemental Analyses

6.1. Alternative Explanations

In Table 8, I rule out alternative explanations. First, the increased investor reactions to earnings announcements may be driven by firms' bundling of more public information released to earnings announcements. In Panel A, I regress the log number of bundled guidance, the log number of bundled EPS guidance, the indicator for the point estimate of bundled EPS guidance, or the log number of bundled 8-K filings on quiet period measures, using stacked regressions. I do not find that quiet periods are associated with changes in public disclosure practices.[30] Second, since quiet periods increase the costs of obtaining private information, some investors may decide to acquire information from firms without quiet periods and trade their stocks (Fischer and Heinle, 2020). Such switching behaviors bias the effects of quiet periods upwards. Using the methodology of Berg, Reisinger, and Streitz (2021), I test and find no such effects in Panel B.[31] In Panel C, I explore whether quiet periods discourage forecasting activities. Using the number of earnings estimates and analyst consensus forecast errors by sell-side analysts or contributors on the crowdsourced Estimize platform, I do not find any evidence supporting this alternative explanation. Last, informed investors may instead exploit information advantages in options markets (Roll, Schwartz, and Subrahmanyam, 2010), which may not be captured in equity markets. In Table 8, Panel D Columns 1 and 2, I do not find abnormal option volumes are significantly higher for quiet period firms. Furthermore, using the multimarket information asymmetry measure constructed following Johnson and So (2018), I do not find such information asymmetry exists (Columns 3 and 4).[32] Overall, alternative explanations are unlikely to drive the results. However, I caveat long-term effects may have not been adequately captured in these tests.

[30] ERC results in Section 5.3 also remain robust to controlling for these bundled public disclosure measures.

[31] To control for spillover effects, I construct $\overline{Quiet\ Period}^c$, which is the average *Quiet Period* or *Quiet Score* of all other firms in the same cohort, excluding firm i itself and interact this variable with *UE*. After controlling for these spillover effects, I find the coefficients on *Quiet Score* $\times$ *UE* are significant and have a similar magnitude (0.019) to those reported in Table 6, Column 4 (0.02), meaning that spillover effects may not be a salient concern.

[32] Johnson and So (2018) construct a measure of information asymmetry among investors based on the assumption that informed traders are more likely than uninformed traders to generate abnormal trading volume in options or stock markets.

6.2. *Sensitivity Analyses*

Measurement issues arise from the possibility that firms might adhere to quiet periods without publicly disclosing them. From the empirical standpoint, such cases only work against finding significant results in consequence tests. Moreover, matched sample analyses partially address these concerns as firms with identified quiet periods are compared to those that have similar firm characteristics and thus share a similar propensity for adopting quiet periods. Theoretically, firms' incentives to *not* to disclose quiet periods are also not clear (Copeland and Galai, 1983; Glosten and Milgrom, 1985; Kyle, 1985). Market makers adjust pricing schedules based on their assessment of whether trading is informed or not. Therefore, from the perspective of liquidity-maximizing managers, publicly disclosing their quiet period policies could facilitate such assessment and reduce trading costs. Nevertheless, I formally test the robustness of results using Lewbel (2012)'s methodology that exploits the heteroskedasticity restriction to obtain instrumental variables free of measurement issues.[33] Table 9 Panel A shows the robustness of the results; I note that the ERC estimate for quiet periods (0.02) is close to that of ordinary least squares results in Table 3 Panel A, Column 4 (0.021). In Panel B, I also show that results are robust to using an alternative definition of unexpected earnings based on the consensus analyst forecast.

6.3. *Deviation from Quiet Period Policies - Investor Conferences*

While it is not feasible to observe the occurrence of private communications, firms often publicize the schedule of investor conferences or Analyst/Investor days (AI days) to encour-

[33]This method identifies structural parameters in an ordinary two-stage least squares regressions:

$$Quiet\ Period_{it} = \sum_{k} \gamma_k X_{it} + u_{it} \tag{1}$$

$$CAR_{it} = \beta_1 Quiet\ Period_{it} \times UE + \sum_{\mathrm{k}} \beta_{\mathrm{k}} X_{it} + \epsilon_{it} \tag{2}$$

In particular, Lewbel (2012) shows that if the error term in the first stage, u_{it}, is heteroskedastic and at least a subset of X_{it} (determinants), Z_{it} (instrument), are uncorrelated with the covariance of ϵ_{it} and u_{it} (i.e., $E[Z\epsilon u]$=0) but correlated with the variance of u_{it} (i.e., $E[Zu] \neq 0$), the model is identified using $(Z_{it} - E[Z_{it}])u_{it}$ as instruments for the mismeasured regressor ($Quiet\ Period_{it}$).

age investors' participation.[34] Therefore, I attempt to examine observable patterns of investor communications activities around earnings announcement dates for quiet period firms that have imposed restrictions on participation in investor conferences or Analyst/Investor days. Specifically, I track if there are any participations in investor conferences and AI days that fall within the window of quiet periods (Figure 5 Panel A). 22% of the firm-quarters display noncompliance with quiet period policies, reinforcing the idea that firms have considerable flexibility in implementing them. However, Figure 5 Panel B shows that the likelihood of deviating from the policy significantly declines after 2016, suggesting that the recent regulatory developments increase the managerial incentive to abide by the policies.

7. Conclusion

Public companies may observe quiet periods toward the end of each fiscal quarter, during which they restrict interactions with the investment community. The purpose of a quiet period is for companies to avoid making any comments about quarterly results to selected parties, thereby maintaining compliance with the Reg FD. Using hand-collected investor communication policies, I find that quiet periods exhibit great heterogeneity regarding formality, durations, and the scope of restrictions. Moreover, firms balance the potential benefits and costs of imposing quiet periods by flexibly adjusting the strictness of quiet period policies depending on the litigation risk, ownership profiles, public information environment, and corporate governance. By analyzing price discovery patterns and information asymmetry within theoretical frameworks, I further find that the managerial incentive to scrupulously follow quiet periods is important for the effectiveness of quiet periods. Overall, evidence on the unique role of quiet periods in limiting selective disclosure and their growing prevalence has important implications for regulators, academics, and practitioners.

[34]Nevertheless, investor conferences are considered private because investors must be invited to attend, and the events often have private break-out sessions with firm managers after company presentations. Such selective access to management during meetings provides profitable trading opportunities (Bushee et al., 2017), which increases legal risks associated with violations of Reg FD. 20% of the companies in my quiet period sample lay out restrictions on participation in investor conferences and AI days, suggesting that firms view such events as high-risk settings that need to be limited leading up to earnings announcement dates.

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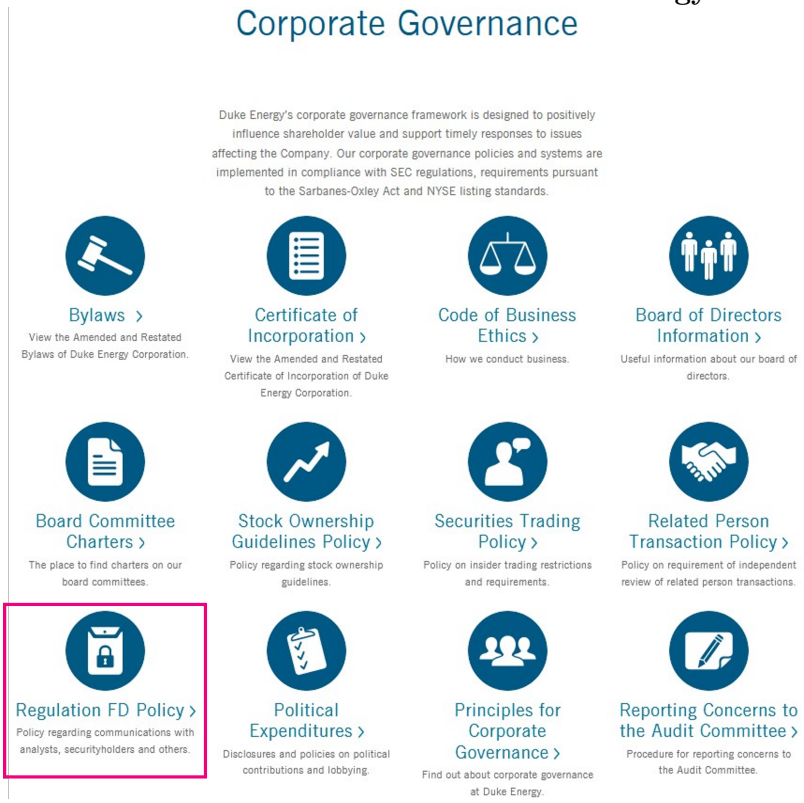
Appendix A. Presentation Formats

Firms formally establish policies in a document under several different names, such as Investor Communication, Disclosure, or Regulation FD policies, and post them along with other corporate policies, typically under the Governance tab on their investor relations websites (Panel A). Quiet periods are discussed under one subsection of such policies, as quiet periods, in essence, are concerned with a specific dimension of investor communications (i.e., timing) and disclosure control procedures. Other firms provide information on quiet periods under Frequently Asked Questions or Investor Contact pages (Panel B), suggesting that the presence of quiet periods questions is among investors' commonly asked questions. Firms also mark the beginning dates of quiet periods for upcoming earnings announcements on their earnings calendars (Panel C). In general, these three presentation formats are not inclusive, meaning that, conditional on the policies being disclosed and formally communicated to the public, they are presented in only one of the formats.

Panel A: Documents under the Governance Tab - Duke Energy[35]



[35] https://www.duke-energy.com/our-company/investors/corporate-governance/regulation-fd-policy

Panel B: FAQs - Rayonier Advanced Materials[36]

What is the investor relations "quiet period?"

To ensure compliance with applicable law and fair practices for all investors and analysts, RYAM has implemented a quiet period that commences on the last day of each fiscal quarter and ends after the quarterly earnings teleconference for each of the first three quarters of the fiscal year. For the fourth quarter of the fiscal year, the quiet period commences two weeks prior to the last day of the fiscal quarter and ends after the earnings teleconference. During the quiet period, the company will not conduct meetings or calls with analysts and investors. These communications will resume after the completion of each quarterly earnings call. However, the company may suspend its quiet period if significant and relevant new information is made public during the quiet period.

Panel C: Corporate Calendars - Humana[37]

Financial calendar

2023

2023-07-21 08:00

Interim Report Jan-Jun, Q2 2023

2023-11-09 08:00

Interim report Jan-Sep, Q3 2023

Silent period

Humana applies a silent period of 30 days prior to the release of its interim reports. Humana does not arrange meetings with financial media, analysts and investors during this period. During this period, Humana only answers questions of a general nature or clarifies information already published by the Group.

[36] ttps://investors.ryam.com/ir-services/investor-faq

[37] https://www.humanagroup.com/investor-relations/financial-calendar

Appendix B. Details of Quiet Periods

Panel A presents several examples of formal quiet period policies. Panel B (Panel C) features several companies that are identified as having informal, quiet period policies by stating, "We're in the quiet period" during investor conferences or press releases (with media).

Panel A: Formal Quiet Period Policies

CrediCorp[38]

The Company has established a quiet period beginning **fifteen (15) calendar days prior to the release**of financial statements and ending on the date of the release thereof. During this quiet period, Credicorp **shall not answer questions or make any comments pertaining to its earnings results**.

Entegris[39]

Quiet Period Communication Limitations. All communications during the Quiet Period shall be limited to historical, factual information. No discussion or comment is permitted concerning non-public information related to the Company including, without limitation, the following:
· Financial results for or projections of financial results for the Current Quarter or for future quarters;
· Forward-looking expectations for industry or Company order or sales trends;
· Comment on public statements by customers, peers, or analysts relating to the Company or the industry; · Business performance for the Current Quarter by operating segment or geography;
· RD&E spending levels for the Current Quarter or for future quarters;
· Comment on financial metrics such as gross margin, earnings per share, EBITA, EBITDA or tax rate for the Current Quarter or for future quarters;
· Cash balances for the Current Quarter; debt repayments during the Current Quarter or projected debt repayments for future quarters.

Johnson Controls International PLC[40]

Beginning with the **15th day of the third month of each calendar quarter** and ending with the issuance of a normal quarterly earnings release (the Quiet Period), Primary or Authorized Spokespersons **will not communicate with any securities market professional or investor regardless of the format**. An exception may be made only with the prior approval of the General Counsel. JC's investor relations website (www.johnsoncontrols.com/investors) will publish a notice announcing the commencement of each Quiet Period.

Volt Information Sciences Inc[41]

Volt Information Sciences, Inc. (the Company) must comply with Regulation FD, which addresses selective and public disclosure of information. To maintain our compliance with Regulation FD, the Company has implemented a Quiet Period Policy. Our executive team **will not be available to respond to any financial inquiries, participate in phone calls or provide any updates on finance-related matters during each quiet period**. A quiet period **begins at the end of the fiscal quarter** and runs until the date the Company publicly issues its earnings release for such fiscal quarter. Exceptions may occur at the Company's discretion based on need to discuss breaking news or otherwise. We appreciate your assistance, compliance and cooperation with this Quiet Period Policy.

[38]https://credicorp.gcs-web.com/static-files/257ccf24-dcd6-4de2-9362-a289e4e17632

[39]https://investor.entegris.com/static-files/dca25b0b-1cd6-4a0c-9223-4ae4a0e57348

[40]https://investors.johnsoncontrols.com/∼ /media/Files/J/Johnson − Controls − IR/committee − charter − policies − procedures/disclosure − policy − 2015 − 10final.pdf

[41] https://investor.volt.com/quiet-period-policy

Panel B: Informal Quiet Period Policies - Conferences

Salesforce.com Inc at Bank of America Securities Merrill Lynch Hosted Bus Tour San Francisco (January 10, 2018)

JOHN CUMMINGS, SVP, INVESTOR RELATIONS, SALESFORCE.COM, INC.: Well, I want to welcome everyone here to Salesforce today... Meanwhile, this is an open Q&A. ...

UNIDENTIFIED AUDIENCE MEMBER: Maybe I'll kick off with this. What are you seeing with customer behaviors especially given the tax refund that increase the propensity of customers to act with a little bit more time sensitivity or no real change because the feedback from the tour, most of the companies we've spend time with is that they all feel extremely bullish back – some of them feel even more bullish than they felt a year back or so. So, I'm curious how you view the vertical changes or the economic implications and how customers are viewing spending (inaudible) with?

JOHN CUMMINGS: Yes. We were just talking about that before we started here with the member of the audience. And I think at some level, it's too soon to tell, right? **I think that we're just about to go into our quiet period. And so, I think, we'll have our Q4 results speak for themselves.** And I think our results is here and that's still [good] for themselves, quite frankly, and – but I think as we look forward, what I'm getting a sense of is, yes, there's the opportunity, certainly, for our customers to, perhaps, accelerate investments in areas that are part of what we think of as the CEO agenda which is being namely growth.

Blackbaud Inc Hosts Investors and Analysts at BBCON (January 10, 2018)

MARK FURLONG, DIRECTOR OF IR, BLACKBAUD, INC.: All right. So we are live webcasted...So today's agenda, Mike's going to start things off for us, then he's going to pass it to Tony, and we'll open it up for Q&A. Essentially, Mike will cover half of our growth strategies, Tony will cover the other half. Q&A through 12:30. And then we invite you guys, at least you all in the room, to join our customers, our partners at the lunch, which is at 12:30, and then investor – not investor but customer breakout sessions this afternoon. So that's the agenda for the day. **And before I pass it to Mike, I'll just note that with the timing of this investor session and the release Monday, officially we are in a quiet period, although we will address Monday.**

Panel C: Informal Quiet Period Policies - Media

Winning Daytona sponsor a likely loser (CNNMoney.com, February 16, 2007)

While the stock price and the checker flag would appear totally unrelated (and probably are) stock history over the last 20 years shows there's no faster-moving, and more accurate, curse in the world of sports and stocks than the Daytona sponsor curse.

Over the last 20 years, the main sponsor of the winning car at Daytona, the key event for the sponsor-centric sport, has seen its stock lag the broader market 12 times the year of the win, and beat the market only four times. There have been four winning sponsors without publicly-traded stock. ...

Lowe's spokeswoman Karen Cobb said the company couldn't comment on the curse due to the fact that it is in the quiet period before the earnings release. (This is one of the very few times you will ever see "quiet" and "Nascar" in the same sentence.)

Appendix C. Variable Definitions

Variables	Variable Description
Quiet Period Variables (Firm-quarter-level)	
Quiet Period	An indicator that is equal to one if the firm imposes a quiet period at point-in-time t) (Source: Investor relations websites, Factiva, and NexisUni)
Quiet Score	A numeric score ranging from 0 to 10, which is constructed by adding up scores from formality (1-3), the scope of restrictions (1-4), and the number of days between the commencement and end of quiet periods each quarter (1-3) (Source: Investor relations websites, Factiva, and NexisUni)
Earnings Announcement Variables (Firm-quarter-level)	
UE	Standardized unexpected earnings defined based on a rolling seasonal random walk model or consensus forecast (Source: COMPUSTAT, I/B/E/S)
CAR[0,2]	The abnormal returns cumulated over the three trading days around the earnings announcement date [0,2]. To calculate daily abnormal returns, 5-factor model parameters are estimated using one year's trading data, ending a day before the previous quarter end (Source: CRSP).
Other Dependent Variables (Firm-quarter-level)	
Effective Bid-Ask Spread	The average of daily dollar value-weighted percent effective spread during the window that begins 21 trading days before earnings announcements through a day before the announcement (Source: WRDS TAQ Million second Tools)
Price Impact	The average of daily dollar value-weighted percent price impact during the window that begins 21 trading days before earnings announcements through a day before the announcement (Source: WRDS TAQ Million second Tools)
Realized Bid-Ask Spread	The average of the daily dollar value-weighted percent realized spread during the window that begins 21 trading days before earnings announcements through a day before the announcement (Source: WRDS TAQ Million second Tools)
N Bundled Guidance	The log number of management guidance issued in the window [-2,2] surrounding earnings announcements (Source: I/B/E/S)
N Bundled EPS	The log number of management earnings guidance issued in the window [-2,2] surrounding earnings announcements (Source: I/B/E/S)
Bundled EPS Point	An indicator for management earnings guidance in the format of point estimate issued in the window [-2,2] surrounding earnings announcements (Source: I/B/E/S)
N Bundled 8-K	The log number of 8-K filings issued in the window [-2,2] surrounding earnings announcements (Source: SEC Edgar)
Consensus FE	The absolute value of differences between actual earnings and median value of analysts' earnings forecasts, scaled by prices as of the quarter end (Source: I/B/E/S)

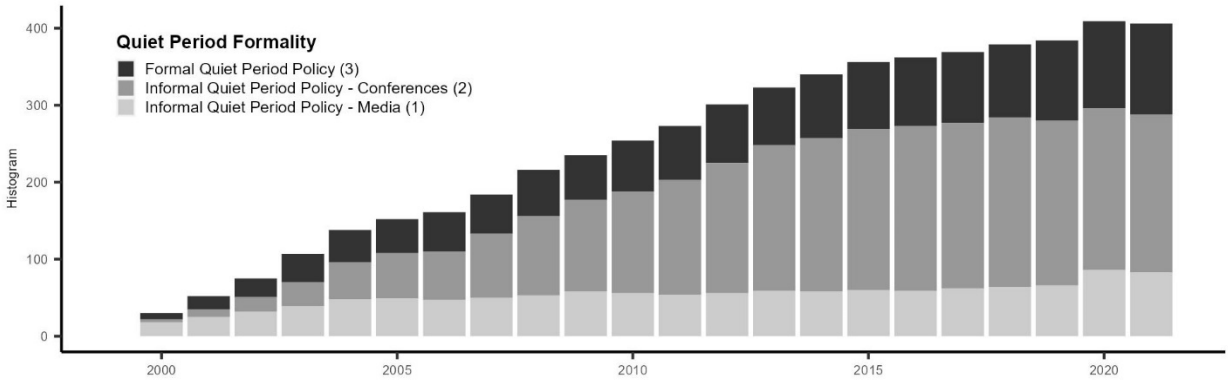
N EPS F	The log number of quarterly analyst earnings forecasts for a quarter (Source: I/B/E/S)
Consensus FE (Crowdsourced)	The absolute value of differences between actual earnings and median value of earnings forecasts contributed to the Estimize platform, scaled by prices as of the quarter end (Source: Estimize)
N EPS F (Crowdsourced)	The log number of earnings forecasts contributed to the Estimize platform for a quarter (Source: Estimize)
Abnormal Log Option Volume	The average of the log daily option trading volume during the window that begins 21 trading days before current earnings announcements through a day before the current announcement minus the average of the log daily option trading volume during the baseline window that begins 3 trading days after previous earnings announcements through 22 trading days before the current announcements (Source: Option Metrics)
Abnormal O/S	The average of daily $\frac{\lvert O/S-M\rvert}{O/S+M}$ during the window that begins 21 trading days before current earnings announcements through a day before the current announcement following the methodology of Johnson and So (2018). O/S is the daily option-to-stock volume ratio, and M is the median value of O/S during the baseline window that begins 3 trading days after previous earnings announcements through 22 trading days before the current announcements (Source: CRSP; Option Metrics)
Explanatory Variables (Firm-quarter-level)	
Firm Size	The log of total market capitalization (Source: CRSP)
Litigation	The ex-ante securities litigation risk estimated following the model of Kim and Skinner (2012)
Institutional Ownership	The percentage of institutional ownership (Source: Thomson Reuters)
Dedicated Institutions	The percentage of ownership held by dedicated institutions defined based on the methodology of Bushee (2001) (Source: Thomson Reuters; Professor Bushee's Website)
Transient Institutions	The percentage of ownership held by transient institutions defined based on the methodology of Bushee (2001) (Source: Thomson Reuters; Professor Bushee's Website)
Opportunistic Insiders	The log number of insiders during the 21 trading day period ending two trading days before a quarterly earnings announcement date following the methodology of Ali and Hirshleifer (2017) (Source: Thomson Reuters)
Analyst Dispersion	The standard deviation of analyst earnings forecasts for a quarter (Source: I/B/E/S)
N Guidance	The log number of management guidance for a quarter (Source: I/B/E/S)
Disclosure/Compliance Committee	An indicator that is equal to one if a firm has a disclosure or compliance committee (Source: Boardex)

Blackout Policy	An indicator that is equal to one if a firm is estimated to have a blackout policy using the methodology of Roulstone 2003b (Source: Thompson Reuters)
Return Volatility	The standard deviation of stock return for a quarter (Source: CRSP)
Earnings Volatility	The standard deviation of earnings per share in the last eight quarters (Source: Compustat)
Price	Prices as of quarter end (Source: Compustat)
Turnover	The average share turnover for a quarter (Source: CRSP)

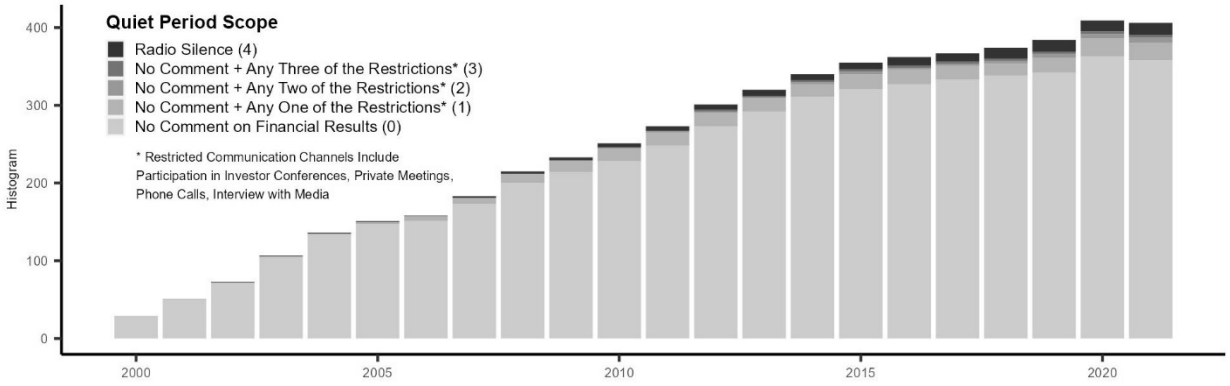
Figure 1. Time-series Pattern of Quiet Periods

These figures plot the number of unique firms with quiet period policies by formality (Panel A), the scope of restrictions (Panel B), and the beginning dates of quiet periods relative to earnings announcements (=0 on the horizontal axis) (Panel C). For Panel C, firm-quarter observations of the years 2000 to 2021 are pooled for brevity. The starting dates of quiet periods relative to earnings announcements = 0 multiplied by -1 indicate the duration of quiet periods for each earnings cycle. A value of 1/2/3 is assigned to the bottom/middle/top tercile in the distribution of the duration. Motivating examples for each classification are provided in Appendix A and B, and regular expressions used to code data are presented in Internet Appendix 1. The numbers in parentheses indicate the quiet score assigned to each dimension.

Panel A: Number of Unique Firms by Formality



Panel B: Number of Unique Firms by Scope of Restrictions



Panel C: Number of Firm-quarter Observations by Number of Quiet Days

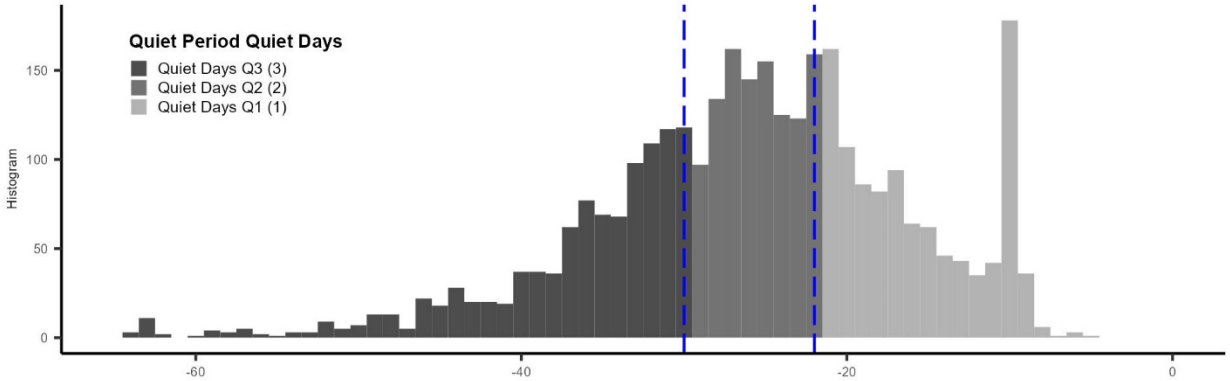


Figure 2. Hazard Ratios of Determinants for Quiet Periods

The figure plots estimated coefficients (β) on the following time-dependent Cox hazard model:

$$h\left(i,\, t, Determinant\left(i,\, t-1\right)\right) = h_0 exp\left(\sum_k \beta_k Determinant_k\left(i,\, t-1\right)\right) + e_{it},$$

where i indexes firm, t quarter. For the dependent variable (incidence of an event), *Quiet Period* (indicator that is equal to one if firm i imposes quiet period at point-in-time t) is used. The sample period is 2010-2021. All determinant variables are scaled to have a mean of 0 and a standard deviation of 1 and lagged. The points and numbers indicate the estimates of hazard ratios for each determinant variable, and the lines indicate its 90% confidence intervals. Hazard ratios > 1 (< 1) indicate higher (lower) event probability.

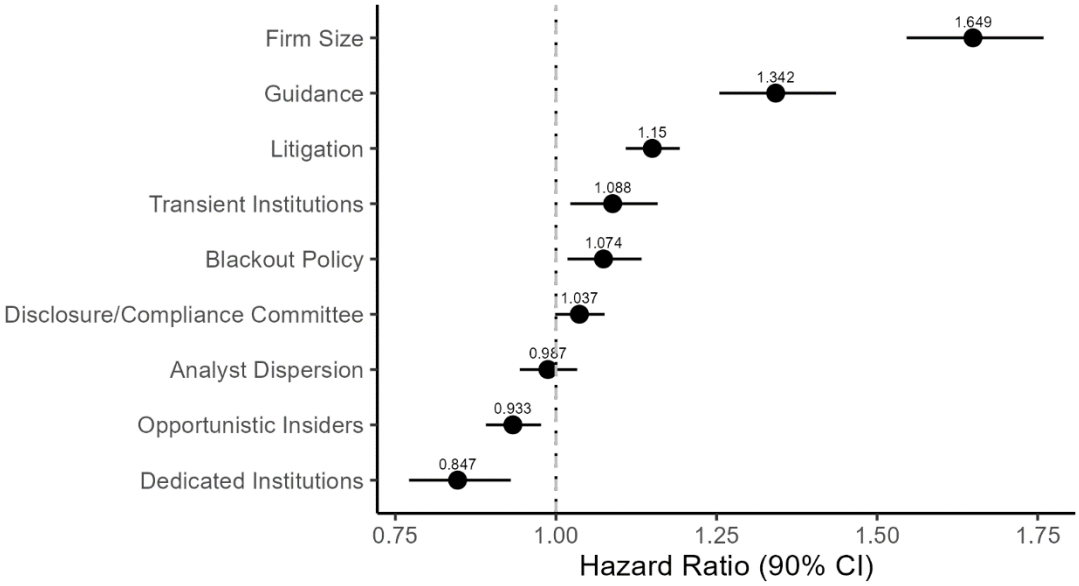


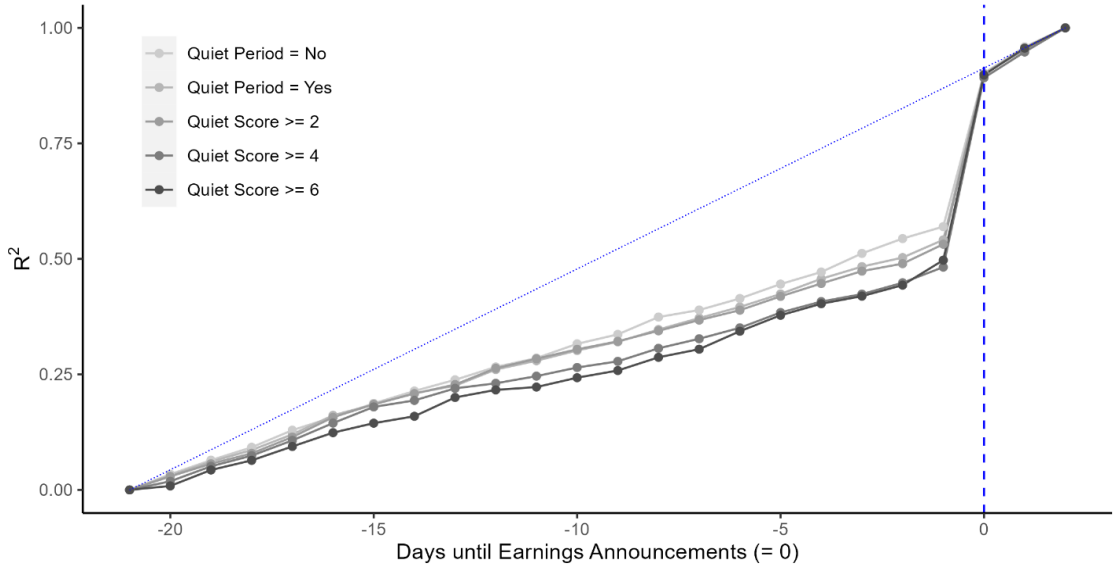
Figure 3. Price Discovery Pattern - Unbiasedness Regression R^2

The figure in Panel A plots ${R_t}^2$ estimated from the following regression at the firm-quarter-day-level:

$$Ret[-21,2]_{i,q,t}=\alpha_t+\beta_t Ret[-21,t]_{i,q,t}+\epsilon_{i,q,t},$$

where i indexes firm, q quarter, and t day. $Ret[-21,t]_{i,q,t}$ is cumulative returns over the window [-21, t] calculated using the log price, where t is in event time relative to firm i's earnings announcement q. The dependent variables are the returns from 21 days prior to 2 days after the earnings announcement, and the independent variables are the returns of the partial announcement window from 21 days prior to the announcement to t. Quiet period firms are matched with firms without quiet periods using CEM during the sample period from 2016 to 2021, with the latter group weighted by ATT. The dotted blue line assumes a linear increase in R^2 (iid-return). The figure in Panel B plots differences in ${R_t}^2$, multiplied by 100, during the pre-earnings announcement period, using *Quiet Period = No* as a baseline.

Panel A: R^2



Panel B: Differences in R^2 ("Quiet Period = No" Group as a Baseline)

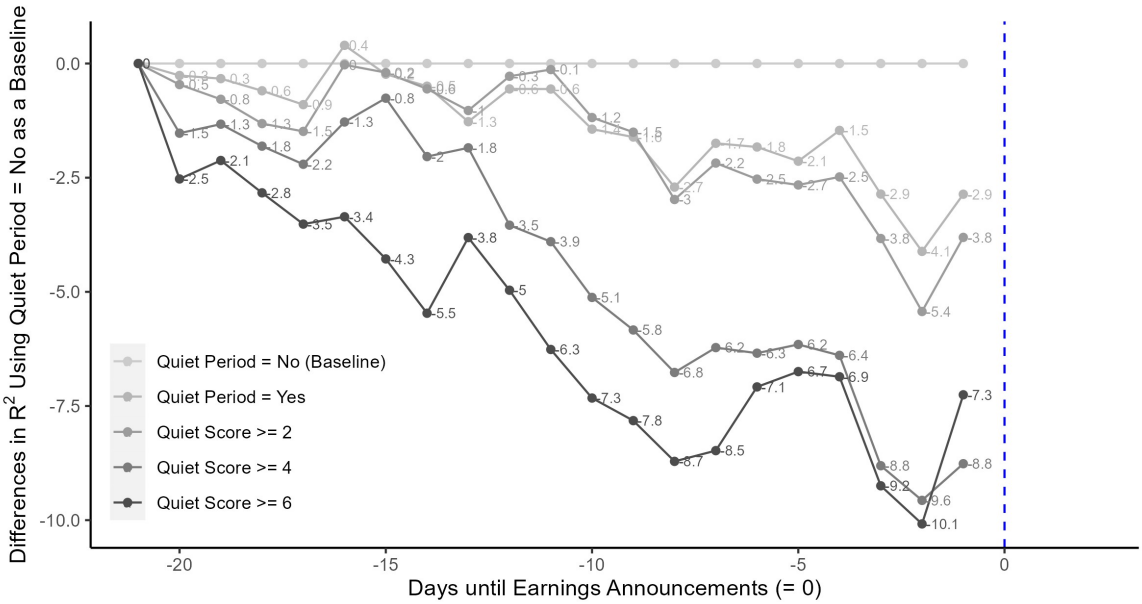


Figure 4. Price Discovery Pattern - Unbiasedness Regression β

The figure plots β_t estimated from the following stacked regression at the cohort-firm-quarter-day-level:

$$CAR[-50,2]_{i,q,t}=\beta_t Quiet\ Measure_{i,q}\times CAR[-50,t]_{i,q,t}+\beta_t^{'}CAR[-50,t]_{i,q,t}+Controls+FE+\epsilon_{i,q,t},$$

where $CAR[-50,t]_{i,q,t}$ is the cumulative five-factor abnormal returns from -50 days to day t in event time relative to firm i's earnings announcement q. *Quiet Measure* is either *Quiet Period*, an indicator that is equal to one if firm i imposes quiet period at point-in-time t, or *Quiet Score*, a numeric score ranging from 0 to 10. To construct the CEM stacked sample, for each quarter, I form a cohort that consists of firms that have adopted quiet periods for the first time in that calendar quarter and matched non-quiet period firms that have never adopted quiet periods using the CEM. The treatment group is restricted to firms that implement quiet periods for the first time after 2016, and three years surrounding each cohort are stacked. Cohort-firm and cohort-year-quarter FE are included, and standard errors are clustered by industry and year-quarter. The empty circles indicate the estimates of β_t and are filled with colors if the estimates are significant at the 90% level.

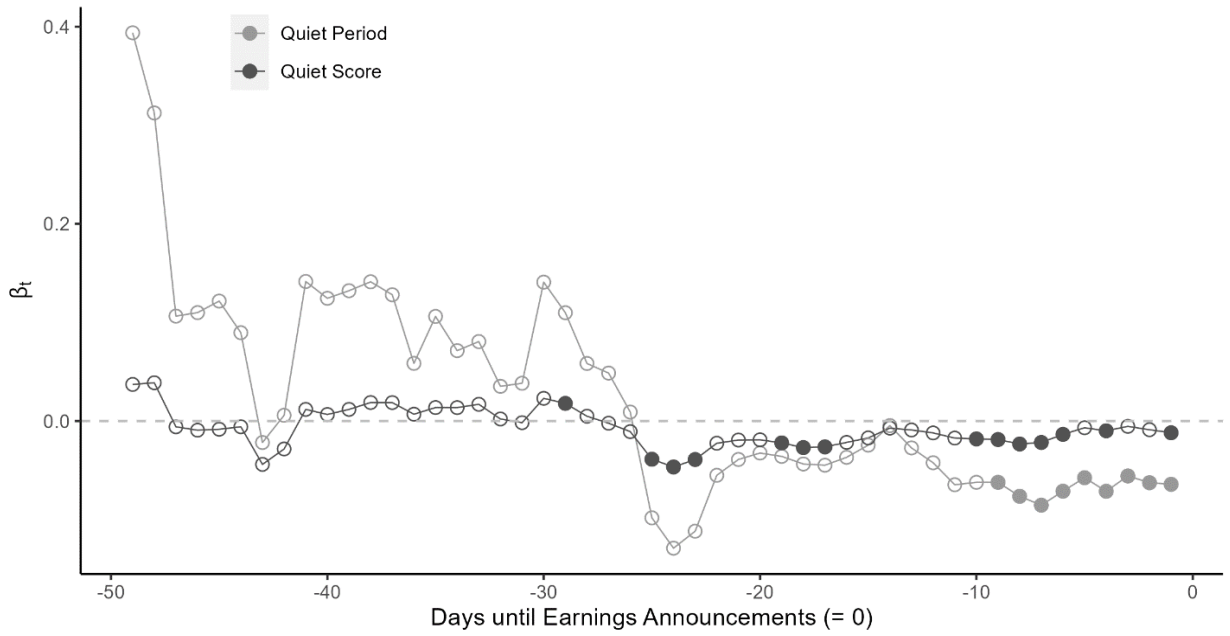


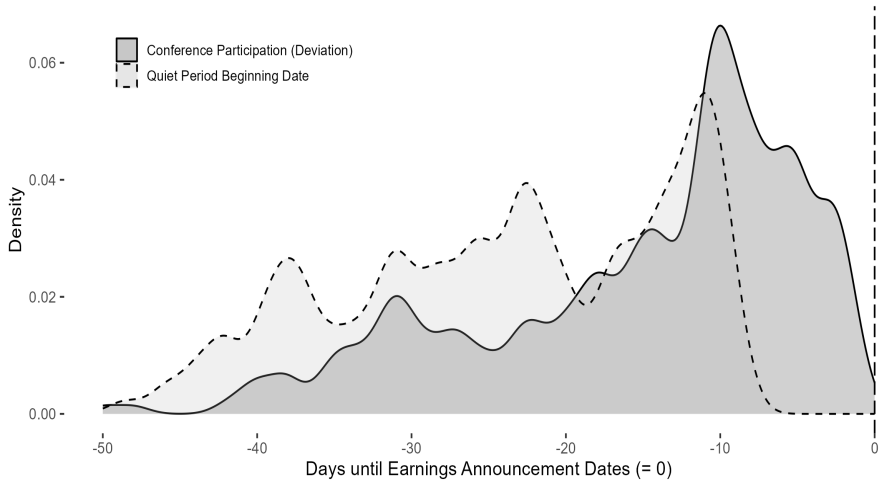
Figure 5. Deviations from Quiet Period Policies – Conference Participation

The figure in Panel A presents a density plot of the quiet period beginning dates (dashed lines) and participation in investor conferences or analyst/investor days (AI days) (solid lines) relative to earnings announcement dates (0 on the horizontal axes), contingent on deviations from the policies. The figure in Panel B plots β_k estimated from the following regression at the firm-quarter-level:

$$Deviation_{i,t} = \sum_{k \in 2016:2021} \beta_k YearIndicator_{i,t,k} + Controls + IndustryFE + \epsilon_{i,t},$$

where $Deviation_{i,t}$ equals one if firm i participates in conferences during quiet periods for quarter t. The years between 2010 and 2015 are used as a baseline, and separate yearly indicators between the years 2016 and 2021 are included in the model. Standard errors are clustered by industry and year. The sample includes firms with quiet period policies that restrict participation in investor conferences and AI days. Grey areas indicate estimated β_k's 90% confidence intervals.

Panel A: Investor Conference Participation and Quiet Period Policies



Panel B: Likelihood of Deviating from the Policies

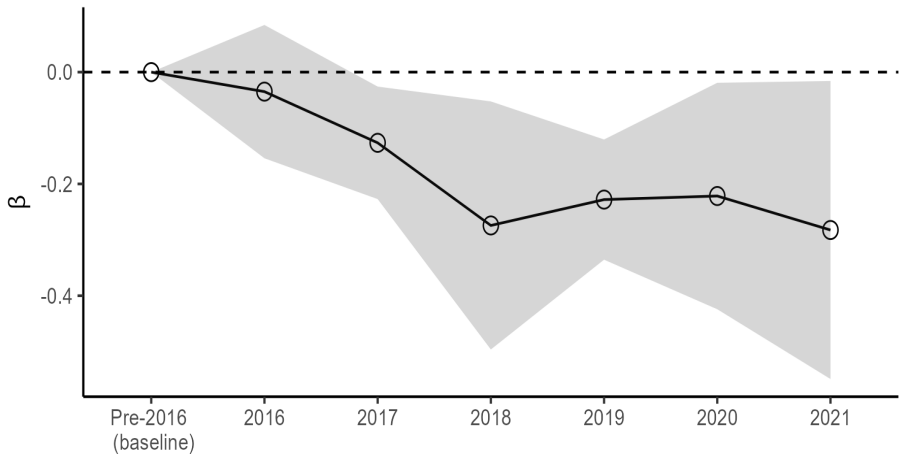


Table 1 Descriptive Statistics

This table reports descriptive statistics for determinant analyses (Panel A), Pearson correlations between variables (Panel B), the number of unique firms by quiet measures throughout the sample period (Panel C), and descriptive statistics for consequences analyses (Panel D). The unit of observation is firm-quarter. Variables are shown after logs are taken. All continuous variables are winsorized at 1% and 99% percentile. *s denote significance levels at 5% or higher. All variable definitions are in Appendix C.

Panel A: Descriptive Statistics for Determinant Sample (2010-2021)

Variable	N	Mean	Median	SD	Pctl. 25	Pctl. 75
Quiet Period	77,117	0.19	0	0.393	0	0
Quiet Score	77,117	0.537	0	1.371	0	0
Firm Size	77,117	7.649	7.586	1.734	6.439	8.804
Litigation	77,117	0.009	0.007	0.007	0.005	0.011
Institution Ownership	77,117	0.758	0.835	0.259	0.667	0.932
Dedicated Institutions	77,117	0.111	0.072	0.113	0	0.179
Transient Institutions	77,117	0.144	0.129	0.096	0.07	0.202
Opportunistic Insiders	77,117	0.429	0	0.603	0	0.693
Analyst Dispersion	77,117	2.261	0.56	4.005	0.14	2.77
Guidance	77,117	1.289	1.386	0.61	0.693	1.792
Disclosure/Compliance Committee	77,117	0.048	0	0.213	0	0
Blackout Period	77,117	0.954	1	0.209	1	1

Panel B: Correlation Coefficients for Determinant Sample (2010-2021)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)Quiet Period											
(2)Quiet Score	0.81*										
(3)Firm Size	0.26*	0.21*									
(4)Litigation	0.17*	0.13*	0.27*								
(5)Institution Ownership	0.04*	0.03*	0.22*	0.06*							
(6)Dedicated Institutions	0.09*	0.08*	0.22*	0.13*	0.36*						
(7)Transient Institutions	-0.05*	-0.05*	-0.11*	0.03*	0.48*	-0.15*					
(8)Opportunistic Insiders	-0.01*	-0.01*	0.10*	0.02*	0.10*	0.02*	0.09*				
(9)Analyst Dispersion	0.03*	0.01*	0.20*	0.15*	0.08*	-0.06*	0.11*	0.08*			
(10)Guidance	0.09*	0.07*	0.14*	0.06*	0.12*	-0.02*	0.09*	0.14*	0.04*		
(11)Disclosure/Compliance Committee	0.04*	0.02*	0.08*	0.03*	0.04*	0.05*	0.01	0.00	0.01*	0.02*	
(12)Blackout Period	0.05*	0.04*	0.07*	0.01*	0.08*	0.02*	0.02*	0.03*	0.00	0.04*	0.01*

Panel C: The Number of Unique Firms by Quiet Measures in Each Sample Year

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Quiet Period	251	272	301	320	340	353	360	367	373	383	409	406
2	Quiet Score - 1	48	47	48	51	50	51	51	56	56	55	58	56
3	Quiet Score - 2	128	145	163	182	192	203	209	208	216	214	217	210
4	Quiet Score - 3	19	21	23	20	20	20	19	19	16	18	28	27
5	Quiet Score - 4	16	21	20	21	25	22	24	21	22	22	32	34
6	Quiet Score - 5	26	25	27	26	34	32	33	38	36	42	39	40
7	Quiet Score - 6	29	24	28	30	37	38	34	38	40	40	44	49
8	Quiet Score - 7	3	3	4	4	3	3	3	5	5	8	11	14
9	Quiet Score - 8	4	5	4	6	6	7	6	8	11	13	10	11
10	Quiet Score - 9	1	1	3	4	3	4	6	7	7	11	8	10
11	Quiet Score - 10	1	1	1	1	2	3	3	4	4	5	6	4
12	Formality - Informal Media (1)	56	54	56	59	58	60	59	62	64	66	86	83
13	Formality - Informal Conference (2)	132	149	169	189	199	209	214	215	220	214	210	205
14	Formality - Formal Policy (3)	66	70	76	75	83	87	89	92	95	104	113	118
15	Scope - No Comment (0)	228	248	273	292	311	321	327	333	338	342	363	358
16	Scope - 1 Restriction (1)	17	17	17	17	16	19	19	18	16	19	23	22
17	Scope - 2 Restrictions (2)	0	1	2	1	3	3	2	2	3	5	6	7

18	Scope - 3 Restrictions (3)	1	1	2	2	2	3	3	3	3	3	3	3
19	Scope - Radio Silence (4)	5	6	7	8	8	9	11	11	14	15	14	16
20	Quiet Days - Q1 (1)	23	25	26	27	29	28	27	26	33	36	47	46
21	Quiet Days - Q2 (2)	31	31	33	32	40	40	43	47	48	56	60	70
22	Quiet Days - Q3 (3)	29	27	31	34	43	42	39	47	44	52	62	64

Panel D: Descriptive Statistics for Consequences Sample (2010-2021)

Sample Period	2010-2015			2016-2021		
Variable	N	Mean	SD	N	Mean	SD
Quiet Period	41,897	0.156	0.363	36,167	0.226	0.418
Quiet Score	41,897	0.425	1.196	36,167	0.658	1.531
CAR	41,897	-0.001	0.086	36,167	-0.001	0.095
UE	41,897	0	0.073	36,167	0.001	0.09
Firm Size	41,897	7.373	1.69	36,167	7.939	1.744
Litigation	41,897	0.008	0.006	36,167	0.01	0.008
Institution Ownership	41,897	0.723	0.28	36,167	0.793	0.23
Dedicated Institutions	41,897	0.04	0.061	36,167	0.192	0.105
Transient Institutions	41,897	0.162	0.102	36,167	0.123	0.084
Opportunistic Insiders	41,897	0.433	0.606	36,167	0.426	0.599
Analyst Dispersion	41,897	2.61	4.206	36,167	1.84	3.729
Guidance	41,897	1.291	0.613	36,167	1.279	0.605
Disclosure/Compliance Committee	41,897	0.04	0.196	36,167	0.056	0.231
Blackout Period	41,897	0.953	0.212	36,167	0.953	0.211
Return Volatility	41,897	0.02	0.011	36,167	0.023	0.014
Earnings Volatility	41,897	0.095	0.476	36,167	0.11	0.639
Price	41,897	35.861	42.23	36,167	63.668	103.62
Turnover	41,897	0.01	0.009	36,167	0.011	0.013
Effective Bid-Ask Spread	41,313	0.002	0.004	35,447	0.002	0.003
Price Impact	41,313	0.001	0.002	35,447	0.001	0.002
Realized Bid-Ask Spread	41,313	0.001	0.003	35,447	0.001	0.002
Abnormal Log Option Volume	31,062	0.1	0.657	31,989	0.036	0.617
Abnormal OS	31,062	3.82	19.795	31,989	3.76	17.835
Consensus FE	41,503	0.005	0.016	35,938	0.006	0.02
N EPS F	41,897	2.25	0.707	36,167	2.26	0.704
Consensus FE (Crowdsourced)	10,500	0.004	0.034	28,468	0.008	0.069
N EPS F (Crowdsourced)	10,500	2.285	0.779	28465	2.59	0.831
N Bundled Guidance	41,897	1.148	0.573	36,167	1.189	0.588
N Bundled EPS Guidance	41,897	0.432	0.446	36,167	0.392	0.435
Bundled EPS Point Guidance	41,897	0.517	0.5	36,167	0.474	0.499
UE (Analyst)	41,503	0	0.013	35,938	0.001	0.017

Table 2 Determinants of Quiet Periods

This table reports results from time-dependent Cox regressions of quiet period measures on firm-level determinants (Columns 1 and 2) and Fama-Macbeth regressions after Newey-West adjustments for autocorrelation up to 8 lags (Columns 3 and 4). The unit observation is firm-quarter. *Quiet Period* is an indicator that is equal to one if a firm imposes a quiet period for a particular quarter. *Quiet Score* is a numeric score ranging from 0 to 10, which is constructed by adding up scores from formality (1-3), the scope of restrictions (1-4), and the number of days between the commencement and end of quiet periods each quarter (1-3). All determinant variables are scaled to have a mean of zero and a standard deviation of one and lagged. The t-values in parentheses are based on two-tailed tests of significance. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. For Cox regressions, standard errors are clustered by industry. All variable definitions are in Appendix C.

Dependent Variable:	Quiet Period	Quiet Period	Quiet Period	Quiet Score
	Cox Hazard		Fama-Macbeth	
Model:	(1)	(2)	(3)	(4)
Firm Size	0.48***	0.50***	0.051***	0.136***
	(0.04)	(0.04)	(49.539)	(32.186)
Litigation	0.14***	0.14***	5.667***	16.044***
	(0.02)	(0.02)	(17.798)	(14.343)
Institution Ownership	0.01			
	(0.05)			
Dedicated Institutions		−0.17***	−0.129***	−0.379***
		(0.06)	(−4.185)	(−4.598)
Transient Institutions		0.08**	−0.07**	−0.353***
		(0.04)	(−2.387)	(−4.376)
Analyst Dispersion	−0.00	−0.01	−0.001*	−0.007***
	(0.03)	(0.03)	(−1.985)	(−4.503)
Guidance	0.30***	0.29***	0.036***	0.116***
	(0.04)	(0.04)	(13.073)	(14.519)
Opportunistic Insiders	−0.07**	−0.07**	−0.026***	−0.075***
	(0.03)	(0.03)	(−5.915)	(−6.845)
Disclosure/Compliance Committee	0.03	0.04	0.027**	−0.013
	(0.02)	(0.02)	(2.062)	(−0.275)
Blackout Period	0.08**	0.07**	0.073***	0.201***
	(0.03)	(0.03)	(5.663)	(3.415)
Observations	77,117	77,117	77,117	77,117
R^2	0.08	0.09	0.091	0.059

Table 3 Consequences of Quiet Periods – Earnings Response Coefficients

Panel A reports results for ERCs using unmatched samples. Columns (1) to (2) include firm-quarter observations within the sample period of 2010-2015, whereas Columns (3) to (4) span the years between 2016 and 2021. The unit observation is firm-quarter. *Quiet Period* is an indicator that is equal to one if a firm imposes a quiet period for a particular quarter. *Quiet Score* is a numeric score, constructed by adding up scores from formality, the scope of restrictions, and the length. *CAR[0,2]* is cumulative three-day returns around earnings announcements estimated using the 5-factor model. *UE* is standardized unexpected earnings defined based on a rolling seasonal random walk model. The t-values in parentheses are based on two-tailed tests of significance. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are clustered by industry and year-quarter. All variable definitions are in Appendix C.

Panel A: Earnings Response Coefficients (Unmatched Sample)

Dependent Variable:	CAR[0,2]			
	Sample Period 2010-2015		Sample Period 2016-2021	
	Unmatched Sample			
Model:	(1)	(2)	(3)	(4)
Quiet Period	0.000		-0.001	
	(0.204)		(-0.661)	
Quiet Period × UE	0.001		0.021	
	(0.038)		(1.275)	
Quiet Score		-0.000		-0.000
		(-1.174)		(-0.557)
Quiet Score × UE		0.002		0.021***
		(0.238)		(3.676)
UE	0.067***	0.067***	0.064***	0.058***
	(6.072)	(5.717)	(4.679)	(4.116)
Firm Size	-0.001	-0.000	-0.001	-0.001
	(-1.150)	(-1.030)	(-0.809)	(-0.859)
Litigation	0.098	0.106	0.007	0.010
	(0.760)	(0.825)	(0.051)	(0.071)
Dedicated Institutions	0.016	0.016	0.011	0.012
	(1.638)	(1.627)	(1.407)	(1.409)
Transient Institutions	0.018***	0.018***	0.010	0.010
	(3.126)	(3.139)	(1.259)	(1.233)
Opportunistic Insiders	0.000	0.000	-0.001	-0.001
	(0.359)	(0.274)	(-0.753)	(-0.743)
Analyst Dispersion	0.000	0.000	0.000**	0.000**
	(0.228)	(0.173)	(2.406)	(2.396)
N Guidance	0.002*	0.002*	0.001	0.001
	(1.739)	(1.768)	(1.141)	(1.153)
Disclosure/Compliance Committee	-0.003	-0.003	-0.003	-0.002
	(-1.166)	(-1.135)	(-0.959)	(-0.958)
Blackout Policy	0.002	0.002	-0.005*	-0.005*
	(0.846)	(0.838)	(-1.813)	(-1.794)
Return Volatility	-0.188*	-0.189*	-0.078	-0.078
	(-1.849)	(-1.855)	(-0.781)	(-0.780)
Earnings Volatility	-0.002*	-0.002*	-0.001*	-0.001
	(-1.760)	(-1.765)	(-1.767)	(-1.582)
Industry FE	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
Observations	41,897	41,897	36,167	36,167
Adjusted R^2	0.006	0.006	0.008	0.008
Diff in Coefficients P-value (two-tail)			0.471	0.051

Table 3 Consequences of Quiet Periods – Earnings Response Coefficients (Cont')

Panel B reports results for ERCs using matched samples. For the CEM sample (Columns 1 to 2), for each calendar year-quarter, a quiet period firm is matched with a non-quiet period firm based on *Firm Size* (quintiles), *Dedicated Institutions* (tercile), *Guidance* (quartile), and *Opportunistic Insiders* (quartile), and each observation is weighted assuming the average treatment effect on the treated. Entropy balanced sample (Columns 3 to 4) weights each observation such that post-weighting distributional properties of quiet period firms and non-quiet period firms are identical. For the PSM sample (Columns 5 to 6), within each calendar year-quarter, a quiet period firm is matched with a non-quiet period firm that has the closest propensity score within a caliper distance of 0.05 with replacement.

Panel B: Earnings Response Coefficients (Matched Sample)

Dependent Variable:	CAR[0,2]					
	Sample Period 2016-2021					
	CEM Sample		Entropy Sample		PSM Sample	
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Quiet Period	-0.001		-0.000		-0.000	
	(-0.543)		(-0.103)		(-0.197)	
Quiet Period × UE	0.033		0.025		0.009	
	(1.421)		(1.486)		(0.420)	
Quiet Score		-0.000		-0.000		-0.000
		(-0.462)		(-0.185)		(-0.329)
Quiet Score × UE		0.025***		0.023***		0.023***
		(3.579)		(3.656)		(2.983)
UE	0.052***	0.045**	0.061***	0.053***	0.078***	0.053**
	(3.055)	(2.670)	(3.615)	(3.061)	(3.253)	(2.426)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,167	33,167	36,167	36,167	15,780	15,780
Adjusted R^2	0.007	0.008	0.008	0.009	0.011	0.012

Table 4 Consequences of Quiet Periods – Earnings Response Coefficients by Quiet Score

Panel A (Panel B) reports results for ERCs by *Quiet Score* (each of three dimensions of *Quiet Score*) using the CEM sample. The unit observation is firm-quarter and the sample period is 2016-2021. *Quiet Score* is a numeric score, constructed by adding up scores from formality, the scope of restrictions, and the length. *CAR[0,2]* is cumulative three-day returns around earnings announcements estimated using the 5-factor model. *UE* is standardized unexpected earnings defined based on a rolling seasonal random walk model. The t-values in parentheses are based on two-tailed tests of significance. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are clustered by industry and year-quarter. All variable definitions are in Appendix C.

Panel A: Earnings Response Coefficients By Quiet Score

Dependent Variable:	CAR[0,2]				
	Sample Period 2016-2021 & CEM Weighted Sample				
Quiet Score	≥1	≥2	≥3	≥4	≥7
Model:	(1)	(2)	(3)	(4)	(5)
Quiet Score ≥ d	-0.001	-0.000	0.001	-0.001	-0.005
	(-0.543)	(-0.353)	(0.387)	(-0.308)	(-1.082)
Quiet Score ≥ d × UE	0.033	0.061**	0.178***	0.218***	0.236**
	(1.421)	(2.359)	(7.303)	(7.127)	(2.741)
UE	0.052***	0.048***	0.052***	0.052***	0.058***
	(3.055)	(2.850)	(3.174)	(3.229)	(3.712)
Controls, Industry & Year-Quarter FE	Yes	Yes	Yes	Yes	Yes
Observations	33,167	33,167	33,167	33,167	33,167
Adjusted R^2	0.007	0.008	0.008	0.008	0.008

Panel B: Earnings Response Coefficients By Quiet Dimension

Dependent Variable:	CAR[0,2]										
	Sample Period 2016-2021 & CEM Weighted Sample										
Quiet Dimension	Formality			Scope					Quiet Days		
	≥1	≥2	≥3	No Comment	≥1	≥2	≥3	Radio Silence	≥1	≥2	≥3
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Quiet Dimension ≥ d	-0.001	-0.000	0.001	-0.001	0.000	-0.003	-0.005	-0.008	-0.001	-0.001	0.002
	(-0.543)	(-0.250)	(0.289)	(-0.737)	(0.116)	(-0.664)	(-0.855)	(-1.449)	(-0.564)	(-0.461)	(0.748)
Quiet Dimension ≥ d × UE	0.033	0.061**	0.185***	0.021	0.233***	0.223**	0.158***	0.149***	0.208***	0.207***	0.111
	(1.421)	(2.373)	(7.752)	(0.977)	(5.004)	(2.531)	(3.220)	(3.270)	(4.844)	(5.066)	(1.441)
UE	0.052***	0.048***	0.052***	0.055***	0.058***	0.059***	0.059***	0.059***	0.053***	0.053***	0.059***
	(3.055)	(2.845)	(3.186)	(3.300)	(3.635)	(3.714)	(3.740)	(3.738)	(3.291)	(3.326)	(3.739)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,167	33,167	33,167	33,167	33,167	33,167	33,167	33,167	33,167	33,167	33,167
Adjusted R^2	0.007	0.008	0.008	0.007	0.008	0.008	0.007	0.007	0.008	0.008	0.007

Table 5 Consequences of Quiet Periods - Unbiasedness Regressions R^2

This table reports the change in R^2 (ΔR^2) and excess ΔR^2 around earnings announcements. R^2 is estimated from the following regression:

$$Ret[-21,2]_{i,q,t}=\alpha_t+\beta_t Ret[-21,t]_{i,q,t}+\epsilon_{i,q,t},$$

where i indexes firm, q quarter, and t day. $Ret[-21,t]_{i,q,t}$ is cumulative returns over the window [-21, t] calculated using the log price, where t is in event time relative to firm i's earnings announcement q. The dependent variables are the returns from 21 days prior to 2 days after the earnings announcement, and the independent variables are the returns of the partial announcement window from 21 days prior to the announcement to t. Quiet period firms are matched with firms without quiet periods using CEM, and the latter is weighted by ATT. Figure 4 provides visualizations of daily R^2. In Column (3), ΔR^2 is defined as the change in R^2 over the event window defined in Column (2). In Column (4), Excess ΔR^2 is defined as $\frac{24}{K}\Delta R^2 - 1$, where K is the length of the event window. Excess ΔR^2 is calculated under the assumption of a constant information flow (iid-return): a positive (negative) value indicates a rate of information flow faster (slower) than the constant information flow. In Columns (5) and (6), differences in either ΔR^2 or Excess ΔR^2 are computed using *Quiet Period = No* as a baseline. In Column (7), p-values are derived from 5,000 bootstrap samples that randomly select observations with replacement within each stratum constructed from the CEM. For the CEM sample construction, see Table 3 description.

	(1) Sample	(2) Window	(3) ΔR^2	(4) $Excess\Delta R^2$	(5) Diff in ΔR^2	(6) Diff in $Excess\Delta R^2$	(7) p-value
1	Quiet Period = No	t = 0	0.33	6.97			
2	Quiet Period = Yes	t = 0	0.36	7.65	0.03	0.68	0.04
3	Quiet Score >= 2	t = 0	0.37	7.83	0.04	0.86	0.01
4	Quiet Score >= 4	t = 0	0.41	8.83	0.08	1.86	0.00
5	Quiet Score >= 6	t = 0	0.40	8.62	0.07	1.65	0.00
6	Quiet Period = No	t = [0,2]	0.43	2.44			
7	Quiet Period = Yes	t = [0,2]	0.46	2.67	0.03	0.23	0.05
8	Quiet Score >= 2	t = [0,2]	0.47	2.75	0.04	0.30	0.01
9	Quiet Score >= 4	t = [0,2]	0.52	3.14	0.09	0.70	0.00
10	Quiet Score >= 6	t = [0,2]	0.50	3.02	0.07	0.58	0.00
11	Quiet Period = No	t = [-5,-1]	0.16	-0.25			
12	Quiet Period = Yes	t = [-5,-1]	0.15	-0.30	-0.01	-0.05	0.31
13	Quiet Score >= 2	t = [-5,-1]	0.14	-0.31	-0.01	-0.06	0.22
14	Quiet Score >= 4	t = [-5,-1]	0.13	-0.37	-0.02	-0.12	0.05
15	Quiet Score >= 6	t = [-5,-1]	0.15	-0.26	-0.00	-0.01	0.91
16	Quiet Period = No	t = [-10,-1]	0.28	-0.32			
17	Quiet Period = Yes	t = [-10,-1]	0.26	-0.37	-0.02	-0.06	0.11
18	Quiet Score >= 2	t = [-10,-1]	0.25	-0.41	-0.04	-0.09	0.01
19	Quiet Score >= 4	t = [-10,-1]	0.24	-0.43	-0.05	-0.12	0.00
20	Quiet Score >= 6	t = [-10,-1]	0.27	-0.34	-0.01	-0.02	0.62
21	Quiet Period = No	t = [-15,-1]	0.41	-0.34			
22	Quiet Period = Yes	t = [-15,-1]	0.38	-0.39	-0.03	-0.05	0.05
23	Quiet Score >= 2	t = [-15,-1]	0.37	-0.40	-0.04	-0.06	0.02
24	Quiet Score >= 4	t = [-15,-1]	0.34	-0.46	-0.07	-0.12	0.00
25	Quiet Score >= 6	t = [-15,-1]	0.37	-0.40	-0.04	-0.06	0.06
26	Quiet Period = No	t = [-20,-1]	0.57	-0.32			
27	Quiet Period = Yes	t = [-20,-1]	0.54	-0.35	-0.03	-0.03	0.05
28	Quiet Score >= 2	t = [-20,-1]	0.53	-0.36	-0.04	-0.05	0.01
29	Quiet Score >= 4	t = [-20,-1]	0.48	-0.42	-0.09	-0.11	0.00
30	Quiet Score >= 6	t = [-20,-1]	0.50	-0.40	-0.07	-0.09	0.00

Table 6 Consequences of Quiet Periods – Stacked Regression

This table reports results for ERCs using a stacked regression design. The unit observation is cohort-firm-quarter. To construct the CEM stacked sample, for each quarter, I form a cohort that consists of firms that have adopted quiet period for the first time in that calendar quarter and matched non-quiet period firms that have never adopted quiet period (Columns 1 and 2) or quiet period firms that either adopted long before three years around the fiscal quarter of interest or have never adopted quiet periods (Columns 3 and 4) using the CEM. The treatment group is restricted to firms that implement quiet periods for the first time after 2016, and three years surrounding each cohort are stacked. *Quiet Period* is an indicator that is equal to one if a firm imposes a quiet period for a particular quarter. *Quiet Score* is a numeric score, constructed by adding up scores from formality, the scope of restrictions, and the length. *CAR[0,2]* is cumulative three-day returns around earnings announcements estimated using the 5-factor model. *UE* is standardized unexpected earnings defined based on a rolling seasonal random walk model. The t-values in parentheses are based on two-tailed tests of significance. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are clustered by industry and year-quarter. All variable definitions are in Appendix C.

Dependent Variable:	CAR[0,2]			
	CEM Stacked Sample			
Model:	(1)	(2)	(3)	(4)
Quiet Period	-0.004		-0.003	
	(-0.889)		(-0.637)	
Quiet Period × UE	0.251***		0.016	
	(3.921)		(0.498)	
Quiet Score		-0.001		-0.001
		(-0.630)		(-0.972)
Quiet Score × UE		0.071***		0.020**
		(4.433)		(2.481)
UE	0.049**	0.050**	0.092***	0.083***
	(2.638)	(2.659)	(5.537)	(4.429)
Controls	Yes	Yes	Yes	Yes
Cohort-Firm FE	Yes	Yes	Yes	Yes
Cohort-Year-Quarter FE	Yes	Yes	Yes	Yes
Observations	25,459	25,459	28,407	28,407
Adjusted R^2	0.036	0.036	0.032	0.033

Table 7 Pre-Earning Announcement Period Information Asymmetry

This table reports the regressions of pre-earnings announcement period information asymmetry on quiet period indicators or quiet period scores. The unit observation is a cohort-firm-quarter of the CEM stacked sample (for the sample construction, see Table 6 description). *Effective Bid-Ask Spread* is the average of daily dollar value-weighted percent effective spread during the window that begins 21 trading days before earnings announcements through a day before the announcement. *Price Impact* is the average of daily dollar value-weighted percent price impact during the window that begins 21 trading days before earnings announcements through a day before the announcement. *Realized Bid-Ask Spread* is the average of the daily dollar value-weighted percent realized spread during the window that begins 21 trading days before earnings announcements through a day before the announcement. Dependent variables are multiplied by 100. *Quiet Period* is an indicator that is equal to one if a firm imposes a quiet period for a particular quarter. *Quiet Score* is a numeric score, constructed by adding up scores from formality, the scope of restrictions, and the length. The t-values in parentheses are based on two-tailed tests of significance. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are clustered by industry and year-quarter. All variable definitions are in Appendix C.

Dependent Variables:	Effective Bid-Ask Spread		Price Impact		Realized Bid-Ask Spread	
			CEM Stacked Sample			
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Quiet Period	-0.019***		-0.007*		-0.011**	
	(-2.759)		(-1.772)		(-2.250)	
Quiet Score		-0.004**		-0.001		-0.003**
		(-2.348)		(-1.336)		(-2.712)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Cohort-Firm	Yes	Yes	Yes	Yes	Yes	Yes
Cohort-Year-Quarter	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,094	28,094	28,094	28,094	28,094	28,094
Adjusted R^2	0.767	0.767	0.692	0.692	0.636	0.636

Table 8 Alternative Explanations

This table reports the results of the regressions of bundled disclosure measures (Panel A), estimated ERCs after controlling for spillover effects (Panel B), analysts' or investors' forecasting behavior (Panel C), or abnormal option trading volume and multimarket information asymmetry measure (Panel D) on quiet period indicators or quiet period scores. The unit observation is a cohort-firm-quarter of the CEM stacked sample (for the sample construction, see Table 6 description). *Quiet Period* is an indicator that is equal to one if a firm imposes a quiet period for a particular quarter. *Quiet Score* is a numeric score, constructed by adding up scores from formality, the scope of restrictions, and the length. In Panel B, $\overline{Quiet\ Period}^c$ is the average *Quiet Period* or *Quiet Score* of all other firms in the same cohort, excluding firm i itself. The t-values in parentheses are based on two-tailed tests of significance. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are clustered by industry and year-quarter. All variable definitions are in Appendix C.

Panel A. Bundled Disclosures

Dependent Variables:	N Bundled Guidance		N Bundled EPS Guidance		Bundled EPS Point Guidance		N Bundled 8-K	
	CEM Stacked Sample							
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables								
Quiet Period	-0.003		-0.005		-0.011		-0.007	
	(-0.201)		(-0.242)		(-0.644)		(-0.512)	
Quiet Score		0.005		-0.001		-0.002		0.003
		(1.392)		(-0.132)		(-0.284)		(0.625)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort-Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort-Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,407	28,407	28,407	28,407	28,407	28,407	28,407	28,407
Adjusted R^2	0.874	0.874	0.794	0.794	0.791	0.791	0.224	0.224

Panel B. Controlling for Spillover Effects

Dependent Variable:	CAR[0,2]		
	CEM Stacked Sample		
Model:	(1)	(2)	(3)
Quiet Period	-0.003	-0.001	
	(-0.637)	(-0.247)	
Quiet Period × UE	0.016	0.014	
	(0.498)	(0.449)	
$\overline{QuietPeriod^c}$		0.191*	
		(1.795)	
$\overline{QuietPeriod^c}$ × UE		0.095	
		(0.910)	
Quiet Score			-0.001
			(-0.624)
Quiet Score × UE			0.019**
			(2.644)
$\overline{QuietScore^c}$			0.056*
			(1.715)
$\overline{QuietScore^c}$ × UE			0.019
			(0.496)
UE	0.092***	0.079***	0.075***
	(5.537)	(2.999)	(2.733)
Controls	Yes	Yes	Yes
Cohort-Firm & Cohort-Year-Quarter FE	Yes	Yes	Yes
Observations	28,407	28,407	28,407
Adjusted R^2	0.032	0.032	0.033

Table 8 Alternative Explanations (Cont')

Panel C. Analysts or Investors' Forecasting Activities

Dependent Variables:	Consensus FE		N EPS F		Consensus FE (Crowdsourced)		N EPS F (Crowdsourced)	
			CEM Stacked Sample					
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Quiet Period	-0.000		0.020		-0.001		-0.012	
	(-0.472)		(0.713)		(-1.041)		(-0.167)	
Quiet Score		0.000		0.004		-0.000		0.004
		(0.158)		(0.642)		(-0.090)		(0.234)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort-Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort-Year-Quarter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,160	28,160	28,407	28,407	21,141	21,141	21,140	21,140
Adjusted R^2	0.370	0.370	0.940	0.940	0.306	0.306	0.861	0.861

Panel D. Option Markets

Dependent Variables:	Abnormal Log Option Volume		Abnormal O/S	
	CEM Stacked Sample			
Model:	(3)	(4)	(5)	(6)
Quiet Period	-0.007		-0.678	
	(-0.198)		(-1.184)	
Quiet Score		-0.009		-0.025
		(-0.931)		(-0.151)
Controls	Yes	Yes	Yes	Yes
Cohort-Firm	Yes	Yes	Yes	Yes
Cohort-Year-Quarter	Yes	Yes	Yes	Yes
Observations	23,487	23,487	23,487	23,487
Adjusted R^2	0.088	0.088	0.082	0.082

Table 9 Sensitivity Analyses

This table reports the results of ERCs using Lewbel (2012) instrumental variable approach (Panel A) and using alternative measures of unexpected earnings (Panel B). In Panel A, I estimate the system of structural equations with the first-stage specification for quiet period measures and the second-stage specification for ERCs:

$$Quiet\ Period\ or\ Score_{it} = \sum_{k} \gamma_k X_{it} + u_{it} \tag{3}$$

$$CAR_{it} = \beta_1 Quiet\ Period\ or\ Score_{it} \times UE + \sum_{k} \beta_k X_{it} + \epsilon_{it} \tag{4}$$

In Panel B, unexpected earnings (*UE*) is defined as the difference between a firm's earnings per share and its latest consensus analyst forecast, which is scaled by its stock price two trading days before earnings announcements. The unit observation is a firm quarter within the sample period between 2016 and 2021. *Quiet Period* is an indicator that is equal to one if a firm imposes a quiet period for a particular quarter. *Quiet Score* is a numeric score, constructed by adding up scores from formality, the scope of restrictions, and the length. *CAR[0,2]* is cumulative three-day returns around earnings announcements estimated using the 5-factor model. The t-values in parentheses are based on two-tailed tests of significance. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are clustered by industry and year-quarter. All variable definitions are in Appendix C.

Panel A. Lewbel (2012) Instrumental Variable Approach

	CAR[0,2]	
	Sample Period 2016-2021	
	(1)	(2)
Quiet Period	0.01*	
	(0.00)	
Quiet Period × UE	0.02	
	(0.01)	
Quiet Score		0.00
		(0.00)
Quiet Score × UE		0.02***
		(0.00)
SUE	0.06***	0.06***
	(0.01)	(0.01)
Controls, Industry & Year-Quarter FE	Yes	Yes
Observations	36,167	36,167
Adjusted R^2	0.01	0.01

Panel B. Unexpected Earnings (UE) Measures Based on Consensus Analyst Forecast

Dependent Variable:	CAR[0,2]					
	Sample Period 2016-2021					
	CEM Sample		Entropy Sample		PSM Sample	
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Quiet Period	-0.001		-0.001		-0.001	
	(-0.853)		(-0.493)		(-0.383)	
Quiet Period × UE	0.159		0.230		0.131	
	(0.561)		(0.959)		(0.549)	
Quiet Score		-0.000		-0.000		-0.000
		(-1.076)		(-0.877)		(-1.038)
Quiet Score × UE		0.147*		0.165**		0.164***
		(1.963)		(2.649)		(5.295)
UE	0.910***	0.872***	0.841***	0.804***	0.941***	0.816***
	(4.558)	(4.690)	(4.145)	(4.123)	(4.340)	(4.258)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,982	32,982	35,938	35,938	15,716	15,716
Adjusted R^2	0.025	0.026	0.022	0.023	0.029	0.030

Internet Appendix

How Quiet Are Quiet Periods: Evidence from Pre-Earnings Announcement Quiet Periods

Contents

IA1 Scope of Restrictions – Regular Expressions and Examples

I extract 1000 words near quiet period keywords and apply the regular expressions to identify the scope of restrictions.

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1. No Comment on Financial Results

e.g., the Company will not comment on its earnings estimates or other prospective financial results for the period; the Company do not discuss guidance for the current quarter; the Company will refrain from answering questions or making other comments pertaining to its upcoming earnings results

"(no(t)?|n't).{1,30}(insider.*information|material.*information|guidance|discussion.*(forward|announcement|financial|outlook|earnings|quarter|result|guidance|projection|expectation|operation|estimate|performance|prospect|current)).{1,50}(communicat|provid|takeplace)|",
"(no(t)?|n't|neither.*nor*|avoid|abstain|refrain|restrict).{1,70}(one(\\-|\\s)?on(\\-|\\s)?one.{1,100}|meetings.{1,100}|telephone.{1,100}|media.{1,100})?(publish|update|comment(s)?|divulge|respond|discuss|disclose|communicat|answer|speakabout|provide|tak(e|ing).*questions).{1,70}(provide.{1,30}|respectto.{1,70})?(publicly|forward|announcement|financial|outlook|earnings|quarter|result|guidance|projection|expectation|operation|estimate|performance|prospect|current)|",
unable.{1,30}(publish|update|comment(s)?|divulge|respond|discuss|disclose|communicat|answer|speakabout|provide|tak(e|ing).*questions).{1,70}(respectto.{1,70})?(forward|announcement|financial|outlook|earnings|quarter|result|guidance|projection|expectation|operation|estimate|performance|prospect|current)|",
"(prohibit|abstain|refrain|prevent|refuse|avoid|restrict).{1,30}(provid|discus|disclos|dialogue|reply|respond|comment|answer).{1,70}(forward|announcement|financial|outlook|earnings|quarter|result|guidance|projection|operation|estimate|performance|prospect|current)|",
"(no(t)?|n't).{1,30}(references|comment).{1,50}(analysts.*preceding.{1,70})?(forward|announcement|financial|outlook|earnings|quarter|result|guidance|projection|expectation|operation|estimate|performance|prospect|current)|communication.{1,20}(analyst.{1,50}|investor.{1,50}|professional.{1,50}|media.{1,50}).{1,50}(limitedto).{1,20}(respond(ing)?to).{1,50}(publiclyavailable|nonmaterial)|",
"(disclosur|discuss).*(forward|announcement|financial|outlook|earnings|quarter|result|guidance|projection|expectation|operation|estimate|performance|prospect|current).*(restrict|limit)","limit.{1,50}(say|talk).{1,50}(forward|announcement|financial|outlook|earnings|quarter|result|guidance|projection|expectation|operation|estimate|performance|prospect|current)|",
"(we)?.{1,30}(currently.{1,20})?in.{1,30}(quietperiod|silentperiod|closedperiod)"

---

2. Conference Participation/ Presentation

e.g., the Company does not participate in conferences; the Company will not make presentations at analyst or investor conference

"(not|n't|neither.*nor*|avoid|abstain|refrain|restrict).{1,50}(atten|initiat|participat|make|takingpart).{1,50}(meetings.{1,20})?conference(s)?|",
"no.{1,100}conferences|limited.{1,30}attendance.{1,30}conferences|'',
''(atten|particip).{1,100}conference.{1,200}(prohibit|limit|restrict)"

---

3. One-on-one Meetings/Private Briefing/Site Visits

e.g., the Company will not initiate or participate in any meeting; the Company must avoid private briefings; On site meetings with third parties will not be conducted

"(not|n't|neither.*nor*|avoid|abstain|restrict).{1,50}(authorized.{1,80})?(schedule|hold|conduct|engage|initiat|participate|accept(ing)?|takingpart|discuss).{1,50}(oneonone|meeting(s)?|brief)|","(no(t)?|avoid).{1,100}((attendan.{1,50}|particip.{1,50})conferences.{1,50})?(one(\\-|\\s)?on(\\-|\\s)?one.{1,10})?(meetings)|","site(visit|meetings).{1,200}(not.{1,50}conduct|prohibit)",
"not.{1,50}(meet).{1,50}(market|participant|investor)|(no).{1,30}(investor|analyst).{1,30}(conduct)"

---

4. Telephone Contact

e.g., the Company will not be available to participate in phone calls

"(not|n't|neither.*nor*|avoid|abstain).{1,100}(available|conduct|initiat|participate|initiateorparticipate).{1,50}(meetings.{1,50})?(telephone|calls|(? <!i)phone)|","(no(t)?|avoid).{1,100}((attendan.{1,50}|particip.{1,50})conferences.{1,50})?(meetings.{1,50})?(telephone|calls|(? <!i)phone)"

---

5. Press/Interview

e.g., the Company does not initiate any meetings or telephone contacts with media

"(no(t)?|discourage|refrain|avoid|abstain).{1,50}(limitedexemptions.*communicate.*investor.{1,50}|meetings.{1,100}|telephone.{1,100})?(press(?=release)|(? <!im)media|interview)"

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6. Radio Silence

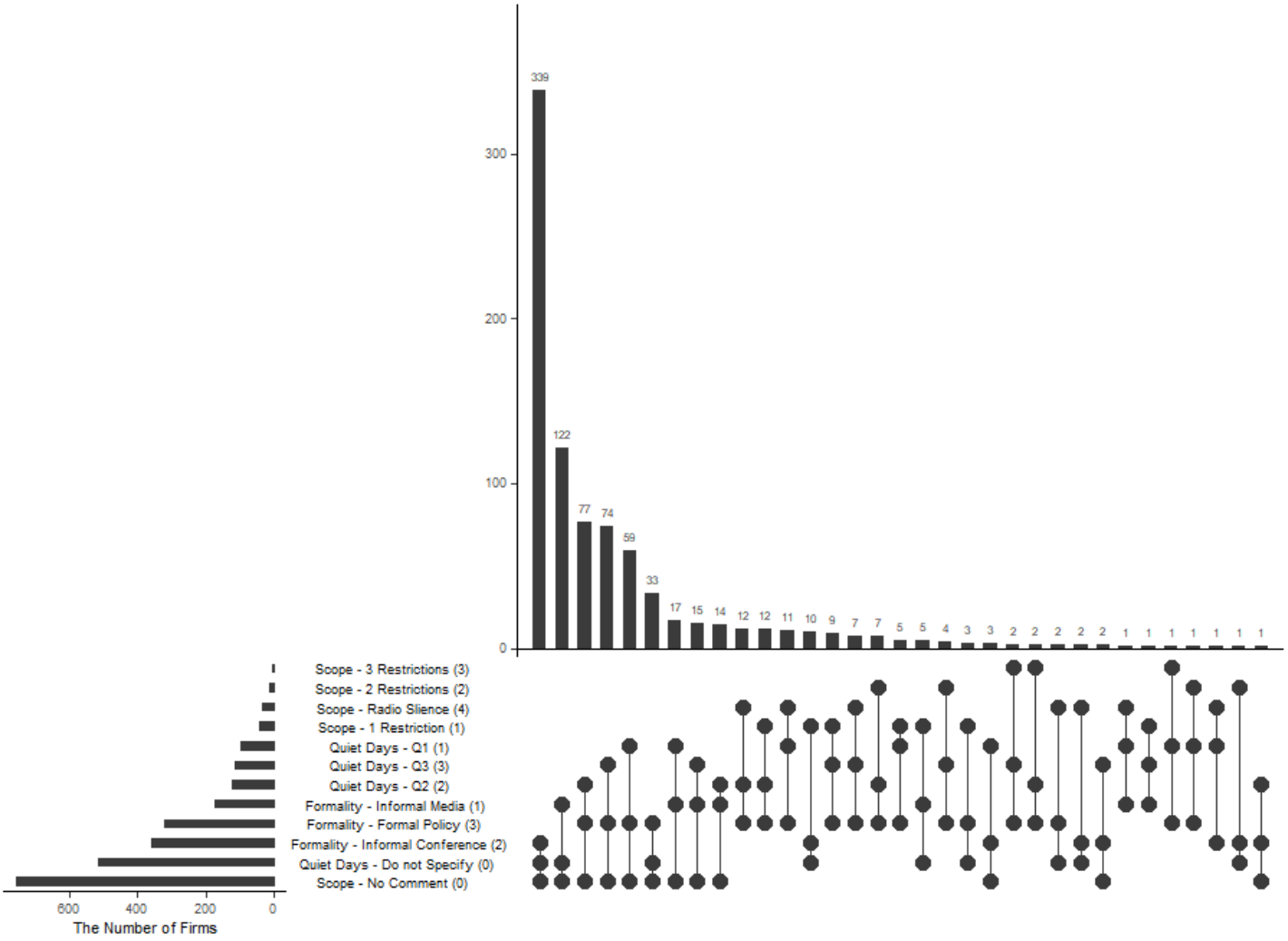
e.g., the Company will restrict access to senior executives; the company will not initiate or participate in any meetings or telephone contacts with analysts, investors or the media or provide guidance; communications with shareholders, investors, analysts, other securities market professionals, the media, and other members of the public shall be restricted; no formal or informal business discussion between the investment community and the Company

"nocontact(s)?with(analyst|investor)|",
"no.{1,10}(general|formal|informal|formalorinformal).{1,20}(discuss(ion)?)|avoiddiscussionswithanalysts|",
"no(t)?.{1,50}(engage|permit|meet|speak|interact).{1,35}(any.*communicat|(discussion.*)?investmentcommunity|participants)|",
"no(t)?.{1,50}(communicate).{1,35}(any.*(investor|participants|participant|professional|participants)|investmentcommunityinvestorsorthemedia)|",
"no(t)?.{1,50}(respond).{1,35}(anyinquiriesfrominvestors)|"communication(s)?with.{1,50}(analyst.{1,100}|investor.{1,100}|professional.{1,100}|media|member.{1,100}).{1,100}restricted|",
"access.{1,50}restrict|restrict.{1,50}(communication|access)|",

---

IA2 Decomposition of Quiet Score

This figure plots the frequency of possible combinations of scores in each dimension for quiet period firms with *Quiet Score* of 1 or higher. *Quiet Score* is constructed by adding up scores from formality (1-3), the scope of restrictions (1-4), and the number of days between the commencement and end of quiet periods each quarter (1-3). The numbers in parentheses indicate the score assigned to each dimension.



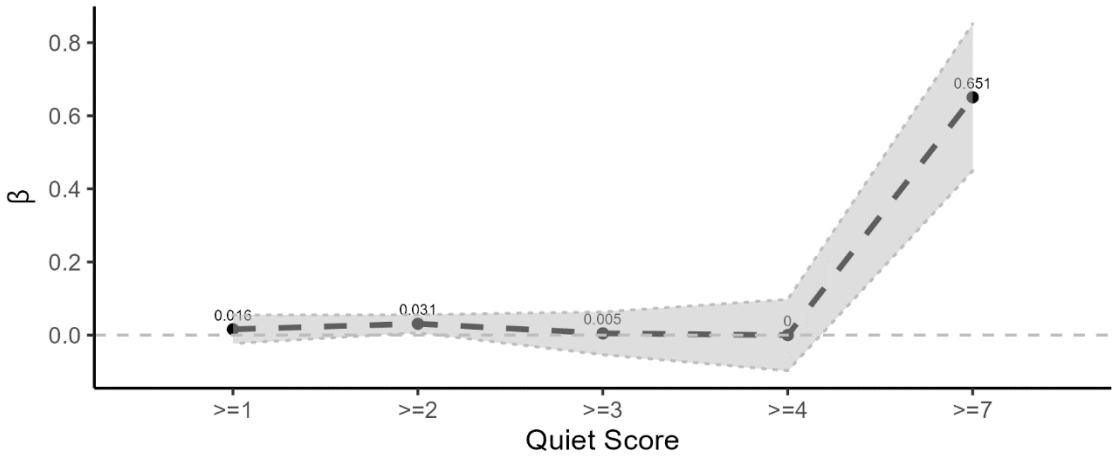
IA3 Earnings Response Coefficients by Quiet Score and Dimensions (Sample Period 2010-2015)

The figure in Panel A plots estimated coefficients (β) on the following regression:

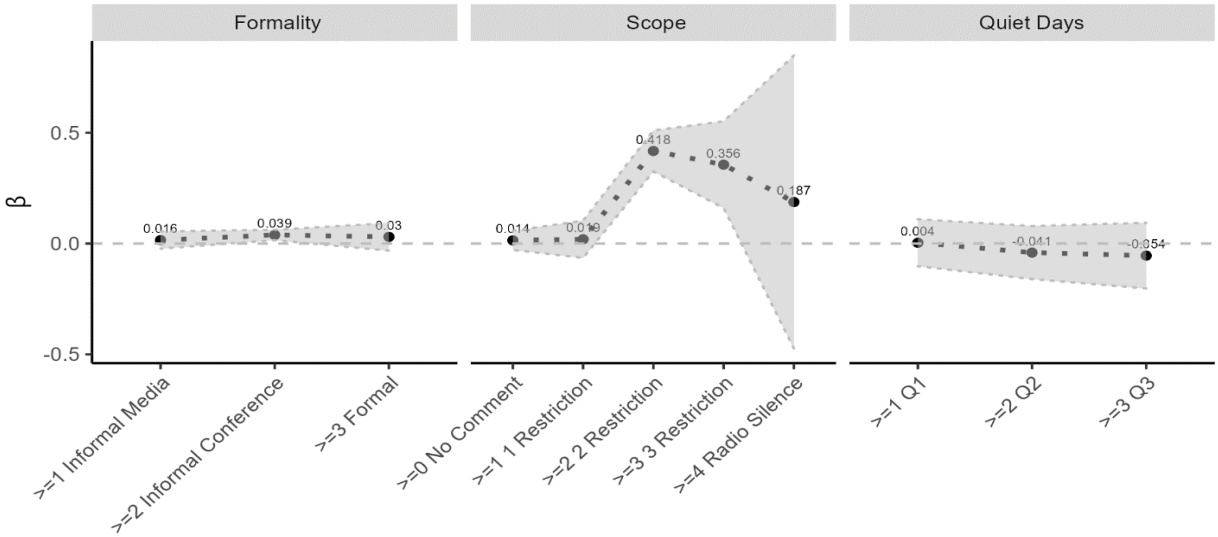
$$CAR\,[0,2] = \beta 1\,(Quiet\ Score \geq d) \times UE + Controls + \epsilon_{i,t}$$

, where $CAR[0,2]$is the cumulative five-factor abnormal earnings announcement date returns, UE is standardized unexpected earnings defined based on a rolling seasonal random walk model, and $1\,(Quiet\ Score \geq d)$ is an indicator that is equal to one if the firm's quiet score is of d or higher. The figure in Panel B estimates the same regression except that the test variable is replaced with scores in each dimension. Quiet period firms are matched with firms without quiet periods using CEM. The sample period is 2010-2015. The blue points indicate the estimates of , and grey dotted lines indicate its 90% confidence intervals.

Panel A: Estimated ERCs by Quiet Score



Panel B: Estimated ERCs by Quiet Dimensions



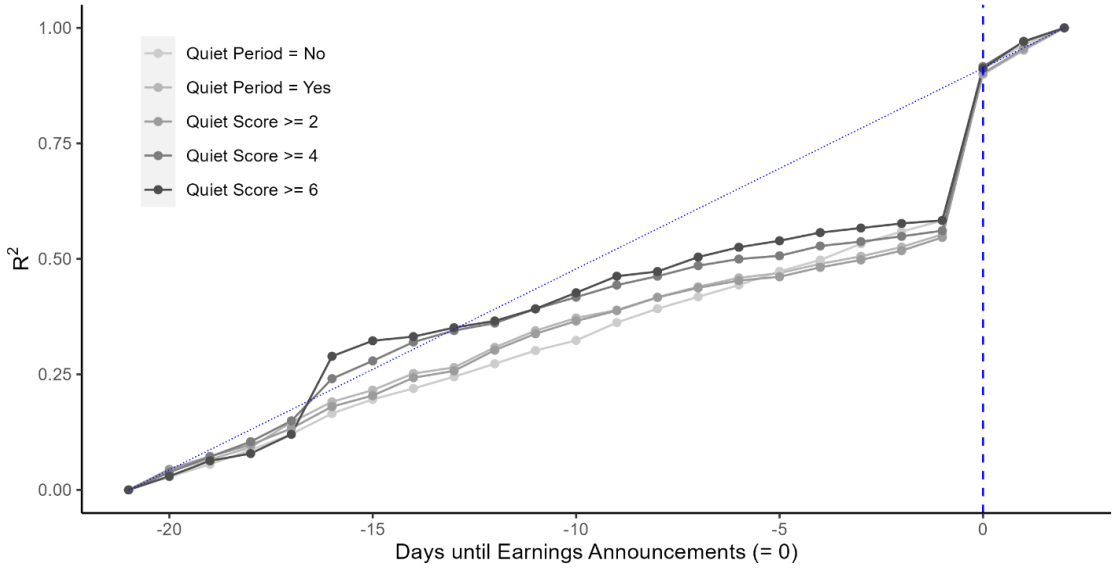
IA4. Price Discovery Pattern - Unbiasedness Regression R^2 (Sample Period 2010-2015)

The figure in Panel A plots ${R_t}^2$ estimated from the following regression at the firm-quarter-day-level:

$$Ret[-21,2]_{i,q,t}=\alpha_t+\beta_t Ret[-21,t]_{i,q,t}+\epsilon_{i,q,t},$$

where i indexes firm, q quarter, and t day. $Ret[-21,t]_{i,q,t}$ is cumulative returns over the window [-21, t] calculated using the log price, where t is in event time relative to firm i's earnings announcement q. The dependent variables are the returns from 21 days prior to 2 days after the earnings announcement, and the independent variables are the returns of the partial announcement window from 21 days prior to the announcement to t. Quiet period firms are matched with firms without quiet periods using CEM during the sample period from 2010 to 2015, with the latter group weighted by ATT. The dotted blue line assumes a linear increase in R^2 (iid-return). The figure in Panel B plots differences in ${R_t}^2$, multiplied by 100, during the pre-earnings announcement period, using Quiet Period = No as a baseline.

Panel A: R^2



Panel B: Differences in R^2 ("Quiet Period = No" Group as a Baseline)