The Lemons Market for Disclosure Redactions*

Albert Di Wang
The University of Texas at Austin
albert.di.wang@utexas.edu

Yong Yu
The University of Texas at Austin
yong.yu@mccombs.utexas.edu

* We appreciate the helpful comments and suggestions from Kristen Valentine, John McInnis, Volker Laux, Steven Kachelmeier, Shuping Chen, Matt Kubic, Brian Akins, Jeremiah Green, Christopher Yust, and Neil Bhattacharya, as well as conference and workshop participants at the 2025 Lone Star Accounting Conference, the 2024 McCombs PhD Conference, and the University of Texas at Austin.

The Lemons Market for Disclosure Redactions

Abstract

This paper investigates peer effects in corporate disclosure redactions, leveraging the 2019 FAST Act as an exogenous reduction in SEC oversight. While redactions increase across industries following the Act, firms respond differently within industries. Our Difference-in-Differences analysis reveals that firms with less proprietary information relative to their peers *increase* redactions, while those with more actually *reduce* their redactions. The increase is stronger among firms with greater bad news or lower litigation risk, while the decrease is more pronounced among firms with higher equity-raising needs or lower institutional ownership. Moreover, firms reducing redactions appear to do so in response to peers' increased redactions. These patterns suggest that reduced oversight fosters agency-driven redactions, which in turn crowd out proprietary-driven ones, exacerbating a lemons problem. As a result, firms—whether increasing or decreasing redactions—experience slower sales growth following the Act. Our findings highlight that policies like the FAST Act, intended to ease the burden of protecting proprietary information through reducing oversight, may paradoxically make it more difficult for firms with legitimate proprietary content to protect it.

1. INTRODUCTION

Proprietary information is essential to firms' competitive advantage and long-term growth. To protect this information, the U.S. Securities and Exchange Commission (SEC) allows firms to submit Confidential Treatment Requests (CTRs), which, upon approval, permit the redaction of sensitive details from material contract filings. While redacted content is obscured from investors (typically replaced with asterisks), it is reviewed and verified by the SEC. The CTR procedure, introduced in the SEC's first Staff Legal Bulletin in 1997, has since served as the key mechanism for protecting proprietary information, used by approximately one-third of public firms every year for over 25 years.

Existing literature has identified two primary motives for disclosure redactions: protecting proprietary information, as intended (e.g., Verrecchia and Weber, 2006; Boone et al., 2016), and concealing bad news for agency reasons (e.g., Bao et al., 2022; Thompson et al., 2023). However, prior research has focused on firm-level redaction decisions in isolation, overlooking potential strategic interactions among firms. In this study, we explore this new perspective by investigating peer effects in redaction behavior.

We propose that firms aiming to protect proprietary information become less likely to redact when their peers increase redactions for agency reasons (i.e., to conceal bad news). The rationale is straightforward: Because investors face difficulty distinguishing between firms redacting for legitimate proprietary purposes ("good" firms) and those redacting to hide bad news ("bad" firms), a "lemons problem" arises (Akerlof, 1970). As agency-related redactions become more prevalent, "good" firms are compelled to reduce their redactions (i.e., "exit the market") to avoid being panelized alongside "bad" firms. In extreme cases, agency-motivated redactions can

largely crowd out proprietary-motivated redactions, rendering the CTR procedure ineffective as a tool for protecting proprietary information.

We explore the Fixing America's Surface Transportation (FAST) Act as a setting.[1] Before the FAST Act, firms seeking redactions were required to file CTRs in which they demonstrate that redacted information is immaterial to investors and would cause competitive harm if disclosed. The CTR procedure was costly since it includes extensive justification and documentation, as well as multiple rounds of communication with the SEC to determine which contract details qualify for redaction. While not perfect, the SEC's review process helped ensure that redactions were justified by proprietary concerns and limited the potential for agency-related redactions (Thompson, 2022). However, the FAST Act, effective April 2019, eliminates the review process and allows firms to redact material contracts without filing CTRs. Additionally, the Supreme Court ruling in *Food Marketing Institute v. Argus Leader Media* in June 2019 further removed the "competitive harm" test, requiring only that redacted information be "customarily kept private".[2] Together, these changes significantly reduced oversight, lowering the barrier for opportunistic redactions.

While the FAST Act should lead to a general increase in redaction rates due to the reduced regulatory burden, we predict that there will be a significant rotation in redaction behavior within industries. Specifically, we hypothesize that firms with lower pre-Act redaction rates relative to their industry peers will *increase* redactions post-Act, taking advantage of the relaxed oversight to conceal bad news. Because pre-Act redactions were subject to stringent SEC review, they are more likely to reflect legitimate proprietary concerns. Firms that redacted less than their peers prior to the Act are therefore less likely to possess valuable proprietary information. Assuming bad news

[1] It is worth noting that, despite its name suggesting a focus on transportation, the disclosure redaction provisions of the FAST Act apply to all SEC reporting companies.
[2] Please refer to Table 1 for the details of relevant policy changes.

is randomly distributed across firms, these firms with lower pre-Act redaction rates are more likely to use redactions as a tool to hide bad news post-Act.

In contrast, we hypothesize that firms with higher pre-Act redaction rates relative to their peers will *reduce* redactions post-Act. These firms, whose pre-Act redactions have been reviewed and verified by the SEC, are likely to have legitimate proprietary concerns. However, the influx of agency-motivated redactions following the FAST Act undermines the credibility of all redactions, pressuring them to scale back redactions to avoid being mischaracterized as "bad" firms. But it is important to note that these firms also face greater incentives to use redactions to hide bad news or redact material proprietary information in the post-Act environment (Thompson et al., 2023). As such, our prediction of reducing redactions may not hold among these firms if the heightened motive to hide bad news or protect material proprietary information outweighs the disincentive to redact arising from the lemons problem.

We construct an eight-year sample surrounding the implementation of the FAST Act. The pre-event window includes the four years leading up to April 1, 2019—the day before the FAST Act took effect—while the post-event window spans the four years following June 25, 2019, when the Supreme Court ruling eliminated the "competitive harm" test. We web-scrape 277,186 material contracts from the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system, focusing on firms with material contracts in both the pre- and post-event periods. After aggregating the data at the firm-year level and merging with additional datasets to obtain firm and industry characteristics, our final sample consists of 12,130 firm-year observations from 1,874 unique firms.

Consistent with our expectations, the average redaction rate increases by 50%—rising from 8% to 12%—after the implementation of the FAST Act. This increase is observed uniformly across all types of material contracts. These findings support that on average the Act significantly lowered

the regulatory burden of disclosure redactions. But interestingly, while redaction rates also rise uniformly across industries, we observe sharp divergence in firm-level responses within industries. Specifically, the increase in redaction rates at the industry level shows no correlation with pre-FAST Act industry-level redaction rates. In contrast, at the firm level, the change in redaction rates is strongly negatively correlated with firms' pre-Act redaction levels. In other words, following the Act, firms that previously redacted heavily tend to reduce their redactions, while those that redacted little increase theirs—indicating a rotation in redaction behavior within industries.

To test whether the model-free evidence reflects opportunistic redactions crowding out proprietary-driven redactions, we exploit intra-industry variation to explore the divergent response in redaction behavior. Specifically, we classify firms into three groups based on their pre-Act redaction rates relative to industry peers, using the Text-based Network Industry Classification (TNIC) from Hoberg and Phillips (2010, 2016). Firms in the top three deciles are designated as the high-proprietary group, those in the bottom three deciles as the low-proprietary group, and those in the middle four deciles serve as the benchmark group. Descriptive statistics show that low-proprietary firms tend to have lower R&D intensity than high-proprietary ones, but two groups do not differ much in terms of industry concentration (HHI) or industry distribution, consistent with our intra-industry classification design.

Our main test compares changes in redaction rates for low- and high-proprietary firms (measured at the firm-year level) around the implementation of the FAST Act, relative to benchmark firms. To account for alternative motives causing redactions, we include variables for proprietary and agency costs, following prior literature. To allow for the possibility that the FAST Act alters the influence of these motives, we also interact all control variables with a post-Act indicator. Additionally, we include firm and year fixed effects to account for time-invariant firm

characteristics and common year trends. Our difference-in-differences (DiD) estimation strongly supports our hypotheses: Compared to benchmark firms, low-proprietary firms increase their redaction rates by 2.1 percentage points, while high-proprietary firms decrease theirs by 8.6 percentage points. These effects are economically meaningful, representing an 81% increase and a 38% decrease, respectively, relative to each group's pre-Act average.

We conduct a dynamic DiD estimation and confirm that parallel trends hold, indicating that the observed changes in redaction behavior are attributable to the FAST Act rather than pre-existing trends. To further validate our results, we implement two sets of placebo tests: one randomizes group assignment while keeping the actual event year, and the other uses placebo event years while fixing group assignment. Neither test undermines our findings. We also perform an extensive set of robustness checks that confirm our findings, including alternative dependent variables (e.g., redaction counts, binary indicators), different weighting methods and peer definitions, alternative sample filters and additional control variables, and various fixed effects and clustering specifications. Additional analyses on year-by-year redaction transitions and controlling for lagged redaction rates further rule out mean reversion of contracting behavior as an alternative story. Taken together, the evidence suggests that the FAST Act prompted firms with less proprietary information to increase redactions, while simultaneously pressuring firms with more proprietary information worth protecting to reduce redactions.

Cross-sectional tests provide corroborating evidence supporting our hypotheses. Among low-proprietary firms, redactions increase more when managers have more private bad news, suggesting they use redactions to conceal negative information, and increase less when litigation risk is higher, implying litigation deterrence curbs opportunistic redactions. Among high-proprietary firms, redactions decrease more when external financing needs are greater or

institutional ownership is lower. These results suggest that as the lemons problem imposes a higher cost on redaction after the Act, high-proprietary firms are more likely to cease redacting when the benefits of raising external funds are higher or continuing redaction would heighten investor concerns about their motives due to the lack of institutional monitoring.

To examine strategic interactions, we analyze how focal firms' redaction rates respond to rivals' changes. We find that low-proprietary firms' redaction rates show no significant relation with rivals' changes, while high-proprietary firms exhibit a significantly negative relation: As rivals increase redactions post-Act, high-proprietary firms reduce theirs. This substitution effect underscores strategic reductions in redactions by high-proprietary firms in response to competitors' increased redactions following the Act, providing further support for our hypotheses.

We further examine the consequences of redaction changes following the reduced SEC oversight. High-proprietary firms, forced to reduce redactions, sacrifice proprietary information, while low-proprietary firms exploit the relaxed oversight to hide bad news. Consistent with the idea that proprietary information supports firm growth (Boone et al., 2016) and that redacting bad news signals weaker prospects (Bao et al., 2022), we find that both groups experience a significant decline in sales growth, though we do not observe a corresponding decrease in profitability. Additionally, we assess whether firms adjust voluntary disclosures in response to redaction changes, as prior research suggests firms may use voluntary disclosures to mitigate redaction-induced transparency concerns (Barth et al., 2023; Heinle et al., 2023). However, we find no evidence of such remediation, which aligns with the notion that the ones hiding bad news have little incentive to address investor concerns, while the ones already giving out proprietary information cannot restore the protection by simply reducing voluntary disclosures.

Our study introduces a new dimension to the disclosure redaction practice and literature by demonstrating that disclosure redaction functions as a lemons market. First, we explore strategic interactions among firms rather than treating redaction decisions as isolated phenomena. Existing research primarily examines firm-specific motives for redactions, such as protecting proprietary information or concealing bad news (e.g., Verrecchia and Weber, 2006; Bao et al. 2022). By leveraging an exogenous regulatory shock, we illustrate how firms' redaction strategies are influenced by their rivals' behaviors. This perspective deepens our understanding of the competitive dynamics underlying redaction decisions.

Second, our study also adds to the emerging literature on peer effects in disclosures by documenting a negative peer effect in redaction decisions. While most prior studies document positive peer effects—where peer firms' disclosure behavior encourages focal firms to increase their own transparency (e.g., Seo, 2023; Truong, 2023)—our findings align with a smaller but growing body of work that identifies a negative peer effect characterized by a substitutive relationship. These studies show that firms reduce their own disclosure to save costs, benefiting from information spillovers generated by peer firms' disclosures (e.g., Baginski and Hinson, 2016; Capkun et al., 2022; Breuer et al., 2022; Valentine and Warren, 2024). We contribute by introducing a novel mechanism for this negative peer effect in redactions: Agency-related redactions can undermine the credibility of proprietary-related redactions, effectively crowding them out through the lemons problem.

Lastly, our study offers timely and important insights for regulators seeking to understand the broader economic implications of the FAST Act, disclosure redactions, and deregulations. As regulators aim to balance transparency with the protection of competitive advantages, our findings underscore the trade-offs associated with reducing oversight. The amplification of the lemons

problem following the Act shows how relaxed regulation can distort disclosure incentives, undermining the credibility of redactions, and eventually leading "good" firms to partially give up this tool of proprietary information protection. These unintended consequences highlight the need for carefully designed policies that deter opportunistic behavior while preserving the effectiveness of legitimate disclosure tools. Without recognizing the nature of the disclosure redaction market, policies like the FAST Act—intended to ease the burden of protecting proprietary information—may ultimately make it harder for firms to do so.

2. LITERATURE, BACKGROUND, AND HYPOTHESES

2.1 Literature Review

Prior research on disclosure redaction has primarily focused on its impact on firms' information environments and the economic determinants driving redaction decisions. Evidence shows that redactions in material contracts negatively affect firms' information environments. For example, Verrecchia and Weber (2006) demonstrate that such redactions increase the adverse selection component of the bid-ask spread, reduce market depth, and lower market turnover. Boone et al. (2016) find that redactions in IPO registration statements are associated with greater IPO underpricing. Heinle et al. (2023) further show that firms increase voluntary disclosures to counteract the adverse effects of redactions on their information environments.

Another stream of research examines the economic determinants of redactions, documenting that both proprietary information concerns and agency-related motives drive redaction decisions. Some studies emphasize the role of protecting proprietary information. For example, Verrecchia and Weber (2006) show that firms in highly competitive industries are more likely to redact, and Glaeser (2018) finds higher redaction prevalence among firms prioritizing

trade secrecy. Similarly, Chen et al. (2022) document that firms with stakeholders facing higher proprietary costs are more inclined to redact.

In contrast, other studies highlight agency-related motives, suggesting that firms also use redactions opportunistically to conceal bad news. For example, Hui et al. (2019) find that when previously redacted information is partially disclosed through amendments, the stock prices of the redacting firm drop, while rival firms' stock prices remain unaffected. These results suggest that redacted information reflects bad news rather than proprietary details. Bao et al. (2022) show that confidential treatment requests, particularly in firms with lower litigation risk, higher executive equity incentives and weaker external monitoring, are associated with higher residual short interest, increased stock price crash risk, and poorer future performance.

While prior research has treated redactions as isolated decisions by individual firms, little attention has been given to the potential strategic interactions among firms. This study adds to the literature by leveraging a regulatory change in redaction oversight to examine peer effects in firms' redaction behaviors. By doing so, it provides new insights into the competitive dynamics underlying redaction decisions and their broader implications.

2.2 Institutional Background

We examine the peer effects of firms' redaction decisions in the context of the FAST Act, which introduced an exogenous reduction in the regulatory oversight of the redaction process. Under SEC regulations, firms must disclose material definitive agreements that fall outside the ordinary course of business, as these events are deemed "unquestionably or presumptively material" (SEC, 2002). Disclosures must be made within four days of execution via an 8-K filing and include the relevant contracts as exhibits either in the 8-K filing or the subsequent periodic filing. Firms can redact proprietary details deemed immaterial in material contracts, provided they comply with

Exemption 4 of the Freedom of Information Act (FOIA), which protects trade secrets and confidential commercial information to encourage reliable data sharing with the government (DOJ, 2004).

Before the FAST Act, firms seeking to redact such information are required to file CTRs with the SEC. This labor-intensive process requires firms to submit unredacted contracts and extensive documentation justifying their redactions. When submitting a CTR, firms provide unredacted copies of contracts to the SEC alongside legal and factual justifications for the redactions. Firms must specify the immateriality of the redacted information, the potential for competitive harm, and the duration of confidentiality. The SEC then reviews these requests based on two criteria: (1) materiality—information deemed material to investors would result in rejection of the CTR, and (2) competitive harm—if disclosing it was unlikely to harm the firm's competitive position, the CTR would also get rejected. The labor-intensive review process, averaging 71 days (Thompson, 2022), often requires multiple rounds of amendments in response to SEC private comment letters. While the SEC aims to apply risk-based screening to redactions, the review process involves subjective judgments, leaving room for managerial opportunism, especially when firms provide vague evidence to support their claims (SEC Report No. 479, 2010). While the CTR process is costly and time-consuming, it helps ensure limited misuse of redactions for agency-related motives (Thompson, 2022).

In March 2019, the SEC amended Item 601 of Regulation S-K as part of the FAST Act to simplify the disclosure process. Firms are allowed to redact material contracts without submitting CTRs, provided they follow the same criteria of materiality and competitive harm. Although the SEC retains authority to selectively review redactions, oversight is significantly reduced. Further, the Supreme Court's 2019 ruling in *Food Marketing Institute v. Argus Leader Media* eliminated

the competitive harm test for redactions. Redacted information now only needs to be "customarily kept private" by the disclosing firm. Together, the FAST Act and the Supreme Court ruling represent a significant shift in redaction oversight, relaxing regulatory scrutiny. Although these changes aim to modernize and expedite disclosures, they also increase managerial discretion and heighten the risk of redactions being used to obscure bad news rather than protect proprietary information. Then SEC Commissioner Robert J. Jackson publicly voiced his dissent on the same day the FAST Act was passed, citing concerns that the reduction in oversight could be exploited for opportunistic redactions.[3]

2.3 Hypothesis Development

We argue that the FAST Act not only facilitates more opportunistic redactions but also likely exacerbates the "lemons problem" in disclosure redactions (Akerlof, 1970). Prior literature has established that firms have agency incentives to use redactions to conceal bad news (Bao et al., 2022; Thompson et al., 2023). The FAST Act, which significantly reduced regulatory oversight of redaction practices, create opportunities for firms to adjust their redaction strategies, increasing the prevalence of "bad" redactions (i.e., hiding bad news).

Meanwhile, investors struggle to distinguish between "good" redactions (i.e., protecting proprietary information) and "bad" redactions for several reasons. First, it is difficult to infer the nature of the redacted content from the redactions themselves. For example, Figure 2A illustrates Tesla's contract with Panasonic, in which the entire Section 3—including the title—is redacted, leaving no clear signal as to whether the redacted content is good or bad news. Second, even when the type of redacted information is known based on the context (e.g., the price of raw materials), the implications are ambiguous. A redacted supplier price could be high or low, and investors

[3] https://www.sec.gov/newsroom/speeches-statements/statement-jackson-032619

cannot easily determine whether it reflects a favorable or unfavorable deal for the firm. These examples highlight the severe information asymmetry surrounding redactions. Furthermore, investors face information processing constraints, making it impractical to analyze every detail in material contracts. While researchers can aggregate redaction patterns at the firm-year level, investors receive redacted contracts individually and sequentially, making it challenging to assess whether any given redaction is legitimate or opportunistic.

As a result, investors are forced to "price protect" themselves by imposing greater penalties on all redactions, regardless of their underlying motive. This dynamic can lead "good" firms—those with legitimate proprietary concerns—to stop redacting in order to avoid being pooled with "bad" firms, effectively causing them to exit the redaction market. Collectively, these challenges suggest that the lemons problem in redactions is especially difficult for investors to overcome in the post-FAST Act environment, where oversight has been weakened and the credibility of redacted information has significantly diminished.

Building on this logic, we predict that while the FAST Act encourages more redaction overall, it will also trigger a substantial rotation in redaction behavior between firms and their peers. Specifically, we argue that a firm's pre-Act redaction behavior relative to its rivals is a key predictor of its post-Act redaction decisions. We expect firms with lower pre-Act redaction rates relative to their rivals to increase redactions post-Act. Pre-Act redactions, subject to rigorous SEC review, are more likely to reflect legitimate proprietary concerns. Thus, firms with lower pre-Act redaction rates likely had less proprietary information to protect and, consequently, less need for redactions. With reduced oversight post-Act, these firms face greater opportunity to exploit the regulatory change by redacting opportunistically to conceal bad news. Assuming bad news is

randomly distributed, firms with historically low redaction activity may use the relaxed environment to redact more contracts post-Act. Accordingly, we state our first hypothesis:

H1*: Firms with lower pre-Act redaction rates relative to their rivals will redact more after the FAST Act, ceteris paribus.*

In contrast, we expect firms with higher pre-Act redaction rates relative to their rivals to reduce redactions post-Act, "exiting the market" due to the heightened lemons problem. These firms are more likely to have legitimate proprietary information worth protecting, but as agency-related redactions increase post-Act, investors may broadly penalize all redacting firms, making redaction less viable for "good" firms. To avoid being pooled with "bad" firms, these firms may reduce their use of redactions to signal transparency and differentiate themselves from firms exploiting the relaxed regulatory environment opportunistically. Therefore, we state our second hypothesis as follows:

H2*: Firms with higher pre-Act redaction rates relative to their rivals will redact less after the FAST Act, ceteris paribus.*

It is important to recognize that these predictions are not foregone conclusions. The reduced regulatory oversight post-Act introduces stronger incentives for all firms—regardless of pre-Act redaction behavior to use redactions opportunistically. Even firms with high pre-Act redaction rates may choose to increase redactions to conceal bad news or protect material proprietary information under the more relaxed regulatory regime (Thompson et al., 2023). Thus,

while the lemons problem may compel firms with proprietary information to reduce their use of redactions, this effect could be offset if the benefits of concealing bad news or material proprietary information outweigh the costs of investor penalties.

3. SAMPLE, MEASURES, AND DESIGN

3.1 Sample Selection

To construct our sample, we begin by systematically compiling material contracts from EDGAR using web scraping, focusing on a four-year rolling window before and after key regulatory changes introduced by the FAST Act and the Supreme Court ruling. Specifically, our pre-event window spans from April 2, 2015 to April 1, 2019, capturing the four-year period before the elimination of CTRs by the FAST Act, while our post-event window spans from June 25, 2019 to June 24, 2023, following the removal of the "competitive harm" test by the Supreme Court ruling. Figure 1 provides a timeline of our sample period and these policy changes. We exclude the three-month interval between the elimination of CTRs and the removal of the "competitive harm" test to avoid potential confounding effects (e.g., the uncertainty about the FAST Act's impact).

To ensure data consistency and quality, we filter the dataset by excluding contracts that cannot be parsed (e.g., those in PDF format; less than 0.1% of the sample contracts) and focus only on contracts filed with periodic reports (10-Ks and 10-Qs) or current reports (8-Ks).[4] Following the literature, we do not include amendment filings to avoid double counting of the same contract. And when firms want to extend their redaction period, they do not need to file the same contract

[4] We follow prior studies by focusing exclusively on material contracts filed with periodic and current reports (Floros et al., 2025; Bao et al., 2022; Heinle et al., 2023; Park et al., 2019). These reports account for approximately 73% of all material contracts filed, while contracts filed with registration statements comprise another 16%.

again. We also verify this by keeping track of a random sample of contracts to mitigate the concern of double counting. We then aggregate the contract-level data to the firm-year level to construct our variables such as the number of contracts filed by a sample firm in a given year, the number of the firm's redacted contracts in that year, and the redaction rate (percentage of contracts redacted) for the firm-year. This process results in a dataset of 277,186 material contracts filed across eight sample years. Panel A of Table A2 outlines the detailed selection criteria and steps.

To construct control variables, we begin with firm-year observations from Compustat, focusing on non-financial U.S. firms listed on the NYSE, AMEX, or NASDAQ. We exclude firm-years with missing identifiers (PERMNO, TICKER, or CIK) and merge the sample with other databases, including Thomson/Refinitiv, I/B/E/S, CRSP, Execucomp, and the Hoberg-Phillips Data Library, to obtain data for control variables. Firm-years with missing major control variables are dropped.

We next merge the control variable data with the firm-year redaction data, with each sample year mapped to the most recent fiscal year ending before the end of the sample year. We further refine the sample by retaining only firm-year observations that have at least one material contract in both pre- and post-event periods. Additionally, we require all firms in our final sample to have non-missing pre-FAST Act peer redaction rates to compute our key variable of interest, *Redaction_Spillover* (as defined below). Our final sample consists of 12,130 firm-year observations from 1,874 unique firms. Panel B of Table A2 outlines the detailed selection process.

3.2 Measurements

3.2.1 Redaction Variables

To measure redaction intensity, we use *P_Redact*, the proportion of material contracts redacted by a firm in a given year. This measure accounts for variations in the total number of

contracts filed and serves as our primary outcome variable capturing redaction intensity. To ensure robustness, we also use two alternative measures of redaction intensity. First, we use *N_Redact*, the number of redacted material contracts filed by a firm in a given year. Second, we use *D_Redact*, a binary indicator that equals one if a firm redacts at least one material contract in a given year, and zero otherwise. Regardless of the redaction intensity variable used, we control for variations in contracting activity across firm-years by including the natural log of *N_Contract* (the number of material contracts filed by a firm in a given year).

Our key independent variable, *Redaction_Spillover*, captures the relative dominance of propriety versus agency costs in a firm's redaction behavior in the post-FAST Act period. As discussed in Section 2, redactions before the FAST Act underwent the SEC's CTR review process, indicating that they were more likely driven by proprietary concerns. Thus, firms with lower redaction intensity relative to their industry peers in the pre-Act period are less likely to possess legitimate proprietary information requiring redaction. Once regulatory oversight was removed, these firms faced stronger incentives to redact opportunistically for agency reasons such as concealing bad news. As a result, we expect these firms to increase their redaction intensity post-FAST Act. In contrast, firms with higher redaction intensity relative to their industry peers in the pre-Act period are more likely redacting for proprietary reasons. Despite the deregulation, these firms are predicted to reduce their redactions in response to the increase in agency-driven redactions by their peers, reflecting an effort to distinguish themselves from opportunistic redactors and avoid being pooled with "bad" firms.

To compute *Redaction_Spillover* for each firm, we measure the difference between the firm's pre-FAST Act redaction rate and the average redaction rate of its industry peers. Peer redaction rate is calculated as the total number of redacted material contracts divided by the total

number of material contracts filed by peer firms. This approach effectively weights peer firms' redaction rates based on the number of material contracts filed, ensuring that peers with more material contracts contribute more to the peer benchmark.

We identify peers using the TNIC developed by Hoberg and Phillips (2010, 2016). TNIC customizes the pool of peers for each firm based on the similarity of product descriptions in 10-K filings, providing a product-market definition of peers that is well-suited for capturing the spillover effects we aim to examine. Specifically, for a focal firm *i*, we consider all firms within the same TNIC-3 industry in the pre-FAST Act period as peers of this firm, and define *Redaction_Spillover* as:

$$Redaction\_Spillover_i = P\_Redact\_Pre_i - P\_PeerRedact\_Pre_i$$
$$= \frac{N\_Redact_i}{N\_Contract_i} - \frac{\sum_{j \in TNIC3_i} N\_Redact_j}{\sum_{j \in TNIC3_i} N\_Contract_j} \quad (1)$$

where *i* stands for the focal firm and *j* stands for all peer firms in the same TNIC-3 industry as the focal firm. Note that all redaction rates are calculated using the pre-FAST Act period and TNIC-3 industries are focal firm specific.

To differentiate firms based on the dominance of proprietary versus agency costs, we follow the approach of Kim and Valentine (2021) and classify firms into three groups based on *Redaction_Spillover*. Specifically, we construct two indicator variables: *Low_Proprietary* and *High_Proprietary*. *Low_Proprietary* takes the value of one if a firm falls within the bottom three deciles of *Redaction_Spillover*, while *High_Proprietary* equals one if a firm is in the top three deciles. Firms in the middle four deciles serve as the benchmark group. For robustness, we also test equal weighting in computing *P_PeerRedact_Pre* and an alternative industry definition using three-digit SIC codes and find similar results.

3.2.2 Control Variables

Following Thompson et al. (2023) and Verrecchia and Weber (2006), we include a series of control variables that may influence firms' redaction choices beyond peer effects. These controls capture firm characteristics such as size (*MarketCap*), growth opportunities (*MTB*), leverage (*Leverage*), profitability (*ROA*, *Loss*), industry competitiveness (*HHI*), and capital needs through equity and debt issuance (*EquityIssue*, *DebtIssue*). We also control for proprietary costs (*R&D*) and contracting activities (*Log_N_Contract*). This set of controls aligns with prior literature and ensures that our main tests include a sufficient number of observations.

Since firms may experience variation in material contracts over time, we control for lagged redaction rates ($P\_Redact_{i,t-1}$) and lagged peer redaction rates ($P\_PeerRedact_{i,t-1}$), along with two indicator variables for whether the previous year's focal or peer redaction rates are missing (e.g., when there is no material contract filed), to mitigate potential concerns of mean reversion.

In robustness checks, we incorporate additional controls for contract types (*P_Employment*, *P_Credit*, *P_Stockholder*, *P_Supply*), contract length and vocabulary diversity (*Character*, *Word*, *Vocabulary*), market conditions (*Returns12m*, *ReturnsVol*), and extended measures of proprietary and agency costs (*MissingR&D*, *MarketShare*, *Analyst*, *Similarity*, *TnicHHI*, *Fluidity*, *ResSI*, *Institution*, *Litigation*).

Additionally, we also include interactions between the above-mentioned control variables and *Post* in corresponding regressions to account for the impact of the FAST Act on redaction decisions through mechanisms beyond peer spillover effects. For example, this interaction allows proprietary costs to have different effect sizes on redaction intensity before and after the FAST Act. We also control for firm and year fixed effects and experiment with other fixed effects structures in robustness checks.

3.3 Research Design

To identify the causal effect of the FAST Act on firms' redaction behavior, we employ a DiD design, which exploits the intra-industry variation in firms' pre-Act redaction rates relative to their peers. As defined in the redaction variables section, we partition the sample into three groups: (1) low-proprietary firms that are in the bottom three deciles of *Redaction_Spillover* and thus more likely to be driven by agency costs in redactions (*Low_Proprietary*=1), (2) high-proprietary firms that are in the top three deciles of *Redaction_Spillover* and thus more likely to have legitimate proprietary information needing protection (*High_Proprietary*=1), and (3) benchmark firms that are in the middle four deciles (*Benchmark*=1) and not clearly dominated by agency or proprietary costs. We then estimate the following DiD regression:

$$P\_Redact_{i,t} = \beta_1 Low\_Proprietary_i * Post_t + \beta_2 High\_Proprietary_i * Post_t + \gamma' X_{i,t} + \alpha_i + \delta_t + \epsilon_{i,t} \quad (2)$$

where *i* stands for sample firm, *t* stands for sample year, *P_Redact* is the redaction rate of the focal firm, *Low_Proprietary* and *High_Proprietary* are two group indicators, *Post* is an indicator taking value one for sample years following the implementation of the FAST Act, *X* is a vector of time-varying control variables, α_i denotes firm fixed effects, and δ_t denotes year fixed effects. Standard errors are clustered by firm.

This empirical design compares the change in redaction rates of firms in the "extreme" groups—those dominated by either proprietary or agency costs—against benchmark firms that will be less clearly driven by either motive in the post-FAST Act period. We expect the coefficient on the interaction term *Low_Proprietary * Post*, β_1, which captures the effect of the FAST Act on low-proprietary firms relative to benchmark firms, to be positive. We predict the coefficient on

*High_Proprietary * Post*, β_2, representing the effect of the FAST Act on high-proprietary firms relative to benchmark firms, to be negative.

4. EMPIRICAL RESULTS

4.1 Increase in Redaction Rates

Table 2 presents summary statistics for the key variables used in this study. On average, firms in our sample file 5.988 material contracts per year, of which 0.628 are redacted, translating to a redaction rate of approximately 10.5%. Additionally, 29.2% of firm-years include at least one redacted contract. The distribution of firms across the three groups are consistent with our design—*Low_Proprietary*, *Benchmark*, and *High_Proprietary* firms account for approximately 30%, 40%, and 30% of the observations, respectively. To address the influence of outliers, all continuous variables are winsorized at the 1st and 99th percentiles. Table A1 provides detailed definitions of all the variables.

To visualize the average impact of the FAST Act on disclosure redaction, Figure 2 plots the annual average redaction rate across firms, along with its 95% confidence interval. Consistent with the notion that the Act significantly reduced the regulatory burden of redactions, the average redaction rate increases from 8% to 12% following its implementation. We further demonstrate that this rise is occurring across nearly all types of material contracts (Figure 3) and across all 2-digit SIC industries (Figure 4).

Interestingly, while redaction rates rise uniformly across industries, we observe substantial divergence at the firm level within industries. In Figure 4, we plot each industry's average pre-FAST redaction rate (blue bars, left y-axis) alongside the change in average redaction rate post-FAST (red dots, right y-axis). The results show that regardless of whether an industry is

traditionally associated with high proprietary information or low proprietary information, the impact of the FAST Act on redaction rates is remarkably consistent—around a five-percentage-point increase—with only a few exceptions such as Food and Kindred Products and Building Construction industries.

In contrast, Figure 5 tells a very different story when we allow for firm-level variation. Here, firms are ranked by their pre-FAST redaction rates and grouped into 24 equally sized bins—Group 1 includes firms with the highest pre-FAST redaction rates, and Group 24 includes those with the lowest. We again plot the pre-FAST average redaction rate for each group (blue bars, left y-axis) and the post-minus-pre change in redaction rates (red dots, right y-axis). The pattern reveals a clear negative relationship: firms with higher pre-FAST redaction rates—presumably those with more proprietary information—experience smaller increases or even decreases in redactions post-Act, while firms with lower initial redaction rates show the largest increases.

Collectively, these results indicate that following the FAST Act, firms that previously redacted heavily tend to reduce their redactions, while those that redacted little increase theirs—and crucially, this rotation in redaction behavior occurs within industries, not across them.

4.2 Rotation in Redaction Rates

To show that this intra-industry redaction rotation reflects a clear pattern consistent with our hypotheses, we check if the rotation correlates with our group definitions.

First, we provide direct evidence of rotation by presenting firm-level transitions between redacting and non-redacting statuses in Table 3, Panel C. Among firms that did not redact *any* contracts in the four pre-Act years, 35% (349 out of 996) begin redacting after the Act. Meanwhile, 27% (239 out of 878) of firms that previously redacted contracts during the pre-FAST Act period cease redacting *entirely* in the four post-FAST Act years.

Second, we examine pre-Act redaction rates across the three groups for both focal firms and their industry peers in Table 3, Panel B. As expected, low-proprietary firms redact only 2.3% of their material contracts, compared to 12.9% by their industry peers. Benchmark firms exhibit redaction rates similar to their peers. In contrast, high-proprietary firms redact 22.1% of their contracts, while their peers redact only 8.9%.

Third, consistent with our predictions, Table 3, Panel C shows that while benchmark firms increase their redaction rate by 4.4% following the FAST Act, low-proprietary firms exhibit an even larger increase of 7.4%, In contrast, despite the removal of regulatory oversight, high-proprietary firms not only refrain from increasing their redactions but actually decrease their redaction rate by 2.8%, supporting our hypothesis that firms with legitimate proprietary information respond strategically to avoid being associated with agency-driven redactions. Figure 6 visualizes the divergent response in redaction behavior to the FAST Act among different groups of firms.

These findings suggest a fundamental shift in the composition of firms engaging in redaction within each industry, consistent with both the increased use of redactions for opportunistic agency motives and the strategic withdrawal of firms that previously redacted for proprietary reasons. Descriptive statistics in Table 4 further show that low-proprietary firms have lower R&D intensity than high-proprietary ones, but two groups do not differ much in terms of industry concentration (HHI) or industry distribution, consistent with the intra-industry rotation findings.

4.3 Effect of FAST Act on Disclosure Redaction

Table 5 presents the results of formally testing our hypotheses using our DiD regressions. Consistent with our expectations, coefficients for *Low_Proprietary* and *High_Proprietary* show

opposing signs for the impact of the Act on agency- versus proprietary-driven firms. We find that the FAST Act increases redactions among low-proprietary firms, as indicated by the significantly positive coefficient of *Low_Proprietary* * *Post*. Conversely, high-proprietary firms reduce redactions post-Act, as reflected in the significantly negative coefficient of *High_Proprietary* * *Post*. These findings remain robust across different model specifications: Column (1) includes only firm and year fixed effects, establishing a baseline estimate; Column (2) introduces control variables, as discussed in Section 3; and Column (3) extends the model by including interactions between the control variables and *Post* to allow for different effect sizes of other motives before and after the FAST Act.

In terms of economic magnitude, low-proprietary firms increase their redaction rate by 2.1 percentage points relative to the benchmark firms, almost doubling their pre-FAST Act redaction intensity (2.3% pre-FAST Act redaction rate, as shown in Table 3, Panel B). In contrast, the FAST Act leads high-proprietary firms to decrease their redaction rate by 8.6 percentage points relative to the benchmark firms, representing a 38% reduction from their pre-FAST Act redaction rate (22.1% pre-FAST Act redaction rate, as reported in Table 3, Panel B).

A key identifying assumption for our DiD analysis is the parallel trends assumption, which requires that redaction behavior across groups would have followed a similar trajectory in the absence of the FAST Act. To support this assumption, we conduct event studies separately for low-proprietary and high-proprietary firms, examining redaction trends four years before and four years after the FAST Act. We omit the year immediately preceding the FAST Act, so it serves as the reference point. The event study plots in Figure 7 show that no significant redaction effects are present for either group during the pre-FAST Act years, while significant effects emerge in the

post-FAST Act period.[5] Additionally, the figure indicates that high-proprietary firms exhibit a steeper reaction to the deregulation compared to low-proprietary firms. This pattern aligns with the notion that investors should begin to discount redacted disclosures immediately after the law takes effect.

To further rule out spurious relationships, we implement two sets of placebo tests. In the first set, we randomly assigning firms to *Low_Proprietary* and *High_Proprietary* groups 500 times and re-estimating our main regression. Figure A1 shows that the distributions of placebo coefficients for *Low_Proprietary * Post* and *High_Proprietary * Post* are centered around zero, in stark contrast to the significant effects reported in Table 5, which are represented by the red solid lines in Figure A1. In the second set, we use placebo event years while fixing the group assignment. Table A3 shows that when using placebo event years in the pre-Act period, the coefficients are all insignificant. Collectively, these results provide evidence that the opposing effects of the FAST Act on disclosure redactions are unlikely to be spurious.

An alternative concern for our findings is the potential mean reversion in contracting behavior. Specifically, the arrival of material contracts containing proprietary information may vary over time, leading to fluctuations in a firm's redaction behavior. High-proprietary (low-proprietary) firms may have exhibited higher (lower) redaction rates in the pre-FAST Act period only because they received a higher (lower) number of contracts with proprietary information during this period. If contract arrivals naturally revert to the mean post-Act, high-proprietary (low-proprietary) firms would experience a decline (increase) in redaction rates, independent of the regulatory change.

[5] Notably, the coefficient for year -4 in the high-proprietary group is marginally significant. However, the pre-trend in the high-proprietary group, if anything, would likely work against finding a significant decrease in disclosure redaction post-Act.

However, this explanation alone is unlikely to drive our findings. Our group classifications are based on the entire four-year pre-FAST Act period, which helps smooth out temporary fluctuations in contract arrivals. As a result, firms identified as high (low) proprietary are more likely to have intrinsically higher (lower) levels of proprietary information. Nevertheless, we conduct two sets of analyses to further support our conclusion. The first set, presented in Table 6, Panel A, examines the number of firms transitioning between redacting and non-redacting status each year. Consistent with the notion that contracting behavior fluctuates annually and exhibits mean reversion, we observe that approximately 15-18% of non-redacting firms in the prior year revert to redacting in the current year, while 47-49% of redacting firms revert to non-redacting. However, these reversion rates show a clear structural break in the year of the FAST Act, indicating that the Act's impact is incremental to the mean reversion in contracting behavior.

The second set of analyses directly controls for the potential mean reversion effects in firms' redaction rates in Table 6 Panel B. In Column (1), we include lagged redaction rates for both focal firms and their industry peers as controls. Since our classification depends on both firm-level and peer-level redaction history, this adjustment accounts for any linear and first-order mean reversion effects. The results remain robust. In Column (2), we further include interaction terms between lagged redaction rates and *Post*, allowing for differential mean reversion trends between the pre- and post-FAST Act periods. The results remain consistent. We incorporate lagged focal and peer redaction rates along with lag-post interactions as control variables in all subsequent analyses.

Besides these analyses, we argue that if mean reversion in contracting activities is solely driving our findings, we should not see a concentration of the Act's increasing redaction effect among "bad" firms and a concentration of the Act's decreasing redaction effect among "good" firms. We should not see a focal firm's reaction to peer firms' redactions, either. However, findings

from the cross-sectional analyses (Section 4.4) and reaction analyses (Section 4.5) suggest the exact opposite, which is inconsistent with the mean reversion explanation, providing additional support for our conclusions.

4.4 Heterogeneities in Redaction Effect of FAST Act

We hypothesize that low-proprietary firms increase their redaction rates after the FAST Act due to reduced regulatory oversight. This effect should be stronger when managers have greater private negative information and weaker when firms face higher litigation risks, as the threat of legal consequences deter opportunistic behavior. To test these predictions, we use residual short interest (Bao et al., 2019) as a proxy for managers' private negative information and follow Kim and Skinner (2012) to measure firms' litigation risk. The results are presented in Panel A of Table 7. Consistent with our expectations, we find that the increase in redactions among low-proprietary firms is more pronounced when managers have above-median private bad news (*High_ResSI=1*) and less pronounced when these firms have above-median litigation risk (*High_Litigation=1*). At the same time, the effect of FAST Act on high-proprietary firms does not vary across these two dimensions. These results suggest that low-proprietary firms use redactions to conceal negative information but are deterred from doing so when litigation risks are high.

Similarly, we hypothesize that high-proprietary firms decrease their redaction rates post-Act due to the influx of agency-driven redactors. To avoid being associated with "bad" firms**,** these firms strategically reduce redactions to signal transparency. Thus, this effect should be stronger for firms with greater equity capital needs, as they are more sensitive to investor perception, and weaker for firms with higher institutional ownership, since institutional monitoring could alleviate concerns about redactions being opportunistic. To test these predictions, we use firms' equity raising activity as a proxy for capital needs (Verrecchia and Weber, 2006) and institutional

holdings as a proxy for external monitoring (Bao et al., 2022). Consistent with our expectations, we find that the decrease in redactions among high-proprietary firms is more pronounced for firms with above-median capital needs (*High_EquityIssue*=1) and less pronounced for firms with above-median institutional ownership (*High_Institution*=1). At the same time, the effect of the FAST Act on low-proprietary firms does not vary across these two dimensions. These results, presented in Panel B of Table 7, suggest that high-proprietary firms stop redacting due to concerns about investor perception.[6]

Collectively, these heterogeneities in the redaction effects of the FAST Act provide corroborating evidence on our hypotheses that agency-driven firms take increase redactions to take advantage of the reduced oversight, while proprietary-driven firms reduce redactions in response to the lemons problem, particularly when investor perception is a primary concern.

4.5 Focal Firms' Reaction Towards Peers' Redactions

To directly examine the strategic interactions between focal firms and their industry peers in redaction decisions, we analyze how changes in a focal firm's redaction rates following the FAST Act relate to changes in redaction rates of its peers. Our hypotheses predict differential responses from low-proprietary versus high-proprietary firms: Low-proprietary firms are expected to increase their redaction rates due to reduced regulatory oversight, *independent of* their peers' redaction decisions. In contrast, high-proprietary firms are expected to decrease their redaction rates *in response to* their peers' increased redactions rather than a direct reaction to the FACT Act itself. This stems from their need to differentiate from firms using redactions for agency motives

[6] Another way to demonstrate that investor concern over redacted content is the mechanism driving the decline in redactions among high-proprietary firms is to examine the market reaction to the release of material contracts, such as changes in abnormal returns or trading volumes. However, we do not adopt this approach because material contracts are filed as attachments in the very end to the main body of periodic (e.g., 10-K, 10-Q) and current (e.g., 8-K) reports, which often include a broad set of disclosures. As a result, it is difficult to isolate the market response to the redacted portions of the contracts from reactions to other simultaneously disclosed information.

and to avoid being misclassified as engaging in opportunistic behavior. Thus, we expect high-proprietary firms to adjust their redaction patterns in the opposite direction of their peers, while low-proprietary firms' redaction patterns should remain unrelated to their peers, all relative to the benchmark firms.

Table 8 provides results in support of these predictions. Relative to benchmark firms, low-proprietary firms exhibit no significant relation between their redaction rate changes and those of their rivals, reinforcing that their redaction increase is primarily driven by the deregulation rather than strategic peer effects. In contrast, high-proprietary firms exhibit a significantly negative correlation with their peers' redaction behavior. Specifically, when their industry rivals increase redactions post-Act, high-proprietary firms respond by reducing theirs. This substitution effect suggests that high-proprietary firms strategically decrease redactions as a defensive mechanism, to signal transparency and distinguish themselves from firms redacting for agency reasons.

4.6 Consequences of FAST Act Induced Change in Redaction

We further examine the consequences of the redaction changes driven by the reduced oversight of the FAST Act. Prior literature suggests that redactions can protect proprietary information and foster firm growth (Boone et al., 2016). However, when used opportunistically, redactions can reduce transparency and ultimately harm firm performance (Bao et al., 2022). In our context, high-proprietary firms are compelled to reduce redactions, thereby sacrificing some proprietary information, while low-proprietary firms exploit the reduced oversight to become less transparent. As a result, we anticipate that these shifts in redaction behavior will have negative consequences for both groups. Consistent with these predictions, we find a significant decline in sales growth for both groups relative to the benchmark firms, while ROA remains unaffected.

These results, presented in Table 9, Panel A, suggest that the redaction shifts induced by the FAST Act come at a cost to firm performance.

Another potential consequence is the within-firm substitution effect between redaction and voluntary disclosure. Prior research suggests that firms often compensate for increased redaction by issuing more management forecasts or non-earnings disclosures to mitigate the loss of transparency (Barth et al., 2023; Heinle et al., 2023). If this substitution effect is bidirectional, high-proprietary firms forced to redact less may reduce voluntary disclosure to offset the loss of proprietary information, while low-proprietary firms increasing redactions may simultaneously increase voluntary disclosures. However, we do not expect this substitution effect to be substantial because the bidirectionality of the effect may not hold: High-proprietary firms cannot regain lost proprietary information by withholding voluntary disclosures, as the information has already been revealed due to forced reductions in redactions; Meanwhile, low-proprietary firms could simply choose to increase their redactions at a modest level, rather than heavily increase redactions and then compensate with voluntary disclosures. Consistent with these expectations, Table 9, Panel B shows no significant change in voluntary disclosures among high- or low-proprietary firms around the FAST Act, relative to the benchmark group.

5. SUPPLEMENTARY ANALYSIS

5.1 Impact on Different Contract Types

To explore which types of contracts are driving the divergence in redaction behavior between low- and high-proprietary firms, we compile a contract-level sample and estimate the same regressions separately by contract type. Contract types are identified using keyword searches across the full text of each contract, following established methods in the literature. We restrict

our analysis to contract types with a detectable redaction rate (as shown in Figure 3), and present the results in Table 10.

The findings reveal that low-proprietary firms primarily increase redactions in royalty, stockholder, and employment contracts, while high-proprietary firms primarily reduce redactions in supply, credit, and stockholder contracts. However, the literature does not offer a clear consensus on which contract types are more likely to reflect proprietary information versus bad news, as the interpretation often depends on the specific terms being redacted. For instance, redacting the price in a supply contract or the interest rate in a credit agreement could signal either positive or negative information, depending on the underlying numbers. Therefore, while these findings provide useful descriptive insights, we do not offer a strong interpretation of the contract-type effects.

5.2 Additional Robustness Tests

To ensure the robustness of our findings, we perform a comprehensive set of sensitivity checks, with results remaining consistent across all checks. Table A4 presents these robustness tests.

Panel A addresses concerns about using a ratio (*P_Redact*) as the dependent variable by testing alternative measures. Specifically, we use the number of redacted contracts in a given year (*N_Redact*, a count variable) and the status of redacting any contract in a given year (*D_Redact*, a dummy variable). For these alternative dependent variables, we employ Poisson regression for *N_Redact* and Logit regression for *D_Redact*. Notably, while *P_Redact* and *N_Redact* capture the intensive margin of the FAST Act's redaction effects, *D_Redact* provides insights into the extensive margin.

Panel B tests the robustness of our findings to alternative definitions of the three groups of firms. Specifically, we replace the weighting based on the number of contracts with equal weighting in Column (1) and use an alternative industry peer definition, the three-digit SIC code, in Column (2).

Panel C tests alternative samples. Column (1) uses a sample with extra control variables for contract types (*P_Employment*, *P_Credit*, *P_Stockholder*, *P_Supply*), contract length and vocabulary diversity (*Character*, *Word*, *Vocabulary*), market conditions (*Returns12m*, *ReturnsVol*), and more measures for firms proprietary and agency costs (*MissingR&D*, *MarketShare*, *Analyst*, *Similarity*, *TnicHHI*, *Fluidity*, *ResSI*, *Institution*, *Litigation*). This should further mitigate concerns about confounding variables related to contracting behavior, proprietary costs, and agency costs influencing our results. Column (2) uses a sample where each firm-year has at least five material contracts, which should mitigate any concern on measurement errors about *P_Redact* when firms file too few contracts.

Panel D tests alternative model specifications such as replacing firm fixed effects with industry fixed effects in Column (1), replacing year fixed effects with industry-year fixed effects in Column (2), replacing firm clustering with firm and year two-way clustering in Column (3), and replacing firm clustering with industry and year two-way clustering in Column (4).

6. CONCLUSION

Disclosure redaction has long served as a key procedure for protecting proprietary information, used by roughly one-third of public firms for over 25 years. Leveraging the 2019 FAST Act as an exogenous decline in redaction oversight, we examine the peer effects in firms' redaction behavior. While redaction rates rise uniformly across industries following the Act,

responses diverge sharply within industries. Our Difference-in-Differences analysis reveals that firms with less proprietary information relative to their peers *increase* redactions, while those with more actually *reduce* their redactions. The increase is stronger among firms with greater bad news or lower litigation risk; the decrease is more pronounced among firms with higher equity-raising needs or lower institutional ownership. Moreover, firms reducing redactions appear to do so in response to peers' increased redactions. Regardless of increasing or decreasing redactions, firms experience lower sales growth following the Act.

Our study contributes to the literature in two ways. First, we extend the redaction literature by being the first to examine peer effects in firms' redaction decisions. While prior research has focused on firm-specific motives, we show that agency-driven redactions, enabled by reduced regulatory oversight, erode the credibility of proprietary-driven redactions, amplifying the lemons problem in disclosure. Second, our findings contribute to the literature on peer effects in disclosure by providing novel evidence of a negative peer effect in redaction behavior, where firms reduce redactions in response to peers' increased redactions. This contrasts with the positive peer effects widely documented in the disclosure literature, where firms increase transparency in response to peers. We introduce a new mechanism for negative peer effects, showing how agency-driven redactions crowd out proprietary-driven ones.

Our study provides important insights for policymakers, regulators, and investors regarding the unintended consequences of the FAST Act, disclosure redactions, and deregulation in general. Our findings suggest that disclosure redaction functions as a lemons market—when oversight weakens, agency-motivated redactions crowd out those driven by proprietary concerns. These unintended consequences highlight the need for carefully designed policies that deter opportunistic behavior while preserving the effectiveness of legitimate disclosure tools. Without recognizing the

nature of the disclosure redaction market, policies like the FAST Act—intended to ease the burden of protecting proprietary information—may ultimately make it harder for firms to do so.

REFERENCE

Akerlof, G.A., 1978. The market for "lemons": Quality uncertainty and the market mechanism. In *Uncertainty in economics* (pp. 235-251). Academic Press.

Baginski, S.P. and Hinson, L.A., 2016. Cost of capital free-riders. *The Accounting Review*, *91*(5), pp.1291-1313.

Barth, M.E., Landsman, W.R., Tian, X.S. and Yu, M., 2023. Does voluntary non-earnings disclosure substitute for redacted proprietary contract information?. *Miaomiao, Does Voluntary Non-Earnings Disclosure Substitute for Redacted Proprietary Contract Information*.

Breuer, M., Hombach, K. and Müller, M.A., 2022. When you talk, I remain silent: Spillover effects of peers' mandatory disclosures on firms' voluntary disclosures. *The Accounting Review*, *97*(4), pp.155-186.

Bao, D., Kim, Y., Mian, G.M. and Su, L., 2019. Do managers disclose or withhold bad news? Evidence from short interest. *The Accounting Review*, *94*(3), pp.1-26.

Bao, D., Kim, Y. and Su, L., 2022. Do firms redact information from material contracts to conceal bad news?. *The Accounting Review*, *97*(5), pp.29-57.

Boone, A.L., Floros, I.V. and Johnson, S.A., 2016. Redacting proprietary information at the initial public offering. *Journal of Financial Economics*, *120*(1), pp.102-123.

Capkun, V., Lou, Y., Otto, C.A. and Wang, Y., 2023. Do firms respond to peer disclosures? Evidence from disclosures of clinical trial results. *The Accounting Review*, *98*(3), pp.71-108.

Chen, G., Tian, X.S. and Yu, M., 2022. Redact to protect? Customers' incentive to protect information and suppliers' disclosure strategies. *Journal of Accounting and Economics*, *74*(1), p.101490.

DOJ, 2024. https://www.justice.gov/archives/oip/foia-guide-2004-edition-exemption-4.

Glaeser, S., 2018. The effects of proprietary information on corporate disclosure and transparency: Evidence from trade secrets. *Journal of Accounting and Economics*, *66*(1), pp.163-193.

Heinle, M., Samuels, D. and Taylor, D., 2023. Disclosure substitution. *Management Science*, *69*(8), pp.4774-4789.

Hoberg, G. and Phillips, G., 2010. Product market synergies and competition in mergers and acquisitions: A text-based analysis. *The Review of Financial Studies*, *23*(10), pp.3773-3811.

Hoberg, G. and Phillips, G., 2016. Text-based network industries and endogenous product differentiation. *Journal of political economy*, *124*(5), pp.1423-1465.

Hui, K.W., Lee, K., She, G. and Yeung, P.E., 2019. *Hoarding non-proprietary bad news through confidential treatments? An analysis of market reactions to redaction amendments*. Working paper, University of Hong Kong, Hong Kong.

Floros, I.V., Johnson, S.A. and Zhao, W., 2025. Redaction as Cross-Regulatory Disclosure Avoidance. *Journal of Accounting Research*.

Kim, I. and Skinner, D.J., 2012. Measuring securities litigation risk. *Journal of Accounting and Economics*, *53*(1-2), pp.290-310.

Kim, Y., Su, L., Wang, Z. and Wu, H., 2021. The effect of trade secrets law on stock price synchronicity: Evidence from the inevitable disclosure doctrine. *The Accounting Review*, *96*(1), pp.325-348.

Kim, J. and Valentine, K., 2021. The innovation consequences of mandatory patent disclosures. *Journal of Accounting and Economics*, *71*(2-3), p.101381.
Park, J., Sani, J., Shroff, N. and White, H., 2019. Disclosure incentives when competing firms have common ownership. *Journal of Accounting and Economics*, *67*(2-3), pp.387-415.
SEC, 2002. https://www.sec.gov/rules-regulations/2004/03/additional-form-8-k-disclosure-requirements-acceleration-filing-date.
SEC Report No. 479, 2010. https://www.sec.gov/files/479.pdf.
Seo, H., 2021. Peer effects in corporate disclosure decisions. *Journal of Accounting and Economics*, *71*(1), p.101364.
Thompson, A.M., 2022. Political connections and the SEC confidential treatment process. *Journal of Accounting and Economics*, *74*(1), p.101511.
Thompson, A.M., Urcan, O. and Yoon, H., 2023. Do companies redact material information from confidential SEC filings? Evidence from the FAST Act. *The Accounting Review*, *98*(4), pp.405-433.
Truong, P., 2023. Peer effects and disclosure timing: evidence from earnings announcements. *The Accounting Review*, *98*(3), pp.427-458.
Valentine, K. and Warren, J., 2024. Peer Information Externalities in Voluntary Disclosure Choices. *Available at SSRN 4145975*.
Verrecchia, R.E. and Weber, J., 2006. Redacted disclosure. *Journal of Accounting Research*, *44*(4), pp.791-814.

Figure 1. Timeline of Relevant Regulatory Change for Disclosure Redaction

Notes: This figure visualizes the timeline of relevant regulatory changes for redacting material contracts, as well as the definition of the sample period used in this study.

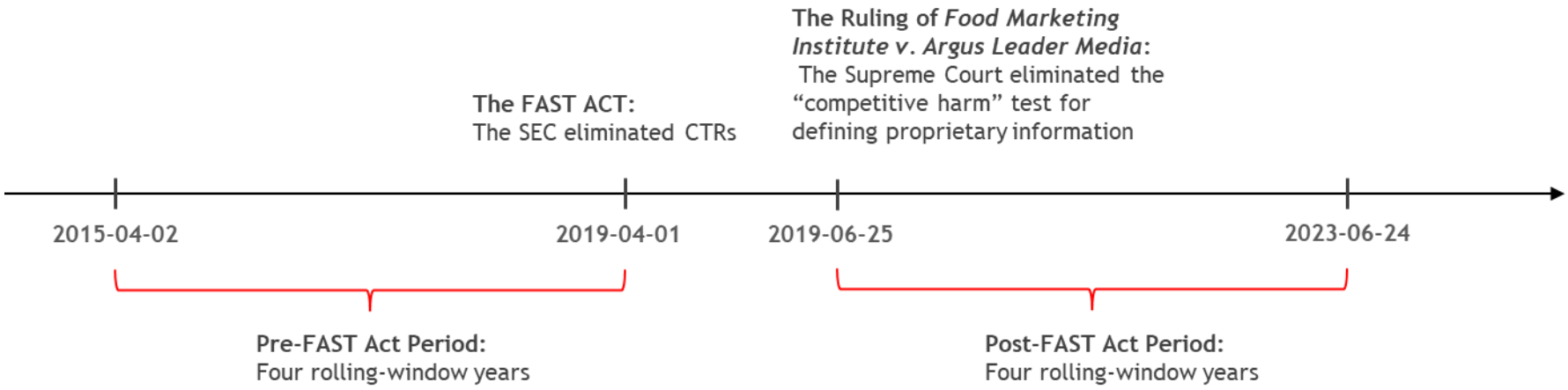


Figure 2. Redaction Rate Over Time

Notes: This figure visualizes the average redaction rate across firms in each year with its 95% confidence interval.

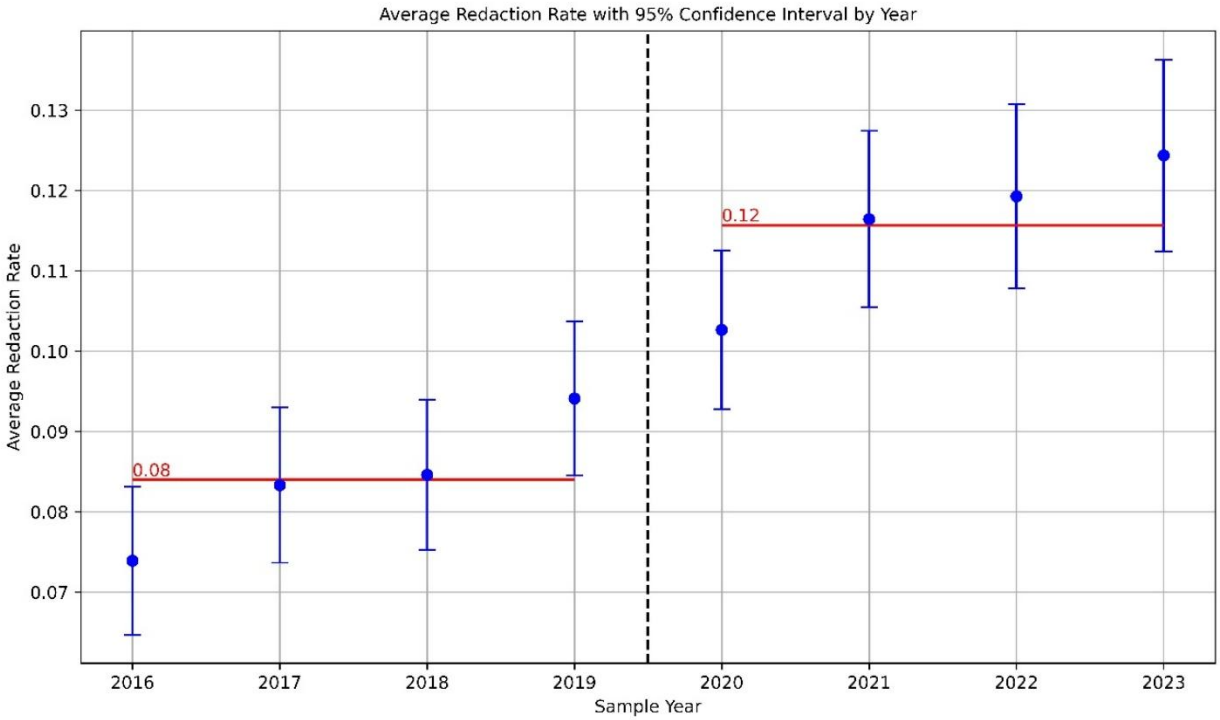


Figure 3. Redaction Rate Across Contract Type

Notes: This figure shows the average redaction rate before and after the FAST Act across different types of contracts.

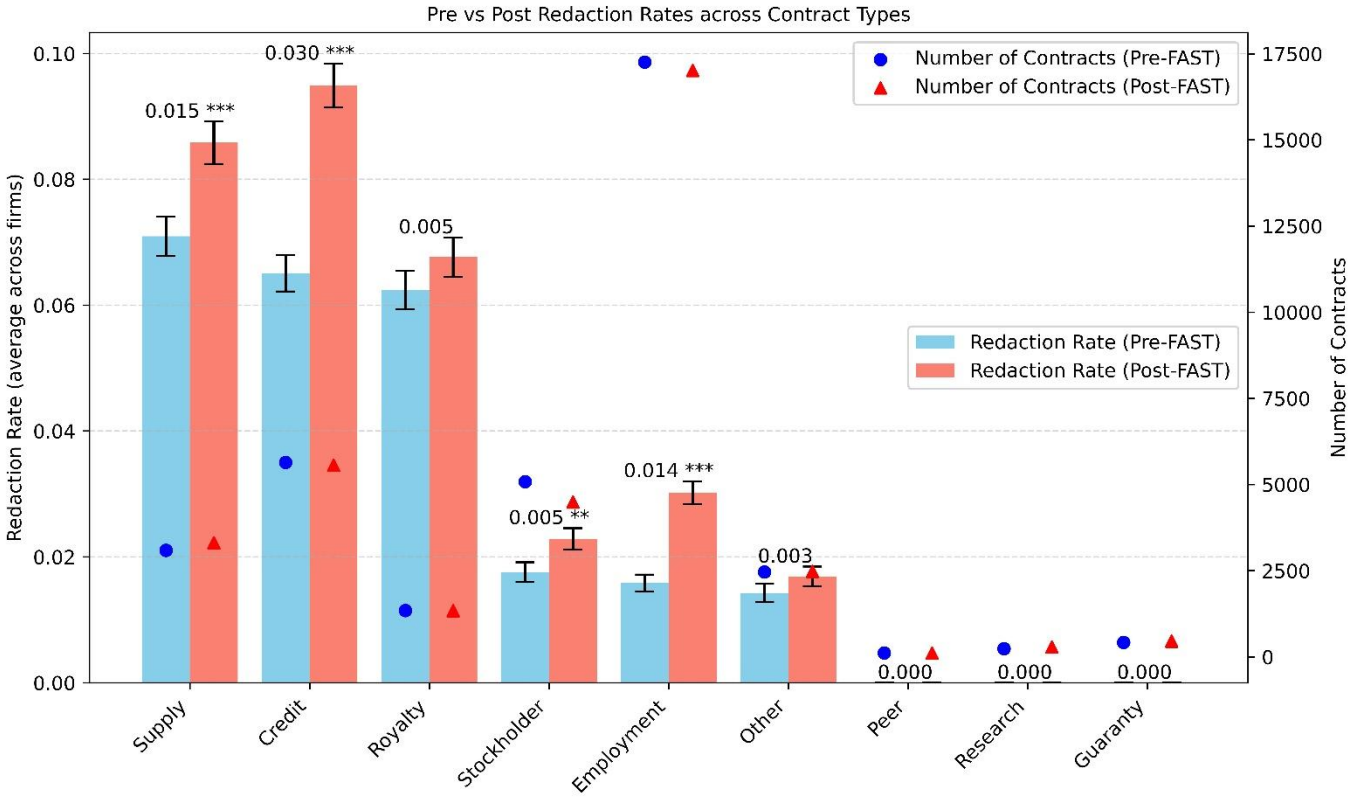


Figure 4. Pre-FAST and Change in Redaction Rate Across Industry

Notes: This figure plots the pre-FAST average redaction rates at the industry level (blue bars with left y-axis), and the change (post-minus-pre difference) in average redaction rate of the corresponding industries (red dots with right y-axis). The average redaction rate is calculated across firms within a SIC 2-digit industry. The dashed line is fitted with the red dots, and its slope as well as p-value for the slope being zero is reported in the upper right corner. SIC 2-digit industries are ranked by their pre-FAST average redaction rates from high to low along the x-axis.

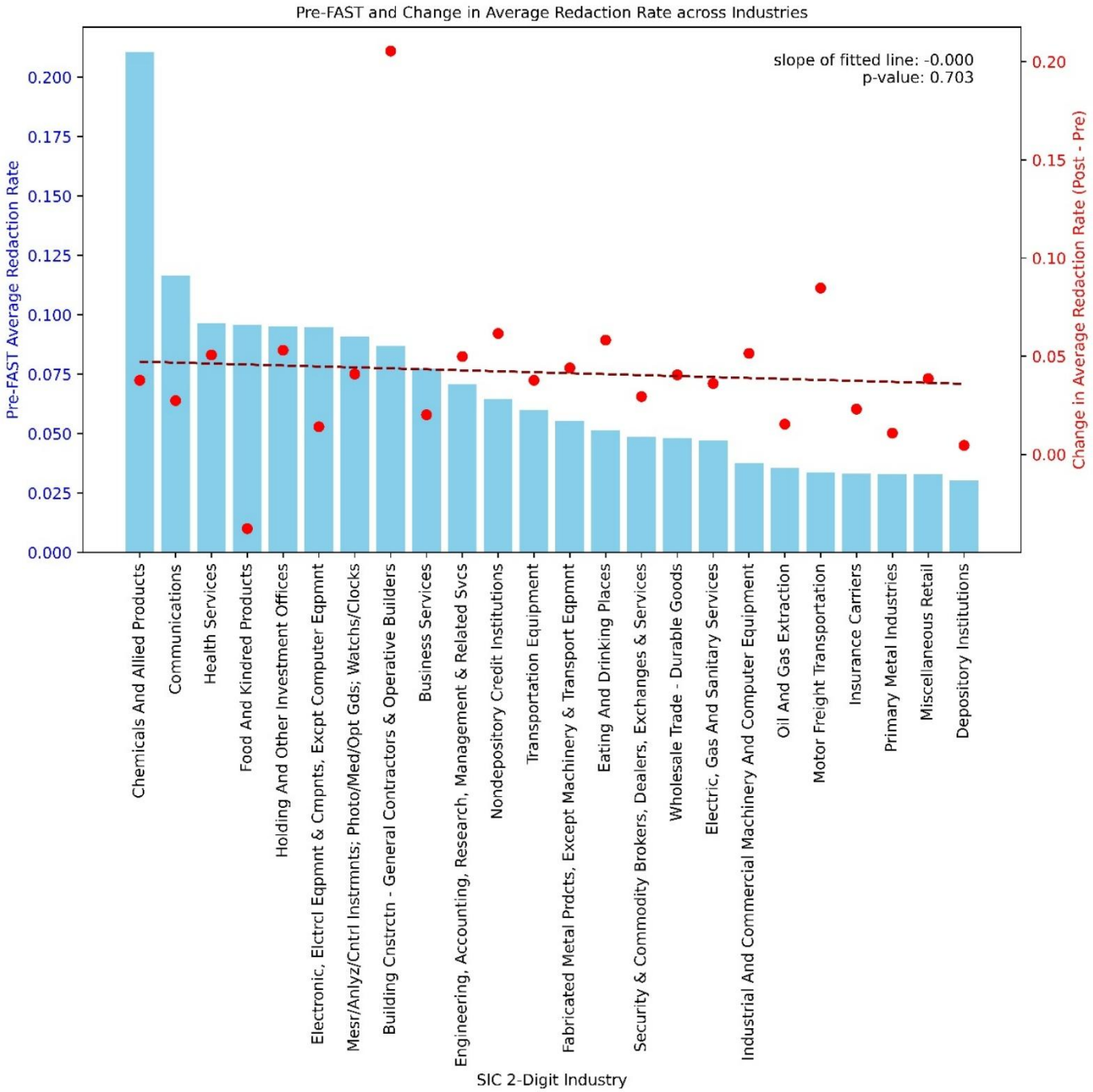


Figure 5. Pre-FAST and Change in Redaction Rate Across Firm Group

Notes: This figure plots the pre-FAST average redaction rates for each firm group (blue bars with left y-axis), and the change (post-minus-pre difference) in average redaction rate of the corresponding group (red dots with right y-axis). Firms are ranked and then grouped by their pre-FAST redaction rates where Group 1 includes the firms with the highest pre-FAST redaction rates and Group 24 includes the ones with the lowest. Groups are created to ensure the number of firms in each group is equal. The average redaction rate is calculated across firms within a group. The dashed line is fitted with the red dots, and its slope as well as p-value for the slope being zero is reported in the figure.

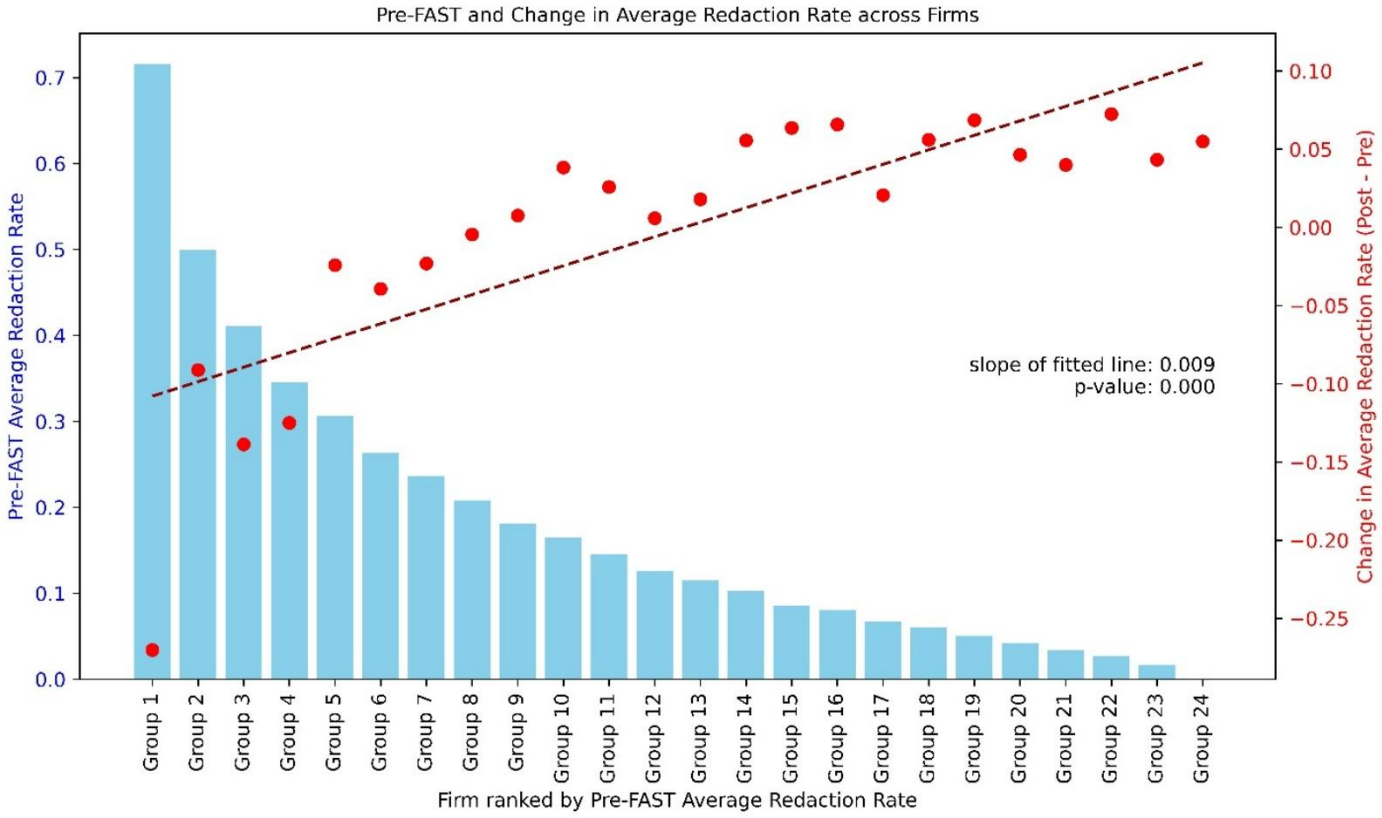
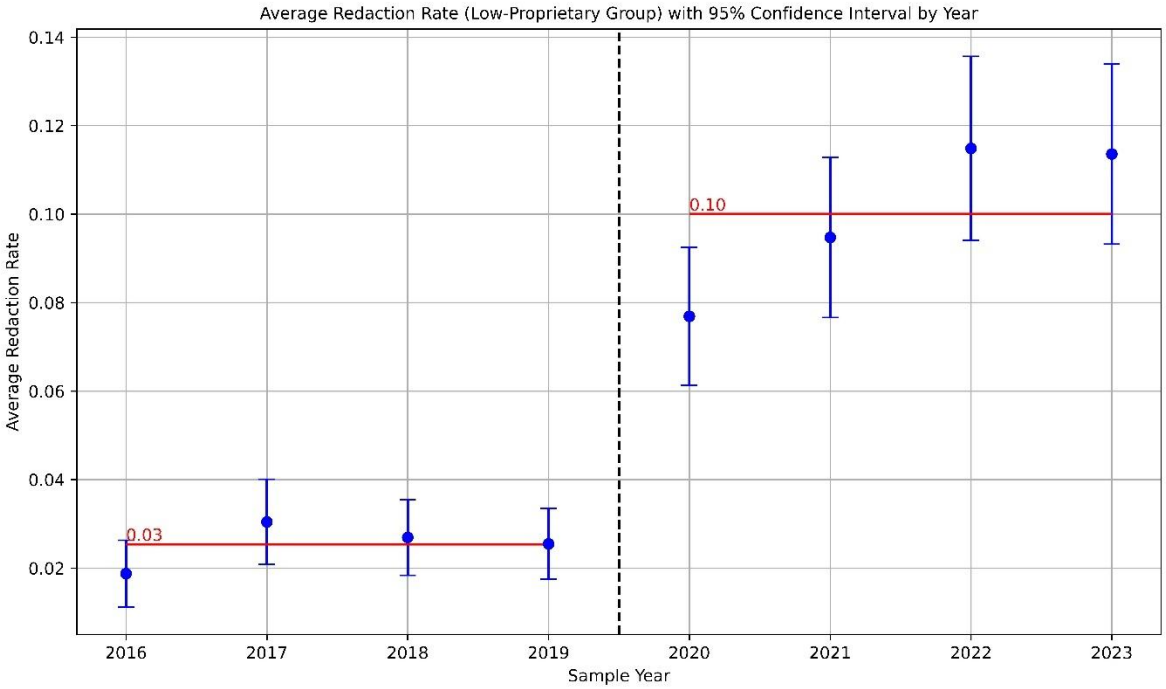


Figure 6. Redaction Rate Over Time for Low-Proprietary and High-Proprietary Firm

Notes: Panel A and B visualize the average redaction rate across firms in each year with its 95% confidence interval for low-proprietary and high-proprietary firms, respectively.

Panel A. Redaction Rate for Low-Proprietary Firm



Panel B. Redaction Rate for High-Proprietary Firm

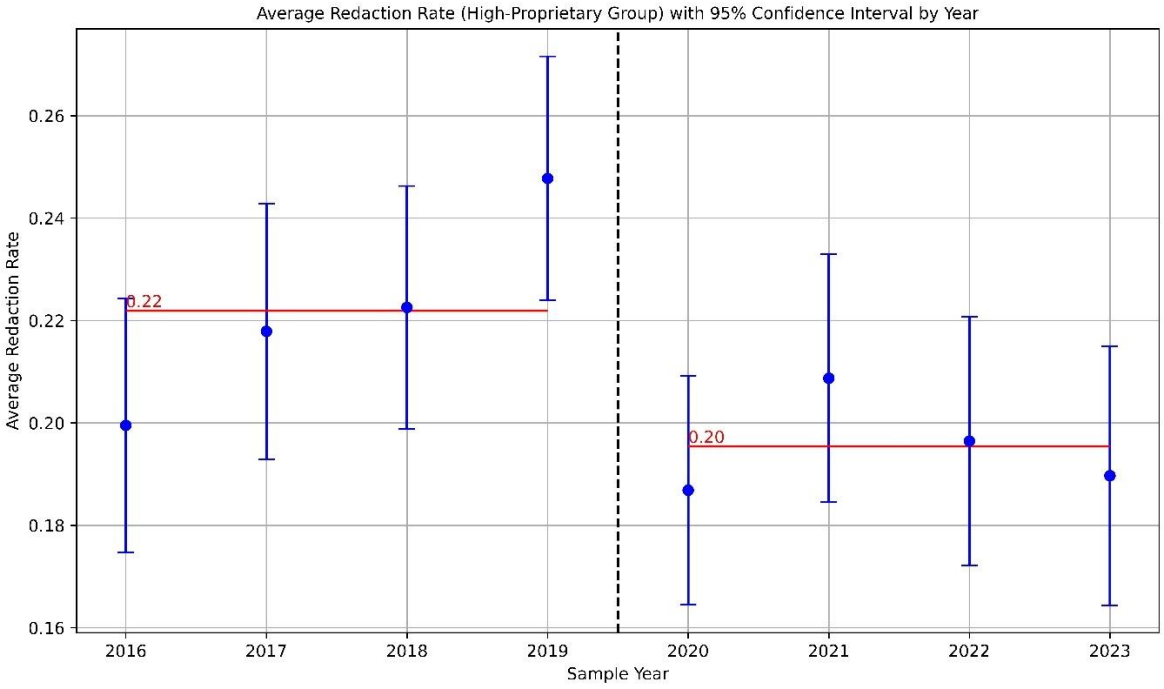


Figure 7. Event-Study Plot for Effect of FAST Act on Disclosure Redaction

Notes: This figure visualizes the dynamic difference-in-differences estimates for the effect of the FAST Act on disclosure redaction, along with their 95% confidence intervals. The model specification for the regression is: $P\_Redact_{i,t} = \sum_{j=-4}^{-2} \beta_j Low\_Proprietary_i * \mathbf{1}(t = j) + \sum_{k=0}^{3} \beta_k Low\_Proprietary_i * \mathbf{1}(t = k) + \sum_{l=-4}^{-2} \beta_l High\_Proprietary_i * \mathbf{1}(t = l) + \sum_{m=0}^{3} \beta_m High\_Proprietary_i * \mathbf{1}(t = m) + \gamma' X_{i,t} + \alpha_i + \delta_t + \epsilon_{i,t}$, where i stands for sample firm, t stands for sample year, $\mathbf{1}(t)$ is an indicator taking 1 for sample year t and 0 otherwise, $X_{i,t}$ is a vector of time-varying control variables, α_i denotes firm fixed effects, and δ_t denotes year fixed effects. All control variables in Table 5 are included. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm.

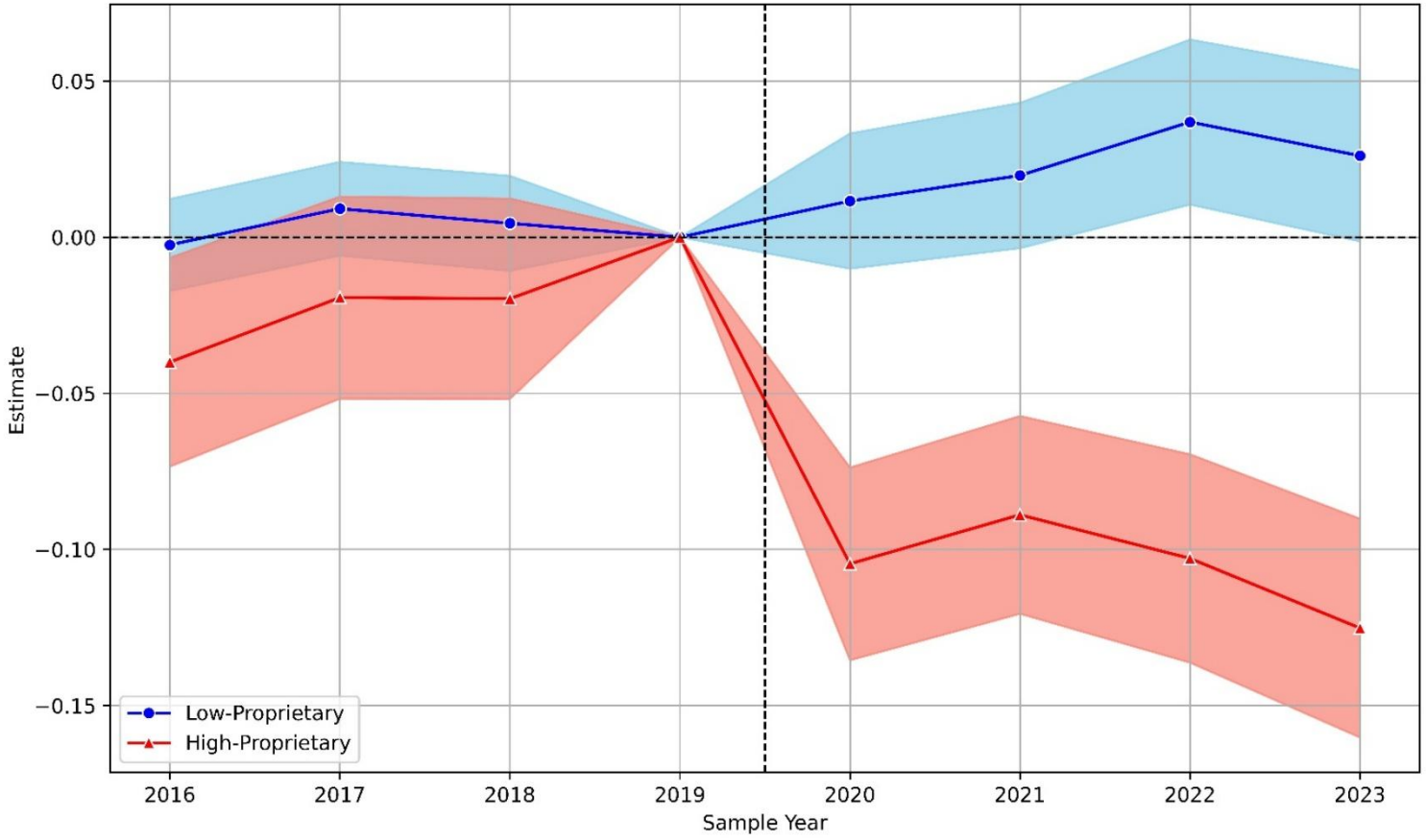


Table 1. Relevant Regulatory Change on Filing and Redacting Material Contract

Notes: This table provides the relevant regulatory changes about the filing and redaction of material contracts in chronological order.

Issue Date	Effective Date	Description
February 28, 1997 First SEC guidance issued in No.1 Staff Legal Bulletin		Reporting firms are required to file with the SEC their material contracts as exhibits in registration statements or periodic reports.[7] As per the Freedom of Information Act (FOIA), these material contracts are made public by the SEC.
		Relying on FOIA Exemption 4, reporting firms can redact confidential information in their material contracts through the SEC's confidential treatment request (CTR) procedure. The confidential information is defined as information that is (1) not material and (2) would likely cause competitive harm to the reporting firm if publicly disclosed.[8]
March 16, 2004	August 23, 2004	The SEC adopted amendments to Form 8-K to provide investors with more and faster disclosure of important corporate events. The amendments require the disclosure of the entry of or the amendment to material contracts within four business days. The amendments encourage but does not require firms to file the contracts together with Form 8-Ks.[9]
March 20, 2019	April 2, 2019	**The FAST Act**: The SEC adopted amendments to Regulation S-K and related rules and forms to reduce the costs and burdens on reporting firms while still providing all material information. The amendments allow reporting firms to redact confidential information from material contracts without filing CTRs.[10]
-	June 25, 2019	**The Supreme Court ruling** of *Food Marketing Institute v. Argus Leader Media* changed the definition of confidential information in FOIA. The new definition eliminates the "competitive harm" test and only requires the information to be "customarily kept private, or at least closely held, by the person imparting it."[11]
November 2, 2020	March 15, 2021	Following the ruling, the SEC adopted the new definition of confidential information as the type of information that is (1) not material and (2) both customarily and actually treated as private and confidential by the reporting firm.[12]

[7] Securities Act Rule 411 and Exchange Act Rule 12b-23. Material contracts include sale or purchase agreements of products, services, raw materials, franchise, or licenses, agreements to use a patent, formula, trade secret, process, or trade name, compensatory plans relating to options, warrants or rights, pension, retirement or deferred compensation or bonus, incentive or profit sharing, etc. Please see Item 601(b)(10) of Regulation S-K for a formal definition and a complete list of material contracts. Here is a real-life example of how Yahoo! analyzes and decides whether a contract qualifies as a material contract.
[8] Securities Act Rule 406, Exchange Act Rule 24b-2, Section 552(b)(4) of the FOIA, and the SEC's Staff Legal Bulletin 1 and 1A.
[9] Here is the final rule.
[10] Here is the press release and the final rule.
[11] Here is the DOJ's guidance issued after the ruling. The first day after the ruling date is regarded as the effective date for the new definition.
[12] Here is the final rule.

Table 2. Summary Statistics

Notes: This table reports the summary statistics for key variables. To mitigate the impact of outliers, all continuous variables are winsorized at the 1st and 99th percentiles. Please refer to Table A1 for variable definitions.

Variable	Count	Mean	STD	25%	Median	75%
Material Contract Characteristics						
Post	12,130	0.508	0.500	0	1	1
Low_Proprietary	12,130	0.299	0.458	0	0	1
Benchmark	12,130	0.394	0.489	0	0	1
High_Proprietary	12,130	0.307	0.461	0	0	1
N_Contract	12,130	5.988	4.694	3	5	8
N_Redact	12,130	0.628	1.370	0	0	1
P_Redact	12,130	0.100	0.206	0.000	0.000	0.111
D_Redact	12,130	0.292	0.455	0	0	1
Firm and Industry Characteristics						
Leverage	12,130	0.576	0.244	0.397	0.589	0.789
MTB	12,130	4.121	6.091	1.285	2.173	4.249
MarketCap	12,130	7.212	2.130	5.741	7.270	8.603
ROA	12,130	-0.029	0.204	-0.023	0.015	0.060
Loss	12,130	0.307	0.461	0	0	1
DebtIssue	12,130	0.360	0.480	0	0	1
EquityIssue	12,130	0.359	0.480	0	0	1
R&D	12,130	0.868	4.884	0.000	0.000	0.101
HHI	12,130	0.127	0.111	0.049	0.080	0.168

Table 3. Change in Redaction Rate Following FAST Act:
Rotation Between Low-Proprietary and High-Proprietary Firm

Notes: This table reports the transition of firms between redacting and non-redacting status (Panel A), our definition of low-proprietary, benchmark, and high-proprietary firms (Panel B), and redaction rates before and after the FAST Act for different groups of firms. Specifically, Panel A presents the transition matrix from firms' pre-FAST Act redaction status to their post-FAST Act status. A firm redacts *any* material contract in *any* pre-(post-)FAST Act year is viewed as a redacting firm in the pre-(post-)FAST Act period. The numbers in cells are the number of firms. Panel B presents the pre-FAST Act redaction rates of focal firms, peer firms, and their differences for different groups. Panel C presents the redaction rates of focal firms before and after the FAST Act for different groups. We use *t*-test to examine if the redaction rate is significantly different between pre-FAST Act years and post-FAST Act years, where *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Detailed variable definitions can be found in Table A1.

Panel A. Transition Between Redacting and Non-redacting Status

Pre-FAST Status	**Post-FAST Status**		
	Non-redacting	Redacting	Total
Non-redacting	647	349	996
Redacting	239	639	878
Total	886	988	1,874

Panel B. Focal and Peer Redaction Rate Before FAST Act

Group	**Focal Redaction Rate** (a): *P_Redact_Pre*	**Peer Redaction Rate** (b): *P_PeerRedact_Pre*	**Relative Redaction Intensity** (a) - (b): *Redaction_Spillover*
Low Proprietary	0.023	0.129	-0.106
Benchmark	0.020	0.050	-0.030
High Proprietary	0.221	0.089	0.130

Panel C. Focal Redaction Rate Before and After FAST Act

Group	**Pre-FAST Act**		**Post-FAST Act**		**Diff**
	# Obs	Avg *P_Redact*	# Obs	Avg *P_Redact*	Post - Pre
Low Proprietary	1,765	0.026	1,863	0.099	0.074***
Benchmark	2,373	0.021	2,409	0.065	0.044***
High Proprietary	1,836	0.224	1,884	0.195	-0.028***

Table 4. Characteristics and Industries of Low-Proprietary and High-Proprietary Firm

Notes: This table reports firm characteristics and industry distribution of low-proprietary and high-proprietary firms. Panel A compares the firm characteristics across two groups. We use *t*-test to examine if the characteristics are significantly different between two groups, where *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Detailed variable definitions can be found in Table A1. Panel B and C list the top 10 SIC 2-digit industries for low-proprietary and high-proprietary firms, respectively.

Panel A. Firm Characteristic for Low-Proprietary and High-Proprietary Firm

Variables	Low-Proprietary		High-Proprietary		Diff
	# Obs	Mean	# Obs	Mean	Post - Pre
Leverage	3,628	0.509	3,720	0.558	-0.048***
MTB	3,628	5.244	3,720	4.443	0.800***
MarketCap	3,628	7.376	3,720	6.934	0.442***
ROA	3,628	-0.028	3,720	-0.067	0.039***
R&D	3,628	0.775	3,720	1.628	-0.853***
ResSI	3,627	-0.002	3,719	0.004	-0.007***
HHI	3,628	0.133	3,720	0.129	0.004

Panel B. Industry Distribution for Low-Proprietary Firm

SIC 2-Digit Industry	Percentage of Obs
Business Services	21%
Chemicals And Allied Products	15%
Mesr/Anlyz/Cntrl Instrmnts; Photo/Med/Opt Gds; Watchs/Clocks	14%
Electronic, Elctrcl Eqpmnt & Cmpnts, Excpt Computer Eqpmnt	9%
Industrial And Commercial Machinery And Computer Equipment	5%
Electric, Gas And Sanitary Services	3%
Communications	3%
Health Services	3%
Insurance Carriers	2%
Transportation Equipment	2%

Panel C. Industry Distribution for High-Proprietary Firm

SIC 2-Digit Industry	Percentage of Obs
Chemicals And Allied Products	21%
Business Services	13%
Electronic, Elctrcl Eqpmnt & Cmpnts, Excpt Computer Eqpmnt	9%
Depository Institutions	8%
Mesr/Anlyz/Cntrl Instrmnts; Photo/Med/Opt Gds; Watchs/Clocks	5%
Industrial And Commercial Machinery And Computer Equipment	4%
Electric, Gas And Sanitary Services	3%
Transportation Equipment	3%
Oil And Gas Extraction	2%
Communications	2%

Table 5. Effect of FAST Act on Disclosure Redaction

Notes: This table presents the effects of the FAST Act on disclosure redaction. The model specification is $P\_Redact_{i,t} = \beta_1 Low\_Proprietary_i * Post_t + \beta_2 High\_Proprietary_i * Post_t + \gamma' X_{i,t} + \alpha_i + \delta_t + \epsilon_{i,t}$, where i stands for sample firm, t stands for sample year, $X_{i,t}$ is a vector of time-varying control variables, α_i denotes firm fixed effects, and δ_t denotes year fixed effects. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm and presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable = *P_Redact*	**(1)**	**(2)**	**(3)**
*Low_Proprietary * Post*	0.027***	0.026***	0.021***
	(0.007)	(0.007)	(0.007)
*High_Proprietary * Post*	-0.079***	-0.079***	-0.086***
	(0.009)	(0.009)	(0.009)
MarketCap		0.003	0.004
		(0.004)	(0.004)
MTB		0.000	0.000
		(0.001)	(0.001)
Leverage		0.035*	0.042*
		(0.021)	(0.022)
ROA		0.024	0.051**
		(0.021)	(0.023)
HHI		-0.025	-0.027
		(0.060)	(0.061)
Loss		0.006	0.004
		(0.006)	(0.007)
EquityIssue		0.002	0.003
		(0.005)	(0.006)
DebtIssue		-0.001	0.001
		(0.004)	(0.005)
R&D		-0.001	-0.001
		(0.001)	(0.001)
Log_N_Contract		-0.010**	-0.013***
		(0.004)	(0.005)
*MarketCap * Post*			0.000
			(0.002)
*MTB * Post*			0.000
			(0.001)
*Leverage * Post*			-0.027*
			(0.015)
*ROA * Post*			-0.077***
			(0.029)
*HHI * Post*			0.016
			(0.033)
*Loss * Post*			0.000
			(0.010)
*EquityIssue * Post*			-0.005
			(0.008)
*DebtIssue * Post*			-0.004
			(0.008)
*R&D * Post*			-0.001
			(0.001)
*N_Contract * Post*			0.008
			(0.006)
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	12,130	12,130	12,130
Adjusted R-squared	0.352	0.353	0.354

Table 6. Mean Reversion of Contracting Behavior

Notes: This table presents the analyses for the mean reversion of firms' contracting behavior. Panel A presents the number of firms transitioning between redacting and non-redacting status in every sample year compared to their status last year. Column (7) and (8) shows the percentage of firms that are reversing from non-redacting to redacting (i.e., not redacting last year but redacting this year) and vice versa (i.e., redacting last year but not redacting this year), respectively.

Panel A. Firms Transitioning between Redacting and Non-redacting across Sample Years

(1) Sample Year	**(2)** # Firms Showed Up Last Year	**(3)** # New Redactors	**(4)** # Repeating Redactors	**(5)** # Retiring Redactors	**(6)** # Never Redactors	**(7)** = (3) / [(3) + (6)] % Reversion from Non-redacting to Redacting	**(8)** = (5) / [(5) + (4)] % Reversion from Redacting to Non-redacting
2017	1,184	139	151	145	749	15.7%	49.0%
2018	1,302	155	176	174	797	16.3%	49.7%
2019	1,414	189	201	178	846	18.3%	47.0%
2020	1,514	215	260	185	854	20.1%	41.6%
2021	1,415	195	272	188	760	20.4%	40.9%
2022	1,363	181	265	176	741	19.6%	39.9%
2023	1,298	204	244	179	671	23.3%	42.3%

Table 6. Mean Reversion of Contracting Behavior (continued)

Notes: This table presents the analyses for the mean reversion of firms' contracting behavior. In Panel B, Column (1) includes lagged focal and peer redaction rates as control variables, assuming linear and first-order mean reversion. Column (2) further includes their lag-post interactions, allowing for distinct mean reversion behavior before and after the FAST Act. All control variables in Table 5, as well as firm and year fixed effects, are included. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm and presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel B. Controlling for Lagged Redaction

Dependent Variable = *P_Redact*	**(1)** Control for lagged focal and peer redaction rates	**(2)** Control for lagged redaction rates and lag-post interactions
*Low_Proprietary * Post*	0.021**	0.022***
	(0.008)	(0.008)
*High_Proprietary * Post*	-0.093***	-0.104***
	(0.010)	(0.011)
Lagged_P_Redact	-0.092***	-0.144***
	(0.018)	(0.029)
No_Lag_Obs	-0.019*	-0.034**
	(0.010)	(0.014)
Lagged_P_PeerRedact	0.047	0.069
	(0.033)	(0.051)
No_Lag_PeerObs	0.008	0.016*
	(0.008)	(0.010)
*Lagged_P_Redact * Post*		0.078**
		(0.034)
*No_Lag_Obs * Post*		0.033*
		(0.019)
*Lagged_P_PeerRedact * Post*		-0.040
		(0.063)
*No_Lag_PeerObs * Post*		-0.021
		(0.014)
Controls & Control * Posts	YES	YES
Firm FE	YES	YES
Year FE	YES	YES
Observations	10,783	10,783
Adjusted R-squared	0.362	0.362

Table 7. Heterogeneities in Redaction Effect of FAST Act:
Private Negative Information, Litigation Risks, Capital Needs, and Institutional Monitoring

Notes: This table presents the heterogeneities in the FAST Act's redaction effects using triple difference-in-differences regressions. Following prior literature, we use *ResSI* (residual in short-selling interest) to proxy for firms' private negative news withheld by the management, *Litigation* to proxy for litigation risks faced by the managers, *EquityIssue* to proxy for firms' capital needs, and *Institution* to proxy for institutional monitoring. For each proxy, we create an indicator variable *High Proxy* taking one if firms' average *Proxy* in the pre-FAST Act years is above the median of sample *Proxy*. All control variables in Table 5, as well as lagged focal and peer redaction rates and lag-post interactions, are included. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm and presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Heterogeneities for Low-Proprietary Group

Dependent Variable = *P_Redact*	**(1)**	**(2)**
*Low_Proprietary * Post * High_ResSI*	0.032**	
	(0.015)	
*High_Proprietary * Post * High_ResSI*	-0.027	
	(0.020)	
*Low_Proprietary * Post * Hig_Litigation*		-0.026*
		(0.014)
*High_Proprietary * Post * High_Litigation*		-0.008
		(0.020)
*Low_Proprietary * Post*	0.006	0.035***
	(0.010)	(0.011)
*High_Proprietary * Post*	-0.088***	-0.100***
	(0.015)	(0.014)
Other Two-way Interactions	YES	YES
Controls & Control * Posts	YES	YES
Fixed Effects	Firm, Year	Firm, Year
Observations	10,783	10,783
Adjusted R-squared	0.363	0.363

Panel B. Heterogeneities for High-Proprietary Group

Dependent Variable = *P_Redact*	**(1)**	**(2)**
*Low_Proprietary * Post * High_EquityIssue*	-0.006	
	(0.014)	
*High_Proprietary * Post * High_EquityIssue*	-0.040**	
	(0.020)	
*Low_Proprietary * Post * High_Institution*		-0.011
		(0.015)
*High_Proprietary * Post * High_Institution*		0.049**
		(0.020)
*Low_Proprietary * Post*	0.024**	0.029**
	(0.010)	(0.012)
*High_Proprietary * Post*	-0.084***	-0.129***
	(0.014)	(0.015)
Other Two-way Interactions	YES	YES
Controls & Control * Posts	YES	YES
Fixed Effects	Firm, Year	Firm, Year
Observations	10,783	10,783
Adjusted R-squared	0.363	0.363

Table 8. Focal Firms' Reaction Towards Their Peers' Redaction Around FAST Act

Notes: This table presents the strategic interactions between focal firms and their industry peers in redaction decisions, by showing the relation between the changes in a focal firm's redaction rates following the FAST Act and the changes in redaction rates of its peers. The firm-year panel is collapsed into a firm level dataset. The change in redaction is measured by the difference between the redaction rates in the pre- and post-FAST Act sample years. To aggregate peers' redaction rates, we use the numbers of material contracts filed in corresponding periods as the weights. In Column (1) we add no control variables, whereas we add the changes of control variables in Column (2) and group-specific changes of control variables in Column (3). All control variables in Table 5, as well as lagged focal and peer redaction rates and lag-post interactions, are included. Detailed variable definitions can be found in Table A1. Standard errors are presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable = Δ *P_Redact*	**(1)**	**(2)**	**(3)**
Low_Proprietary * Δ *P_PeerRedact*	0.103	0.098	-0.073
	(0.147)	(0.135)	(0.155)
High_Proprietary * Δ *P_PeerRedact*	-1.241***	-1.131***	-0.762***
	(0.148)	(0.136)	(0.161)
Δ *P_PeerRedact*	0.439***	0.380***	0.380***
	(0.117)	(0.109)	(0.122)
Controls	No	Δ Controls	Group-specific Δ Controls
Observations	1,874	1,835	1,835
Adjusted R-squared	0.053	0.219	0.287

Table 9. Consequences of Change in Redaction Rate Caused by FAST Act

Notes: This table presents the consequences of the changes in redaction rates caused by the FAST Act. In Panel A, we replace the dependent variable used in Table 5 with firms' profitability (industry adjusted *ROA*), and growth (industry adjusted *Sales_Growth*). In Panel B, we replace the dependent variable with voluntary disclosures (*Log # EPS Forecasts* and *Log # Earnings Forecasts*). All control variables in Table 5, as well as lagged focal and peer redaction rates and lag-post interactions, are included. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm and presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Financial Performance

	(1)	**(2)**
Dependent Variable	*Adj_ROA*	*Adj_Sales_Growth*
*Low_Proprietary * Post*	0.002	-2.153***
	(0.007)	(0.474)
*High_Proprietary * Post*	0.013	-1.238***
	(0.008)	(0.441)
Controls	YES	YES
Control * Posts	YES	YES
Firm FE	YES	YES
Year FE	YES	YES
Observations	10,783	10,730
Adjusted R-squared	0.756	0.089

Panel B. Voluntary Disclosure

	(1)	**(2)**
Dependent Variable	*Log # EPS Forecasts*	*Log # Earnings Forecasts*
*Low_Proprietary * Post*	-0.006	0.031
	(0.030)	(0.038)
*High_Proprietary * Post*	0.025	0.046
	(0.026)	(0.034)
Controls	YES	YES
Control * Posts	YES	YES
Firm FE	YES	YES
Year FE	YES	YES
Observations	10,783	10,783
Adjusted R-squared	0.833	0.826

Table 10. Effect of FAST Act on Disclosure Redaction Across Contract Type

Notes: This table presents the effects of the FAST Act on disclosure redaction across different types of contracts, using a contract level sample. The contract type is determined using key word searching through the whole contract following prior literature. Only contract types with a detectable redaction rate (Figure 3) are included in this table. All control variables in Table 5, as well as firm and year fixed effects, are included. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm and presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

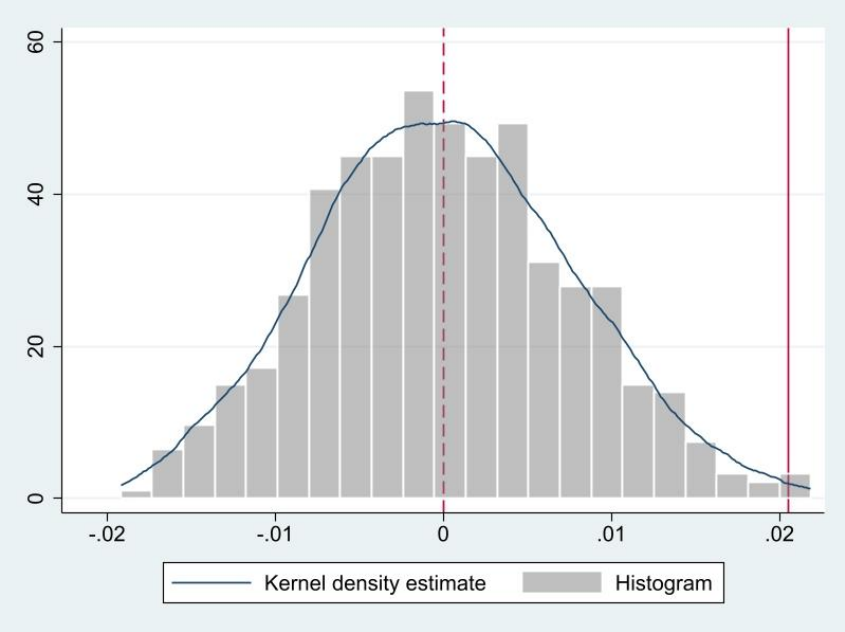
Dependent Variable = *P_Redact*	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Contract Type	Supply	Credit	Royalty	Stockholder	Employment	Other
*Low_Proprietary * Post*	-0.005	0.022	0.268***	0.023*	0.015**	-0.010
	(0.041)	(0.021)	(0.092)	(0.014)	(0.006)	(0.028)
*High_Proprietary * Post*	-0.101***	-0.052**	0.003	-0.048***	-0.004	-0.036
	(0.037)	(0.022)	(0.063)	(0.017)	(0.009)	(0.026)
Controls & Control * Posts	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	5,697	9,814	2,230	8,196	29,395	4,355
Adjusted R-squared	0.440	0.259	0.512	0.212	0.250	0.641

Appendix

Figure A1. Placebo Test for Effect of FAST Act on Disclosure Redaction (Placebo Low- and High-Proprietary Firms)

Notes: This figure visualizes the histogram of the coefficients in placebo tests where the low-proprietary or high-proprietary group is randomly assigned for 500 times. The model specification is: $P\_Redact_{i,t} = \beta_1 Low\_Proprietary_i * Post_t + \beta_2 High\_Proprietary_i * Post_t + \gamma' X_{i,t} + \alpha_i + \delta_t + \epsilon_{i,t}$, where i stands for sample firm, t stands for sample year, $X_{i,t}$ is a vector of time-varying control variables, α_i denotes firm fixed effects, and δ_t denotes year fixed effects. All control variables in Table 5 are included. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm. Panel A plots the distribution of β_1, and Panel B plots the distribution of β_2. The red solid vertical lines denote the estimates when true group definitions are used.

Panel A. Histogram of Coefficients for Low-Proprietary Group



Panel B. Histogram of Coefficients for High-Proprietary Group

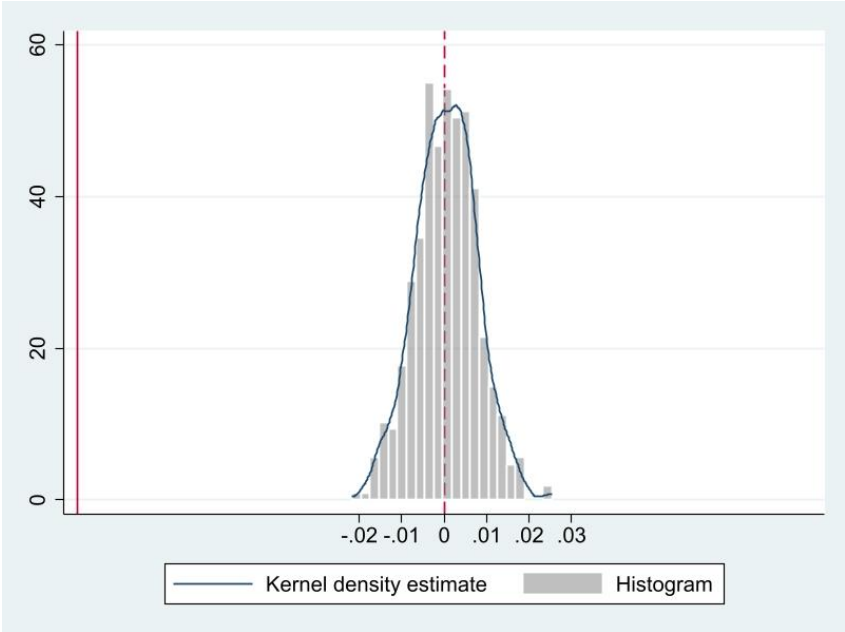


Figure A2. Example of Material Contract

Notes: This is an example of material contract between Tesla and Panasonic: https://www.sec.gov/Archives/edgar/data/1318605/000156459019026445/tsla-ex103_198.htm. All information, even the section title, in Section 3 has been redacted.

2. Tesla Responsibilities

2.1 Section 2.4 (Tesla Responsibilities) of the General Terms is incorporated by reference into, and forms an integral part of, this Lease, provided that such provision shall be d *mutandi* solely for purposes of applicability to this Lease.

2.2 As a Tesla Responsibility, Tesla shall: (a) maintain the Land; (b) construct the Factory; and (c) procure items for the Premises and/or the Purpose as may be agreed in writing by

3. [***]

3.1 [***]

(a) [***]

(b) [***]

(c) [***]

3.2 [***]

(a) [***]

(b) [***]

(c) [***]

3.3 [***]

3.4 [***]

(a) [***]

(b) [***]

(c) [***]

(d) [***]

4. Representations and Warranties.

4.1 General. Each Party represents and warrants that it (and its Affiliates to the extent applicable): (a) will perform all of its obligations under this Lease in a professional and industry standards and in accordance with all of the terms of this Lease; and (b) has the right and ability to enter into, perform the obligations under and agree to the covenants contained i that: (c) each obligation of any Tenant entity under this Lease is binding on all Tenant entities which are Parties to this Lease as if each such Tenant entity had agreed to the obligation. obligation of any Tesla entity under this Lease is binding on all Tesla entities which are Parties to this Lease as if each such Tesla entity had agreed to the obligation.

Table A1. Variable Definitions

Notes: This table provides the definitions of variables utilized in this study.

Variable	Definition	Source
Firm Characteristics based on Material Contracts		
P_Redact	The percentage of material contracts that have been redacted by a sample firm in a given year.	EDGAR
N_Redact	The number of redacted material contracts filed by a sample firm in a given year. Following Floros, Johnson, & Zhao (2023), Thompson, Urcan, and Yoon (2023), Chen, Tian, and Yu (2022), Kim et al. (2021), Park et al. (2019), Glaeser (2018), and Boone, Floros, and Johnson (2016), we use keyword searching to determine if a material contract has been redacted, utilizing six groups of keywords such as "confidential treatment," "rule 406," "rule 24b-2," "item 601(b)," "intentionally omitted/excluded," "[*]," and their variations.	EDGAR
N_Contract	The number of material contracts filed by a sample firm in a given year.	EDGAR
P_PeerRedact	The percentage of material contracts that have been redacted by the peers of a sample firm in a given year. We identify firms in same the TNIC-3 industry of a sample firm in a given year as its peers. The calculation does not include peers that file zero material contracts in the given year. TNIC-3 industries are firm-year specific and based on the similarity of product descriptions in 10-K filings (Hoberg and Phillips, 2010, 2016).	EDGAR, Hoberg-Phillips
P_Redact_Pre	The percentage of material contracts that have been redacted by a sample firm in pre-FAST Act years.	EDGAR
P_PeerRedact_Pre	The percentage of material contracts that have been redacted by the peers of a sample firm in pre-FAST Act years. Any firm shows up in the sample firm's TNIC-3 industry in any pre-FAST Act year is regarded as its peer. The calculation does not include peers that file zero material contracts in pre-FAST Act years.	EDGAR, Hoberg-Phillips
Redaction_Spillover	The difference between the pre-FAST Act redaction rate of peers and that of a sample firm: *Redaction_Spillover = P_Redact_Pre - P_PeerRedact_Pre*.	EDGAR, Hoberg-Phillips
Low_Proprietary	An indicator variable that equals one for a sample firm in the bottom three deciles of *Redaction_Spillover*, and zero otherwise.	EDGAR, Hoberg-Phillips
Benchmark	An indicator variable that equals one for a sample firm in the middle four deciles of *Redaction_Spillover*, and zero otherwise.	EDGAR, Hoberg-Phillips
High_Proprietary	An indicator variable that equals one for a sample firm in the top three deciles of *Redaction_Spillover*, and zero otherwise.	EDGAR, Hoberg-Phillips
P_Type	The percentage of material *Type* contracts filed by a sample firm in a given year. The *Type* of a material contract is determined by keyword searching following Chen, Tian, and Yu (2022). We use a modified list of keywords from Boone, Floros, and Johnson (2016) where any material contract belongs to one of the following ten types: customer/supplier, license/royalty, peer, research/consulting, credit/leasing, employment, stockholder, guaranty,	EDGAR

	litigation, and other. The value is missing if the sample firm files zero material contracts in the given year.	
Character	The average number of characters used in material contracts filed by a sample firm in a given year.	EDGAR
Word	The average number of words used in material contracts filed by a sample firm in a given year.	EDGAR
Vocabulary	The average number of unique words used in material contracts filed by a sample firm in a given year.	EDGAR
Post	An indicator variable that equals one for pre-FAST Act sample years (four rolling-window years before 2019-04-01), and zero for post-FAST Act sample years (four rolling-window years after 2019-06-25).	EDGAR
D_Redact	An indicator variable that equals one if a sample firm has redacted any material contracts in a given year, and zero otherwise.	EDGAR
Lagged_P_Redact	One-year lagged *P_Redact*.	EDGAR
No_Lag_Obs	An indicator variable that equals one if the one-year lagged firm-year observation does not exist in the sample, and zero otherwise.	EDGAR
Lagged_P_PeerRedact	One-year lagged *P_PeerRedact*.	EDGAR, Hoberg-Phillips
No_Lag_PeerObs	An indicator variable that equals one if the one-year lagged peer firm-year observation does not exist in the sample, and zero otherwise.	EDGAR, Hoberg-Phillips
Generic Firm and Industry Characteristics		
Leverage	The ratio of a sample firm's total liabilities (LT) to total assets (AT) in a given year.	Compustat
MTB	The ratio of a sample firm's market value of equity (MKVALT or PRCC_F * CSHO) to book value of equity (CEQ) ratio in a given year.	Compustat
MarketCap	The natural logarithm of a sample firm's market value of equity (MKVALT or PRCC_F * CSHO) in a given year.	Compustat
ROA	The ratio of a sample firm's net income (NI) to its total assets (AT) in a given year.	Compustat
Loss	An indicator variable that equals one if a sample firm reports a loss (NI<0) in a given year, and zero otherwise.	Compustat
DebtIssue	An indicator variable that equals one if the change in a sample firm's total debt (DT) equals or exceeds one percent over the last year, and zero otherwise.	Compustat
EquityIssue	An indicator variable that equals one if the change in a sample firm's common/ordinary stock capital (CSTK) equals or exceeds one percent over the last year, and zero otherwise.	Compustat
MissingR&D	An indicator variable that equals one if a sample firm has missing research and development expense (XRD) in a given year, and zero otherwise.	Compustat
MarketShare	The ratio of a sample firm's revenue in a given year to the total revenue in the three-digit SIC code industry in the same year.	Compustat
Analyst	The natural logarithm of one plus the number of analysts following a sample firm in a given year.	I/B/E/S

Returns12m	The cumulative market-adjusted return of a sample firm over the past 12 months, where market-adjusted return is the buy-and-hold return minus CRSP value-weighted market index returns.	CRSP
ReturnsVol	The sample standard deviation of a sample firm's monthly stock return over the past 24 months.	CRSP
R&D	The ratio of a sample firm's research and development expense (XRD) to sales (SALE) in a given year, imputed zero if missing.	Compustat
Fluidity	A firm-year specific measure of how intensively the product market around a sample firm is changing in a given year. It is customized to each firm based on each firm's unique product market vocabulary (Hoberg, Phillips, and Prabhala, 2014).	Hoberg-Phillips
Similarity	A firm-year specific measure of how similar the business description of a sample firm's10-K filing is to its peers where the peers are identifies by the text-based network industry classifications, constructed by Hoberg and Phillips (2016).	Hoberg-Phillips
TnicHHI	A firm-year specific Herfindahl-Hirschman Index based on text-based network industry classifications, constructed by Hoberg and Phillips (2016). The data is not available for fiscal year-ends after 2023.	Hoberg-Phillips
ResSI	The average of quarterly short interest residuals for a sample firm in a given year. Quarterly short interest residuals are estimated following Bao et al. (2019) and Bao, Kim, and Su (2022).	Compustat, Thomson/Refinitiv
Litigation	The probability of being sued for a sample firm in a given year, estimated following the model in Kim and Skinner (2012, Table 7, column 3). More specifically, SUEProb/(1-SUEProb) = exp(-7.883 + 0.566 * FPS + 0.518 * at + 0.982 * salegrw + 0.379 * return - 0.108 * skewness + 25.635 * stdev + 0.00007 * turnover), where FPS is an indicator variable for industries that belong to biotech (SIC codes 2833-2836 and 8731-8734), computers (3570-3577 and 7370-7374), electronics (3600-3674), or retail (5200-5961); at is the log transformed total assets of year t; salegrw is the sales change from year t-1 to year t scaled by total assets of year t-1; return is the 12-month market-adjusted return in year t; skewness and stdev are the stock-return skewness and standard deviation in year t; turnover is trading volume in year t scaled by the beginning-of-year t shares outstanding (divided by 1,000).	Compustat, CRSP
Institution	The average of quarterly institutional ownership ratios for a sample firm in a given year. Quarterly institutional ownership ratios are measured by the total number of shares owned by institutions divided by the number of shares outstanding.	Thomson/Refinitiv
HHI	The Herfindahl-Hirschman Index for a three-digit SIC industry in a given year. It is calculated as the sum of the squared market share of each sample firm in the industry in the given year, where the market share is the ratio of the firm's revenue to total industry revenue. Each industry-year requires at least 10 observations.	Compustat
Log # EPS Forecasts	The log-transformed number of EPS forecasts issued by a sample firm in a given year.	I/B/E/S
Log # Earnings Forecasts	The log-transformed number of any types of earnings forecasts issued by a sample firm in a given year.	I/B/E/S

Table A2. Sample Construction Procedure

Notes: This table presents the sample construction procedure for our firm-year panel dataset. The sample years are defined as four rolling-window years before 2019-04-01 (the elimination of CTRs) and four rolling-window years after 2019-06-25 (the elimination of the "competitive harm" test).[13] In Panel A, we collect material contracts from the SEC filings in EDGAR daily feed files by selecting exhibits of type EX-10.[14] In Panel B, we start with firm-year observations of non-financial U.S. firms that are listed on NYSE, AMEX, or NASDAQ, sourced from Compustat. Each sample year is linked to the most recent fiscal year ending prior to the end of the sample year. We obtain firm-year control variables from Compustat, Thomson/Refinitiv, I/B/E/S, CRSP, Execucomp, and Hoberg-Phillips Data Library. Major variables include *MarketCap*, *MTB*, *Sales*, *Returns12m*, *ReturnsVol*, and *HHI*. All variables are defined in Table A1.

#	Panel A. Material Contracts	# Contract Left	# Firm Left
1	Select material contracts filed with the SEC during the sample years	403,460	12,503
2	Drop material contracts that cannot be parsed (e.g., pdf files)	402,956	12,503
3	Drop material contracts that do not have a form type	381,574	12,482
4	Drop material contracts that are not filed in 10-Ks, 10-Qs, or 8-Ks	277,186	10,208

#	Panel B. Firm-Year Panel	# Firm-year Left	# Firm Left
1	Select firm-years of non-financial U.S. firms listed on major U.S. exchanges during the sample years	40,475	7,033
2	Drop firm-years with missing firm identifier PERMNO, TICKER, or CIK	34,431	6,175
3	Drop firm-years with missing major variables	17,890	3,381
4	Drop firm-years with zero material contract	15,180	3,191
5	Drop firm-years of firms with material contracts only in pre- or post-FAST Act years	12,603	1,948
6	Drop firm-years of firms with missing pre-FAST Act peer redaction rates	12,130	1,874

[13] See Figure 1 for a visualization of the sample period. We exclude the three months between the elimination of CTRs and the elimination of the "competitive harm" test due to the uncertain impact of the FAST Act on firms' redaction decisions. Besides, "sample year" or "year" means "rolling-window year" rather than "calendar year" or "fiscal year" in this study unless otherwise stated.

[14] The EDGAR daily feed files can be accessed from here. As per Regulation S-K Item 601, material contracts are classified under Exhibit 10. To extract these contracts, we write Python code to parse the feed files and retrieve all exhibits of type 10. We employ a case-insensitive regular expression "ex-10\b" on the document type field to identify material contracts. To validate our data source and extraction approach, we cross-reference 200 random periodic filings in the EDGAR index files. All 123 material contracts in the 200 selected filings align with the extracted exhibits. Additionally, to mitigate the concern of double counting, we randomly check 20 redacted exhibits filed with the SEC in Form 8-Ks and their subsequent periodic filings. In all cases, the exhibits have only been attached once in the current filings, but not again in the subsequent periodic filings.

Table A3. Placebo Test for Effect of FAST Act on Disclosure Redaction (Placebo Event Year)

Notes: This table presents the effects of the FAST Act on disclosure redaction, using placebo event years. The FAST Act took effect in April 2019, while here in Column (1), (2), and (3) we set it to happen in April 2016, 2017, and 2018, respectively. The model specification follows the same as Table 5. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm and presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable = *P_Redact*	**(1)**	**(2)**	**(3)**
Placebo Event In	2016 April	2017 April	2018 April
*Low_Proprietary * Post*	0.009	0.006	0.002
	(0.007)	(0.006)	(0.007)
*High_Proprietary * Post*	0.020	0.015	0.023
	(0.014)	(0.013)	(0.014)
Controls	YES	YES	YES
Control * Posts	YES	YES	YES
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	5,743	5,743	5,743
Adjusted R-squared	0.393	0.391	0.392

Table A4. Robustness Check for Redaction Effect of FAST Act

Notes: This table presents the robustness checks for the FAST Act's redaction effects. In Panel A, we use alternative dependent variables such as the number of redacted contracts (Column (1)) and the indicator of any redaction in a certain firm-year (Column (2)). Accordingly, we use Poisson and Logistics regressions for the corresponding dependent variables. In Panel B, we use alternative definitions for our group classification. We test equal weighting instead of weighting using the number of contracts (Column (1)) and alternative industry peer definition (Column (2)). In Panel C, we use alternative samples. Column (1) uses a sample with extra control variables for contract types (*P_Employment, P_Credit, P_Stockholder, P_Supply*), contract length and vocabulary diversity (*Character, Word, Vocabulary*), market conditions (*Returns12m*, *ReturnsVol*), and more measures for firms proprietary and agency costs (*MissingR&D, MarketShare, Analyst, Similarity, TnicHHI, Fluidity, ResSI, Institution, Litigation*). Column (2) uses a sample where each firm-year has at least five material contracts. In Panel D, we test alternative model specifications such as replacing firm fixed effects with industry fixed effects (Column (1)), replacing year fixed effects with industry-year fixed effects (Column (2)), replacing firm clustering with firm and year two-way clustering (Column (3)), and replacing firm clustering with industry and year two-way clustering (Column (4)). Industries are defined using two-digit SIC code. All control variables in Table 5, as well as lagged focal and peer redaction rates and lag-post interactions, are included. Detailed variable definitions can be found in Table A1. Standard errors are clustered by firm and presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Alternative Dependent Variable

	(1)	**(2)**
Dependent Variable	*N_Redact*	*D_Redact*
Regression Method	Poisson	Logit
*Low_Proprietary * Post*	0.225*	0.775***
	(0.119)	(0.243)
*High_Proprietary * Post*	-1.092***	-2.654***
	(0.092)	(0.205)
Controls	YES	YES
Control * Posts	YES	YES
Firm FE/Dummies	YES	YES
Year FE/Dummies	YES	YES
Observations	7,019	6,488
Pseudo R-squared	0.375	0.293

Panel B. Alternative Independent Variable

	(1)	**(2)**
Independent Variable Definition	Equal Weight	Three-Digit SIC
*Low_Proprietary * Post*	0.030***	0.027***
	(0.008)	(0.008)
*High_Proprietary * Post*	-0.100***	-0.104***
	(0.010)	(0.011)
Controls	YES	YES
Control * Posts	YES	YES
Firm FE	YES	YES
Year FE	YES	YES
Observations	10,783	11,200
Adjusted R-squared	0.363	0.356

Panel C. Alternative Sample Selection

	(1)	(2)
Sample	Extra Controls	*N_Contract* >= 5
*Low_Proprietary * Post*	0.018**	0.020**
	(0.008)	(0.010)
*High_Proprietary * Post*	-0.087***	-0.080***
	(0.010)	(0.011)
Control Variables	YES	YES
Control * Post Interactions	YES	YES
Firm FE	YES	YES
Year FE	YES	YES
Observations	10,509	5,404
Adjusted R-squared	0.443	0.478

Panel D. Alternative Model Specification

	(1)	(2)
Model Specification	Use Industry FE	Use Industry-Year FE
*Low_Proprietary * Post*	0.022***	0.025***
	(0.008)	(0.009)
*High_Proprietary * Post*	-0.103***	-0.105***
	(0.011)	(0.011)
Control Variables	YES	YES
Control * Post Interactions	YES	YES
Firm FE	NO	YES
Industry FE	YES	NO
Year FE	YES	NO
Industry-Year FE	NO	YES
Observations	10,783	10,783
Adjusted R-squared	0.362	0.370

	(3)	(4)
Model Specification	Cluster by Firm and Year	Cluster by Industry and Year
*Low_Proprietary * Post*	0.022**	0.022**
	(0.007)	(0.009)
*High_Proprietary * Post*	-0.104***	-0.104***
	(0.021)	(0.025)
Control Variables	YES	YES
Control * Post Interactions	YES	YES
Firm FE	YES	YES
Year FE	YES	YES
Observations	10,783	10,783
Adjusted R-squared	0.362	0.362