When Regulation Falls Short: Evidence from "Other Events" Disclosures*

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When Regulation Falls Short: Evidence from "Other Events" Disclosures

We investigate conditions for when disclosure regulation may fall short by comparing lightly regulated "Other Events" (OE) disclosures to non-OE ones within 8-K filings. First, we confirm that OE disclosures face significantly less regulatory scrutiny than non-OE disclosures. Next, we find that the sentiment of OE disclosure contributes to stock mispricing and negatively predicts firms' future financials, suggesting strategic sentiment distortion. In contrast, these distortions are absent in strictly regulated non-OE disclosures. We use topic modeling and LLMs to identify the content most subject to such distortions and find hard-to-verify non-financial topics most susceptible. Timing-wise, we observe ensuing corporate events, such as insider sales and equity offerings, where managers and their firms stand to benefit from distorting sentiment. Lastly, we find retail investors particularly vulnerable to such practices. These findings point towards multifaceted areas where regulatory scrutiny could be enhanced. Overall, weakened disclosure regulation may foster manipulation, disproportionately harming retail investors.

Keywords: Disclosure Regulation, Other News, 8-Ks, Sentiment Distortion, Retail Investors, Textual Analysis, ChatGPT

JEL Classification: G14, D12, M41

The current administration's efforts to deregulate and downsize government agencies have reignited a longstanding debate over the appropriate scope of government regulation: How much regulation is truly necessary? Does deregulation enhance businesses and market freedom, or does it inadvertently enable illicit or even illegal activities? Similarly, within capital markets, the rationale for disclosure regulations remains a persistent question. In theory, in the absence of regulation, firms would naturally weigh the costs and benefits of disclosure to arrive at an economically optimal level of information provision (Healy and Palepu, 2001). A key justification for disclosure regulation emphasizes the need to prevent misleading communications and to protect less sophisticated investors (e.g., Watts and Zimmerman, 1986). Supporting this view, Karpoff, Lee, and Martin (2008) provide empirical evidence that enforcement actions against financial misrepresentation carry significant legal and career consequences for managers, highlighting the critical deterrent function of regulation.

Empirically, testing for the effectiveness of disclosure regulation across the spectrum of U.S. firms presents a significant challenge, as it requires comparing disclosures with varying regulatory intensity while holding constant the disclosure rules framework. In this study, we address this challenge by analyzing potential disclosure distortions across differentially regulated components of 8-K filings, comparing lightly regulated "Other Events" disclosures with more stringently regulated mandatory disclosure.

Corporate press releases are a primary channel for firms disseminating information, typically via company websites, financial media, and filings of Form 8-K to the U.S. Securities and Exchange Commission (SEC). Among these outlets, 8-Ks provide the most timely and comprehensive coverage of significant corporate events (e.g., Lerman and Livnat, 2010; Cao et al., 2018; Ben-Rephael et al., 2022). Of note, one-fourth of 8-Ks feature disclosure of "Other Events" (OE, Item 8.01), a residual, lightly scrutinized, and voluntary item. The SEC's comprehensive 8-K filing guidance spans 24 pages,

yet allocates only 64 words to OE disclosure.[1] This minimal guidance defines OE broadly as matters "*not otherwise called for by this form [8-K], that the registrant deems of importance to security holders*" – a deliberately flexible standard that provides virtually no specific direction, particularly for disclosures concerning intangible or subjective information.[2] Furthermore, the voluntary nature of OE disclosures exempts them from regulations such as Section 10(b) or Rule 10b-5 of the Securities Exchange Act of 1934 (Segal and Segal, 2016).

Our key methodological innovation is in comparing disclosures under differential regulatory scrutiny within the same filings, i.e., the lightly regulated *residual* OE item versus strictly regulated *scripted* items within 8-K filings. This enables us to study the consequences of reduced disclosure regulation, thereby providing new insights into whether disclosure regulations are essential for safeguarding the quality of corporate disclosures and the interests of unsophisticated investors. Specifically, we study three research questions. First, we validate if OE disclosures are less scrutinized than non-OE, and if so, whether that results in disclosure distortion.[3] Second, we explore the specific topics and timing associated with potential heightened disclosure distortion. Third, we investigate the consequence of such distortion for investors by comparing whether unsophisticated retail investors are more susceptible compared to their sophisticated counterparts.

To operationalize, we assemble the universe of 8-Ks filed by U.S. public firms from August 2004 to August 2020, and construct a sample of half a million 8-Ks (with available data requirements)

[1] The SEC's 8-K filing guidance is at https://www.sec.gov/files/form8-k.pdf.
[2] Outside of "Other Events", the SEC exactly titles and carefully describes the type of information conveyed. The nine items are Section 1 – Registrant's Business and Operations, Section 2 – Financial Information, Section 3 – Securities and Trading Markets, Section 4 – Matters Related to Accountants and Financial Statements, Section 5 – Corporate Governance and Management, Section 6 – Asset-Backed Securities, Section 7 – Regulation FD, Section 8 – Other Events, and Section 9 – Financial Statements and Exhibits.
[3] We focus on the sentiment distortion as the existing literature shows sentiment is an important tool of strategic disclosure (e.g., Ahern and Sosyura, 2014; Huang, Teoh, and Zhang, 2014). Additionally, sentiment is directly comparable across different disclosure components.

for our analyses.[4] We focus on three subsamples: 1) "All OE": A subsample of 114,953 8-Ks that includes Item 8.01, which account for 23.5% of the sample 8-Ks; 2) "Standalone OE": A narrower subsample of 79,856 8-Ks that reports only Item 8.01 and thus is a subset of "All OE"; and 3) "Non-OE": A benchmark sample of the 374,864 8-Ks without Item 8.01 disclosures. We measure textual sentiment in each 8-K as the difference between the proportion of positive words and negative words, based on the Loughran and McDonald's (2011) dictionary. This sentiment measure is not only a replicable benchmark in the literature but also indicative of how individual and institutional investors process financial information (Cao, Jiang, Yang, and Zhang, 2023).

We begin by verifying the differential regulatory scrutiny of OE versus non-OE disclosures using SEC comment letters, a critical oversight tool for enforcing compliance (e.g., Dechow, Lawrence, and Ryans, 2016; Kubick et al., 2016). Our analysis reveals that the odds of SEC comment letters addressed to OE disclosures are 70.5% lower than for non-OE disclosures. Moreover, regulators target significantly more comment letters to potentially "suspicious" disclosures – those with extreme sentiment or initial market reactions – but this pattern holds only for non-OE disclosures rather than OE disclosures. These findings confirm that OE disclosures face substantially less regulatory oversight than their non-OE counterparts.

To test our first research question regarding potential sentiment distortion due to differential regulatory intensity, we estimate regressions of buy-and-hold abnormal returns (BHAR) in the four-day disclosure window [0, +3] and the three-month post-disclosure window [+4, +63] on disclosure sentiment. Using the "All OE" sample, we find that a one standard deviation increase in OE sentiment is associated with a statistically significant increase of 0.19% in event returns, but a subsequent decline

[4] Our sample starts from August 23, 2004, because that is when the SEC finalized the current regime of rules for the disclosure of 8-Ks (see the Federal Register Volume 69, Issue 58).

of 0.21% in post-disclosure returns.[5] Therefore, long-run returns *fully* erase the initial response. This reversal is even more pronounced when we focus on the "Standalone OE" sample, with a 0.25% increase in event returns followed by a reversal of 0.33%. These results suggest that distortions in OE sentiment mislead investors, resulting in a significant initial price reaction followed by a price correction.

When analyzing the "non-OE" sample, however, we observe a strikingly contrasting pattern emerges – one of drift rather than reversal. Specifically, a one standard deviation increase in non-OE sentiment is associated with a statistically significant increase of 0.06% in event returns, followed by a continued 0.11% *increase* in post-disclosure returns. This post-disclosure *drift* for non-OE sentiment contrasts sharply with the reversal pattern for OE sentiment, consistent with the well-documented investor under-reaction to corporate announcements. Given that OE and non-OE disclosures involve different types of events that may differentially affect firm values and market reactions, we conduct a robustness test by constructing pairs of OE and non-OE disclosures within the same industry and filing month based on their nearest-neighbor announcement returns. This approach compares OE and non-OE disclosures with similar perceived impacts on firm value. Consistent with our main results, we continue to find that return reversal occurs uniquely for OE disclosures, with no comparable pattern observed for non-OE disclosures.

Figure 1 plots the difference in BHAR between the high-sentiment (top 10 percent) and low-sentiment (bottom 10 percent) groups of OE disclosures. In both the "All OE" and "Standalone OE" samples, we observe an initial surge in differential BHAR, peaking at approximately 1.5% during the four days following the disclosure. This initial spike is then followed by a gradual reversal over the next three months. In contrast, the differential BHAR for non-OE sentiment shows a gradual upward

[5] For economic comparison, Loughran and McDonald (2011) report a one standard deviation increase in firms' annual report (i.e., 10-K) sentiment is associated with a 0.11% higher event return.

drift after the initial spike, without a significant reversal. These results strongly suggest that while sentiment distortion is evident in the lightly regulated OE component of 8-K filings, such distortion is absent in the strictly regulated non-OE component.

To corroborate the distortion interpretation of our return analysis, we follow Huang, Teoh, and Zhang (2014) and examine the relationship between disclosure sentiment and firms' future financial performance. We find that OE sentiment significantly and *negatively* predicts future return on assets (ROA) in the two years following disclosure. In stark contrast, non-OE sentiment significantly *positively* predicts future ROA. This sharp divergence provides additional evidence for differential sentiment distortion between OE and non-OE disclosures.

To study our second research question, we analyze both content topics and timing patterns of heightened disclosure distortions. For content analysis, we first identify latent topics in OE disclosure assess their susceptibility to sentiment distortion. Using Latent Dirichlet Allocation (LDA) model to classify OE disclosures into specific topics, following by ChatGPT-assisted interpretation of topic keywords, we find that 89% of OE disclosures (all but one identified topics) exhibit sentiment distortion as measured by the point estimates of the return reversal pattern. Notably, sentiment distortion is most severe for topics involving intangible information, such as disclosures regarding pharmaceutical R&D and legal proceedings. These findings suggest that topics involving intangible non-financial content are especially vulnerable to sentiment manipulation, as unsophisticated retail investors often lack specialized knowledge needed to properly evaluate such content.

For timing analysis, we examine corporate events that could allow managers or their firms to benefit from temporary stock price fluctuations caused by OE sentiment distortion. First, we analyze insider sales and CEO option grants, as managers may personally benefit from inflated stock prices before insider sales, and deflated stock prices before option grants (e.g., Yermack, 1997; Core and Guay, 2002; Lie, 2005). Consistent with managers' incentives for strategic disclosure, we find a

significantly positive relation between OE sentiment and the probability of subsequent insider sales. In contrast, there is a significantly negative relation between OE sentiment and the likelihood of subsequent option grants. Next, we examine two corporate events where firms can benefit from temporary inflated stock prices: seasoned equity offerings (SEOs) and stock mergers (e.g., Rangan, 1998; Teoh, Welch, and Wong, 1998; Ahern and Sosyura, 2014). We find a significantly positive relation between OE sentiment and the probability of a subsequent SEO. Similarly, OE sentiment is positively associated with the likelihood of stock mergers, but not with cash mergers, where firms gain little advantage from manipulated stock prices.

A key public interest objective for disclosure regulation is to protect unsophisticated investors. Given extensive evidence that individual investors exhibit attention-driven trading and behavioral biases (e.g., Barber and Odean, 2008; Barber et al., 2022), we examine our third research question by comparing the impacts of OE sentiment distortion on retail versus institutional counterparts. Following Cao et al. (2023), we measure retail investors' interest through EDGAR download activity, classifying human downloads as retail and machine downloads as institutional.[7] To validate this approach, we use Boehmer et al.'s (2021) algorithm to identify retail orders and find a significant association between human 8-K downloads and retail order imbalances, but no such relationship for machine downloads.

To the extent distorted OE sentiment generates sustained retail interest and therefore trading, standard microstructure models (e.g. Chordia and Subrahmanyam, 2004) predicts return predictability via price impact.[8] To test this prediction, we examine the relationship between retail interest and price

[7] This classification reflects the typical behavior of each investor type: retail investors generally access filings directly without automated tools such as web-crawlers or sophisticated machine algorithms, which better characterize institutional investors' practices (e.g., Ben-Rephael, Da, Easton, and Israelsen, 2022; Callen, Kaniel, and Segal, 2023).

[8] We corroborate this assumption in Appendix C. We find, for both OE and non-OE, higher sentiment is associated with significantly higher retail order imbalances in the event window, indicating that individual investors trade strongly in the direction of sentiment. Notably, we find that retail investors continue to trade in alignment with OE, but not non-OE, sentiment even in the post-disclosure period, potentially delaying price correction.

responses. We find that greater retail interest amplifies initial price responses to OE sentiment while attenuating subsequent reversals. Specifically, a one-standard deviation increase in retail interest is associated with a 1.5 times stronger initial price reaction but a 15% weaker post-disclosure reversal. These patterns are absent for machine-based interest. As a further validation, we use institutional ownership as an alternative proxy for non-retail activity and confirm that lower institutional ownership is associated with larger mispricing. Taken together, this evidence demonstrates that unsophisticated retail investors primarily bear the consequences of sentiment distortion in lightly regulated OE disclosures.

Our paper contributes to the literature on disclosure regulation. The necessity of disclosure regulations in capital markets remains a fundamental yet unresolved question in financial and accounting research. While existing literature demonstrates that regulated financial disclosures provides value-relevant information (e.g., Healy and Palepu, 2001; Graham, Harvey, and Rajgopal, 2005), it remains unclear whether these regulations effectively serve their purposes of curbing disclosure fraud or protecting unsophisticated investors. By exploiting variation in regulatory intensity within 8-K filings, we provide novel evidence that lighter disclosure regulation leads to greater disclosure distortion and disproportionally harms unsophisticated investors. These findings therefore provide new insights into how disclosure regulations shape disclosure quality and investor welfare. Additionally, our findings reveal unintended consequences of existing voluntary disclosure practices, highlighting the need for regulatory oversight of flexible voluntary corporate disclosures.

Our paper also contributes to the literature on firms' strategic use of press releases. Ahern and Sosyura (2014) provide novel evidence that firms actively manage press releases to influence their stock prices. 8-K press releases are critical in providing coverage on important corporate events, and previous studies show that 8-Ks are vulnerable to various misleading tactics such as strategic timing, bundling with other news, or misclassification of item categories (e.g., Niessner, 2015; Segal and Segal,

2016; Rawson, Twedt, and Watkins, 2023). We extend this literature by identifying a novel form of strategic disclosure: sentiment manipulation in "Other Events" disclosures, which is present in one-fourth of 8-K press releases. Our analysis reveal, content-wise, that this distortion occurs pervasively across disclosure topics, but is strongest for intangible non-financial disclosures.[9] Timing-wise, the distortions bundle with ensuing corporate events where managers and firms stand to benefit such as insider sales, option grants, and stock mergers.

Finally, our study extends the literature on how corporate disclosure impacts individual investors. While previous studies shed light on retail investors' responses to financial disclosures (e.g., Lee, 1992; Hirshleifer, Myers, Myers, and Teoh, 2008; Lewellen, 2010), there has been little evidence regarding the impact of strategic corporate disclosure on retail investors. We provide novel evidence that retail investors, relative to sophisticated institutional investors, are particularly vulnerable to the strategic corporate disclosure. Additionally, we find retail investors' reactions to strategic corporate disclosures not only contribute to stock mispricing but also delay subsequent price corrections.

1. Sample Construction and Summary Statistics

As detailed in Panel A of Table 1, we start our sample construction with the universe of Form 8-Ks (current reports) from the SEC's EDGAR database, which includes 1,345,485 8-Ks from August 23, 2004, when the SEC implemented the present framework for Form 8-K filings, to August 23, 2020. Of these filings, 345,929 (25.7%) contain "Other Events" (OE) disclosure. We then require firms to have accounting data from the Compustat database and stock data from the Center for Research in Security Prices (CRSP) database. This reduces our sample to 546,985 8-Ks. We further require the

[9] A contemporaneous paper by Balachandran et al. (2024) also examines voluntary 8-K disclosures and finds a positive association between textual tone and announcement returns, as well as firms' strategic tone management prior to restatements, aligning with our findings. While their study focuses exclusively on voluntary 8-K disclosure and the intricacies of textual analysis, our study examines sentiment distortion across differentially regulated components within 8-K filings. Moreover, we conduct a comprehensive analysis of OE sentiment distortion including market consequences, impact on retail investors, disclosure topics, and strategic timing patterns.

firms to have data on additional control variables (described in Appendix A), resulting in a final sample of 489,817 Form 8-Ks. Within the final sample, the "All OE" sample contains the 23.5% of 8-Ks that report Item 8.01, while the "non-OE" sample contains all remaining 8-Ks not reporting Item 8.01. Because the "All OE" sample may bundle Item 8.01 with other items, we also analyze a cleaner "Standalone OE" subsample, which comprises the 69.5% of filings in the "All OE" sample that either solely report Item 8.01 or report Item 8.01 with its appendix, Item 9.01.[10]

We use a standard approach to measure each filing's sentiment as perceived by retail and institutional investors (Cao, Jiang, Yang, and Zhang, 2023). Specifically, we apply a bag-of-words approach using the Loughran and McDonald (2011) dictionary, which allows us to tally the positive and negative words in each 8-K. We then compute sentiment as the number of positive words minus that of negative words, scaled by the total count of dictionary words. Panel B of Table 1 presents the summary statistics of sentiment across our 8-K samples. The first row indicates that the average sentiment of 8-Ks in the "All OE" sample is slightly negative at -0.07%, while the median sentiment is slightly positive at 0.21%. Since OE disclosure may bundle with other items in the same 8-K, we also calculate the sentiment specifically for the Item 8.01 section within these 8-Ks. The second-row reports that the average sentiment remains similar at -0.07%, while the median becomes neutral. The third row focuses on the "Standalone OE" sample, where both the mean and median sentiment are slightly positive. The last row shows that the average and median sentiment for non-OE disclosure is also slightly positive, at 0.02% and 0.25%, respectively.

Panel C of Table 1 presents the summary statistics of variables used in our analysis. We find that the median market capitalization for firms filing OE news is $850 million, categorizing them as small-cap stocks. The mean market capitalization is substantially higher at $7.49 billion, indicating a

[10] We classify 8-Ks that report only Items 8.01 and 9.01 into the "Standalone OE" sample because Item 9.01 provides only supplemental information such as financial statements, pro forma financial information, or exhibits to further explain Item 8.01.

skew towards larger firms. The firms have a median market-to-book ratio of 1.78, and a mean of 3.2, comparable to that of the broader Compustat universe. OE-filing firms are typically recent winners as their median and average pre-event alphas are 1.49 and 1.80 basis points per day, respectively. On average, these firms have institutional ownership of 60.16% and are about equally likely to be listed on NASDAQ and non-NASDAQ exchanges. Regarding operating performance, the median ROA for an OE-filing firm is a modest 1.79%, but the average is much lower at -2.23% due to some firms with extremely poor operational performance. Appendix A provides the definitions of these variables.

2. Distortion of Disclosure Sentiment: OE vs Non-OE Disclosure

In this section, we first examine the difference in regulatory scrutiny between OE and non-OE disclosures in 8-K filings. Next, we analyze the extent of sentiment distortion across OE and non-OE disclosures by examining both stock market reactions and firms' future financial performance.

2.1 Regulatory Scrutiny: OE vs Non-OE Disclosure

OE disclosure is discretionary because the guidance for filing Item 8.01 does not create an obligation to disclose under Section 10(b) or Rule 10b-5 of the Securities Exchange Act of 1934. Segal and Segal (2016) highlight the scarcity of legal cases pertaining to Item 8.01 disclosure.[11] We begin our empirical analysis by verifying that OE disclosures face lower regulatory scrutiny than non-OE disclosures. To test this, we use SEC comment letters, a critical tool in SEC's oversight process to enforce regulatory compliance (e.g., Dechow, Lawrence, and Ryans, 2016; Kubick, Lynch, Mayberry, and Omer, 2016; Duro, Heese, and Ormazabal, 2019; Liu, Shu, Towery, and Wang, 2022). Because these comment letters are tied to specific 8-K filings, they allow us to examine regulatory scrutiny at the filing level.

We collect data on comment letters related to 8-K filings from Audit Analytics and estimate

[11] See their footnote 4 for examples of such cases and law reviews on the subject.

the following logistic regression:

$$log\frac{p_{it}}{1-p_{it}} = \beta_0 + \beta_1 \times OE + \text{Controls} + \text{FEs}, \quad (1)$$

where p_{it} is the probability of an 8-K filed by firm i on date t receiving a future comment letter from the SEC. *OE* is our variable of interest, which is an indicator variable that equals 1 if the 8-K filing contains only OE disclosure, and 0 if it contains no-OE disclosure. We deliberately exclude 8-K filings that contain both OE and non-OE disclosures to ensure a clean comparison. We control for firm characteristics including the natural logarithm of market capitalization, the natural logarithm of the market to book ratio, the natural logarithm of the share turnover, the pre-announcement alpha, institutional ownership, and an indicator variable for firms listed on Nasdaq.[12] We define these variables in Appendix A. We also include Fama-French 48 industry fixed effects and year-quarter fixed effects to control for industry- or time-specific unobserved heterogeneity, respectively.[13]

Columns (1) and (2) of Table 2 present the regression results. The coefficient of *OE* is negative and significant at the 1% level in both models, indicating that OE disclosures are significantly less likely to receive a comment letter from the SEC compared to non-OE disclosures. This result is also economically significant, as the coefficient in Column (2) indicates the odds of receiving a future comment letter for an OE disclosure is 70.5% lower (i.e., $e^{-1.22} - 1$) than that for a non-OE disclosure.

We further investigate whether regulators focus more on the "suspicious" cases, proxied by more extreme disclosure sentiment or announcement returns, among OE disclosures. Specifically, we first re-estimate Equation (1) using the "Standalone OE" sample, replacing the independent variable with the absolute value of either OE sentiment or buy-and-hold abnormal returns (BHAR) in the [0, +3] window around the disclosure date (details of the construction are provided in the next section). Columns (3) and (4) of Table 2 show that the likelihood of receiving SEC comment letters is not

[12] To reduce the effect of outliers, we winsorize the accounting variables at the 0.5 and 99.5 percentiles.
[13] In untabulated analysis, we find that our results are robust when we control for firm fixed effects.

significantly higher for either proxy, suggesting that regulators do not apply additional scrutiny to these "suspicious" cases within OE disclosures.

In contrast, Columns (5) and (6) of Table 2 show that non-OE disclosures with more extreme sentiment or announcement returns face significantly higher likelihoods of SEC comment letters. A one-standard deviation increase in absolute sentiment (event returns) is associated with a 15% (8%) increase in the odds of receiving comment letters. Therefore, unlike the less regulated OE disclosures, regulators seem to devote significantly more attention to the "suspicious" non-OE disclosures. We also conduct a robustness test using OLS regressions rather than logistic regressions, and our results hold in Table C1 in Appendix C. Overall, these results support the contention that OE disclosures face less regulatory scrutiny than non-OE disclosures, both along the extensive and intensive margins.

2.2 Disclosure Sentiment and Price Responses: Test Design

We adopt a regression-based event study methodology to investigate the stock market reaction to the sentiment of OE and non-OE disclosures. For our analysis of the initial event return, the dependent variable is the buy-and-hold abnormal return (BHAR) in the four-day window [0,+3], with day 0 being the filing date of the 8-K report.[14] To compute expected buy-and-hold returns ($\widehat{AR}_{it}$) for each firm i on the filing date t, we use the following equation:

$$\widehat{AR}_{it} = \prod_{d\in[a,b]} (1 + \hat{\alpha}_i + \hat{\beta}_{i,MKT} MKT_d + \hat{\beta}_{i,SMB} SMB_d + \hat{\beta}_{i,HML} HML_d + \hat{\beta}_{i,MOM} MOM_d) - 1, \quad (2)$$

where d represents the trading days within the event window $[a, b]$ relative to the filing date, and the Carhart (1997) four-factor model parameters are estimated using data from the one-year window ending 30 days prior to the event ([-282, -30]). The BHARs are then calculated as follows:

$$BHAR_{it} = \prod_{d\in[a,b]} [(1 + r_{id}) - (1 + \widehat{AR}_{it})], \quad (3)$$

[14] For a filing date that is a non-trading day such as weekend or holiday, we use the next trading day as the event day.

where r_{id} is the delisting-adjusted return for the firm i on day d within the event window $[a, b]$.

Following Loughran and McDonald (2011), we employ event study-based regressions as follows:

$$BHAR_{it} = \gamma Sent_{it} + \text{Controls} + \text{FEs} + \varepsilon_{it}, \quad (4)$$

where $Sent_{it}$ is the sentiment of the 8-K filed by firm i on day t, γ is the coefficient capturing the differential market reaction to sentiment, and ε_{it} is the error term with a mean of zero. Following Loughran and McDonald (2011), we control for the natural logarithm of market capitalization, the natural logarithm of the market to book ratio, the natural logarithm of the share turnover, the pre-announcement alpha, institutional ownership, and an indicator variable for firms listed on Nasdaq.[15] We also include Fama-French 48 industry fixed effects and year-quarter fixed effects like Equation (1) and report t-statistics using robust standard errors clustered by year-quarter.

2.3 Disclosure Sentiment and Price Responses: OE vs. Non-OE Disclosures

2.3.1 Initial Price Reaction to OE Sentiment

In Panel A of Table 3, the left panel presents regressions of event returns (BHAR [0, +3]) on OE sentiment. Using the "All OE" sample, Column (1) shows that the coefficient on OE sentiment (*Sent*) is positive and significant at the 1% level (t-stat 3.77). The coefficient of 20.11 indicates that a one standard deviation increase in OE sentiment corresponds to a 0.19% increase in event return. This effect is economically large, considering the sample average BHAR is 0.20%.[17]

The "All OE" sample includes 8-Ks that bundle OE disclosures with other items, potentially blurring the specific market reactions to OE sentiment. We address this concern in two ways. First, we measure OE sentiment only within Item 8.01 ($Sent^{8.01}$) rather than the entire document. Column

[15] To reduce the effect of outliers, we winsorize the accounting variables at the 0.5 and 99.5 percentiles.

[17] For a comparison, Loughran and McDonald (2011) report that a one standard deviation increase in firms' annual reports sentiment is associated with a 0.11% increase in event return. The 0.19% increase is calculated as the coefficient of 20.11 times the standard deviation of OE sentiment in the "All OE" sample of 0.0093 (the 0.93 in Table 1 divided by 100).

(2) of Panel A shows that the coefficient on $Sent^{8.01}$ remains positive and significant at the 1% level (t-stat 5.58), with a one standard deviation increase in $Sent^{8.01}$ corresponding to a 0.18% increase in event return, which is similar to the baseline result in Column (1).[18] Second, we restrict our analysis to the "Standalone OE" sample that contains 8-Ks with only OE disclosures. Column (3) of Panel A shows that the coefficient of OE sentiment is also positive and significant (t-stat 6.50), and a one standard deviation increase in sentiment corresponds to a 0.25% higher announcement return.[19] Overall, the results in Columns (1) through (3) provide robust evidence of a strong investor response to OE sentiment.

2.3.2 Long-run Price Reaction to OE Sentiment

Several potential explanations exist for the positive relation between event returns and OE sentiment. First, investors may rationally respond to new information presented in OE disclosure ("rational response"), which would lead to insignificant returns in the post-disclosure period. Second, investors may either underreact or overreact to OE disclosure, as suggested by previous studies (e.g., DellaVigna and Pollet, 2009; Hirshleifer, Lim, and Teoh, 2009), potentially causing either a drift (underreaction) or reversal (overreaction) in long-run returns. Finally, if managers distort OE sentiment and investors overlook such distortion, the initial price reaction could cause stock mispricing, leading to a reversal in the post-disclosure window as the market corrects the mispricing. Notably, while both overreaction and manipulation explanations predict a long-term reversal, they predict different outcomes for the relationship between combined returns in the event and long-run windows with OE sentiment. Overreaction would predict a positive relationship, while manipulation would suggest a negative or neutral relationship. To distinguish among these competing hypotheses,

[18] The 0.18% increase is calculated as the coefficient of 51.34 in Column (2) times the standard deviation of $Sent^{8.01}$ (0.35 in Table 1 divided by 100).
[19] The 0.25% increase is calculated as the coefficient of 26.29 in Column (3) times the standard deviation of OE sentiment in the "Standalone OE" sample (0.95 in Table 1 divided by 100).

we proceed to analyze stock returns in the long run.

We re-estimate Equation (4) using the BHAR in the three-month period after the filing (i.e., BHAR [+4, +63]). In Panel A of Table 3, Column (4) shows that for the "All OE" sample, the coefficient on sentiment is negative and significant at the 10% level, indicating a reversal of stock returns after the initial response to OE sentiment. Importantly, the magnitude of the coefficient (-22.7) surpasses that of the event return regression (20.1, Column (1)), suggesting a full reversal of the initial response. Stronger patterns are observed with $Sent^{8.01}$ (-86.7 in Column (5) vs. 51.3 in Column (2)) and the "Standalone OE" sample (-35.2 in Column (6) vs. 26.3 in Column (3)). For example, the result in Column (6) indicates that a one standard deviation increase in OE sentiment is associated with a 0.33% reversal, following a 0.25% increase in event return as indicated by the coefficient in Column (3).[20] Therefore, the results regarding both short-term and long-term returns align with the OE sentiment manipulation.

2.3.3 Initial and Long-Run Price Reactions: Non-OE Disclosure

For comparison, we repeat the baseline regressions of market responses as presented in Panel A of Table 3, but this time using the "non-OE" sample. In Panel B of Table 3, Column (1) presents the regression of event returns using the non-OE sample. We find that the coefficient on non-OE sentiment is positive and significant at the 1% level (t-stat 3.35), mirroring the findings for OE sentiment. However, a divergent pattern emerges in the analysis of long-term returns, shown in Column (2). Here, non-OE sentiment has a significantly *positive* coefficient (t-statistic 2.07), suggesting a *drift* in the post-disclosure period rather than the reversal observed with OE sentiment. Economically, a one standard deviation increase in non-OE sentiment corresponds to an 0.06% increase in event

[20] The 0.33% reversal is calculated as the coefficient of -35.15 in Column (6) times the standard deviation of OE sentiment in the "Standalone OE" sample (0.95 in Table 1 divided by 100).

return and a 0.11% drift in the subsequent three months.[21]

Therefore, we observe a sharp contrast between the less regulated OE disclosures and the more intensely regulated non-OE disclosures within 8-Ks. The return reversal observed among less regulated OE disclosures points to sentiment distortion, while the drift observed in the more regulated non-OE disclosures aligns with the extensively documented investor underreaction to corporate events, such as post-earnings announcement drift (PEAD, Ball and Brown, 1968; Bernard and Thomas, 1989). These findings support the notion that looser regulation oversight leads to greater distortion in disclosure sentiment.

Besides their difference in regulatory scrutiny, OE and non-OE disclosures also differ in the type of events reported. As a result, OE and non-OE disclosures could have differential impacts on firm values and their corresponding market reactions. To examine this alternative explanation, we conduct a matched-sample analysis by pairing OE and non-OE disclosures within the same industry and filing month based on their nearest-neighbor BHAR [0, +3].[22] These matched disclosures are "informationally equivalent" in the sense that they are perceived to have similar impacts on firm values (e.g., via their effect on expected cash flows or discount rates).

Table C2 of Appendix C reports on the results of this analysis. In a matching balance test, Column (1) assesses the success of this procedure, showing that none of the independent variables predict the BHAR [0, +3]. More importantly, Column (2) shows that despite similar initial market responses, the matched OE and non-OE filings lead to divergent post-disclosure returns. Non-OE filings exhibit an insignificant but positive drift related to sentiment (t-stat 1.04), but the coefficient on *Sent* × *OE* indicates that OE filings experience a statistically different reaction in the opposite

[21] The 0.06% (0.11%) increase is calculated as the coefficient of 8.59 (15.00) times the standard deviation of non-OE sentiment (0.74 in Table 1 divided by 100).

[22] To ensure a clean comparison, we match standalone OE with non-OE filings. To prevent poor matches, we limit the maximum difference in BHAR [0, +3] between OE and its non-OE counterpart to 5%. This combined with the exact matching of FF48 industry and filing month reduces the OE (non-OE) sample from 79,856 (374,864) to 78,361 matched pairs.

direction (t-stat –2.15). The sum of the coefficients on *Sent* and *Sent x OE* is negative, indicating that only OE filings are associated with negative reversals of the initially positive market response.

2.3.4 High-Minus-Low Sentiment Analysis

To visually illustrate our findings, we plot the difference in BHAR between the two subgroups of OE disclosures: high-sentiment and low-sentiment. While the regression analysis reflects average effects, this approach helps us to assess the impact of OE sentiment distortion at the tails of the sentiment distribution, where the sentiment distortion could be more likely. Like our regression tests, we compute industry- and past return-adjusted sentiment breakpoints by first classifying 8-Ks into Fama-French 48 industries and then, within each industry, sorting them by their pre-event abnormal return (*PreFFAlpha*). We then classify low- and high-sentiment subgroups using the 10^{th} and 90^{th} percentiles of sentiment, respectively. We plot the difference in BHAR between high and low sentiment subgroups in a period from five trading days before to 63 trading days after the disclosure.

In Figure 1, we observe that for both the "All OE" sample and the "Standalone OE" sample, the differential BHAR spikes up immediately after the disclosure, reaching approximately 1.5% within four trading days. After peaking, the differential BHAR flattens, and then fully reverses within three months. The reversal pattern is more pronounced in the "Standalone OE" sample compared with the "All OE" sample. In contrast, the high-minus-low-sentiment BHAR for the "non-OE" sample spikes in the event window and slowly drifts upwards, consistent with the regression analysis. These results corroborate our regression analysis, indicating a sharp contrast between OE and non-OE disclosures.

2.4 Disclosure Sentiment and Future Firm Performance: OE vs. Non-OE Disclosures

A crucial feature of the sentiment manipulation hypothesis is that the distorted sentiment misrepresents the firm's actual fundamentals. Huang, Teoh, and Zhang (2014) uncover distorted sentiment in earnings press releases by showing a negative association between disclosure sentiment and future operating performance. Following their approach, we re-estimate Equation (4) but replace

the dependent variable with the firm's return on assets (ROA) in the subsequent year after OE disclosure.

Columns (1) to (3) in Panel A of Table 4 show that the coefficient on OE sentiment is significantly negative (t-statistics ranging from -2.00 to -2.55). The coefficient in Column (3) indicates that a one standard deviation increase in OE sentiment is associated with a substantial 0.45% decrease in next year's ROA.[23] Columns (4) to (6) further presents the regressions of ROA in year t+2. Remarkably, we find that the coefficient on OE sentiment continues to be significantly negative.[24] These results show that, consistent with sentiment distortion, OE sentiment misrepresents the firm's future performance.

For comparison, we present the results for non-OE disclosures in Panel B or Table 4, which show non-OE sentiment *positively* predicts ROA in both the subsequent year (t-statistic 2.62) and two years later (t-statistic 2.28). This result again contrasts with the negative association observed between OE sentiment and firm performance. Therefore, non-OE sentiment, unlike OE sentiment, does contain value-relevant information about a firm's fundamentals, consistent with the broader literature that supports the informative value of increased disclosure. Taken together, the analyses of both stock returns and accounting performance consistently reveal evidence of sentiment distortion in the lightly regulated voluntary disclosures in 8-Ks, whereas such distortion is absent in the more regulated mandatary disclosures in 8-Ks.

3. Where and When is Distortion in OE Disclosures Found?

To further understand the sentiment distortion in the less regulated 8-K voluntary disclosures, we examine two key questions regarding the occurrence of such distortion. First, which types of

[23] The 0.45% decrease is calculated as the coefficient of -0.47 times the standard deviation of OE sentiment in the "Standalone OE" sample (0.95 in Table 1 divided by 100).
[24] We find that the predictability of future ROA with OE sentiment disappears in year t+3.

content are especially prone to distortion? Second, which circumstances are associated with heightened incentives for such distortion? By studying these questions, we hope to provide policy insights for the effective detection of disclosure manipulations and the protection of investors' welfare.

3.1 OE Disclosure Topics and Sentiment Distortion

We employ an unsupervised Latent Dirichlet Allocation (LDA) approach to identify latent topics that may be especially prone to sentiment distortion. Methodologically, LDA has several advantages as an increasingly used method in financial and accounting research[34]: it does not require pre-defined topics and can efficiently handle large volumes of text in 8-K filings.

Before implementing the algorithm, we pre-process the textual data for the corpus of text within our "Standalone OE" sample, which excludes non-8.01 sections of the 8-K filings. For each document, we start with the raw text that includes attached exhibits and press releases, and remove any XML or HTML tags, punctuation, numbers and stop words. Then, after lemmatizing, we create a document-term matrix of all unigrams (single words) across the corpus of documents. Finally, we eliminate uninformative words that appear less than 200 times (rare words) or in more than half of our "Standalone OE" sample (common words).

The LDA algorithm requires a user-specified number of topics (k). To tune this hyperparameter, we explore a range of pre-specified topic counts, starting at 2 and incrementing by one up to 15. To assess the optimal number of topics, we use coherence scores, which evaluate the semantic similarity among words within topics, and supplement this measure with human judgement. We find that setting the number of topics to five or more achieves high average and maximum coherence scores. In our manual reading of the most probable words in each topic for a given number of topics, the LDA algorithm discerns similar sets of topics for any k above 5. Therefore, we proceed

[34] See, for example, LDA adoption in Dyer, Lang and Stice-Lawrence (2017) for 10-K disclosure, Huan, Lehavy, Zang, and Zheng (2018) for analyst reports, and Christensen, Floyd, Liu and Maffet (2017) for social responsibility disclosures.

with k = 8 topics. To facilitate reproducibility, we ask ChatGPT 3.5 to interpret the themes of the eight topics by summarizing the fifty most probable words in each topic.

Utilizing the output of the eight topic LDA model, we decompose the short- and long-run market responses to OE sentiment by topic. Specifically, we estimate the following regression,

$$BHAR_{it} = \gamma_0 Sent_{it} + \sum_{\tau=1}^{8} \gamma_\tau Topic_{\tau,it} \times Sent_{it} + Controls + FEs + \varepsilon_{it}, \quad (5)$$

where $Topic_{\tau,it}$ is an indicator variable that equals 1 if the LDA probability of topic τ exceeds 0.30 for the OE disclosure by firm *i* on date t, and 0 otherwise. The threshold of 0.30 is chosen because it ensures that nearly every document is categorized into at least one topic.[35] In this model, $\hat{\gamma}_0$ captures the market reaction to OE sentiment for documents that are not classified under any specific topic, while $\hat{\gamma}_0 + \hat{\gamma}_\tau$ represents market reaction to OE sentiment for topic τ. As in Equation (4), the dependent variable is the BHAR either in the four-day event window or over a three-month post-disclosure window. Consistent with our LDA implementation, we measure OE sentiment ($Sent_{it}$) within the entire document, which includes any attached exhibits and press releases. Additionally, we include controls and fixed effects, consistent with Equation (4). To test for the significance of the total effect for topic τ, we report Wald statistics based on the robust covariance matrix clustered by quarter. These statistics test against the null hypothesis $H_0: \gamma_0 + \gamma_\tau = 0$, determining whether the topic-specific response to OE sentiment is statistically significant.

Table 5 reports our LDA results, where we organize the ChatGPT-derived themes of the eight topics into three self-evident categories. The category "Intangible Disclosures" includes three topics on largely qualitative non-financial information: 1) *Pharmaceutical R&D*; 2) *Legal Proceedings and Disputes*; and 3) *Legal and Contractual Agreements*. The category "Financing Disclosures" includes three financial

[35] While a higher cutoff also does so, it also unrealistically limits documents to having mostly one topic. Thus, our choice of 0.30 strikes a balance between multiple topics per document and full topic classification of each document.

topics: 1) *Financial Accounting and Reporting*; 2) *Financial Management and Banking*; and 3) *Stocks and Securities Transactions*. The category "Operational Disclosures" includes two topics related to firms' business operations: 1) *Business Development and Marketing*; and 2) *Business and Financial Analysis*. To corroborate these descriptions, Appendix B provides the top fifty keywords for each topic identified by the LDA algorithm.

Table 5 first presents the distribution of filings across the identified topics, noting that a single filing can encompass multiple topics. The most prevalent category is "Financing Disclosures", representing almost 60% of all OE disclosures, followed by "Operational Disclosures" (about 40%) and "Intangible Disclosures" (about 29%). Overall, OE disclosures on average contain 1.3 topics, suggesting that the LDA model uncovers complex, multifaceted themes within the OE disclosures.

Next, we proceed to detect the OE topics that are most prone to sentiment manipulation by examining the return reversal pattern across the eight topics. The remaining columns of Table 5 present the regression results from estimating Equation (5), where the topics are arranged by the strength of post-disclosure return reversal in descending order, from the strongest to the weakest. Several interesting patterns emerge. First, all eight topics, except for *Business and Financial Analysis*, exhibit a pattern of a positive initial return reaction followed by return reversal, which is consistent with the full sample results. Specifically, for these seven topics, $\gamma_0 + \gamma_\tau$ is positive in the regression of event turn (BHAR [+0, +3]) but negative in the regression of post-disclosure return (BHAR [+4, +63]). These results seem to suggest that sentiment distortion is a common phenomenon, as these seven topics together account for 89% of OE disclosures.

Second, the topic *Business and Financial Analysis* exhibits a significant return drift in the post-disclosure window after the initial price reaction, suggesting that this category could be less prone to sentiment manipulation. Third, among the seven topics with reversals, the two topics of *Pharmaceutical R&D* and *Legal Proceedings and Disputes* experience statistically significant return reversals, as indicated

in the last column of Table 5.[36] These two topics often require specialized expertise, training, and experience (e.g., in the biological or legal fields, respectively) that typical retail investors may not possess. In contrast, sophisticated institutional investors are more likely to have the resources to employ professionals with the necessary expertise to correctly evaluate such intangible content. Given that both topics fall under the "Intangible Disclosures" category, this suggests that when firms have disclosure flexibility, the intangible content can be an acute risk to retail investors.

3.2 OE Sentiment Distortion and Corporate Events

To understand the timing and motives that drive firms and their management to engage in OE sentiment manipulation, we investigate occurrences of OE sentiment distortion prior to corporate events that could yield personal or organizational benefits to managers or their firms from short-term price fluctuations. We estimate a logistic regression model (Loughran and McDonald, 2011) as below:

$$log\frac{p_{it}}{1-p_{it}} = \lambda_1 Sent_{it} + \text{Controls} + \text{FEs} + \varepsilon_{it}, \quad (6)$$

where parameter $p_{it} = P(Y = 1)$ is the probability of a corporate event shortly after the 8-K filed by firm i on date t. Specifically, the outcome indicator variable Y equals 1 if a corporate event occurs in either the [+1, +1] or [+1, +3] window relative to the disclosure of the 8-K, and 0 otherwise. *Sent* is the *OE* sentiment previously defined. The control variables and fixed effects are similarly defined as in Equation (4).

In this regression framework, λ_1 is the coefficient of interest. Under the strategic disclosure hypothesis, we would expect $\lambda_1$to be significantly positive for a corporate event that benefits from temporarily inflated stock prices, while significantly negative for a corporate event that benefits from temperately deflated stock prices. Note a significant λ_1 may arise from two possible situations: 1) OE

[36] To address the concern that our results might be driven by the pharmaceutical industry, we conduct robustness tests by excluding the pharmaceutical industry, and our results remain similar.

sentiment manipulation prior to a pre-planned corporate event, such as inflating sentiment prior to a stock merger; or 2) The OE sentiment disclosure leads to managerial actions, such as insider sales following a negative sentiment manipulation that suppresses stock prices. We follow the literature and investigate two events where temporary price movements would benefit managers, as well as two events where temporary price movements are likely to benefit the firms. Our results are robust when we estimate OLS regressions rather than logistic regressions (see Table C3 in Appendix C).[37]

3.2.1 Insider Sales

The first event we investigate is insider sales, often used to test managers' incentives (e.g., Kedia and Philippon, 2009). In our context, managers may benefit from selling shares at higher prices driven by positive OE sentiment. We collect data on shares sold by insiders from the Thomson Financial Insider Filing database, which compiles the data from Forms 3, 4, and 5 filed to the SEC. We follow Lou (2014) and define insider sales as the selling of shares by executive-level corporate insiders, specifically the chair of the board, chief executive officer, chief financial officer, chief operating officer, general counsel, and the president. We construct a measure of quarterly insider sales as the split-adjusted shares sold by insiders divided by the total shares outstanding at the end of the quarter. We then follow Lou (2014) and construct an indicator variable of notable insider sales that equals 1 if the insider sale is above the 25th percentile of the sample distribution, and 0 otherwise.[38]

Columns (1) and (2) of Table 6 examine the occurrence of insider sales in the day after OE disclosure for the "All OE" sample and the "Standalone OE" sample, respectively. We find that the coefficient of OE sentiment is significantly positive in both regressions. These results are also economically significant. For example, Column (1) indicates that a one standard deviation increase in

[37] While we separately examine these four types of events, there is the possibility that corporate events bundle at the same time and one event drives all our results. In untabulated tests, we exclude observations where multiple events occur within our event window when constructing our dependent variable and find similar results.
[38] The intuition of this indicator variable is to focus on large insider sales as the benefit from small insider sales could be negligible.

OE sentiment is associated with a 12.0% higher likelihood of a large insider sale.[39] The OE sentiment coefficient remains significantly positive when we examine insider sales in the [+1, +3] window in Columns (3) and (4). Overall, these findings support the notion that managers might benefit from bundling their insider sales with OE sentiment manipulation.

3.2.2 Option Grants

While insider sales are associated with incentives to *increase* stock prices, we examine another event where managers may have incentives to *decrease* stock prices: the issuance of executive option grants. Because employee stock options are typically granted at-the-money, a temporarily deflated stock price can reduce the exercise price of the options, thereby increasing the option value (e.g., Yermack, 1997; Core and Guay, 2002; Lie, 2005; Heron and Lie, 2007). Therefore, we examine whether there is a negative relation between OE sentiment and the probability of subsequent option grants.

We follow the literature (e.g., Fich, Cai, and Tran, 2011; Shue and Townsend, 2017) and use data from ISS Incentive Lab to construct our sample of unscheduled option grants to the CEO.[40] Specifically, we first identify scheduled option grants as those granted within the [-14, +14] window surrounding the one-year anniversary of a prior option grant, where day 0 marks the anniversary. This approach is motivated by the common practice of scheduled option grants annually on a regular basis. Subsequently, we classify all other option grants as unscheduled.

We estimate Equation (6) with the dependent variable being an indicator for an unscheduled option grant. Columns (1) and (2) of Table 7 present the results for option grants occurring the day after OE disclosure. We find that the coefficient on OE sentiment is *negative* and significant at the 1%

[39] The 12.0% higher likelihood is calculated as $\exp(32.44 \times 0.35/100) - 1$, where 32.44 is the coefficient in Column (1), and 0.35 is the standard deviation of OE sentiment for the "All OE" sample (Table 1).
[40] A manager can have up to four roles in a company in the ISS data. We classify managerial option grants as to CEO if one of the four roles of the manager is CEO.

level in both models, indicating that lower OE sentiment predicts a higher chance of a CEO option grant. Economically, Column (1) indicates that a one-standard *decrease* in OE sentiment corresponds to a 20.9% higher likelihood of an option grant to the CEO.[41] Columns (3) and (4) conduct the analysis using option grants in the [+1, +3] window, where the OE sentiment coefficient remains negative in both models and significant in one. These results suggest that CEOs appear to benefit from bundling low OE sentiment with their option grants.

3.2.3 Seasoned Equity Offerings

Next, we investigate two corporate events where firms could benefit from temporary price fluctuations. For the first event, we examine if OE sentiment is related to subsequent seasoned equity offerings (SEOs), as previous studies find evidence that firms engage in earnings management to boost stock prices before equity issuance (e.g., Rangan, 1998; Teoh, Welch, and Wong, 1998).

Following Cohen and Zarowin (2010), we construct our sample of SEOs using the Thomson Reuters SDC New Issue database. We require the sample of SEOs to be common stocks of U.S. firms that are listed on the NYSE, NASDAQ, or AMEX exchanges, and have an offer price above $5.[42] Table 8 presents the regression results for SEOs based on the issue date. Columns (1) and (2) examine SEOs in the [+1, +1] window, where the OE sentiment coefficient is positive and significant at the 1% level in both models. Column (1) indicates that a one standard deviation increase in OE sentiment corresponds to a 44.0% higher likelihood of a SEO.[43] Columns (3) and (4) consider SEOs in the [+1, +3] window, where the coefficient of OE sentiment remains positive and significant, albeit at the 10% level. Overall, these results are consistent with firms benefiting from OE sentiment manipulation prior

[41] The 20.9% higher likelihood is calculated as exp(-54.26×0.35/100) – 1, where -54.26 is the coefficient in Column (1), and 0.35 is the standard deviation of OE sentiment for the "All OE" sample (Table 1).
[42] We also follow the literature and exclude spin-offs, reverse LBOs, closed-end funds, unit investment trusts, REITS, and limited partnerships, rights, and standby issues, simultaneous or combined offers of several classes of securities such as unit offers of stocks and warrants, and non-domestic and simultaneous domestic-international offers.
[43] The 44.0% higher likelihood is calculated as exp(104.09×0.35/100) – 1, where 104.09 is the coefficient in Column (1), and 0.35 is the standard deviation of OE sentiment for the "All OE" sample (Table 1).

to SEOs.

3.2.4 Mergers and Acquisitions

For the second corporate event where firms would benefit from temporary price movements, we examine stock mergers, where the acquiring firms can benefit from higher stock prices by using fewer shares to purchase the target firms. It is worth noting that the potential gains from manipulated stock prices are pertinent only when the payment is made in stock rather than cash (e.g., Ahern and Sosyura, 2014; He, Liu, Netter, and Shu, 2020). Therefore, we aim to test whether OE sentiment is positively associated with to the likelihood of stock deals, while having no significant relationship with cash deals. We collect data on mergers and acquisitions from the Thomson Reuters SDC Platinum database.[44] We categorize deals as cash mergers if the payment is exclusively in cash. Conversely, deals that involve stock payment as classified stock mergers. Next, we estimate Equation (6) where the dependent variable is an indicator variable that equals 1 if a merger announcement occurs after OE disclosure, and 0 otherwise.

Panel A of Table 9 presents the results for stock deals. The coefficient on OE sentiment is significantly positive in all four models, suggesting a positive association between OE sentiment and the likelihood of a stock merger. This effect is also economically large. For example, Column (1) indicates that a one standard deviation increase in OE sentiment is associated with an 80.5% higher likelihood of a stock merger.[45] Interestingly, when we examine cash mergers in Panel B of Table 9, we find starkly different results, as the coefficient on OE sentiment is insignificant in all four models. This finding is consistent with the rationale that there is minimal advantage to be gained from inflated stock prices in cash transactions.

[44] We follow the literature (e.g., He, Liu, Netter, and Shu, 2020) and require the deals to be completed and have deal values of at least $20 million, where the percentage acquired is greater than or equal to 50%, the acquirer is public, and the target's ownership status is one of public, private, or subsidiary.

[45] The 80.5% higher likelihood is calculated as $\exp(168.77 \times 0.35/100) - 1$, where 168.77 is the coefficient in Column (1), and 0.35 is the standard deviation of OE sentiment for the "All OE" sample (Table 1).

In summary, the consistent patterns observed across four corporate events indicate that OE sentiment manipulation is much more prevalent in circumstances where the resulting stock price changes benefit managers and their firms.

4. Are Retail or Institutional Investors Misled by OE Sentiment Manipulation?

An often-discussed explanation for disclosure regulation is its role in protecting the welfare of financially unsophisticated investors (e.g., Watts and Zimmerman, 1986, Healy and Palepu, 2001). Our findings thus far have revealed sentiment distortion in 8-K voluntary disclosures, which are subject to less regulatory scrutiny. In this section, we further investigate whether such distortions have a greater impact on financially unsophisticated investors compared to their more sophisticated peers. Given that previous studies consistently highlight the tendency of individual investors to engage in sub-optimal attention-driven trading and to exhibit behavioral biases (e.g., Barber and Odean, 2008; Barber et al., 2022), our analysis focuses on the comparison of less sophisticated retail investors with more sophisticated institutional investors.

4.1 Measures of Retail EDGAR Interest

Previous studies investigating the response of retail investors to corporate disclosure typically categorize retail trades by trade size (e.g., Lee, 1992; Bushee, Matsumoto, and Miller, 2003) or with proprietary brokerage data (Lawrence, 2013). We differ from previous studies by using a novel combination of retail investors' actual news consumption based on internet traffic, with recently available data on high frequency retail orders.

To capture the information acquisition behavior of investors, we analyze data on the download activity of financial filings on the SEC's EDGAR database from 2004 to 2017.[46] We measure daily

[46] The SEC acknowledges that due to technical issues with its data processing, there are a small proportion of instances during the sample period when not all SEC IP addresses are available. Despite this issue, previous studies find a strong correlation between EDGAR download activity and investor attention (e.g., Drake, Roulstone, and Thornock, 2015).

firm-level visits on EDGAR as the number of unique IP addresses that download a firm's filings on a given day. Following Cao, Jiang, Yang, and Zhang (2023), we classify the EDGAR visits as retail when they originate from human downloads, and as institutional when they originate from machine downloads. This classification is based on the plausible assumption that retail investors primarily rely on manually reading disclosures and are not likely to employ automated tools like web-crawlers or sophisticated machine-based algorithms for processing disclosures.

To identify retail order flows, we utilize comprehensive data on trades from the Trade and Quote (TAQ) database. We employ Boehmer et al.'s (2021, BJZZ) algorithm to identify retail orders based on the sub-penny improvements given to marketable retail orders filled by wholesalers and brokers.[47] The BJZZ algorithm offers the advantage of identifying retail orders, and it has the capacity to distinguish between buy and sell orders for cross-sections of thousands of stocks. Following BJZZ, we measure firm-level daily retail order imbalances (ROIB) as total retail buy orders minus sell orders in shares divided by the total retail share volume.

We then check the underlying premise that our classification of retail EDGAR visits accurately reflects retail investors' news consumption and, consequently, their trading. Given the existing literature that retail investors tend to purchase stocks that capture their attention (Barber and Odean, 2008), we would expect a positive relationship between retail EDGAR visits and ROIB. Table C4 in Appendix C presents firm-level panel regressions of daily ROIB on contemporaneous EDGAR visits. Column (1) shows that the coefficient on total EDGAR visits is positive but insignificant (t-statistic 0.91), which may be driven by the inclusion of non-retail EDGAR visits that obscures the relationship between retail EDGAR visits and ROIB. Consequently, we separately investigate machine visits and retail visits. Column (2) shows that retail EGAR visits exhibits a significant and positive relationship

[47] These price improvements for marketable retail orders start after the implementation of Regulation National Market System (Reg NMS) in 2005.

with ROIB. In contrast, Columns (3) shows that machine visits do not display a significant association. This contrast lends credibility to our classification of retail EDGAR visits.

4.2 The Effect of Retail News Consumption to OE Disclosure

We first investigate the impact of OE sentiment manipulation on retail investors by examining retail news consumption as proxied by retail EDGAR interest. For an 8-K filed by firm *i* on day *t*, we calculate retail interest (*Retail_Interest*) in the initial event window [0, +3] using the following measure:

$$Retail_Interest_{it} = \frac{\Sigma_{d\epsilon[0,+3]} Retail_IP_{it}}{\Sigma_{d\epsilon[0,+3]} IP_{it}}, \quad (7)$$

where $\sum_{d\epsilon[a,b]} Retail_IP_{it}$ is the sum of daily number of unique retail IP addresses that download the 8-K filing during the [0, +3] window. To adjust for the general level of timely investor attention to the firms' filings, which may vary over time and across firms, we scale by $\sum_{d\epsilon[0,+3]} IP_{it}$, which is the sum of the daily number of unique IP addresses (retail and machine) that download any of the filings by firm *i* in the [0, +3] window. Thus, this retail interest measure quantifies the proportion of retail EDGAR traffic dedicated to the 8-K filing relative to total firm-level EDGAR traffic. We similarly construct a measure for machine interest (*Machine_Interest*) by replacing the numerator in Equation (5) with the number of unique machine IPs (rather than retail IPs).

We re-estimate our baseline regressions from Equation (4) by including an interaction term of OE sentiment with either retail or machine interest in 8-K filings. Panel A of Table 10 presents the regressions of the BHAR in the [0, +3] window. In Column (1), which uses the "All OE" sample, the interaction of retail interest is positive and significant at the 1% level, suggesting that higher retail interest leads to a significantly stronger initial price reaction to OE sentiment. This result is also economically significant. Absent retail interest, the price response to a one standard deviation increase

in OE sentiment is just marginally significant at 0.07% (t-statistic 1.68).[48] This response is higher by an additional 0.10%, or by 1.5 times, with a one standard deviation increase in retail interest.[49] In Column (2), the coefficient on the interaction of machine interest is negative, although it is not statistically significant. The contrast between retail and machine interest persists in Columns (3) and (4), which examine the "Standalone OE" sample. Therefore, during the event window, higher retail interest leads to a significantly stronger price response to OE sentiment, while machine interest does not exhibit such an impact.

In Panel B of Table 10, we next examine EDGAR interest and returns in the post-disclosure window. We construct the retail and machine interest measures for the post-disclosure window based on Equation (7), except that the numerator is now calculated over the [+4, +63] post-disclosure window. We estimate the regressions of long-run BHAR using the "All OE" sample. Column (1) shows that the coefficient on the interaction of retail interest is significant and *positive*, which mitigates the *negative* coefficient on OE sentiment (reversal effect). Absent retail interest, a one standard deviation increase in OE sentiment corresponds a -0.33% reversal. However, this reversal is reduced by 0.05% with a one standard deviation increase in retail interest.[50] On the other hand, we find no evidence that additional machine interest hampers market efficiency, as Column (2) shows that the interaction of machine interest is insignificant. These results persist when we examine the "Standalone OE" in Columns (3) and (4). Overall, the results in Table 10 suggest that OE sentiment generates persistent retail interest in the post-disclosure window resulting in retail investor activity not only

[48] The 0.07% increase absent retail interest is calculated as the $Sent^{8.01}$ coefficient of 19.06 in Column (1) times the standard deviation of $Sent^{8.01}$ (0.35 in Table 1, divided by 100).

[49] The 0.10% marginal effect is calculated as the interaction term coefficient of 386.31 in Column (1) times standard deviation of $Sent^{8.01}$ (0.35 in Table 1, divided by 100) times standard deviation of retail interest (7.35 in Table 1, divided by 100).

[50] The -0.33% reversal absent retail interest is calculated as the $Sent^{8.01}$ coefficient of -93.79 in Column (2) times the standard deviation of $Sent^{8.01}$ (0.35 in Table 1, divided by 100). The 0.05% reduction is calculated as the interaction term coefficient of 12.21 in Column (2) times standard deviation of $Sent^{8.01}$ (0.35 in Table 1, divided by 100) times standard deviation of retail interest (131.45 in Table 1, divided by 100).

contributing stronger mispricing in the event window but also delaying the price correction process in the post-disclosure window.

4.3 Analysis Based on Institutional Ownership

Despite the validation, we acknowledge that our approach of classifying retail EDGAR interest based on human downloads may not perfectly divide retail and sophisticated interest. For example, sophisticated investors may also access 8-K filings through human downloads as well. Consequently, we use institutional ownership as an alternative means to differentiate between retail and sophisticated investors.

We repeat the regression analysis from Table 11 but replace EDGAR interest with a dummy variable for high institutional ownership that equals one if the filing firm's institutional ownership in the quarter of the filing date is above the sample median, and zero otherwise. Columns (1) and (2) of Table 11 present the regressions of event returns, where the interaction of institutional ownership is significantly negative in both models. This indicates that firms with higher institutional ownership, which suggests a lower retail presence, experience significantly weaker price responses in the event window. This result is also economically significant. For example, in Column (2), the interaction term has a coefficient of -17.95, while that for OE sentiment is 35.47. This indicates that for firms with high institutional ownership, the positive association between price response and OE sentiment is reduced by half (17.95/35.47). In Columns (3) and (4), we further examine long-term returns following OE disclosure, where the coefficient of the interaction term is not significant in either model. Overall, the findings using institutional ownership support our findings using EDGAR interest that retail investors are more susceptible to OE sentiment manipulation.

4.4 Corroboration with Retail Order Imbalances from TAQ

A key assumption of our analysis is that OE sentiment generates persistent retail interest and therefore trading. To corroborate this point, we examine how OE sentiment directly influences retail

trading. We calculate initial ROIB for each 8-K filing as the difference between retail buy orders and sell orders in shares in the [0, +3] window, divided by the total share retail volume in this window. We calculate post-disclosure ROIB similarly using the [+4, +63] window.

We use these ROIB measures as dependent variables to re-estimate Equation (4). Columns (1) to (3) of Appendix Table C5 present the regressions analyzing initial ROIB and shows that OE sentiment positively and significantly predicts retail order imbalances in the event window. The sentiment coefficient in Column (3) indicates a one standard deviation increase in OE sentiment corresponds to a 0.48 percentage point rise event ROIB, which is approximately 13.6% of the average initial ROIB in our sample.[51] This finding indicates that individual investors tend to trade strongly in the direction of OE sentiment during the event window.

Columns (4) to (6) of Table C5 further present the regressions examining post-disclosure ROIB. Notably, we find that the coefficient on OE sentiment is significantly positive in all three models, indicating that the retail investors consistently trade in alignment with the (distorted) OE sentiment even after the disclosure. For example, Column (6) indicates that a one standard deviation increase in OE sentiment corresponds to a 0.35 percentage point rise post-disclosure ROIB.[52] This finding, together with the observed return reversal in the post-disclosure period, points to a dichotomy among investors: while sophisticated investors arbitrage against and correct the initial mispricing, retail investors tend to continue trading in the direction of the mispricing, potentially delaying the subsequent price correction.[53]

[51] The 0.48% increase is calculated as the coefficient of 0.49 in Column (3) times the standard deviation of OE sentiment in the "Standalone OE" sample (0.95 in Table 1, divided by 100).
[52] The 0.35% increase is calculated as the coefficient of 0.36 in Column (3) times the standard deviation of OE sentiment in the "Standalone OE" sample (0.95 in Table 1, divided by 100).
[53] This finding is consistent with Griffin et al. (2011) who demonstrate that individual investors continue to buy even after the price peak during the crash of the tech bubble. Additionally, this finding demonstrates that uninformed trading – such as retail trading related to the distorted OE sentiment – can significantly moves stock prices (Hartzmark and Solomon, 2024).

As a robustness test, we also examine retail investor order imbalance for the matched OE and non-OE disclosures based on initial market responses (see Section 2.3.3). Table C6 of Appendix C reports the results. In the matching balance test, Column (1) shows that the matched sample effectively controls for latent responses, as we observe no differences in retail trading in the same [0, +3] window. More importantly, Column (2) shows that only OE filings are associated with continued post-disclosure retail trading in the direction of sentiment. These results suggest that the differential retail investor trading patterns between OE and non-OE disclosures persists in the "informationally equivalent" matched pairs.

5. CONCLUSION

We investigate the effectiveness of disclosure regulation by comparing lightly regulated "Other Events" (OE) disclosures with strictly regulated non-OE disclosures in 8-K filings. Using a comprehensive dataset of 8-Ks from 2004 to 2020, we document a strong initial price response in the direction of OE sentiment, which completely reverses in the post-disclosure period. In contrast, non-OE disclosures lead to a continuous price drift rather than a reversal. Additionally, OE sentiment negatively predicts future operating performance, while non-OE sentiment exhibits a positive association with future operating performance. These contrasting patterns suggest that sentiment distortion arises in lightly regulated OE disclosures but not in strictly regulated non-OE disclosures.

To identify conditions where OE sentiment distortion is more likely, we use an LDA model to classify OE disclosures into specific topics and utilize ChatGPT to interpret them. We find that while sentiment distortion exists in most topics, it is strongest in topics involving hard-to-verify non-financial information, which unsophisticated investors may struggle to interpret accurately. Moreover, we find that OE sentiment distortion is more pronounced ahead of corporate events where managers or their firms stand to gain from resulting mispricing, including insider sales, option grants, seasoned equity offerings, and stock mergers.

We find that OE sentiment distortions particularly burden retail investors. Specifically, retail investors trade strongly in the direction of OE sentiment both during and after the OE disclosure, amplifying the initial price reaction and slowing the subsequent price correction. These results also hold when we use institutional ownership as an alternative measure to distinguish between sophisticated and retail investors.

Altogether, our findings provide novel evidence that disclosure regulation plays an essential role in shaping both disclosure quality and investor welfare. These results further highlight the need for regulators to exercise increased scrutiny over voluntary corporate disclosures, especially those involving hard-to-verify financial information and accompanied by bundled corporate events, to curb strategic disclosures and safeguard less sophisticated market participants.

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Figure 1

High-Minus-Low Sentiment Buy-and-Hold-Abnormal Returns around 8-K Disclosure

This figure plots the high-minus-low sentiment buy-and-hold-abnormal returns (BHARs) starting 5 days before to 63 days after disclosures of 8-Ks. We compute industry- and past return-adjusted sentiment breakpoints by first sorting 8-Ks by its Fama and French 48 industry and then, within each industry, by the median pre-event abnormal return (*PreFFAlpha*). We then use the 10th and 90th percentiles of sentiment as the breakpoints to identify low-sentiment and high-sentiment subsamples, respectively. The high-minus-low sentiment event BHAR is the high sentiment group's average BHAR minus the low sentiment group's average BHAR on each event day relative to the filing date. We plot average BHARs for the "All OE", "Standalone OE", and "Non-OE" samples. The sample period is from August 23, 2004, to October 23, 2020.

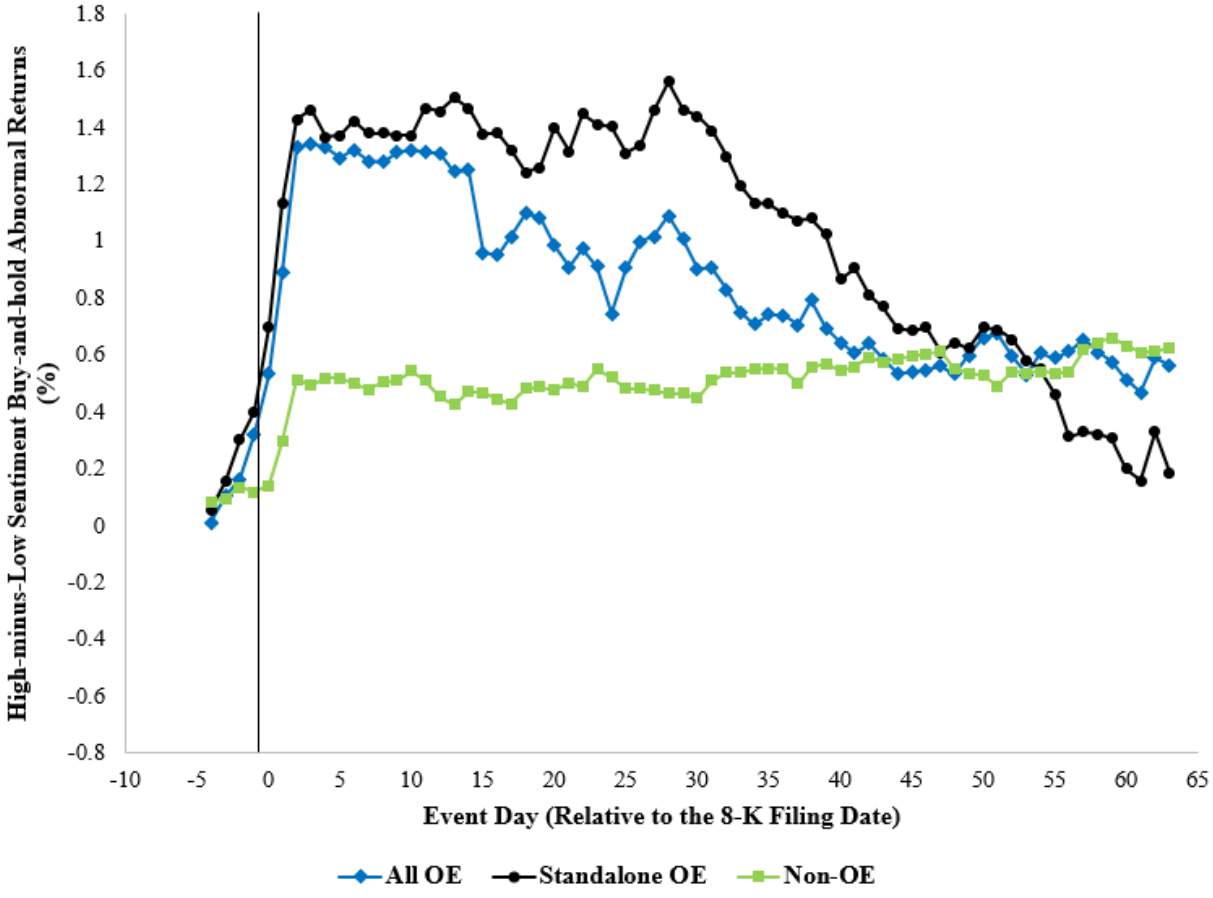


Table 1
Summary Statistics

Panel A reports our sample construction procedure for arriving at the final sample of 8-Ks. The sample period is from August 23, 2004, to October 23, 2020. The three subsamples are the "All OE" sample that contains all 8-Ks with Item 8.01 ("other news"), the "Standalone OE" sample that contains 8-Ks with only Item 8.01, and the "non-OE" sample that contains all 8-Ks without Item 8.01. Panel B reports on the summary statistics for sentiment across samples. We compute sentiment as the number of positive words minus negative words as defined by the Loughran and McDonald (2011) dictionary, scaled by the total dictionary word count. Panel C reports on the summary statistics for all other variables used in our analysis. The definitions of all variables are provided in Appendix A. The unit of observation (N) is the number of 8-Ks.

Panel A: Sample Construction

	8-Ks	All OE	Standalone OE	Non-OE
SEC EDGAR	1,345,485	345,929	244,584	999,556
Require Compustat/CRSP Event Study	546,985	129,142	89,193	417,843
Require Controls (Final Sample)	489,817	114,953	79,856	374,864

Panel B: Summary Statistics of Disclosure Sentiment

	N	Mean	St. Dev.	Median	Min	Max
All OE (Entire Document, %)	114,953	-0.07	0.93	0.21	-13.01	7.79
All OE (Item 8.01 only, %)	114,953	-0.07	0.35	0.00	-7.29	2.71
Standalone OE (%)	79,856	0.02	0.95	0.31	-13.01	7.79
Non-OE (%)	374,864	0.02	0.74	0.25	-8.82	6.82

Panel C: Summary Statistics of Other Variables

	N	Mean	St. Dev.	Median	Min	Max
Market Capitalization ($Bil)	114,953	7.49	0.85	27.01	0.00	895.78
Market to Book	114,953	3.20	1.78	5.30	0.16	52.86
Share Turnover	114,953	2.19	1.64	2.02	0.07	13.95
Pre-FF Alpha (Basis points per day)	114,953	1.80	1.49	19.96	-152.61	365.34
Institutional Ownership (%)	114,953	60.16	66.51	29.87	0.00	100.00
Nasdaq Indicator	114,953	0.52	1.00	0.50	0.00	1.00
ROA (%)	109,924	-2.23	1.79	24.00	-183.38	60.82
ROIB [0, +3] (%)	84,612	-3.52	-1.91	30.72	-100.00	100.00
ROIB [+4, +63] (%)	82,187	-2.98	-1.60	13.21	-100.00	100.00
Retail Interest [0, +3] (%)	100,354	7.70	7.35	5.56	0.00	94.89
Machine Interest [0, +3] (%)	100,354	11.70	12.10	7.95	0.00	96.42
Retail Interest [+4, +63] (%)	99,513	16.47	131.45	5.98	0.00	21,600.00
Machine Interest [+4, +63] (%)	99,513	6.35	26.75	3.64	0.00	2,883.34

Table 2
Regulatory Scrutiny: OE vs. Non-OE Disclosures

This table presents results for the regulatory scrutiny of OE disclosure versus non-OE disclosure. Columns (1) and (2) present a logistic regression where the dependent variable is the log-odds of a future comment letter filed by the U.S. Securities and Exchange Commission addressing an 8-K. The sample includes 8-Ks with only OE disclosure (Item 8.01, "Standalone OE" sample) and 8-Ks without OE disclosure ("non-OE" sample). The dependent variable of interest *(OE)* is an indicator equal to 1 for the "Standalone OE" subsample, and zero for the "non-OE" subsample. Columns (3) and (4) present the logistic regression using the "Standalone OE" sample, where the dependent variables of interest, the absolute value of *Sent* or *BHAR [0, +3]*), are the absolute value of sentiment for OE-disclosure and buy-and-hold returns in the [0, +3] window of OE disclosure. Columns (5) and (6) are similar to Columns (3) and (4) except using the "non-OE" sample. All regressions include firm-level controls including market capitalization, market-to-book ratio, share turnover, past performance, institutional ownership, and a dummy for NASDAQ firms, which are defined in Appendix A. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Variable: Future Comment Letters					
	Extensive Margin: All 8-Ks		**Intensive Margin**			
			Standalone OE		**Non-OE**	
	(1)	(2)	(3)	(4)	(5)	(6)
OE	**−1.32*** **	**−1.22*** **				
	(−13.49)	**(−12.91)**				
abs(Sent)			**−16.41**		**27.39*** **	
			(−1.21)		**(5.43)**	
abs(BHAR [0, +3])				**0.004**		**0.01*** **
				(0.64)		**(7.24)**
log(Size)		0.02	0.05	0.06	0.02	0.03*
		(1.12)	(0.88)	(0.99)	(1.05)	(1.71)
log(MB)		−0.03	−0.21	−0.22	−0.02	−0.02
		(−0.95)	(−1.54)	(−1.62)	(−0.49)	(−0.62)
log(ShareTO)		0.21***	0.27**	0.28***	0.20***	0.18***
		(7.40)	(2.45)	(2.54)	(6.82)	(6.29)
PreFFAlpha		0.07	−0.02	0.001	0.09	0.09
		(0.54)	(−0.06)	(0.003)	(0.66)	(0.69)
InstOwn		0.0001	0.002	0.002	0.000	0.002
		(0.07)	(0.59)	(0.54)	(0.02)	(0.16)
Nasdaq		0.33***	0.16	0.19	0.35***	0.34***
		(6.69)	(0.81)	(0.95)	(6.69)	(6.55)
Year-Quarter FE	No	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	Yes	Yes	Yes	Yes
Observations	510,084	455,432	80,049	79,856	375,380	374,867

Table 3
Market Reactions to Disclosure Sentiment: OE vs. Non-OE Disclosure

Panel A presents regressions of the initial and long-run market reactions to disclosure sentiment for OE disclosure. The dependent variable is either the buy-and-hold abnormal return (BHAR) in the [0, +3] or [+4, +63] window, where day 0 is the filing date of 8-K. The variable of interest is the sentiment of the entire 8-K filing (*Sent*) or the sentiment of the Item 8.01 section ($Sent^{8.01}$). The "All OE" ("Standalone OE") sample includes all 8-Ks that have OE disclosure (8-Ks that include only OE disclosure). Panel B is similar to Panel A except for using the non-OE sentiment. The sample is "non-OE" subsample that includes all 8-Ks without OE disclosure. All regressions include firm-level controls including market capitalization, market-to-book ratio, share turnover, past performance, institutional ownership, and a dummy for NASDAQ firms, which are defined in Appendix A. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: OE Disclosures

	Dep. Variable: BHAR [0, +3]			**Dep. Variable: BHAR [+4, +63]**		
	All OE		**Standalone OE**	**All OE**		**Standalone OE**
	(1)	(2)	(3)	(4)	(5)	(6)
Sent	**20.11*** **		**26.29*** **	**−22.70***		**−35.15*** **
	(3.77)		**(6.50)**	**(−1.99)**		**(−3.23)**
***Sent*^{8.01}**		**51.34*** **			**−86.70*** **	
		(5.58)			**(−3.19)**	
log(Size)	−0.19***	−0.19***	−0.16***	−0.13	−0.12	−0.08
	(−4.90)	(−4.92)	(−3.97)	(−0.67)	(−0.66)	(−0.47)
log(MB)	−0.11*	−0.12*	−0.13**	−1.07***	−1.07***	−1.30***
	(−1.92)	(−1.92)	(−2.36)	(−4.94)	(−4.95)	(−4.98)
log(ShareTO)	−0.34***	−0.35***	−0.24***	−1.54***	−1.53***	−1.46***
	(−5.77)	(−5.94)	(−4.43)	(−4.14)	(−4.10)	(−3.86)
PreFFAlpha	−2.47***	−2.45***	−2.60***	−46.08***	−46.09***	−46.01***
	(−8.84)	(−8.85)	(−7.26)	(−20.55)	(−20.51)	(−21.75)
InstOwn	0.01***	0.01***	0.01***	0.06***	0.06***	0.05***
	(8.66)	(8.69)	(4.85)	(7.13)	(7.12)	(6.06)
Nasdaq	−0.10	−0.09	−0.18*	−0.28	−0.29	−0.35
	(−1.32)	(−1.23)	(−1.86)	(−0.71)	(−0.72)	(−0.76)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	114,953	114,953	79,856	111,479	111,479	77,545
Adjusted R^2	0.01	0.01	0.01	0.11	0.11	0.13

Panel B: Non-OE Disclosures

	Dep. Variable	
	BHAR [0, +3]	**BHAR [+4, +63]**
	(1)	(2)
Sent	**8.59*****	**15.00****
	(3.35)	**(2.07)**
log(*Size*)	−0.05**	−0.29
	(−2.39)	(−1.52)
log(*MB*)	−0.13***	−0.74***
	(−4.93)	(−3.52)
log(*ShareTO*)	−0.25***	−1.02***
	(−7.20)	(−3.30)
PreFFAlpha	−2.46***	−46.41***
	(−14.20)	(−18.20)
InstOwn	0.01***	0.04***
	(8.37)	(5.72)
Nasdaq	−0.11***	−0.71**
	(−2.77)	(−2.39)
Year-Quarter FE	Yes	Yes
Industry FE	Yes	Yes
Observations	374,864	370,523
Adjusted R^2	0.01	0.12

Table 4

Disclosure Sentiment and Future Firm Performance: OE vs. Non-OE Disclosures

Panel A presents the regressions of firms' subsequent operating performance on OE sentiment, where the dependent variable is the firm's return on assets in the one or two years after disclosure. The independent variable of interest is the sentiment of the entire 8-K filing (*Sent)* or the sentiment of the Item 8.01 section ($Sent^{8.01}$). The "All OE" ("Standalone OE") sample includes all 8-Ks that have OE disclosure (8-Ks that include only OE disclosure). Panel B is similar to Panel A but using the non-OE sentiment. The sample is that "non-OE" subsample that includes all 8-Ks without OE disclosure. All regressions include firm-level controls including market capitalization, market-to-book ratio, share turnover, past performance, institutional ownership, and a dummy for NASDAQ firms, which are defined in Appendix A. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: OE Disclosures

	Dep. Variable: ROA in t+1			**Dep. Variable: ROA in t+2**		
	All OE		**Standalone OE**	**All OE**		**Standalone OE**
	(1)	(2)	(3)	(4)	(5)	(6)
Sent	**−0.35****		**−0.47****	**−0.39****		**−0.43****
	(−2.00)		**(−2.55)**	**(−2.04)**		**(−2.06)**
$Sent^{8.01}$		**−0.83****			**−0.99****	
		(−2.09)			**(−2.18)**	
log(*Size*)	0.02***	0.02***	0.02***	0.02***	0.02***	0.02***
	(7.84)	(7.85)	(6.51)	(9.46)	(9.46)	(8.50)
log(*MB*)	−0.02***	−0.02***	−0.02***	−0.04***	−0.04***	−0.04***
	(−5.78)	(−5.79)	(−5.95)	(−3.13)	(−3.13)	(−2.81)
log(*ShareTO*)	−0.04***	−0.04***	−0.04***	−0.05***	−0.05***	−0.05***
	(−7.69)	(−7.72)	(−6.80)	(−6.47)	(−6.49)	(−5.59)
PreFFAlpha	−0.002	−0.002	−0.02	0.04	0.04	0.04
	(−0.08)	(−0.09)	(−0.83)	(1.67)	(1.66)	(1.16)
InstOwn	0.001***	0.001***	0.001***	0.002***	0.002***	0.001***
	(8.27)	(8.28)	(6.92)	(7.78)	(7.79)	(6.13)
Nasdaq	0.02***	0.02***	0.02***	0.02***	0.02***	0.02***
	(3.99)	(3.97)	(3.82)	(4.19)	(4.17)	(3.85)
ROA_t	0.52***	0.52***	0.66***	0.44***	0.44***	0.53***
	(6.02)	(6.02)	(6.86)	(6.79)	(6.79)	(9.63)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	96,666	96,662	67,613	88,898	88,894	62,496
Adjusted R^2	0.22	0.22	0.23	0.18	0.18	0.19

Panel B: Non-OE Disclosures

	Dep. Variable	
	ROA in t+1	**ROA in t+2**
	(1)	(2)
Sent	**0.23****	**0.23****
	(2.62)	**(2.28)**
log(*Size*)	0.02***	0.02***
	(11.74)	(12.57)
log(*MB*)	−0.01***	−0.01***
	(−2.83)	(−2.93)
log(*ShareTO*)	−0.03***	−0.04***
	(−12.15)	(−11.79)
PreFFAlpha	0.03***	0.02
	(3.50)	(1.12)
InstOwn	0.001***	0.001***
	(15.59)	(13.01)
Nasdaq	0.001	0.01***
	(0.54)	(2.90)
ROA_t	0.45***	0.45***
	(8.54)	(7.44)
Year-Quarter FE	Yes	Yes
Industry FE	Yes	Yes
Observations	320,400	291,731
Adjusted R^2	0.22	0.17

Table 5
LDA Topic of OE Content

This table reports on the results of using Latent Dirichlet Allocation (LDA) modeling to decompose the market reaction associated with OE sentiment in the "Standalone OE" sample. After implementing the LDA algorithm with eight topics, we label each topic with an interpreted theme based on ChatGPT's reading of the top fifty most probable words in each topic. Then, we decompose the market reaction by estimating,

$$BHAR_{it} = \gamma_0 Sent_{it} + \sum_{\tau=1}^{8} \gamma_\tau Topic_{\tau,it} \times Sent_{it} + Controls + FEs + \varepsilon_{it},$$

where $Topic_{\tau,it}$ is an indicator equal to 1 if the LDA probability of topic τ is greater than 0.30 for the i^{th} Item 8.01 8-K filed on date t and zero otherwise. $\hat{\gamma}_0$ estimates the market reaction associated with OE sentiment among documents classified into none of the topics, while $\hat{\gamma}_0 + \hat{\gamma}_\tau$ estimates the total market reaction associated with topic τ. The dependent variable is either buy-and-hold abnormal returns ($BHAR_{it}$) in the four-day announcement window [0, +3] or that in the three-month post-disclosure window [+4, +63]. We measure OE sentiment ($Sent_{it}$) within the entire filing, including attached exhibits and press releases. We also include controls and fixed effects (FEs) following Equation (4) of the main text. To test the null hypothesis that $H_0: \gamma_0 + \gamma_\tau = 0$, we report Wald ($W$) statistics in the parentheses computed from the robust variance covariance matrix clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

			BHAR [0, +3]		**BHAR [+4, +63]**	
τ	ChatGPT Theme	% Filings	$\hat{\gamma}_0 + \hat{\gamma}_\tau$	W	$\hat{\gamma}_0 + \hat{\gamma}_\tau$	W
			Intangible Disclosures			
1	**Pharmaceutical R&D**	**10.64**	**86.96*** **	**(7.46)**	**-126.78***	**(2.77)**
2	**Legal Proceedings and Disputes**	**10.76**	**13.98*** **	**(7.34)**	**-79.74*** **	**(10.53)**
3	Legal and Contractual Agreements	7.25	10.07	(0.67)	-36.54	(0.85)
			Financing Disclosures			
4	Financial Accounting and Reporting	6.37	17.26*	(2.74)	-32.62	(0.97)
5	Financial Management and Banking	32.21	20.49**	(4.81)	-22.30	(0.73)
6	Stock and Securities Transactions	21.30	0.09	(0.00)	-22.03	(0.35)
			Operational Disclosures			
7	Business Development and Marketing	19.25	1.20	(0.01)	-8.54	(0.06)
8	Business and Financial Analysis	20.52	33.47***	(20.75)	63.61*	(3.60)

Table 6
OE Sentiment and Subsequent Insider Sales

This table presents the logistic regressions that examine the likelihood of insider sales following OE disclosure. The dependent variable is the log-odds of an insider sales event in the [+1, +1] or [+1, +3] trading day window relative to the filing date of the 8-K. Following Lou (2014), we focus on insider sales by top-level insiders consisting of the chair of the board, the chief executive officer, the chief financial officer, the chief operating officer, the general counsel, and the president. We also follow Lou (2014) and define an insider sales event as large insider sales with the dollar amount above the 25th percentile of the sample distribution. The main variable of interest is the OE sentiment within the Item 8.01 section ($Sent^{8.01}$). Columns (1) and (3) use the "All OE" sample which includes all 8-Ks with OE disclosure (Section 8.01), and Columns (2) and (4) use the "Standalone OE" sample which includes 8-Ks with only OE disclosure (only Section 8.01). We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Var.: Insider Sales [+1, +1]		**Dep. Var.: Insider Sales [+1, +3]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**32.44*****	**28.04****	**32.68*****	**27.46****
	(3.09)	**(2.46)**	**(4.83)**	**(3.55)**
log(*Size*)	−0.004	−0.01	0.04**	0.02
	(−0.19)	(−0.44)	(2.40)	(0.83)
log(*MB*)	0.28***	0.27***	0.26***	0.25***
	(10.80)	(7.65)	(10.08)	(8.32)
log(*ShareTO*)	−0.03	−0.02	−0.05	−0.05
	(−0.56)	(−0.33)	(−1.08)	(−1.02)
PreFFAlpha	1.19***	1.26***	1.31***	1.38***
	(7.58)	(6.44)	(9.63)	(9.24)
InstOwn	0.02***	0.02***	0.02***	0.02***
	(9.31)	(7.82)	(12.63)	(10.61)
Nasdaq	−0.04	0.04	0.12**	0.17**
	(−0.40)	(0.39)	(2.07)	(2.28)
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045

Table 7
OE Sentiment and Subsequent CEO Option Grants

This table presents the logistic regressions that examine the likelihood of option grants to the CEO following OE disclosure. The dependent variable is the log-odds of an unscheduled option grant event in the [+1, +1] or [+1, +3] trading day window relative to the filing date of the 8-K. We follow Shue and Townsend (2017) and construct the sample of option grants, and further follow Fich, Cai and Tran (2011) and classify unscheduled option grants. The main variable of interest is the OE sentiment within the Item 8.01 section ($Sent^{8.01}$). Columns (1) and (3) use the "All OE" sample which includes all 8-Ks with OE disclosure (Section 8.01), and Columns (2) and (4) use the "Standalone OE" sample which includes 8-Ks with only OE disclosure (only Section 8.01). We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Var.: Option Grant [+1, +1]		**Dep. Var.: Option Grant [+1, +3]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**−54.26*****	**−50.82*****	**−23.07**	**−22.30**
	(−3.29)	**(−2.65)**	**(−1.52)**	**(−1.23)**
log(*Size*)	0.37***	0.36***	0.43***	0.43***
	(4.87)	(3.38)	(8.42)	(5.87)
log(*MB*)	0.24	0.31	0.08	0.13
	(1.35)	(1.43)	(0.76)	(1.00)
log(*ShareTO*)	0.37	0.64	0.40**	0.56***
	(0.96)	(1.50)	(2.50)	(3.02)
PreFFAlpha	−0.64	−0.48	−0.13	−0.37
	(−0.59)	(−0.31)	(−0.19)	(−0.36)
InstOwn	0.01	0.01	0.01*	0.005
	(0.69)	(0.56)	(1.81)	(0.86)
Nasdaq	0.02	0.30	0.08	0.20
	(0.04)	(0.63)	(0.28)	(0.56)
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045

Table 8
OE Sentiment and Subsequent Seasoned Equity Offerings

This table presents the logistic regressions that examine the likelihood of seasoned equity offerings (SEOs) following OE disclosure. The dependent variable is the log-odds of a seasoned equity offering in the [+1, +1] or [+1, +3] trading day window relative to the filing date of the 8-K. The main variable of interest is the OE sentiment within the Item 8.01 section ($Sent^{8.01}$). Columns (1) and (3) use the "All OE" sample which includes all 8-Ks with OE disclosure (Section 8.01), and Columns (2) and (4) use the "Standalone OE" sample which includes 8-Ks with only OE disclosure (only Section 8.01). We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Var.: SEO [+1, +1]		**Dep. Var.: SEO [+1, +3]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**104.09*****	**105.13*****	**68.07***	**74.70***
	(3.48)	**(3.26)**	**(1.78)**	**(1.78)**
log(*Size*)	0.05	0.04	0.01	0.01
	(0.81)	(0.58)	(0.10)	(0.22)
log(*MB*)	0.28***	0.18	0.19*	0.07
	(2.61)	(1.25)	(1.65)	(0.39)
log(*ShareTO*)	0.43***	0.25	0.39***	0.28
	(3.47)	(1.27)	(2.70)	(1.28)
PreFFAlpha	0.35	0.50	0.82***	0.89***
	(1.08)	(1.31)	(3.68)	(3.06)
InstOwn	−0.01	−0.002	−0.004	−0.001
	(−1.62)	(−0.22)	(−1.14)	(−0.19)
Nasdaq	0.37	0.42	0.47**	0.42*
	(1.54)	(1.32)	(2.53)	(1.78)
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045

Table 9
OE Sentiment and Subsequent Mergers and Acquisitions

This table presents the logistic regressions that examine the likelihood of mergers and acquisitions (M&A) following OE disclosure. The dependent variable is the log-odds of a stock merger (Panel A) or a cash merger (Panel B) in the [+1, +1] or [+1, +3] trading day window relative to the filing date of the 8-K. Cash mergers are deals paid for with all cash. Stock mergers are deals with stock payment. The main variable of interest is the OE sentiment within the Item 8.01 section ($Sent^{8.01}$). Columns (1) and (3) use the "All OE" sample which includes all 8-Ks with OE disclosure (Section 8.01), and Columns (2) and (4) use the "Standalone OE" sample which includes 8-Ks with only OE disclosure (only Section 8.01). We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: OE Sentiment and the Likelihood of Stock Mergers

	Dep. Var.: Stock Merger [+1, +1]		**Dep. Var.: Stock Merger [+1, +3]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**168.77*****	**234.13*****	**165.92*****	**141.06*****
	(2.84)	**(3.86)**	**(3.85)**	**(2.98)**
log(*Size*)	0.08	0.11	0.25**	0.39***
	(1.26)	(1.13)	(2.02)	(2.66)
log(*MB*)	0.75***	0.54**	0.74***	0.60***
	(4.36)	(2.24)	(5.48)	(2.92)
log(*ShareTO*)	−0.17	−0.20	−0.26	−0.21
	(−0.93)	(−0.89)	(−1.10)	(−0.59)
PreFFAlpha	1.33*	3.01	−0.76	0.69
	(1.86)	(1.62)	(−0.53)	(0.33)
InstOwn	−0.02	−0.0001	−0.005	−0.003
	(−1.24)	(−0.003)	(−0.41)	(−0.24)
Nasdaq	0.04	16.24***	0.11	0.30
	(0.04)	(22.72)	(0.20)	(0.41)
Year × Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045

Panel B: OE Sentiment and the Likelihood of Cash Mergers

	Dep. Var.: Cash Merger [+1, +1]		Dep. Var.: Cash Merger [+1, +3]	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
Sent$^{8.01}$	**−40.88**	**−42.13**	**42.69**	**38.37**
	(−1.06)	**(−1.31)**	**(0.85)**	**(0.78)**
log(*Size*)	0.37	0.43**	0.66***	0.67***
	(1.62)	(1.98)	(4.14)	(3.67)
log(*MB*)	−0.57*	−0.94***	−0.21	−0.49
	(−1.68)	(−3.75)	(−0.62)	(−1.20)
log(*ShareTO*)	0.46	0.13	0.15	−0.01
	(0.75)	(0.20)	(0.33)	(−0.01)
PreFFAlpha	1.39	0.13	1.70	1.57
	(0.95)	(0.06)	(1.49)	(0.92)
InstOwn	0.001	−0.01	0.02	0.02
	(0.02)	(−0.31)	(1.29)	(1.18)
Nasdaq	0.37	−0.05	0.66	0.73
	(0.44)	(−0.03)	(1.15)	(0.97)
Year × Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045

Table 10
EDGAR Interest in 8-K Filings and Price Responses to OE Sentiment

Panel A reports on the relationship between EDGAR interest in 8-K filings and price responses to OE sentiment in the event window. The dependent variable is the buy-and-hold abnormal return in the [0, +3] window, where day 0 is the filing date of 8-K. Columns (1) and (2) use all 8-Ks with OE disclosure (item 8.01), and Columns (3) and (4) use 8-Ks with only OE disclosure (only item 8.01). The variable of interest is the interaction of OE sentiment in the Item 8.01 section with retail EDGAR interest in 8-K filings or machine EDGAR interest in 8-K filings ($Sent^{8.01} \times Retail_Interest$ or $Sent^{8.01} \times Machine_Interest$). Panel B is like Panel A except that the dependent variable is buy-and-hold abnormal return in the [+4, +63] window. All regressions include firm characteristics as in the baseline regressions (Table 3), and their coefficients are omitted for brevity. We also include year-quarter fixed effects and industry fixed effects in all regressions. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: EDGAR Readership and Initial Price Response to OE Sentiment

	Dep. Variable: BHAR [0, +3]			
	All OE Sample		**Standalone OE Sample**	
	(1)	(2)	(3)	(4)
Sent*$^{8.01}$ × *Retail_Interest	**386.31*****		**200.48*****	
	(3.03)		**(4.54)**	
Sent*$^{8.01}$ × *Machine_Interest		**−23.56**		**−24.65**
		(−0.69)		**(−1.05)**
Sent$^{8.01}$	19.06*	56.37***	10.05**	30.67***
	(1.68)	(5.37)	(2.17)	(7.14)
Retail_Interest	0.65		−1.21	
	(0.84)		(−1.67)	
Machine_Interest		−1.72***		−1.07***
		(−4.30)		(−3.11)
Controls	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	100,350	100,350	73,089	73,089
Adjusted R^2	0.01	0.01	0.01	0.01

Panel B: EDGAR Readership and Long-Run Price Response to OE Sentiment

	Dep. Variable: BHAR [+4, +63]			
	All OE Sample		Standalone OE Sample	
	(1)	(2)	(3)	(4)
Sent$^{8.01}$ × Retail_Interest	**12.21*****		**5.35***	
	(4.01)		**(1.69)**	
Sent$^{8.01}$ × Machine_Interest		**3.25**		**−23.85**
		(0.04)		**(−0.48)**
Sent$^{8.01}$	−93.79***	−91.22***	−38.40***	−36.02***
	(−3.13)	(−3.10)	(−3.45)	(−3.39)
Retail_Interest	0.08*		0.02	
	(1.94)		(0.23)	
Machine_Interest		0.25		0.28
		(1.48)		(0.97)
Controls	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	96,334	96,334	70,197	70,197
Adjusted R^2	0.11	0.01	0.01	0.01

Table 11
Institutional Ownership and Price Responses to OE Sentiment

This table reports the relationship between institutional ownership and price responses to OE sentiment in the event window and post-disclosure period. The regression design is like that of Table 7 except that we replace EDGAR readership with a dummy of high institutional ownership, which equals one if the filing firm's institutional ownership in the quarter of the 8-K filing date is above the sample median, and zero otherwise. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Var.: BHAR [0, +3]		**Dep. Var.: BHAR [+4, +63]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
Sent*$^{8.01}$ × *High_InstOwn	**−45.31*****	**−17.95****	**−22.63**	**−4.93**
	(−2.75)	**(−2.27)**	**(−0.34)**	**(−0.19)**
Sent$^{8.01}$	73.76***	35.47***	−81.65*	−31.52*
	(4.73)	(4.77)	(−1.76)	(−1.72)
High_InstOwn	0.44***	0.33***	2.21***	1.87***
	(5.32)	(4.27)	(5.75)	(4.71)
log(*Size*)	−0.17***	−0.15***	−0.04	−0.01
	(−4.55)	(−3.69)	(−0.20)	(−0.04)
log(*MB*)	−0.12**	−0.13**	−1.04***	−1.25***
	(−2.03)	(−2.48)	(−4.78)	(−4.79)
log(*ShareTO*)	−0.27***	−0.19***	−1.27***	−1.18***
	(−4.40)	(−3.59)	(−3.44)	(−3.10)
PreFFAlpha	−2.47***	−2.60***	−46.39***	−46.28***
	(−8.69)	(−7.20)	(−20.54)	(−21.81)
Nasdaq	−0.09	−0.17*	−0.28	−0.41
	(−1.25)	(−1.87)	(−0.70)	(−0.90)
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	114,556	79,576	111,076	77,265
Adjusted R^2	0.01	0.01	0.11	0.13

Appendix A

Variable Definitions

Variable	Definition
Sent	Overall sentiment is measured by the number of positive words minus negative words scaled by the total number of words from the entire 8-K document. Positive, negative, and other neutral words are defined based on the Loughran and McDonald (2011) dictionary.
$Sent^{8.01}$	8.01 sentiment is measured by the number of positive words minus negative words scaled by the total number of words from the Item 8.01 section of an 8-K document. Positive, negative, and other neutral words are defined based on the Loughran and McDonald (2011) dictionary.
BHAR	Event (post-disclosure) returns are measured in the [0, +3] ([+4, +63]) trading day window relative to the 8-K event date by the buy-and-hold abnormal return (BHAR) defined in Equations (2) and (3), relative to the Carhart (1997) four factor model.
ROIB	Event (post-disclosure) retail buying and selling is measured in the [0, +3] ([+4, +63]) trading day window relative to the 8-K event date by the retail order imbalances (ROIB) identified by the Boehmer et al. (2021) algorithm. Retail order imbalances are defined as retail buy orders minus sell orders scaled by the total retail trading volume. Within the event window, we sum up (in shares) the retail imbalances and trading volumes before computing the ratio of the two. Data is from the TAQ database.
Retail_Interest	Event (post-disclosure) visits by retail investors are measured in the [0, +3] ([+4, +63]) trading day window relative to the 8-K event date by the number of visits by human IP addresses to an 8-K relative to total visits to the firm in the [0, +3] event window, as in Equation (7). Human IPs are classified excluding machine IPs following Cao et al. (2023). We use data from the SEC's EDGAR traffic logs.
Machine_Interest	Event (post-disclosure) visits by sophisticated investors are measured in the [0, +3] ([+4, +63]) trading day window relative to the 8-K event date by the number of visits by machine IP addresses to an 8-K relative to total visits to the firm in the [0, +3] event window, as in Equation (7). Machine IPs are classified following Cao et al. (2023). We use data from the SEC's EDGAR traffic logs.
Size	Size is the market capitalization defined as the price times the shares outstanding as of the day before the 8-K filing date from the CRSP database.
MB	Market-to-Book is the market capitalization divided by the book equity in the most recent fiscal year before the 8-K filing date. Book equity, from COMPUSTAT, is computed in the following order of priority as seq-preferStk+txditc, ceq+upstk-preferStk+txditc, and at-lt-preferStk+txditc.
ShareTO	Share turnover is the total CRSP share trading volume in the [-252, -6] trading day window relative to the 8-K filing date divided by the shares outstanding on the filing date. We require more than 60 available volume observations in this event window.
PreFFAlpha	The pre-event alpha in percentages per day is the intercept from a time-series regression of excess returns on market excess returns, the SMB size factor, the HML value factor, and the momentum factor as in Carhart (1997). The regression is estimated in the [-252, -61] day window relative to the 8-K filing date and we require more than 60 available volume observations in this event window. We use data from CRSP and the Ken French data library.
InstOwn	Institutional ownership is the percentage of shares owned by 13F filing institutional investors as of the quarter before the 8-K filing date from Thomson Reuters.
Nasdaq	The NASDAQ indicator is a variable equal to 1 if the CRSP exchange code is 2 and 0 otherwise.

Variable	Definition
ROA	The return on assets is the firm's income before extraordinary items scaled by the prior fiscal year's total assets from COMPUSTAT.

Appendix B

Top 50 Keywords per Latent OE Topic as Identified by the LDA Algorithm

	Intangible Discloses			Financing Disclosures			Operational Disclosures	
Topic	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
ChatGPT Theme	**Pharmaceutical R&D**	**Legal Proceedings and Disputes**	**Legal and Contractual Agreements**	**Financial Accounting and Reporting**	**Financial Management and Banking**	**Stock and Securities Transactions**	**Business Development and Marketing**	**Business and Financial Analysis**
1	develop	approv	author	adjust	bank	offer	product	cost
2	product	determin	repres	measur	director	amend	continu	product
3	pharmaceut	propos	amend	invest	sharehold	price	custom	increas
4	commerci	request	account	present	investor	stock	lead	project
5	patient	receiv	limit	consist	servic	purchas	servic	factor
6	approv	action	effect	calcul	uncertainti	common	offer	rate
7	drug	court	refer	determin	factor	us	begin	uncertainti
8	us	alleg	supplement	us	approv	amount	technologi	servic
9	clinic	claim	mean	account	board	sale	posit	condit
10	trial	vote	enforc	expens	declar	term	develop	develop
11	studi	seek	purchas	alloc	condit	note	investor	custom
12	treatment	meet	respect	estim	common	senior	serv	estim
13	receiv	order	reason	allow	close	instruct	manufactur	anticip
14	complet	enter	determin	receiv	anticip	outstand	brand	effect
15	prepar	continu	present	tax	plan	see	increas	base
16	uncertainti	respect	prepar	effect	stock	plan	solut	could
17	activ	agre	offer	borrow	could	sell	integr	updat
18	indic	reason	constitut	indic	dividend	million	improv	price
19	diseas	grant	control	consolid	updat	made	expand	plan
20	effect	amend	certif	compar	per	receiv	attach	avail
21	updat	against	permit	reflect	annual	transact	us	limit
22	medic	matter	design	continu	invest	aggreg	creat	million
23	potenti	parti	occur	assess	interest	tender	work	impact
24	plan	agreement	person	exclud	hold	per	opportun	continu
25	evalu	director	default	fund	privat	trade	said	econom
26	design	defend	perform	increas	attach	certain	pleas	believ
27	therapeut	termin	compli	evalu	cash	extend	deliv	discuss
28	continu	consid	accept	contribut	avail	director	graphic	energi
29	manufactur	case	affect	rate	record	law	innov	approxim
30	limit	review	agre	repres	subsidiari	due	help	us
31	initi	person	deliv	matur	complet	secretari	global	affect
32	treat	recommend	transfer	purchas	believ	begin	grow	competit
33	factor	make	govern	leas	quarterli	effect	support	litig
34	pleas	respons	assign	amort	litig	counsel	present	natur
35	therapi	violat	advis	collect	base	expir	look	manufactur
36	candid	law	termin	util	mean	refer	enhanc	annual
37	could	regard	consent	decreas	limit	prior	design	perform
38	investor	direct	assum	earn	reform	repurchas	sale	certain
39	program	submit	approv	activ	transact	corp	team	complet
40	regulatori	assert	distribut	comput	within	interest	see	regul
41	lead	final	record	reduc	obtain	option	visit	electr
42	research	district	request	recogn	begin	previous	network	abil
43	phase	effect	origin	loss	regard	accord	leader	involv
44	improv	disclos	confirm	charg	express	close	plan	facil
45	focus	notic	receiv	capit	stockhold	condit	growth	begin
46	believ	negoti	initi	deriv	herein	elect	system	revenu
47	need	govern	law	valu	commerci	regist	on	privat
48	fda	limit	indemnifi	develop	certain	upon	avail	reform
49	present	set	particip	perform	asset	respect	call	ga
50	involv	particip	make	exercis	continu	holder	invest	util

Appendix C: Additional Robustness Tests

Table C1
Regulatory Scrutiny of OE Disclosure: OLS Regressions

This table is similar to Table 4 of the main paper but using OLS regressions rather than logistic regressions. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Variable: Future Comment Letters					
	Extensive Margin: All 8-Ks		**Intensive Margin**			
			Standalone OE		**Non-OE**	
	(1)	(2)	(3)	(4)	(5)	(6)
OE	**−0.005*** **	**−0.005*** **				
	(−12.61)	**(−13.38)**				
abs(Sent)			**−0.03**		**21.89*** **	
			(−1.46)		**(3.80)**	
abs(BHAR [0, +3])				**0.0000**		**0.01*** **
				(0.62)		**(5.22)**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	No	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	Yes	Yes	Yes	Yes
Observations	510,084	455,432	80,049	79,856	375,380	374,867
Adjusted R^2	0.001	0.003	0.003	0.003	0.003	0.003

Table C2
Post-Disclosure Market Responses: Matched-Sample Sample based on Initial Market Responses

This table presents a comparison of long-term market responses for a matched sample of OE and non-OE disclosures. Within the same FF48 industry and filing month, each OE disclosure in the Standalone 8-K sample is 1-to-1 nearest neighbor matched to a non-OE filing based on the initial market response (BHAR [0, +3]). We include "Matched Pair" fixed effects in all specifications to directly compare between the pairs of matches and control for unobserved confounds. Column (1) reports on the matching balance. Columns (2) reports the difference in post-disclosure market response. The regression design is the same as our baseline analysis (Table 3). We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable:	
	Matching Balance Tests	**Post-Disclosure Responses**
	BHAR [0, +3]	**BHAR [+4, +63]**
	(1)	(2)
Sent × OE	**0.61**	**−61.72****
	(1.20)	**(−2.15)**
Sent	**−0.05**	**23.53**
	(−0.12)	**(1.04)**
OE	**0.001**	**−0.32**
	(0.19)	**(−1.27)**
log(*Size*)	−0.0002	−0.19
	(−0.17)	(−0.79)
log(*MB*)	−0.002	−1.21***
	(−0.70)	(−3.64)
log(*ShareTO*)	−0.001	−1.14**
	(−0.30)	(−2.53)
PreFFAlpha	−0.01	−43.00***
	(−1.04)	(−13.85)
InstOwn	−0.0001	0.04***
	(−0.07)	(3.49)
Nasdaq	0.002	−0.78
	(0.58)	(−1.38)
Matched Pair FE	Yes	Yes
Observations	156,722	113,490
Adjusted R^2	0.99	0.03

Table C3
OE Sentiment and Subsequent Corporate Events: OLS Regressions

This table is similar to Tables 9 to 12 of the main paper but using OLS regressions rather than logistic regressions. Panel A is similar to Table 9; Panel B is similar to Table 10; Panel C is similar to Table 11; Panels D and E are similar to Table 12. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: OE Sentiment and Subsequent Insider Sales

	Dep. Var.: Insider Sales [+1, +1]		**Dep. Var.: Insider Sales [+1, +3]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**0.20*****	**0.17*****	**0.41*****	**0.33*****
	(3.70)	**(2.90)**	**(5.77)**	**(4.10)**
Controls	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045
Adjusted R^2	0.004	0.004	0.01	0.01

Panel B: OE Sentiment and Subsequent CEO Option Grants

	Dep. Var.: Option Grant [+1, +1]		**Dep. Var.: Option Grant [+1, +3]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**−0.03***	**−0.02**	**−0.02**	**−0.02**
	(−1.70)	**(−1.35)**	**(−1.38)**	**(−1.01)**
Controls	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045
Adjusted R^2	0.0003	0.0003	0.001	0.001

Panel C: OE Sentiment and Subsequent Seasoned Equity Offerings

	Dep. Var.: SEO [+1, +1]		**Dep. Var.: SEO [+1, +3]**	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**0.04*****	**0.04*****	**0.04*****	**0.05****
	(4.12)	**(3.61)**	**(2.25)**	**(2.13)**
Controls	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045
Adjusted R^2	0.002	0.001	0.002	0.001

Panel D: OE Sentiment and Subsequent Stock Mergers

	Dep. Var.: Stock Merger [+1, +1]		Dep. Var.: Stock Merger [+1, +3]	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**0.005***	**0.004**	**0.01*****	**0.01****
	(1.75)	**(1.27)**	**(3.04)**	**(2.36)**
Controls	Yes	Yes	Yes	Yes
Year × Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045
Adjusted R^2	−0.0003	−0.0005	−0.0002	−0.0003

Panel E: OE Sentiment and Subsequent Cash Mergers

	Dep. Var.: Cash Merger [+1, +1]		Dep. Var.: Cash Merger [+1, +3]	
	All OE	**Standalone OE**	**All OE**	**Standalone OE**
	(1)	(2)	(3)	(4)
***Sent*$^{8.01}$**	**−0.003**	**−0.003**	**0.01**	**0.01**
	(−0.57)	**(−0.63)**	**(1.04)**	**(1.04)**
Controls	Yes	Yes	Yes	Yes
Year × Quarter FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	115,352	80,045	115,352	80,045
Adjusted R^2	−0.0002	−0.0004	−0.0000	0.0000

Table C4
EDGAR Visits and Retail Order Imbalances

This table examines the relationship between EDGAR downloads and retail investors' trading. Column (1) presents the firm-day panel regression of retail order imbalances (ROIB) on contemporaneous daily EDGAR visits to all financial filings. Columns (2) and (3) are similar to Column (1) except the dependent variables are *Retail_Visits* and *Machine_Visits*, respectively. *Retail_Visits* and *Machine_Visits* are EDGAR visits that originated from human downloads and machine downloads, respectively. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Variable: ROIB$_t$		
	(1)	(2)	(3)
Visits$_t$	**0.002**		
	(0.91)		
Retail_Visits$_t$		**0.030*****	
		(2.59)	
Machine_Visits$_t$			**0.002**
			(0.68)
Firm FE	Yes	Yes	Yes
Trading Day FE	Yes	Yes	Yes
Observations	6,639,595	6,639,595	6,639,595
Adjusted R^2	0.01	0.01	0.01

Table C5
Retail Order Imbalances and OE Sentiment

This table examines the relationship between OE sentiment and retail investors' trading in the event-window and the post-disclosure window. The regression design follows our baseline regression in Panel A of Table 3, except the dependent variable is the event ROIB in the [0, +3] window (Columns (1) to (3)) or post-disclosure ROIB in the [+4, +63]) window (Columns (4) to (6)), where day 0 is the filing date of a given 8K. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dep. Variable: ROIB [0, +3]			**Dep. Variable: ROIB [+4, +63]**		
	All OE		**Standalone OE**	**All OE**		**Standalone OE**
	(1)	(2)	(3)	(4)	(5)	(6)
Sent	**0.59*** **		**0.49*** **	**0.35*** **		**0.36*** **
	(3.77)		**(6.50)**	**(4.75)**		**(4.31)**
***Sent*^8.01**		**0.60***			**0.54*** **	
		(1.90)			**(2.88)**	
log(*Size*)	−0.0001	−0.0001	0.0002	0.001	0.001	0.001
	(−0.11)	(−0.10)	(0.14)	(0.97)	(0.97)	(1.45)
log(*MB*)	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(4.20)	(4.29)	(4.29)	(5.77)	(5.81)	(5.23)
log(*ShareTO*)	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(3.16)	(2.93)	(2.27)	(7.65)	(7.38)	(6.64)
PreFFAlpha	−0.002	−0.001	−0.002	0.004	0.004	0.003
	(−0.39)	(−0.27)	(−0.35)	(1.09)	(1.19)	(0.81)
InstOwn	−0.0002***	−0.0002***	−0.0002***	−0.0002***	−0.0002***	−0.0002***
	(−2.72)	(−2.68)	(−2.92)	(−4.75)	(−4.69)	(−3.84)
Nasdaq	−0.003	−0.003	0.003	−0.01***	−0.01***	−0.01**
	(−0.61)	(−0.57)	-0.49	(−2.93)	(−2.90)	(−2.12)
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	84,932	84,932	57,598	85,221	85,221	57,939
Adjusted R^2	0.005	0.005	0.01	0.02	0.02	0.02

Table C6

Retail Order Imbalance: Matched-Sample Analysis based on Initial Market Responses

This table presents a comparison of market and retail trading responses for a matched sample of OE and non-OE disclosures. Within the same FF48 industry and filing month, each OE disclosure in the Standalone 8-K sample is 1-to-1 nearest neighbor matched to a non-OE filing based on the initial market response (BHAR [0, +3]). We include "Matched Pair" fixed effects in all specifications to directly compare between the pairs of matches and control for unobserved confounds. Columns (1) and (2) report the difference in initial retail trading and the long-run retail trading for the matched OE and non-OE filings. We report, in parentheses, *t*-statistics based on robust standard errors clustered by the quarter of the filing date. ***, **, * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable:	
	Matching Balance Tests	**Post-Disclosure Responses**
	ROIB [0, +3]	**ROIB [+4, +63]**
	(2)	(4)
Sent × OE	**0.03**	**0.47****
	(0.07)	**(2.38)**
Sent	**0.24**	**0.001**
	(0.78)	**(0.01)**
OE	**−0.0003**	**−0.004*****
	(−0.10)	**(−3.60)**
log(*Size*)	0.001	0.001
	(0.67)	(0.76)
log(*MB*)	0.01***	0.004***
	(3.65)	(3.26)
log(*ShareTO*)	0.002	0.01***
	(0.69)	(3.72)
PreFFAlpha	0.004	0.01*
	(0.44)	(1.79)
InstOwn	−0.0001	−0.0001**
	(−0.79)	(−2.19)
Nasdaq	0.001	−0.01
	(0.10)	(−1.06)
Matched Pair FE	Yes	Yes
Observations	153,511	114,442
Adjusted R^2	0.15	0.05