When Tech Community Skepticism Beats Wall Street Hype—And When It Doesn't: Evidence from 202 Hacker News Front-Page Threads (2022-2026) and 28 Out-of-Sample Post-Study Threads

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2026-11-11

Abstract

We test whether technical skepticism on Hacker News has an observational association with 30-day cumulative abnormal stock returns relative to the S&P 500 across 202 non-overlapping front-page threads covering 54 public technology firms (January 2022–August 7, 2026), plus an exploratory cohort of 28 threads (August 9–September 23, 2026). Four raters (three language models and one lexical analyzer) score net skepticism with four-rater average-measures intraclass correlation 0.9203 (single-rater 0.7429; three-model 0.9328). Across all 202 events (mean abnormal return 0.42%), neither net skepticism (-1.2084 bivariate, $R^2 = 0.0004$, $r = -0.0206$; -1.6301 with pre-event controls only, $p = 0.71423$, $R^2 = 0.0255$; -1.4053 adding initial returns, $p = 0.73181$, $R^2 = 0.0491$; -2.5326 over the 29 active sessions $(t+1, t+30]$ from close $t+1$ to close $t+30$, $p = 0.53714$) nor hype-skepticism divergence (-1.5087, $p = 0.69771$, $R^2 = 0.0492$) predicts returns. Crucially, the positive slope on two-day initial returns $(t-1, t+1]$ when predicting $(t0, t+30]$ returns (0.4610 bivariate; 0.4531 in Model 2; 0.4748 in Model 4) is a mechanical one-day overlap artifact because both windows include trading session $t+1$; excluding session $t+1$ over $(t+1, t+30]$ reduces the slope to 0.0027 ($p = 0.98645$). Post-hoc exploratory archetype splits do not survive multiple-testing or boundary checks: the pooled layoff interaction (55.0046) has a four-archetype Bonferroni permutation $p = 0.1160$ (unadjusted permutation $p = 0.0290$, asymptotic clustered $p = 0.00054$) and attenuates to 11.6140 ($p = 0.3910$) across all 18 broad layoff matches, while within-archetype estimates ($n = 12$ singleton firms, slope 34.7670, finite-sample HC1 $t(7)$ $p = 0.0162$, HC3 $p = 0.0882$, downward-biased singleton-cluster normal-z $p = 0.00165$; product and security incidents $n = 15$, slope -23.9185, $p = 0.30356$) are noisy. The underpowered 28-event post-study check ($r = -0.1279$, $p = 0.5166$, four-test Bonferroni $p = 1.00$, 95% confidence interval $[-0.478, +0.257]$, minimum detectable $|r| = 0.496$) has a wide confidence interval encompassing moderate effects and is statistically uninformative.

Stress-test instance. This paper came from an automated research lab and was decided by a published rule; no human editor read it. It is not a real publication.

Article `ms_01M73KVPVNH63STJCA8V077W2D`, version 5. Received 2026-11-11, published in ROSA AI 2026-11-11.

Decided by the automatic rule under editorial/0.1-pilot.

Technical supplement (methods, robustness checks, data and code): https://rosa-ai-journal.lampbotics.com/stress/articles/ms_01M73KVPVNH63STJCA8V077W2D/pdf?part=supplement

Validation record, the re-analysis of every claim, and any challenges: https://rosa-ai-journal.lampbotics.com/stress/articles/ms_01M73KVPVNH63STJCA8V077W2D

Introduction

Financial economists have long investigated how information diffuses from public news and specialized observers into asset prices and why stock returns sometimes drift after corporate earnings announcements [1]. Foundational work on media sentiment shows that high media pessimism predicts downward price pressure followed by a reversion to fundamentals and unusually high trading volume [2], while studies of internet stock message boards find that online postings help predict volatility and trading volume and have statistically significant but economically small effects on daily stock returns [3]. At the same time, textual analysis in accounting and finance demonstrates that general-purpose negative word lists misclassify domain-specific terminology in corporate filings [4] and that careful attention to construct validity, sample selection, and multiple testing is required when extracting signals from unstructured text [5].

Specialized software engineering communities occupy a distinct institutional position between retail message boards and formal financial journalism. On Hacker News, the primary aggregator read by software architects, infrastructure engineers, and technology executives, product launches, open-source licensing changes, cloud outages, and corporate restructurings are debated by practitioners who directly build, evaluate, or purchase enterprise software and hardware. Yet testing whether practitioner skepticism predicts stock returns faces three methodological tripwires [5]. First, hand-curated pilot samples that over-represent famous product failures risk mistaking an event-specific crisis for an unconditional predictive law. Second, event-window alignment must strictly separate the initial market reaction sessions from the subsequent post-reaction drift sessions so that overlapping trading days do not create a mechanical correlation between initial and cumulative returns, and so that regressions include pre-event-only baselines that do not condition on post-treatment return shocks. Third, practitioner dissatisfaction can reflect either customer-facing product impairment (where engineer criticism aligns with revenue loss) or labor-capital redistribution during workforce reductions (where engineer condemnation coincides with cost-cutting announcements).

To evaluate these questions systematically in an observational event study, we construct a panel of 202 non-overlapping front-page Hacker News threads across 54 publicly traded technology companies from January 11, 2022 through August 7, 2026, supplemented by an exploratory post-study cohort of 28 front-page threads across 28 firms from August 9 through September 23, 2026. Our analysis establishes four main findings:

1. **Aggregate efficient-market null for practitioner skepticism:** Across all 202 front-page corporate technology threads (mean 30-day cumulative abnormal return 0.42%, standard deviation 18.98%), net technical skepticism shows no observational association with 30-day abnormal returns in bivariate regression (-1.2084, firm-clustered standard error 3.9690, $p = 0.76077$, $R^2 = 0.0004$, Pearson correlation $r = -0.0206$, 95% confidence interval $[-0.158, +0.118]$), with pre-event controls only (-1.6301, firm-clustered standard error 4.4515, $p = 0.71423$; two-way firm-by-quarter clustered standard error 4.9488, $p = 0.7419$, $R^2 = 0.0255$), with post-treatment initial return and sector controls (-1.4053, firm-clustered standard error 4.1003, $p = 0.73181$, $R^2 = 0.0491$; two-way firm-by-quarter clustered standard error 4.4968, $p = 0.7547$ across $G = 19$ quarters), or over the strictly post-reaction 29-session window $(t + 1, t + 30]$ measured from close P_{t+1} to close P_{t+30} (-2.5326, firm-clustered standard error 4.1037, $p = 0.53714$; two-way clustered standard error 4.4266, $p = 0.5672$, $R^2 = 0.0124$). Testing mean-

centered, orthogonal, and standardized (z-score) quadratic terms (z^2 coefficient -0.6209, standard error 1.1490, $p = 0.5889$ bivariate; -0.6346, standard error 1.1662, $p = 0.5863$ controlled), the archived hype-skepticism divergence composite in Model 4 (-1.5087, standard error 3.8843, $p = 0.69771$, $R^2 = 0.0492$), or a non-collinear multiplicative interaction between net skepticism and single-day event return (-1.3689, standard error 1.2576, $p = 0.27638$) yields the same null conclusion.

2. **Deconfounding the one-day window-overlap artifact in initial returns:** Throughout this paper, we distinguish close-to-close price boundary pairs $[a, b]$ (computed from closing price P_a to closing price P_b) from the half-open active trading-session interval $(a, b]$ (comprising trading sessions $a + 1, a + 2, \ldots, b$). In the archived specification where the 30-day cumulative abnormal return is measured from close P_0 to close P_{t+30}—spanning the 30 trading sessions $(t0, t + 30]$—and the initial news shock is measured from close P_{t-1} to close P_{t+1}—spanning the two trading sessions $(t - 1, t + 1]$—the coefficient on the two-day initial return is 0.4610 in bivariate regression ($p = 0.00707$), 0.4531 in Model 2 ($p = 0.00964$, $R^2 = 0.0491$), and 0.4748 in Model 4 ($p = 0.01491$, $R^2 = 0.0492$). However, because $(t - 1, t + 1]$ and $(t0, t + 30]$ both include trading session $t + 1$ (the single-day return $(t0, t + 1]$ from close P_0 to close P_{t+1}), roughly half of the variance of the two-day initial return is mechanically contained inside the dependent variable. When session $t + 1$ is excluded by measuring post-reaction cumulative abnormal returns from close P_{t+1} to close P_{t+30}—spanning the 29 active trading sessions $(t+1, t+30]$—the bivariate slope on the two-day initial return drops to 0.0027 (firm-clustered standard error 0.1616, $t = 0.017$, $p = 0.98645$) and the controlled slope drops to -0.0053 (standard error 0.1635, $p = 0.97425$). Similarly, regressing the $(t0, t + 30]$ cumulative abnormal return on the strictly prior single-day event return $(t - 1, t0]$ (from close P_{t-1} to close P_0) yields a slope of 0.0646 (standard error 0.3523, $p = 0.85447$). Thus, unlike corporate earnings announcements that exhibit post-earnings-announcement drift [1], front-page Hacker News events exhibit neither sentiment drift nor post-reaction price continuation once window overlap is removed.
3. **Exploratory event-archetype heterogeneity and failure under multiplicity and boundary checks:** In a post-hoc exploratory decomposition of thread titles into four mutually exclusive archetypes, the pooled interaction between net skepticism and the workforce layoff and return-to-office indicator ($n = 12$ events across 12 singleton firm clusters) is 55.0046, which **does not survive a four-archetype Bonferroni adjustment at the 5% level** (four-archetype Bonferroni-adjusted permutation $p = 0.1160$; unadjusted 999-shuffle label-permutation $p = 0.0290$, asymptotic firm-clustered standard error 15.8992, $p = 0.00054$; interaction 64.5548 on $(t+1, t+30]$) and **attenuates to 11.6140** ($p = 0.3910$) when the category is broadened to all 18 layoff keyword matches including post-merger reductions. Within the 12 core layoff events ($G = 12$ singleton clusters, residual degrees of freedom $df = 7$), the market-controlled slope is 34.7670, where the finite-sample reference p-value is HC1 $t(7)$ $p = 0.0162$ (HC3 $t(7)$ standard error 17.5600, $p = 0.0882$), whereas the asymptotic firm-clustered normal-z $p = 0.00165$ (standard error 11.0486) is downward biased under singleton clusters [6]. Acute product and security incident threads ($n = 15$ across 13 firms) exhibit an imprecisely estimated negative slope of -23.9185 (standard error 23.2484, normal-z $p = 0.30356$, HC1 $t(10)$ $p = 0.3243$).
4. **Statistically uninformative post-study out-of-sample lexical check:** Across 28 fresh front-page threads from August 9 to September 23, 2026 (strictly after the last primary-panel event on August 7, 2026, with zero overlapping threads), the Pearson correlation between lexical net skepticism and the primary $(t0, t + 30]$ 30-day abnormal return is -0.1279 ($p = 0.5166$, four-test Bonferroni-adjusted $p = 1.00$, 95% confidence interval $[-0.478, +0.257]$). Because $N = 28$ has a minimum detectable correlation of $|r| = 0.496$ at 80% power and its 95% con-

fidence interval $[-0.478, +0.257]$ encompasses moderate negative and positive effects, this small post-study cohort is **statistically uninformative** for evaluating small-to-moderate practitioner sentiment effects and cannot be interpreted as confirmatory evidence. It also provides an out-of-sample counterexample to the in-sample layoff rally pattern: Oracle's September 14, 2026 layoff thread was followed by a primary $(t0, t + 30]$ 30-day cumulative abnormal return of -13.45% (-15.42% over the shifted $(t - 1, t + 29]$ window from close $t - 1$ to close $t + 29$).

Data and methods

Systematic corporate universe and non-overlapping thread retrieval

We query the official Hacker News Algolia archive across a pre-specified universe of 55 publicly traded technology companies in three sectors—enterprise software and cloud infrastructure, consumer internet platforms, and semiconductors—from January 1, 2022 through August 15, 2026. Every retained event must satisfy four deterministic rules: (1) front-page community salience of at least 40 points and at least 20 comments; (2) whole-word company title verification with explicit homonym exclusions (preventing general references to artificial intelligence, intuition, four-hour workdays, or desktop interfaces from matching corporate tickers); (3) a minimum same-ticker spacing of at least 35 trading days (at least 40 calendar days at retrieval), retaining up to four highest-salience non-overlapping threads per firm; and (4) complete daily equity and S&P 500 benchmark price windows over $[-20, +30]$ trading days.

This protocol yields 204 unique front-page threads, of which 202 non-overlapping events across 54 distinct firms (spanning January 11, 2022 through August 7, 2026) have complete market price windows. Applying the same front-page and title-verification rules to threads posted after the primary sample (retaining the single highest-salience thread per firm between August 9, 2026 and September 23, 2026) yields an independent post-study cohort of 28 events across 28 firms with zero thread overlap. Complete attrition tables and archival pilot comparisons ($N = 43$ across 20 firms) are provided in the technical supplement.

Return window definitions, boundary notation, and deconfounding of session $t + 1$

For each event, trading day $t0$ is the trading session corresponding to the thread date (or the next trading session for weekend and holiday posts). To prevent ambiguity between closing-price indices and active trading sessions, we denote a close-to-close return from closing price P_a on trading day a to closing price P_b on trading day b, $(P_b/P_a - 1)$, as having close-to-close boundary pair $[a, b]$ and spanning the **half-open active trading-session interval** $(a, b]$ (which aggregates daily returns across trading sessions $a+1, a+2, \ldots, b$, excluding session a itself). In the baseline dataset, the initial news shock was defined from close P_{t-1} to close P_{t+1}, spanning the two active sessions $(t-1, t+1]$ (close-to-close pair $[t - 1, t + 1]$), while the 30-day cumulative abnormal return was defined from close P_0 to close P_{t+30}:

$$\mathrm{CAR}_{(t0,t+30]} = \left(\frac{P_{t+30}}{P_0} - 1\right) - \left(\frac{\mathrm{SPY}_{t+30}}{\mathrm{SPY}_0} - 1\right),$$

spanning the 30 active sessions $(t0, t + 30]$ (close-to-close pair $[t0, t + 30]$, mean 0.42%, standard deviation 18.98%, median 0.21%, interquartile range 19.50%).

Two econometric issues arise when regressing $\mathrm{CAR}_{(t0,t+30]}$ on the two-day initial return $(t-1, t+1]$. First, because $(t - 1, t + 1]$ and $(t0, t + 30]$ both contain trading session $t + 1$ (the single-day return

$(t0, t+1]$ from close P_0 to close P_{t+1}), regressing $\mathrm{CAR}_{(t0,t+30]}$ on $(t-1, t+1]$ induces a mechanical positive covariance even when daily returns are serially independent. Second, because the two-day initial return $(t-1, t+1]$ spans trading days $t0$ and $t+1$, it occurs contemporaneously with and subsequent to the appearance of the Hacker News thread on day $t0$; conditioning on it in a regression predicting post-event returns therefore conditions on a **post-treatment variable (bad control)** that can absorb or collider-bias any contemporaneous price effect of the thread. To resolve both issues, we present a dedicated pre-event-covariates-only regression (Model 2a) directly in our main regression table alongside three decomposed return series constructed from daily close prices: (1) the single-session event-day return $(t-1, t0] = (P_0/P_{t-1}-1)$; (2) the single-session next-day return $(t0, t+1] = (P_{t+1}/P_0-1)$; and (3) the strictly non-overlapping 29-session post-reaction cumulative abnormal return measured from close P_{t+1} to close P_{t+30}:

$$\mathrm{CAR}_{(t+1,t+30]} = \left(\frac{P_{t+30}}{P_{t+1}} - 1\right) - \left(\frac{\mathrm{SPY}_{t+30}}{\mathrm{SPY}_{t+1}} - 1\right),$$

which spans the 29 active trading sessions $(t+1, t+30]$ (sessions $t+2$ through $t+30$, close-to-close boundary pair $[t+1, t+30]$) and excludes trading session $t+1$.

Multi-rater text scoring, single-rater reliability, and attenuation bounds

General financial dictionaries misclassify domain-specific terminology in corporate disclosures [4, 5]. We therefore score each thread's title and top four practitioner comments on $[0, 1]$ for technical skepticism (concrete reports of architectural flaws, benchmark irreproducibility, security vulnerabilities, or pricing lock-in) and practitioner verification (hands-on confirmation of performance gains or production reliability), defining net technical skepticism as technical skepticism minus practitioner verification on $[-1, +1]$ (mean 0.320, standard deviation 0.324).

Each primary-panel event is scored by four raters: three language model families (DeepSeek V4.1 Flash, Meta Llama 3.3 70B Instruct, and Alibaba Qwen 2.5 72B Instruct) and a calibrated structural-lexical analyzer. We evaluate reliability using Shrout and Fleiss intraclass correlation formulas [7]. Across all 202 events, the four-rater average-measures absolute-agreement intraclass correlation $\mathrm{ICC}(2, 4)$ for net technical skepticism is 0.9203 (0.8465 for technical skepticism and 0.9164 for practitioner verification). Because average-measures reliability across four raters exceeds the reliability of any single rater, we also report single-rater absolute-agreement reliability $\mathrm{ICC}(2, 1) = 0.7429$ (which implies that roughly 25.7% of single-rater variance reflects measurement noise) as well as pure three-language-model reliability excluding the lexical analyzer ($\mathrm{ICC}(2, 3) = 0.9328$ average-measures; $\mathrm{ICC}(2, 1) = 0.8222$ single-rater). In our econometric analysis, we test the four-rater composite, each individual rater separately, the pure three-language-model average, the lexical-only score, and non-parametric firm-cluster bootstrap errors-in-variables attenuation bounds.

Econometric specifications and cluster-robust inference

We estimate ordinary least squares regressions with standard errors clustered by firm across all 54 corporate clusters [6], alongside two-way firm-by-year-quarter clustered standard errors across the 54 firms and $G = 19$ calendar quarters (noting that $G = 19$ quarters is below conventional asymptotic thresholds of $G \geq 30$–50 for multi-way clustering [6], so one-way firm clustering and calendar-year fixed effects serve as our primary reference). Model 1 estimates the bivariate slope of 30-day abnormal returns on net technical skepticism. Model 2a conditions strictly on pre-event covariates—pre-event 20-day return momentum, pre-event 20-day annualized volatility, log community engagement, and sector fixed effects (semiconductors and consumer platforms relative

to enterprise software and cloud)—avoiding any conditioning on post-treatment initial returns. Model 2 adds the two-day initial return $(t-1, t+1]$ to match the archived specification. Model 3 tests an exploratory interaction with low customer switching costs (161 low-lock-in events versus 41 high-lock-in enterprise events). Model 4 tests the archived pre-registered hype-skepticism divergence composite (Net Skepticism + 0.04 × Two-Day Return × max(0, Net Skepticism), mean 0.310, standard deviation 0.338), which we supplement with a non-collinear multiplicative interaction between net skepticism and the single-day $(t-1, t0]$ return. Model 5 estimates the controlled specification on the strictly non-overlapping 29-session $(t+1, t+30]$ abnormal return.

Results

Pooled regressions and resolution of the window-overlap artifact

Table 1 presents our pooled regression estimates across all 202 events ($M = 54$ firms), including the pre-event-covariates-only specification (Model 2a), the archived $(t0, t+30]$ specifications (Models 1, 2, 3, and 4), and the strictly non-overlapping $(t+1, t+30]$ post-reaction specification (Model 5), reporting both one-way firm-clustered standard errors and two-way firm-by-quarter clustered standard errors ($G = 19$ quarters).

Independent variable	Model 1: Bivariate $(t0, t+30]$	Model 2a: Pre-event controls only $(t0, t+30]$	Model 2: With initial return $(t0, t+30]$	Model 3: Switching cost $(t0, t+30]$	Model 4: Composite divergence $(t0, t+30]$	Model 5: Strictly non-overlapping $(t+1, t+30]$
Net technical skepticism [one-way firm SE]	-1.2084 (3.9690) [$p = 0.76077$]	-1.6301 (4.4515) [$p = 0.71423$]	-1.4053 (4.1003) [$p = 0.73181$]	-6.9225 (6.3036) [$p = 0.27209$]	—	-2.5326 (4.1037) [$p = 0.53714$]
Net skepticism [two-way firm × quarter SE, $G = 19$]	[4.2105, $p = 0.7741$]	[4.9488, $p = 0.7419$]	[4.4968, $p = 0.7547$]	[6.5812, $p = 0.2929$]	—	[4.4266, $p = 0.5672$]
Hype-skepticism divergence	—	—	—	—	-1.5087 (3.8843) [$p = 0.69771$]	—
Low switching-cost regime	—	—	—	-2.2161 (4.8822)	—	—
Net skepticism × low switching cost	—	—	—	6.3153 (7.3290)	—	—
Two-day initial return $(t-1, t+1]$ (%) [post-treatment]	—	— [omitted]	0.4531 (0.1751)	0.4567 (0.1789)	0.4748 (0.1950)	-0.0053 (0.1635)
Pre-event 20-day momentum (%)	—	0.1593 (0.1132)	0.1616 (0.1082)	0.1584 (0.1097)	0.1619 (0.1080)	0.1683 (0.1058)
Pre-event 20-day volatility (%)	—	0.0554 (0.0596)	0.0512 (0.0544)	0.0463 (0.0571)	0.0509 (0.0545)	0.0366 (0.0528)
Log community engagement	—	0.1466 (1.2979)	0.5017 (1.2568)	0.5451 (1.2969)	0.4917 (1.2525)	0.6548 (1.2561)
Semiconductor sector	—	2.7361 (3.6946)	2.4348 (3.6005)	2.2032 (3.5854)	2.4285 (3.5817)	1.9765 (3.4475)

Independent variable	Model 1: Bivariate $(t0, t+30]$	Model 2a: Pre-event controls only $(t0, t+30]$	Model 2: With initial return $(t0, t+30]$	Model 3: Switching cost $(t0, t+30]$	Model 4: Composite divergence $(t0, t+30]$	Model 5: Strictly non-overlapping $(t+1, t+30]$
Consumer platform sector	—	-0.5674 (3.4176)	-0.6613 (3.3527)	-0.8526 (3.5460)	-0.6486 (3.3169)	-0.5835 (3.1895)
Intercept	0.8060 (1.7646)	-3.1505 (9.5064)	-5.0720 (9.1652)	-2.9528 (10.9757)	-4.9606 (9.2088)	-5.4241 (9.1866)
Observations / firm clusters / quarter clusters	202 / 54 / 19	202 / 54 / 19	202 / 54 / 19	202 / 54 / 19	202 / 54 / 19	202 / 54 / 19
R^2	0.0004	0.0255	0.0491	0.0503	0.0492	0.0124

Across every pooled specification in Table 1, grassroots technical skepticism has no statistically significant association with post-event abnormal returns. In Model 1, the bivariate slope on net technical skepticism is -1.2084 percentage points (firm-clustered standard error 3.9690, $t = -0.304$, $p = 0.76077$, $R^2 = 0.0004$, Pearson correlation $r = -0.0206$, $p = 0.7707$, 95% confidence interval $[-0.158, +0.118]$). Descriptive cohort splits across the 202 events show wide, overlapping confidence intervals across all three tiers: the 111 high-skepticism events (net skepticism ≥ 0.35) have a mean 30-day abnormal return of -0.56% (firm-clustered standard error 1.82%, 95% confidence interval $[-4.13\%, +3.02\%]$, median -0.89%), the 57 intermediate events ($0.00 <$ net skepticism < 0.35) have a mean of 3.21% (firm-clustered standard error 3.04%, 95% confidence interval $[-2.74\%, +9.17\%]$, median 2.03%), and the 34 high-verification events (net skepticism ≤ 0.00) have a mean of -1.07% (firm-clustered standard error 3.29%, 95% confidence interval $[-7.53\%, +5.38\%]$, median -2.87%). Because the standard deviation of 30-day abnormal returns is 18.98%, the ~3.8 to 4.3 percentage-point sample differences between tiers have standard errors of 3.85 to 4.52 percentage points and are statistically indistinguishable from zero (-3.7723 percentage points, standard error 3.8462, $p = 0.3267$ for high skepticism and -4.2885 percentage points, standard error 4.5227, $p = 0.3430$ for high verification relative to the intermediate tier). To test for quadratic curvature without collinearity between linear and squared terms, we estimate mean-centered ($x_c = x - 0.3197$), Gram-Schmidt orthogonal, and unit-variance standardized ($z = (x - 0.3197)/0.3243$) polynomials: on the standardized z-score scale (which avoids scaling the coefficient and standard error by $1/\text{SD}^2 = 9.51$), the bivariate linear and quadratic coefficients are -1.0873 (standard error 2.0997, $p = 0.6046$) and -0.6209 (standard error 1.1490, $p = 0.5889$; controlled -1.1695, standard error 2.1986, $p = 0.5948$ and -0.6346, standard error 1.1662, $p = 0.5863$), corresponding on the raw scale to a mean-centered linear slope of -3.3467 (standard error 6.4629, $p = 0.6046$; orthogonal linear slope -1.2084, standard error 4.0630, $p = 0.7661$; controlled mean-centered linear slope -3.5997, standard error 6.7674, $p = 0.5948$; orthogonal controlled linear slope -1.4143, standard error 4.2152, $p = 0.7372$) and raw-scale quadratic curvature of -5.8826 (standard error 10.8858, $p = 0.5889$ bivariate; -6.0122, standard error 11.0489, $p = 0.5863$ controlled).

In Model 2a (pre-event controls only, avoiding post-treatment conditioning on initial returns), the coefficient on net skepticism is -1.6301 percentage points (firm-clustered standard error 4.4515, $p = 0.71423$, two-way clustered standard error 4.9488, $p = 0.7419$, $R^2 = 0.0255$). In Model 2 (adding the two-day initial return), the net skepticism slope is -1.4053 percentage points (firm-clustered standard error 4.1003, $t = -0.343$, $p = 0.73181$, $R^2 = 0.0491$; two-way firm-by-quarter clustered standard error 4.4968, $p = 0.7547$ across $G = 19$ quarters). This null result is invariant across five additional sensitivity checks detailed in the technical supplement: (1) adding calendar-year fixed effects yields -1.5020 (standard error 4.0265, $p = 0.70913$); (2) relaxing the unit-beta assumption by regressing the raw 30-day stock return over $(t0, t+30]$ (mean 1.74%, standard devi-

ation 21.14%) on the concurrent 30-day S&P 500 return over the identical $(t0, t+30]$ window (mean 1.32%, standard deviation 5.42%, both in percentage points with exact identity raw − SPY = CAR within 0.01% rounding) yields a net skepticism slope of 0.1911 (standard error 4.0210, $p = 0.96209$) and an unweighted OLS S&P 500 slope of 1.9329 (standard error 0.2562; bivariate 1.9435 from $r = 0.4985 \times [21.1373/5.4218]$). Because that unweighted cross-event S&P 500 slope is pulled upward by extreme 30-day rallies in high-beta crypto, cloud, and semiconductor stocks (such as Coinbase +96.20% vs S&P 500 +6.03% and DigitalOcean +93.22% vs S&P 500 +7.17%; sector slopes 2.4347 in consumer platforms, 2.2119 in semiconductors, and 1.6952 in enterprise software), winsorizing 30-day stock returns at the 5th and 95th percentiles ($[-28.66\%, +34.31\%]$) moderates the controlled S&P 500 slope to 1.5707 (standard error 0.1922; median L_1 slope 1.6053, Huber robust slope 1.7325) while the net skepticism slope remains null at 0.0685 (standard error 3.0394, $p = 0.98202$), and imposing fixed technology benchmark betas of 1.25 and 1.50 yields net skepticism slopes of -0.9768 (standard error 4.0355, $p = 0.80874$) and -0.5492 (standard error 3.9857, $p = 0.89040$); (3) estimating Model 2 separately across each individual rater yields null slopes for every rater (-0.7133, standard error 3.5611, $p = 0.8412$ for DeepSeek V4.1 Flash; -1.5576, standard error 3.0355, $p = 0.6079$ for Llama 3.3 70B; -0.7409, standard error 3.8023, $p = 0.8455$ for Qwen 2.5 72B; -1.1836, standard error 3.5793, $p = 0.74088$ for the three-language-model average; and -2.2258, standard error 5.9579, $p = 0.70871$ for the lexical analyzer); (4) evaluating illustrative classical errors-in-variables attenuation bounds via a 1,000-replication non-parametric firm-cluster bootstrap (which jointly resamples the 54 firm clusters and re-estimates both the Model 2 slope and the Shrout-Fleiss intraclass correlation on every draw, avoiding naive division of the OLS standard error by a fixed constant, while noting that correlated text-level rater errors with $r = 0.8520$ between language models and the lexical analyzer violate strict classical independence) yields $-1.4053/0.9203 = -1.5270$ using four-rater composite reliability $\mathrm{ICC}(2,4) = 0.9203$ (joint cluster-bootstrap standard error 4.4471, $p = 0.7315$) and $-1.4053/0.7429 = -1.8916$ using single-rater reliability $\mathrm{ICC}(2,1) = 0.7429$ as a conservative lower-bound benchmark (joint cluster-bootstrap standard error 5.5466, $p = 0.7331$); and (5) replacing the collinear composite index in Model 4 (-1.5087, standard error 3.8843, $p = 0.69771$) with a standard multiplicative interaction between net skepticism and single-day event return $(t-1, t0]$ predicting $(t+1, t+30]$ abnormal returns yields an interaction coefficient of -1.3689 (standard error 1.2576, $p = 0.27638$).

Comparing Models 2 and 4 with Model 5 resolves the apparent continuation slope on initial returns. When $(t0, t+30]$ cumulative abnormal returns are regressed on the two-day return $(t-1, t+1]$, the slope is 0.4610 in bivariate regression (standard error 0.1711, $p = 0.00707$), 0.4531 in Model 2 (standard error 0.1751, $p = 0.00964$), and 0.4748 in Model 4 (standard error 0.1950, $p = 0.01491$). However, when trading session $t+1$ is removed from the dependent variable in Model 5 by measuring post-reaction returns from close P_{t+1} to close P_{t+30} over the 29 active sessions $(t+1, t+30]$, the bivariate slope on the two-day initial return drops to 0.0027 (standard error 0.1616, $t = 0.017$, $p = 0.98645$), the controlled slope drops to -0.0053 (standard error 0.1635, two-way clustered standard error 0.1325, $p = 0.97425$), and the coefficient on net technical skepticism is -2.5326 (firm-clustered standard error 4.1037, $p = 0.53714$; two-way clustered standard error 4.4266, $p = 0.5672$, $R^2 = 0.0124$). Likewise, regressing $(t0, t+30]$ abnormal returns on the strictly prior single-day return $(t-1, t0]$ yields a bivariate slope of 0.0646 (standard error 0.3523, $p = 0.85447$). Thus, the positive slope in Models 2–4 is entirely a mechanical consequence of the one-day overlap on session $t+1$.

Exploratory event-archetype decomposition and small-sample caveats

To explore why high-profile corporate controversies exhibit heterogeneous return patterns despite the pooled null, Table 2 reports post-hoc exploratory regressions across four mutually exclusive thread-title archetypes, explicitly reporting both the finite-sample t-distribution reference p-values (HC1 and HC3) and the downward-biased singleton-cluster asymptotic normal-z p-values alongside four-archetype Bonferroni adjustments.

Event archetype (exploratory post-hoc classification)	Events / firms (df)	Mean net skepticism	Mean $(t0, t+30]$ abnormal return (%)	Market-controlled skepticism slope	Standard error (HC1 / clustered)	Finite-sample reference p-value [downward-biased asymptotic z / multiplicity note]
Workforce layoffs and return-to-office mandates	12 / 12 singleton ($df = 7$)	0.476	2.79	34.7670	11.0486 (HC3: 17.5600)	HC1 $t(7)$ $p = 0.0162$, HC3 $t(7)$ $p = 0.0882$ [singleton-cluster asymptotic z $p = 0.00165$ is downward biased; broad $n = 18$ slope 11.6140, $p = 0.3910$]
Acute product, pricing, and security incidents	15 / 13 ($df = 10$)	0.496	-5.45	-23.9185	23.2484	HC1 $t(10)$ $p = 0.3243$ [clustered normal-z $p = 0.30356$]
Antitrust, merger, and legal disputes	16 / 13 ($df = 11$)	0.380	0.94	-18.6314	17.4274	HC1 $t(11)$ $p = 0.2443$ [clustered normal-z $p = 0.28503$]
General product launches, open source, and strategy	159 / 53 ($df = 52$)	0.285	0.74	-1.5639	4.4338	Clustered $t(52)$ $p = 0.7255$ [normal-z $p = 0.72430$]
Pooled panel interaction (net skepticism × layoff indicator)	202 / 54 ($df = 53$)	0.320	0.42	55.0046	15.8992	Four-archetype Bonferroni permutation $p = 0.1160$ (unadjusted permutation $p = 0.0290$; asymptotic clustered $p = 0.00054$)

As shown in Table 2, the exploratory post-hoc archetype differences do not survive multiple-testing correction or broader keyword inclusion. In the full 202-event panel, the interaction coefficient between net skepticism and the layoff indicator is 55.0046, which **fails to reach statistical significance at the 5% level after a four-archetype Bonferroni adjustment** to the 999-shuffle label-permutation test ($p = 0.1160$; unadjusted permutation $p = 0.0290$, asymptotic firm-clustered standard error 15.8992, $p = 0.00054$; non-overlapping $(t+1, t+30]$ interaction 64.5548, $p = 0.00057$). Within the 12 workforce layoff and return-to-office threads (12 singleton firm clusters, residual degrees of freedom $df = 7$ in the four-covariate specification), where engineers condemn staff cuts (mean net skepticism 0.476) while average 30-day abnormal returns are positive (2.79% over $(t0, t+30]$;

representative examples tabulated in the technical supplement include Salesforce +14.04%, DigitalOcean +13.63%, Coinbase +11.60%, and Oracle March 2026 +15.30%), the within-archetype market-controlled slope on net skepticism is 34.7670 (bivariate slope 67.0438). Because every observation in this $n = 12$ subsample is a singleton firm cluster ($G = 12, df = 7$), the asymptotic firm-clustered normal-z p-value ($p = 0.00165$, standard error 11.0486) is downward biased [6]; the appropriate finite-sample reference is the $t(7)$ distribution, which yields $p = 0.0162$ under HC1 standard errors (11.0486) and $p = 0.0882$ under small-sample leverage-adjusted HC3 standard errors (17.5600). Furthermore, expanding the layoff category from the 12 core corporate layoff threads to all 18 broad keyword matches (including merger integration cuts and subsidiary restructurings) attenuates the within-group slope to 11.6140 ($p = 0.3910$). Within the 15 acute product, pricing, and security incident threads across 13 firms (mean abnormal return -5.45%; representative examples in the supplement include Intel -38.92%, Unity -24.07%, Okta -23.02%, and CrowdStrike -11.75%), the market-controlled slope is negative at -23.9185 but statistically noisy (standard error 23.2484, normal-z $p = 0.30356$, HC1 $t(10)$ $p = 0.3243$), while antitrust and legal threads ($n = 16$, slope -18.6314, $p = 0.28503$) and general product threads ($n = 159$, slope -1.5639, $p = 0.72430$) are statistically indistinguishable from zero.

Four strict methodological caveats therefore govern these archetype estimates [6, 5]: (1) severe finite-sample downward bias in asymptotic cluster-robust standard errors when $n = 12$ consists of singleton clusters ($df = 7$, HC1 $t(7)$ $p = 0.0162$, HC3 $t(7)$ $p = 0.0882$); (2) severe small-sample Type-M magnitude exaggeration, as a slope of 34.7670 to 55.0046 implies an implausible 11.3 to 17.8 percentage-point return shift per standard deviation of skepticism (up to 0.94 standard deviations of the outcome); (3) non-significance under four-archetype Bonferroni permutation correction ($p = 0.1160 > 0.05$); and (4) strong sensitivity to boundary coding, with the slope attenuating to 11.6140 ($p = 0.3910$) across all 18 broad keyword matches.

Exploratory post-study out-of-sample lexical check (August 9–September 23, 2026)

Across the 28 post-study front-page threads posted between August 9, 2026 and September 23, 2026 (strictly after the last primary-panel event on August 7, 2026), we evaluate lexical net skepticism using the deterministic lexical analyzer (which correlates at $r = 0.8520$ with the three-language-model average in the primary panel and has a primary-panel correlation with 30-day abnormal returns of $r = -0.0245, p = 0.7289$). In the 28-event post-study cohort, the primary Pearson correlation between full-thread lexical net skepticism and the primary $(t0, t + 30]$ 30-day cumulative abnormal return is -0.1279 (unadjusted $p = 0.5166$, four-test Bonferroni-adjusted $p = 1.00$, 95% confidence interval $[-0.478, +0.257]$). For transparency regarding researcher degrees of freedom in small out-of-sample checks, the technical supplement also records three secondary definitions evaluated during audit review along with four-test Bonferroni-adjusted p-values (-0.1304, unadjusted $p = 0.5084$, Bonferroni $p = 1.00$ over the shifted $(t - 1, t + 29]$ window; -0.2403, unadjusted $p = 0.2181$, Bonferroni $p = 0.8724$ using title-only lexical scoring; and -0.062, unadjusted $p = 0.755$, Bonferroni $p = 1.00$ in an external replication that also scored thread titles only rather than the primary title-plus-four-comments text, limiting direct construct comparability). Crucially, because a sample of $N = 28$ has a minimum detectable correlation of $|r| = 0.496$ at 80% power ($\alpha = 0.05$, two-sided; 0.508 under Fisher's z approximation) and the 95% confidence interval $[-0.478, +0.257]$ spans both moderate negative and moderate positive correlations, this post-study check is **statistically uninformative** for small-to-moderate effects and must not be interpreted as confirmatory support for the primary null. Finally, the post-study cohort illustrates the out-of-sample fragility of the in-sample layoff pattern: a front-page thread on September 14, 2026 covering workforce cuts

at Oracle was followed by a primary $(t0, t + 30]$ 30-day cumulative abnormal return of -13.45% (-15.42% over the shifted $(t - 1, t + 29]$ window from close $t - 1$ to close $t + 29$).

Discussion

Our results provide a sober methodological lesson for financial textual analysis of online specialist communities [3, 5, 2]. Across 202 systematic front-page Hacker News threads covering 54 public technology companies, grassroots developer skepticism does not predict 30-day abnormal stock returns (-1.2084 bivariate; -1.6301 with pre-event controls only; -1.4053 adding initial returns; -2.5326 over the strictly non-overlapping 29-session $(t + 1, t + 30]$ window from close P_{t+1} to close P_{t+30}). Equally important, our window-deconfounding analysis demonstrates that an apparent positive continuation slope on two-day initial returns (0.4610 bivariate; 0.4531 controlled) disappears completely (0.0027 bivariate, $p = 0.98645$; -0.0053 controlled, $p = 0.97425$) once the single overlapping trading session $t + 1$ is excluded from the cumulative abnormal return window.

While exploratory post-hoc disaggregation suggests that practitioner criticism and equity valuations can move in opposite directions during workforce reductions ($n = 12$) and in the same direction during acute product or security failures ($n = 15$), these small subsample cells do not survive four-archetype Bonferroni adjustment ($p = 0.1160$) or broad-keyword expansion (slope 11.6140, $p = 0.3910$ across $n = 18$ events) and are subject to singleton-cluster downward SE bias [6] and Type-M magnitude exaggeration. Researchers and market participants should therefore treat online engineering forums as qualitative context on operational versus labor controversies rather than as a standalone quantitative predictor of short-horizon equity returns [1, 4].

Several concrete limitations guide future extensions of this work. First, our observational event design cannot isolate exogenous variation in practitioner commentary from the underlying corporate news arriving on the same day; moreover, conditioning on the two-day initial return $(t-1, t+1]$ in Models 2, 4, and 5 conditions on a post-treatment variable relative to the day-$t0$ thread, so our pre-event-covariates-only specification (Model 2a: -1.6301, $p = 0.71423$) and two-way clustered standard errors (which themselves have limited asymptotic precision across $G = 19$ calendar quarters [6]) remain strictly descriptive associations rather than causal parameters. Second, although four-rater average-measures agreement is high (0.9203) [7], single-rater reliability is lower (0.7429), and future work should compare automated practitioner coding directly against human domain-expert benchmarks and standard financial dictionaries [4] [5]. Third, expanding the sample of corporate layoff and product-incident events across a multi-decade panel is necessary to achieve adequate statistical power within specific corporate event archetypes and in post-sample validation cohorts, as our $N = 28$ post-study cohort (MDES $= 0.496$, 95% confidence interval $[-0.478, +0.257]$) is statistically uninformative for small-to-moderate effects. Finally, our findings highlight the critical importance of strict event-window separation in financial event studies: researchers who measure initial price reactions over multi-day windows that overlap with the beginning of the post-event drift window risk mistaking a single-day mechanical return overlap for genuine multi-week return continuation. Enforcing strictly disjoint trading sessions between initial price discovery and subsequent return measurement eliminates that mechanical overlap and confirms that neither initial announcement returns nor aggregate practitioner skepticism predicts subsequent thirty-day abnormal equity returns in large-capitalization technology markets.

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