Firm-specific Information Processing and the Delayed Discovery of Macroeconomic News: Evidence from Earnings Announcement Returns *

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Abstract

Analyzing a panel of earnings announcers from 1998-2022, we document that the aggregate market return on quarterly earnings announcement dates is positively associated with the announcing firm's 3-day abnormal returns following the announcement. This phenomenon is strongest for firms with extreme earnings surprises and is no longer significant by day 7, indicating a short-lived delay in incorporating the aggregate return from the announcement date. We also document a sluggish return response for earnings announcing firms to same-day macro news disclosures, where this effect is also moderated by extreme earnings. Our findings are more pronounced when investors exert more effort in acquiring announcing firm information, as measured by SEC EDGAR filing downloads, when macro-news has a larger impact on a firm's stock returns, for smaller firms facing higher costs of information processing, and when investors are more constrained in attention and processing capacity, as proxied by retail trading activities. Overall, findings support the notion that investors have finite information processing capacity and that intensive efforts to acquire firm-specific earnings news impede the timely incorporation of macroeconomic news into prices.

Keywords: Earnings Announcements, Information Processing, Investor Neglect, Limited Attention, Market Efficiency, Asset Pricing

JEL Classifications: G12, G40, M41

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1. Introduction

The incorporation of information into prices is a central question in capital market research. A growing literature examines how information processing constraints and limited attention affect a firm's informational environment, both cross-sectionally (Chapman, 2018; DellaVigna and Pollet, 2009; Hirshleifer, Lim, and Teoh, 2009) and over time (Blankespoor, 2019; Israeli, Kasznik, and Sridharan, 2021). A common theme in this literature is that under constrained time and cognitive resources, certain firms—e.g. those with lower benefits from information production or higher costs of information processing—are often neglected. Consequently, these prior studies find underreactions to firm-specific news which results in post-announcement return predictability.[1] Our study compliments this literature on price discovery and information processing in a novel way, focusing on how prices neglect macroeconomic news when investors have limited processing resources and urgent demands to process newly disclosed earnings news.

The theory of limited attention suggests that investors will selectively allocate their efforts to acquire and process new information due to processing capacity constraints (Hirshleifer and Teoh, 2003; Sims, 2003; Van Nieuwerburgh and Veldkamp, 2010; Peng, 2005; Peng and Xiong, 2006). Extreme earnings news is particularly salient to the firm's investors as it directly impacts stock prices and garners market and media discussion (Brown, Hillegeist, and Lo, 2009; Koester, Lundholm, and Soliman, 2016). Because investors compete to profit from mispricing, they must act urgently. Consequently, investors may concentrate their limited bandwidth on acquiring and integrating firm-specific information, deprioritizing cognitive resources and attention for macro-level news. We conjecture that this neglect may delay the incorporation of macroeconomic news into the announcing firms' prices, thus resulting in short-term stock return predictability for the announcing firm in the days following the earnings announcement.

[1] See, e.g., Ben-Rephael, Da, and Israelsen (2017); Drake, Gee, and Thornock (2016); Bernard and Thomas (1989, 1990); Sloan (1996).

To test this conjecture, we follow prior literature (Campbell and Shiller, 1988; Fama, 1990; Flannery and Protopapadakis, 2002) and use aggregate return to proxy for macroeconomic news, capturing both prominent macroeconomic news (such as FOMC meetings and GDP releases) and less visible macroeconomic information flows. Our sample covers quarterly earnings announcements from 1998 to 2022. Our findings show that aggregate returns on the announcement date positively predict a firm's future abnormal returns over the next three days, especially for extreme announcers. For these firms, we find that approximately 23.2% of the aggregate market return on the earnings date is incorporated into firm prices over the subsequent three trading days.[2] In contrast, the aggregate return is fully priced for firms with very small or zero earnings surprises, i.e., it is uncorrelated with 3-day post-announcement returns. The predictability we observe for extreme announcers becomes insignificant in days four to seven, suggesting a short-lived delay in incorporating macroeconomic news embedded within the aggregate return.

To further support the idea that the arrival of extreme earnings news crowds out efforts to acquire and process macroeconomic news, we examine how delays in macro news discovery for extreme announcers vary in the cross-section with a focus on investors with larger processing capacity constraints—retail investors, and investors of smaller firms. We sort extreme announcers into quintiles based on the intensity of retail trading (and market cap) around the announcement date. Then, for each quintile, we measure the magnitude by which aggregate returns are delayed in the discovery of prices by calculating the 3-day cumulative abnormal return from a long/short portfolio that takes a long (short) position when market returns are in the highest (lowest) quintile. Our findings indicate that price discovery delays for aggregate returns are larger (smaller) for firms with higher (lower) retail intensity. We find similar results when sorting by market cap, with return predictability being stronger (weaker) for smaller(larger) firms. Both of these findings are also robust to multivariate analyses that compare macro news delays across subsample splits by retail trading and size.

[2] The most extreme announcers have $EE\_Score = 4$. With the interaction coefficient on $MktRet(0) \times EE\_Score$ in the baseline regression of Table 3, Column 1 of 0.058, $0.058 \times 4 = 0.232$.

These cross-sectional results support the notion that more binding capacity constraints are responsible for macro news neglect for firms with extreme earnings announcements.

We provide additional tests showing that macro news is overlooked on earnings announcement (EA) days when earnings surprises are extreme. First, we partition firms based on their pre-announcement market beta and find that day-0 aggregate returns more strongly predict post-EA returns for firms whose stock prices historically respond more to market-wide shocks. This is consistent with investors allocating disproportionately more attention to firm-specific information when earnings news is salient.

Next, we examine whether reactions to macroeconomic announcements released on EA days are muted when firms report extreme earnings. Using well-identified macro releases (e.g., inflation, GDP, FOMC decisions, employment reports), we construct an "extreme macro surprise" measure analogous to our earnings extremity measure. Larger macro surprises generally elicit stronger day-0 stock price reactions; however, these reactions are significantly attenuated when the firm simultaneously reports extreme earnings. This suggests that limited investor processing capacity on EA days is directed primarily toward firm-specific news, delaying incorporation of macroeconomic signals.

To assess whether firm-level information acquisition contributes to macro neglect, we proxy for investor attention using SEC EDGAR download activity on the announcement date, following prior work (Chen, Cohen, Gurun, Lou, and Malloy, 2020; Drake, Johnson, Roulstone, and Thornock, 2020; Neilson, 2022). Extreme earnings lead to substantially higher download activity. Using the residualized EDGAR measure described in Section 6.2, we isolate the component of downloads attributable solely to extreme earnings. Splitting the sample on this fitted component, we find that day-0 aggregate returns more strongly predict firms' three-day abnormal returns in the high-download subsample. This supports the notion that intense processing of firm-specific information diverts attention from macro news on EA days.

We also investigate intraday return comovement to examine real-time information processing on EA days. We compute intraday CAPM R^2 values using 30-minute return intervals between 10:30 a.m. and 3:30 p.m., consistent with microstructure convention.[3] Intraday R^2 declines sharply on EA days—especially following extreme earnings—indicating reduced sensitivity to market-wide movements and heightened focus on firm-specific information. Using the same residualized approach as above, we show that firms with unusually low intraday R^2 exhibit stronger predictive power of $MktRet(0)$ for $CAR(1,3)$, consistent with neglected macro information on day 0 being incorporated over subsequent days.

Finally, a series of robustness tests confirms that these results are not attributable to traditional post-earnings-announcement drift or cross-firm news spillovers. Controlling for firms' own earnings surprises and peer earnings releases does not alter the central interaction between market returns and earnings extremity. Collectively, these tests reinforce our interpretation that investors underreact to macroeconomic news when processing extreme firm-level information. Our baseline findings are robust across several different factor models used to estimate the 3-day abnormal return (i.e., CAPM 3 and 4 factor asset pricing models), and do not occur for a set of pseudo-announcement dates where there are no shocks to investors' demands to process firm-level information. Overall, results support the notion that investors have limited capacity to process all available information during earnings announcements, often neglecting macroeconomic data in aggregate stock returns when responding to extreme earnings surprises.

The existing literature on price discovery indicates that constraints in investor attention and processing can lead to the neglect of firm-level information and predictable firm returns (Hirshleifer, Lim, and Teoh, 2009; Blankespoor, deHaan, and Marinovic, 2020). A notable exception is Hirshleifer and Sheng (2022), which find that the arrival of macro-news improves the incorporation of firm-specific information due to a complementary relation between processing macro and micro-news. Our study provides a novel finding with respect to these

[3] Prior research (Patell and Wolfson, 1984; Jennings and Starks, 1985; Barclay and Litzenberger, 1988; Jain, 1988; Gregoire and Martineau, 2022) shows that excluding the first hour after market open allows prices to incorporate firm news, while excluding the final 30 minutes avoids liquidity-driven and rebalancing trades (Cushing and Madhavan, 2000).

studies, as we find that investors' acquisition efforts on firm-specific news can result in the neglect of macroeconomic news. This oversight impedes the discovery of market-wide information about stock prices on the earnings announcement date, especially for announcers with extreme earnings surprises, leading to predictable abnormal returns in the following three days as the delayed news is discovered by prices.

Our findings contribute to several significant literature streams: (1) the effect of attention and information acquisition on return predictability and price discovery (Ke and Ramalingegowda, 2005; Israeli, Kasznik, and Sridharan, 2021; Barinov, Park, and Yıldızhan, 2022; Hirshleifer and Sheng, 2022), (2) anomalous return patterns around earnings announcements, including post-earnings announcement drift (Ball and Brown, 1968; Bernard and Thomas, 1989), earnings announcement premium Frazzini and Lamont (2007); Barber, De George, Lehavy, and Trueman (2013), and pre-earnings announcement reversals (So and Wang, 2014), (3) variations in the incorporation of common versus idiosyncratic news into stock prices (Piotroski and Roulstone, 2004; Wang, 2019). Additionally, our findings also have direct implications for industry professionals, i.e., that arbitrageurs and analysts should not ignore the implications of aggregate news during earnings announcements.

The remainder of our paper is structured as follows. Section 2.1 presents motivation and empirical predictions. Section 3 discusses the empirical design. Section 4 details sample construction and descriptive statistics. Section 5 presents and discusses our main findings. Section 6 presents analyses that test our proposed mechanism. Section 7 examines the robustness of our findings. Section 8 concludes.

2. Motivation

On earnings announcement (EA) days, investors are inundated with both quantitative disclosures, such as earnings and revenue surprises, and qualitative information from conference calls. Processing this information quickly is essential for arbitrageurs seeking to update valuations and trade before prices converge.

Yet information acquisition is not costless (Grossman and Stiglitz, 1980). Investors have finite resources for acquiring and processing information (Kahneman, 1973; Hirshleifer, Lim, and Teoh, 2009; DellaVigna and Pollet, 2009). A large body of research shows that market participants selectively allocate attention to maximize expected payoff, often at the expense of other sources of information.[4] For instance, Corwin and Coughenour (2008) finds that NYSE specialists shift focus to active stocks during busy periods; Chakraborty and Moulton (2012) shows that market makers allocate attention to announcing firms, reducing liquidity for non-announcers; and Frederickson and Zolotoy (2016) documents that when multiple firms announce simultaneously, investors prioritize visible firms, creating drift in the neglected ones.

Our study builds on this logic but focuses on a different margin: the potential crowding out of *macroeconomic news* by firm-specific earnings information. Earnings announcements provide abundant firm-level signals with large valuation impact, especially when earnings surprises are extreme. Because investors' processing capacity is finite, urgent firm-level information may displace attention to macro news, producing short-lived neglect. As investor focus normalizes in subsequent days, neglected macro signals should diffuse into prices, creating predictable returns.

To sharpen this intuition and create testable predictions, we present an illustrative example using a simple investor allocation framework.

[4] Examples include Peng (2005); Peng and Xiong (2006); Van Nieuwerburgh and Veldkamp (2010); Veldkamp (2011); Andrei, Friedman, and Ozel (2023); Harford, Jiang, Wang, and Xie (2019); Driskill, Kirk, and Tucker (2020); Kwan, Liu, and Matthies (2022).

2.1 Intuitive Overview of Investors' Resource Allocation

On an earnings announcement day, investors must triage[5] scarce attention between processing firm earnings and macroeconomic news. When earnings surprises are small, capacity is sufficient to process both, and macro news is incorporated promptly. When surprises are large, firm news is both salient and economically important, drawing disproportionately more investor resources and leaving macro signals neglected. Such neglected macro news is discovered by prices in the subsequent days after the earnings announcement when investors regain additional processing capacity.

Appendix A illustrates this idea with a stylized example. Investors allocate a fixed budget of information processing resources $\bar{e}$ between firm-specific (e_E) and a global/macro signals (e_M). Subject to diminishing returns, each additional unit of effort converts into a fraction of the corresponding signal processed, a_E and a_M. Unprocessed shares, $(1 - a_E)$ and $(1 - a_M)$, are incorporated into prices in the post-EA period, when investors' capacity constraints no longer bind. The resulting returns can be written as:

$$r_0 = \theta a_E S + \beta a_M G + \varepsilon_0, \tag{1}$$

$$CAR(1,3) = \theta(1 - a_E)S + \beta(1 - a_M)G + \varepsilon_{1:3}, \tag{2}$$

where r_0 is the announcing firm's stock return on the EA date, S is the firm's earnings surprise, $|S|$ its extremity, G the aggregate market return, θ and β are parameters that map the processed earnings and macro news into stock returns. Equation (2) decomposes post-EA returns into two parts: a firm-news (PEAD) component $\theta(1 - a_E)S$ and a macro-delay component $\beta(1 - a_M)G$.

The focus of our empirical study is on the macro-delay term $\beta(1-a_M)G$: we test whether

[5] "Triage" (French for "to sort") was popularized in World War I battlefield medicine, where doctors prioritized scarce treatment capacity. We borrow the analogy for how investors allocate limited information processing resources across competing signals.

it grows with earnings extremity. Because attention is scarce, larger $|S|$ shifts effort toward earnings ($a_E \uparrow$)[6] and away from macro ($a_M \downarrow$); higher β or larger $|G|$ tilt effort toward macro. Importantly, the marginal value of processing any signal decays with time due to competitive arbitrage (Grossman and Stiglitz, 1980), thus neglect is temporary: macro news ignored on Day 0 is incorporated into prices in the days following the earnings announcement.

2.2 Predictions

The stylized example from Section 2.1 yields testable predictions. When earnings surprises are small, investors have sufficient capacity to process aggregate news occurring on the same date, so Day-0 market returns are fully incorporated into stock prices and do not forecast post-EA returns. When surprises are large, resources shift toward firm news, leaving some macro information neglected. This neglected component of macro news, $\beta(1 - a_M)G$, is incorporated into prices in the post EA-period, $CAR(1, n)$, implying that extreme earnings surprises increase the amount of macro news neglected on the EA date and subsequently discovered in returns.

Comparative statics from this simplified framework imply that the macro delay effect should be stronger when $\bar{e}$ is smaller, i.e., investors have a smaller information processing capacity. For example, investors at small-cap firms and those dominated by retail trading have fewer resources for processing information, ultimately leading to greater neglect of macro news. These subsets of firms should have larger delayed responses to Day-0 market moves.

The framework also suggests that differences across firm betas imply additional cross-sectional heterogeneity: with small surprises, high-β firms process macro news more fully, so predictability is weak. With extreme surprises, even high-β firms neglect macro signals, and the neglected macro component is larger because macro shocks matter more for these firms.

[6] The comparative static for PEAD with respect to $|S|$ is *a priori* ambiguous. The PEAD term is $\theta(1 - a_E)S$: while $(1 - a_E)$ typically falls as $|S|$ rises, the increase in S (and possibly θ) can offset that decline. Accordingly, we treat PEAD as a separate phenomenon and include standard non-parametric PEAD controls (e.g., *ESurp_Rank*) and its interaction with *EE_Score*; our results on macro delay are unchanged.

Finally, in placebo tests when there is no earnings-news triage, investors' resource capacities should not be constrained, thus Day-0 market returns and their interaction with extreme earnings news should not forecast post-EA returns.

Our illustrative example differs from theories proposed by Patton and Verardo (2012) and Hirshleifer and Sheng (2022). Patton and Verardo assume that firms act as bellwethers that convey macro information, resulting in market returns that comove more strongly with firm returns on the EA date. Hirshleifer and Sheng argue that acquiring macro news can reduce the cost of learning about firm-specific information due to information complementarities. Notably, neither of their theories predict a macro delay effect. In fact, Hirshleifer and Sheng's theory would make our predictions less likely to be observed in an empirical setting.

In summary, we consider the idea that macro news acts as a competitor to firm news for investors' limited processing capacities. We conjecture that when earnings surprises are extreme, investors will prioritize firm-specific processing and neglect macro information, which only becomes incorporated into prices as capacity constraints ease in subsequent days. This results in return predictability after earnings announcements that grows with the extremity of the earnings surprise. In section 3, we outline the empirical strategy that tests these predictions.

3. Empirical Design

Building on the theoretical framework in Section 2, we now develop our empirical strategy to test the key prediction: when investors must process firm-specific news in a timely manner($|S|$ is large), they reduce their efforts spent processing and incorporating macro news (G) into prices, resulting in predictable returns when the neglected information is absorbed in subsequent days.

Accordingly, our tests focus on whether aggregate market returns on the earnings announcement date predict firm abnormal returns in the following days, and whether this predictability strengthens with the extremity of the earnings surprise. We define day $t = 0$ as the EA date,[7] and measure post-EA outcomes at $CAR(1, 3)$ and $CAR(1, 7)$, the cumulative abnormal returns over 3- and 7-day windows beginning the first full trading day after earnings news is incorporated into price.

To operationalize the framework we proxy for G, macroeconomic news on day 0, with *MktRet(0)*–the daily CRSP value-weighted aggregate return.[8] Prior research validates this measure as a broad summary of macro factors affecting aggregate cash flows and discount rates.[9] For $|S|$, the extremity of firm-specific earnings news, we construct EE_Score by calculating each firm's earnings surprise following Livnat and Mendenhall (2006) as actual EPS less the last IBES consensus EPS forecast prior to the EA date, scaled by price at the fiscal quarter-end date. We then rank earnings surprises within the year and assign values between 0 and 4, where 4 represents the most extreme deciles (1 and 10), and 0 represents the middle deciles (5 and 6).

The framework yields a clear empirical prediction: if extreme earnings surprises crowd out macro news processing, then the predictive power of $MktRet(0)$ for future firm returns should increase with EE_Score. We test this prediction using the baseline regression in Eq 3, where i and t denote firm and EA date timestamp:

$$\begin{aligned} CAR(1,k)_{i,t} = {} & \beta_1 MktRet(0)_{i,t} + \beta_2 EE\_Score_{i,t} \\ & + \beta_3 MktRet(0)_{i,t} \times EE\_Score_{i,t} + \gamma' X'_{i,t} + FE + \varepsilon_{i,t} \end{aligned} \tag{3}$$

The key variable of interest is the interaction term $MktRet(0) \times EE\_Score$, which directly tests our central hypothesis. We also include the main effect of EE_Score as it is necessary when the interaction is estimated—it also serves to absorb any direct "extremity-

[7] If a firm announces earnings after close, Day 0 is the next trading day.
[8] Results are robust to the use of an ex-announcer return
[9] Aggregate return proxies predict future growth (Fama, 1990), industrial production (Cutler, Poterba, and Summers, 1988), aggregate earnings (Choi, Kalay, and Sadka, 2016), and discount-rate components (Campbell and Shiller, 1988; Shiller et al., 1981; Kothari, Lewellen, and Warner, 2006), including inflation (Fama, 1981), default risk, and term-structure spreads (Chen, Roll, and Ross, 1986).

drift" that is distinct from PEAD. In our proposed mechanism, high EE_Score reduces the effort allocated to processing macro news on the EA date, causing stock prices to initially neglect macroeconomic information. As investors' capacity constraints relax over subsequent days, we expect the coefficient β_3 to be positive and significant—indicating that the Day-0 market return has greater predictive power for future returns when earnings surprises are more extreme.

We use a vector of controls X_i' that proxy for an array of prior variables used in controlling for the firm's post-announcement returns (So and Wang, 2014; Hirshleifer and Sheng, 2022). Specifically, $Size$ (natural log of market cap), MtB (market-to-book ratio) control for cross-sectional differences in the riskiness of firms (Fama and French, 1992). We also include firms' own earnings surprise to account for post-earnings-announcement drift (PEAD), a well-documented source of short-term return predictability following earnings announcements (Bernard and Thomas, 1989). Following Hirshleifer, Lim, and Teoh (2009), we use a decile ranking of quarterly earnings surprise ($ESurp\_Rank$) based on the signed surprise calculated in EE_Score.[10] Following PEAD studies, we additionally include momentum (30 days of pre-announcement returns) to account for its influence on post-announcement returns Livnat and Mendenhall (2006). Further, we follow Hirshleifer, Lim, and Teoh (2009) and include the number of other firms announcing earnings on the same day ($NumEAFirms$) to control for investor distraction, as a higher number of concurrent announcements can distract investors' attention and attenuate their processing of firms' earnings news. We also account for differences in liquidity across firms by including share turnover ($Turnover$), measured as 30 days of pre-announcement volume. Because greater analyst following is associated with a richer information environment and faster incorporation of earnings news into prices (Lang and Lundholm, 1996), we control for analyst coverage, measured as the natural logarithm of the number of analysts with an outstanding forecast. Finally, we include firms' abnormal returns on the EA date, $AbnRet(0)$, as a control. All variables are defined in Section B.

[10] We follow Hirshleifer, Lim, and Teoh (2009) and Hirshleifer and Sheng (2022) who use a non-parametric measure of earning surprises to account for non-linearities between earning surprises and CAR.

We include fixed effects (FE) by year-month to remove any potentially unobservable time-varying effects on CAR, and by day of the week to remove attention-related variation across weekdays (DellaVigna and Pollet, 2009; Engelberg, McLean, and Pontiff, 2018; Hirshleifer and Sheng, 2022).[11] We report t-statistics based on two-way clustered standard errors by firm and earnings announcement date.

4. Sample Construction and Descriptive Statistics

We begin by collecting quarterly earnings announcement dates and times for all US public companies from Compustat and IBES. Following DeHaan, Shevlin, and Thornock (2015), we remove observations for which the Compustat and IBES EA dates differ. We also eliminate observations with an EA timestamp of 00:00:00, which are likely errors. We then intersect this IBES-Compustat merged dataset with CRSP and retain only common stock observations with non-missing price and return data. We further remove observations for which the earnings announcement date occurs more than 90 days following the fiscal quarter-end, and observations that have an EA on a Saturday or Sunday (DeHaan, Shevlin, and Thornock, 2015). Our sample period begins in 1998, when comprehensive coverage of earnings announcement timestamps began in IBES, and ends in 2022. We further eliminate observations that have missing data for any of our variables in Eq (3).

Of the remaining observations, roughly 52% of quarterly EAs occur after-hours, and 37.7% of EAs happen before-hours, leaving only 10.3% of EAs occurring within trading hours. Because more than half of our sample consists of after-hours EAs for which intraday returns data is unavailable, we adjust the earnings announcement date (i.e., day $t = 0$) of after-hours announcers to the first trading day after the calendar EA date such that the "event day" coincides with the first period in which investors can trade on the news. This alignment allows $MktRet(0)$ to capture the macro shock that competes with earnings news processing and aligns post-EA windows across firms. Prior studies document that EAs

[11] Results are also robust to firm fixed effects (untabulated).

made during trading hours differ in the information content and thus receive a different degree of investor attention (DeHaan, Shevlin, and Thornock, 2015). Furthermore, we want to maintain consistency in time windows for post-EA returns (i.e., post-EA returns begin after market close on the EA date, rather than during trading hours). Hence, we drop EAs that occur within trading hours from the sample.[12] We are then left with a total of 259,664 firm-quarter observations spanning twenty-five years from 1998 to 2022.

Summary statistics for our analyses are presented in Table 1 Panel A. The average post-EA cumulative abnormal returns in the 3-day ($CAR(1,3)$) and 7-day ($CAR(1,7)$) windows are slightly negative. The mean and median EA date (day 0) market return is slightly positive (mean 0.04%, median 0.07%), while the mean and median market-adjusted firm return on the EA date is slightly negative (mean -0.16%, median -0.10%). The median firm has a market cap of just over $720 million and is followed by approximately five analysts in a given quarter. The median firm has a market-to-book ratio of just over 2, and announces quarterly earnings on a day when there are 119 other earnings announcements.

A matrix with Pearson (above) and Spearman (below) correlations is presented in Table 1, Panel B. We briefly comment on a few of the observed Pearson correlations. First, our sample is generally unremarkable in that it contains numerous correlations previously documented in prior papers. For example, the market-adjusted returns on the EA date, $AbnRet(0)$, and signed earnings surprise, $ESurp\_Rank$, are highly and positively correlated ($\rho < 0.277$), in accordance with Ball and Brown (1968) and Beaver (1968). $ESurp\_Rank$ and $AbnRet(0)$ are both positively and significantly correlated with $CAR(1,3)$ and $CAR(1,7)$, consistent with prior papers documenting the post earnings announcement drift effect (Bernard and Thomas, 1989, 1990; Livnat and Mendenhall, 2006). Second, the aggregate market return on the day of the earnings announcement, $MktRet(0)$, has insignificant or very small correlations with a majority of the firm-level controls used in our baseline analyses, as mentioned in Section 3, with the notable exceptions being a positive and significant correlation with $AbnRet(0)$

[12] Results are robust to the inclusion of intraday EA observations.

($\rho = 0.017$) and *Turnover* ($\rho = 0.008$). The correlation with $CAR(1,3)$ ($\rho = 0.028$) and $CAR(1,7)$ ($\rho = 0.023$) are statisticall significant, suggesting the aggregate return on day 0 is associated with firm abnormal returns in subsequent days. Third, our measure of extreme earnings surprise, *EE_Score*, is negatively correlated with both *Size* ($\rho = -0.480$) and analyst following, *Analyst* ($\rho = -0.375$). This is consistent with the notion that extreme earnings surprises are more likely to occur for smaller firms and those with weaker information environments, as proxied by lower analyst coverage.

5. Results and Discussion

We now turn to testing the central predictions developed in Section 2 and empirically implemented in Section 3. We conjecture that extreme earnings surprises can overwhelm investors' information processing capacity—incentivizing investors to prioritize the processing of earnings news at the expense of macroeconomic news. As a result of this macro news neglect, $MktRet(0) \times EE\_Score$ will predict post-EA returns $CAR(1,3)$, as price discovery occurs after investors' processing constraints no longer bind. We also test the conjecture that cross-sectional macro delay will be stronger for firms where processing capacity is more likely to bind.

5.1 Extreme Earnings, Macro News & Post-EA Returns

5.1.1 Univariate Analysis

We begin by examining univariate relations between post-EA abnormal returns, $CAR(1,n)$, and the earnings-day aggregate market return, $MktRet(0)$, across quintiles of earnings surprise extremity, *EE_Score*. Table 2, Panels A and B tabulate univariate statistics from the full panel of observations for $CAR(1,3)$ and $CAR(1,7)$. Rows are sorted in descending order of lowest to highest *EE_Score*, while columns are sorted from left to right by lowest to highest $MktRet(0)$.

The results align closely with our framework. Panels A and B show similar patterns; we focus discussion on Panel A. For firms with small surprises in Panel A ($EE\_ScoreQ1$), the association between $MktRet(0)$ and subsequent returns is weakest, consistent with the idea that investors have sufficient capacity to process both firm and macro news contemporaneously. By contrast, for firms with extreme surprises ($EE\_ScoreQ5$), $CAR(1,3)$ increases strongly across quintiles of $MktRet(0)$. The difference in returns between the top and bottom $MktRet(0)$ quintiles is 1.08% (t = 9.22). The spread [$MktRet(0)$ $Q5 - MktRet(0)$ $Q1$] increases monotonically with EE_Score, rising by 0.95% (t = 7.00) from the least to the most extreme announcers. These findings suggest that the association between $MktRet(0)$ and $CAR(1,3)$ is moderated by EE_Score, and that more extreme announcers increase the predictability of the daily aggregate return on subsequent 3-day firm abnormal returns.

Overall, results provide clear univariate evidence in support of our central hypothesis: when earnings surprises are extreme, investors neglect macroeconomic information on the announcement date, and the overlooked component of $MktRet(0)$ is gradually discovered in the subsequent trading days.

Finally, we discuss some univariate statistics and examine distributional properties regarding macro news delay over the time series. For each year, we tabulate the mean return for $CAR(1,3)$ resulting from returns on $MktRet(0)$ Q5 $-$ $MktRet(0)$ Q1 using annual quintile sorts. Figure 1 illustrates the time-series averages over 1998-2022. Untabulated, we find the median (mean) return for extreme announcers to be 1.15% (1.08%) and the standard deviation to be 1.10%. Five of the twenty-five years have $CAR(1,3)$ for[$MktRet(0)$ $Q5 - Q1$] less than 0%. An average of 5-year subperiod annual returns from[$MktRet(0)$ $Q5 - Q1$] is largest in the first five years of the sample (1998-2002: 1.56%), and smallest in the last five years of the sample (2018-2022: 0.61%), suggesting that price discovery of macroeconomic news on earnings news days may be improving over time.

5.1.2 Multivariate Analysis

Next, we examine multivariate panel regression analyses. Table 3 tabulates the regression output from Eq 3. The coefficient on $MktRet(0)$, β_1, is insignificantly different from zero for $CAR(1,3)$ and $CAR(1,7)$, suggesting that there is no return predictability at either horizon for $MktRet(0)$ when the size of the unsigned earnings surprise is small or zero. Our coefficient of interest β_3, $MktRet(0) \times EE\_Score_i$, reflects the degree to which a one quintile rank increase in extreme earnings surprise, EE_Score, impacts the predictability of the aggregate return, $MktRet(0)$, on future firm returns, $CAR(1,3)$ and $CAR(1,7)$. The coefficients for β_3 are positive and statistically significant at the 1% level, 0.058 ($t = 4.87$) and 0.063 ($t = 3.51$) for $CAR(1,3)$ and $CAR(1,7)$, respectively.[13] Economically, the β_3 coefficient of 0.058 on the $CAR(1,3)$ regression in Column 1 equates to 23.2% ($0.232 = 0.058 \times 4$) of the aggregate return being discovered in the subsequent 3 days following the earnings date, consistent with delayed macroeconomic news recognition. It is worth noting that our main interaction is significant in the presences of controls for PEAD ($ESurp\_Rank$). Given that coefficient on $ESurp\_Rank$ is also positive and significant ($t = 12.29$), this implies that our findings are complementary to PEAD: whereas PEAD reflects how firm news is gradually incorporated into prices, macro neglect reflects concurrent macro information that is neglected when extreme earnings news binds investors' processing capacity.

We also re-estimate Eq (3) for CAR(4,7) in column 3 of Table 3 and find that the coefficient for β_3 is insignificantly different from zero ($t = 0.69$). This implies that the return predictability we observe in the $CAR(1,7)$ window appears to be driven by $CAR(1,3)$, in accordance with our univariate findings. To better observe the decay in return predictability, which should occur once the delayed news is fully incorporated into price, we rerun a series of

[13] Given that $NumEAFirms$ has been documented to act as a proxy for investor distraction on the firm's EA date, for completeness we also examine how adding the additional interactions of $NumEAFirms \times ESurp\_Rank$ and $NumEAFirms \times MktRet(0)$ may attenuate the coefficient of our variable of interest, $MktRet(0) \times EE\_Score$. We find that the magnitude of this coefficient remains unchanged at 0.058, confirming that these are two separate mechanisms of investor distraction that occur at the firm's earnings announcement.

regressions in Eq (3) where we examine the effect of $EE\_Score \times MktRet(0)$ on the piecewise daily returns that comprise the $CAR(1,7)$ window.

We estimate Eq (3) separately for $CAR(1)$, $CAR(2)$, $CAR(3)$, $CAR(4)$, $CAR(5)$, $CAR(6)$, and $CAR(7)$. If news recognition is delayed, we expect return predictability to be highest in early periods when the greatest amount of market information has not been absorbed by price, and should decline to zero once prices have fully absorbed the aggregate news.

In Figure 2, we plot the coefficient and t-statistic of $EE\_Score \times MktRet(0)$ on the Y-axis, where the X-axis is labeled for each day's return following the EA from $t+1$ to $t+7$. The effect peaks on day $t+2$, $\beta_3^{CAR(2)} = 0.031$ and becomes insignificant by day $t+5$. The positive and significant coefficients that attenuate towards zero predictability over time are consistent with the neglect of macro news (whether it be from cash flow or discount rate news),[14] consistent with the conjecture that increased demands for processing firm-level information, as proxied for by EE_Score, appear to be driving the delays in macro news discovery and the subsequent observed firm return predictability. Given our evidence that the return predictability in $CAR(1,7)$ is predominantly driven by $CAR(1,3)$, the remainder of our analyses focus on the impact of extreme announcers and the aggregate return over the subsequent 3-day window, $CAR(1,3)$. Next, in Section 5.2 we examine additional cross-sectional implications motivated in Section 2.2.

5.2 Cross-Sectional Implications

The example in Section 2 suggests additional empirical tests regarding the baseline results from Section 5. First, the capacity channel: when investors' information-processing capacity is lower, their constrained capacity makes them more likely to neglect macro news firm firms with extreme announcements, so $MktRet(0)$ should forecast $CAR(1,3)$ more strongly for

[14]Overreactions to macro news, such as discount rate surprises, would predict a *negative* relation between $MktRet(0)$ and $CAR(1,3)$. For example, if there is a positive macro announcement, e.g. the Fed cuts rates by 50 rather than 25 basis points, and aggregate returns rise on Day 0 but firm prices overshoot, they would subsequently decline—yielding negative $CAR(1,3)$. The same logic applies to negative surprises. Thus, overreaction would imply a negative relation and would not explain why EE_Score moderates the effect.

extreme announcers. Second, the valuation importance of macro news, captured by the β from a capital asset pricing model. Because high β both incentivizes the processing of macro news and simultaneously magnifies any portion that remains unprocessed, the moderating effect of β on our baseline findings are ex-ante unknown—we examine this tension empirically.

5.2.1 Investors' Capacity Constraints & Macro News Delay

We begin with the capacity channel. If limited processing capacity results in the neglect of macro news due to the revelation of earnings news, the predictability of $MktRet(0)$ for $CAR(1,3)$ should be stronger where processing resources are more constrained. We examine two stock-level proxies: retail trading intensity and firm size. Both tests assess the idea that binding information capacity constraints may amplify delays in incorporating macro news for extreme announcers.

A number of papers in behavioral finance have shown that average retail investors are inattentive and constrained in information processing capacity (Barber and Odean, 2008; Da, Engelberg, and Gao, 2011; Andrei and Hasler, 2015; Yuan, 2015; Liu, Peng, and Tang, 2023) and fixate on both extreme good and bad news earnings surprises (Hirshleifer, Myers, Myers, and Teoh, 2008). Using the Trade and Quote (TAQ) database, we measure retail trading activities following the methodology of Boehmer, Jones, Zhang, and Zhang (2021). Retail trades are defined as off-exchange transactions with sub-penny price improvements relative to the National Best Bid or Offer (NBBO). We then scale the retail trading volume by total trading volume. To capture the influence of retail traders on the speed of the price discovery process, we compute the average daily retail intensity over days $[-3, 1]$ relative to the EA date ($RetailVol$).

Figure 3A tabulates univariate results for extreme announcers (highest EE_Score quintile) and shows abnormal returns are 1.95% for the highest quintile of retail traders and only 0.33% for the lowest quintile. Table 4, Columns 1 and 2 confirm univariate implications across the high and low retail trading subsamples. We find that the coefficient on $MktRet(0) \times EE\_Score$ is only significant when firms have above median retail trading activities. The difference in coefficient size between the high and low subsamples is significant($t = 2.19$), consistent with the notion that firms with more retail traders, who are likely to be less sophisticated and hence more likely to face processing capacity constraints, experience larger delays in incorporating macro news into prices.

Next, we use firm size as a proxy for investors' information-processing constraints. Prior studies document that larger firms are more highly followed by analysts and large institutional investors, resulting in a stronger information environment and higher disclosure quality, relative to smaller firms. Since information processing is relatively more challenging for smaller firms, the arrival of extreme earnings news is more likely to divert investors' attention away from processing macro news.[15]

In Figure 3B, we document that the short-run return predictability to the long/short portfolios are 170 basis points for the smallest firms and only 72 bps for the largest firms, consistent with the framework's predictions. In Table 4, Columns 3 and 4, we find that market returns only predict post-earnings announcement returns for extreme announcers for the smaller market cap subsample ($t = 4.43$ for the smaller firm subsample, $t = 1.11$ for the larger firm subsample). These findings are consistent with the idea that reduced processing capacity for investors at smaller firms can result in increased neglect of macro news, leading to greater return predictability of $CAR(1, 3)$ with $MktRet(0) \times EE\_Score$. Overall, the post-EA return predictability we document in our baseline analyses is strongest when the firm's stock is dominated by investors with limited information processing capacity.

5.2.2 Macroeconomic Valuation Impact & Macro News Delay

Firms differ in how sensitive their valuations are to macroeconomic conditions. This sensitivity is commonly summarized by market beta, the coefficient on aggregate market returns

[15] An alternative view is that large firms can act as bellwethers whose earnings partially reveal macro information, making the processing of firm and macro news complementary (Hirshleifer and Sheng, 2022). Our framework emphasizes the crowding-out channel, so we treat such bellwether effects as a distinct mechanism.

in the CAPM (Sharpe, 1964; Lintner, 1965). Section 2.1 highlights an ambiguity in how beta interacts with our proposed macro news delay mechanism: investors in high-beta firms may be more attentive to macro news, reducing $MktRet(0)$'s predictive content for $CAR(1,3)$, or extreme earnings may overwhelm processing capacity even when macro news is highly valuation-relevant.

To evaluate this, we estimate CAPM betas using 48 months of pre-EA returns and split firms at the median. Table 5 shows that $MktRet(0)$ predicts $CAR(1,3)$ among low-beta firms, consistent with underreaction to macro news even when earnings surprises are small. Among high-beta firms, this predictability disappears for small surprises, suggesting relatively efficient macro processing. However, the interaction $MktRet(0) \times EE\_Score$ is positive and significant in both groups, and more than twice as large for high-beta firms (0.073 vs. 0.034; $t = 2.07$). Figure 3C shows a similar pattern in long–short portfolio returns, rising from 60 basis points in the lowest beta quintile to 173 basis points in the highest quintile. These results imply that macro news is more neglected when earnings surprises are extreme, especially for firms whose fundamentals are more sensitive to aggregate conditions.

Finally, to reconcile this finding with Patton and Verardo (2012), who show that betas spike on earnings announcement dates, we examine whether EA-date betas understate the full macro response due to delayed incorporation of information.[16] Using $CAR(0,3)$ as the firm's return to measure a lag-adjusted beta and comparing it to the beta when measured with $AbnRet(0)$, we find (untabulated) that lag-adjusted betas are significantly larger than comntemporaneous betas, with the gap widening sharply for extreme earnings surprises; the difference between EE_Score Q5 and Q1 is significant at the $< 1\%$ level. These results suggest that contemporaneous EA-day betas capture only a lower bound on firms' true macro sensitivity, particularly when earnings surprises are extreme.

Overall, the cross-sectional and time-series evidence indicates that macro news has greater

[16] Patton and Verardo estimate betas using realized intraday covariance and variance, which corresponds to the market-model slope in $R_i = \alpha + \beta R_m + \varepsilon$. In our daily setting, the same market-model beta is obtained from regressing $AbnRet(0)$ on $MktRet(0)$, up to an additive shift of one. Because this shift applies equally to contemporaneous and lag-adjusted betas, the difference between them (the "beta gap") is unchanged.

return predictability for extreme announcers when firm valuations are more tied to aggregate conditions, and that a nontrivial portion of the macro response is delayed on EA days.

6. Mechanism of Action

6.1 Event-date Sluggishness to Macro News

Our baseline evidence in Table 3 is consistent with investor neglect of aggregate news: when the earnings signal is more extreme, announcing firms incorporate a larger share of the EA-day aggregate move after the announcement, producing short-term return predictability. We now probe the mechanism further and empirically document whether the reaction to macro news on Day 0 is muted when earnings news is extreme.

In the baseline $CAR(1,3)$ tests from Section 5, we proxy for macro news with $MktRet(0)$, as it acts as an omnibus proxy for all announced macro news discovered that day (e.g., macro releases, policy communication, cross-industry news, discount-rate movements) and unofficial macro news that is incorporated into price through investors' trades.[17]

To better zoom in on the processing of macro news on Day 0 itself, we collect a set of well-identified macroeconomic events with scheduled announcements and observable surprises that allow us to directly measure the magnitude of the market's reaction to the news. This event-based design allows us to target the proposed mechanism—the neglect of macroeconomic news. We assemble ten widely used macro series, which we collect from Trading Economics (Core Inflation, Durable Goods Orders, FOMC rate decision, GDP growth, Industrial Production, Michigan Sentiment, Non-Farm Payrolls, Producer Price Index, Retail Sales, and Unemployment) and retain EA dates in 2014–2022 on which at least one release occurs.[18] For each release, we compute a surprise (actual minus forecast, scaled by forecast)

[17]The choice of $MktRet(0)$ also increases the power of our tests by ensuring maximal sample size, since it includes all trading days regardless of whether a scheduled macro release occurs. Untabulated, we additionally re-estimate the baseline using an "ex-announcer" market return and by orthogonalizing $MktRet(0)$ to peers' earnings surprises, and our inferences remain unchanged.

[18]Trading economics database of calendar events begins in 2014.

and map it into an extremity score, ME_Score, analogous to EE_Score (Appendix B).[19]

$$AbsAbnRet(0)_{i,t} = \beta_1\, ME\_Score + \beta_2\ EE\_Score_{i,t} + \beta_3\ (ME\_Score \times EE\_Score)_{i,t} \\ + \gamma' X'_{i,t} + FE + \varepsilon_{i,t}. \tag{4}$$

Following Barth, Landsman, Raval, and Wang (2020), Beaver (1968), and Heflin, Subramanyam, and Zhang (2003), we use an unsigned absolute measure of the Day 0 return, $AbsAbnRet(0)$, to measure the magnitude of the firm's response to the revealed news.[20] We then estimate Eq (4) expecting $\beta_1 > 0$ (larger macro surprises move prices more) and $\beta_3 < 0$ (that response is smaller when EE_Score is high), consistent with limited processing capacity on the EA date.

Results in Table 6 are consistent with this design. Column (1) shows a positive and significant coefficient on ME_Score, but more importantly, a negative and significant coefficient on $ME\_Score \times EE\_Score$. Columns (2)–(3) use two alternate simple measures of macro news intensity—$MacroDay$ (indicator for at least one release) and $NumMacro$ (count of releases)—and the interactions $MacroDay \times EE\_Score$ and $NumMacro \times EE\_Score$ are also negative and significant at the 1% level.[21] Taken together, the findings in Section 5 and the Day 0 macro event tests provide corroborating evidence that investors' focus on firm-specific earnings can temporarily crowds out the processing of macroeconomic news.

[19] We obtain release "actuals" and the provider's published forecasts from Trading Economics.

[20] Our choice to use Day 0 unsigned returns is particularly prudent because the sign of macro news' impact on equities is state-dependent (e.g., an unemployment decline can lower prices if discount-rate effects dominate cash-flow effects). See (McQueen and Roley, 1993; Boyd, Hu, and Jagannathan, 2005; Elenev, Law, Song, and Yaron, 2024). Our inference does not rely on taking absolute values: using non-absolute volatility proxies (e.g., squared returns) yields the same conclusion.

[21] While not the focus of our study, the (+) coefficient on EE_Score in conjunction with the (−) coefficient on $ME\_Score \times EE\_Score$ is also consistent with the idea that extreme macro surprises could crowd out efforts spent processing firm-specific news, consistent with competition from both types of information for investors' cognitive resources.

6.2 Firm-Level Information Acquisition & Macro News Delay

To test the idea that heightened investor acquisition efforts in process firm-specific earnings news can crowd out the processing of macro news, we use a direct measure of information acquisition effort—investors' EDGAR downloads on the EA date following Neilson (2022). Prior work shows that sell-side analysts (Gibbons, Iliev, and Kalodimos, 2021) and investors (Chen et al., 2020; Drake et al., 2020) consume information disclosed via the SEC's EDGAR system. Consistent with these studies, we use the number of downloads of 10-K, 10-Q, 8-K, DEF 14A, and related filings as a proxy for information search and acquisition.

We obtain EDGAR usage from SEC server logs that record user access statistics for each filing, available from Jan 2003 to June 2017. Abnormal downloads on the EA date are measured as the number of downloads on Day 0 minus the average over $[-50, -11]$ trading days. We then compute a year-by-year decile rank, $AbnHitsRank$.

To isolate the component of processing effort associated with earnings-news extremity, we follow a two-step decomposition (untabulated). First, we regress $AbnHitsRank$ on the full set of controls and fixed effects and obtain the residuals:

$$AbnHitsRank_{i,t} \;=\; \beta_1\, MktRet(0)_{i,t} \;+\; X'_{i,t}\gamma \;+\; FE \;+\; \varepsilon_{i,t}^{\text{AbnHitsRank}}, \tag{5}$$

Second, we regress the residuals ($\varepsilon_{i,t}^{\text{AbnHitsRank}}$) on $EE\_Score_{i,t}$.

$$\varepsilon_{i,t}^{AbnHitsRank} \;=\; \alpha\, EE\_Score_{i,t} \;+\; u_{i,t} \tag{6}$$

where $\widehat{\varepsilon}_{i,t}^{AbnHitsRank} \equiv \widehat{\alpha} EE\_Score_{i,t}$. The fitted value $\widehat{\alpha} EE\_Score_{i,t}$ from the regression ($Fitted\_AbnHits$) isolates the portion of downloads attributable solely to $EE\_Score_{i,t}$.

Last, we split the sample at the median of $Fitted\_AbnHits$ and estimate:

$$CAR_{i,t}(1,3) \;=\; \beta_1\, MktRet(0)_{i,t} \;+\; X'_{i,t}\gamma \;+\; FE \;+\; \varepsilon_{i,t}, \tag{7}$$

We omit EE_Score and $MktRet(0) \times EE\_Score$ because the subsamples are already partitioned on EE-associated abnormal downloads. Table 7 reports the subsample results. The predictive ability of $MktRet(0)$ for $CAR(1,3)$ is significantly stronger in the high vs low subsample ($t = 3.09$), consistent with greater firm-specific processing effort (associated with EE_Score) crowding out the discovery of macro news on the EA date.

6.3 Intraday Evidence

In Section 6.1, we provide evidence that the Day 0 EA return is sluggish when examining the market's response to macro news when EE_Score is high. Here, we observe intraday return comovements on Day 0 of the EA to observe more granular evidence with regards to our conjecture of macro news neglect. We examine intraday return comovements (as measured by R-squareds of intraday CAPM regressions) between the firm and the aggregate market return on EA date, and focus our investigation on whether decreases in such firm-market return comovement are associated with delayed macro news discovery and moderate return predictability in $CAR(1,3)$.

While it is often assumed that comovement decreases due to new firm-specific information being incorporated into prices, we provide an alternative explanation that comovement may also decrease because macro news neglect hinders price discovery on Day 0. While the two theories are not mutually exclusive, they have different implications regarding future return predictability. In the prior case where market news is not neglected, past market returns will not be associated with $CAR(1,3)$. In the latter case where neglected macro news is ultimately discovered by prices with delay,announcing firms with suppressed return comovement will have aggregate returns that are more predictive of $CAR(1,3)$.

Similar to our analyses in Section 6.2, we isolate the component of decreased comovement associated with extreme earnings surprises and examine whether this component moderates the predictive ability of $MktRet(0)$ for $CAR(1,3)$. We begin by using TAQ data, and calculate returns for ten 30-minute intervals[22] from 10:30 am to 3:30 pm[23] on the earnings announcement date. We then calculate a variable, $R2\_EA$, which measures the R^2 of intraday CAPM regressions estimated on the announcing firm's earnings announcement date.

Figure 4 presents the $R2\_EA$ for each quintile of earnings surprise on Day 0 of the EA as a proportion of the Pre-EA R^2 (Day t-1), as well as the return comovement on the days surrounding the announcement, Days t+1 and t+2. The R-squared drops on Day 0, and the decrease in R-squared monotonically intensifies with the size of the absolute earnings surprise–consistent with higher reduced comovement when firm-specific news has urgent processing demands. For example, for the extreme announcers (5th quintile in the magnitude of earnings surprise), R-squared is only 20.66% of its pre-announcement level. In addition, we find that it takes two full trading days for the return comovement to rebound to its pre-announcement level.

As previously discussed, a drop in intraday R^2 could be mechanical on announcement days. Our conjecture, however, is that the portion of this drop driven by the extremity of the earnings surprise is a marker of investors' macro news neglect and leads to future return predictability. To isolate this specific component, we employ the two-step residualization approach used in Section 6.2. This method allows us to create a measure of the decline in comovement that is attributable solely to EE_Score, after parsing out the influence of other firm characteristics. By splitting our sample on this cleaner proxy, we can more rigorously test the mechanism behind the delayed discovery of macro news.

To execute this approach, we regress $R2\_EA$ on the full set of controls and fixed effects and retain the residual comovement component. We then regress the residualized comovement

[22] Thirty-minute returns are the change in intraday prices within each window; if no trade occurs, we use the last available price. Market returns are based on SPY, the most liquid ETF tracking the S&P 500 with minimal tracking error and inception in 1993, which covers our full sample. Results are similar using VTI, which tracks the CRSP US Total Market Index.

[23] We exclude the first hour (9:30–10:30) to allow time for earnings news to be incorporated, consistent with microstructure evidence that abnormal profits dissipate within 10–40 minutes depending on venue (Patell and Wolfson, 1984; Jennings and Starks, 1985; Barclay and Litzenberger, 1988; Jain, 1988; Gregoire and Martineau, 2022). We also omit the last half-hour (3:30–4:00) to avoid trades driven by liquidity needs or portfolio rebalancing (Cushing and Madhavan, 2000).

component on EE_Score and compute the fitted measure of R2_EA($Fitted\_R2$). Finally, we split the sample at the median of $Fitted\_R2$ (intraday R^2 associated with EE_Score) and re-estimate Eq (7) across both subsamples.

Table 8 reports regression results of Eq (7) for two subsamples. Recalling that $Fitted\_R2$ will be negatively related to EE_Score (extreme earnings surprises reduce intraday firm-market comovement), we find that the coefficient on $MktRet(0)$ is larger in the low $Fitted\_R2$ sample than in the high $Fitted\_R2$ sample ($coeff = 0.187$ vs 0.083), and the difference is statistically significant ($t = -3.09$). These results add further evidence to the notion that larger earnings surprises are associated with greater reductions in intraday return comovement and, subsequently, stronger return predictability. Taken in conjunction with findings from Sections 6.1 and 6.2, the overall body of evidence suggests that the processing of earnings news can result in temporary neglect of macro news, thereby leading to predictable firm abnormal returns in the subsequent three days.

7. Robustness Tests

7.1 Robustness to Additional Earnings Attributes

Our illustrative example of attention allocation in Section 2.1 suggests that delays in processing macroeconomic news on the EA date that lead to post-EA short-term price predictability are conceptually distinct from Post-Earnings Announcement Drift (Bernard and Thomas, 1989, 1990), which focuses on the market's incomplete reaction to the firm's earnings news. Here, we conduct additional robustness tests to ensure that our main variable of interest, $MktRet(0) \times EE\_Score$, is also empirically distinct.

We interact our control for PEAD, $ESurp\_Rank$, with EE_Score in our baseline model from Eq. (3) and examine whether $ESurp\_Rank \times EE\_Score$ attenuates the coefficient on $MktRet(0) \times EE\_Score$ relative to the baseline coefficients observed in Table 3. Results are presented in Table 9. The coefficients on $MktRet(0) \times EE\_Score_i$ are 0.058 and 0.063

when the dependent variables are $CAR(1,3)$ and $CAR(1,7)$, respectively, which are virtually identical to those in Table 3. This finding suggests that macro news neglect is empirically distinct from PEAD's post-earnings return predictability.[24]

We also test whether our results are robust to the finding in Patton and Verardo (2012) that firms' βs spike temporarily around the EA date, particularly when earnings surprises are large. To do so, we add an interaction term for this beta spike, $D\_Beta(0) \times MktRet(0)$, to our main regression.[25] In untabulated results, we find this additional interaction to be insignificant, while the coefficient on our primary variable, $MktRet(0) \times EE\_Score$, remains unchanged. Overall these analyses conclude that our primary variables of interest are distinct from other well-documented firm-level phenomena around earnings announcements.

7.2 Robustness to Concurrent Peer Announcements

Frederickson and Zolotoy (2016) find that when multiple firms announce earnings simultaneously, investors often fail to immediately impound the earnings of the less visible firms into stock prices, leading to an underreaction. To ensure that $MktRet(0)$ does not simply act as an aggregate proxy for other earnings announcers, we follow Frederickson and Zolotoy (2016) and measure less visible announcers' earnings surprises on the same date as the announcing firm as the value-weighted earnings surprise for firms whose size is below the sample median ($SmallPeers\_ESurp$), and as the value-weighted earnings surprise for firms covered by the number of analysts below the sample median ($LowCovPeers\_ESurp$). We also calculate a variable that captures all concurrent announcing peer firms' earnings surprises ($Peers\_ESurp$). We exclude the primary firm itself when calculating all 3 of these measures.

We retabulate our baseline findings in Table 10 Panels A, B, and C, with additional con-

[24] Replacing $ESurp\_Rank$ with a continuous measure of earnings surprise does not change the inferences regarding our key variable of interest, $MktRet(0) \times EE\_Score$.

[25] Intraday betas are measured using CAPM parameters from Section 6.3. $D\_Beta(0)$ is the percentage change in the firm's intraday beta on the EA date relative to its average pre-EA beta over the prior five trading days.

trols for each main effect and each variable interacted with EE_Score. In all three panels, our primary result–that $MktRet(0) \times EE\_Score$ predicts $CAR(1,3)$–remains unchanged.[26][27] These additional analyses disentangle the effects of peer firms' earnings announcements from macroeconomic news embedded in $MktRet(0)$, and demonstrate that our measure of aggregate macroeconomic news is not solely driven by the earnings news of other announcers.

7.3 Placebo: Predictability on Pseudo-announcement Days

In Section 5, we present analyses that support the hypothesis that investors' limited processing capacity can lead to the potential neglect of market-wide news during earnings announcements. In Section 6.2, we further demonstrate that heightened firm-level information acquisition efforts, as indicated by the volume of EDGAR downloads, result in greater neglect of the aggregate market return on the EA date. To elaborate on this idea, we conduct a falsification test to examine the predictability of the aggregate return on subsequent three-day firm abnormal returns on pseudo-announcement days. These are days with no earnings announcements, thus not burdening investors' information processing capacities. Table 11 presents analyses analogous to our primary regression findings in Table 3, Column 1. The pseudo-announcement date is set 45 trading days prior to the actual earnings announcement date. This pseudo-announcement date becomes "Day 0" in our analyses, and variables included in the falsification test are re-calculated accordingly (for instance, $MktRet(0)$ is the CRSP value-weighted aggregate return on the pseudo-announcement date, and $Size$ is the market value as of the pseudo-announcement date).

Since there are no actual earnings announcements on these pseudo-dates, EE_Score cannot be calculated. Consequently, Column 1 reports the results of regressing $CAR(1,3)$

[26]Untabulated, we also constructed aggregated news for less visible firms based on these peer firms' abnormal earnings announcement returns and find that our baseline findings remain unimpacted.

[27]We also conduct one additional test where we count the percentage of extreme earnings announcers (as measured by the upper quintile of EE_Score on a given date) and split the sample across the median value into two subsamples of announcement days with high and low extreme announcers. While $MktRet(0) \times EE\_Score$ remains positive and significant in both subsamples, we find no difference between the coefficient on $MktRet(0) \times EE\_Score$ in the two subsamples ($t = -0.21$), demonstrating that $MktRet(0)$ captures more than merely extreme announcing firms.

on $MktRet(0)$ and the vector of controls, while Column 2 uses the EE_Score from the forthcoming earnings announcement date to examine the interaction term $MktRet(0) \times EE\_Score$. In Column 2, the main effect on EE_Score in Table **??** is significant, consistent with prior evidence that stock returns embed information about forthcoming earnings news (e.g., Ball and Brown, 1968; Beaver, 1968). The key variables of interest in this placebo study are $MktRet(0)$ in Ccolumn 1 and $MktRet(0) \times EE\_Score$ in Column 2. The t-statistics for the key variables of interest are insignificant: for $MktRet(0)$ in Column 1, $t = -0.44$, while for $MktRet(0) \times EE\_Score$ in Column 2, $t = -1.24$. These results further enforce the notion that the macro news delays we document are associated with events that capture investors' urgency for processing firm-specific information and do not reflect general market trends observable in non-EA periods.

7.4 Robustness to Alternate Abnormal Return Calculations

To examine the robustness of our results to alternate calculations of the abnormal return in the 3-days subsequent to the EA date, we estimate cumulative abnormal returns using CAPM (Sharpe, 1964; Lintner, 1965), Fama-French 3-Factor (Fama and French, 1992) and 4-Factor models (Carhart, 1997). For each model, we calculate the abnormal return based on estimations of asset pricing factors over one calendar year (252 trading days), from days $[-261, -10]$ relative to the EA date. We then use these factors to calculate the post-EA $(1, 3)$ abnormal returns, which replace the dependent variable of $CAR(1, 3)$ in the estimation of Eq 3. Untabulated, we find that our primary inferences remain unchanged—aggregate returns are neglected during extreme earnings announcements, creating subsequent post-EA firm-level return predictability. The coefficient on $MktRet(0) \times EE\_Score$ is positive and significant at the 1% level with all 3 calculations of the abnormal return, with the economic magnitude of the coefficient remaining similar to the 0.058 observed in Table 3, Column 1.[28]

[28]Specifically, we find the coefficient on $MktRet(0) \times EE\_Score$ to be 0.062 ($t = 5.35$), 0.047 ($t = 4.63$) and 0.053 ($t = 4.94$)when using the CAPM, the Fama-French 3 factor model and the Carhart 4-Factor model to calculate $CAR(1, 3)$, respectively.

8. Conclusion

We investigate the association between extreme earnings surprises and delayed price discovery of macroeconomic news on earnings announcement dates. We find that the aggregate market return on earnings announcement dates, Day 0, positively predicts firms' returns in the 3 days post-announcement, especially for firms with more extreme earnings surprises. To shed further light on this finding, we collect a sample of major macro news announcements and find that the Day 0 reaction to macro news is more muted in the presence of extreme earnings. Additionally, we find that the macro delay effect we document is more pronounced when investors expend greater efforts acquiring firm-specific earnings information, when investors have more constrained processing capacities, when firm-level returns are more dependent on macro news, and when the intraday correlation between firm and market returns on the EA date is lower.

Taken together, our results are consistent with macro news delays driven by investors' limited processing capacity and urgent demands to process firm-specific earnings news following the announcement date, especially i.e. when earnings surprise is large. In general, our study contributes to research on information acquisition, price discovery and investor attention by showing that investors' intensive efforts to process earnings news can temporarily impede the discovery of macroeconomic news in stock prices. Whereas prior literature documents that information acquisition pursuits of firm-level information enhance price efficiency, this study documents a side-effect of urgent firm-specific information processing—the delayed price discovery of market-wide news into prices.

Appendix A. Attention Allocation on EA Days

We develop a simplified illustrative example with the sole intention of motivating our empirical predictions and sharpening the intuition behind our conjectures. Our intention is not to develop a fully specified analytical model.[29] Below, our stylized example demonstrates how investors allocate scarce information processing resources across firm-specific and macroeconomic signals on earnings announcement days.

A.1 Environment

On the EA date (Day 0), two signals arrive:

- **Firm-specific signal** S, earnings surprise and its extremity $|S|$ (proxied by *ES_Score*).
- **Macro signal** G, proxied by the aggregate market return *MktRet(0)*.

Let $\bar{e} > 0$ denote the total resource capacity available to investors of the announcing firm on Day 0. Investors allocate effort (e_E, e_M) between earnings and macro signals, subject to the constraint

$$e_E + e_M \leq \bar{e}, \qquad e_E \geq 0,\ e_M \geq 0. \tag{8}$$

Effort e_j converts into the share of the corresponding signal that is actually processed:

$$a_j = q_j(e_j) \in [0, 1]. \tag{9}$$

The function q_j is increasing and concave, with

$$q_j(0) = 0, \qquad q_j' > 0, \qquad q_j'' < 0, \qquad \lim_{e \to \infty} q_j(e) = 1, \tag{10}$$

capturing diminishing returns to processing effort.[30]

A.2 Day-0 Optimal Investor Attention Allocation

Investors derive value from processing both signals. Parameter θ scales the return impact of processed earnings news S, and β scales the impact of processed macro news G. Investors

[29] For example, assumptions—such as a fixed attention capacity and focus on only two information sources—are made for tractability and to highlight the core trade-offs involved in investors' allocation of limited attention on earnings announcement days. Extensions and more comprehensive modeling are left for future research.

[30] Qualitative predictions do not depend on this functional form. Other standard specifications—such as linear shares with a cap or quadratic costs of effort—yield the same intuition and empirical predictions.

choose which information to acquire and process such that they maximize expected returns. We assume investors solve the simple utility function:

$$\max_{e_E, e_M} U(e_E, e_M) \equiv \theta\,|S|\,q_E(e_E) + \beta\,|G|\,q_M(e_M) \quad \text{s.t.} \quad e_E + e_M \leq \bar{e},\ e_E, e_M \geq 0. \tag{11}$$

At an interior solution (where both sources receive positive effort), the first-order conditions imply:

$$\theta\,|S|\,q_E'(e_E^*) = \lambda^*, \tag{12}$$
$$\beta\,|G|\,q_M'(e_M^*) = \lambda^*, \tag{13}$$
$$e_E^* + e_M^* = \bar{e}. \tag{14}$$

The interior solution in Eq (12)–(14) equates the marginal benefit of processing earnings, $\theta|S|q_E'(e_E^*)$, with that of processing macro, $\beta|G|q_M'(e_M^*)$.

An increase in the extremity of earnings news, $|S|$, raises the marginal benefit of allocating resources to processing firm-level information. Under a fixed attention budget ($\bar{e}$), this upsets the equality of marginal benefits between earnings and macro, so the investor reallocates effort toward earnings and away from macro until the marginal benefits are equalized.[31]

This adjustment leads directly to the following comparative statics:

$$\frac{\partial e_E^*}{\partial |S|} > 0, \qquad \frac{\partial e_M^*}{\partial |S|} < 0, \tag{15}$$
$$\frac{\partial e_M^*}{\partial (\beta|G|)} > 0, \qquad \frac{\partial e_E^*}{\partial (\beta|G|)} < 0. \tag{16}$$

That is, more extreme earnings (higher $|S|$) shift scarce attention toward earnings and away from macro; larger β or larger $|G|$ tilt attention toward macro.

A.3 Return Decomposition and Short-Lived Delay

From Equation (1) in Section 2, the Day 0 return of the announcing firm is:

$$r_0 = \theta\,a_E\,S + \beta\,a_M\,G + \varepsilon_0,$$

where G is the CRSP value-weighted market return on Day 0.

From Equation (2) in Section 2, the unprocessed fractions $(1 - a_E)$ and $(1 - a_M)$ diffuse

[31] The assumption of concavity ($q_j'' < 0$) ensures that a stable interior solution exists. It guarantees that as effort is reallocated toward earnings, its marginal productivity declines, allowing a new equilibrium to be found where effort is allocated across both signals rather than shifting entirely to a corner solution.

gradually in subsequent days. Over Days $(1, n)$:

$$CAR(1, n) \;\approx\; \theta\,(1 - a_E)\,S \;+\; \beta\,(1 - a_M)\,G \;+\; \varepsilon_{1:n}.$$

This decomposition highlights two points. First, the sign of post-EA predictability follows the sign of G: neglected macro news discovered later moves returns in the same direction as the Day-0 aggregate return. Second, the magnitude is larger when a_M is smaller: as $|S|$ rises, e^*_M falls, so $(1 - a_M)$ increases and strengthens the mapping from *MktRet(0)* to $CAR(1, n)$.[32]

Due to the competitive arbitrage process (Grossman and Stiglitz, 1980), the value of processing a signal quickly declines over time. Thus, neglect is temporary: if macro news is overlooked on Day 0, investors process it promptly in the post-EA period when firm-specific demands wane.

A.4 Empirical Implications

The comparative statics in (15)–(16) imply three main predictions. First, more extreme earnings, $|S|$, draw attention toward earnings and away from macro (lower a_M).[33] Second, firms with greater sensitivity to aggregate conditions (high $\beta|G|$) tilt toward macro. Third, when overall capacity $\bar{e}$ is limited—as in retail-dominated or small firms—neglect of one source becomes more likely. These shifts affect Day-0 returns via (1) and, more importantly for our tests, the post-EA component in (2):

- **Main interaction (Table 3).** As $|S|$ rises, a_M falls and the neglected macro component $\beta(1 - a_M)G$ increases. Prediction: a positive coefficient on *MktRet(0)*×*ES_Score*.
- **Capacity proxies (Table 4).** High retail activity and smaller size proxy for tighter capacity (low $\bar{e}$). In these settings, extreme $|S|$ drives $e^*_M \to 0$, amplifying neglect. Prediction: stronger interaction effects for high retail trading and small firms.
- **High-$\boldsymbol{\beta}$ firms (Table 5).** Unconstrained, higher importance of macro news, β, increases macro news attention, suggesting weaker neglect. But increased macro-relevance means the delayed component of macro news $\beta(1 - a_M)G$ also amplifies with β, thus when $|S|$ is sufficiently large, amplification effect may dominate. Thus, the effect of β appears to be ex-ante ambiguous.
- **Placebo (Table 11).** On pseudo-EA dates, $|S| \approx 0$ and macro is not crowded out. Prediction: no significant relation between *MktRet(0)* (or its interaction with *ES_Score*) and $CAR(1, 3)$.

[32] For clarity: the PEAD component is $\theta(1 - a_E)S$. Because $(1 - a_E)$ typically falls as $|S|$ rises while S (and possibly θ) increases, the comparative static of PEAD in $|S|$ is ex-ante ambiguous. Given the motivation of our study, our empirical analyses focus on the macro-delay term $\beta(1 - a_M)G$, while controlling for PEAD.

[33] While our model assumes a substitution effect, Hirshleifer and Sheng (2022) argue for a complementarity effect, where macro news lowers the cost of processing firm-specific information. A strong complementarity would mute the crowding-out effect we test for. Our empirical analyses allow the data to adjudicate which of these competing channels dominates.

Appendix B. Variable Definitions

Variable	Definition
$AbnHits\_Rank$	Yearly decile rank of the abnormal downloads for EDGAR filings. We measure abnormal downloads as the number of downloads on the EA date minus the average number of downloads in the window [-50, -11] days before the EA date.
$AbnRet(0)$	Firm raw return net of the CRSP value-weighted market return on the EA date.
$AbsAbnRet(0)$	Absolute value of $AbnRet(0)$, defined above.
$Analyst$	Log (1 + number of analysts who make an EPS forecast in the firm-quarter).
$Beta$	Market Beta from monthly market model regressions for the past 48 months from the month of the earnings announcement.
$CAPM(1,3)$	Cumulative returns adjusted for the CAPM model from $[1,3]$ trading days after the EA date.
$CAR(1,3)$	Cumulative abnormal returns from $[1,3]$ trading days after the EA date.
$CAR(1,7)$	Cumulative abnormal returns from $[1,7]$ trading days after the EA date.
$CAR(4,7)$	Cumulative abnormal returns from $[4,7]$ trading days after the EA date.
EE_Score	Five-bin scale (0–4) based on yearly deciles of signed earnings surprise, collapsed symmetrically toward the center (deciles 1 & 10 $\rightarrow$ 4; 2 & 9 $\rightarrow$ 3; 3 & 8 $\rightarrow$ 2; 4 & 7 $\rightarrow$ 1; 5 & 6 $\rightarrow$ 0) Earnings surprise is defined as (actual EPS – last IBES consensus EPS forecast prior to EA date) / price at the fiscal quarter-end date.
$ESurp\_Rank$	Yearly decile rank of signed earnings surprise calculated as [Actual EPS - Consensus EPS] scaled by stock price.
$FF3(1,3)$	Cumulative returns adjusted for the Fama-French 3 Factor model from $[1,3]$ trading days after the EA date.
$FF4(1,3)$	Cumulative returns adjusted for the Fama-French 4 Factor model from $[1,3]$ trading days after the EA date.
$IndPeers\_ESurp$	Value-weighted earnings surprise among 2-digit SIC industry peer firms announcing on the same EA date.
$LowCovPeers\_ESurp$	Value-weighted earnings surprise among peer firms announcing on the same EA date covered by a below-sample median number of analysts.

Continued on next page

Table 1 – continued from previous page

Variable	Definition
$MacroDay$	Indicator variables that equals 1 if the EA is accompanied by one or more major macroeconomic news announcements, and zero otherwise. The ten major macroeconomic news announcements include Core Inflation Rate, Durable Goods Orders, FOMC Interest Rate Decisions, GDP Growth, Industrial Production, Michigan Consumer Sentiment, Non-Farm Payrolls, Producer Price Index, Retail Sales, and Unemployment Rate.
MtB	Market value on the EA date divided by book value of stockholder's equity at the end of the corresponding fiscal quarter-end date.
ME_Score	Score for the extremeness of absolute macro surprise from 0 to 5, based on the yearly decile rank of signed macro surprise. No macro news is classified as "0", deciles 5 and 6 are classified as "1", deciles 4 and 7 as "2", deciles 3 and 8 as "3", deciles 2 and 9 as "4", and deciles 1 and 10 as "5". Macro surprise is defined as (Actual - Forecast) / Forecast for macroeconomic variable announced on the EA date and gathered from Trading Economics.
$MktRet(0)$	CRSP value-weighted market return on the EA date.
$Momentum$	Cumulative abnormal returns from $[-30, -1]$ trading days before the EA date.
$NumEAFirms$	Log (1 + number of firms announcing on the same EA date).
$NumMacro$	Log (1 + number of major macroeconomic news announcements).
$Past30MktRet$	Cumulative CRSP value-weighted market return from 30 to 1 trading days prior to the EA date.
$Peers\_ESurp$	Value-weighted earnings surprise among all peer firms also announcing on the same EA date.
$R2\_EA$	R^2 from intra-day CAPM regressions during the first trading day following the EA time stamp using half-hour price intervals during trading hours from 10:30 to 15:30.
$RetailVol$	The average retail trading volume in the window $[-3, 1]$ prior to the EA date, scaled by total trading volume. Using the Trade and Quote (TAQ) database, we measure retail trading activities following the methodology of Boehmer, Jones, Zhang, and Zhang (2021). Retail trades are defined as off-exchange transactions with sub-penny price improvements relative to the National Best Bid or Offer (NBBO).
$Size$	Natural log of market value on the EA date.

Continued on next page

Table 1 – continued from previous page

Variable	**Definition**
SmallPeers_ESurp	Value-weighted earnings surprise among peer firms announcing on the same EA date whose size is below the sample median.
Turnover	Sum of daily volume divided by sum of daily shares outstanding from 30 to 1 trading days before the EA date.

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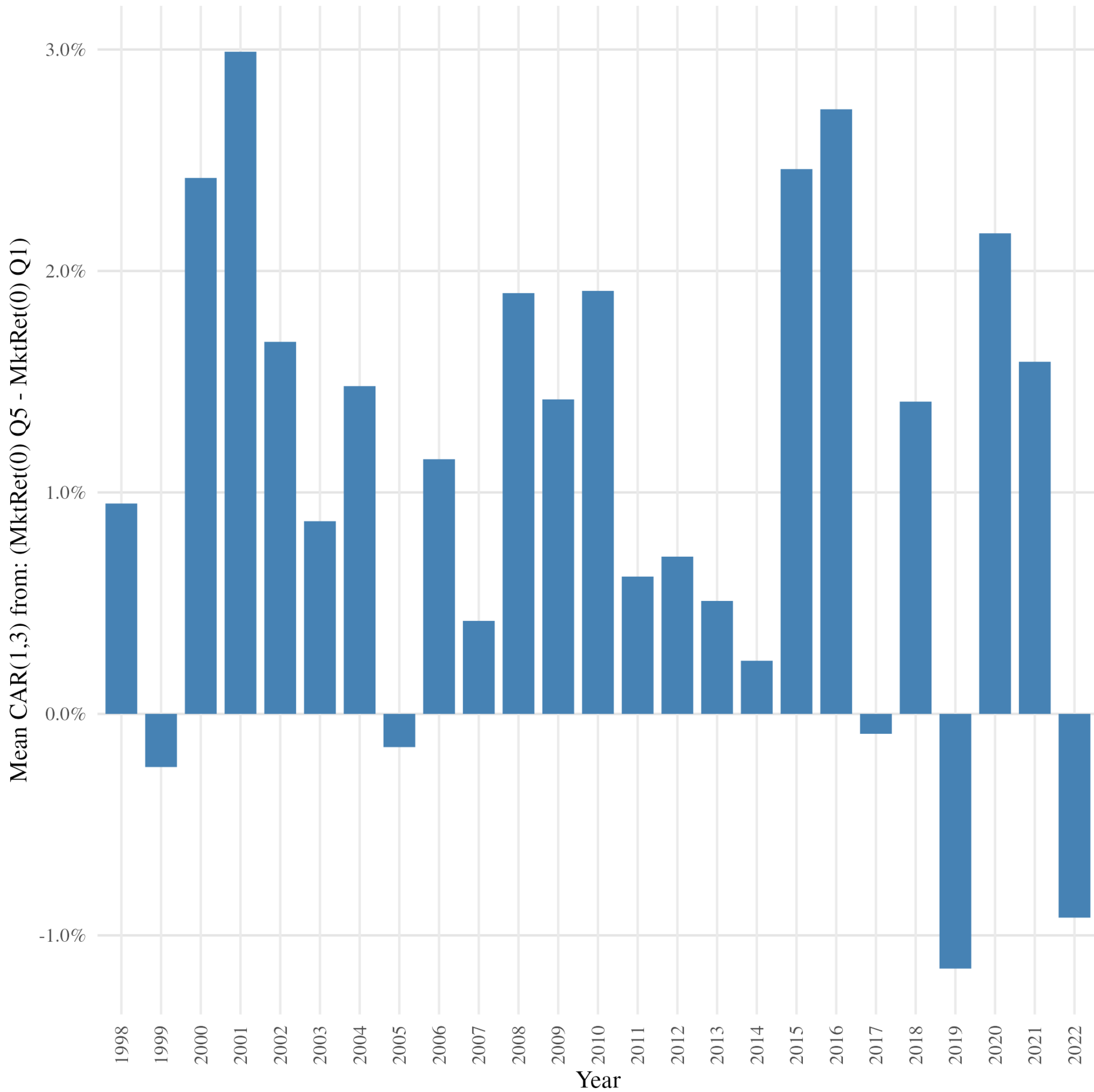
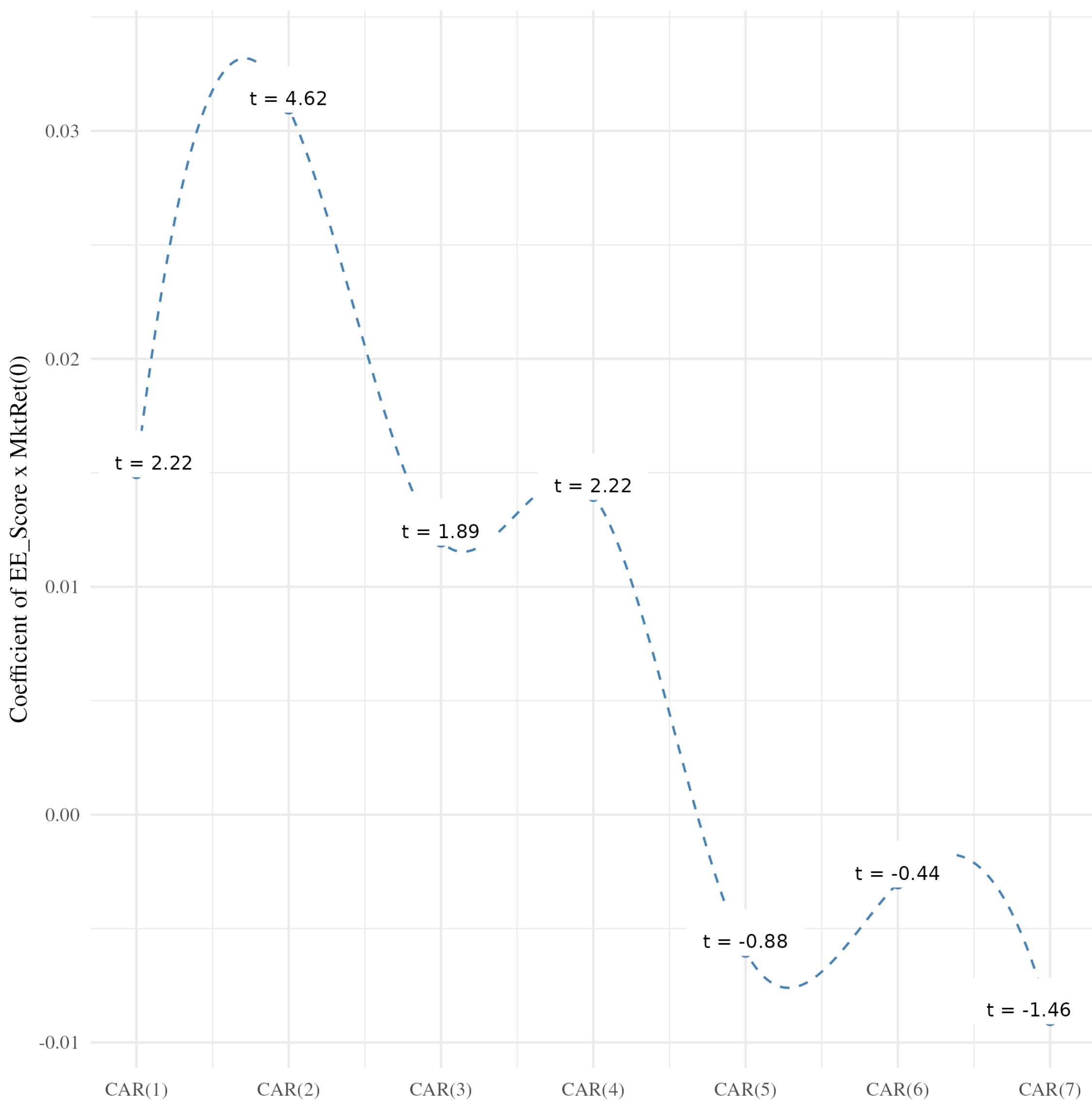
Figure 1: Time-Series Abnormal Returns for Extreme Announcers



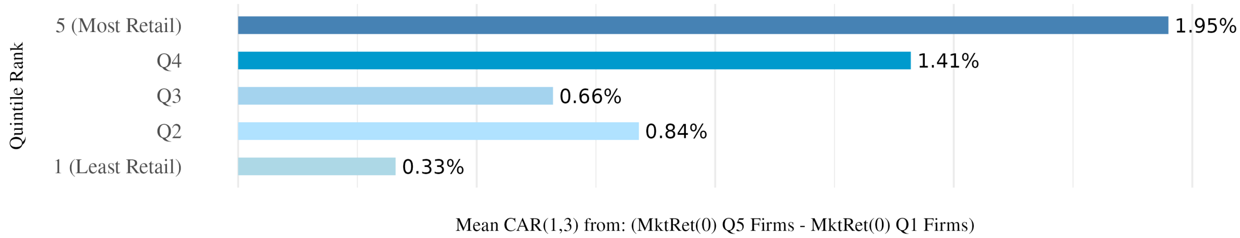
This figure plots *CAR(1,3)* for (*MktRet(0)* Q5 – *MktRet(0)* Q1) for all extreme announcing firms (*EE_Score* Q5) in a given year-qtr.

Figure 2: Aggregate Returns, Extreme Earnings and Post-EA Abnormal Returns from Day 1 to Day 7



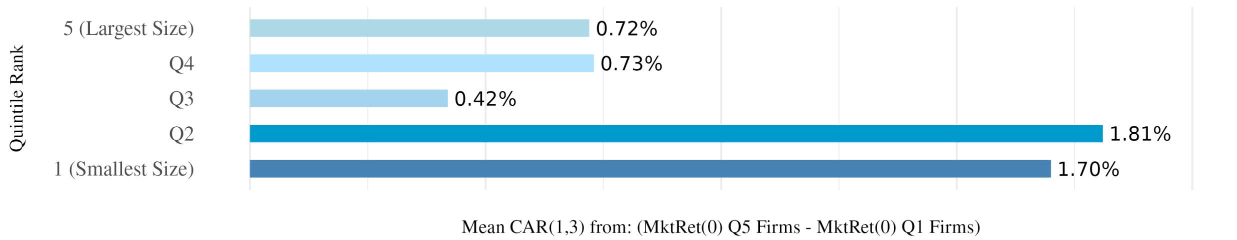
This figure plots the β_3 coefficient on $MktRet(0) \times EE\_Score$ and prints the corresponding t-stat from panel regressions of Eq (3) where the abnormal return is calculated for each day following the earnings announcement date.

Figure 3A: Abnormal Returns from Extreme Announcers by Retail Trade Intensity



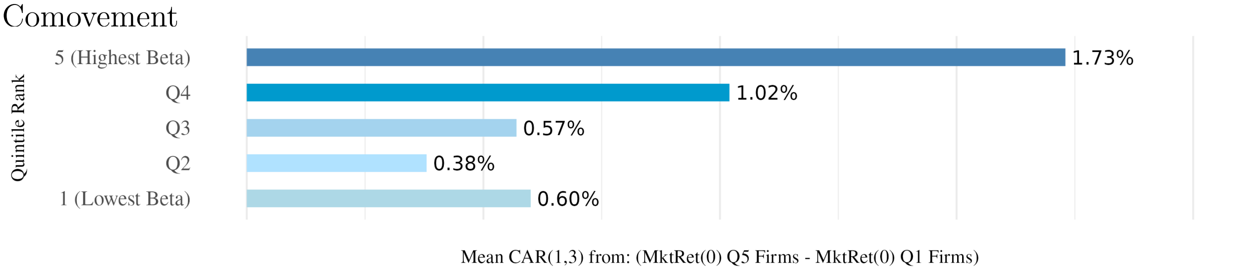
This figure plots the average 3-day abnormal return $CAR(1,3)$ for $[MktRet(0)$ Q5 $-$ $MktRet(0)$ Q1$]$ within extreme announcing firms (EE_Score = Q5) by quintile yearly ranks of retail trading intensity.

Figure 3B: Abnormal Returns from Extreme Announcers by Market Capitalization



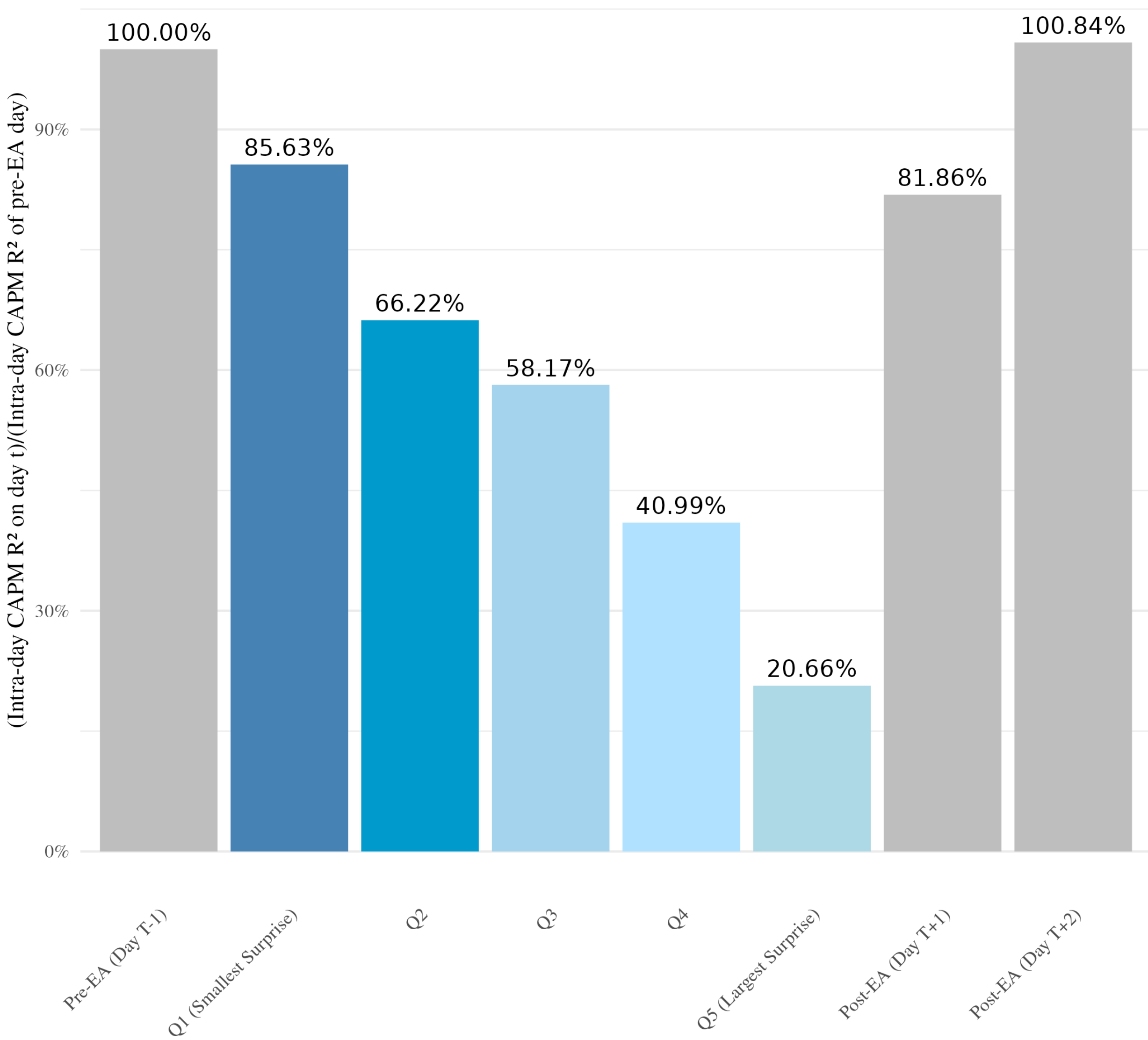
This figure plots the average 3-day abnormal return $CAR(1,3)$ for $[MktRet(0)$ Q5 $-$ $MktRet(0)$ Q1$]$ within extreme announcing firms (EE_Score = Q5) by quintile yearly ranks of firm market capitalization.

Figure 3C: Abnormal Returns from Extreme Announcers by CAPM Beta Return Comovement



This figure plots the average 3-day abnormal return $CAR(1,3)$ for $[MktRet(0)$ Q5 $-$ $MktRet(0)$ Q1$]$ within extreme announcing firms (EE_Score = Q5) by quintile yearly ranks of market beta calculated using monthly CAPM return regressions from $[-48, 0]$.

Figure 4: Changes in Firm-Market Intraday Comovement on Earnings Announcement Dates by EE_Score



This figure plots the ratio of average $R-Squared$ values from intraday CAPM regressions on the EA date relative to the intraday CAPM on day $t-1$ relative to the EA date. Intraday CAPM regressions are estimated using 30-min return intervals from 10:30 AM to 3:30 PM Eastern Time on Day 0 of the earnings announcement, as defined in Section 3.

Table 1: Descriptive Statistics

Panel A. Summary Statistics

Table 1 Panel A presents descriptive statistics, including the number of firm-quarter observations, sample mean, standard deviation, lower quartile, median, and upper quartile. Detailed definitions for all variables are provided in Appendix B.

Variable	**N**	**Mean**	**Std Dev**	**Q1**	**Median**	**Q3**
CAR(1,3)	259,664	-0.0012	0.0604	-0.0299	-0.0021	0.0252
CAR(1,7)	259,664	-0.0008	0.0843	-0.0414	-0.0029	0.0355
CAR(4,7)	259,598	0.0001	0.0128	-0.0049	0.0005	0.0060
MktRet(0)	259,664	0.0004	0.0119	-0.0050	0.0007	0.0063
EE_Score	259,664	1.9986	1.4077	1.0000	2.0000	3.0000
AbnRet(0)	259,664	-0.0016	0.0811	-0.0375	-0.0010	0.0354
Size	259,664	13.6022	1.9143	12.2530	13.4919	14.8325
Momentum	259,664	0.0017	0.1885	-0.0792	-0.0065	0.0655
Turnover	259,664	8.9274	9.0491	3.4416	6.2295	10.9134
MtB	259,664	3.2648	5.3088	1.2315	2.0851	3.7947
Analyst	259,664	1.8705	0.7370	1.3863	1.7918	2.3979
NumEAFirms	259,664	4.5888	0.9650	4.0775	4.7875	5.3327
ESurp_Rank	259,664	4.5104	2.8678	2.0000	5.0000	7.0000
MacroNewsDay	259,664	0.5977	0.4904	0.0000	1.0000	1.0000
AbnHits_Rank	124,620	4.5282	2.8718	2.0000	5.0000	7.0000
Beta	232,369	1.2844	0.8416	0.7177	1.1568	1.6930
RetailVol	184,570	0.0760	0.9341	0.0302	0.0484	0.0887
R2_EA	256,016	0.1651	0.1820	0.0226	0.0965	0.2521

Panel B. Correlation Table

Table 1 Panel B presents a correlation matrix among variables. Pearson correlations are presented on the upper right, and Spearman correlations are presented on the lower left section of the correlation matrix. Detailed definitions for all variables are provided in Appendix B. Bold numbers in the correlation matrix indicate statistical significance at the 10% level.

VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) CAR(1,3)	1	**0.701**	**0.034**	**-0.014**	**0.055**	**0.027**	**-0.017**	**-0.009**	**-0.013**	**0.024**	**0.004**	**0.047**	-0.000	-0.002	**-0.012**	**0.006**
(2) CAR(1,7)	**0.685**	1	**0.029**	**-0.013**	**0.051**	**0.024**	**-0.020**	**-0.008**	**-0.012**	**0.023**	0.002	**0.047**	0.001	-0.003	**-0.011**	**0.007**
(3) MktRet(0)	**0.028**	**0.023**	1	0.006	**0.017**	-0.003	-0.002	**0.008**	0.002	0.000	0.000	0.002	**0.005**	0.001	-0.001	**-0.047**
(4) EE_Score	**-0.032**	**-0.037**	0.003	1	**-0.037**	**-0.480**	**-0.021**	**0.039**	**-0.140**	**-0.375**	**-0.011**	**0.006** r	**-0.061**	**0.033**	**0.196**	**-0.086**
(5) AbnRet(0)	**0.054**	**0.056**	**0.012**	**-0.050**	1	**0.079**	**-0.022**	**-0.036**	**0.041**	**0.023**	**0.008**	**0.277**	**-0.030**	**-0.006**	**-0.025**	**0.016**
(6) Size	**0.051**	**0.057**	0.001	**-0.485**	**0.086**	1	**0.061**	**0.097**	**0.189**	**0.745**	**0.023**	**0.050**	**0.324**	**-0.043**	**-0.121**	**0.172**
(7) Momentum	**-0.005**	**-0.007**	-0.001	**-0.076**	**-0.022**	**0.118**	1	**0.075**	**0.093**	**-0.014**	**-0.020**	**0.083**	-0.005	**-0.005**	**0.032**	**0.007**
(8) Turnover	**-0.006**	**-0.004**	**0.008**	**-0.050**	**-0.020**	**0.301**	**0.024**	1	**0.092**	**0.257**	**0.017**	**0.019**	**0.187**	**0.007**	**0.270**	**0.064**
(9) MtB	**-0.008**	**-0.013**	0.002	**-0.284**	**0.066**	**0.337**	**0.138**	**0.173**	1	**0.127**	**0.009**	**0.006**	**0.031**	-0.004	**0.013**	**0.017**
(10) Analyst	**0.038**	**0.044**	0.004	**-0.375**	**0.032**	**0.745**	**0.028**	**0.426**	**0.236**	1	**0.032**	**0.038**	**0.291**	**-0.031**	**0.023**	**0.140**
(11) NumEAFirm	**0.005**	0.003	-0.002	**-0.012**	**0.010**	**0.035**	**-0.023**	**0.046**	**0.022**	**0.038**	1	**0.034**	**-0.122**	-0.004	**0.037**	**0.015**
(12) ESurp_Rank	**0.053**	**0.055**	0.003	**0.006**	**0.288**	**0.052**	**0.099**	**0.042**	**0.043**	**0.038**	**0.037**	1	-0.001	**-0.006**	**0.037**	**0.012**
(13) AbnHits_Rank	0.004	0.008	**0.010**	**-0.061**	**-0.021**	**0.311**	0.003	**0.230**	**0.056**	**0.291**	**-0.106**	-0.001	1	**-0.075**	**0.036**	**0.040**
(14) RetailVol	**-0.034**	-0.044	0.011	**0.365**	**-0.072**	**-0.442**	**-0.052**	**-0.025**	-0.078	**-0.291**	-0.080	**-0.010**	**-0.053**	1	0.004	**-0.009**
(15) Beta	**-0.030**	**-0.037**	0.005	**0.184**	**-0.028**	**-0.093**	**-0.018**	**0.305**	**-0.005**	**0.043**	**0.034**	**0.041**	**0.041**	0.120	1	**0.015**
(16) R2_EA	**0.009**	**0.011**	**-0.041**	**-0.077**	**0.018**	**0.149**	**0.014**	**0.081**	**0.031**	**0.125**	**0.014**	**0.011**	**0.036**	**-0.079**	**0.018**	1

Table 2: Univariate Market Results

Table 2 presents average cumulative abnormal returns from one trading day after the earnings announcement to 3 and 7 trading days after the earnings announcement based on double sorts on quintiles of market return on the earnings announcement day ($MktRet(0)$) and quintiles of the magnitude of earnings surprise (EE_Score). EE_Score is sorted annually based on lower and upper deciles of signed earnings surprise ($ESurp$). The far right column indicates difference between the highest quintile of $MktRet(0)$ and the lowest quintile for each quintile of EE_Score. Detailed variable definitions are provided in Appendix B.

Panel A

	$CAR(1,3)$					
$MktRet(0)$	Q1	Q2	Q3	Q4	Q5	**(5-1)**
EE_Score Q1	-0.07%	-0.23%	-0.13%	0.07%	0.07%	**0.13%**
	(-1.39)	(-5.08)	(-3.01)	(1.51)	(1.49)	**(2.04)**
EE_Score Q2	-0.22%	-0.21%	-0.06%	-0.01%	0.02%	**0.24%**
	(-4.49)	(-4.50)	(-1.28)	(-0.26)	(0.34)	**(3.41)**
EE_Score Q3	-0.23%	-0.21%	-0.06%	0.11%	0.20%	**0.43%**
	(-4.13)	(-4.15)	(-1.22)	(2.06)	(3.82)	**(5.63)**
EE_Score Q4	-0.28%	-0.19%	0.08%	0.15%	0.28%	**0.56%**
	(-4.33)	(-3.07)	(1.33)	(2.50)	(4.42)	**(6.19)**
EE_Score Q5	-1.03%	-0.60%	-0.26%	-0.20%	0.06%	**1.08%**
	(-12.37)	(-7.49)	(-3.20)	(-2.50)	(0.70)	**(9.22)**
ALL	-0.36%	-0.29%	-0.09%	0.02%	0.12%	**0.48%**
	(-13.33)	(-11.03)	(-3.29)	(0.76)	(4.59)	**(12.69)**

EE_Score Q5 (5-1) – EE_Score Q1 (5-1) = 0.95% t-stat = 7.00

Panel B

	$CAR(1,7)$					
$MktRet(0)$	Q1	Q2	Q3	Q4	Q5	(5-1)
EE_Score Q1	-0.01%	-0.13%	-0.09%	0.07%	0.21%	**0.22%**
	(-0.09)	(-2.07)	(-1.52)	(1.20)	(3.33)	**(2.38)**
EE_Score Q2	-0.29%	-0.23%	-0.07%	-0.10%	0.19%	**0.48%**
	(-4.27)	(-3.52)	(-1.05)	(-1.51)	(2.93)	**(5.10)**
EE_Score Q3	-0.19%	-0.07%	0.04%	0.10%	0.34%	**0.53%**
	(-2.49)	(-0.99)	(0.64)	(1.47)	(4.68)	**(5.06)**
EE_Score Q4	-0.16%	-0.10%	0.29%	0.05%	0.45%	**0.60%**
	(-1.74)	(-1.14)	(3.42)	(0.64)	(5.11)	**(4.82)**
EE_Score Q5	-1.06%	-0.86%	-0.22%	-0.37%	0.10%	**1.16%**
	(-9.04)	(-7.46)	(-1.88)	(-3.19)	(0.81)	**(6.94)**
ALL	-0.36%	-0.27%	-0.01%	-0.05%	0.26%	**0.60%**
	(-8.98)	(-7.55)	(-0.25)	(-1.37)	(6.84)	**(11.20)**

EE_Score Q5 (5-1) – EE_Score Q1 (5-1) = 0.94% t-stat = 4.91

Table 3: Market Returns, Earnings Surprise Magnitude, and Post-EA CAR

Table 3 presents the effect of earnings announcement day market returns and the magnitude of the earnings surprise on post-earnings announcement returns. More specifically, we estimate OLS regressions with three different cumulative abnormal return windows – from 1 to 3 trading days after the earnings announcement date ($CAR(1,3)$), 1 to 7 trading days after the earnings announcement date ($CAR(1,7)$), and 4 to 7 trading days after the earnings announcement date ($CAR(4,7)$) – as the dependent variables. The main explanatory variable is the interaction between earnings announcement day market returns ($MktRet(0)$) and the magnitude of the earnings surprise (EE_Score). Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	$CAR(1,3)$	$CAR(1,7)$	$CAR(4,7)$
$MktRet(0)$	0.008	-0.027	-0.031
	(0.28)	(-0.71)	(-0.72)
EE_Score	-0.000	-0.000	0.000
	(-1.57)	(-1.62)	(0.44)
$MktRet(0) \times EE\_Score$	0.058***	0.063***	0.005
	(4.87)	(3.51)	(0.69)
$AbnRet(0)$	0.031***	0.038***	-0.001*
	(11.33)	(10.56)	(-1.73)
$Size$	0.000**	0.000*	-0.000
	(2.42)	(1.81)	(-0.37)
$Momentum$	-0.006***	-0.011***	0.000
	(-4.25)	(-5.37)	(0.16)
$Turnover$	-0.000***	-0.000***	0.000
	(-2.84)	(-2.67)	(0.16)
MtB	-0.000***	-0.000***	-0.000
	(-5.46)	(-4.71)	(-0.28)
$Analyst$	0.001***	0.002***	0.000
	(3.32)	(3.17)	(0.32)
$NumEAFirms$	-0.000	-0.000	-0.000
	(-0.93)	(-1.15)	(-0.91)
$ESurp\_Rank$	0.001***	0.001***	0.000
	(12.29)	(12.56)	(0.56)
N	259,664	259,664	259,598
R^2	0.02	0.03	0.07
Year-Month Fixed Effects	Y	Y	Y
EA Weekday Fixed Effects	Y	Y	Y

Table 4: Information Constraint Cross Sectional Tests

Table 4 presents the effect of earnings announcement day market returns and the magnitude of the earnings surprise on post-earnings announcement returns in different subsamples. The first two columns present results for subsamples split on retail trading volume ($RetailVol$), with the left (right) column containing above- (below-) median retail trading firms. The last two columns present results for subsamples split on firm size ($Size$), with the left (right) column containing non-large-cap (lower three quartiles for market value) firms and the right column containing large-cap (upper quartile for market value) firms. We estimate OLS regressions with cumulative abnormal return windows from 1 to 3 trading days after the earnings announcement date ($CAR(1,3)$) as the dependent variable. The main explanatory variable is the interaction between earnings announcement day market returns ($MktRet(0)$) and the magnitude of the earnings surprise (EE_Score). Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double-clustered by firm and earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Retail Trading Volume		**Large Cap**	
	High	**Low**	**No**	**Yes**
	$CAR(1,3)$	$CAR(1,3)$	$CAR(1,3)$	$CAR(1,3)$
$MktRet(0)$	0.020	0.036	0.017	0.028
	(0.35)	(1.15)	(0.50)	(0.98)
EE_Score	0.000	0.000**	-0.000	0.000
	(1.23)	(2.38)	(-1.15)	(1.31)
$MktRet(0) \times EE\_Score$	0.060***	0.013	0.057***	0.021
	(3.17)	(0.80)	(4.43)	(1.11)
$AbnRet(0)$	0.034***	0.008*	0.032***	0.017***
	(8.99)	(1.95)	(10.77)	(4.04)
$Size$	0.000*	0.000	0.001***	-0.000
	(1.74)	(1.14)	(4.69)	(-1.22)
$Momentum$	-0.001	-0.008***	-0.007***	-0.005
	(-0.37)	(-3.02)	(-4.61)	(-1.55)
$Turnover$	-0.000*	0.000	-0.000***	-0.000
	(-1.84)	(0.73)	(-3.48)	(-1.19)
MtB	-0.000*	-0.000***	-0.000***	-0.000***
	(-1.80)	(-3.08)	(-4.71)	(-3.05)
$Analyst$	0.001*	0.000	0.001***	0.001
	(1.91)	(0.71)	(3.28)	(1.57)
$NumEAFirms$	0.000	-0.000*	-0.000	-0.000
	(0.88)	(-1.88)	(-1.22)	(-1.29)
$ESurp\_Rank$	0.001***	0.001***	0.001***	0.001***
	(7.53)	(10.19)	(11.50)	(5.48)
T-stat of differences of $MktRet(0) \times EE\_Score$	2.19**		1.69*	
N	92284	92,285	194,748	64,916
R^2	0.02	0.02	0.02	0.02
Year-Month Fixed Effects	Y	Y	Y	Y
EA Weekday Fixed Effects	Y	Y	Y	Y

Table 5: Market Beta Cross Sectional Tests

Table 5 presents the effect of earnings announcement day market returns and magnitude of the earnings surprise on post-earnings announcement returns in different subsamples. Results for subsamples are split on market beta (*Beta*), with the left (right) column containing below- (above-) median beta firms. We estimate OLS regressions with cumulative abnormal return windows from 1 to 3 trading days after the earnings announcement date ($CAR(1,3)$) as the dependent variable. The main explanatory variable is the interaction between earnings announcement day market returns ($MktRet(0)$) and the magnitude of the earnings surprise (EE_Score). Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Low Beta	**High Beta**
	$CAR(1,3)$	$CAR(1,3)$
$MktRet(0)$	0.047*	-0.022
	(1.70)	(-0.53)
EE_Score	-0.000*	0.000
	(-1.94)	(0.05)
$MktRet(0) \times EE\_Score$	0.034**	0.073***
	(2.55)	(4.56)
$AbnRet(0)$	0.021***	0.028***
	(5.55)	(8.24)
$Size$	0.000*	0.000
	(1.91)	(0.14)
$Momentum$	-0.013***	-0.005***
	(-6.04)	(-2.59)
$Turnover$	-0.000	-0.000*
	(-0.77)	(-1.75)
MtB	-0.000*	-0.000***
	(-1.84)	(-2.92)
$Analyst$	0.000	0.002***
	(0.45)	(4.39)
$NumEAFirms$	0.000	-0.001
	(0.28)	(-1.48)
$ESurp\_Rank$	0.001***	0.001***
	(14.96)	(8.15)
T-stat of differences of $MktRet(0) \times EE\_Score$	2.07**	
N	116,179	116,190
R^2	0.02	0.03
Year-Month Fixed Effects	Y	Y
EA Weekday Fixed Effects	Y	Y

Table 6: Abnormal Earnings Announcement Returns and Macro News

Table 6 reports the estimation results of OLS regressions of the absolute value of cumulative firm abnormal returns on Day 0 ($AbsAbnRet(0)$) on three measures of macro news (ME_Score, $MacroDay$, and $NumMacro$), the extremity of the unsigned earnings surprise (EE_Score), their interaction terms, and control variables. We gather available data on 10 major macroeconomic announcements from Trading Economics during 2014-2022. Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and earnings announcement date. *, **, and *** indicate statistical significance at 10%, 5%, and 1% levels,respectively.

	$AbsAbnRet(0)$	$AbsAbnRet(0)$	$AbsAbnRet(0)$
ME_Score	0.001***		
	(3.95)		
$ME\_Score \times EE\_Score$	-0.000***		
	(-2.87)		
$MacroDay$		0.003***	
		(3.43)	
$MacroDay \times EE\_Score$		-0.001***	
		(-2.78)	
$NumMacro$			0.002***
			(3.24)
$NumMacro \times EE\_Score$			-0.001***
			(-2.76)
EE_Score	0.005***	0.005***	0.005***
	(18.01)	(17.85)	(18.36)
$Size$	-0.005***	-0.005***	-0.005***
	(-17.13)	(-17.14)	(-17.14)
$Momentum$	-0.002	-0.002	-0.002
	(-1.01)	(-1.02)	(-1.02)
$Turnover$	0.001***	0.001***	0.001***
	(18.15)	(18.12)	(18.10)
MtB	0.000***	0.000***	0.000***
	(7.18)	(7.20)	(7.21)
$Analyst$	0.010*	0.010***	0.010***
	(12.60)	(12.60)	(12.59)
$NumEAFirms$	-0.000	-0.000	-0.000
	(-0.79)	(-0.80)	(-0.77)
$ESurp\_Rank$	0.000	0.000	0.000
	(0.93)	(0.92)	(0.91)
N	93,108	93,108	93,108
R^2	0.09	0.09	0.09
Year-Month Fixed Effects	Y	Y	Y
EA Weekday Fixed Effects	Y	Y	Y

Table 7: Abnormal EDGAR Downloads

Table 7 reports the effect of post earnings-announcement returns ($CAR(1,3)$) on $MktRet(0)$, splitting firms by the fitted number of abnormal EDGAR downloads ($Fitted\_AbnHits$). $Fitted\_AbnHits$ is the fitted value from the two-step procedure in Section 6.2 that isolates the portion of downloads attributable to earnings-surprise extremity. The left (right) column shows results for firms with below- (above-) median $Fitted\_AbnHits$. We obtain EDGAR usage from SEC server logs that record user access statistics for each filing, available from Jan 2003 to June 2017. Detailed definitions for all variables are provided in Appendix B. Standard errors are double clustered by firm and announcement date. *, **, *** denote significance at the 10%, 5%, and 1% levels.

	Fitted Abnormal EDGAR Downloads	
	Low	**High**
	$CAR(1,3)$	$CAR(1,3)$
$MktRet(0)$	0.070***	0.157***
	(2.58)	(3.40)
$AbnRet(0)$	0.010**	0.043***
	(2.56)	(8.29)
$Size$	0.000	0.001***
	(0.33)	(2.60)
$Momentum$	-0.006**	0.001
	(-2.12)	(0.52)
$Turnover$	-0.000	-0.000**
	(-0.49)	(-2.55)
MtB	-0.000*	-0.000
	(-1.77)	(-1.44)
$Analyst$	0.001**	0.000
	(1.99)	(0.72)
$NumEAFirms$	-0.000	0.000
	(-1.03)	(0.32)
$ESurp\_Rank$	0.001***	0.001***
	(8.93)	(12.41)
T-stat of differences of $MktRet(0)$	3.09**	
N	75,973	48,646
R^2	0.01	0.03
Year-Month Fixed Effects	Y	Y
EA Weekday Fixed Effects	Y	Y

Table 8: Fitted Intraday R^2

Table 8 presents the effect of post–earnings-announcement returns ($CAR(1,3)$) on $MktRet(0)$, splitting firms by the fitted intraday R^2 ($Fitted\_R2$). $Fitted\_R2$ is obtained from the two-step procedure in Section 6.3 that isolates the portion of Day 0 intraday comovement attributable to earnings-surprise extremity. The left (right) column shows results for firms with below- (above-) median $Fitted\_R2$. Detailed definitions for all variables are provided in Appendix B. Standard errors are double clustered by firm and announcement date. *, **, *** denote significance at the 10%, %, and 1% levels.

	Fitted Intra-EA Day $\mathbf{R^2}$	
	Low	**High**
	$CAR(1,3)$	$CAR(1,3)$
$MktRet(0)$	0.187***	0.083***
	(4.58)	(3.51)
$AbnRet(0)$	0.043**	0.016***
	(11.46)	(5.11)
$Size$	0.001***	-0.000
	(5.18)	(-0.92)
$Momentum$	-0.005***	-0.011***
	(-2.71)	(-5.32)
$Turnover$	-0.000***	-0.000*
	(-3.65)	(-1.70)
MtB	-0.000	-0.000***
	(-1.52)	(-5.25)
$Analyst$	0.001	0.002***
	(1.29)	(4.48)
$NumEAFirms$	0.000	-0.001**
	(0.27)	(-2.53)
$ESurp\_Rank$	0.001***	0.001***
	(9.16)	(7.38)
T-stat of differences of $MktRet(0)$	-3.09**	
N	101,433	154,583
R^2	0.03	0.02
Year-Month Fixed Effects	Y	Y
EA Weekday Fixed Effects	Y	Y

Table 9: Market Returns, Earnings Surprise Magnitude, and Post-EA CAR controlling for PEAD

Table 9 reports the estimation results of OLS regressions of post-earnings announcement returns ($CAR(1,3)$, $CAR(1,7)$, and $CAR(4,7)$) on earnings announcement day market returns ($MktRet(0)$), the extremity of the unsigned earnings surprise (EE_Score) and their interaction term, controlling for the rank measure of signed earnings surprise ($ESurp\_Rank$) and the interaction between EE_Score and $ESurp\_Rank$. Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	$CAR(1,3)$	$CAR(1,7)$	$CAR(4,7)$
$MktRet(0)$	0.008	-0.026	-0.031
	(0.29)	(-0.71)	(-0.72)
EE_Score	-0.001***	-0.002***	0.000
	(-3.39)	(-5.23)	(0.95)
$MktRet(0) \times EE\_Score$	0.058***	0.063***	0.005
	(4.87)	(3.51)	(0.69)
$ESurp\_Rank \times EE\_Score$	0.000***	0.000***	-0.000
	(3.00)	(5.16)	(-0.86)
$ESurp\_Rank$	0.000*	-0.000	0.000
	(1.68)	(-0.32)	(1.03)
$AbnRet(0)$	0.031***	0.039***	-0.001*
	(11.38)	(10.67)	(-1.74)
$Size$	0.000**	0.000*	-0.000
	(2.40)	(1.77)	(-0.36)
$Momentum$	-0.006***	-0.011***	0.000
	(-4.25)	(-5.38)	(0.16)
$Turnover$	-0.000***	-0.000***	0.000
	(-2.79)	(-2.59)	(0.15)
MtB	-0.000***	-0.000***	-0.000
	(-5.50)	(-4.77)	(-0.27)
$Analyst$	0.001***	0.002***	0.000
	(3.32)	(3.15)	(0.33)
$NumEAFirms$	-0.000	-0.000	-0.000
	(-0.93)	(-1.16)	(-0.91)
N	259,664	259,664	259,598
R^2	0.02	0.03	0.07
Year-Month Fixed Effects	Y	Y	Y
EA Weekday Fixed Effects	Y	Y	Y

Table 10: Market Returns, Earnings Surprise Magnitude, and Post-EA CAR Controlling for Aggregate Peer Firms' Earnings Surprises

Panel A. Less Visible Peers

Table 10, Panel A reports the estimation results of OLS regressions of post-earnings announcement returns ($CAR(1,3)$) on earnings announcement day market returns ($MktRet(0)$), the extremity of the unsigned earnings surprise (EE_Score), $MktRet(0) \times EE\_Score$, controlling for less visible announcing firms' earnings surprises ($SmallPeers\_ESurp$ and $LowCovPeers\_ESurp$), and $SmallPeers\_ESurp \times EE\_Score$ or $LowCovPeers\_ESurp \times EE\_Score$. Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	$CAR(1,3)$	$CAR(1,3)$
$MktRet(0)$	0.008	0.008
	(0.29)	(0.31)
EE_Score	-0.001	-0.001**
	(-1.56)	(-2.47)
$MktRet(0) \times EE\_Score$	0.058***	0.057***
	(4.85)	(4.85)
$SmallPeers\_ESurp \times EE\_Score$	0.000	
	(1.23)	
$LowCovPeers\_ESurp \times EE\_Score$		0.000**
		(2.12)
$SmallPeers\_ESurp$	-0.000	
	(-0.59)	
$LowCovPeers\_ESurp$		-0.000*
		(-1.69)
$AbnRet(0)$	0.030***	0.030***
	(11.27)	(11.27)
$Size$	0.000**	0.000**
	(2.37)	(2.38)
$Momentum$	-0.006***	-0.006***
	(-4.22)	(-4.19)
$Turnover$	-0.000***	-0.000***
	(-2.74)	(-2.78)
Mtb	-0.000***	-0.000***
	(-5.41)	(-5.36)
$Analyst$	0.001***	0.001***
	(3.25)	(3.27)
$NumEAFirms$	-0.000	-0.000
	(-1.00)	(-0.86)
$ESurp\_Rank$	0.001***	0.001***
	(12.29)	(12.27)
N	258,385	258,367
R^2	0.02	0.02
Year-Month Fixed Effects	Y	Y
EA Weekday Fixed Effects	Y	Y

Panel B. Industry Peers

Table 10, Panel B reports the estimation results of OLS regressions of post-earnings announcement returns ($CAR(1,3)$) on earnings announcement day market returns ($MktRet(0)$), the extremity of the unsigned earnings surprise (EE_Score), and their interaction terms, controlling for 2-digit SIC industry peer announcers' earnings surprises ($IndPeers\_ESurp$), and the interaction between EE_Score and $IndPeers\_ESurp$. Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	$CAR(1,3)$
$MktRet(0)$	0.019
	(0.61)
$IndPeers\_ESurp$	-0.000
	(-1.41)
EE_Score	-0.001**
	(-2.42)
$MktRet(0) \times EE\_Score$	0.052***
	(3.97)
$IndPeers\_ESurp \times EE\_Score$	0.000**
	(2.08)
$AbnRet(0)$	0.027***
	(9.07)
$Size$	0.000**
	(2.20)
$Momentum$	-0.007***
	(-4.43)
$Turnover$	-0.000**
	(-2.17)
Mtb	-0.000***
	(-4.69)
$Analyst$	0.001**
	(2.53)
$NumEAFirms$	-0.000
	(-0.91)
$ESurp\_Rank$	0.001***
	(9.95)
N	209,734
R^2	0.02
Year-Month Fixed Effects	Y
EA Weekday Fixed Effects	Y

Panel C. All Announcing Peers

Table 10, Panel C reports the estimation results of OLS regressions of post-earnings announcement returns ($CAR(1,3)$) on earnings announcement day market returns ($MktRet(0)$), the extremity of the unsigned earnings surprise (EE_Score), and their interaction terms, controlling for all concurrent announcing peer firms' earnings surprises ($Peers\_ESurp$), and the interaction between ES_Score and $Peers\_ESurp$. Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	$CAR(1,3)$
$MktRet(0)$	0.009
	(0.31)
$Peers\_ESurp$	-0.000
	(-0.90)
EE_Score	-0.001
	(-1.20)
$MktRet(0) \times EE\_Score$	0.058***
	(4.86)
$Peers\_ESurp \times EE\_Score$	0.000
	(0.92)
$AbnRet(0)$	0.031***
	(11.31)
$Size$	0.000**
	(2.41)
$Momentum$	-0.006***
	(-4.24)
$Turnover$	-0.000***
	(-2.80)
Mtb	-0.000***
	(-5.46)
$Analyst$	0.001***
	(3.32)
$NumEAFirms$	-0.000
	(-0.93)
$ESurp\_Rank$	0.001***
	(12.33)
N	259,381
R^2	0.02
Year-Month Fixed Effects	Y
EA Weekday Fixed Effects	Y

Table 11: Placebo Test - Market Returns, Earnings Surprise Magnitude, and Post-EA CAR

Table 11 presents the effect of pseudo-earnings announcement day market returns and the magnitude of the earnings surprise on post-pseudo-earnings announcement returns. We estimate OLS regressions with cumulative abnormal return windows from 1 to 3 trading days after the pseudo-earnings announcement date ($CAR(1,3)$) as the dependent variable. The main explanatory variable is the pseudo-earnings announcement day market returns ($MktRet(0)$) in Column 1 and the interaction between pseudo-earnings announcement day market returns ($MktRet(0)$) and the magnitude of the earnings surprise (EE_Score) in Column 2. The pseudo-earnings announcement date is set as 45 trading days prior to the actual earnings announcement date. Detailed definitions for all variables are provided in Appendix B. In parentheses are t-statistics based on standard errors double clustered by firm and pseudo-earnings announcement date. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	$CAR(1,3)$	$CAR(1,3)$
$MktRet(0)$	-0.008	0.018
	(-0.44)	(0.85)
EE_Score		-0.001***
		(-10.67)
$MktRet(0) \times EE\_Score$		-0.013
		(-1.24)
$AbnRet(0)$	-0.068***	-0.069***
	(-5.84)	(-5.90)
$Size$	0.000	-0.000*
	(0.84)	(-1.84)
$Momentum$	-0.008***	-0.008***
	(-3.94)	(-4.27)
$Turnover$	-0.000	-0.000
	(-1.56)	(-0.96)
MtB	0.000	-0.000
	(0.27)	(-0.26)
$Analyst$	0.001	0.000
	(1.37)	(0.68)
$NumEAFirms$	0.001	0.001
	(1.23)	(1.17)
$ESurp\_Rank$		0.000***
		(6.82)
N	259,613	259,613
R^2	0.01	0.02
Year-Month Fixed Effects	Y	Y
EA Weekday Fixed Effects	Y	Y